JANUARY 2004 VOLUME 46 NUMBER 1



AND UNUSUAL WEATHER PHENOMENA WITH LATE REPORTS AND CORRECTIONS



noaa

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE NATIONAL CLIMATIC DATA CENTER, ASHEVILLE, NC **Cover:** A rare tornado touched down on the island of Oahu in a pineapple field near Kunia, about 7 miles northwest of downtown Honolulu, on January 25, 2004. The F0 tornado, as defined by the Fujita Tornado Scale, stayed on the ground for about 5 minutes moving very slowly through the field. (*Photo courtesy: Twain Newhart, Honolulu Advertiser, Hawaii.*)

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STORM DATA

(ISSN 0039-1972) National Climatic Data Center Editor: William Angel Assistant Editors: Stuart Hinson and Rhonda Herndon

STORM DATA is prepared, and distributed by the National Climatic Data Center (NCDC), National Environmental Satellite, Data and Information Service (NESDIS), National Oceanic and Atmospheric Administration (NOAA).

The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by the National Climatic Data Center and the National Weather Service's (NWS) Storm Prediction Center.

STORM DATA contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in Storm Data are published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

Subscription, pricing, and ordering information is available from:

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The editor of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or severe weather events (past or present) for use in the "Outstanding Storms of the Month" section of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Storm Data National Climatic Data Center 151 Patton Avenue Asheville, NC 28801 e-mail: <u>storm.data@noaa.gov</u>

Any such items received by the editor will be for use in STORM DATA only. Any other use will be with the permission of the owner of said items. Materials will be returned if requested.

This is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center Asheville, North Carolina 28801-2733.

Thomas R Karf

Daga

Thomas R. Karl Director, National Climatic Data Center

January 2004 Confirmed Tornadoes



OUTSTANDING STORMS OF THE MONTH

THERE IS NO

"OUTSTANDING STORM OF THE MONTH"

FOR THE MONTH OF JANUARY 2004.

		Time	Path Length	Path Width	Nur	nber of	Estin	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
ALABAMA. Central									
ALZ024	Jeffe 03	rson 1500CST			0	0			Excessive Heat
ALZ044	The at record Mont 03	fternoon high te l high which las tgomery 1500CST	emperature r t occurred in	neasured at the 2000.	he Birming 0	ham Interi 0	national Air	port was 7	72 degrees. This reading tied the previous Excessive Heat
ALABAMA, North	The asset in	fternoon high te 2000.	mperature r	eading at Da	nnelly Field	l reached	77 degrees.	This high	n temperature tied the previous record last
ALABAMA, Southea	NOT I I <u>st</u>	RECEIVED.							
ALABAMA, Southwe	NONI <u>est</u>	E REPORTED.							
Escambia County Appleton	26	0500CST 0502CST			0	0	8K		Thunderstorm Wind (G50)
	Trees	were blown dow	vn by high v	vinds from a t	hunderstor	m near Ap	pleton.		
Escambia County Brewton	26	0540CST 0542CST			0	0	5K		Thunderstorm Wind (G50)
ALASKA, Northern	High	winds from a the	understorm l	olew down se	veral powe	r lines in F	Brewton.		
AKZ201	West 03	ern Arctic Co 1235AST 1955AST	oast		0	0			High Wind (G53)
AKZ203>204	A slow afterne where Cent	w-moving low oon and evening southerly gusts ral Beaufort (pressure centric pressu	nter over Fai , this gradien knots (61 mp - Eastern B	E East Rus t was tight h). Eeaufort S	sia caused er and cau	a moderate used strong t	e pressure south win	e gradient over the Chukchi Sea. On the ds to occur at the Cape Lisburne AWOS,
	05 06	1500AS1 0500AST			U	0			Blizzard
	A larg winds condit Zone 2 Zone 2	ge low pressure to the eastern h tions were obser 203: Deadhorse 204: Kaktovik ()	center mov alf of the A ved at: (ASOS) Commercial	red from the rctic Coast or Air Carrier F	high Arcti n the 5th ar Pilot).	c Ocean s id 6th. The	outheast ov ese winds cr	er Banks eated blizz	Island in Canada, and brought northwest zard conditions in blowing snow. Blizzard
AKZ207-210- 212>213-217-225	Chuk Strai	t - Upper Kol	t - Nrn & ouk And N	Intr. Sewar Ioatak Vlys	rd Penins - Denali	ula - Eri	n Norton S	Sound N	ulato Hills - St Lawrence Is. Bering
	07 10	1452AS1 0615AST			U	U			High wind (G/1)
AKZ212>213-217	Ern 1 08 09	Norton Sound 1255AST 0123AST	l Nulato H	ills - St Lav	wrence Is 0	Bering 0	Strait - U _l	oper Koł	ouk And Noatak Vlys Blizzard
AKZ217	Uppe 08	er Kobuk And 1723AST 2023AST	l Noatak V	/lys	0	0			Extreme Cold/Wind Chill
AKZ211	Srn S 08	Seward Penin 1922AST 2202AST	sula Coast	;	0	0			Winter Weather/Mix
	Strong Chuke 1050 t	g high pressure chi Sea on the 5 to 1055 millibar	which deve th then cont s into the 8t	loped early in inued north s h. Low press	n the mont lowly to co sure center	h over inte ver the Ch s moved al	erior Alaska nukchi and H long the Ale	and Cana Beaufort S eutian Isla	ada migrated to northwest Alaska and the eas on the 7th, maintaining it's strength of nds or into the Gulf of Alaska through the

1050 to 1055 millibars into the 8th. Low pressure centers moved along the Aleutian Islands or into the Gulf of Alaska through the 10th helping to slowly weaken the High fursther, but not before producing strong pressure gradient in areas across Northern Alaska...resulting in Blizzard conditions, High winds, and Extreme Wind Chills in various locations. Strong winds were reported at:

Zone 207: Point Hope AWOS peak gust 65 knots (75 mph) at 1035 AST on the 9th, and 59 knots (68 mph) at 0455 AST on the

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estin Dan Property	nated nage Crops	Character of Storm	January 2004
	Dute	Sunduru	(innes)	(1 4 4 3)	Ttilled	injureu	riopenty	erops	Character of Storm	
<u>ALASKA, Northern</u>	10th. Zone Zone (82 m Zone peak g Blizza Zone Zone	210 - Hoodoo H 212 - Unalakleet 213 - Tin City A 217: Noatak Riv ph). 225 - Wonder L gust to 54 knots (ard Conditions re 213 - Tin City 212 - Unalakleet 217 - Due to hig	ill Remote A AWOS: pe WOS peak ver Remote ake Remote (62 mph). eported or lil - AWOS vi h winds suc	Automated Wo ak gust 58 knots gust 59 knots Automated W Automated V kely occurred isibility was 1 h as at the No	eather Syste ots (67 mpl (68 mph). Veather Sys Veather Sys at: /4 mile the atak River	em (RAW n). tem (RAV stem (RAV n stopped Remote A	S):gust nea VS): sustair VS): sustain reporting. utomated V	r 52 knots ned wind 6 ned winds Veather Sy	(60 mph). 53 knots (72 mph) and 35 to 39 knots (40 to 4 stem (RAWS).	peak gust 71 knots 45 mph) mph with a
	Near- Zone	blizzard conditio 210 - Nome	ons (Winter	Weather Mix)	occurred a	t:				
AKZ201-206	Extrem Zone 2 West 16	ne Wind Chill o 217 - Noatak Riv ern Arctic Co 1520AST	ccurred at: ver Remote past - N. Bi	Automated W rooks Rng I	Veather Sys E Of Colv 0	tem (RAW ille R 0	/S): -62		Extreme Cold/Wir	nd Chill
AKZ207-212	18 Mode dange Zone Zone Chul	1236AST rate winds com rous wind chills 201: Point Lay: 206: Anaktuvuk schi Sea Coas	bined with Hours of ev 71F. Pass: -76F. t - Ern No	cold tempera vents are for v rton Sound	atures from vind chills Nulato H	a large colder that	high press n -65F. Col	ure center dest Wind	covering the Arctic chills:	Ocean, resulted in
	19 20	1436AST 2136AST			0	0			High Wind (G58)	
AKZ223	Delta 19 20	na And Tana 2220AST 0653AST	na		0	0	0.50K		Strong Wind	
AKZ201-211>212-	Strong of the High Zone Zone The D West	g high pressure of Alaska Peninsui winds were repo 207: Point Hope 212: Unalakleet 223: At Dry Cre- lelta Junction AS ern Arctic Co	over the Arc la and anoth rted at: AWOS peal AWOS peal eek, the Co- GOS reporter oast - Srn	tic Ocean and er center in th c gust 57 knot k gust 58 knot operative Obs d a peak gust Seward Pen	l over the Y e Gulf of A s (66 mph) ts (67 mph) terver report of 51 knots ninsula C	Tukon Terr Iaska prod ted damag (59 mph) oast - En	ritory of Ca duced local ging winds rn Norton	nada comł ly strong v as some s s Sound l	oined with a low presso vinds. iding was blown off of Nulato Hills - Yuk o	re center just south f an aircraft hanger. on Delta - Upper
214-219-223	Koyu 24 27	ikuk Valley - 2 2155AST 1353AST	Deltana A	nd Tanana	0	0			High Wind (G63)	
AKZ214	Yuko 26 27	on Delta 2355AST 0655AST			0	0			Blizzard	
AKZ221	Wrn 27	Tanana Vly V 0000AST 0955AST	Vrn Yuko	n Vly	0	0	150K		Strong Wind	
	Strong and 2 moved chann Zone 2 Zone 2 Zone 2 Zone 2	g high pressure of 8th, broad low 4 north a bit in eled areas across 201: Cape Lisbu 211: Golovin AV 212: Unalakleet 214: Cape Roma 223: Delta Junct	over the Arc pressure ov- the Bering s northern A rne AWOS WOS peak g AWOS: pea anzof AWOS ion ASOS p	tic Ocean on er the Aleutia Sea before laska, such as peak gust 63 l ust 56 knots (k gust 54 kno S peak gust 57 eak gust 52 k	the 24th me an Islands weakening :: knots (73 n 64 mph). ts (62 mph 7 knots (66 nots (60 mp	oved south and South late on t uph).) occasion mph). oh).	heast to the hern Bering he 27th. 5 ally throug	Yukon Te Sea strer Chis cause	rritory of Canada on th gthened and an assoc d strong easterly win e 2 and one-half days.	e 25th. On the 27th iated weather front ds to develop over

Strong winds were reported at: Zone 221: Nenana: A 70 ft. by 120 ft. Quonset Hut owned by Toghotthele, a Native Investment Corporation a few miles north of Nenana, was entirely blown down. Nenana ASOS reported peak wind of 45 knots (52 mph).

Storm Data and Unusual Weather Phenomena											
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Pers Killed	oer of ons Injured	Estimated Damage Property C	rops Character of Storm	January 2004		
ALASKA, Northern											
	Blizza	ard conditions li	ikely occurre	d at:							
ALASKA, Southeast	Zone	214: Cape Rom	anzof AWO	S							
	NOT	RECEIVED.									
<u>ALASKA, Southern</u> AKZ135	Sern 02 03	P.W. Snd 0200AST 1500AST			0	0		High Wind (G69)			
	A stro were in ths	ong high pressur gusting an estin data void area.	re system ov nated 80 mpl	er interior Al 1 out of the C	aska combin Copper River.	ed with r Satellite	noderate low pro analysis also su	essure in the Gulf of Alaska in apports wind estimates of app	ndicated that winds roximately 80 mph		
AKZ101-111-131-135	Anch 06 07	norage Muni 0400AST 2100AST	To Bird C	reek - Mata	anuska Val 0	ley - Ne 0	ern P.W. Snd 10K	- Sern P.W. Snd High Wind (G78)			
AKZ171	Kodi 07	ak Peninsula 1230AST 1600AST	l		0	0		Blizzard			
AKZ161	wind of the gulf c Drifti closin Intern with v Brist 06 07	across the south c Copper River oast. The north ng snow and sz ig the Parks Hi iational Airport. winds gusting 30 ol Bay 1430AST 0516AST	a central regi Delta based wind reache and resulted ighway for s . As the low 0 to 40 mph	on and north upon satellit d 86 mph in in the derail several hours in the Gulf o causing a bliz	ern gulf coas e interpretati the Palmer ar ment of the s. The northo f Alaska mov zzard over th 0	t of Alas on and t ad Wasill Alaska R erly wind red to the e Island f 0	ka. Strong wind he magnitude of la area as a resul ailroad train at l peaked at 64 west it brought for over 3 hours 40K	is estimated to have reached the wind observations in an t of the channeling down the the junction of the Parks Hi mph over Fire Island, just v moderate to heavy snow to F on the afternoon of the 7th. Strong Wind	around 90 mph ou d around the north Matanuska Valley ghway resulting in west of Anchorag Kodiak island alonş		
	Gusty aircra	north wind to ft causing an es	48 mph in t timated \$40,	he Bristol B 000 in damas	ay communit ge.	y of Dill	ingham blew ai	rline freight "igloo" containe	ers into two parked		
AKZ181	Alasl 09	ka Peninsula 0620AST 1900AST		·	0	0		Blizzard			
AKZ131	A stor blizza Nern 09 10	rm moved north ard across the ware P.W. Snd 2100AST 2100AST	h of the east estern portio	ern Alaska I ns of the Ala	Peninsula Fri ska Peninsula 0	day morr a. 0	ning. Moderate	snow along with northwest Heavy Snow	winds resulted in a		
AKZ131	A stor the V Friday Nern	rm over souther aldez area. Sno y evening throug P.W. Snd	rn Cook Inle ow fell at a r gh Saturday	t and persiste ate of 5 inch evening.	ent southwes les per hour	t flow in for sever	to northern Prin al hours. Storm	ce William Sound resulted in total snow fall was 44 inch	n Heavy snow over es for Valdez fron		
AKZ121	13 15 Build strong terrain winds Kena 26	1715AST 0200AST ing high pressu g outflow wind n of northern F gusts peaking a ai Peninsula 0300AST 2353AST	are over inter s along the Prince Willia at 70 mph.	ior Alaska c Chugach mo m sound ba	0 ombined wit untains. Wir sed upon su 0	0 h modera ds are e tface obs 0	ate low pressure stimated to hav servations and s	High Wind (G69) in the Gulf of Alaska resul e peaked around 80 mph ou atellite interpretation. Valde Heavy Snow	ted in the typically it of the channelec z Airport measure		
	A stor for the the af	rm southwest of e peak of the sr ternoon.	f the Gulf of now event ov	Alaska push ver Seldovia	ed moist air o by noon Mor	over the aday. In	arctic front in th Homer, snowfal	e Homer area. This produced l accumulated to 8 inches be	12 inches of snov fore tapering off in		

S	torr	n Data	and	Unus	ual V	Veat	her P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estima Dama Property	ated age Crops	Character of Storm	January 2004
AMERICAN SAMO	A									
ASZ001>004	Swair 04 05	ns - Tutuila - 2300SST 0600SST	Manu'A -	Rose	0	20	50M		Hurricane/Typhoo	n
	Tropic winds 100 kr experio facing	al Cyclone Heta recorded was 6 nots on January enced minor da villages of all I	a was at its c 5 knots at 1 5th at 1205 mages. Ma slands. Surf	closest to Ame 242Z on Janu Z. Over 600 ny trees were heights reach	erican Sama ary 5th ov homes we uprooted, ed 30 to 44	ba within er the Isla re destroy downed 1 feet main	150 miles we nd of Tutuil yed, 1000 ho ines, damage ly along the	est-southwa. Peak vormes suffe ed vehicle north and	vest of Tutuila on Janu vinds reported at the V vred major damages, a es, and demolished p west facing shores of	ary 4th. Maximum Weather station was nd 3000 residences ablic roads at north the Islands.
	There homes was an estima and bre	were 20 people . Federal Emer mounced by the te between \$40 eadfruits, were	with injurie gency Mana American S and \$50 mi demolished	s. No fatality gement (FEN Samoa govern llion in funds by strong wind	reported. IA) continument after , approved ds. An esti	Over 2500 les to assi their asse in federa mate of cr	0 people wer ist the island essment with 1 assistance rop damages	e sheltere ers with the T.C. Heta for victime was unkn	d and over 140 were e heir claims. An estim a, but a FEMA repress is. All vertical based own to date.	vacuated from their ate of \$150 million entative reported an crops, like bananas
ADIZONA Control	Swains washed	s Island suffered d off-shore, and	d huge wave a lot of deb	es and high wars and high wars were seen	inds. An u along the s	naccounta hores of th	able number nis remote Isl	of boats v land.	were lost when the Isla	and's boat shed was
AZZ004	<u>anu N(</u> Kaiba	o <u>rtilleast</u> ah Plateau								
ALLOUT	03	0600MST			0	0			Heavy Snow	
AZZ015>017	A wint inches and no Weste	ter storm brough . The heaviest s on. The snow wern Mogollon	ht heavy sno now fell dui vas falling at Rim - Eas	w to the Kaib ring the day o a rate of 2 1/2 stern Mogol	bab Plateau n the secor 2 inches an llon Rim	from the ad. Eight hour duri - White	first to the th inches of sno ng the mid n Mountains	nird of Jar ow fell at norning.	nuary. Local storm tota Jacob Lake (7900 fee	als exceeded fifteen t) between 600 AM
	20 21 A strop of Mog	1800MST 1800MST ng low pressure gollon Rim and	e center mov White Mou	red across the ntains. The h	southern p eaviest sno	ortions of wfall amo	f Arizona and ounts were: N	d produce Munds Pa	d heavy snowfall alor rk 8 inches, Heber 9 in	ng the southern part inches, and Alpine 9
ARIZONA, Northwe	inches. est									
ARIZONA, South	NONE	REPORTED.								
ARIZONA, Southwe	NOT F est Centr 05	RECEIVED. al Deserts			0	0			Frost/Freeze	
ARKANSAS, Centra	Minim Coolid al and I	0800MST um temperatur ge, with a low North Centr	es dropped temperature al	into the 20s of 24 degrees	across so	ne areas	of south-cer	ntral Ariz	ona. One of the co	dest locations was
<u>ARKANSAS, East</u>	NONE	REPORTED.								
ARKANSAS, North	NONE west	REPORTED.								
ARKANSAS, Southe	NONE east	REPORTED.								
ARKANSAS, South	NONE west	REPORTED.								

NONE REPORTED.

S	Stori	n Data	and	Unu	sual V	Veat	ther P	Phen	omena
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Nur Pe Killed	nber of rsons Injured	Estima Dama Property	ated age Crops	January 2004 Character of Storm
CALIFORNIA, Ext	reme Se	outheast							
CALIFORNIA, Noi	NONE rth Cen	E REPORTED. <u>tral</u>							
	NONI								
CALIFORNIA, Noi	rtheast	E KEPÜKTED.							
CAZ071	Lasse	en/Eastern Pl	umas/East	ern Sierr	a				
	01 02	0300PST 0500PST			0	0			Heavy Snow
	A stro	ng winter storn	n moved thr	ough the S	ierra Nevada	on Januai	ry 1-2depos	siting ove	er 3 feet of snow in the higher elevations.
	Up to	a half-foot of sn	ow fell in th	ne valleys e	ast of the Sie	rra. Some	snowfall tota	als reporte	ed:
	Susan	ville		4 inches					
	Janesv Chilco	ville		8 inches 10 inches					
	Eagle	Lake			12 inches				
	Portola Fredor	a nver Pass		12 inches 24 inches					
CAZ073	Mono))							
	01 02	0300PST 0500PST			0	0			Heavy Snow
	A stro Up to	ng winter storm a half-foot of sn	n moved thr ow fell in th	ough the S ne valleys e	ierra Nevada ast of the Sie	on Januai rra. Some	ry 1-2depos snowfall tota	siting ove als reporte	er 3 feet of snow in the higher elevations. ed:
	Mamn	noth Mountain (at 8200 ft.)		28	3 inches			
017070	Mamn	noth Mountain (above 8500	ft.)	40) inches			
CAZU/2	Great 01 02	ter Lake Tah 0300PST 0500PST	oe Area		0	0			Heavy Snow
	A stro Up to	ng winter storm a half-foot of sn	n moved thr ow fell in th	ough the S ne valleys e	ierra Nevada ast of the Sie	on Januar rra. Some	ry 1-2depos snowfall tota	siting ove als reporte	er 3 feet of snow in the higher elevations. ed:
	South Trucke	Lake Tahoe ee			15-20 inches 24 inches				
	Squaw	Valley Ski Res	ort (6200 ft	.)	22 inches				
	Sierra-) at-Tahoe Ski R-	s200 ft.) esort		30 inches 26-32 inches				
	Heave	nly Valley Ski I	Resort		27-33 inches				
	Alpine	e Meadows Ski	(8600 ft.)	40 inches	24 inches				
	Norths	star Ski Resort (6500 ft.)		23-36 inches				
	Boreal	(800 l Ski Resort	0 ft.)		42 inches 48 inches				
CAZ071	Lasse	en/Eastern Pl	umas/East	ern Sierr	a	0			
	01 52 km	0640PS1	d gust at Do	vle RAWS	U	U			High Wind (G52)
CAZ071	Lasse	en/Eastern Pl	umas/East	ern Sierr	a				
	02 03	1300PST 0600PST			0	0			Heavy Snow
	24-hou	ur snowfall total	s:						
	Sattley	y 		6 inches					
	4 S Su 3 W G	isanville iraeagle		11 inches					
	Portol	a		12 inches					
CAZ073	Sloat Mono)		15 inches					
	02 03	1300PST 0600PST			0	0			Heavy Snow

10 inches of snow reported past 24 hours above 8500 feet at Mammoth Mountain Ski Resort.

	Time Path Path Number of		Estin Dam	nated		January 2004				
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
CALIFORNIA, Nort	theast									
CAZ072	Grea	ter Lake Tał	ioe Area							
	02 03	1300PST 0600PST			0	0			Heavy Snow	
	Snowf	all reports:								
	Heave	nly Valley Ski	Resort (7200	(ft.)	6 inches					
	Meyer	s (6340 ft.) Lake Taboe			6-8 inches					
	Echo S	Summit			10 inches					
	Norths	star-at-Tahoe S	ki Resort		15 inches					
	Squaw	/ Valley Ski Re	sort (6200 ft.	.)	14 inches					
			(8200 ft.)		16 inches					
	Alpine	e Meadows Ski	Resort (7000) ft.)	12 inches					
	Home	wood Ski Area	(6200 ft.)		17 inches					
	1101110	(79	900 ft.)		22 inches					
CAZ072	Grea	ter Lake Tal	ioe Area							
	19	1800PST			0	0			Heavy Snow	
	20	0800PST								
C A 7072	10 inc	hes of snow fel	l overnight 2	miles we	st of Topaz L	ake.				
CAL072	Grea	2000PST	loe Area		0	0			Hoovy Snow	
	28	0600PST			U	U			Heavy Show	
	A fast-	-moving winter	storm broug	ht up to a	foot of snow	to the Sier	ra Nevada.	Some 24-h	our snowfall totals:	
	Squaw	/ Valley Ski Re	sort (6200 ft.	.)	4 inches					
			(8200 ft.)		6 inches					
	Norths	star-at-Tahoe (8	3300 ft.)		5 inches					
	Donne	er Pass	.00 II.)		8 inches					
	Sierra	-at-Tahoe Ski F	Resort (7300 1	ft.)	8 inches					
	Alpine	e Meadows Ski	Resort (6900) ft.)	8 inches					
CA 7071	T		(Mid-mour	itain)	11 inches					
CAZ0/1	Lasse	en/Eastern Pl	lumas/East	ern Sier	ra o	0			High Wind (C56)	
	56 km	0.342101	d gust report	ad by Do	In PAWS	U			ingii winu (650)	
CALIFORNIA, Nort	thwest	n (04 mpn) wn	ia gust report	ed by Do	ie KAWS.					
CAZ003>004	<u>Nortl</u>	n Coast Inter	ior - Unne	r Trinity	River					
CA20052004	01	0000PST	ioi - Oppe	i i i i i i i i i i i i i i i i i i i	0	0			Heavy Snow	
		0900PST								
	6" sno	w accumulation	n near Covin	gton Mill	at 2,500 feet.	8" snow a	ccumulation	near Dins	more at 3,800 feet.	
CAZ003>004	North	n Coast Inter	ior - Uppe	r Trinity	River					
	02	0000PST			0	0			Heavy Snow	
	05 15" on		on noor Ding	mora 9 " a		ation noor	Haufork 12	" anow oo	umulation near Duth I	aka
CAZ001	Redw	ow accumulant	on near Dinsi	nore. 8 s		lation near	naylork. 15	snow acc	cumulation near Kuth I	Lake.
CHEOUT	02	1200PST			2	0			Heavy Surf/High S	Surf
	Family	y passing throu	gh area stop	bed for lui	nch. While p	laying nea	r the water a	large wa	ve pulled several fami	ly members into the
	water.	38 year old wa	s attempting	to rescue	the 8 year old	l boy. M81	W, M38IW	e		•
CAZ002	Mend	locino Coast								
	11	1430PST			2	0			Heavy Surf/High S	Surf
	A bash	ketball team fro	m Lake Tah	oe were al	bout to leave	when they	made one la	st trip to l	beach. A large wave p	oulled two boys into
	boys b	The 56 year of	d male attem	pted a res	cue and got t	he boys to	a large rock,	when and	other large wave pulled	him and one of the
CALIFORNIA, Sout	th Cent	tral	a. 1911-71.99, IV	1						
CAZ096>097	S Sie	<u></u> rra Mtne - Ti	ulare Ctv N	Atns						
JI 10/ 0/ 0/1	01	0300PST	and the ty h		0	0			Winter Storm	
	03	0400PST								
	Typica	al winter storm	for the highe	r elevatio	ns of the Sou	thern Sierra	a Nevada wi	th the follo	owing estimated snow	fall in generally less
	than 2 Meado	24 hours on th ow 22"; Tamar	e 1st: Chilko ack Summit	oot Meado 21"; and,	ow 41 inches Huntington I	s; Wet Me Lake 20". A	adows 40"; Another stor	Paradise m system	Meadow and Kaiser 1 on the 2nd and 3rd fo	Point 37"; Crabtree llowed the stronger

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard Character of Storm (Miles) (Yards) Killed Location Date Injured Property Crops CALIFORNIA, South Central system of the 1st continuing to deposit lessor amounts of snow. For the foothills elevations as low as 3000 feet a couple of inches were reported from Mariposa to the Kern County Mountains with up to 15" of new snow at the higher elevations into the morning of the 3rd. CAZ089>090-093 W Central S.J. Valley - E Central S.J. Valley - S Sierra Foothills 01 1000PST 0 0 3K Strong Wind 1528PST Pre-frontal southeast wind turned quite gusty and strong late in the morning of the 1st for portions of the Central San Joaquin Valley and immediately adjacent foothill locations. CAZ089>092 W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley 03 0300PST 0 **Frost/Freeze** 0 06 0800PST In a cold post-frontal air mass, temperatures dipped to the mid 20s at several agricultural locations in the Central San Joaquin Valley during the hours around dawn from the 3rd through the 6th of the month. The coldest morning was that of the 4th when several locations dipped to 26F requiring protective measures be taken for area citrus crops. CAZ098>099 Indian Wells Vly - Se Kern Cty Desert 03 0413PST 0 2K Strong Wind 1000PST Post-frontal wind buffeted the Kern County Desert locations during the morning hours of the 3rd. **CAZ092** Se S.J. Valley 09 1035PST 0 0 25K High Wind (G60) Localized but strong, southeast, pre-frontal wind in the extreme south portion of the San Joaquin Valley blew two tractor-trailer rigs over on Interstate-5 at the base of the Tehachapi Mountains. CAZ091>092-095 Sw S.J. Valley - Se S.J. Valley - Kern Cty Mtns 09 1035PST 2 40K High Wind (G50) 2000PST Strong southeast wind in the extreme Southern San Joaquin Valley resulted in overturned trucks at the base of the Grapevine. CAZ089>092 W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley 2330PST 0 10 0 **Dense Fog** 13 1030PST During the late night and early morning hours of the 11th and 12th dense fog formed in the Central San Joaquin Valley with the lowest visibilities down to 200 feet on the morning of the 11th at several locations. In the South San Joaquin Valley dense fog was present on the mornings from the 11th through the 13th. On the 13th indirect results of the dense fog resulted in \$50K damage and 2 injuries in automobile accidents 15 miles ESE of Bakersfield. CAZ089>092 W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley 22 0330PST 0 0 **Frost/Freeze** 23 0900PST Temperatures briefly lowered to 29F at a few locations in the Valley's agricultural areas on the morning of the 22nd and 23rd with the coldest reading of 26F at Delano on the 22nd. W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley CAZ089>092 0 22 0700PST **Dense Fog** 24 0630PST On the mornings of the 22nd through the 24th, dense fog developed in the Central and South San Joaquin Valley. Visibilities varied from 200 to 500 feet on the mornings of the 22nd and 23rd. The evening of the 23rd, just before midnight, had some of the most dense fog with driving visibilities less than 100 feet from Visalia south to the Shafter area in Kern County on the Valley east side. CAZ090>092 E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley 0453PST 26 Dense Fog 1053PST Fog was primarily located along the east side of the Central and north portions of the South San Joaquin Valley this morning. CAZ089>090 W Central S.J. Valley - E Central S.J. Valley 26 0535PST 0 **Frost/Freeze** 0800PST Minimum temperatures briefly dipped to 32F at several locations on the morning of the 26th in the Central San Joaquin Valley. **CALIFORNIA**, Southeast **CAZ026 Owens Valley** 1000PST 0 01 Û Heavy Snow 2145PST A strong Pacific storm dropped a foot of snow on Aspendell, CA. Snowfall was occurring at 1 inch per hour.

		Time Path Path Number of Estimated Local/ Length Width Persons Damage		nated nage	January 2004				
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
CALIFORNIA, Sou	<u>itheast</u>								
CAZ026	Ower 30	ns Valley 1040PST 1455PST			0	0			High Wind (G57)
CALIFORNIA. Sou	A spo 1thwest	tter in Aspende	ll, CA report	ed several wi	ind gusts of	65 mph.			
CAZ055	San I 02	Bernardino (1630PST 1700PST	County Mo	untains	0	0	20K		Landslide
CAZ061>062	Mud, Coac 05	rocks, and debr hella Valley 0000PST 0800PST	is flowed acr - San Diego	oss Highway County D	7 18, just so Deserts 0	uth of Wa 0	terman Cany	on Road.	Extreme Cold/Wind Chill
CAZ048	Temp San 1 05	eratures fell to Bernardino (0357PST 1054PST	25 degrees Fa County Val	ahrenheit ove ley/The Inl	er the Coach and Empi 0	nella Valle ire 0	ey and Anza-	Borrego I	Desert. High Wind (G60)
CAZ043	Tree t San I 13	oranches torn of Diego County 0226PST 0814PST	ff below Cajo v Coasts	on Pass.	0	0	30K		Heavy Surf/High Surf
CAZ050	Runuj Imper San I 21	p from breaking ial Beach. Diego County 0026PST 0100PST	g surf, combi 7 Valleys	ned with hig	h tide, and 0	flooded th 0	ne south bou $30 \mathrm{K}$	ind lanes	State Highway 75, between Coronado and Landslide
	Mud a	and debris flow	ed across Val	llev Center ro	oad just sou	th of Mor:	ales Lane		
CAZ048-057	San 1 22	Bernardino (0030PST 1000PST	County Val	ley/The Inl	and Empi 0	ire - San 1	ta Ana Mo 150K	ountains	And Foothills High Wind (G52)
	A sem	ni-tractor trailer	was blown o	over at the Int	terstate 210	and Inters	state 15 conr	ection.	
CALIFORNIA, Up	<u>per</u>								
CAZ081	Cent 01	ral Siskiyou 0245PST 1245PST	County		0	0			Blizzard
CAZ080-080>082-	The W snow West	Veed RAWS re- reported by spo ern Siskiyou	corded wind otters, indicate County - (gusts 44-53 1 es that blizza C entral Sis l	mph on nea rd condition kiyou Cou	rly every o ns likely d inty - So	observation id occur dur uth Centra	in this tim ing this tir al Siskiy	e interval. This, combined with the heavy me interval. ou County
002-002	01 02	0934PST 1200PST			0	0			Heavy Snow
CAZ085	Spotte Mode 01	er SY100 at Haj oc County 1000PST 1100PST	ppy Camp ree	corded 7 inch	nes of snow 0	in 24 hou 0	rs.		High Wind (G40)
	Spotte An ex were i	er MO39 at Cal traordinary wir issued to cover	pines recorde nter storm str this event. T	ed winds 40g: uck Oregon a he California	50 mph at 1 and Norther a warnings a	100 PST. m Californ are summa	nia on Janua arized below	ry 1, 2004 . Verifyir	4. A multitude of warnings and advisories ag observations are listed above.
	CAZ0 2500 CAZ0 0958 CAZ0 expire on 12/ CAZ0	980 Winter Stor 981 Winter Stor 982 Winter Sto ed /31/03, expande 983/084/085 W	rm Warning 1 rm Warning i rm Warning ed inter Storm V	12/30/03 at 2 feet at 2000 I ssued at 12/3 PST on 0 issued at 12 at 01/01/04 a	100 PST ur PST on 12/3 81/03 at 050 1/01/04. /31/03 at 2 at 0958 PST to ed at 12/31/	til 01/01/0 31/03. 01 PST, ch 100 PST, 7. Initial 0 9 entire zon 03 at 0501	04 at 1445 F nanged to Bl changed to elevation wa ne at 01/01/0 l PST, chang	PST. Initia izzard Wa a Heavy as above 2 04 at 0514 ged to a B	al elevation was above 2000 feet, raised to arning at 01/01/04 at 0514 PST, expired at Snow Warning at 01/01/04 at 0514 PST, 2000 feet, raised to 2500 feet at 2000 PST PST. lizzard Warning at 01/01/04 at 0807 PST,

		Time	Path	Path	Nur	nber of	Estin	nated	January 2004
Location	Date	Local/ Standard	(Miles)	(Yards)	Killed	rsons Injured	Property	Crops	Character of Storm
CALIFORNIA, Uppe	er								
CAZ080-080	West 02	ern Siskiyou 1335PST 1608PST	County		0	0			Heavy Snow
CAZ081-081-081	Spotte A Hea PST o Cent 09	er SY89 in Saw avy Snow Warr n 01/02/04. Th ral Siskiyou 0745PST 0945PST	yer's Bar rep iing was issu ie two verify: County	orted 9 inche ed for Califo ing reports al	es of snow o ornia zones (bove indicat 0	vernight. CAZ080 a te that this 0	t 1122 PST warning wa	on 01/02/ as issued la	04 and downgraded to an advisory at 1501 ate. High Wind (G65)
	The W on 01/ The al Advise the mo	Veed RAWS wi /09. bove observation ory was in effections of the observation of the observ	nds met Hig ons, all record ct for this zon action for thi	n Wind Warr ded at the W ne. The Wee s event.	ning criteria feed RAWS ed RAWS is	briefly du , met High s located in	uring this int n Wind War n the windie	terval. Th ming crite est part of	e peak sustained wind was 45 mph at 0845 ria. No warning was in effect, but a Wind the zone, so the Wind Advisory was likely
CALIFORNIA, West	Sout	<u>h Central</u>							
CALIFORNIA, West	NONI t <mark>ern</mark>	E REPORTED.							
CAZ007	Alam 01	ieda / Contra 0835PST 0840PST	i Costa Coi	inties	0	0			High Wind (G71)
CAZ006	Winds San I 01	s gusted to 71 n Francisco Co 1023PST 1028PST	nph at Las Tr unty	ampas (eleva	ation 1760 f 0	t) in the E 0	ast Bay Hill	s.	High Wind (G65)
~ ~ ~ ~	Strong	g winds blew th	rough the Ba	y Area, inclu	uding a 65 n	nph wind	gust at Twin	Peaks in	San Francisco county.
Santa Cruz County Scotts Vly	01	1115PST 1225PST			0	0			Flash Flood
Nana County	Heavy road c	rains caused losures.	the Carboner	a Creek in S	Scotts Valle	y to overl	flow its ban	ks, causin	g localized flash flooding, mudslides and
Napa	01	1141PST 1400PST			0	0			Flash Flood
<u>CARIBBEAN SEA A</u>	Heavy roads	y rains caused t and farmlands ROPICAL	he Napa Crea along the bar ATLANT	ek at Highwa iks of the cre <u>'IC</u>	ay 29 to rise eek.	over floo	d stage, cau	ising flood	ling of highways, underpasses and country
Deerfield Beach To Ocean Reef Fl 6 SE Government Cut	07	1700EST			0	0			Marine Tstm Wind
COLODADO Contre	Thund	lerstorm wind g	gust at Fowey	Rocks Ligh	ıt.				
<u>COLORADO, Centra</u> COZ032-035-037	<u>ar anu</u> Gran	d & Summi	Counties	Below 900	0 Feet - L	arimer &	& Boulder	• Countie	es Between 6000 & 9000 Feet - C &
	Se Pa 03	ark County 0000MST 1600MST	countres		0	0	0	0	Winter Storm
	Scatte Count 9 inch	red reports of ies. Snowfall t ies, 3 miles sou	heavy snow otals include thwest of Jan	were reporte d 14.5 inches nestown.	ed across N s at Taberna	Aiddle and ash and 11	l South Par inches, 4 m	ks as wel ailes south	l as the foothills of Larimer and Boulder -southwest of Estes Park and Fairplay, and
COZ039>040- 043>044-049	Boule Denv Wasł	der & Jeffers er / W Adau hington Cour	son Counti ns & Arap nty	es Below 6 ahoe Cour	000 Feet / nties / E F	W Broo Broomfie	omfield Co ld County	ounty - N 7 - C & S	Douglas County Below 6000 Feet / S Weld County - Morgan County -
	03 D	1200MST 2000MST	- f-11 -		0 Ushan C	0	0	0	Winter Storm

Bands of heavy snow fell across parts of the Urban Corridor and Northeastern Plains. Storm totals included: 12 inches at Brush, 6.5 inches at Broomfield, 6 inches at Akron, Arvada, 4 miles south of Fort Morgan, 4 miles northwest of Hudson, and Westminster.

S	tori	n Data	and	Unus	ual V	Veat	ther H	Phen	omena
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estim Dam Property	nated nage Crops	January 20 Character of Storm
COLORADO, Centr COZ036-040>041-043	al and Jeffe - N I	<u>Northeast</u> rson & W Do Douglas Cour	ouglas Cou nty Below	nties Above 6000 Feet	e 6000 Fee / Denver /	t / Gilp W Ad	oin / Clear ams & Ai	Creek / rapahoe	Ne Park Counties Below 9000 F Counties / E Broomfield Count
	Elbeı 25	t / C & E Do 1400MST 2200MST	uglas Cou	nties Above	6000 Feet 0	- C & S	S Weld Co 0	ounty 0	Winter Storm
	Locall inches southy	y heavy snow f , 3 miles south vest of Aurora a	ell across pa of Indian H ind 6 inches	arts of the Fro Iills, 8.5 incho at Highlands	nt Range Fo es, 4 miles 1 Ranch.	othills, N North of 1	Monument R Franktown a	Ridge and and 9 mile	Urban Corridor. Storm totals included es southwest of Sedalia, 8 inches, 7 m
COZ037	C & 3 31	Se Park Cour 1200MST 2359MST	nty		0	0	0	0	Winter Storm
	Very l miles and 8.	neavy snow fell south of Hartse 5 inches at Ante	across parts l, 12.5 inche ero Reservoi	s of Park Courses, 21 miles so r.	nty as a storr outh of Fairr	n system lay, 11 i	n moved thro nches, 3 mil	ough the s les north o	tate. Storm totals included: 15 inches, of Alma and 2 miles northwest of Fairp
COLORADO, East C	Centra	<u>l</u>							
COZ090	Yum 03	a County 1200MST 2000MST			0	0			Winter Storm
COLORADO, South	A loca difficu Centr	alized band of e alt travel conditi	5-8 inch of a ons. heast	snow occurred	d across the	northerr	n half of Yu	ma count	y during the day on January 3rd, creat
COZ084>085-085-087	Nortl	<u>ur unu Bout</u> hern El Paso	County /	Monument	Ridge / R	ampar	t Range B	elow 75	00 Ft - Colorado Springs Vicinit
	South	nern El Paso	County /	Rampart H	Range Bel	ow 750	0 Ft - Wa	lsenburg	g Vicinity / Upper Huerfano Riv
	Basir 01	Below 7500 2155MST 2325MST	Ft		0	0			High Wind (G67)
	Some winter northe	strong and dam storm. Strong ast of the Air Fo	aging winds g wind gusts orce Acaden	were noted of s noted in the nyand a 67 r	luring the ev region incl nph measure	ening ov uded64 ement at	ver portions 4 mph 6 mi La Veta in F	of El Paso les west-s Huerfano o	o and Huerfano counties ahead of a stre southwest of Ft. Carson66 mph 5 m county.
COZ084>085-	North	hern El Paso	County /	Monument	Ridge / R	ampar	t Range B	elow 75	00 Ft - Colorado Springs Vicinit
085>086-086-088	South Trini	ern El Paso dad Vicinity	County / J / Lower H	Rampart Ra Derfano Riv	ange Belov ver Basin 4	v 7500 . & Westi	Ft - Puebl ern Las Ai	o Vicini nimas C	ty / Pueblo County Below 6300 F ounty Below 7500 Ft
	02	0000MST 0224MST			0	0	50K	innas C	High Wind (G86)
	A dev counti Force miles Spring poles	eloping winter es into the early Academy75 west of Trinida sin the Broad to snapfences	storm over y morning h mph 8 mile ad. Finally lmoor Bluff to be blown	southern Colo ours of the 2r es to the sout a 98 mph § s area. This over window	orado contir nd. Some of h-southwest gust was ex high wind o s to be blow	the high of down perience caused tw n outar	broduce high ner wind gus ntown Color d approxima wo homes u nd tiles roofs	n wind gu sts are as a rado Sprir ately 5 m nder cons s to be dan	sts over mainly El Paso and Las Ann follows71 mph in the vicinity of the ngs79 mph in Pueblo West80 mph iles to the south of downtown Color- truction to collapse and also caused li- naged.
COZ060-067>068	Easte	ern Sawatch I	Mountains	Above 110	00 Ft - Up	per Rio	Grande V	Valley / I	Eastern San Juan Mountains Bel
	10000 02 03) Ft - Eastern 0100MST 1800MST	San Juan	Mountains	Above 10 0	000 Ft 0			Heavy Snow
	A stro of the the sur was m	ng winter storm higher snow an mmit of Monarc easured at the s	n produced c nounts are a ch Pass in Cl ummit of W	opious amour s follows24 haffee county folf Creek Pas	nts of snow a inches 3 mi 42 inches i s in Mineral	s well as les south nundated county.	s gusty wind west of Sou d the region	s across th th Fork in around C	ne mountains of southern Colorado. So n Rio Grande countyover 30 inches n umbres Pass in Conejos county48 inc
COZ059-072- 076>077-079-081-083- 087	Lead 1100 Moun 7500	ville Vicinity) Ft - Northw ntains Betwee & 11000 Ft	/ Lake C vest Fremo en 8500 Au - Canon C	ounty Belov ont County nd 10000 Ft City Vicinity	w 11000 F Above 850 - Teller C y / Easterr	t - Nor 0 Ft - ` ounty / Fremo	thern San West / Cer Rampart ont Count	ngre De ntral Fre Range A y - Wals	Cristo Mountains Between 8500 emont County Below 8500 Ft - V Above 7500 Ft / Pikes Peak Betwe senburg Vicinity / Unner Huerfa
	River 02 03	Basin Below 1800MST 2100MST	7500 Ft	ing viennty	0	0	un count	, val	Heavy Snow
	A stro	ng winter storn	n moving ac	ross southern	Colorado c	aused ar	eas of heavy	y snow.]	The highest reported snow totals with

A strong winter storm moving across southern Colorado caused areas of heavy snow. The highest reported snow totals with this event are as follows. In the vicinity of Leadville in Lake county 6 to 10 inches of snow was reported. 6 inches of snow was also measured at Rye and 3 miles to the southwest of Rosita. 7 to 8 inches of snow covered Florence and Canon City in Fremont

S	torr	n Data	and	Unus	ual V	Veat	her F	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estim Dam Property	aated age Crops	Character of Storm	January 2004
COLORADO, South	Centr	al and Sout	heast							
COZ062-074-079-084	county commu Huerfa snow v Centr Wet M Below 20	7 inches of mity of Divide mo county. 11 vas seen approv ral Chaffee (Mountains B v 7500 Ft 0030MST 1300MST	snow was a e in Teller c inches of sr kimately 11 f County Bel etween 850	also noted so ounty and 10 low fell some niles to the so ow 9000 Ft 00 And 1000	me 7 mile inches of 12 miles to outh of Guff - Southe 00 Ft - No 0	s west of snow wa o the north fey in Free ern Sang orthern 1	Westcliffe s also obser- heast of Tex- mont county gre De Cri El Paso Co	in Custer rved some cas Creek i 7. isto Mou ounty / N	county. 10 inches of 7 miles to the south n Fremont county. F ntains Between 75 Jonument Ridge / Heavy Snow	of snow graced the west of Gardner in inally14 inches of 300 & 11000 Ft - Rampart Range
COLORADO, West	A stor totals i county Spring	m system produ include 6 inche and an isolatu s in Chaffee co	uced some n as 6 miles ea ed amount of unty.	noderate snow st of Monumo f 8 inches 6 m	amounts t ent in El P iles north-	o select a aso count northwest	reas of sout y7 inches of Black Fo	thern Colo in Rye in orest in El	rado. Some of the hi Pueblo county and C Paso countyand 6 n	gher reported snow uchara in Huerfano iiles west of Poncha
COZ006	Gran 01	d Valley 0000MST 0800MST			0	0			Dense Fog	
COZ001>014- 017>023	A stro which early r dissipa Lowe Mour Basin Gunn South	ng inversion o' began the morn norning hours tted around day r Yampa Riv ttains - Uppe - Grand A ison And Un ison River V western San	ver the Gran ning of Dece of January break. ver Basin - er Yampa I and Battle ncompahgg Valley - U Juan Mo	d Valley crea mber 31. Visi 1, which resu Central Ya River Basin ment Mesa re River Ba ncompahgr untains - P	ated very n bilities of 1 ampa Riv - Grand s - Grand s - Gore sin - Wes e Plateau aradox V	noist and /4 mile or erruptions er Basim Valley - And E at Elk And And D Valley / J	stable condi less continu s of flights - Roan A Debeque Clk Mount nd Sawato Pallas Divi Lower Do	itions resu ued to plag at Walker Ind Tava To Silt (tains/Cen ch Moun ide - Non lores Riv	Iting in a prolonged j que much of the Grand Field Airport. The o puts Plateaus - El Corridor - Central Atral Mountain V tains - Flattop Mo thwestern San Ju yer Basin - Four o	period of dense fog I Valley through the lense fog gradually khead And Park Colorado River alleys - Central puntains - Upper tan Mountains - Corners / Upper
	Dolor 01 31 A num protrac contine drough	es River Bas 0000MST 2359MST aber of storms (cted drought si ental divide, to at situation.	in - Anima moved acros tuation. Dro ' "extreme" 1	s western Co aght severity hear the Utah	in - San J 0 lorado duri ranged fro border. Se	ng the mo m "abnor e the Feb	ver Basin onth resultin mally dry" a oruary, 2004	ng in a cor across the Storm Da	Drought atinued slow improves central and northern ata publication for a c	ment in the region's mountains near the continuation on this
COZ003>004- 009>010-012>013- 017>019	Roan Mour Uncor	And Tavapu tains/Centra mpahgre Pla	its Plateau d Mounta iteau And	s - Elkhead in Valleys Dallas Div	And Par - West ride - No	k Moun t Elk A rthweste	tains - Gra And Sawa ern San J	and And atch Mo Juan Mo	Battlement Mesas ountains - Flatto untains - Southwe	s - Gore And Elk p Mountains - estern San Juan
	Mour 01 04	itains 1800MST 0430MST			0	0			Winter Storm	
COZ002-005>008- 011-014-020>023	A very mountain on the Mount storm is Centr Color Parace Basin 01	r moist and pow ains. Some of Grand Mesa, ains. Wind gu red at the Doug resulted in majo ral Yampa R rado River B lox Valley / - San Juan I 1800MST	verful low p the heaviest 59 inches a sts in excess glas Pass FA or disruption iver Basin asin - Cen Lower Do River Basin	ressure system snowfall amo at Columbine of 40 mph re A radar site. s of travel thro - Upper Ya tral Gunnis lores River	n moved ac unts were r Pass on t sulted in ex A peak gu ough the m mpa Rive son And Basin - 0	ross weste neasured a he Uncon ktensive b ist of 78 r ountains a er Basin Uncomp Four Co 0	ern Coloradi at SNOTEL npahgre Pla lowing and nph was clo nd also pror - Grand V ahgre Riv orners / U	o and gene platforms iteau, and drifting sm ocked at th mpted the i Valley - I ver Basin	erally produced 1 to 4 and included 52 inch 70 inches at Schofie ow. Snow drifts up t e top of Telluride Sk ssuance of avalanche Debeque To Silt Co - Upper Gunniso lores River Basin Heavy Snow	feet of snow in the es at Park Reservoir eld Pass in the Elk o 10 feet deep were i Area. This winter warnings. orridor - Central n River Valley - - Animas River
COZ003>004-013	03 A very heavie Steam Roan 07	2300MST a moist and pot r amounts inclu- boat Springs, an And Tavapu 1200MST 2000MST	ent Pacific s uded 25 inch nd 16 inches its Plateau	torm produced es three miles six miles sout s - Elkhead	d 6 to 12 in west of Pa heast of No And Par 0	nches of s agosa Spri prwood. k Mount 0	now in mos ngs, 19 inch c ains - Flat	t lower ele nes near De t top Mou	evation areas of weste byleville, 17 inches of ntains Winter Weather/M	rn Colorado. Some ne mile southeast of flix

An upper level disturbance moved across western Colorado in a northwest flow and produced 4 to 10 inches of snow across the

		Time Local/	Path Length	Path Width	Numb	per of	Estin	nated	Jar	nuary 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
COLORADO, West										
COZ006-011	northen produc Grane 08	n mountains. ed areas of blo d Valley - Co 0100MST 1230MST	Local amou owing and dri entral Gun	nts up to 16 fting snow. nison And U	inches wer U ncompah 0	e measur ngre Riv 0	red in the H v er Basin	Park Moun	ntains. Winds gusting to arc Dense Fog	ound 40 mph
	High p This re Intersta	ressure over t esulted in wide ate 70.	he area and a espread visit	a deep snow o bilities reduce	cover produ d to less th	ced a str an 1/4 m	ong inversio nile. Traffic	on over th flow on	e lower valleys of west-cent major highways was impact	ral Colorado. ed, including
COZ006-011	Grano 08 09	d Valley - Co 1600MST 0900MST	entral Gun	nison And U	Uncompah 0	igre Riv 0	ver Basin		Dense Fog	
COZ006-014	High p which at Wall Gran	ressure over t resulted in visi ker Field Airpo d Valley - U	he area and o ibilities less t ort. pper Gunn	deep snow co than 1/4 mile. ison River V	ver maintai The reduce V alley	ned a str d visibili	ong inversi ities hamper	on over th red travel a	e lower valleys of west-cent cross the area, including flig	tral Colorado ht operations
	09 12	1530MST 2000MST			0	0			Dense Fog	
COZ006	High p Colora visibili visibili temper Gran	bressure over t do which rest ties below 1/4 ty. Flight ope atures and pre- d Valley	the area and ulted in a pr mile much o erations at V cipitation of s	snow cover or rolonged perior of the time. The Valker Field snow grains fr	continued to od of denso e fog in the Airport we om the fog	o hold a e fog. La Grand V ere disruj resulted i	strong inve aw enforcer Valley was the pted with 1 in patches of	ersion ove ment and ne most pe numerous f ice and s	r many of the central valley automated sensors indicated rsistent. Travel was hampere flights cancelled or delaye lick spots to form on roadway	ys of western d widespread d by the poor d. Freezing ys.
002000	13	0500MST 1130MST			0	0			Dense Fog	
COZ006	Wides	pread visibilitie	es below 1/4	mile in dense	fog plagued	the west	tern half of	the Grand	Valley, primarily west of 25	Road.
COLUM	14	0415MST 1030MST			0	0			Dense Fog	
	Trappe Grand	d low level me Valley, mainly	oisture and st west of 25 H	table condition Road.	ns continued	l to resul	lt in visibilit	ties below	1/4 mile across the western p	portion of the
COZ021>023	Four 15 16	Corners / Uj 2030MST 1030MST	pper Dolor	es River Ba	sin - Anim 0	as Rive 0	er Basin -	San Juai	n River Basin Dense Fog	
COZ012-018>019	Low le enforce West 19 20	evel moisture a ement agencies Elk And Sav 2230MST 1500MST	and stable con s reported vis watch Mou	nditions produ ibilities below ntains - No i	1/4 mile th thwestern 0	read den roughout n San Ju 0	ise fog acros t the lower e uan Moun	ss the low elevation r tains - Se	er elevations of southwest Co oadways of their jurisdictions outhwestern San Juan M Winter Weather/Mix	olorado. Law s. Iountains
COZ022>023	A slow southw Anim 20	y moving storn yest Colorado. as River Bas 0100MST 1500MST	n system mov sin - San Ju	ved across the	Four Corne asin 0	rs area a	nd produced	1 5 to 9 ind	ches of snow across the high Winter Weather/Mix	elevations of
	A stor	m system mov	ved across the	e Four Corne	rs area and	produce	d 3 to 4 inc	ches of sn	ow across many lower eleva	tion areas of
COZ009	southw Grand 24 25	est Colorado. d And Battle 2300MST 2130MST	ement Mesa	as	0	0			Heavy Snow	
	An up measur	per level low ed at Powderh	pressure sys orn Ski Area	tem brought	heavy snow	to muc	h of the Gr	and and I	Battlement Mesas. Up to 19	9 inches was
COZ004-010-013- 017>019	Elkhe Uncor Moun	ad And Par npahgre Pla tains	k Mounta ateau And	ins - Gore A Dallas Div	And Elk I ride - Nor	Mounta thwest	ins/Centra ern San J	al Moun Iuan Mo	tain Valleys - Flattop M untains - Southwestern	Iountains - San Juan
	24 25	2300MST 2300MST			0	0			Winter Weather/Mix	
	An iini	her level low i	pressure syste	em moved act	ross westerr) Colorac	to and prod	luced 5 to	12 inches of snow across m	ost mountain

An upper level low pressure system moved across western Colorado and produced 5 to 12 inches of snow across most mountain areas. Blowing and drifting snow occurred in some exposed areas with wind gusts up to 30 mph.

		Time Local/	Path Length	Path Width	Numb Pers	er of ons	Estimated Damage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property C	crops Character of Storm	
COLORADO, West									
COZ003>004- 009>010-012>013- 017>019	Roan Moui Unco Moui	And Tavapu ntains/Centra mpahgre Pla	its Plateau 1 Mounta 1teau And	s - Elkhead ain Valleys Dallas Div	And Park - West ide - Nor	Mount Elk A thweste	ains - Grand And Sawatc rn San Jua	l And Battlement Mesas - h Mountains - Flattop n Mountains - Southwest	Gore And Elk Mountains - ern San Juan
	30 31	1000MST 2359MST			0	0		Winter Weather/Mix	ſ
	A stor new s Mount	m system and a now across the tain Ski Area, a	ssociated co mountains. nd 13 inches	ld front moved Locally heav at Steamboat	l from north vier amount Springs Ski	west to s s include Area.	outheast across ed 18 inches a	s western Colorado resulting in t Powderhorn Ski Area, 15 in	5 to 12 inches of ches at Silverton
COZ001	Lowe 30 31	er Yampa Riv 1200MST 1600MST	er Basin		0	0		Heavy Snow	
	A Pac Massa	cific storm syste idona.	em produced	l 6 to 12 inch	es of snow	in the ar	rea. A local	amount of 18 inches was repo	rted just west of
COZ002-011	Centr 30 31	ral Yampa R 1500MST 2000MST	iver Basin	- Central G	unnison A 0	nd Unco 0	ompahgre R	iver Basin Winter Weather/Mix	ſ
007001 000	A stor of new	m system and a v snow across so	ssociated co	and central va	d from nort alleys.	hwest to	southeast acros	ss western Colorado and produ	ced 3 to 6 inches
COZ021>023	Four 31	Corners / Up 0430MST 2145MST	oper Dolor	es River Bas	sin - Anim 0	as Rivei 0	r Basın - San	Juan River Basin Winter Weather/Mix	:
CONNECTICUT N	A stor of sno	rm system and a owfall across the	ssociated co lower eleva	d front move ations of south	d from nort west Colora	hwest to a	southeast acros	ss western Colorado and produ	ced 3 to 6 inches
CTZ002>004	<u>orinea</u> Hartf	<u>st</u> ford - Tolland	l - Windha	m					
012002/001	27 28	1900EST 1300EST	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0	0		Winter Storm	
	A win much with lo	of Connecticut ocally as much	ing south of and souther as one foot in	New England n Rhode Island n the higher ele	brought he d. In northe evations.	eavy snov ern Conne	w to southern l ecticut, snowfa	New England, from western M Il totals of 5 to 10 inches were	assachusetts into widely observed
	Officia	ally, the snowfa	ll total at Bra	adley Internati	onal Airpor	t in Wind	sor Locks was	5.6 inches.	
	Other Plainf Hartfo Staffo	snowfall totals ield, and Pomf ord, Burlington, rd Springs and l	, as reported ret; 9 inches Enfield, We Putnam	d by trained s in Farmingto thersfield, Ma	potters, inc on, South V nsfield, and	luded 13 /indsor, ` l Ashford	inches in Sto Vernon, and E l; 7 inches in A	rrs; 10 inches in Manchester, ast Killingly; 8 inches in Nor won, Windsor, and Woodstock	Union, Eastford, th Granby, West ;; and 6 inches in
CONNECTICUT, N	orthwe	est	utiluiii.						
CTZ001-013	Nortl 15 16	hern Litchfie 1900EST 1100EST	ld - Southe	rn Litchfield	d O	0		Extreme Cold/Wind	Chill
	An ex At the arctic in the resulte Equiva	tremely cold air same time, a pe high pressure, o 15 to 30 mph r ed in dangerous alent wind chill	rmass moved owerful storn extending fro ange, with h wind chills readings ran	l out of Siberia n developed o om central Car igher gusts. Th across northwo ged from 25 to	a, then plun ff the Canachada southwinis wind, consister Control of the setting o	ged south lian Mari vard throu mbined v lecticut du zero.	hward through times. The pre- ugh the Ohio V with ambient te uring the night	Canada and across the northea ssure gradient between the inter 'alley, produced gusty north to mperatures ranging from zero to of January 15 through the more	st by January 15. ase storm and the northwest winds to 10 below zero, rning of the 16th.
CTZ001-013	Nortl 28	hern Litchfiel 0000EST	d - Southe	rn Litchfiel	d O	0		Winter Storm	
	A cor Appal Long moder profile Barkh	0400EST nplex low pre- achians to form Island. The two rate to heavy sr e was cold eno amsted reportin	ssure area r a a secondar o systems co now moved ugh for ma g 7 inches an	noved into th y storm, off th ombined to pr over the area inly snow, mind Colebrook I	e Ohio Va ne mid Atla oduce a ma from aroun xed with a Lake reporti	lley on ntic coas orginal w d midnig little sle ng 8.	January 27. E to by midnight. inter storm ev ht into the ear eet. An avera	Energy from this storm transf This second storm moved no ent across northwest Connecti ly morning hours of the 28th. ge of 7 inches fell in Litchfi	erred across the ortheast, south of cut as a band of The temperature eld County with

	Stor	m Data	a and	Unus	ual V	Veat	her l	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Nun Pe: Killed	nber of rsons Injured	Estin Dan Property	nated nage Crops	Character of Storm	January 2004
CONNECTICUT	. Souther	'n								
CTZ005>012	Nort - Sou 15	hern Fairfiel thern New H 1800EST	d - Northe Iaven - Sou	rn New Ha thern Mide	ven - Nor dlesex - So 0	thern M outhern 1 0	iddlesex - New Lond	Norther lon	n New London - Sout Extreme Cold/Wind	hern Fairfield Chill
	An an follow	rctic cold front ved, resulted in	swept south a new record	heast across low tempera	the region ture of 1 de	during Tegree at Si	uesday afte korsky Airp	rnoon, Ja ort in Brid	nuary 13th. The extreme lgeport on Wednesday, Ja	ely cold air that nuary 14th.
	As an Thurs high J low w	Alberta Clippe day. The large pressure system vind chill index	er passed sou e difference i n in Southeas values from	uth of Long in pressure b t Canada res sunset Thurse	Island Wed etween a st ulted in the day evening	nesday ni rong low combina through s	ght, it rapid pressure sy tion of extre sunrise Frida	lly intensi stem nort emely low ay mornin	fied as it moved northeas heast of New England an v temperatures, high wind g, January 16th.	t of Long Island d a strong arctic s, and extremely
	A rec from below Peak	ord low temper 0 in Bridgeport 7 0 at Groton wi wind gusts were	rature of zero t to 5 degrees th a sustaine e between 25	b degrees was s below 0 at d wind speed and 35 mph.	s tied at Sil Meriden. T l of 23 mph	korsky Air The lowes to 25 degr	rport in Brid t Wind Chi rees below (dgeport or ll Index te) at Merid	n January 16th. Low tem emperature values ranged en with a sustained wind s	peratures ranged from 19 degrees speed of 14 mph.
CTZ009>010	Sout 18	hern Fairfiel 1730EST 1800EST	d - Souther	n New Hav	ven 0	0			Winter Storm	
	With South evenin	just enough co east U.S. This ng, January 18th	ld air in plac s second low h.	ce, as a low j gradually in	pressure sys ntensified a	stem move s it move	ed east of th d northeast.	he upper (It passe	Great Lakes, another low d south then east of Lon	formed over the g Island Sunday
	Light increa range	snow develop used in intensity d from 6 to 8 in	ed by 5 am and became ches.	across the r heavy by 10	region, whi am. By th	ch was one time the	ccasionally e snow ende	mixed with the mixed around	ith sleet through the mor 6 pm, the Storm Total Sr	rning. Snowfall nowfall Amounts
CT7005-012	Here a South was n South	are selected sno ern Fairfield C neasured. ern New Haver horn Foirfiel	owfall amoun ounty, amou o County, 8.0	ts for: nts ranged fr inches was r	om 6.5 incl neasured at	nes at Brid both Nort	lgeport to 7 h Branford	7.1 inches and Milfo	at New Canaan. At Stan rd.	nford, 7.0 inches
C12003>012	- Sou 28	ithern New H 0100EST 0600EST	laven - Sou	thern Mide	dlesex - So	outhern 1 0	New Lond	lon	Heavy Snow	
	A col- the E- secon	d high pressure astern Great La dary low rapidl	ridge extend akes, a secon y intensified	led southeast ndary low de as it moved r	from Jame eveloped of northeast.	s Bay acro f the Mid	oss New En Atlantic C	gland. A oast durii	s the primary low moved ng Tuesday morning, Jan	northeast toward uary 27th. This
	Light Storm	snow develope Total Snowfal	ed and spread l amounts rar	l north during	g Tuesday o ound 6 to 11	evening. inches.	It became h Fhe highest	eavy at ti amounts o	mes by 11 pm and lasted occurred across Fairfield C	until 5 am. The County.
	Here a Fairfi was n New l Middl New l	are selected sno eld County - fr neasured at Siko Haven County - lesex County - (London County	wfall amoun om 6.1 inche orsky Memor from 6.0 inc 6.8 inches wa - from 6.0 ir	ts for: es at Westpor ial Airport in thes at Milfor s measured a aches at Norw	rt to 11.0 in Bridgeport d and Naug tt both Hado vich to 7.0 i	ches at St atuck to 8 atuck to 8 am and C nches at Jo	amford and 0.0 inches at old Saybrool ewitt City.	Cos Cob Waterbur k.	. An lower isolated amon	unt of 5.0 inches
DELAWARE										
DEZ001>004	New 09 11	Castle - Ken 1800EST 1200EST	t - Inland S	Sussex - Del	laware Be 0	aches 0			Extreme Cold/Wind	Chill
	An ar morni winte: occurr warm	ctic air mass br ing of the 11th. r and the lowe red with no sno ing effects norr	The low ter treading si ow cover. W	of the coldest nperature of nce February inds around d from the G	t weather in 4 degrees a y 5, 1996. Y the center of breat Lakes	years to t tt the New What mac of the arct and subsid	the Delmary Castle Cou le this even ic high pres dence from	va Peninsu unty Airp more un ssure syste the Appal	la from the evening of the ort on the 10th was the c usual was that the brutal em were from the north au achian Mountains. The u	e 9th through the oldest day of the ly cold air mass nd by-passed the nseasonably colc

warming effects normally received from the Great Lakes and subsidence from the Appalachian Mountains. The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was a dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their bills. Additional schools and community centers were opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze

		Time Local/	Path Length	Path Width	Numbe Perso	r of ns	Estin Dan	nated nage	January 2	2004
Location	Date	Standard	(Miles)	(Yards)	Killed I	njured	Property	Crops	Character of Storm	
DELAWARE										
DEZ001>004	and b sprink hospin the w incide batter and 8 move west and N New	urst both inside ther pipe burst at al emergency ro ater was freezin ence of chimney ies. Specific low degrees in Geo d through Delaw of James Bay on forth Carolina or Castle - Kent	and outside the Bayhea boms. Fire fi ing in hoses y fires and y temperature rgetown (Su vare during the mornin the mornin - Inland S	of structures tht-Kent Genu ghters were h and the truci a general sh es included 4 ussex County the day on th g of the 9th, i g of the 11th.	as well as a h eral Hospital i having probler ks. Fire fight ortage of fire degrees at the) and Milford e 9th. The hig to along the C aware Beac	igher of n Kent (ms battl ers were wood c New C (Kent gh press Ontario/0 hes	ccurrence o County. Th ing blazes a e injured s developed. Castle Count County). T sure system Quebec Pro	f water ma e cold wea as the wate lipping an Many veh ty Airport, he arctic c , or the co vince borc	in breaks. Hospitals were not immut ther also led to an increase in worklor r quickly turned to ice. In some inst d falling on the ice. There was a h icles were not starting because of 6 degrees in Greenwood (Sussex Co old front which ushered in the cold re of the arctic air mass, moved from the norming of the 10th to Vin	ne. A bad in ances ligher dead ounty) ler air n just rginia
	15 16	1200EST 1200EST			0	0			Extreme Cold/Wind Chill	
	Follov highe tempe	wing an Alberta r than the previ eratures were arc	Clipper lov ous outbrea ound 10 degr	w pressure sy k on the 10th ees and the lo	rstem, another and 11th, w west hourly v	r arctic vinds wo vind chi	air mass in ere stronge 11 factors av	waded De r and the veraged are	aware. While temperatures were sli wind chill factors were lower. Mos ound ten degrees below zero.	ightly t low
	The u their l not al Many shelte highe Schoo hospir the w incide	nseasonably col nomes. There was ford to pay their municipalities rs. The unseaso r occurrence of r ol District (New tal emergency ro ater was freezin ence of chimney	d weather w as another du ir utility bill declared coor nably cold v water main l Castle Cour poms. Fire fi ng in hoses fires and a g	vas a dangero amatic increa s. The cold v de blues to a veather cause preaks. Pluml nty) cancelled ghters were h and the truck general shorta	us situation for use in phone c veather cause ssist the home d many pipes bers and heati d classes on t having probler ks. Fire fight ge of firewood	or the h alls to s d additi eless. T s to free ng repai he 16th ns battl ers wer d. Many	omeless as social servic onal schoo eams went ze and bur ir services l . The cold ing blazes a e injured si y vehicles w	well as fo ces by indi ls and con outside to st both ins had twenty weather al as the wate lipping an ere not sta	the elderly who could not afford to viduals who have run out of heat or munity centers to be opened as she locate homeless people and get the ide and outside of structures as wel- four hours worth of work. The Red so led to another increase in worklo r quickly turned to ice. In some inst d falling on the ice. There was a h rting because of dead batteries.	 heat could elters. em to l as a l Clay bad in ances higher
	Speci degre barrel and th Delay Great core o Midni Count	fic low temperat es in Dover (K ing behind the d he pressure grad vare. The high p Lakes and near of the coldest a ight EST and 6 ty Airport (New	ures include ent County) leparting All ient betweer pressure ridg by Canada o ir moved th a.m. EST o Castle Cour	d 7 degrees i and 13 deg berta Clipper i it and the bu ge moved from n the mornin rough the reg n the 16th. L tty) and 7 deg	n Wilmington rees in Georg low pressure s nilding high p n the Red Ri g of the 16th gion during the owest hourly rees below ze	(New C getown system o ressure ver and and into ne night wind c ro in Do	Castle Cour and Green on the 15th. system bro Upper Mis Pennsylva t of the 15 hill factors over (Kent 6	ity), 8 degi wood (Su The low o ught the lo sissippi V nia and No th with the included County) an	tees at the New Castle County Airpo seex County). The arctic air mass leepened explosively as it moved off west wind chill factors of the winte alleys on the morning of the 15th, te w York on the morning of the 17th. e lowest temperatures occurring bet 2 degrees below zero at the New C d Georgetown (Sussex County).	rt, 12 came shore r into to the . The tween Castle
DEZ001>004	This s mean Janua New	second arctic ou temperature of ry since 1984. Castle - Kent	utbreak ceme 25.4 degree - Inland S	ented January s was 6.1 deg sussex - Del	y as an unsea grees colder th aware Beac	sonably han nor hes	cold mont mal. It was	h. At the the the 10th o	New Castle County Airport, the mo- coldest January on record and the co-	onthly oldest
	17 18	1900EST 0700EST			0	0			Winter Weather/Mix	
DEZ001>004	A low of pre of the precip rain c Castle one-te cold. into th system during New	Pressure system cipitation across e state and a m bitation changed hanged to plain e County averag enth of an inch. The low pressur ne Tennessee Va n combined witt g the late afterno Castle - Kenf	n from the so s Delaware of ixture of freezing rain from s ed around o Untreated r e system ress alley the mo h a cold fro on of the 18 - Inland S	buthern plains luring the eve eezing rain, s rain in all are iouth to north ne inch. Less boads became ponsible for rrning of the i th that moved th to wring m bussex - Del	s combined we ning and over sleet and snor as by around 3 a across the s er amounts fe very hazardo the wintry mi l&th and east 1 from the Up oisture from t	ith a col rnight o w across 3 a.m. E tate bet 11 farthe us and s x move of Long oper Mis he atmo hes	ld front fron n the 17th. ss southern ST. Warme ween 3 a.m er south. Ice slippery, es d from the 6 g Island dur ssissippi Va osphere onto	n the uppe Precipitati parts of t r air also n a. and 7 a. e accretion pecially si Oklahoma ling the lat alley the n o the regio	r Mississippi Valley to bring a wintry on began as snow across the northern he state. As warmer air moved in noved in near the surface and the free m. EST. Snowfall accumulations in s across the state were generally less nee the recent weather was unseaso Texas border on the morning of the e afternoon of the 18th. The low pre- norning of the 17th east through the h.	y mix n part aloft, ezing New s than nably 17th, essure s state
	25	2100EST	intanu D	ubbea - Del	0	0			Heavy Snow	
	26 Heavy Accur	1200EST y snow fell from nulations average	om the seco ged between	ond half of 4 and 6 inch	the evening es. After the	on the snow er	25th throu ided, some	igh Mond spotty free	ay morning the 26th across Dela zing drizzle or light freezing rain fe	ware. ell for

Heavy snow fell from the second half of the evening on the 25th through Monday morning the 26th across Delaware. Accumulations averaged between 4 and 6 inches. After the snow ended, some spotty freezing drizzle or light freezing rain fell for the rest of the day across southern sections of the state. Most schools were closed on the 26th, especially in the southern part of the state. State and county government offices were also closed. Delaware State Police reported around 100 accidents, half of them

		Time Local/	Path Length	Path Width	Numbe Perso	r of ns	Estiı Dar	nated nage	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed I	njured	Property	Crops	Character of Storm
DELAWARE									
	involv	ed vehicles slid	ing into ditcl	hes.					
	Specif (Susse County	ic accumulation x County), 4.5 y) and at the Ne	ns included (inches in Do w Castle Co	6.5 inches in over (Kent C unty Airport	Smyrna (Ken county) and W	t Count ilmingte	ty), 5.0 incl on (New C	hes in Woo astle Coun	odside (Kent County), Laurel and Milford ty) and 4.0 inches in Georgetown (Sussex
DEZ001>004	The sr second primar Hatter New 27 28	ow was caused low pressure s y low and mov as, North Carol Castle - Kent 1800EST	l by a low p system then o red northeast ina around 7 - Inland S	ressure syste developed of t. It passed c a.m. EST or bussex - De	em that develo ff the South Ca lose to Wilmi n the 26th befo laware Beac 0	ped in rrolina o ngton, l re it mo hes 0	the lower 7 coast that e North Caro oved farther	Fennessee vening. Th lina around offshore.	Valley during the morning of the 25th. A he second low pressure system became the d 1 a.m. EST on the 26th and just east of Winter Weather/Mix
	The co Lakes and sr temper on the increas in fror change up to 3	ombination of a before dissipati now. Light free atures in Susse 27th. Late that sed and freezin n the north, the ed to snow from i inches in New	high pressu ng and anoth ezing drizzla x County we same afterno g rain and sla rain change n north to sou Castle Cour	re system ov ner that form e fell throug ere above fre oon as a low eet began fal ed to freezin uth before it tty.	er nearby Can ed over the Vi ghout most of ezing and temp pressure syste ling across Ne g rain and slev ended around	ada and rginia c the da perature om was ew Cast et durin midnigl	a pair of l coastal wate ay on the es in Kent C forming ov le County : g the even ht EST. Ac	ow pressur ers gave De 27th in N County rose er the Virg and rain els ing in Ken cumulation	the systems - one that moved into the Great elaware a wintry mix of freezing rain, sleet lew Castle and Kent Counties. Daytime to the freezing mark late in the afternoon ginia coastal waters, precipitation intensity sewhere in the state. As colder air moved t and Sussex Counties. Precipitation then as ranged from a trace in Sussex County to
	Untrea were le snarleo follow	ted roads were cnocked down l traffic in Ken ed the same pro	slippery. De in Sussex C t County. Sta ocedure on th	elaware State ounty. Two ate and coun ate 28th.	e Police reporte overtured dun ty offices worl	ed abou np trucl ked on	it 160 crash ks on ramp two hour d	es, most o os to Delav elayed ope	f them single vehicle crashes. Three poles vare State Route 1 in Smyrna and Dover nings on the 27th and New Castle County
	Specif inches	ic accumulation in Bear (New C	ns included 3 Castle Count	3.0 inches in y), 1 inch in	Wilmington (Smyrna (Kent	New Ca County	astle Count) and trace	y), 2.5 incl s in Milfor	hes at the New Castle County Airport, 2.2 d and Greenwood (Sussex County).
DISTRICT OF CO	While system 26th a remair warme high p farther waters pressu about this se intensi DLUMBI	the first low p was already ir nd reached Oh ed nearly statio r air aloft acro- ressure system south in Dela' . By 7 p.m. ES' re system. The 120 miles east cond low press ty increased an <u>A</u>	ressure syste a Arkansas. T io around su onary as it sl ss the region over nearby ware. During T when it wa Virginia lov of Atlantic C sure system d the precipi	em was head This low pre- unrise on th owly weake a. What made Canada that g the late aft as located ne w pressure s City, New Jer intensified tation change	ling off the N ssure system n e 27th. The lo ned during the e precipitation t fed cold air s ernoon of the ar the Virginia ystem moved rsey and by 7 and its upper ed to snow.	orth Ca noved n ow mov e evenin fall as outh ne 27th, a a Capes northea a.m. ES	arolina coa: tortheast in yed north i: g and over either free ear the surf a second lo , its central st and inte ST it was al pport mov	st around s to the lowe nto Michig night. This zing rain o ace. The h w pressure pressure v nsified and pout 240 m ed across	sunrise on the 26th, another low pressure er Ohio Valley during the afternoon of the gan during the afternoon of the 27th and is low pressure system brought a wedge of or sleet in New Castle County was a large igh pressure system's influence weakened system formed over the Virginia coastal was already as strong as the Michigan low by 1 a.m. EST on the 28th, was located tiles east of Atlantic City, New Jersey. As the Middle Atlantic States, precipitation
DCZ001	Distri	ict Of Colum	bia						
	08 09	1700EST 1400EST			0	0			Winter Weather/Mix
DCZ001	An are amoun throug closed Distri	a of low pressu ts over the Di- hout the Distri- or opened two act Of Colum	re moved ac strict of Col ct as a light hours late. bia	cross Central umbia and l glaze forme	Virginia and J North Central ed on the stree	oroduce Maryla ts. Nur	ed one to tw and. The di- nerous auto	vo inches o usting of s omobile ac	f snow over Northern Virginia with lesser now caused widespread traffic problems cidents were reported, and schools either
	10	0100EST 1100EST			0	0			Extreme Cold/Wind Chill
DCZ001	Very c the low were d Distr i	old Arctic air s ver teens, and r ozens of report	ettled over th north winds s of broken v bia	he Washingt averaged 10 water mains a	on DC metrope to 15 mph. Th and pipes due t	olitan a he com to the ex	rea. The mi bination pr xtremely co	nimum ten oduced win old tempera	nperatures ranged from the single digits to nd chills of 10 degrees below zero. There tures.
	15 16	2300EST 1100EST			0	0			Extreme Cold/Wind Chill
	A fast	moving storm	system brou	ght light sno	w to the regio	n on th	e 14th and	15th. The	District and the surrounding suburbs only

S	tori	n Data	and	Unus	ual V	/eat	her F	Phen	omena
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estim Dam Property	ated age Crops	January 2004 Character of Storm
DISTRICT OF COL	UMBI	A							
DCZ001	reporte single below Distr 17	ed a trace of sno digits and teen zero on the nigl ict Of Colum 1800EST	owfall. There s. Strong no ht of the 15th bia	e was some v orthwest and h and the earl	ery cold air west winds y morning o 0	behind th (20 to 25 f the 16th 0	is system. N 5 mph with 1.	Ainimum t gusts to 3	emperatures across the region were in the 5 mph) produced wind chills of 5 to 10 Winter Weather/Mix
DCZ001	Two a Metro pavem Distr 25	areas of low pro- politan area ran nents caused sev ict Of Column 1200EST	essure merg ged from or eral acciden bia	ed over the ane quarter to the around the	region, and two inches. District. 0	produced There w 0	l a mix of s ere also rep	snow and orts of on	freezing rain. Snowfall amounts for the e tenth inch of ice accumulation. Glazed Winter Storm
DCZ001	26 An are and fro over to school Distr 26	1000EST ea of low pressu eezing drizzle o o freezing drizzl ls closed due to ict Of Colum 1530EST	are develope ver the regional le before enco the inclement bia	d off the coa on. Four to fiv ling. Several at weather.	st of North 0 ve inches of minor accide	Carolina snow fel ents were 0	and tracked l in the Distr reported to	north. Thi rict. The s Law Enfo	is storm produced widespread snow, slee now mixed with sleet and finally changed rcement and Emergency personnel. Many Winter Weather/Mix
	A wea to the agenci	area. One tent	ressure move h inch of ic hours early.	ed across the accumulate	region on th ed in portion	e 26th and a soft the	nd 27th. Thi District. So	s brought ome schoo	a second round of freezing rain and snow ols were closed on the 27th and Federa
FLORIDA, East Cen	<u>tral</u>								
Brevard County	10	1340FST			٥	0	0	0	Hail (1.00)
Indian River County	19	1340£51			U	U	U	U	nan (1.00)
Sebastian	19	1529EST			0	0	0	0	Hail (1.00)
Indian River County	One in	nch hail was rep	orted at Seba	astian Inlet.					
Blue Cypress Lake	19 C4	1555EST			0	0	0	0	Hail (0.75)
FLORIDA, Extreme	South	<u>ern</u>							
FLORIDA, Northeas	NONE stern	E REPORTED.							
FLORIDA, Northwe	NONE <u>st</u>	E REPORTED.							
FLORIDA, Southerr	NONE <u>1</u>	E REPORTED.							
	NONE	E REPORTED.							
FLORIDA, West Cel	ntral								
Г <i>LL</i> U3У	Levy 08	0230EST 0730EST			0	0			Frost/Freeze
FI 7020	Clear freezii	skies and light ng with a low of	winds allow 37 degrees.	ved temperatu	ires to drop	to 31 de	grees for fiv	ve hours i	n Bronson while Inverness stayed above
FLZ039	Levy 11	0200EST 0830EST			0	0			Frost/Freeze
FLORIDA, West Par	Unsea nhand	sonably cold air le	behind a co	ld front allow	ved temperat	ures to re	each 28 degr	ees in botl	h Bronson and Chiefland.

NONE REPORTED.

St	tor	m Data	and	Unus	ual W	eat	ther P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number Person Killed Iı	of s	Estima Dama Property	nted nge Crops	Character of Storm	January 2004
CEODCIA East Com	tual		. ,	. ,		5	1 5	1		
GAZ040-063>065-077	Linco 26 27	oln - Mcduffi 0645EST 1400EST	e - Columb	ia - Richm	ond - Burke 0	4		0	Ice Storm	
	An ic accum power and or	e storm develo nulations occurr r outages. Abo ne person was k	ped over the red in Lincol ut 100,000 h illed in Lonc	e CSRA late n, Columbia omes were w oln county w	Sunday night and McDuffi ithout power f hen a tree fell	t and 1 e coun for sev on his	Monday and nties. Many eral days. For vehicle.	produce trees and our peopl	d 1/4-3/4 inch of ice. T powerlines were down c e were injured in traffic r	The heaviest ice ausing scattered related accidents
GEORGIA, Lower										
Jeff Davis County Hazelhurst	26	1400EST			0	0			Lightning	
	Lighti area.	ning struck Jeff Students and te er Hazlehurst (Davis Prim eachers were Ta 1/28/04	ary School c in session in	ausing damage the school due	e to the	e media cent e strike. Dan	er hallwa nage amo	uy, gymnasium, classroon unt unknown. Source, Je	ns and backdoor ff Davis County
Echols County	Deuge	, muzienuist, e	Ju. 1/20/01.							
Statenville	26 Large	1559EST trees blown do	wn on power	lines along F	0 Jiohway 129 n	0 orth			Thunderstorm Wind	(G50)
Charlton County	Luige	dees blown do	wit on power	intes along i	ingilitug 129 il	orun.				
1 S Racepond	26 Tin ro	1730EST oof blown off Bi	ig John Trail	ers building o	0 on US Highwa	0 v 1. T	in roof blowi	n off outb	Thunderstorm Wind uilding and swing set onto	(G50) o a car on Carter
CEORCIA North an	Circle	Rd. Pine trees	blown down	onto power	ines on US Hi	ghway	1.		6	
GAZ007-009-	<u>Gilm</u>	<u>ittat</u> er - Towns i	. Pickens .	Dawson .	Lumpkin .	. Whi	te - Chero	kee - F	orsyth - Hall - Rank	s - Jackson -
013>016-021>025- 027-032>039- 045>051-055>057- 059>060-073	Madi Rock Bald	ison - Cobb dale - Walto win	- North Fu n - Newton	llton - Gwi - Morgan	nnett - Barı - Greene - T	row - Faliafe	Clarke - (erro - Clay	Dconee ton - Sp	- Oglethorpe - Wilke alding - Henry - Jasp	s - De Kalb - er - Putnam -
0277 000 012	25 27	0500EST 0900EST			0	1	925K		Ice Storm	
	An ex aftern place withir and su freezi creatin the m accum Some main where Athen counti Wilke firema Altho	tensive and for oon of the 25th until a cold from the wedge are urrounding area ng during this ng periods of li iorning hours of nulations of 1/4 bridges and ov problem was w chundreds of tr is, Watkinsville ies. Approxima es, Taliaferro, a an was injured ugh the fireman ulations were s	midable wed and moved at moved the a ranged fro us. In gener period. Me ght freezing of the 26th. to 1/2 inch, erpasses in t ith ice accur ees and pow , Greensboro tely 23,000 f md Warren c when a larg n was wearin renerally 1/8	ge of cold air west toward persistent w m the upper 1 al, all areas anwhile, sev rain and free During this mainly on tra- he northeast nulations on er lines fell f o, Crawfordy electric custo oounty areas ge ice laden inch or less a	associated wi the Alabama b edge of cold a 20s in northea north and east eral upper-lev zing drizzle. ' time, several ces and power and east centra trees and power and east centra trees and power orm the weigh ille, and Wash mers were left were quoted a oak tree limb gear, he suffe and little to no	th a ba border l ir out of st Geo t of a el dist The m l areas lines, al beca er line; t of th ington t witho s sayin fell fir red a f	tek door cold by the morni of the area du rgia near Dau line from Da urbances pas ost significat in northeas as ground su me ice coate s. The east of e ice. The w , especially a out power for ng it was the fracture to hi fracture to hi	front inv ng of the nring the nielsville sklonega, sed over at icing o t and eas rfaces we d and sor central po orst icing across Og up to tw worst ic above as s right so	aded the area during the I 26th. The wedge of cold morning hours of the 27th and Homer to around free to Atlanta, to Milledgev the area while the wed ccurred overnight on the st central Georgia experi- ere too warm to support ion ne accidents were reporte of the state was esp g occurred in an area bou lethorpe, Wilkes, Taliafe to days in this area. Some e storm they had seen in he responded to a pote sapula. In the Atlanta aro ported	ate morning and l air remained in n. Temperatures ezing in Atlanta iille were below ge was in place 25th and during enced glaze ice we accumulation. d, but by far the pecially hard hit, nded by Homer, rro, and Warren residents in the many years. A ntial house fire. ea, however, ice
GEORGIA, Northeas	st accum	iulauolis wele g	enerally 1/8	filen of less, a		sigiiii	cant problem	is were re	ponea.	
GAZ010-017>018- 026-028>029	Rabu	ın - Habersha	am - Steph	ens - Frank	lin - Hart - I	Elbert	t			
	25 26	1800EST 0600EST			0	0			Ice Storm	
GAZ018-026-028>029	Freezi The f Wides injurio	ing rain develop reezing rain m spread power ou es also occurred hens - Frankl	bed across ex ixed with sl itages resulte as a result o in - Hart -	treme northe eet at times. d, especially f falls. Elbert	ast Georgia du By the morn in Rabun Cou	uring th ning of nty, wh	the early even the 26th, u there thousand	ing and p p to 1/2 ls were w	persisted for much of the inch of ice and sleet h ithout power for several h	overnight hours. ad accumulated. nours. Numerous
	26 27	2100EST 0000EST			0	0			Ice Storm	
	Freezi	ing rain redevel	oped during	the late even	ing of the 26th	n acros	s extreme no	rtheast G	eorgia, resulting in an ad	ditional 1/4 inch

S	Stori	m Data	and	Unus	ual W	/eat	her Ph	enomena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estimated Damage Property C	ops Character of Storm	January 2004
GEORGIA. Northe	ast								
	or so	of ice across the	e area. Thi	s resulted in	further pow	er outage	es. The glaze of	f ice caused numerous traf	fic accidents on the
GEORGIA. Southe	mornı ast	ng of the 27th.							
GAZ087>088	Jenk 26	ins - Screven 1230EST 2330EST			0	0		Ice Storm	
	A stro northe genera Jenkir	ong wedge was in east on the 26th a ally around 1/4 i ns and Screven C	n place ove and into the nch. There ounties.	r the Carolina early mornin were large l	as and Geor ag hours of the limbs and possible of the second seco	gia. An a he 27th, j ower line	area of low pres producing freez s down that dis	sure developed off the coar ing rain and freezing drizzle rupted the power over the	st and tracked to the e. Ice accretion was northern portions of
GEORGIA, Southw	vest								
Grady County Rocky Hill	26	1243EST			0	0	2K	Thunderstorm W	ind (G50)
	A resi	dent reported sev	veral trees a	nd a light pol	e blown dow	n in her	front yard.		
GULF OF MEXICO Sw Pass Of The Ms I To Atchafalaya R La Out 20Nm Grand Isle	<u>)</u> R 1	1026CST			0	0		Marine Tstm Win	d
Lake Ponchartrain And Lake Maurepas									
Lkfrnt Arpt New Sw Pass Of The Ms I To Atchafalaya R La	17 R	1057CST			0	0		Marine Tstm Win	d
Out 20Nm 20 S Venice	17	1152CST			0	0		Marine Tstm Win	d
Sw Pass Of The Ms I To Atchafalaya R La Out 20Nm	R								
20 S Venice Sw Pass Of The Ms I To Atchafalaya R La	17 R	1225CST			0	0		Marine Tstm Win	d
Out 20Nm 20 S Venice	17	1343CST			0	0		Marine Tstm Win	ıd
To Atchafalaya R La Out 20Nm 20 S Venice	17	1455CST			0	0		Marine Tstm Win	d
Sw Pass Of The Ms I To Atchafalaya R La Out 20Nm 20 S Venice	R 17	1534CST			0	0		Marine Tstm Win	d
Sw Pass Of The Ms I To Atchafalaya R La Out 20Nm 20 S Venice	R 1	1607CST			0	0		Marine Tstm Win	d
Pascagoula Ms To Sy Pass Of Ms R 20 To 60Nm 45 E Varico	W 17	1731CST			Δ	A		Morine Tetm Win	d
Pascagoula Ms To Sv Pass Of Ms R 20 To 60Nm	W	1151051			v	U			u
45 E Venice	17	2029CST			0	0		Marine Tstm Win	d

		Time Local/	Path Length	Path Width	Nun Pe	nber of	Estin Dam	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
GULF OF MEXICO										
Apalachicola To Destin Fl Out 20Nm 6 W Mexico Beach	17	2158EST			0	0			Waterspout	
	A wate	erspout was rep	orted by a Pa	anama City T	V meteorol	ogist.				
Englewood To Tarpon Springs Fl Out 20Nm										
Clearwater Beach	18	0645EST			0	0			Marine Tstm Wind	
T	The gu	ist was measure	ed by the CO	MPS station	but the time	e of the wi	nd gust was	estimated	by radar.	
Lampa Bay Middle Tampa Bay	18	0740EST			0	0			Marine Tstm Wind	
Wildure Tampa Day	The wi	ind oust was m	easured at th	e Albert Whit	ted Airport	t U			Marine 15th Wind	
Englewood To Tarpon Springs Fl Out 20Nm	The w	ind gust was in			ieu mpon					
10 NNW Longboat Key	18	0742EST			0	0			Marine Tstm Wind	
	The wi	ind was measur	red by the CO	OMPS station	on Anna N	Iaria Islan	d.			
High Is To Freeport Tx Out 20Nm 13 W Calveston	25	0336CST			0	0			Marina Tatm Wind	
15 W Galveston	23 Maasu	rad at Jamaica	Beach		U	U			Marine Istin winu	
Pensacola Fl To Pascagoula Ms Out 20Nm	Wiedsu		Beach.							
2 S Gulf Shores	26	0605CST 0607CST			0	0			Marine Tstm Wind	
Mobile Bay										
Bon Secour	26	0615CST 0617CST			0	0			Marine Tstm Wind	
Destin To Pensacola Fl 20 To 60Nm										
25 S Destin to 35 S Destin	26	0920CST 0925CST			0	0			Marine Tstm Wind	
Mobile Bay 2 SE Alabama Port	26	1200CST 1205CST			0	0			Marine Tstm Wind	
Pensacola Fl To Pascagoula Ms Out 20Nm										
15 S Dauphin Island	26	1203CST 1206CST			0	0			Marine Tstm Wind	
Pensacola Fl To Pascagoula Ms 20 To 60Nm										
20 S Dauphin Island to 30 S Dauphin Island	26	1215CST 1220CST			0	0			Marine Tstm Wind	
Key W To Dry Tortugas Waters 70 W Key West	30	2011FST			0	0			Marine Tetm Wind	
is in they incor	Wind	mist 37 knots (43 mnh) mea	sured at Dry '	Tortuose C	-MAN Sta	tion		marine i still willu	
Key W To Dry Tortugas Waters	•• iiiu į	5ust 57 KIIOts (*	+5 mpn) mea	surce at Dry	ronugas C	WITTIN DIA				
10 SW Key West	30	2158EST			0	0			Marine Tstm Wind	
	Wind g	gust 36 knots (4	41 mph) mea	sured at Sand	Key C-M	AN Station	1.			

		Time Local/	Path Length	Path Width	Nun Pe	nber of rsons	Estiı Dar	mated nage	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
GULF OF MEXICO W End Of The 7 Mile Bridge To Key W Out 20Nm									
Key West	30	2159EST			0	0			Marine Tstm Wind
Key W To Dry Tortugas Waters	Wind	gust 34 knots (39 mph) mea	sured at Key	West Intern	national A	irport.		
10 SW Key West	30 W ² 1	2200EST	40 1)	1 (0 1	U V CM				Marine Tstm Wind
W End Of The 7 Mile Bridge To Key W Out 20Nm	wind	gust 35 knots (4	40 mpn) mea	sured at Sand	Key C-M	AN Statior			
10 WSW Big Pine Key	30	2235EST			0	0			Marine Tstm Wind
<u>HAWAII</u> Kauai County	Wind	gust 50 mph m	easured in So	outhern Cudjo	e Key alon	g Cudjoe I	Bay.		
1.5 ENE Hanalei	01	0742HST 0903HST			0	0			Flash Flood
Mani County	Heavy Hanal 1st. T	y rain over the r ei River floode here were no re	nountains in d near the H eports of serie	central Kauai analei Bridge ous property d	i caused m and force lamage or i	any strean d the closu injuries, ho	ns and rive are of the b owever.	rs to becom oridge and i	he swollen and overflow their banks. The roadway for a time on the morning of the
Lahaina to	01	1220HST			0	0			Heavy Rain
Lanai City		1645HST							·
	Heavy	showers and i	solated thunc	lerstorms proc	luced pone	ling of roa	dways, and	d small strea	am and drainage ditch flooding in parts of
Maui County	west	Maul and in La	nai. No serio	ous property a	amage or 1	njuries we	re reported		
16.5 E Kaunakakai	01	1400HST 1645HST			0	0			Flash Flood
	Heavy near V	/ showers, rain, Vaialua. Howe	and isolated ver, there we	thunderstorm re no reports o	ns forced th of serious i	he closure njuries or	of Kameha property da	ameha V H amage.	ighway near mile post 2 in East Molokai,
Maul County Maunaloa to 15 E Kalaupapa	01 02	1745HST 0015HST			0	0			Heavy Rain
	Heavy seriou	rain and show s property dam	ers caused si age or injurie	nall stream ar es were reporte	nd drainage ed.	e ditch floo	oding, and	ponding of	roadways across the isle of Molokai. No
Honolulu County Countywide	02 03	0954HST 0500HST			0	0			Heavy Rain
	Intern roadw occurr streets	nittent heavy rays across Oah red from time to s and streams. 1	ain, showers u, most parti o time in mar No serious in	, and isolated cularly Pali H by parts of the juries or prop	d thunders Highway ne island. B erty damag	torms cau ear Kameh ackups of ge were rep	sed occasi ameha Hig sewer lines oorted.	onal muds hway, and s, as well, c	lides that forced lane closures on some Kaneohe Bay Drive. Power outages also aused raw sewage to be spilled into a few
Maui County Maunaloa to 15 E Kalaupapa	02 03	1003HST 1230HST			0	0			Heavy Rain
	Intern roadw	nittent heavy ra ays over most o	in, showers, of Molokai. '	and isolated There were no	thundersto reports of	rms produ serious pr	ced small operty dan	stream and nage or inju	drainage ditch flooding, and ponding of iries.
Maui County 10 NW Lanai City to 5.5 S Lanai City	02 03	1655HST 1530HST			0	0			Heavy Rain
	Intern floodi hours	nittent heavy rang across the is on the 2nd. Ho	iin, showers, land of Lana wever, no se	and isolated i. The very d rious injuries	thundersto amp condi or property	orms cause tions also i y damage y	ed ponding forced the were report	g of roadwa closure of the	ays, and small stream and drainage ditch he Lanai airport during the later afternoon
Maui County Lahaina to Hana	02 03	1655HST 1830HST			0	0			Heavy Rain
	Intern	sittant baavas re	in choward	and isolated	thundarate		d nonding	of roading	we and small stream and drainage ditch

Intermittent heavy rain, showers, and isolated thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding on the island of Maui. Power outages were not uncommon as the inclement weather persisted for more than 24 hours.

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) Crops Date (Yards) Killed Character of Storm Location Injured Property HAWAII However, there were no reports of serious injuries or property damage. Hawaii County 0630HST Countywide 03 Û 0 **Heavy Rain** 1830HST Intermittent heavy rain, showers, and isolated thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways on the Big Island of Hawaii. Isolated power outages also occurred across the isle. No serious injuries or property damage were reported. HIZ001>005-007 Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna -Molokai - West Hawaii Including Leeward Kohala And Kona 05 0700HST Heavy Surf/High Surf 0900HST 06 A low 800 miles northwest of the state generated surf of 10 to 20 feet along the west- and north-facing shores of all the isles except Lanai. There were no reports of serious property damage or injuries. HIZ001>007 Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna -Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona 10 0400HST Heavy Surf/High Surf 1400HST 11 A storm low far northwest of Hawaii produced surf of 15 to 25 feet along the north-facing shores, and 10 to 15 feet along the west-facing shores, of all the islands. No serious injuries or property damage were reported. HIZ004-007>008 North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - West Hawaii Including Leeward Kohala And Kona - South Hawaii Including Kau 12 0640HST 0 High Wind (G70) 15 0400HST Southwest to west winds sustained at 80 mph buffeted areas at and near the summits of Mauna Kea and Mauna Loa on the Big Island of Hawaii. There were no reports of serious injuries or property damage. **HIZ003** Maui 12 0640HST High Wind (G61) 0 0 1600HST Southwest to west winds that gusted to 70 mph affected areas at and near the summit of Haleakala in East Maui. No serious property damage or injuries were reported, however. HIZ001>003-005-007 Kauai - Oahu - Maui - Molokai - West Hawaii Including Leeward Kohala And Kona 0400HST 14 1 0 High Wind (G63) 1600HST A fast-moving cold front brought strong winds to much of the Aloha State on the 14th. A significant number of trees and power lines were blown down, closing roads on Oahu and Kauai for several hours. Media reports indicated that over 100 homes on Oahu suffered roof damage. At least three homes on the Big Island of Hawaii and one on Maui also had roof damage. Power outages affected Kauai, Oahu, Maui, and the Big Island. Around 69,000 customers were without power on Oahu, several thousands on Maui and Kauai, and nearly 10,000 on the Big Island. Nine schools on Oahu closed early due to power failures and/or roof damage. One man was killed on Kauai while apparently camping. A portion of a tree blown down by high winds fell on his campsite and caused his death. No serious injuries were reported. The cost of damages across the state was not available. M?CA **HIZ003** Maui 0400HST 14 0 0 High Wind (G61) 0400HST 15 Strong west to southwest winds that gusted to 70 mph occurred at and near the summit of Haleakala in East Maui. No serious injuries or property damage were reported. HIZ001>007 Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna -Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona 0500HST 15 0 Heavy Surf/High Surf 0 16 2200HST A storm low far northwest of the state generated surf of 15 to 25 feet along the north-facing shores, and 10 to 15 feet along the west-facing shores, of all the Hawaiian Islands. However, no serious property damage or injuries were reported. HIZ001>007 Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna -Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona 19 0800HST Heavy Surf/High Surf 23 0200HST A deep low far northwest of the Aloha State produced surf of 15 to 20 feet along the north-facing shores, and 8 to 12 feet along the

west-facing shores, of all the islands. There were no reports of serious injuries or property damage.

		Time Local/	Path Length	Path Width	Nur Pe	nber of ersons	Estin Dan	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
HAWAII									
Honolulu County Countywide	22 23	2322HST 0030HST			0	0			Heavy Rain
	Heavy Oahu.	y showers and t There were no	hunderstorm reports of so	s caused sma erious propert	ll stream a ty damage	nd drainag or injuries	ge ditch floo	oding, and	ponding of roadways across the island of
Honolulu County Central Portion	22 23	2358HST 0010HST			0	0			Thunderstorm Wind (G52)
	A sev were i	ere thunderstor no reports of ser	m generated ious injuries	wind gusts to or property o	o about 60 lamage.	mph at an	d near Whe	eler Army	Airfield in central Oahu. However, there
Maul County Maunaloa to Lanai City	23	0130HST 0430HST			0	0			Heavy Rain
	Heavy of Mo	y rain, showers, lokai and Lana	and thunder	storms caused s injuries or p	l ponding or roperty dar	of roadway nage were	vs, and smal reported.	l stream ai	nd drainage ditch flooding over the islands
Maui County Maalaea	23	0210HST 0430HST			0	0			Flash Flood
	Heavy heavy prope	y showers and t rain also caus rty damage or in	hunderstorm ed small stre njuries were	s forced the eam and drain reported.	closure of nage ditch	Honoapiil: flooding,	ani Highwa and pondin	y near Ma g of road	alaea Bay and the town of Maalaea. The ways in other parts of Maui. No serious
Maui County Spreckelsville	23	0210HST 0215HST			0	0			Lightning
	Lightı the gr The co	ning struck a tre ound and dama ost of the damag	e near a resi ged a fence ges was not a	dence in Spre and deck rail wailable. No	ckelsville ling. The serious inj	on the isla electrical o uries were	nd of Maui. charge also reported.	The elect slightly st	trical energy from the strike then ran along unned two men who were near the strike.
Hawaii County 4 N Pahala	23	0900HST 0945HST			0	0			Flash Flood
	Heavy on the	y rain and thund Big Island of H	lerstorms wa Iawaii. How	shed out a po vever, no serio	ortion of W ous injuries	ood Valle or proper	y Road betv ty damage v	veen Pahal vere report	la and Kapapala Ranch in the Kau District ted.
Hawaii County Hawi to Naalehu	23	0930HST 1745HST			0	0			Heavy Rain
	Heavy parts o	y rain, showers, of the Big Island	and thunde d of Hawaii.	rstorms produ There were r	iced small to reports o	stream an of serious p	d drainage property dan	ditch floo nage or inj	ding, and ponding of roadways in eastern juries.
Hawaii County 9 SW Kamuela to 12 SW Kamuela	23	1600HST 1730HST			0	0			Flash Flood
	Heavy time, a	y showers and t and to damage s	hunderstorm some homes	s caused enou in Waikoloa	igh floodir Village. T	ng to close he cost of	a portion o damages to	f Queen K the homes	Caahumanu Highway in West Hawaii for a s was not available. There were no reports
Hawaii County	or ser	ious injuries.							
9.5 NW Laupahoehoe	24	1420HST 1630HST			0	0			Heavy Rain
	Heavy of Paa damaa	y showers and t auilo and Kukai ge.	hunderstorm au in the Ha	s caused pon makua Distri	ding of roa ct on the B	idways, ar ig Island o	nd small stre of Hawaii. '	eam and d	rainage ditch flooding in the communities e no reports of serious injuries or property
HIZ001>006	Kaua	ai - Oahu - I	Maui - No	rth And E	ast Hawa	aii Inclu	ding Win	dward k	Kohala / Hamakua / Hilo / Puna -
	Molo 24 25	okai - Lanai 1500HST 1200HST			0	0			Heavy Surf/High Surf
	A low Island	v northwest of ls. There were i	the state gen no reports of	nerated surf of serious injuri	of 10 to 1: es or prope	5 feet alor erty damag	ng the north	n- and nor	rthwest-facing shores of all the Hawaiian
Maui County 8.5 NW Hana to 6 NW Hana	24	1530HST 1700HST			0	0			Heavy Rain
	Heavy to Ula	y rain, showers, ino in windwar	and thunder d East Maui.	storms produ No serious i	ced small s njuries or j	tream and property da	drainage di amage were	tch floodii reported.	ng, and ponding of roadways from Nahiku

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) Date (Yards) Killed Character of Storm Location Injured Property Crops HAWAII **Maui County** 1600HST Kalaupapa to 24 0 0 **Heavy Rain** 15 E Kalaupapa 2000HST Heavy rain and thunderstorms caused ponding or roadways, and small stream and drainage ditch flooding in central and eastern parts of Molokai, i.e., east of a line from Kalaupapa to Kamalo. No serious property damage or injuries were reported. Hawaii County 9 NW Laupahoehoe to 24 1900HST 0 **Heavy Rain** A 2030HST Hilo Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in windward sections of the Big Island of Hawaii, that included portions of the Hamakua, and North and South Hilo districts. No serious injuries or property damage were reported. Maui County Spreckelsville to 2320HST **Heavy Rain** 24 Û 0 25 Hana 0220HST Heavy rain, showers, and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in windward parts of East Maui. There were no reports of serious property damage or injuries. **Honolulu Countv** Mililani Town to 25 1330HST Û 0 **Heavy Rain** 1455HST **Pearl City** Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in central and south-central parts of Oahu. No serious injuries or property damage were reported. **Honolulu County** 1335HST Wahiawa to 25 0 0 **Funnel Cloud** 4 SSE Aiea 1410HST Several funnel clouds were reported by airplane pilots and a weather observer from near Wheeler Army Airfield to the Honolulu International Airport in the early afternoon of the 25th. Apparently, none of these funnels became tornadoes. There were no serious disruptions in air traffic caused by these phenomena. **Honolulu County** 3 NW Waipahu 25 1345HST 25 0 1 0 Tornado (F0) 1350HST A tornado touched down about 1 mile northwest of Royal Kunia, or 3 miles northwest of Waipahu, on the island of Oahu. However, no serious injuries or property damage were reported. Maui County 25 1440HST Lahaina to 0 0 **Heavy Rain** Hana 1715HST Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding across the island of Maui. No serious injuries or property damage were reported. Hawaii County Hilo 0 25 1515HST 0 Hail (0.75) 1520HST An off duty National Weather Service employee reported three-quarter inch hail in the afternoon of the 25th in North Hilo on the Big Island of Hawaii. However, no serious injuries or property damage were reported. Hawaii County 8 WSW Honokaa 25 1630HST 0 0 Flash Flood 0030HST 26 Heavy showers and thunderstorms flooded a section of Highway 19 (Mamalahoa Highway) from mile post 15 to 19. This effectively shut down the road between Kamuela and Honokaa for several hours. However, no serious property damage or injuries were reported. Maui County 1630HST Kalaupapa to 25 A 0 **Heavy Rain** Kaunakakai 1930HST Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in central parts of Molokai. There were no reports of serious injuries or property damage. Hawaii County 7 NE Kailua Kona to 25 1850HST 0 0 **Heavy Rain** 8 SSE Kailua Kona 2030HST Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in parts of the North

Kona District on the Big Island of Hawaii. No serious property damage or injuries were reported.

		Time	Path	Path	Nur	nber of	Estin	nated		January 2004
Location	Date	Local/ Standard	(Miles)	(Yards)	Pe Killed	rsons Injured	Property	age Crops	Character of Storm	-
HAWAII										
Honolulu County 2 N Kahaluu	25	2015HST 2325HST			0	0			Flash Flood	
	Heavy highw damag	y rain and thun ay had to be cl ge.	derstorms pr osed for a tir	oduced flash ne to allow th	flooding on the flooding	conditions g waters to	along Kam subside. 7	ehameha There were	Highway near the Wa no reports of serious	ikane Bridge. The injuries or property
Hawaii County Hawi to Kamuela	26	1615HST 1740HST			0	0			Heavy Rain	
	Heavy of the	rain, showers,	and thunder	storms produ tricts on the F	ced pondi	ng of road of Hawaii	ways, and s No serious	mall strea	m and drainage ditch f	looding in portions
Hawaii County 10 W Volcano to Pahala	27	1425HST 1630HST			0	0	110 0011040	property	Heavy Rain	
	Heavy Distric	showers and t t on the Big Isl	hunderstorm and of Hawa	s caused sma ii. There wer	ll stream a re no repor	nd drainag ts of seriou	ge ditch floo us property o	oding, and damage or	ponding of roadways injuries.	in parts of the Kau
Hawaii County Honokaa to Hilo	29	0730HST 1030HST			0	0			Heavy Rain	
	Heavy	showers and ns of the Big Is	thunderstorm land of Hawa	is produced s	small strea ded parts o	m and dra f the Ham	ainage ditcł akua, and N	n flooding forth and S	, and ponding of road outh Hilo districts. No	lways in windward o serious injuries or
HIZ001-004-008	Kaua Inclu	ii - North A ding Kau	nd East H	awaii Incl	uding W	indward	Kohala /	/ Hamak	xua / Hilo / Puna	- South Hawaii
	30 31	1400HST 2359HST			0	0			Heavy Surf/High S	urf
Hawaji County	A trad injurie	e wind swell g s or property d	enerated sur amage were i	f of 6 to 8 fe reported.	et along th	ne east-fac	ing shores o	of Kauai a	nd the Big Island of H	Iawaii. No serious
Pahoa to Volcano	31	0245HST 0445HST			0	0			Heavy Rain	
	Heavy on the	showers and t windward side	hunderstorm of the Big Is	s caused pond land of Hawa	ling of roa iii. No ser	idways, an ious injurio	d small stre es or proper	am and dr ty damage	ainage ditch flooding i were reported.	in the Puna District
IDAHO, Extreme Sou	utheas	<u>st</u>								
	NONE	E REPORTED.								
IDAHO, North	N 41			· · · · · · · · · · · · · · · · · · ·				T. d		
IDZ005>000-010	Noru 01	0800MST	ater Mount	ains - Souu	nern Clea 0	arwater 1 0	viountains	s - Laster	Winter Storm	
	02	0800MST	mored through	h waatam N	Contono on	d into nor	the control L	laha muad	using widespread hoor	w anow and strong
107005-006	Strong	northeast wind gest wind gusts M to 1030 PM	s. Storm tota occurred dur MST.	I snowfall rai	ng hours o	4 to 9 incl f January	hes at the lo 1st, where g	ower eleva gusts betwo	tions to 10 to 12 inche een 33 to 53 MPH wer	in the mountains. e recorded between
11/2003>000	Noru 03 04	0000MST 0700MST		anis - Souti	0	o o	viountains		Heavy Snow	
	An arc Heavy Pierce	ctic frontal bou snow fell at H , 8.5 inches at I	ndary moved leadquarters Powell Range	from wester which receive r Station, wit	n Montana ed a storm h the mour	into north total of 20 ntains rece	n central Ida 0 inches. Of iving up to t	ho and sta her storm two feet of	lled, producing heavy total snowfall amounts new snow.	snow for 36 hours. s were 15 inches at
IDZ005>007-009>010	North	nern Clearwa	ater Mount	ains - Sout	hern Cle	arwater	Mountair	s - Orof	ino / Grangeville R	egion - Western
	23 25	11 County - E 0400MST 1000MST	astern Len	ini County	0	0			Heavy Snow	
	Warm two da to fall Orofin inches	Pacific moistu ays. By mid day with power ou to and Kamiah , and 18 inches	re pushed int of January 2 tages near Ko . As the mo s reported at	o north centr 23, 6 to 8 incl poskia. Heavy sture moved Gibbonsville.	al Idaho w nes of heav y snowfall eastward The Cleary	ith cold ai vy wet snov continued into Leml water Mou	r residing ir w had alread the next 24 hi County, S ntains receiv	the valley dy fallen o hours wit Salmon re ved 10 to 2	ys, to produce widesprover the lower valleys, of h 16 to 18 inches of ne ceived 9 inches of ne 20 inches of new snow.	ead heavy snow for causing power lines w snow reported at w snow, Shoup 12

S	torr	n Data	a and	Unusu	al W	eatl	her Ph	enomena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed I	r of ns injured	Estimated Damage Property Cr	ops Character of Ste	January 2004
IDAHO, North	Orofi	no / Crongo	villo Dogior						
1172007	30	0730MST 0830MST	vine Kegioi	I	0	0		High Wind (G 52)
	A stro thunde from C reporte	ng west to ea erstorms and a Grangeville to ed downed tree	st oriented je strong press Harpster. Wir es onto power	et stream moved ure gradient allo nd gusts up to 60 lines caused nur	l over nor owed stron MPH wer merous pov	th centra g winds re reporte wer outag	l Idaho during aloft to mix to ed at the Grang ges from 630 A	the morning hours the valley floors, pr eville Airport. The Ida M to 1030 AM throug	of January 30th. Isolated oducing damaging winds ho Free Press Newspaper hout the area.
IDAHO, Northwest IDZ001>004-026	North 01 03	ern Panhan 0800PST 1800PST	dle - Coeur	D'Alene Are	a - Idaho 0	Palous 0	e - Central P 0	anhandle Mountai Heavy Snow	ns - Lewiston Area
	A wint spotter receive first 24 inches anothe receive	ter storm drop in Rathdrum ed 12 inches d 4 hours of the on the 3rd, D r 6 inches on ed ranging from	ped heavy sno reported 5 ind luring the day storm. An emo- beary had 10 i the 3rd, and n 6 to 10 inch	by over the Idah ches of new sno of January 1st, ergency manage inches through t Genesee had 6 nes.	to Panhand w on the 1 Sandpoin r reported he 2nd and inches on	lle from t st and ar t got 6.5 the follow d another the 2nd	the morning of nother 9 inches inches. The c wingBovill re c 6 inches on t and another 6	January 1st through t by the morning of the ity of Couer D'Alene ceived 15 inches through he 3rd, Troy had 8 im- inches on the 3rd. S	he day of January 3rd. A e 2nd. Elsewhere, Athol received 11 inches in the ugh the 2nd and another 3 ches through the 2nd and everal other reports were
IDZ001>002	North 04 06	ern Panhan 0100PST 1200PST	dle - Coeur	· D'Alene Are	a 0	0		Extreme Col	d/Wind Chill
IDZ001>004	The m Januar temper North 22 23	orning of Janu y 5, was minu ratures of min tern Panhan 2100PST 0900PST	ary 4, 5, and is 24 at Coeur us 22 was rep adle - Coeur	6 brought extren r D'Alene. At Sa orted. This cold • D'Alene Area	me cold to andpoint th weather re a - Idaho 0	northern e officia sulted in Palous 0	Idaho. The mo l low temperat numerous brol e - Central P 0	orning low temperatur ure was minus 18 but cen water pipes and sc anhandle Mountai Heavy Snow	e on the coldest morning, at a nearby school a low attered power outages. ins
IDZ001>004	A wing Januar Benew North 26	ter storm dum y 23rd. Spott vah county and tern Panhan	ped heaved s er reports rec 6 inches in S adle - Coeur	now over the Id eived included 5 hoshone county. • D'Alene Are	aho Panha inches of a - Idaho	indle dur new sno Palous	ing the overnig ow near Mosco e - Central P	ght hours from Januar ow, 6 inches in Sandp anhandle Mountai Heavy Spar	y 22 into the morning of oint, 7 inches in northern
	A win	1800PST ter storm mov	ed across the	Idaho Panhandl	le during t	he day of	f January 26th	Spotters reported 8	inches of new snow near
IDAHO, Southeast IDZ017>023-031>032	Easte Snako	rn Magic V e River Plain	alley - Saw n - South C	tooth Mounta entral Highla	ains - Uj nds - Ca	oper Sn ribou H	ake Highlan ighlands - B	ds - Upper Snake ig And Little Woo	River Plain - Lower d River Region - Lost
	01 02	0800MST 0100MST	DI		0	1	242K	Blizzard	
	An inc Christi snowfa of sourt storm a blizzar Service heavy sustain state closed mornir cold fr Extens hour ra of 55 Enviro gusts u school	redible storm mas and contin all during the v theastern Idah system caused 'd came in twe e office at the snow and sus ned 48 mph wi I-84 from Bur as well in all ng of the 2nd, 'ont trailing so sive cloud to g ange. The stro to 65 mph co onment and En up to 53 mph f	concluded a nuing almost v week. The fin o from the ce the event with Pocatello airp stained 40 mp th a gust of 5 ley to the Uti of the region 25 major roa- uth from the ground lightmi ngest winds common in the gineering Lab along the colourches were o	very active holid without interrupt all storm during ntral mountains h a strong surfaa very strong sou portblizzard co oh winds with g 6 mph. By early ah border and I- n. All roads in ds in eastern and low which move ing occurred allo of the storm occu e frontal region poratory north an d front. Several pened for shelte	day weath tion throug January 1s extending ce low pre atherly win mditions or gusts over y afternoor 86 from E Blaine, Bi d central Ic ed west to ng the frou urred just a . These v d northwe travelers er. A train	er week i th New Y t was the east and ssure mo nds aheaa courred f 50 mph. a, all maji Gurley to ingham a daho wer east thro nt and sn head of t vinds we st of Poc. were stra a cociden	n southeast Ida /ear's Day. The highlight of th south to the U ving rapidly th d of the cold f rom around 11 The peak n or interstates w Pocatello. By nd Power Cou the closed. The ugh the foreca: towfall rates ju he front with s rere recorded b atello. The Po- including t occurred as of	aho with widespread s e Pocatello airport rec le week with a widesp Vtah and Wyoming bo rough the Idaho panha ront during the day. am through 3 pm with easured wind at the rere closed including I 7 pm nearly every st inty were closed. It w blizzard peaked with st area from approxim st behind the front w ustained wind speeds y several mesonet sit catello airport had sus 5 750 to 850 in Rockl containers blown off t	now and wind beginning eived 23.4 inches of total read blizzard affecting all rders. An intense pacific undle late in the day. The At the National Weather a visibilities zero miles in airport in this time were -15 throughout the whole ate and US highway was was estimated that by the the passage of the strong ately 6 pm through 9 pm. ere in the 2 to 4 inch per of 35 to 45 mph and gusts es at the Idaho National tained 38 mph winds with and in Power County. A he train. Costs to Power

		Time Path		ath Path Number of			Estin	ated	January 2004		
Location	Date	Local/ Standard	(Miles)	(Yards)	Killed	ons Injured	Property	age Crops	Character of Storm		
IDAHO, Southeast											
IDZ031	County excess gauge. on the 18 incl signific Elepha Wood Big A 01	y were \$280,00 of \$200,000. From spotter: benches, 6 inc hes at Galena 1 cant SNOTEL int, 9 inches at Divide, 32 incl nd Little We 2230MST	00. Extensiv Widespread s, snowfall es hes fell in Id Lodge, 10 ind estimates we Bostetter, 14 hes at Swede Dod River F	e damage to t power outag timates were aho Falls, 6 in thes at Stanle re 30 inches a t inches at Oy Peak, 27 inch Region	trailers and es occurred 5.5 inches a nches in Bla y, 4 inches t Bear Cany cford Spring es at Vienna 2	mobile l but for tt the Po- tckfoot, 4 at Challi gon, 19 in gs, 21 in a Mine, 2 0	nomes were the most pa catello airpo 4 inches in <i>A</i> s, 12 inches nches at Mil ches at Sedg 24 inches at	noted mai art were b rt with ge: Ashton, 30 at Arco, a I Creek, 33 gewick Pea Hilts Cree	inly in Bingham Coun- rief. Snowfall amoun nerally 6 to 9 inches re inches at Island Park, and 8 inches at Mink C 8 inches at Crab Creek, uk, 24 inches at Galena k, and 9 inches at Some Avalanche	y with damages in ts were difficult to ported in town and 8 inches at Hailey, Yreek. Some of the 37 inches at White a, 31 inches at Lost sen Ranch.	
	52 5250000 Several avalanches occurred in the Ketchum and Galena area casing road closures. One avalanche in the ev Soldier Mountain and destroyed a cabin killing two people on the bottom floor of the cabin. Other family ground laval survived ESSOT MSSOT										
IDZ018-018>023-031	Sawto	ooth Mounta	ins - Uppe	r Snake Hig	ghlands - 1	Upper S	Snake Riv	er Plain	- Lower Snake Riv	er Plain - South	
	Centr 24	al Highland	s - Caribou	Highlands	- Big And		Wood Riv	er Regio	n Winter Storm		
	25	0900MST			Ū	U			white storm		
IDZ019	A wint inches pm and Island Uppe 28	ter storm broug of snow from d interstate 86 Park with 12 in r Snake Hig 0400MST	to be closed to be closed the closed	olizzard condi Ils to Rexburg from the Salt es fell at Gale	tions to the g but the win Lake interc ena, 3 inches	Snake R nds in ex hange to s in Black	tiver Plain. ccess of 25 n American H kfoot, 2 inch	Snow amo niles per h Falls at 2 a les in Rext	ounts were not heavy w our caused interstate & m. The only heavy sn ourg and Rigby and 1 in Winter Storm	ith generally 2 to 4 4 to be closed at 11 ow was reported at nch at Malad.	
		1800MST			Ū	Ū					
Minidoka County Minidoka	Locali: were 9 30	zed heavy sno inches in victo 1130MST	w fell in the or, 10 inches	Upper Snake in Swan Valle	Highlands. ey, 3 inches 0	Strong in Palisa 0	winds acco des, 3 inche	mpanied tl s in Island	he snow with extensive Park, 4 inches in Tetor Thunderstorm Win	e drifting. Reports iia nd (G63)	
Putto County		1136MST									
22 SE Arco	30	1155MST			0	0			Thunderstorm Win	nd (G50)	
Cassia County Burley	30	1159MST 1205MST			0	0			Thunderstorm Win	1d (G60)	
	3 semi	-tractor trucks	blown off of	interstate 84 i	n Burley.						
9 NW Idaho Falls	30	1230MST 1235MST			0	0			Thunderstorm Wi	nd (G50)	
IDAHO, Southwest											
IDZ011-013-029	West 01	Central Mor 1000MST 1900MST	untains - Bo	oise Mounta	ains - Owy 0	hee Mo 0	ountains		Heavy Snow		
IDZ028	A maj with it Cama	or Pacific syst up to a foot of is Prairie	em moved ea new snow a	stward across nd strong gust	s Eastern O ty winds to	regon ar the mour	nd Southwes ntains of Sou	tern Idaho thwestern	o on new years day. T Idaho and Baker Cour	his system brought ity Oregon.	
	02	0100MST 0200MST			2	2			Avalanche		
IDZ013	The Average Av	valanche was 00 to 700 feet l ants who were Mountains 2300MST 0800MST	located about ong. Snow fr asleep. Five	10 miles not om the Avala other occupan	rth of Fairfi inche destro its on the sec 0	eld and 1 yed a tw cond floo 0	mile south story cabi or of the cab	of the Sol n, filling t in escaped	dier Mountain Ski Res he first floor with snow without major injuries Heavy Snow	ort. The snow slide v, and killing two J. F55PH, M58PH	
IDZ012-014-016	A seco Up to a Lowe 07	ondary cold fro a foot of new s r Treasure V 1000MST 1700MST	nt that moved now fell in th 7 alley - Upj	l across Easte e Boise Mour per Treasur	ern Oregon a atains as this re Valley - 0	into Sou s system Wester 0	nthern Idaho passed throu rn Magic V	Sunday e igh the are alley	vening brought with it a. Heavy Snow	wide spread snow.	

		Time Local/	Path Length	Path Width	Numb	er of	Estimate	ed	January 2004				
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm				
IDAILO Southmost													
IDAHO, Southwest	A Paci	fic storm syste	m that move	d into Southe	rn Idaho dui	ring the	early morning	of Janua	ary 7 2004, left behind wide spread snow				
	with he 7 inche miles I NWS (eavy snow in thes, 3 miles NN NW of Caldwe Observer Boise	he lower vall E of Greenle ll 7 inches. : Airport 5 in	eys as it move af 6 inches, a Upper Treasu ches. : Magic	ed across the and 6 miles I are Valley, N Valley NWS	region. NNW of NWS En S Co-op	Lower Treasu Middleton 6 i ployee Garder Observer 6 inc	re Valle nches, n City 5 ches.	y, Trained Spotter 7 miles north of Melba Broadcast Media Nampa 5 inches and 11 inches and West Boise 4 inches, Official				
IDZ011>013	West 23 25	Central Moi 1700MST 0300MST	untains - L	ower Treas	ure Valley 0	- Boise 0	e Mountains		Heavy Snow				
	A vigorous Pacific Storm system moved across Eastern Oregon and Southwestern Idaho durning the night of the 23rd and duri the day of 24th of January. This system brought with it heavy snow to Baker County Oregon, Lower Treasure Valley of Oregon a Idaho and the Central and Boise Mountains of Idaho. Snow amounts in Baker County ranged from 2 inches in Baker City to inches in the mountains. In the Lower Treasure Valley snow amounts ranged from 2 inches up to 8 inches, with areas of freezi rain also. In the mountains of Idaho snow fall amounts ranged from 4 to 8 inches below 5000 feet and up to 16 inches above 50 feet.												
Canvon County													
Countywide	30	0800MST 0840MST			0	0			Thunderstorm Wind (G60)				
Owvhee Countv													
Countywide	30	0800MST 0845MST			0	0			Thunderstorm Wind (G60)				
Ada County													
Countywide	30	0830MST 0905MST			0	0			Thunderstorm Wind (G60)				
Elmore County													
Countywide	30	0855MST 0920MST			0	0			Thunderstorm Wind (G60)				
IDZ016	shower Payette Power Weste 30	rs as it moved e County and in was briefly kn ern Magic Va 1000MST 1100MST	eastward acr n Nampa in C ocked out in alley	ross Eastern C Canyon Count northern Owy	Dregon and S y. There wer thee County 0	Southwe re also re as the lin 0	estern Idaho. I eports of trees one of thunders	Fairly la down in torms me	rge trees were blown down in Payette in Baker and Malheur counties in Oregon. oved across the county High Wind (G67)				
	A stroi	ng fast moving	cold front pr	oduced very s	trong winds	as it pas	sted across the	Magic V	/alley of Idaho.				
<u>ILLINOIS, Central</u>													
ILZ027>028-030	Knox 04	- Stark - Ma 1300CST 1512CST	arshall		0	0			Winter Storm				
ILZ038	Mclea	m											
	04	1400CST 1512CST			0	0			Ice Storm				
H 70/1 0/2 0// 0/0	A wint Knox, 5 and causing outage	ter storm move Stark and Mar 6 inches of sr g near whiteou s in Normal, L	ed into northe shall, while i now was rep at conditions eRoy, Downs	ern portions o n McLean Co orted in Know in numerous s and Lexingto	f Central III unty signific x, Stark and locations. on.	inois late ant ice a Marsha Meanwh	e on January 3 accumulations all counties w hile in McLean	Brd and i around a ith signi n county	nto the 4th. Heavy snow was reported in a third of an inch were reported. Between ficant blowing and drifting of the snow y, the heavy coating of ice caused power				
ILZ061>063-066>068- 071>073	- Shelb	y - Cumberl	and - Clarl	k - Effingha	m - Jaspei	r - Crav	wford - Clay	- Rich	land - Lawrence				
0/120/3	25	1200CST 2100CST			0	0			Ice Storm				
	A strong winter storm moved out of Southern Plains and into the Ohio River Valley. This system brought significant icing to th southeastern portions of Central Illinois on January 25th. Also, significant sleet accumulation was reported in numerous location along and south of Interstate 70. Effingham County reported an inch of sleet as well as over a quarter inch of ice accumulation There were numerous reports of power outages, downed tree limbs and traffic accidents in all of these counties. There were n reports of sations injuries or fatalities.												
ILLINOIS, Northeas	t	··· -j-											
ILZ010-012>014-022	Lee - 04 05	Kane - Du P 0700CST 0700CST	age - Cook	- Will	0	0			Heavy Snow				

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	iber of sons Injured	Estim Dam Property	ated age Crops	Character of Storm	January 2004		
II I INOIS Nowtheor			(()			py	or of o				
ILZ033	Heavy inches O'Hare heart a automo	snow fell ove in Aurora (Ka e Airport (Coo ttack while sh obile accident tois	er north-centh ane County), k County) ar oveling his d near Glen Ell	ral and north 6.4 inches i nd 5.6 inches riveway in N yn (Du Page	neast Illinois in Burbank in Dixon (lew Lenox (County).	s. Some s (Cook Co Lee Coun Will Cour	snow report unty), 5.7 i ty). There v nty) and 2 (1	s include; nches in V vas 3 indi 8 and 19	7 inches in Paw Paw Winfield (Du Page Cou rect deaths, a 76 year of years old) were killed in	(Lee County), 6.5 nty), 5.6 inches at old man suffered a n a weather related		
	06	1400CST	1.6 . 1		1	0			Extreme Cold/Wind Chill			
ILZ014	91 yea M91V Cook 06	r old man four E 1500CST	id frozen to d	eath in car in	a ditch bety	o normalization of the other sectors of the other s	uois and Ka	пкакее со	Extreme Cold/Wine	volved.		
ILZ012	An 82 mornir Kane	year old wom ng she was fou	nan was foun nd was -3F.	d dead in he F82PH	r mobile ho	me. The	furnace in 1	her home	was turned off. The lo	w temperature the		
	07	1000CST	10	0	1	0			Extreme Cold/Wine	l Chill		
ILZ014	Man, a low ter Cook	mperature the	morning of 0	0 years, may 1/07/04 was	3F at Aurora	n to death. NSugar Gi	. Body disc rove airport.	overed at M50OU	10:25am near a bike pa	th in Aurora. The		
	15 75 voo	0700CST	d dood in his	home in Oal	l k Lawn Cov	0 ok County	Overnight	low tom	Extreme Cold/Wind	d Chill		
ILZ014	73 yea Cook 18	0700CST	id dead in his	nome in Oa	1 r Lawii, Coo	0 o	. Overnigni	low temp	Extreme Cold/Wind	H I Chill		
П 7014	52 yea 6F. M	r old man four 52OU	nd dead under	a bridge ov	er North Bra	unch of the	e Chicago R	iver, Cool	k County. Overnight lo	w temperature was		
	19	1200CST			1	0			Extreme Cold/Wine	ł Chill		
	47 yea	r old man four	d dead in Por	rtage Park, C	look County	, due to hy	pothermia.	Overnigh	nt low temperature was a	3F. M47OU		
ILZ014	Cook 25	1200CST			1	0			Extreme Cold/Wind	l Chill		
ILZ003>006-008- 010>014-019>023- 022>033-020	33 yea 01/25/0 Winn Grun	ur-old man fou 04 was 13F. M aebago - Boo dy - Will - K	nd dead in E 133OU one - Mcher Kankakee -	3ank One Pl n ry - Lake Livingston	aza, Chicag - Ogle - I - Iroquois	o, Cook () 2 ee - De 5 - Ford	County, due Kalb - Ka	to hypoth ine - Du	nermia. Low temperatu Page - Cook - La S	tre the morning of alle - Kendall -		
032>033-039	29	1800CST			0	0			Extreme Cold/Wine	l Chill		
	30 A cold from -2	2300CST l arctic airmass 20F to -34F.	s with temper	atures as lov	v as -5F to -	10F and v	winds of 10	to 15mph	produced widespread v	vind chill readings		
ILZ014	Cook 31	0700CST			1	0			Extreme Cold/Wind	l Chill		
П.Z014	86 yea order.	r old woman f Pipes were fro	found dead in ozen. Overni	n home in Sa ght low temp	uk Village, berature was	Cook Co -6F. F86	unty. Hous PH	e was not	heated, although furna	ce was in working		
	31	0700CST			1	0			Extreme Cold/Wine	ł Chill		
	82 yea	r old woman f	ound dead in	unheated mo	bile home in	n Hodgkin	ns, Cook Co	unty. Ove	ernight low temperature	was -6F. F86PH		
ILLINOIS, Northwe	<u>st</u> Doole	Idond Ho	Dunco									
112013>017	Коск 04	1430CST 2300CST	iry - Burea	u	0	0	15K		Heavy Snow			
	The fin 2004. some l mesoso Jones. did no souther	rst major winter A majority of Illinois counti- cale banding p Mesoscale ba t. A perfect e ast corner of th	er storm of th the heavy sn es along Inte roducing am- inding of the xample was he county wh	ne season be ow fell across stratate 80. To ounts of 8 to snow during in Delaware ile the remain	gan during ss Eastern Io Fotal snow 10 inches a the day on County Iow nder of the c	the evening wa and no amounts f cross the 4 January va. A me ounty saw	ng hours of orth of U.S. for this stor Iowa counti 2004 result soscale hea a amounts ir	3 January 34, but m m were g es of Was ed in som vy snow b the 4 to 6	2004 and ended by 23 esoscale banding produ generally 6 to 8 inches shington, Muscatine, Ko e areas receiving heavy band deposited 7 inches 5 inch range.	00 CST 4 January ced heavy snow in with the resultant cokuk, Louisa, and snow while others s of snow over the		

		Time Local/	Path Length	Path Width	Nun Pe	Number of Persons		nated nage	January 2004			
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm			
ILLINOIS, Northwes	st											
ILZ001>002-007	Jo Da	aviess - Stepl	henson - Ca	rroll								
	16	1900CST			0	0	15K		Winter Weather/Mix			
ILLINOIS, Northwa ILZ001>002-007	17	0500CST										
ILZ015	A mix 2004 a heavie North many calls v respor Rock	ture of freezin as surface tem est accumulatic west Illinois. I vehicles in the were double th ading to a call. Island	g rain and sle peratures clin on along the U Numerous tra ditches along te usual numb	et developed abed above f J.S. 20 corric ffic accident g Interstate 8 bers for the	during the reezing. Id dor. The ar s occurred 0 in Iowa a time of day	evening l ee accumu eas affect that invo and Johns y. In Jac	hours of 16. ulations of o ted were mai lved minor on counties, ekson Count	January 2 one or two inly along (indirect) while co y Iowa, a	004 and ended before dawn on 17 January o tenths of an inch were reported with th and north of U.S. 30 in Eastern Iowa and injuries. The Iowa State Patrol reported unty sheriff offices indicated that acciden n ambulance went off the road as it wa			
	28	0000CST			1	0			Extreme Cold/Wind Chill			
	A period of abnormally cold weather settled across the Midwest in late January. In Hampton, Illinois, an 82 year old man slipped and fell between his house and garage and was not found until the 29th of January. The coroner report indicated death was a result of hypothermia. Just prior the the bitter cold, another fatality (indirect) occurred. A 75 year old Milan, Illinois man suffering from alzheimers left his house on the night of January 25th, and became even more confused when he could not find the gate on the fenced in property. He attempted to climb over the fence and became hung up and was not discovered until the morning of January 26th. M82OU											
ILLINOIS, South												
ILZ078-083	Waba	ash - White			0	0			Flood			
	19	1600CST			U	U			Fi00u			
ILZ087-090>094	the riv woodl Wabas to inst above Galla 05 20	ver crested at lands and field sh River was m tall flood gates flood stage. atin - Pope - 1700CST 1200CST	28.1 feet late s. Most roads hore than 2 mi A, B, and C. Hardin - Al	e on the 12t along the ri iles wide at In At New Har exander - 1	h. This res ver were in nterstate 64 mony, Indi Pulaski - 1 0	ulted in npassable . Some m ana, the r Massac 0	moderate fle . Cattle and obile homes iver crested	boding, w farm equi had to be at 19.56 f	with considerable inundation of low-lyin, pment were moved to higher ground. Th moved, and the city of Mount Carmel have eet early on the 14th. This is almost 5 feet Flood			
	The Ohio River rose above flood stage in response to heavy rains from Illinois to Ohio at the end of December. The											
ILZ075>078-080>094	contin flood Chain stage stage the riv Jeffe	ued into the fi stage on the 2 , and Cairo. The of 33 feet. The at Cairo. These ver. Several cou rson - Wayn latin - Union	rst days of Ja Oth at Shawr he river creste e crests were river stages inty roads wei e - Edward	nuary. The (neetown. Oth d at all these two to three resulted in m re closed in t s - Wabash	Ohio River her points in points on t feet above hinor floodi he Shawned h - Perry	first reac n Illinois he 14th a flood sta ng. The fl etown are: Frankleyander	hed flood sta that rose ab nd 15th. Sha ge from Gol looding was a. in - Hamil	age on the pove flood wneetown conda to confined	e 5th at Shawneetown, and last fell below l stage were Golconda, Brookport, Grand n crested at 44.7 feet, well above the floor Grand Chain, and just inches above floor mostly to low-lying woods and fields nea hite - Jackson - Williamson - Saling			
	25	0700CST	Johnson	rope in	0	0	1 ulusia	1110500	Ice Storm			
ILZ075>078-080>087	The arice gla Interst and po Count for at around ice-lad roads Jeffet - Gal	1800CST reas hardest hit azed all surface tate 57 between ower lines. One y, a downed pu- least a day fo d one quarter i den tree limbs partially blocker rson - Wayn latin	by this ice st es. Numerous n West Frank e of the large ower line bloo llowing the ic nch of ice coa and power lir ed by downed e - Edward	torm were all accidents we fort and Mou st utility con cked Illinois ce storm, wh ated trees and tes brought limbs. s - Wabash	ong and nor ere reported int Vernon. ipanies in s Route 34 n nich occurre d power lin down by gu n - Perry	th of a lin . At least Scattered outhern I ear West ed on a S es, but ro isty wind • Frankl	ne from Harn one overtur I power outa Ilinois repor End and U.S Sunday. To t bads were ma s. Illinois Ro in - Hamil	risburg to ned vehic iges occur ted about 5. Route 4 the south ainly wet bute 145 i	Carbondale, where about one half inch o le and a jackknifed semi were reported or red as brisk winds downed ice-laden tree 1,500 customers without power. In Salin 5 near Ledford. Most schools were close of a line from Carbondale to Harrisburg with scattered icy spots. There were som n Massac County was one of a number o hite - Jackson - Williamson - Saline			
	27	0100CST			0	0			Winter Weather/Mix			
	One to Shawn report icing o	1100CST o two inches of neetown. The s edly very slick of trees and po	snow fell acr now began as Main roads, wer lines was	oss parts of s a period of s which recei reported in S	southern Ill freezing dri ved attentic Saline Coun	inois, mai zzle that 1 on from ro ty.	inly along an left a thin co bad crews so	id north of ating of ic oner, wer	f a line from Carbondale to Harrisburg and ce on most surfaces. Secondary roads wer e mainly wet with some slick spots. Som			

Si	torr	n Dat	a and	l Un	usual	Weat	ther l	Phen	omena					
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yard	Ni h I ls) Killed	umber of Persons Injured	Estin Dan Property	nated nage Crops	January 2004 Character of Storm					
ILLINOIS South														
<u>ILZ075>078-080>087-</u>	Jeffer	rson - Wavi	ne - Edwa	rds - Wa	bash - Perry	/ - Frankl	in - Hami	lton - Wł	nite - Jackson - Williamson - Saline					
089>091	- Gall	atin - John	son - Pope	- Hardi	n									
	29	1500CST 2300CST			0	0			Winter Weather/Mix					
	One to	two inches (of snow fell	across mo	ost of southern	Illinois, ex	cept for the	southern t	tip from Metropolis to Cairo and Anna. A					
	thin la	yer of ice forr	ned on some	e surfaces	just prior to the	e snowfall.	Roads were	reportedly	very slick and hazardous.					
ILLINOIS, Southwes	<u>st</u>	-												
ILZ095>096	Adam	1S - Brown 2330CST			0	0			Ico Storm					
	04	1200CST			0	U								
	A narr	ow band of f	freezing rain	n hit parts	of West Cent	ral Illinois	. Broken tre	e limbs fe	ell on power lines causing power outages					
II 7005\006	across	the southeast	half of Ada	ms County	y into Brown C	county.								
	05	2200CST			0	0			Extreme Cold/Wind Chill					
	06	1000CST												
	Tempe Centra	ratures dropp I Illinois of 1	oing into the 5 to 20 below	single dig w zero	gits combined v	vith a 10 to	20 mph wir	nd produce	d wind chill readings across parts of West					
ILZ058>060-064>065-	Green	Greene - Macoupin - Montgomery - Bond - Fayette - Clinton - Marion - Washington - Randolph - Adams -												
069>070-074-079-	Brow	Brown - Pike - Calhoun - Jersey - Madison - St. Clair - Monroe												
095>102	25	0600CST			0	0			Winter Storm					
	20	2200CST			0	U			white Storm					
	rain ea mid-m accum across early T	arly Sunday orning with so ulated anothe the region wo fuesday.	morning. S ome location or 1 to 2 inch ere closed in	ome place ns in South les. Luckil nto mid-we	es received 1/ hwest Illinois r ly it was a Sund eek as another	4 to 1/.2 f eceiving 1 day, as tran fast movin	inch of free to 2 inches of sportation w g storm broo	ezing rain. of sleet. By as brought ught anothe	The freezing rain changed to sleet by y afternoon, the sleet changed to snow and t to a halt across the region. Many schools er inch or two of snow Monday night and					
INDIANA, Central														
INZ028>029-035	Warr	en - Tippec	canoe - Fou	ıntain	0	0			F1					
	01 02	1300EST			U	U			Flood					
	The De	ecember floor	ding ended i	n early Jar	nuary along the	upper port	ion of the W	abash Riv	er.					
INZ043>044-051-060	Verm	illion - Par	ke - Vigo -	Sullivar	1	0								
	01 17	0000ES1 0700EST			U	U			Flood					
	The December flooding continued into January 2004 along the middle and lower portion of the Wabash. 2 to 5 inches of rain fel across the basin from the 1st through the 5th creating a higher crest and also prolonged flooding into the middle of the month.													
	Locatio	on:	FS:	Crest:	Date of crea	st:								
	Monte:	zuma	14.0	23.3	January 6									
	Hutsor	iville	14.0	20.4 22.3	January 9									
	Riverto	on	15.0	20.2	January 10									
INZ064-069>071	Barth 02 13	olomew - N 2030EST 1628EST	Aartin - La	awrence	- Jackson 0	0			Flood					
	 2 to 5 inches of rain fell from the 1st through the 5th on top of already saturated ground caused moderate river flooding along East Fork White River. This was the worst flooding along the East Fork White since May 1996. There were numerous roads clo and many evacuations. 													
	Locatio	on:	FS in feet	t: Crest in	feet:	Date of Cre	est:							
	Colum	bus	9.0	13.8		January 6								
	Seymo	our	12.0	19.0 32.8		January 5								
	Bedfor	rd	20.0	29.0		January 8								
	Willia	ms	8.0	16.5		January 9								
	Shoals		20.0	27.9		January 10								

S	tori	n Dat	a and	l Uni	isual V	Veat	ther	Phen	ome	ena		
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Nur Pe Killed	nber of rsons Injured	Esti Da Property	imated mage Crops	Charact	er of Storm	Janu	ary 2004
INDIANA Central												
INZ039>041-047- 053>055-061>062- 067>068	Hamilton - Madison - Delaware - Marion - Owen - Morgan - Johnson - Greene - Monroe - Knox - Daviess											
0072000	03 18	2300EST			0	0			Flood			
	2 to 5 River Indian	inches of rain since May 20 a.	i fell along t 002. Extensi	the White I ve river flo	River Basin fro ooding closed	om the 1st numerous	through the local rive	ne 5th causin er roads and	ng the wo I several	orst flood al state roads	ong the lo across so	wer White uth centra
	Locati	on:	FS:	Crest:	Date of Crest	t:						
	Munci	e	9.0 10.0	10.9 13.6	January 5 January 6							
	Noble	sville	14.0	17.0	January 6							
	Nora		11.0	13.4	January 6							
	Raven Center	swood ton	6.0 12.0	7.9 16.0	January 6 January 5							Spencer
	Center	14.0	22.2	January 6	January 5						Elliston	openeer
	18.0	27.3	January 7						F 1 1	Newberry	15.0	13.0
	Januar	January 8 v 9	5					Petersburg	Edwardsp	16.0	15.0 25.1	23.5 Januarv
	11	J -						Hazleton		16.0	25.9	January
IN7067	12 V											
INZU07	Knox 04	0853EST			0	0			Flood			
	18	0925EST					~					
	2 to 5	inches of rain	fell on the 1	st through	the 5th causing	minor riv	er flooding	g along the l	ower Wa	bash.		
	Locati	on:	FS:	Crest:	Date of Crest	t:						
	Vincer	nnes	16.0	20.0	January 10							
	Mount	Carmel	17.5	21.2 28.1	January 10 January 13							
INZ021-028>031-	Carr	oll - Warrei	ı - Tippec	anoe - Cl	linton - How	ard - Fo	ountain -	Montgom	nery - B	oone - Tij	pton - Ha	amilton ·
035>049-051>057-	Madi	son - Delaw	vare - Rar	ndolph - `	Vermillion -	Parke -	Putnam	- Hendri	cks - M	arion - H	ancock -	Henry ·
060>065-067>072	Vigo	- Clay - Ow	en - Morg	an - John Montin	ison - Shelby	- Rush	- Sullivai	n - Greene	e - Moni	roe - Brov	vn - Bart	holomew
	- Dec 04 06	atur - Knox 1100EST 1100EST	- Daviess	- Marun	- Lawrence - 3	· Jackson 0	n - Jennin	igs	Flood			
	The gr 5th of of Inte creeks roadw River. filled	ounds were st January anoth erstate 70 (mar especially acr ays and being Meanwhile, a with 4-5 feet of central Indiana	ill rather sat aer 2-2.5 inc ny locations ross south ce swept into 1 a 16 year old of water. The a. M77IW, 1	urated at th hes of rain recorded n entral India higher wate l female wa ere were al M22IW, F1	e start of the N fell across more ew daily rainfa na. There were er. 2 were kille is killed as her so numerous su 6IW	lew Year is st locales ill records also 3 fat d in Jacks car crosse accessful i	from the D north of In for Januar talities all a con county ed high flow rescues of j	ecember hea terstate 70 a y 4). This ca associated w near the Sco wing water a people trapp	avy rain e and as mu aused wic with people ott county and hydro oed in car	pisodes wh ich as 5 ind lespread flo e trying to c v line and al oplaned ups s in high w	en from the bes of rain oding of s lrive throu ong the M ide down i ater especi	e 1st to the a fell south treams and gh flooded uscatatuck nto a ditch ally across
INZ028>029-035	Warı 04 12	en - Tippec 1608EST 0557EST	anoe - Fou	intain	0	0			Flood			
	Aroun Wabas	d 2 inches of sh.	rain fell fr	om the 1st	through the 5	th on alre	eady satura	ated ground	causing	minor flood	ling along	the upper
	Locati	on:	FS:	Crest:	Crest Date:							
	Lafaye	ette	11.0	17.9	January 6							
INDIANA Northoos	Covin t	gton	16.0	22.0	January 6							
INZ003>004	<u>"</u> La P4	orte . St. Too	enh									
<u></u>	19 20	1505EST 1100EST	чЪп		0	0	0		Heavy	Snow		
	Heerry	lalva affaat	orr. o o our1	lated ano	d 10 in alaga	ooo I or	to commt		has in th	a aitre of T -	nonto on 1 1	17 in alter

Heavy lake effect snow accumulated around 12 inches across Laporte county with 13.5 inches in the city of Laporte and 11.7 inches in Rolling Prairie. Snow accumulated around 8 inches in parts of St Joseph county with 8.5 inches reported in North Liberty.
		Time Local/	Path Length	Path Width	Nun Per	ber of	Estin Dam	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
INDIANA, Northeast	t								
INZ017>018-020- 022>027-032>034	Whit	ley - Allen - V	White - Ca	ss - Miami	- Wabash	- Hunti	ngton - W	ells - Ada	ams - Grant - Blackford - Jay
	26	0100EST 0500EST			0	0	0		Winter Storm
INZ004>007	Snow driftin St. Jo	accumulated 2 g snow. Snow o seph - Elkha	to 5 inches a drifts were as	across the are s high as 4 fee nge - Steub	ea with with et across son	n east to n me county	ortheast win roads.	nds of 20	to 30 mph causing extensive blowing and
	27 28	2100EST 0400EST		-g- ~	0	0	0		Heavy Snow
	A con storm	nbination of sno caused heavy s	ow from an a now across th	area of low p he area with s	ressure mor general accu	ving acros umulations	ss Ohio and s of 8 to 10	lake enha inches and	ncement from northwest flow behind this over 12 inches in some locations.
INDIANA, Northwes	t				-				
INZ001	Lake 04 05	0700CST 0700CST			0	0			Heavy Snow
IN7001\002 010\011	Heavy Highla	snow fell over and (Lake Cour	r portions of nty).	northwestern	n Indiana.	Some sno	wfall amour	nts include	e; 6.8 inches in Whiting and 5.5 inches in
019	- Lake	- Porter - Ne	ewton - Jas	per - benu	011				
	29 30	1800CST 2300CST			0	0			Extreme Cold/Wind Chill
	A colo from -	d arctic airmass 20F to -34F.	with temper	atures as low	as -5F to -	10F and v	winds of 10	to 15mph	produced widespread wind chill readings
INDIANA , South Cer	ntral	201 10 0 11							
INZ079	Jeffe	rson							
	04 05	1300EST 1630EST			0	0			Flood
IN/7090	The M floodin	Iuscatatuck Riv ng occurs at thi	ver at Deput	y crested at 2 ity roads are 1	28.9 feet ar under water	ound 3 A in northe	M EST on astern Jeffer	January 5. son Count	. Flood stage at Deputy is 20 feet. Minor ty, Indiana.
1112009	05 13	4 1300EST 1200EST			0	0			Flood
	The O minor the gag	Phio River at Te flooding occur ge.	ell City cresto s. Indiana 66	ed at 42.6 fee 5 is flooded b	et around 7 between Ros	AM EST me and Do	on January erby. The ri	10. Flood ver begins	stage at Tell City is 38 feet. At this level, to overflow both banks above and below
INZ089	Perry 07 12	0100EST 0730EST			0	0			Flood
	The C	Ohio River at C	Cannelton cross stage. Floo	ested around	43.6 feet a	at noon E s begins n	ST on Janu lear Cloverr	ary 9. Flo	ood stage at Cannelton is 42 feet. Minor
INZ083	Dubo 25	ois 1100EST	6	6 6	0	0	1		Ice Storm
	Ice ac	1830EST cumulations of	around an	inch prompte	d the coun	ty to decl	are a state	of emerge	ency. This closed all roads in the county,
	except	t for emergency	vehicles or	individuals w	ith persona	l emergen	cies.	-	
INDIANA, Southeast INZ050-050-058- 058>059-059-066-066- 073>074-074	Wayı	ne - Fayette -	Union - Fi	ranklin - Ri	ipley - De	arborn			
	04	1245EST 2330EST			0	0			Flood
	A nea Many and str	rly stationary f locations recei reams rose out	ront produce ved two to f of their bank	ed widespread our inches of and many ho	d heavy rai Frain, causi mes sustair	n across r ng widesj ied basem	nuch of eas pread floodi ent flooding	t central a ng of roac s.	and southeast Indiana throughout the day. Is and low-lying areas. Numerous creeks
INZ050-058>059-066- 073>075-080	Wayı	ne - Fayette -	Union - F	ranklin - Ri	ipley - De	arborn -	Ohio - Sv	vitzerlan	d
	25	1530EST 2100EST			0	0			Winter Storm

		Time	Path	Path	Num	per of	Estimated		Januarv 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Per: Killed	sons Injured	Damage Property C	crops Character of St	orm
INDIANA, Southeast	ţ								
INZ066	Low j snowf	pressure oversp fall totals averag klin	read the Ohi ged 4 to 6 inc	o Valley and hes.	l produced s	significan	t icing along a	nd south of the Ohio	River. North of the river
1,12000	29	2115EST			0	0		Winter Stor	n
	Low p	pressure tracked	l over the Ob	io Valley an	d created w	despread	snowfall of 1	1/2 to 3 inches. One re	port from Brookville was
INDIANA, Southwes	<u>t</u>	ciles.							
INZ081>082	Gibs 04 17	on - Pike 0900CST 2200CST			0	0		Flood	
INZ085>088	Mode Peters Peters floode Pose	rate flooding o sburg and Hazel sburg and the 12 ed. Extensive bo v - Vanderbu	ccurred alon ton, where th 2th at Hazelto ottomland flo roh - War i	g the White the flood stage on. River cab oding affecte tick - Spene	River, whic e is 16 feet, ins were eva d agricultura	h was ab the river of cuated, a al and rur	ove flood stage crested between and livestock we al residential are	e for most of the first 25 and 26 feet. The c ere moved. A number of eas. State Road 257 wa	half of January. At both rest dates were the 11th a of rural county roads were as completely flooded.
	05 17	0900CST 1700CST	-8	~ F ····	0	1		Flood	
INZ081-085	days of of les homes drivin broke the co limbs of 90 17th. 42-foo Evans gravel Gibs	or January. The ser travelled cc s. One man was ag through the fl into, then decic old water and w before he was f degrees. The riv At Newburgh, v ot flood stage. N sville. Basemen I secondary roac on - Posey	river floodin sunty roads v s swept into looded area v led to try cro 'as swept aw foound. The m ver first rose where flood Mount Verno ts along the ds were close	g was moder were closed. the floodwate vhen their pic ssing the flood ay by the cur an was airliff above flood stage is 38 fe n crested at 4 riverfront be d, mostly acr	ate, consisti Some famil ers in southe ckup truck s odwaters to a rent. He wa ted to a loca stage at New et, the river 42.8 feet on gan to fill, oss from He	ng of ext ies in flo rrn Vande talled in v Iry land s able to l hospital /burgh or crested a the 12th, and Pige nderson,	ensive bottomla sod-prone areas erburgh County waist-deep wate Although one of grab onto a tre where he was t in the 5th and lass tt 45.0 feet on th nearly 8 feet or on Creek was f KY where there	In a Hooding of fields a had to find alternate as he tried to walk to rr. They spent the nigh f the men turned back, e, and he spent three l rreated for hypothermi t fell below flood stag he 10th. Evansville cre ver flood stage. The ri flooded by backwater. e is a bend in the river.	Ind woodlands. A number routes to and from their ory land. Two men were t in a river camp that they the second continued into nours wedged between its a with a body temperature e at Mount Vernon on the seted just inches above its ver was 3300 feet wide a Near Evansville, severa
	05 19	0900CST 1800CST			0	0		Flood	
	The V the riv along miles Harm	Vabash River w ver crested at 2 the river were wide at Intersta ony, Indiana, th	as above floo 8.1 feet late impassable. te 64. Some e river creste	od stage durin on the 12th. Cattle and fa mobile home d at 19.56 fee	ng most of th This resulte arm equipme s had to be r et early on th	ne first ha d in exte ent were noved, ar ne 14th. T	If of the month. nsive lowland f moved to highe d residents of E This is almost 5 t	At Mount Carmel, wh looding in western Gi er ground. The Wabas East Mount Carmel beg feet above flood stage.	here flood stage is 19 feet bson County. Most road h River was more than 2 gan to be affected. At New Harmonie State Park was
INZ081>082-085>088	Gibse 25	on - Pike - Po 0500CST 1700CST	osey - Vand	erburgh - \	Warrick - 0	Spencer 0	•	Ice Storm	
	Betwee accide Emerg pulled occurr bridge (indire spread power were broug	een one quarter ents were repor gency was decla d off the roads in red on Interstatt e. A Mexican r ect fatalities). S ding ice melt or r outages were r without power. ht down a trans	and one hat red across s rred in Spencer Cc e 64 on the V man and wor everal others h his drivewa reported thro About 12,00 former line.	If inch of icc outhwest Inc eer and Pike (ounty after the Vabash River man in the v in the van w y (indirect fa ughout south 00 customers Another large	e coated all diana, inclu Counties, w ree salt truck bridge at th an died sho vere not inju atality). The west Indiana were withous e power outa	surfaces ding jack nich bann as overtur e Illinois rtly after red. In C coroner s a s brisk ut power age was i	Roads were d knifed tractor led all travel ex- ned on icy road state line. A va the wreck whe handler, a man suspected weath winds brought on the east sid n Boonville, wh	langerous and locally trailers. Some roads cept for emergencies. Is and a fourth went ini- an heading eastbound en a tractor-trailer rig was found dead in his her may have contribu- down ice-laden tree li le of Evansville for al- tere about 2,000 utility	impassable. Hundreds o were closed. A State o State highway crews were to a ditch. A fatal acciden spun out of control on the struck them and the van vehicle after he had been ted to his death. Scattered mbs. Thousands of home boout 90 minutes when ic o customers were affected

St	torn	n Data	and	Unus	ual W	eat	her P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number Persor Killed I	r of 1s njured	Estima Dama Property	ited ige Crops	Character of Storm	January 2004
INDIANA, Southwest	t									
INZ081>082-085>088	One to ice on r Gibso 29	two inches of s most surfaces. S n - Pike - Pos 1500CST 2300CST	now fell acr Secondary ro Sey - Vand	oss southwes oads were rep erburgh - V	t Indiana. The ortedly slick a Varrick - S J 0	snow b nd hazan pencer 0	egan as a br rdous. Main	ief period roads we	of freezing rain that le re reported to be wet w Winter Weather/M	off a thin coating of /ith slick spots.
	One to	two inches of s	now fell acr	oss southwes	Indiana. No	major tra	avel problen	ns were re	ported.	
<u>IOWA, Central</u> IAZ059>062-070>075- 081>086-092>097	Dallas Clark 04	s - Polk - Jasj e - Lucas - M 0500CST 1700CST	per - Powe lonroe - W	eshiek - Ca apello - Ta	ss - Adair - ylor - Ringg 0	Madis gold - D 0	on - Warr Decatur - V 110K	en - Ma Vayne -	rion - Mahaska - A Appanoose - Davis Heavy Snow	Adams - Union -
IAZ004>006-015- 023>024-033>034- 044>045-047>048- 0570 0590 070	northw southw evening the 4th to low provide over Io 850 mb howeve the 10 heavy s snow. than ar snow v snows Emme	est Canada and rest U.S. during g of the 3rd. Th . A strong them 40s just north ed a rich source wa during the p o temperatures i er it did not pre to 20 MPH rat snow accumulat Amounts taper n inch was com was recorded in was found betw et - Kossuth e - Story - Au	nosed south the day on his low push mal contrast of the front, e of moistur- predawn hou in the -5 to - sent a serior age, resultin tions took pl ed off rapid mon. The h Decatur Co even these tw - Winneba dubon - D	east into the the 4th. Low ed east-north was in place with 70s to e for the syst urs of the 4th -10 degree C. us travel prot g in consider ace nearly al- ly to the nort neaviest snow bounty at Leor roo locations. ago - Palo A allas - Cass	central U.S. <i>A</i> y pressure formeast across so across the stathe south of file em. Overrun and continue in most of the blem. Fortuna table drifting ong Interstate h and by the to fall occurred a swell as in	At the sa med ove uthern M ationary it along ning too ed throug te snow ately, wi of the s 80. Sou time you in south to Wapell	me time, a v r Colorado dissouri on a front that th with dew p ok place over gh the day. area. The s nds were no now along uth of the In a were 15 to a central int lo County a - Humbol	vigorous u into the T the 4th an ie low mo ooints in the r a large The snow caus of strong c with some terstate, n o 20 miles o the east t Ottumw dt - Sac	pper air system lifted i exas panhandle during d to northern Kentucky ved along. Temperatu he low to mid 60s in t part of the central U.S. v was of the light and ed quite a few acciden during the event. They e blowing snow. A s nost areas received fro north of the heavy sn central parts of the st a. A 50 mile wide ba	northeast out of the g the afternoon and y by the evening of res were in the 30s he warm air. This S. Snow broke out fluffy variety with nts across the state, y were generally in harp cut-off of the m 6 to 10 inches of ow area little more ate. Ten inches of and of 8 to 10 inch
057-059-070	26	0700CST 2100CST			0	0			Heavy Snow	
<u>IOWA, East Central</u> IAZ041-053-063>064- 067>068-076>078-087	A long of Arct with a 2 25th. 7 freezin The fre through north t approad at Atla These upward the cen Dallas northw souther -40 deg and Soc Delaw	lived snow ever ic air was unde layer of above fi The accumulation grain was repo- bezing rain char in the day on the o south deform ched from the s ntic. In Crawfe were the heavier should be the the should be the the the should be the the should be the should be the should be should be the should b	ent took plac rway as a st freezing air l on rate was rted over the aged over the e 25th into f aution zone outhwest. So ord County est totals in reported in C Heavy snow as County, i Iowa was i ate. This ca the northwe Iowa - Jol	the in Iowa du rong cold fro located over s slow, but cor e southwest p o snow within the evening P became estab forowfall of a at Denison, 1 the DMX C Glenwood. L v fell at the t n ortheast into n the 4 to 7 used conside st two thirds of hmson - Mu	ring the day of nt sagged sour oouth central a titinuous throu art of the state n a couple of ours. The he dished. The foot or more 2 inches of s WA. Reports ate in the stor riple-point as 0 the Ames a inch range. rable drifting of the state.	n the 25 th across ind south gh the 2 e. Roads hours. eaviest s upper ai was reconow was s indicat m, a mes it lifted rea of S Followin snow an	ith into the or s the area or newest Iowa. 5th into the s became ic. From that now occurrent in flow was orded in a fe s recorded w ed somewh soscale featu I northeast. tory County ing the snow d patchy block	day on the n the 24th Snow be 26th. Du y quite qu point on, ed over th from the w locatio vith 10 in at heavier irre develo A narrow y. Total so , gusty n owing sno	e 26th. The seasons fi . Initially the airmass gan in earnest shortly uring the initial stages ickly, resulting in 4 tra snow spread northeau the west third of Iowa 4 southwest as an uppen ns. Nearly 12 inches 5 ches reported in Sac C amounts occurred ju upped over southwest Io w band of 8 inch snow snowfall over much of orthwest winds of 20 ww. Wind chill indices	rst significant push was quite shallow, after sunrise on the of the snow event, affic related deaths. st across the CWA where a significant r level closed low fell in Cass County County at Sac City. st to the west with wa and moved into w fell from around of the remainder of to 35 MPH swept s fell into the -25 to
vv/~vvo-v/v/v/v/0=v0/	04	0700CST 2300CST			0	0	50K		Heavy Snow	

The first major winter storm of the season began during the evening hours of 3 January 2004 and ended by 2300 CST 4 January 2004. A majority of the heavy snow fell across Eastern Iowa and north of U.S. 34, but mesoscale banding produced heavy snow in some Illinois counties along Interstate 80. Total snow amounts for this storm were generally 6 to 8 inches with the resultant mesoscale banding producing amounts of 8 to 10 inches across the Iowa counties of Washington, Muscatine, Keokuk, Louisa, and Jones. Mesoscale banding of the snow during the day on 4 January 2004 resulted in some areas receiving heavy snow while others

Two Part of the provided based Darrow Dampe January 2004 Leasting Damped Standard Wilds Wilds Proventy Cope Character of Storm IOWA. Lest Central and Southeast did not. A perfect sample was in Delaware County Jowa. A mesoneade heavy some hand deposited 7 incless of some over the southeast count of the county while the remainder of the county saw amounts in the 4 to 6 incle mags. Standard A mesoneade heavy some hand deposited 7 incless of some over the southeast count of the county while the remainder of the county saw amounts in the 4 to 6 incle mags. IAZ0405-042-051-051 Image: Count of the county while the remainder of the county saw amounts in the 4 to 6 incle mags. A misure of freezing min and letst developed during the evening hours of 16 January 2004 as extra temperatures include and barrow in the counts of mage. Nameer Counts of the counts while the evening hours of 16 January 2004 as extra temperatures include and barrow include include the counts while counts sheet of freezing heavier a communition along the U.S. 20 corridor. The areas affected were namely along and north of U.S. 30 in Fasten lows and Northwest Hinds. Nameer Counts while counts sheet of the counts while the event of the induces and interpretation of the induces and Northwest Hinds. LZZ042-051-053-060 Dbinourge Fasten I.January 2004 Dbinourge Fasten I.January 2004 Nameer Counts while the co	Si	torr	n Data	a and	Unus	ual W	leat	her F	Phen	omena	
IOWA. Fact Central and Southeast dd no. A perfect example was in Delaware County low. A mesoscale heavy now band deposited 7 inches of snow over the southeast corner of the county while the remainder of the county saw amounts in the 4 to 6 inch nage. IAZ040-042-051-064. Buchanan - Delaware - Dubugue - Benion - Linn - Jones - Jackson - Iowa - Johnson 063-064. 17 9500CST 0 0 455. Amittem of freezing, nin and sheet developed during the evening hours of 16 January 2004 as surface temperatures clinebal above freezing. The accomptation of one or two tents on in the wate reported with the berevise accumulation adopted by 10 Java 2007. The mere affected were mainly along and north US. 30 in Eastern lowa. The lowar reported with the berevise accumulation adopted by 10 how and Johnson counties, while county sheet/field field indicated that accident calls were double the usal numbers for the time of day. In Jackson County lows, an ambulance went off the road as it was responding to a call. IAZ042-051-053-060 Dubugue - Fentton - Linn - Jones - Clinton 30 on 0000CST 0 Extreme Cold/Wind Chill IAZ042-051-053-061 Dubugue - Martino - Line - Jones - Clinton 30 on 0000CST 0 Winter Storm 21 on 0000CST IAZ042-051-053-061 Dubugue - Martino - Line - Jones - Clinton 30 on 0000CST 0 Winter Storm 21 on 0000CST IAZ042-051-053-060 Dubugue - Martino - Line - Jones - Clarton 24 on 0000CST 0 Winter Storm 25 uoos (Michell - Howard - Clarton 26 uoos 2000CST <	Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Perse Killed	er of ons Injured	Estim Dam Property	ated age Crops	Character of Storm	January 2004
id. or. A perfect example was in Delaware Comy Dow. A nessexale heavy snow hand deposited 7 incluss of snow over the southeast corner of the coursely while the remained of the coursy as anomats in the 4 to 6 inch range. IAZ040:042-051-054 Buchanan - Delaware - Dubugue - Benton - Linn - Jones - Jackson - Iowa - Johnson 0063-064 16 1900:CST 0 0 45K Winter Wenther/Mix 17 2004 as surface temportarius clinebal door for terring. Ics accumulations of one or two tenths of an inch were reported with the heaviest accumulation along the U.S. 20 corridor. The areas affected were mainly along and north 012. 30 in Eastern lowa and Northwest Illinois. Numerous turfile accident course, while coursy hearing the road as 11 was reporting to a cult report with the road as 11 was reporting to a cult report with the road as 11 was reporting to a cult report with with a 10 to 12 knots. (D to 15 mph) produced dangerous wind chills or 000 course. IAZ042-051-053-060 Distore of the origo as 11 was reporting to a cult report with with of 10 to 12 knots. (D to 15 mph) produced dangerous wind chills or 0 to 15 below zero range. IAZ043-051-053-060 Distore of the origo the road as 11 was reporting to a cult report with with origo to 10 to 12 knots. (D to 15 mph) produced dangerous wind cult so thin bin the 25 to 30 below zero range. IAZ043-063-003-021 Winter Storm Distore of the origo the road as 11 was reporting wind speeds just prior to dawn allowed wind chills or clinabas. Specific reports included 6 3 incles at Edgewood (Clapton County). IOWA. Northweat IAZ0003-003-003 <td< td=""><td>IOWA. East Central</td><td>and So</td><td>outheast</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	IOWA. East Central	and So	outheast								
ND.5001 16 1900CST 0 45K Winter WandherMix 2004 as surface temperatures (Imperatures (IAZ040>042-051>054-	did nor souther Bucha	t. A perfect exact ast corner of the anan - Delaw	xample was e county whi vare - Dubu	in Delaware (le the remain ique - Bent e	County Iowa der of the co on - Linn -	a. A mes unty saw Jones -	soscale heav amounts in Jackson	vy snow b the 4 to 6 - Iowa	and deposited 7 incl inch range. Johnson	nes of snow over the
A mixture of receing rain and set developed during the evening hours of 16 Jamurg 2004 and here reported with the heaviest accumulations along the US, 20 corridor. The areas affected vere mainly along and north Of US. 30 in Essent Jova and Northwest Hillion S. Numerons traffic accident secure during the involved minor (indirect) injuries. The Iowa State Parton and Northwest Hillion S. Numerons traffic accident Secure during the involved minor (indirect) injuries. The Iowa State Parton along the US, 20 corridor. The areas affected vere mainly along and north Of US. 30 in Essent Jova and Anter State Parton and Northwest Hillion S. Numerons traffic accident Secure during the involved minor (indirect) injuries. The Iowa State Parton Pa	003>004	16 17	1900CST 0500CST			0	0	45K		Winter Weather/	Mix
ICOVE-V012-005-0000 Durbulgue - Dention - Limit - Jointe - Clayton Bitter cold emperatures of 10 to 15 below zero combined with winds of 10 to 12 knots (10 to 15 mph) produced dangerous wind chills of 30 to 35 below zero across parts of Eastern Lova. The arrival of clouds and lowering wind speeds just prior to daw adlowed wind chills to 10 to 13 below zero across parts of Eastern Lova. The arrival of clouds and lowering wind speeds just prior to daw adlowed wind chills to 10 to 13 below zero across parts of northeast Lova. Specific reports included 6.3 inches at Edgewood (Clayton Comp), Accumulations of 6 to 7 inches were common near the Minnesota-Jova border from near Osage (Mitchell County) toward Lozon), Accumulations of 6 to 7 inches were common near the Minnesota-Jova border from near Osage (Mitchell County) toward Lozon). IOWA, Northwest Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida 020>022-031>032 IOWA, Southwest Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida 020>022-031>032 IOWA, Southwest Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida 020>020-021>04 IOWA, Southwest Louor - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida 020>020-021>04 IOWA, Southwest HaZ000+070>080 0 IAZ000+070>080-090 Pottawattamie - Mills - Montgomery - Fremont - Page 090-091 0 SouvAll of 6 to 13 inches was accompanied by winds strong enough to reduce visibilities to aquarter mile or less a	14 7042 051-053 066	A mixt 2004 a heavie Northy calls w respon	ture of freezing is surface temp st accumulation west Illinois. N vehicles in the vere double the ding to a call.	g rain and sle peratures clin n along the U lumerous tra ditches along e usual num	et developed abed above fi J.S. 20 corrid ffic accidents g Interstate 80 bers for the t	during the e reezing. Ice or. The area occurred th in Iowa an ime of day.	vening h accumul as affecte at invol d Johnso In Jack	ours of 16 J lations of o ed were mai ved minor (on counties, cson County	anuary 20 ne or two nly along (indirect) while cou y Iowa, ar	004 and ended before tenths of an inch we and north of U.S. 30 injuries. The Iowa inty sheriff offices in a ambulance went of	dawn on 17 January ere reported with the in Eastern Iowa and State Patrol reported dicated that accident if the road as it was
Inter cold temperatures of 10 to 15 below zero across parts of Eastern Iowa. The arrival of clouds and lowering wind speeds just prior to dawn allowed wind chills to climb into the 25 to 30 below zero range. IVWA. Northeast Mitchell - Howard - Clayton 20 2000CST 0 Winter Storm 12/2001S-003-012-011 Lyou - Osceola - Dickinson - Sioux - O'Brien - Clay - Phynouth - Cherokee - Buena Vista - Woodbury - Ida 12/2001S-003-012-012 Lyou - Osceola - Dickinson - Sioux - O'Brien - Clay - Phynouth - Cherokee - Buena Vista - Woodbury - Ida 12/2001S-003-012-012 Lyou - Osceola - Dickinson - Sioux - O'Brien - Clay - Phynouth - Cherokee - Buena Vista - Woodbury - Ida 12/2001S-0030-012-012 Lyou - Osceola - Dickinson - Sioux - O'Brien - Clay - Phynouth - Cherokee - Buena Vista - Woodbury - Ida 12/2001S-0000-01 25 1000CST 0 Winter Storm 12/2001S-0000-01 25 1000CST 0 Winter Storm 13/2001S-010 0 Vinter Storm 0<	IAZ042-051>055-000	Dubu 30	que - Бентол 0000CST 0600CST	I - L/IIII - J(ones - Chint	0	0			Extreme Cold/Wi	ind Chill
IOWA. Northeast Not the last in the interval of last		Bitter of chills of allowe	cold temperatu of 30 to 35 be d wind chills to	res of 10 to low zero acr climb into t	15 below zero oss parts of 1 he 25 to 30 be	o combined Eastern Iowa elow zero rat	with win a. The a nge.	ds of 10 to urrival of cl	12 knots (ouds and	(10 to 15 mph) produ lowering wind speed	aced dangerous wind ls just prior to dawn
IAZ008>009-030 Mitchell - Howard - Clayton 27 0600CST 0 Winter Storm 27 A winter storm produced heavy snow across parts of northeast lowa. Specific reports included 6.3 inches at Edgewood (Clayton County). Accumulations of 6 to 7 inches were common near the Minnesota-lowa border from near Osage (Mitchell County) toward Line Springs (Howard County). IOWA, Northwest IAZ001>003-012>014 Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida 25 1000CST 26 0 0 Winter Storm 26 25 1000CST 200>022-031-032 0 0 Winter Storm 26 2300CST 0 0 Winter Storm 26 26 2300CST 200>021-031 0 0 Winter Storm 26 2300CST 0 0 Winter Storm 26 100WA, Southwest IAZ009-073-080- 090>091 Fottawattamic - Mills - Montgomery - Fremont - Page 0 0 Winter Storm 04 1400CST 14Z043-055-056-060- 079>080-090>091 03 2300CST 2300CST 25 0 0 Winter Storm 04 30 300CST 10 10 10 10 10 14Z043-055-056-060- 079>080-090>091 03 2300CST 04 0 0 Winter Storm 04 1400CST 10 10 10 10 10	IOWA, Northeast										
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020>022-031>032 25 1000CST 0 Winter Storm 26 2300CST 0 Winter Storm Snowfall of 6 to 13 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The heaviest snow accumulations occurred in the Sioux City area. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Numerous schools were closed and many school related activities were cancelled. 10WA, Southwest Pottawattamie - Mills - Montgomery - Fremont - Page 03 2300CST 0 Winter Storm 04 1400CST 0 Winter Storm 04 1400CST 0 Winter Storm 14Z043-055-056-069 Ob Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals include 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska. 14Z043-055-056-069 05 1000CST 0 Extreme Cold/Wind Chill 05 1000CST 0 0 Extreme Cold/Wind Chill 14Z043-055-056-069 05 1000CST 0 0 Extreme Cold/Wind Chill 05 1000CST 0 0	<u>IOWA, Northwest</u> IAZ001>003-012>014-	A wint County Lime S	ter storm produ y). Accumulatio Springs (Howar - Osceola - I	uced heavy s ons of 6 to 7 rd County). Dickinson -	now across p inches were c Sioux - O'H	arts of north common nea Brien - Cla	east Iow r the Mir y - Plyn	a. Specific mesota-Iow nouth - Cl	reports in a border fr herokee -	acluded 6.3 inches at rom near Osage (Mite - Buena Vista - W	Edgewood (Clayton chell County) toward oodbury - Ida
Snowfall of 6 to 13 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The heaviest snow accumulations occurred in the Sioux City area. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Numerous schools were closed and many school related activities were cancelled. IOWA, Southwest IAZ0069-079-080-090>091 Pottawattamie - Mills - Montgomery - Fremont - Page 03 2300CST 0 Vinter Storm 04 1400CST 0 Vinter Storm 04 1400CST Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd, the steadier, more widespread and accumulating snow moved into the region during the late evening hours on the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending. IAZ043-055>056-0669 Nonona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 05 1900CST 0 Extreme Cold/Wind Chill 06 1000CST 0 Extreme Cold/Wind Chill 05 1900CST 0 0 Extreme Cold/Wind Chill 06 1000CST 0 0 Extreme Cold/Wind Chill 05 1900CST 0	020>022-031>032	25 26	1000CST 2300CST			0	0			Winter Storm	
IAZ069-079>080- 090>091 Pottawattamie - Mills - Montgomery - Fremont - Page 03 2300CST 0 Winter Storm 04 1400CST 0 Winter Storm Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd, the steadier, more widespread and accumulating snow moved into the region during the late evening hours on the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending. IAZ043-055>056-069- 079>080-090>091 Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska. IAZ043-055>056-069- 079>080-090>091 Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 05 1900CST 0 Extreme Cold/Wind Chill 06 1000CST 0 Extreme Cold/Wind Chill 05 1900CST 0 0 Extreme Cold/Wind Chill 04 100 below zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th. <tr< td=""><td>IOWA, Southwest</td><td>Snowf blowin contrib fell. Nu</td><td>all of 6 to 13 ag snow. The h puted to makin umerous schoo</td><td>inches was a neaviest snow g travel very ls were close</td><td>accompanied v accumulatio difficult. In d and many so</td><td>by winds st ons occurred addition, da chool related</td><td>rong eno l in the s ngerous l activitie</td><td>ough to redu Sioux City wind chills as were canc</td><td>area. The developed elled.</td><td>ities to a quarter mil winds also caused o d late in the storm as</td><td>e or less at times in drifting snow, which a actual temperatures</td></tr<>	IOWA, Southwest	Snowf blowin contrib fell. Nu	all of 6 to 13 ag snow. The h puted to makin umerous schoo	inches was a neaviest snow g travel very ls were close	accompanied v accumulatio difficult. In d and many so	by winds st ons occurred addition, da chool related	rong eno l in the s ngerous l activitie	ough to redu Sioux City wind chills as were canc	area. The developed elled.	ities to a quarter mil winds also caused o d late in the storm as	e or less at times in drifting snow, which a actual temperatures
03 2300CST 04 0 0 Winter Storm Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending. IAZ2043-055>056-069- 079>080-090>091 Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska. Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 05 1900CST 0 Extreme Cold/Wind Chill 000 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th. HAZ043-055>056-069- 079>080-090>091 25 0 0 Winter Storm	IAZ069-079>080- 090>091	Potta	wattamie - M	fills - Mon	tgomery - F	remont - I	Page				
Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd. the steadier, more widespread and accumulating snow moved into the region during the late evening hours on the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending. IAZ043-055>056-069- 079>080-090>091 Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska. Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 05 1900CST 0 Extreme Cold/Wind Chill 06 1000CST Bitterly cold temperatures followed a winter storm that struck parts of southeast Nebraska and southwest Iowa a few days prior. Temperatures fell to zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th. IAZ043-055>056-069- 079>080-090>091 25 0 0 Winter Storm		03 04	2300CST 1400CST			0	0			Winter Storm	
IAZ043-055>056-069- 079>080-090>091 Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska. IAZ043-055>056-069- 079>080-090>091 Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 0 0 Extreme Cold/Wind Chill 0 0 Extreme Cold/Wind Chill 0 0 Description 0 0 Extreme Cold/Wind Chill 0 0 Description 0 0 Extreme Cold/Wind Chill 0 0 Description 0 0 Description 0 0 Description 0 0 Extreme Cold/Wind Chill 0 0 Description 0 0 Description 0 0 Extreme Cold/Wind Chill 0 0 Description 0 0 Description 0 0 Description 0 0 Winter Storm		Althou the ste continu ending	igh periods of 1 adier, more wi ued into the m	moderate sno despread and id afternoon	w fell across l accumulatin hours on the	far southeas g snow mov 4th, shrinki	t Nebrasl ed into t ng to a b	ka and extre he region d band along 1	eme southv uring the I Interstate-3	west Iowa during the late evening hours of 80 from Lincoln to C	afternoon of the 3rd, n the 3rd. The snow Omaha before finally
05 1900CST 0 0 Extreme Cold/Wind Chill 06 1000CST 0 Extreme Cold/Wind Chill Bitterly cold temperatures followed a winter storm that struck parts of southeast Nebraska and southwest Iowa a few days prior. Temperatures fell to zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th. IAZ043-055>056-069- 079>080-090>091 25 0500CST 0 Winter Storm	IAZ043-055>056-069- 079>080-090>091	Snowf inches Mono	all of between in Oakland and ona - Harriso	5 and 6 inc d Glenwood I on - Shelby	hes fell acros lowa and 7 in - Pottawatt	s the entire ches in La P amie - Mil	area, wit latte, Gre ls - Mo r	th some am etna and the ntgomery	ounts a lit NWS in V - Fremo	ttle higher. The hig ⁷ alley, all in Nebrask nt - Page	her totals included 8 a.
Bitterly cold temperatures followed a winter storm that struck parts of southeast Nebraska and southwest Iowa a few days prior. Temperatures fell to zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th. IAZ043-055>056-069- 079>080-090>091 Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page 25 0500CST 0 Winter Storm		05 06	1900CST 1000CST			0	0			Extreme Cold/Wi	ind Chill
079>080-090>091 25 0500CST 0 0 0 Winter Storm	14 7043 055-056 060	Bitterly Tempe the reg of 20 b	y cold tempera eratures fell to z gion during the pelow to 25 below	tures follow zero or a little early mornir ow were com	ed a winter st e colder by 70 ng hours on th mon through	torm that str 0 pm on the ne 6th. Wher out the regio	uck parts 5th and 1 combine n from as	s of southea bottomed ou ed with wes round 700 p	ist Nebras it between sterly wind m on the 5	ka and southwest Io 5 below and 10 belo 15 around 10 to 15 m 5th through 1000 am b 2000 am	wa a few days prior. w zero over much of ph, wind chill values on the 6th.
	079>080-090>091	25	0500CST	- Sherby	- 1 onawall	anne - win 0	0	urgoillery	- 110110	Winter Storm	

		Time	Path	Path	Numb	er of	Estim	nated		January 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Perso Killed	ons Injured	Dam Property	age Crops	Character of Storm	Junuary 2001
IOWA, Southwest	Two d and so southw Nebras coverin Nebras	ifferent low pres uthwest Iowa, d yest U.S. brough ska and southwe ng much of the ska and Pottawat	ssure systen ropping as at moisture st Iowa earl region. A ttamie count	ns moving ac much as 15 i from the sou ly on Sunday few heavy s ty Iowa Sund	ross the plain inches of sno thern plains the 25th. Th now bands s ay afternoon	ns broug w by the into the ne icing et up fre	ht a prolong e time the sur- region resul- changed to pm southeas	ged winter torm ender lting in fre snow and st Nebrask	storm event to much o d. The first system tha eezing rain and sleet ov quickly spread northea ta northeast into weste	of eastern Nebraska t moved out of the ver parts of eastern st Sunday morning rn Douglas county
	The second combined much signifi and re range a Tuesda	econd low press nation of Arctic of Sunday nigh cant blowing an duced visibilitie as actual tempera ay due to the sno	ure system air and left t into Mon- d drifting si s. As temp atures fell b ow on the gr	moved out o over moistur day the 26th now Monday peratures con elow zero. T ound and the	f the norther e from the pr i. The cold afternoon in tinued plung 'he storm cau extremely co	n Rockie evious s air was to Mond ing Mon sed the c old wind	es Sunday r ystem result ushered in lay night. T day night, v cancellation chills that f	hight bring ed in heav on north The strong wind chills of most so followed.	ing Arctic air from Ca y snowfall rates across winds that gusted ove winds and fluffy snow s fell into the 20 below chools Monday and man	anada with it. The most of the region er 30 mph causing caused large drifts v to 30 below zero ny remained closed
	Higher Omaha southw receive	r snowfall totals a Eppley, the N vest Lincoln, Hid ed between 6 and	in eastern WS in Vall ckman, Ray 110 inches.	Nebraska in ey and in no mond, Papill	cluded 15 in ortheast Linco ion, Springfo	ches at oln, with eld, Frie	Elkhorn and 12 inches nd and Fort	d Bellevud reported a Calhoun.	e, 14 inches at Plattsm at Lyons, Fremont, Ue Most other locations i	outh, 13 inches at hling, Bennington, n eastern Nebraska
IAZ043-055>056-069-	Heavie Castan Mon o	er totals in south a and 11 inches ona - Harrison	nwest Iowa at Mapletor 1 - Shelby	included 14 and Underw - Pottawat	inches at G vood. Most o tamie - Mil	lenwood ther loca ls - Mo	, 13 inches ations in sou ntgomery	in Oaklar thwest Iov - Fremo	nd, 12 inches in Little wa received 6 to 10 inch nt - Page	Sioux, Harlan and nes.
079>080-090>091	27	0000CST 1200CST			0	0			Extreme Cold/Wind	d Chill
IAZ043-055>056-069- 070-080-000-001	Extrem storm a Monda wind c Most a somew Monda	hely cold wind of that dropped bet ay slowly subsid shill values of 20 actual lows ove vhat decreased w ona - Harrisor	chills were ween 6 and ed into Tue below to 3 r the area b rind allowed a - Shelby	observed over 15 inches of sday morning 30 below we by Tuesday a l some recover - Pottawat	er all of easter snow across g, 1/27/04. H re common t morning wer ery in wind c tamie - Mil	ern Nebr most of Iowever hrougho e 5 belo hill value ls - Mo	aska and so the region. , as tempera ut the regio w to 15 be es toward no ntgomery	outhwest Id North win atures fell in n from arc clow zero. toon Tuesda - Fremo	bowa on the heels of the nds of 20 to 30 mph wi into the single digits an bound Midnight through Slowly moderating t ay. nt - Page	e prolonged winter th higher gusts late id then below zero, noon on Tuesday. emperatures and a
0772000-0702071	28	0000CST 1200CST			0	0			Extreme Cold/Wine	d Chill
	The se anothe north v values	econd night in a r surge of Arcti- winds increased of 15 below to 3	row of ext c air spilled into the 10 30 below ze	remely cold l south across to 20 mph ra ro over much	wind chill van s the region. ange. The cor a of the area f	alues we Temper nbinatio rom mid	ere observed ratures by m n of the color night throug	l across ea hidnight or d temperat gh noon or	astern Nebraska and so a the 28th fell to aroun cures and brisk winds p a the 28th.	outhwest Iowa as a d zero or below as roduced wind chill
<u>KANSAS, East</u> KSZ008>012- 020>024-026- 034>040-054>056- 058>059	Repu Jeffer Coffe	blic - Washir son - Ottawa y - Anderson	ngton - M - Dickinse	larshall - 1 on - Geary	Nemaha - 1 - Morris -	Brown Wabau	- Cloud insee - Sha	- Clay - awnee - l	Riley - Pottawator Douglas - Lyon - Os	mie - Jackson - age - Franklin -
0307037	03 04	1530CST 1300CST			0	0	20K		Winter Storm	
KSZ008>012- 020>024-026- 034>040-054>056- 058>059	A wint freezin where Repu Jeffer Coffe	ter storm brough ng rain and sleet 1/2 to 1 inch of blic - Washir rson - Ottawa y - Anderson	tt 2 to 5 incl produced g glazing was ngton - M - Dickins	nes of snow t glazing of 1/ reported. Do [arshall -] on - Geary	o areas along 4 to 1/2 inch owned power Nemaha - 1 - Morris -	and non except lines in Brown Wabau	th of an Ab in an area : the glazing - Cloud unsee - Sha	ilene to M from Carb area produ - Clay - awnee - I	anhattan to Horton line ondale to Big Springs iced power outages for Riley - Pottawaton Douglas - Lyon - Os	e. South of that line and Williamstown a time. mie - Jackson - sage - Franklin -
	25 26	0005CST 1000CST			0	0	15K		Winter Storm	
	A wir	nter storm prod ulated 1/4 to 1/2	uced slick	roads and son power line	streets leadines and trees in	ng to m n the are	amerous sc a. Power lin	hool closi ie damage	ings and event postpo in the area caused pow	onements. Glazing er outages to about

A whiter storm produced slick roads and streets leading to numerous school closings and event postponements. Glazing accumulated 1/4 to 1/2 inch thick on power lines and trees in the area. Power line damage in the area caused power outages to about 30,000 customers. The icy roads lead to 3 vehicle accidents (discussed separately). The sleet and freezing rain was followed by snow which accumulated from around 1 inch south of Interstate 70 up to 6 to 8 inches in Republic and Washington counties. In addition strong winds produced considerable blowing and drifting of snow which led to whiteout conditions at times mainly near

		Time Local/	Path Length	Path Width	Numbe	er of ons	Estimated Damage	Janu	ary 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property Cro	ps Character of Storm	
KANSAS, East									
KSZ020	the Net Cloud 25	raska border. 0025CST			0	2		Ice Storm	
	A car st driver a Concor	truck 2 emerge and her 54 yea dia.	ency vehicles ar old husban	pulling ano d who was	ther vehicle o a passenger i	ut of a d n the ca	litch. two people i r. The incident o	n the car were injured; the 54 year ccurred on U.S. Highway 81 1 mi	old female ile south of
KSZ038	Waba 25	unsee 1800CST			0	1		Ice Storm	
	Icy con serious	ditions on Inter-	erstate 70 nea 18 year old fe	ar the Paxicomale driver.	o exit caused	a picku	p to slide into a s	stopped vehicle. The pickup flippe	ed over and
KSZ040	Dougl	as 0855CST			0	2		Ice Storm	
	Three voties other w	vehicles collide as 25 years old	ed on an icy 1. The injuries	U.S Highwa s were mino	y 40 6 miles r.	west of	Lawrence injurir	g two women. One was 24 years	old and the
KSZ036	Geary 26	2315CST			0	0	5K	Ice Storm	
	An ice	coated tree fro	m an ice stor	m earlier in	the day fell th	nrough a	trailer house in J	unction City damaging the trailer h	nouse and a
KSZ008>012- 020>024-026- 034>040-054>056- 058>059	Compute Repute Jeffers Coffey	er inside. blic - Washi son - Ottawa y - Anderson	ngton - Ma a - Dickinso	arshall - 1 on - Geary	Nemaha - I - Morris - `	Brown Wabau	- Cloud - Cla insee - Shawne	y - Riley - Pottawatomie - J e - Douglas - Lyon - Osage - H	Jackson - Franklin -
	29 31	1700CST 2359CST			0	0		Winter Storm	
KANSAS Extreme S	Anothe again re inches were cle	r winter storm bads became s accumulation baced once against	moved across slick and haza south of Inter in and meetin	s the area pr ardous resul state 35 up gs were cano	oducing anoth ting in numen to an addition celled. The sto	her roun rous acc hal 10 to form pers	d of sleet and free idents. The chang 12 inches of acc isted into the earl	zing rain before changing over to s eover to snow produced an additi umulation near the Nebraska bord y part of February.	snow. Once onal 1 to 3 er. Schools
KAUDAD, EXtreme D	ounca	<u>st</u>							
KANSAS, North Cen	NONE <u>tral</u>	REPORTED.							
KANSAS, Northeast	NONE	REPORTED.							
KSZ103>105	Leave 25	nworth - Wy 0730CST 1200CST	yandotte - J	ohnson	0	0		Winter Storm	
KSZ057-060	A wide Miami 25	spread freezing i - Linn 0800CST 1200CST	g rain event h	it the area w	ith ice totals o 0	of 1/4" in 0	nch reported.	Winter Storm	
	Widesp	read freezing	rain with ice a	accumulation	ns up to 1/4 of	f an inch	L.		
KSZ025-102	Atchis 25	on - Doniph 0930CST 1300CST	an		0	0		Winter Storm	
	Widesp an inch	read freezing	rain reported	in Atchison	and Doniphar	n countie	es. Ice accumulation	ons reached 1/4 of	

KANSAS, Northwest

NONE REPORTED.

KANSAS, Southeast

NONE REPORTED.

		Time Local/	Path Length	Path Width	Nun Per	iber of rsons	Estin Dam	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
KANSAS, Southwest KSZ030>031- 043>046-061>066- 074>081-084>090	Trego Stanto Clark) - Ellis - Sc on - Grant : - Comanch	cott - Lane - Haskell - e - Barber	- Ness - Ru Gray - For	ush - Har d - Edwa	milton - ards - K	Kearny - iowa - Pr	Finney att - Mo	- Hodgeman - Pav rton - Stevens - Se	vnee - Stafford - eward - Meade -
	25 26	1800CST 1200CST			0	0			Heavy Snow	
	Snow s remain Snowf central	started falling der of the are all amounts of part of the are	during the ev a during the f 3 to 4 inche ea but winds d	vening in the night. Wind es fell across lid produce m	Hays, Ness speeds rea most of th uch blowir	City and ched 20 t e area. L ng and drif	Wakeeney to 30 mph d less amount fting.	areas early ropping v s of less t	y on. The snow spread isibilities to under 1/4 han 2 inches fell acro	d quickly across the of a mile at times. ss mainly the south
KENTUCKY, Centra	al					-	-			
Taylor County Campbellsville	02	0900EST 1150EST			0	0	100K		Flash Flood	
KYZ026	Trace, evacua were c Ohio	Wilson, and E ted. Burress F overed by a fo	Buckhorn Cree Hollow Road ot or more of	eks were out o was washed water.	of their bar out. Water	iks. Severa was over	al residence a bridge or	s along Bu 1 South Ja	uckhorn Creek were flo ckson Street. Numero	boded and had to be us streets and roads
	02 03	1900EST 1915EST			0	0			Flood	
777040	The Ro occurs	ough River at at this level. A	Dundee crest A section of K	ed at 25.6 fee entucky 69 al	t around 8 bout half a	AM EST mile long	on January on the right	3. Flood s bank near	tage at Dundee is 25 f the bridge begins to f	eet. Minor flooding lood.
KYZ042	Bouri 03 04	DON 1100EST 0100EST			0	0			Flood	
KYZ062	The St level n Edmo	oner Creek at ninor flooding	Paris, Kentu occurs and th	cky, crested a le creek is at b	at 19.0 feet oank full.	around 7	PM EST o	n January	3. Flood stage at Pari	s is 18 feet. At this
	03 04	2200EST 2030EST			0	0			Flood	
KYZ045	The Grand The Gr	reen River at H ng occurs at thi n	Brownsville c is level. The r	rested at 18.7 iver begins to	feet aroun overflow	d 10 AM the lock w	EST on Jan alls and son	uary 4. Flone of the lo	ood stage at Brownsvi ower banks, creeks, an	lle is 18 feet. Minor d sloughs.
	03 04	2320EST 1445EST			0	0			Flood	
KYZ061	The Ro feet. M Butle	olling Fork Sa linor flooding r	lt River at Bo occurs at this	oston, Kentuc level. Agricu	ky crested ltural botto	around 35 mland is o	5.3 feet at 6 covered by v	AM EST water.	on January 4. Flood s	tage at Boston is 35
	04 06	0100EST 0000EST			0	0			Flood	
KYZ061	The Grant Strength The Grant Strength The Grant Strength	reen River at ' ng of lowlands r	Woodbury cro around the to	ested at 34.1 own of Woodb	feet around oury begins	1 630 AM at this lev	EST on Jaivel.	nuary 5. F	lood stage at Woodbu	ry is 33 feet. Minor
	05 06	0700EST 2100EST			0	0			Flood	
	The G floodir	reen River at ng occurs at thi	Rochester cruis level and th	ested at 17.4 le ferry is shu	feet aroun t down.	d 7 AM I	EST on Jan	uary 6. Fl	ood stage at Rocheste	er is 17 feet. Minor
КYZ030-030	Jeffer 06 11	son 0700EST 0000EST			0	0			Flood	
	The Ol Below levels,	hio River at Lo the lock, the sections of Ri	ouisville, abo river crested ver Road are	ve the McAlp at 55.1 feet a closed near C	ine Lock, c round 5 Al ox's Park. I	crested at 2 M EST or River Fror	24.6 feet arc n January 8. nt Park in do	ound 3 PM Flood sta owntown I	EST on January 8. Fl ge for the lower gage louisville floods.	ood stage is 23 feet. is 55 feet. At these
Montgomery County	<u>n</u>									
Mt Sterling	02	0630EST 0930EST			0	0	0	0	Flash Flood	
	Water	was over Unit	ed States Hig	hway 460 at 7	Гоwn Bran	ch Road.	Water was a	also over t	he road at Hinkston Pi	ke and West Locust

Street.

Storm Data and Unusual Weather Phenomena Number of Time Path Path Estimated January 2004 Local/ Length Width Persons Damage Standard Property Crops Date (Miles) (Yards) Killed Character of Storm Location Injured **KENTUCKY**, Eastern Whitley County 02 0925EST Flash Flood Corbin 0 0 0 0 1230EST Eight to ten inches of water were flowing over Fifth Street, downtown. **Knox County** 2 N Girdler 02 0925EST 0 0 0 0 Flash Flood 1230EST Several homes were completely surrounded by flood water with water within inches of them, stranding the occupants inside and water was over Kentucky Highway 11 North. **KYZ115** Perry 02 1030EST 0 0 0 0 Flood 1730EST Water was covering Route 550, near Hazard. Letcher County Whitesburg 02 1050EST 0 0 0 0 Flash Flood 1630EST Roads were closed due to high water, including: Kentucky Route 160 at Smoot Creek (about 2 miles west of Whitesburg), Kentucky Route 931 South (Whitesburg), and Route 2034 (northeast of Whitesburg). Water was also over the road on Kentucky Route 15 at Maryland Drive and Jenkins Road in Whitesburg. **Pulaski County** 1120EST 0 0 Nancy to 02 0 0 Flash Flood Somerset 1530EST Roberts Port Road, southwest of Nancy, was closed due to high water. Highway 1956 at Kentucky Highway 80 was closed and a family was evacuated due to high water. In and around Somerset, several roads were closed due to high water, including: Highway 635 at Kentucky Route 39, Route 1247 at Bodie Road, Kentucky Highway 80 East (at Pumphouse Road), and Kentucky Highway 70 at Goochtown Road. **KYZ120** Pike 02 1305EST 0 0 A 0 Landslide One lane was closed on Route 805 near Dorton due to a mud slide. **Pike County** 1305EST 0 0 0 1 NE Virgie to 02 0 Flash Flood 1 NE Elk Horn City 1700EST United States Route 119 was closed due to high water at Penny Bottom. There were road closures due to high water at Five Forks and Harold's Branch Road. Water was over a bridge in Elkhorn City at the grade school. **Knott County** Hindman 02 1449EST 0 0 Flash Flood 0 0 1700EST More than a foot of water covered Kentucky Highway 550 West and Kentucky Highway 160. **KYZ111-114** Lee - Owsley 0400EST 03 A A A Flood A 04 0430EST KYZ059>060-Powell - Menifee - Bell - Harlan - Morgan - Johnson - Magoffin - Floyd - Leslie - Letcher - Pike 087>088-106>107-109>110-117>118-120 09 0530EST 0 Heavy Snow 1700EST Seven inches of snow were reported in Stanton on higher ridges. An upper level disturbance dumped heavy snow across portions of eastern Kentucky, with up to seven inches of snow reported on some ridges. KYZ044-050>052-Fleming - Montgomery - Bath - Rowan - Estill - Powell - Menifee - Rockcastle - Jackson - Pulaski - Laurel -058>060-068>069-Wayne - Mccreary - Whitley - Knox - Harlan - Elliott - Morgan - Johnson - Wolfe - Magoffin - Floyd - Lee -079>080-083>086-Breathitt - Knott - Owsley - Perry - Clay - Leslie - Letcher - Martin - Pike 088-104-106>120

25 0700EST 0 0 Ice Storm 2100EST

A storm system moved out of the plains and into the southern Ohio Valley. Before the storm arrived, arctic air flooded into eastern Kentucky. As the storm system approached, warm air rose up and over the cold air. A brief period of snow and sleet started the event for some, but the overwhelming bulk of precipitation was freezing rain. Ice accumulations of one quarter to one half inch occurred for most areas, with Pike, Floyd, Martin, Knott, and Rowan Counties receiving up to an inch of ice accumulation. Electric

S	tori	n Data	a and	Unus	ual W	/eat	her Phen	omena	
		Time Local/	Path Length	Path Width	Numb Perse	er of	Estimated Damage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property Crops	Character of Storm	
KENTUCKY, Easte	<u>rn</u>	mias agross the	araa raporta	that about 1'	7 850 poopl	wara w	ithout power, but for	only a short period of	time
KENTUCKY, North	east	unes across the	area reported	I mai adout I	7, 850 peopl	e were w	futiout power, but for	only a short period of	ume.
KYZ101>103-105	Gree	nup - Carter	- Boyd - L	awrence					
	25	1100EST 2100EST			0	0		Winter Storm	
	Snow	and sleet accur	nulated 1 to 2	2 inches befor	e changing t	o freezin	ig rain in the afternoor	n. The ice from freez	ing rain accumulated
	treach	erous roads, no	major power	r outages were	e reported.	uly ever	ling. Temperatures	lose above neezing	overnight. Desides
KENTUCKY, North	ern								
KYZ089>100	Carr	oll - Gallatin	- Boone -	Kenton - C	ampbell -	Owen -	- Grant - Pendleto	n - Bracken - Rol	oertson - Mason -
	Lewis 25	s 1530EST 2000EST			0	0		Winter Storm	
	Low p	pressure oversp	read the Ohi	o Valley and	produced s	gnifican	t icing along and sou	th of the Ohio River	. North of the river,
KYZ093	snowi Cami	all totals averag bhell	ged 4 to 6 inc	nes.					
	29	2200EST			0	0		Winter Storm	
	Low p	pressure tracked	d over the O	hio Valley an	d created w	idespread	d snowfall of 1 1/2 to	o 3 inches. One report	t from the Highland
KENTUCKY, South	Heigh	ts area was 3.8	inches.						
KYZ021	Muhl	enberg							
	03 09	0800CST 1800CST			0	0		Flood	
	The G	reen River rose	e above flood	l stage at TV	A's Paradise	fossil pl	ant, cresting at 384.7	feet on the 6th. Floor	l stage at Paradise is
KYZ014-018>019	Unio	n - Henderso	n - Daviess	boding of low	-tying helds	and othe	er bottonnands.		
	06 18	0900CST 1400CST			0	0		Flood	
KYZ019>021	The O heavy bottom includ second in Her deep t floody for hy flood s	hio River rose rains lasted in hlands were flo ed Lower Riv dary county roa hderson County floodwaters. A vaters to safety pothermia. At stage on the 186 ess - Mclean	above flood a to the first d boded. In Da er Road from ds. Backwa 7. On one of dump truck . Although th J.T. Myers I th. The river - Muhlenbo	stage in north ays of Januar viess County m U.S. Route ter from the C the flooded r k from the c te 35-degree v lock and Dan crested near 4 erg	west Kentuc y. This resu , about a do e 60 to Gri Dhio River c oads near H ounty road vater was ne n near Union 4.5 feet on t	ky due te ted in m zen road ffith Sta aused flo ebbardsw departm arly up to ntown, th ne 13th,	o heavy rains from Ill noderate flooding. Lo Is near the river were tion, Rockport Ferry boding near the mouth ville, a postal worker tent towed the man's to the ignition of the vo- ne river rose above fl which was about 7.5 f	inois to Ohio at the er w-lying woodlands a e closed by high wat Road, Crooked Cree n of the Green River, on his route became e vehicle about 3/4 ehicle, the postal wor ood stage on the 6th ceet above flood stage	nd of December. The nd fields in the river er. The closed roads ek Road, and other which flooded roads stranded in five-foot mile through 5-foot cer refused treatment and fell back below
	08	1400CST		0	0	0		Winter Weather/	Mix
	One to Schoo Muhle	2300CS1 o two inches o ls were closed enberg County.	f snow fell a the followi The only on	across the Gr ng day in M e involving a	een River b Iclean and M ny injuries v	asin, inc Auhlenbo vas a roll	cluding most of Muhl erg Counties. A nun lover accident on U.S	enberg County and the ber of vehicle wreck. 431 near Belton that	he Owensboro area. ks were reported in t resulted in a minor
KYZ004>005- 007>008-010>022	Balla Hopk	rd - Mccrac ins - Christia	ken - Livi an - Hende	ngston - M rson - Davi	arshall - (ess - Mclea	Critten n - Mu	den - Lyon - Trig hlenberg - Todd	gg - Caldwell - U	nion - Webster -
	25	0500CST 1700CST			0	0		Ice Storm	
	The a Owens wind b Power widesj salt tru a tow Hende spokes crews	reas of western sboro regions, prought down i was restored t pread cell phor truck and tow tr truck that slid erson worked a sman for the st were pulled of	n Kentucky where abou ce-laden tree o all but 175 he outages. N ucks losing c into a wreck bout 55 acci- ate police po f the roads d	hardest hit b t one half inc limbs and po homes by the Jumerous veh ontrol on the scene it was dents in its an st at Henders ue to "impass	y this ice s th of ice coa ower lines. A e end of the icle wrecks ice. A four-v sent to clear rea, while th on reported the able" condit	torm we ted trees t the hei day follo occurred vehicle w . One pe e Hende he worst ions for	re close to the India s, power lines, and ro ight of the outages, al owing the ice storm. (l, but none with serio yreck on an Audubon rson was slightly inju rson County Sheriff t road conditions he h a time during the ice	na border, including ads. Sporadic power bout 2500 customers Cell phone towers we us injuries. Some of Parkway ramp at Ken red in that wreck. Th Department responde had seen in years. Hei storm. Some schools	the Henderson and outages occurred as were without power. re damaged, causing the wrecks involved tucky 1554 involved e state police post at d to 20 accidents. A nderson County road cancelled classes on

		Time Local/	Path Length	Path Width	Num Per	ber of	Estin Dam	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
KENTUCKY, South	west									
KYZ004>005-	the da caused basem inch a resulti custor power injurie Balla	y after the ice d a house fire i eent and spread is far south as ing in fewer acc ners lost power . Only three we es in a one-car c ord - Mccrac	storm becau n Henderson up to the kit a Paducah t cidents, but th in the Daws yeather-relate crash on High ken - Livin	se power was An ice-cove An ic	not fully r red tree lir f the Ower e line. Mo a number c arlington, H ere reporte ural second rshall - C	estored, nb fell o nsboro ar st of the of tree lin Hanson, a d to the lary road C rittend	and some tr n a power li nd Henderso ice in this nbs falling o and St. Char state police in Crittende len - Lyon	ee limbs v ine, causin n areas, io more sou n power li les areas. post at M n County. a - Caldy	were still on roadways ng a power surge that e accumulations were thern area was on tree ines. In rural Hopkins (In Madisonville, about Madisonville. Two peo well - Union - Web	The ice may have started a fire in the around one quarter and power lines, County, about 3,000 400 customers lost ople received minor ster - Hopkins -
007>008-010>011- 013>016-018>020	Hend	lerson - Davi	ess - Mclea	n						
	26	0500CST 1200CST			0	0			Dense Fog	
Livingston County	Wides forme any fli	spread dense fo d over areas th ights from depa	g enveloped at received a rting or arriv	much of west n ice storm th ing at Owensb	ern Kentuc e previous ooro-Davies	cky, mair day. Vis ss County	nly along an sibilities wer y Regional A	d north of e one qua dirport for	f a Paducah to Madiso arter mile or less. The six hours.	nville line. The fog thick fog prevented
Smithland	26	2030CST			0	0			Lightning	
	A ligh neighl	ntning bolt stru boring house ca	ck a house, ught fire, but	blowing a six	-foot hole nificantly d	in the w lamaged.	all and start	ing a fire	. The house was exter	sively damaged. A
Lyon County		A130.00		6		0				
Eddyville	26 Lightr	2130CST	water tower a	at the Kentuck	0 v State Per	0 uitentiary	near Eddyy	ille The F	Lightning	a break in a 12-inch
KYZ014-018>019	supply water Union 27	y line, which er for a while. Bo n - Henderso 0100CST 1200CST	nptied the to ilers that hear n - Daviess	wer of more the facility w	han 350,00 ere tempor 0	0 gallons arily out 0	s of water. T of service.	he rupture	Winter Weather/M	go without running
KV7014>015	On the two-ve the pa north in Her were of Airpor	e heels of a sign ehicle accident rkway when sh and southbound nderson County cancelled for n rt.	hificant ice st on the Penny e lost control d lanes of the resulted in l nuch of the a	orm on the 25 vrile Parkway on the ice, cr parkway wer ess serious inj urea. Ice on th	th, about an near Kentu ossed the n e closed fo juries. Kent the runways	n inch of cky 425, nedian in r about 4 cucky Sta cancelle	snow fell ea the Henders to the southl 5 minutes. A the Police rep ed morning f	rly on the son by-pas bound land Another h ported wo flights at	27th. A woman was se ss. The woman was he es, and struck a tractor- ead-on collision on a r rking only a handful of the Owensboro-Davies	eriously injured in a aded northbound on trailer rig. Both the ural secondary road f accidents. Schools ss County Regional
018>021	UIIIO	II - webster -	nenuerso	li - Daviess -	wiciean ·	· wrume	enberg			
	29	1200CST 2100CST			0	0			Winter Weather/N	lix
	One to Count	o two inches of ies. Although r	snow fell ac oad conditior	ross northwest	t Kentucky ed to be haz	, from He ardous, e	enderson and only a few m	d Owensb inor accio	oro south across Webs lents occurred.	ter and Muhlenberg
LOUISIANA, North	east	-					-			
Concordia Parish 2 NE Clayton	25	0235CST			0	0	2K		Thunderstorm Wi	nd (G55)
LOUISIANA North	Severa	al trees were blo	own down.							
LOUISIANA, NORU	west									
	NON	E REPORTED.								
LOUISIANA, South	east									
Terrytown	17	1030CST			0	0	20K		Thunderstorm Wi	nd (G50)
Jaffarson Darish	A met	al canopy at a g	gas station wa	as blown dowr	1.					
Metairie	17	1515CST 1530CST			0	0	350K		Thunderstorm Wi	nd (G55)

Thunderstorm winds ripped the roof off of two apartments, partially removed the roof of another apartment, damaged eight houses, and snapped trees and utility poles.

St	tor	m Data	and	Unus	ual V	Veat	her Ph	enomena	ı
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estimated Damage Property C	Crops Character of S	January 2004 Storm
LOUISIANA Southy	vost								
Calcasieu Parish 5 S Sulphur	17	1550CST			0	0	5K	Thundersto	rm Wind (G50)
Lafametta Danish	A mo	bile home had it	s roof torn o	ff during a se	evere thunde	rstorm.			
7 SW Lafayette to 6 SW Lafayette	25	0647CST 0649CST	1	10	0	3	1M	Tornado (F	2)
	A sho One l and b	ort-lived tornado ady broke her sl ruises.	destroyed t noulder when	wo brick hound hous the mobile	mes and two home she w	mobile h as in flipp	omes, and dam bed over, trappi	naged at least another ng her. The other two	15 homes and businesses injuries were minor - cut
<u>MAINE, North</u> MEZ001>006- 010>011-031>032	Nort Peno Wasi	hwest Aroos bscot - South hington	took - No east Aroos	ortheast A stook - Cen	roostook itral Piscat	- North taquis -	ern Somerso Central Peno	et - Northern Pi obscot - Southern	scataquis - Northern Piscataquis - Northern
	07 10	2200EST			0	0		Extreme Co	ld/Wind Chill
	Low j mariti produ chills	pressure intensif imes low and ar ice an extended of 30 to 50 belo	ying across ctic high pre interval of da w zero.	the maritime essure across angerous win	provinces d Ontario pro ad chills. The	rew arctic vince rem e winds co	air across the nained strong en bombined with su	region. Winds betwee nough to combine wit ub-zero temperatures	n the intense slow moving h sub-zero temperatures to to frequently produce wind
MEZ015>017	Sout 08	hern Penobsc 1600EST	ot - Interio	or Hancock	x - Central 0	Washin 0	gton	Extreme Co	old/Wind Chill
	Low production	pressure intensif imes low and ar ice an extended of 25 to 45 belo	ying across ctic high pre interval of da w zero.	the maritime essure across angerous win	provinces d Ontario pro ad chills. The	rew arctic vince rem e winds co	air across the rained strong en bombined with su	region. Winds betwee hough to combine wit ub-zero temperatures	en the intense slow moving h sub-zero temperatures to to frequently produce wind
MEZ001>006- 010>011-015>017- 029>032	Nort Peno Hano	hwest Aroos bscot - South cock - Centra	took - No least Aroo ll Washing	ortheast A stook - Ce gton - Coas	roostook ntral Pisca stal Hanco	- North ataquis ck - Co	ern Somerso · Central Per astal Washin	et - Northern Pi nobscot - Souther agton - Southern I	scataquis - Northern n Penobscot - Interio Piscataquis - Northern
	Was 14 16	hington 0100EST 1200EST			0	0		Extreme Co	ld/Wind Chill
	Low gusts across northe areas High coast.	pressure intensit to 40 mph at the s the region and ern areas and lo with wind chills temperatures or The extreme vern portions of the	Tying across nesdevelop producing c ws of 10 to 2 s of 35 to 55 the 15th or vind chills p he region.	the maritime ped between langerous wi 20 below zero below zero hly reached 1 prompted ma	e provinces of the intense of nd chills. The o Downeast Downeast. The 0 to 15 belo any schools	Irew arction maritimes ne winds of to frequen Yemperatu Dow zero av to close a	c air across the low and arctic combined with htly produce wi res remained be cross northern a and resulted in	region. Sustained wi high pressure to the low temperatures of nd chills of 45 to 65 elow zero across north areasbarely reaching the cancellation of	nds of 20 to 30 mphwith west drawing the arctic ai 15 to 30 below zero across below zero across northern hern areas during this time g zero along the Downeas eventsparticularly acros
MEZ011-017-032	Cent 19	ral Penobscot 0400EST 1900EST	t - Central	Washingto	on - Northe 0	ern Was 0	hington	Heavy Snov	v
	Low j snow accun	pressure trackin to the region. S nulations ranged	g across eas Snow began from 7 to 1	tern portions during the e 1 inches.	of the Gulf evening of t	of Maine he 18th	combined with continuing thro	a second low crossing of the evening of t	ng the state to bring heavy he 19th. Storm total snow
MEZ001>006	Nort Peno 19	hwest Aroos bscot - South 0600EST	took - No east Aroos	ortheast A took	roostook	- North	ern Somerso	et - Northern Pi	scataquis - Northeri
	./	1900EST			U	v		Heavy Show	,
MEZ001-003>004-010	Low j snow accum Nort 23 24	pressure trackin to the region. S nulations genera hwest Aroost 2000EST 1000EST	g across east Snow began lly ranged fr ook - Nort	tern portions during the e om 10 to 16 hern Some	of the Gulf evening of the incheswith rset - Nort 0	of Maine he 18th localized hern Pis 0	combined with continuing thro totals to around ccataquis - Ce	a a second low crossi ugh the evening of t d 22 inches. entral Piscataquis Extreme Co	ng the state to bring heavy he 19th. Storm total snov
	Wind	s of 10 to 20 mp	h combined	with tempera	atures falling	into the t	eens below zero	o to produce wind chi	lls of 30 to 50 below zero.

		Time	Path Longth	Path	Num	ber of	Estin	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MAINE North										
MEZ001>006- 010>011-031>032	North Peno Wash 24 27	hwest Aroo bscot - South nington 1800EST 1100FST	stook - No neast Aroos	ortheast An stook - Cen	roostook tral Piscat 0	- North taquis - 0	hern Som Central P	erset - enobscot	Northern Piscataqui t - Southern Piscataq Extreme Cold/Wind	is - Northern uis - Northern Chill
MEZ015>017- 029>030	An in sustain tempe South	tense slow mo ned 10 to 20 ratures to prod	ving low acro mph winds uce an extend cot - Interio	oss the northe which contin led interval of or Hancock	ern maritime ued to tran f dangerous - Central	e province sport arc wind chi Washir	es combine tic air acros lls frequently ngton - Cos	d with arc ss the reg y ranging t astal Har	tic high pressure to the viol. The winds combined from 35 to 60 below zero ncock - Coastal Wash	west to maintain d with the cold lington
0277 000	24 27	1800EST 0500EST			0	0			Extreme Cold/Wind	Chill
	An in sustain tempe	tense slow mo ned 10 to 20 ratures to prod	ving low acr mph winds uce an extend	oss the north which contin led interval of	ern maritim ued to tran f dangerous	e provinc sport arc wind chi	ces combine tic air acros lls frequently	d with arc ss the reg y ranging t	tic high pressure to the ion. The winds combine from 25 to 50 below zero	west to maintain ed with the cold
MAINE, South	N T (1		NT (1		a	a		0.0		
MEZ007>009- 012>014-018>028	North Some Coas 08	hern Oxford erset - Interi tal Cumberl 0100EST	- Northeri or York - Ii and - Sagac	n Franklin nterior Cur lahoc - Line	- Central nberland coln - Kno 0	Somers - Andro ox - Coa 0	et - South oscoggin - 1 stal Waldo	ern Oxfo Kennebe	ord - Southern Frank c - Interior Waldo - (Extreme Cold/Wind	lin - Southern Coastal York - Chill
MEZ007>009- 012>014-018>028	Low p begins values North Some	pressure in Easing on the nig of 20 to 49 de hern Oxford erset - Interi	tern Canada ht of Wednes grees below z - Northern or York - In	funneled bitt day, Jan. 7, a zero where ob a Franklin nterior Cur labor. Lin	er arctic air nd continui oserved at th - Central nberland	into Nor ng throug e peak of Somers - Andro	thern New a share of the souther of the souther of the souther of the secoggin - 1 stol Wold work of the stol	England o ng of Satu k during t ern Oxfo Kennebe	n very strong and gusty rday, Jan. 10. Temperatu he early morning hours o ord - Southern Frank c - Interior Waldo - (northwest winds re and wind chill f Friday, Jan. 9. Jin - Southern Coastal York -
	13 16	0000EST 1100EST	anu - Sagao	ianoc - Lino	0 0	0 - Coa	stal walu	U	Extreme Cold/Wind	Chill
MEZ007>009-	An arc Centra outbre Nort	ctic cold front al Canada Jan. eak on the morn hern Oxford	noved throug 14 through J ing of Jan. 1: - Northern	h Northern N an. 16. Wind 5. h Franklin	lew England d chill value - Central	d on the a es of 33 t Somers	afternoon of to 50 degree et - South	Jan. 13. A s below z	Arctic high pressure settle ero were recorded during ord - Southern Frank	d southeast from the peak of this the Southern
012>014-018>028	Some	erset - Interi	or York - I	nterior Cur	nberland	- Andro	scoggin - 1	Kennebe	c - Interior Waldo - (Coastal York -
	Coas 24 25	tal Cumberl 0600EST 1200EST	and - Sagac	lahoc - Lin	coln - Kno 0	ox - Coa 0	stal Waldo	D	Extreme Cold/Wind	Chill
	A stro into th morni	ong area of low ne Northeast or ng of Jan. 25.	pressure over Jan. 24 and	er Eastern Ca Jan. 25. Win	nada resulto d chill valu	ed in stro es of 22 t	ong northwes to 42 degree	st winds a s below ze	nd bitter temperatures as ero were recorded across	arctic air spilled the region on the
MARYLAND, Centr	al									
MDZ009-013	Mon 08 09	tgomery - Pr 1700EST 1400FST	ince Georg	es	0	0			Winter Weather/Mix	5
MD70025006 011	An arc North caused school	ea of low press ern Virginia a d widespread ls either closed	ure tracked nd lesser am raffic proble or opened tw	across Centra ounts over M ms as a light to hours late o	l Virginia o Jorth Centra t glaze form on the 9th.	n the 8th al Maryla ned on th	and 9th. The and and the ne roads. N	is system Baltimore Jumerous	produced up to two inche Metropolitan area. The automobile accidents we	es of snow across dusting of snow ere reported, and
013>014	Aneg	ally - wasii Arundol	ington - rr	ederick - C	arron - N	ormeri	i Daitinioi	re - Sout	nern Daiumore - Pri	Ince Georges -
	10	0100EST 1100EST			0	0			Extreme Cold/Wind	Chill
	Very tempe on the	cold Arctic air ratures ranged average of 10	settled over from the sing degrees belo	Western Mar gle digits to t w zero. The (yland, Nort he lower tee City of Balti	h Central ens, and i more iss	l Maryland a north winds sued a "Code	and the Ba measured Blue and	ltimore Metropolitan are 10 to 15 mph. This proc opened the Federal Stree	a. The minimum luced wind chills et shelter because

of the bitter cold air. There were dozens of cases of broken water mains and pipes.

		Time	Path Langth	Path	Num	iber of	Estim	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MARYLAND, Cent	ral									
MDZ002>006-011- 013>014	Alleg Anne 15	any - Washi Arundel 2300EST	ington - Fr	ederick - C	Carroll - N 0	Northerr 0	n Baltimor	e - Sout	hern Baltimore - H Extreme Cold/Win	Prince Georges - d Chill
	A fast inches South digits on the Count and el	and teens. Strop y. Reports for ectricity for ab	system broug e only a trace There was so ong northwest 5th and the n a local pow out 3 hours do	ght light snow of snowfall me very colo and west win early mornin er company s uring this colo	v to the regi was reporte 1 air behind nds (20 to 2 g of the 16 show 5 thou d spell.	ion on the d in North this syste 5 mph wi th. On a c sand custe	e 14th and 1: n Central Ma em. Minimu th gusts to 3 different not omers in the	5th. Weste aryland, th m tempera 35 mph) p te the win e eastern p	ern Maryland counties a le Baltimore Metropolit atures across the region roduced wind chills of ds also downed power art of Baltimore Count	received one to two tan area, and Lower 1 were in the single 5 to 10 below zero 1 lines in Baltimore 9 were without heat
MDZ002>007-011- 013>014-016>018	Alleg Geor 17	gany - Washi ges - Anne A 1800EST	ington - Fr Trundel - Cl	ederick - C harles - St.	Carroll - N Mary'S - 0	Northern Calvert 0	ı Baltimor	e - Har	ford - Southern Ba Winter Weather/M	ltimore - Prince Iix
	18 Two a quarte accum	1600EST areas of low pro- per to two inche mulations up to pents	essure merge s were record two tenths	d over the re led across M inch. Law 1	gion and p laryland fro Enforcemen	oduced a om Allega at officers	wintry mix ny down to and Emer	of snow a St. Mary gency per	and freezing rain. Snow 's County. There were 'sonnel responded to	amounts from one also reports of ice several automobile
MDZ002>004	Alleg 23	any - Washi 0500EST 1000EST	ngton - Fre	derick	0	0			Extreme Cold/Win	d Chill
MDZ002	An ar Strong Alleg 23	ctic front usher g north winds o gany 0500EST	red more cold f 15 to 25 mp	l air into the h with gusts	area on the near 30 mp	e 22nd and h helped t 0	d 23rd. Min o produce w	imum ten vind chills	nperatures were in the of 5 to 10 below zero. Extreme Cold/Win	lower to mid teens. d Chill
MDZ002>005	An ar Strong Alleg 23 24	ctic front usher g North winds of any - Washi 1900EST 1200EST	red more colo of 15 to 25 mj ngton - Fre	l air into the ph with gusts derick - Ca	area on the near 30 mp nrroll 0	e 22nd and oh helped b 0	d 23rd. Min to produce v	imum tem vind chills	peratures were in the s of 5 to 10 below zero. Winter Storm	lower to mid teens.
MDZ002>007- 009>011-013>014	An ard The le border record Alleg South 25 26	ea of low press ow tracked acu r. Five to six in led in Harford, ;any - Wash hern Baltimo 1200EST 1000EST	ure developed coss West Vi aches of snow Northern Bal ington - F pre - Prince	l over the Lo rginia, Virgi was reported timore, South rederick - Georges -	wer Great L nia and Ma d across No hern Baltime Carroll - Anne Aru 1	akes brou aryland. S rth Centra ore and th Northe ndel 0	ight more sn snowfall tot: and Weste e City of Ba rn Baltim	ow to the als were 1 ern Maryla iltimore. hore - H	region on the 23rd and highest along the Mar und. Lesser amounts of arford - Montgom Winter Storm	the 24th. yland/Pennsylvania f 2 to 3 inches were ery - Howard -
MDZ016>018	An ar and fr snow after Emerg Char 25 26	ea of low press eezing drizzle mixed with sle being struck b gency Operatio iles - St. Mar 1200EST 1000EST	sure develope over the regic eet and finally y an automo ns Centers. M y'S - Calve	d off the coa on. Six to eigh / changed ov bile as he cl (any school d rt	ast of North ht inches of er to freezi eared his c istricts clos 0	Carolina snow fell ng drizzle lriveway. ed due to 0	and moved across Mar before tap Several oth the inclement	north. Th yland fror ering off. ner accide nt weather	is storm produced wid n Allegany to Anne A A Harford County mants with minor injurie M570U Winter Weather/M	espread snow, sleet rundel County. The an died on the 26th s were reported to lix
MDZ002-006	An ard and fr and fi Opera Alleg 26	ea of low press eezing drizzle nally changed tions Centers. 1 (any - Norther 1530EST	oure develope over the regio over to freez Most school c ern Baltimo	d off the coar on. Three to t ing drizzle b listricts close re	st of North four inches efore taperi d. 0	Carolina a of snow f ing off. So 0	and moved i fell over Lov everal other	north. Thi wer South minor ac	s system produced wid ern Maryland. The snc cidents occurred accor Winter Storm	espread snow, sleet w mixed with sleet ding to Emergency
	27 An ar snow. accum closed custor	2230EST ea of low press Five addition nulated in Nort I three hours ea ners in Marylan	sure moved a nal inches of thern Baltimo arly on the 27 nd were witho	cross the reg snow fell ac ore Due to th. Several out power at s	ion on the 2 cross Alleg the incleme minor accic some point	26th and 2 any Coun ent weather lents were in the stor	27th. This st ity in Weste er, Federal a blamed on m. Some sc	form proc ern Maryl agencies i in the ice a shools wer	luced a second round of and. Further east one n the Washington DC s well as scattered pow re closed again on the 2	of freezing rain and quarter inch of ice Metropolitan area ver outages. 70,000 7th.

S	Stori	n Data	a and	Unus	ual W	/eat	her l	Phen	omena	
		Time	Path	Path	Numb	er of	Estin	nated		Januarv 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Pers Killed	ons Injured	Dan Property	nage Crops	Character of Storm	Junuary 2001
MARYLAND, Cent	ral									
MDZ005-007-009>01	1 Carr	oll - Harford	- Montgor	nery - How	ard - Soutl	nern Ba	ltimore			
	26 27	1530EST 2230EST			1	0			Winter Weather/I	Mix
MDZ007	An are snow. sidewa as he also b inclem Harfe	ea of low press One to two add alks and roadsid walked in the s lamed on the id nent weather. So ord	ure moved a ditional inche des were bla street because ce. Federal a chools were	across the regises of snow fel med for the de e the sidewalk gencies in the closed again of	ion on the 2d l across the l eath of a ped as were slick washington on the 27th.	5th and 2 Baltimor estrian n and dar n DC Mo M52OU	27th. This s e Metropoli near Baltimo ngerous. Sca etropolitan	ystem proo itan area as ore City. T attered pov area close	duced a second round s well as one tenth inc 'he man was struck an wer outages and other d three hours early or	of freezing rain and h of ice. Ice covered d killed by a vehicle minor injuries were h the 27th due to the
	28	1200EST 1700EST			0	0	7.5K		Strong Wind	
	High were were	winds and ice la without power. was finally res	aden power l Wind gusts tored late in	ines led to wid s up to 40 mp the evening.	de spread ou h were repo	tages acr rted acro	oss Harford	d County o ast Maryla	n the 28th. Nearly 70 nd. Emergency shelte	thousand customers rs were opened, and
MDZ002>007	Alleg	any - Washii 0300FST	ngton - Fre	ederick - Ca	rroll - Nor	thern E	Baltimore	- Harfor	d Extreme Cold/Wi	nd Chill
	51	1000EST			Ū	Ū			Extreme Colu/ WI	
	Very o lower below	cold arctic air c teens. Wind sp zero.	combined wi eeds average	th strong Nor ed 20 mph. Gu	thwest wind sts of 30 mp	s to prod h were c	luce danger bserved. T	ous wind his produc	chills. Minimum temp ed wind chill values of	peratures were in the of five to ten degrees
MARYLAND, Nort	heast									
MDZ008-012-015- 019>020	Cecil	- Kent - Que	en Annes	- Talbot - C	aroline					
	09 11	1800EST 1200EST			0	0			Extreme Cold/Wi	nd Chill
MDZ008-012-015- 019>020	An arc mornin around the Gr burst b in wor some i higher batteri (Talbo which the arc Cecil	the air mass bring of the 11th. I the center of the 11th. I the center of the eat Lakes and a both inside and kload in hospit instances the were incidence of the east Specific lo the County) and ushered in the the tic air mass, morning of the 10 - Kent - Que	ought some of What made the arctic hig subsidence fi outside of s tal emergence ater was free chimney fires w temperatu Salisbury (V colder air m oved from ju th to Virgini een Annes	of the coldest this even mo the pressure sys- rom the Appa tructures as w y rooms. Fire- zing in hoses and a genera- res included Wicomico Cor- oved through ust west of Jai a and North C - Talbot - C	weather in y re unusual w stem were fr lachian Mou ell as a high fighters wer and the truci al shortage o 6 degrees at unty) and 10 the Eastern S mes Bay on Carolina on th aroline	ears to t vas that t om the n ntains. T er occurr e having cs. Fire f f firewood t the Bal o degrees Shore du the morrni	he Delmary the brutally orth and by he unseaso rence of wa g problems Tighters wer od develope timore-Wa s in Stevens ing the day ing of the 1	va Peninsu cold air n v-passed th onably cold ter main b battling bl e injured s ed. Many v shington I sville (Que y on the 9th 9th, to alor 1th.	la from the evening o nass occurred with no e warming effects nor l weather caused many reaks. The cold weath azes as the water quid lipping and falling on vehicles were not start international Airport, een Anne's County). The h. The high pressure s ing the Ontario/Quebed	f the 9th through the o snow cover. Winds mally received from y pipes to freeze and the led to an increase skly turned to ice. In the ice. There was a ting because of dead 7 degrees in Easton The arctic cold front ystem, or the core of province border on
	15 16	1200EST 1200EST			0	0			Extreme Cold/Wi	nd Chill
	Follov slightl low te	ving the depart y higher than t mperatures wer	ing Alberta he previous re in the teen	Clipper low p outbreak on t s and the lowe	ressure syste he 10th and est hourly wi	em, anoth 11th, wi nd chill	ner arctic ai inds were s factors aver	ir mass inv tronger an aged arour	vaded Maryland. Whil d the wind chill facto nd five degrees below	e temperatures were rs were lower. Most zero.
	The un occurr led to quickl falling startin	nseasonably co rence of water r another increas y turned to ice on the ice. The g because of de	old weather of nain breaks. se in worklo e. In some ir here was a l ead batteries.	caused many Plumbers and ad in hospital istances the v nigher incider	pipes to free heating rep- emergency vater was free ace of chimi	eze and lair servic rooms. I eezing in ney fires	burst both ces had twe Fire fighter hoses and and a gen	inside and nty-four ho s were hav l the truck eral shorta	outside of structures ours worth of work. T ving problems battling s. Fire fighters were age of firewood. Man	as well as a higher he cold weather also g blazes as the water injured slipping and y vehicles were not
	Specif (Quee pressu buildii	ic low tempera n Anne's Coun re system on t ng high pressu	atures includ ty) and East he 15th. Th re system br	ed 13 degrees on (Talbot Co e low deepen ought the low	s at the Balt ounty). The a ed explosive yest wind ch	more-W rctic air ely as it ill factor	ashington l mass came moved off s of the wi	Internation barreling shore and nter into M	al Airport and 15 deg behind the departing the pressure gradient Maryland. The high p	grees in Stevensville Alberta Clipper low t between it and the ressure ridge moved

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from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th.

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) (Yards) Killed Character of Storm Location Date Injured Property Crops MARYLAND, Northeast Lowest hourly wind chill factors included 6 degrees below zero at the Baltimore-Washington International Airport and 3 degrees below zero in Salisbury (Wicomico County). This second arctic outbreak cemented January as an unseasonably cold month. At the Baltimore-Washington International Airport, the monthly mean temperature of 27.8 degrees was 4.5 degrees colder than normal. For the state of Maryland, the average monthly temperature of 27.7 degrees was the 15th coldest January on record since 1895. MDZ008-012-015-Cecil - Kent - Queen Annes - Talbot - Caroline 019>020 17 1800EST 0 Winter Weather/Mix 18 0700EST A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across the Eastern Shore during the evening and overnight on the 17th. Precipitation began as snow across the northern part of the Eastern Shore and a mixture of freezing rain, sleet and snow across southern parts of the Eastern Shore. As warmer air moved in aloft, precipitation changed to freezing rain in all areas shortly after midnight EST on the 18th. Warmer air also moved in near the surface and the freezing rain changed to plain rain from south to north across the Eastern Shore between 4 a.m. and 7 a.m. EST. Snowfall accumulations from Queen Anne's County north averaged between 1 and 2 inches. Ice accretions across the Eastern Shore were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through the Eastern Shore during the afternoon of the 18th to wring moisture from the atmosphere onto the region. MDZ008-012-015-Cecil - Kent - Queen Annes - Talbot - Caroline 019>020 25 2000EST Û 0 Heavy Snow 26 1100EST Heavy snow fell from the evening of the 25th through Monday morning the 26th across the Eastern Shore. Accumulations averaged between 4 and 6 inches. After the snow ended, some spotty freezing drizzle fell across mainly southern sections of the Eastern Shore through the afternoon and into the night of the 26th. Schools were closed on the 26th and they were also closed on the 27th in Caroline County. Untreated roads were slippery. Specific accumulations included 5.8 inches in Stevensville (Queen Anne's County), 5.0 inches in Denton and Federalsburg (Caroline County), 4.5 inches in Easton (Talbot County) and 4.0 inches in Conowingo (Cecil County). The snow was caused by a low pressure system that developed in the lower Tennessee Valley during the morning of the 25th. A second low pressure system then developed off the South Carolina coast that evening. The second low pressure system became the primary low and moved northeast. It passed close to Wilmington, North Carolina around 1 a.m. EST on the 26th and just east of Hatteras, North Carolina around 7 a.m. EST on the 26th before it moved farther offshore. MDZ008-012-015-Cecil - Kent - Queen Annes - Talbot - Caroline 019>020 27 1700EST 0 0 Winter Weather/Mix 2200EST The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave the Maryland Eastern Shore a wintry mix of freezing rain, sleet and snow. Light freezing drizzle fell throughout most of the day on the 27th. Late in the afternoon as the low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and freezing rain began falling across most of the Eastern Shore. As colder air moved in from the north and precipitation intensity increased, the freezing rain changed to sleet and then snow from north to south before it ended before midnight EST. Accumulations ranged from a trace in Caroline and Talbot Counties where precipitation changed to snow just as it was ending to up to 4 inches in parts of Cecil and Kent Counties. Untreated roads were slippery.

Specific accumulations included 4.0 inches in Port Deposit (Cecil County) and Rock Hall (Kent County), 3.5 inches in Elkton (Cecil County), 3.0 inches in Conowingo (Cecil County), 1.5 inches in Chestertown (Kent County), 1.0 inch in Stevensville (Queen Anne's County) and traces in both Cordova (Talbot County) and Greensboro (Caroline County).

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as

S	tor	n Data	and	Unus	ual V	Veat	her I	Phen	omena				
		Time	Path	Path	Numb	ber of	Estim	ated		January 2004			
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Pers Killed	ons Injured	Dam Property	age Crops	Character of Storm	· · ·			
MARYLAND, North	east												
MADVI AND Grad	strong on the Atlant Atlant	as the Michiga 28th, was loc ic City, New J ic States, precip	in low presso ated about 1 fersey. As the pitation inten	are system. The 20 miles east and second low sity increased	he Virginia t of Atlantic w pressure and the pre	low press c City, N system ir cipitation	sure system lew Jersey a ntensified an changed to	moved no and by 7 a nd its upp snow.	rtheast and intensified a.m. EST it was about er air support moved	l and by 1 a.m. EST at 240 miles east of across the Middle			
MARYLAND, South	Dore	hostor - Wicc	mico - Sor	norsot - Inle	and Wored	stor - N	farvland l	Roachas					
WID2021>025	25 26	2100EST 1100EST	onneo - 501	nerset - ma		0	iai yiailu i	beaches	Winter Storm				
	Two t Prince Dorch closin	wo to four inches of snow and sleet fell across portions of the Lower Maryland Eastern Shore. Some higher amounts included incess Anne in Somerset county 4.3", Salisbury in Wicomico county 3.8", Snow Hill in Worcester county 3.8", and Hurlock in orchester county 3". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and schoo osings for a few days.											
MARYLAND, West	Com	-44											
WIDZ001	Garr 24	0500EST 0800EST			0	0			Heavy Snow				
	A tota northy over th	l of 8 to 9 inch vest flow of air he highest eleva	es of snow f over Lake I ttions.	ell from the e Erie, but a lov	vening of th w pressure c	e 23rd in enter dev	to the morn veloped in C	ing of the Dhio and n	24th. Initially, the sn noved east, enough to	ow was caused by a enhance the snows			
MDZ001	Garr 26	ett 0300EST 1200EST			0	0			Heavy Snow				
MDZ001	Snow Garr	began the after ett	noon of the 2	25th. Oakland	reported 6 i	nches of s	snow before	7 AM on	26th.				
	27	1400EST 2200EST			0	0			Heavy Snow				
	Snow	began the after	noon of the 2	7th. Oakland	reported 8 i	nches by	3 PM; Frier	ndsville 8 i	nches by 9 PM.				
MAZ003>004- 008>009-024	<u>, Cent</u> Easte	ral and Eas ern Franklin	<u>t</u> - Northern	Worcester	- Western	Hamps	shire - We	stern Ha	mpden - Nantuck	et			
000/00/-024	27 28	1900EST 1600EST			0	0			Winter Storm				
	A win much north with th	ter storm track of Connecticut central Massac ne storm. Snow	ing south of and souther husetts. Hea fall totals of	f New Englan n Rhode Islan avy snow also 4 to 8 inches	nd brought h nd. In Mas o fell on Na were comm	eavy sno sachusetts ntucket, v on in thes	ow to southers, heavy snow which was over a reas.	ern New E ow fell act on the nor	ngland, from western ross the higher elevat thern edge of the hea	Massachusetts into ions of western and wy snow associated			
	Amou dry ain to 5 in	nts were signif at low levels to ches of snow to	icantly lower o cause preci o accumulate	r across much pitation to eva , mostly durin	a of eastern aporate as it ag the tail en	Massachu headed t d of the s	usetts. High oward Boste storm.	n pressure on. Eventi	over the Gulf of Mai ually, the dry air erode	ne provided enough ed and allowed for 2			
	Offici inches	al snowfall tota at Blue Hill O	ls included 4 oservatory in	1.9 inches at V Milton, and 1	Worcester A 1.5 inches at	irport, 3.4 Logan Ir	4 inches at t nternational	he Nation Airport in	al Weather Service of Boston.	fice in Taunton, 2.7			
MASSACHUSETTS	Other South Huntin	snowfall totals Hadley, Amhe ngton, Southwid	, as reportec rst, Eastham ck, Westfield	l by trained s pton, Brimfie , Fitchburg, a	potters, incl ld, Granvill nd Hopedale	uded 9 i: e, Wilbra e.	nches in Le aham, West	everett, 7 i Brookfiel	nches in Montague; d, and Nantucket; and	Colrain, Greenfield, d 6 inches in Ware,			
MAZ001-025	Nortl	hern Berkshi	re - Southe	ern Berkshi	re								
	15 16	1900EST 1100EST			0	0			Extreme Cold/Win	nd Chill			
	An ex At the arctic in the resulte Equive	tremely cold ai same time, a p high pressure, 15 to 30 mph r ed in dangerou alent wind chill	r mass move owerful storn extending fro ange, with h s wind chill readings ran	d out of Siber m developed o om central Ca igher gusts. T is across Berl aged from 30 t	ria, then plu off the Cana unada southy his wind, co kshire Cour to 40 below	nged sout dian Mar ward thro ombined ty during zero.	thward throu itimes. The ugh the Ohi with ambier g the night	ugh Canad pressure g to Valley, nt temperat of Januat	a and across the north radient between the in produced gusty north tures ranging from zer ry 15 through the m	heast by January 15. Intense storm and the to northwest winds to to 10 below zero, orning of the 16th.			

,	Storr	n Data	and	Unus	ual W	^v eat	her P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Perso Killed	er of ons Injured	Estimat Damaş Property	ted ge Crops	Ja Character of Storm	nuary 2004
MASSACHUSETT	S, West									
MAZ001-025	North 28	ern Berkshir 0000EST 0400EST	e - Southe	rn Berkshii	re 0	0			Winter Storm	
MICHICAN Fort	A con Appala Island. to hear cold en inches	nplex low press achians to form a The two systen vy snow moved nough for all sno	sure area r a secondary ns combined over the ar ow. Around	noved into the storm, off the d to produce a ea from aroun 1 7 inches of a	ne Ohio Va e mid Atlant n marginal w nd midnight snow fell ac	lley on c coast l inter sto into the ross Ber	January 27. by midnight. ' orm event acro early mornin kshire Count	Energy This second poss westen og hours og y with Da	from this storm transferm nd storm moved northeast, rn Massachussetts as a ban of the 28th. The temperatu alton reporting 7.5 inches a	ed across the south of Long d of moderate re profile was and Savoy 7.3
MICHIGAN, East	Huro	n								
W112049	09 10	0500EST 0500EST 0500EST			0	0			Heavy Snow	
MIZ047>048- 053>054-060>063- 068>070	A Lako Midla Maco	e Huron lake effo and - Bay - S mb	ect band pro aginaw -	oduced up to e Tuscola -	ight inches Shiawasse	of snow of sno	over parts of a nesee - Laj	northern l peer - S	Huron County. t. Clair - Livingston -	· Oakland -
	14	0600EST			0	0			Heavy Snow	
MIZ047>049- 053>055-060>062- 068>069-075	An An Seaboa occurri southe Clippe contrib other s (Genes Almon county county Midla Wash	ard on January 1 ed along and no ast Michigan, w. r, as these syste pution off of Lal specific higher a see county), 10 at (Lapeer county	the from F 15th. While rth of M-59 ith the heav ms general ke Huron h mounts thre in Troy (O y), 9.0 in R (Huron cou (Bay county tron - Sag	this system t this system t Twelve hou iest snow falli ly produce m elped Port Hu oughout south akland count, ochester (Oal unty), 8.0 in M y) and northw jinaw - Tuso	racked acro r snowfall v ing between uch less sna uron and Sai least Michig y) and Burt dand county Aidland (Mi est Detroit (cola - Sani	(, across s souther vith this M-59 ar ow. This nt Clair an (in in on (Gen- (), 8.5 in dland cc Wayne c lac - Sh	southern Lak ern Lake Mic system was g ad I-69. These a event linger record the hi aches): 10.9 i esee county), a Owosso (Sh punty), 7.5 in ounty).	e higan, a generally e high sno ed into the gighest tota n White J 9.5 in C itawassee Caro (Tu Genesee	an to near Toledo, then easi persistent moderate to hea between 6 and 11 inches a wfall amounts are unusual ne morning of the 15th as al snowfall of 12 inches. F Lake (Oakland county), 10 Clinton Township (Macoml county), 8.2 in West Sagin iscola county) and Brighton e - Lapeer - Livingston	vy snow band cross much of for an Alberta a Lake effect lere are a few .5 in Flushing b county) and naw (Saginaw on (Livingston - Oakland -
	26 28	1900EST			0	0			Winter Storm	
	A strop snow c snow c with au moved precipi reports day an accum (Huror (Living (Oakla	ng storm system leveloped across was reported in s into far southe itation changed s of thunder. A c d continued intu ulations ranged a county), 9.2 in gston), 7.0 in Sa nd county), 6.0 i	lifted from s the region ccattered loc of ice repo east Michig to all snow by the early from 5 to 1 n Otisville ndusky (Sa in Midland	the southern Monday ever eations from N rted in some I an. Heavy frr during the m ved into Soutt morning hour 0 inches. Her (Genesee cou nilac county) (Midland court	Plains and hing. The sur- d59 north. T ocations fro orning, with heast Michig rs of Wedne re are a few nty), 8.0 in and Chelsea nty) and Sag	moved th ow was this preci- m I 69 so and sleet accumu an durin sday. By specific Vassar t (Washt inaw (Sa	hrough south mixed with sl ipitation was outh. By Tue et crossed the alations of 1 th ag the afterno y the time the snowfall tota (Tuscola cou- tenaw county aginaw county	east Mich eet, espec replaced l sday mori e Michiga to 2 incha on hours, e snow en als from t nty) and), 6.7 in (y).	tigan on Tuesday January 2 cially form M59 south. An oy widespread freezing driz ning, the surface low tracki un border shortly after 6 a ses per hour common, with before snow picked up ag ded Wednesday morning, he storm (in inches): 10.5 Linwood (Bay county), 7. Dwosso (Shiawassee), 6.1 i	27th. Areas of inch or two of zzle overnight, ing from Ohio am EST. This even a couple gain late in the total snowfall in Sebewaing 5 in Brighton in White Lake
MICHIGAN, Extre	eme Sout	thwest								
MIZ077>078	Berri 19 20	en - Cass 1505EST 1100EST			0	0	0		Heavy Snow	
MIZ078>081	Heavy 9 inche Cass - 27	lake effect snow es at Dowagiac. - St. Joseph - 1 2100EST	v accumula Branch - I	ted 8 to 9 incl Hillsdale	nes across no	orthern E 0	Berrien count <u>y</u> 0	y into Cas	ss county with 8 inches at V Heavy Snow	Watervliet and
	28	0400EST			-				•	

A combination of snow from an area of low pressure moving across Ohio and lake enhancement from northwest flow behind this storm caused heavy snow across the area with general accumulations of 8 to 10 inches and over 12 inches in some locations.

		Time	Path Longth	Path Width	Nun	nber of	Estin	ated	Ja	anuary 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MICHIGAN, North										
MIZ021	Antri 05 07	im 2315EST 1400EST			0	0			Winter Storm	
MIZ027	Kalk 06	aska 0015EST 1000EST			0	0			Heavy Snow	
MIZ008-016>017-	A ban Count follow Chip	nd of heavy lak y, including Bo ving event), acco pewa - Emmo	e effect snov ellaire and th ompanied by et - Cheboy	w produced s ne Twin Lake stronger win ygan - Char	ix to twelv es area. In ds, signific levoix - I	e inch ac Antrim ant blowir Leelanau	cumulations County, the ng and driftin - Otsego	from cen lake effe ng, and wi	tral Antrim County to nort ct would continue into the nd chills well below zero.	hern Kalkaska next day (see
019>020-022	06 07	1715EST 1400EST			0	0			Winter Storm	
	A pas snow, condit below Paradi	sing cold front but 3 to 6 ind tions. Significa zero. The high ise in eastern Up	reinvigorate ches of new nt blowing a hest snowfal pper Michiga	d lake effect accumulatio and drifting le l totals, arour m.	snow on t n combine ed local lav nd 6 inches	he evenin d with st enforcen , fell from	g of the 6th rong winds nent to recom n East Jorda	. The air and earli mmend ag n to Elmir	mass was too cold to supp er snowfall to produce da ainst travel, and wind chill a in northwest Lower Mich	ort very heavy ngerous travel s dropped well tigan, and near
MIZ016	On the Count Emm	e night of the 7t y line in easterr net	h, an isolateo 1 Upper Micl	d lake effect s nigan.	now band	dumped o	ver a foot of	snow at T	Cahquamenon Falls on the C	Chippewa/Luce
	10 11	1300EST 0400EST			0	0			Heavy Snow	
MIZ031>036-041>042	A gen snow inches Mani 14	eral light snow dumped over a s in 14 hours, ju istee - Wexfor 1300EST 2000EST	across north foot of new st short of ward rd - Missau	ern Michigan snow on Cro inter storm wa 1kee - Rosc o	a was enhan oss Village arning crite ommon - 0	and Bliss ria. Ogemav 0	outhwest win in Emmet C v - Iosco -	nds off of County. S Gladwin	Lake Michigan. A narrow t Ignace in Mackinac Coun - Arenac Heavy Snow	band of heavy ty picked up 8
	An Al of enh snowf	berta Clipper lo hanced snowfal	ow pressure 1 producing ford and Mis	system passed 6 to 12 inch saukee Count	d across so nes of accu ies, where	uthern Mi imulation 10 to 12 ii	chigan. Sno south of a nches fell.	ow spread line from	north of the low on the 14 Frankfort to Tawas City.	th, with a band The heaviest
M1Z020-025>026-031	Leela 19 20	anau - Benzie 0500EST 0400EST	- Grand T	raverse - N	lanistee 0	0			Heavy Snow	
	Heavy persist near I Benzie	/ lake effect sno tent band of sno nterlochen, wit e and Manistee	ow came in o ow settled in h drifts of 5 Counties.	ff of Lake M from central to 6 feet act	ichigan, ac Leelanau C ross M-72	companied County to in Leelan	d by gusty n western Gra au County.	orthwest v nd Travers Elsewher	winds and blowing and drift a County. Around 20 inch e, 4 to 8 inch amounts we	ting. The most es of snow fell ere common in
MIZ008-015>016- 019>022-025>028- 031>032	Chip Kalk	pewa - Macl aska - Crawf	kinac - En ord - Mani	nmet - Cha istee - Wexf	arlevoix - ford	- Leelan	au - Antr	im - Ot	sego - Benzie - Grand	l Traverse -
0312032	21 23	1345EST 0300EST			0	0			Heavy Snow	
	Low p night o This o Michi Arcad zero v	oressure moved of the 21st. Ou contributed to gan, during the ia, Interlochen, isibility. US-2	east across t ahead of th heavy snow day on the 2 and Petoske was closed v	northern Lak e the front, w over Easter 21st. Four to ey. Winds gu vest of St Igan	e Superior idespread s n Upper M twelve inc usted up to nce due to t	, pushing snow fell, Aichigan, hes of sno 40 mph, he snowy	a cold from which was e and near the producing s and windy e	t into and enhanced l he Lake l ese areas, substantial conditions.	through the northern Great by southwest winds off of L Michigan shoreline in Nor with the highest amounts r blowing and drifting snow	t Lakes on the Lake Michigan. rthwest Lower lear Lake Ann, v, and at times
MIZ016>030-	After of win	the cold front w nd-blown snow i	ent through, fell from Cha	winds turned arlevoix to Gr	l northwest ayling and	and usher Gaylord,	red in a mor as well as fr	e classic la om Paradi	ake effect snow event. And se to DeTour Village.	other six inches
032>036-041>042	Benz	ie - Grand T	raverse -	Kalkaska -	Crawfor	d - Osco	oda - Alco	na - We	xford - Missaukee - R	oscommon -
	Ogen 26 28	naw - Iosco - 2100EST 0400EST	Gladwin -	Arenac	0	0			Heavy Snow	
	An ex	tended period	of heavy sn	ow affected a	almost all	of Northe	rn Lower M	lichigan, a	as a strong low pressure sy	stem over the

		Time Local/	Path Length	Path Width	Num Per	iber of	Estin Dan	nated	Ja	anuary 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MICHIGAN, North										
MIZ008-022	southe to 10 i snow 1 I-75, a next ev 20 inc busine Chipp 28	rn plains grad inch amounts reintensified. nd 3 to 5 inch vent). Total su hes near Roge ss closings du pewa - Otseg 1900EST	ually moved t from Cheboy Heavy snow hes to the wes nowfall amou ers City and A ring the multi- go	oward the sta gan to Alpen was more wi t. The snow nts during thi Alpena. The day storm.	ate. An inii a on the 20 despread d c continued is period ra latter area 0	tial burst 5th. A br uring the into the r nged fror was cert 0	of snow, en rief lull folld daylight ho night, gradu n around 10 ainly the ha	hanced by owed in the urs of the ally transi inches ne urdest hit,	east winds from Lake Hurd e early morning hours of t 27th, with another 6 to 10 tioning to lake effect snow ar Traverse City and Cadilla with widespread school, ge Heavy Snow	on, produced 6 he 27th before inches east of overnight (see ac, to just over overnment and
MT7008 010 021-022	Heavy 6 inches	2100EST lake effect sn es of snow fel of new snow	ow showers d l in the Elmir fell at Paradis	eveloped dur a area before e and Point Ir	ing the more things tape coquois.	rning of the pred off in	ne 28th. In the evening	he snowbe g. In Chip	elts of Northwest Lower Mi ppewa County in Upper Mi	chigan, around chigan, 6 to 12
027>028	Cnip	pewa - Char	ievoix - An	rim - Otseş	go - Kaika	iska - C	rawiora			
	30 31	1700EST 1400FST			0	0			Heavy Snow	
	Anothe fell in	er round of he the snowbelts,	avy lake effect with isolated	et snow, as co amounts as h	old northwe nigh as 18 in	est winds nches nea	crossed the r Bellaire.	upper Gre	at Lakes. Another 6 to 12 i	inches of snow
MIZ017	This w record: Noven Cheb	vas the last he s. Gaylord wa aber of 1893. ovgan	avy snow eve as one of the	ent of a very n, where arou	snowy Jan und 74 inch	uary. Senes of sno	overal sites i ow fell durir	n Norther	n Michigan set all-time mo th, exceeding the old recor	onthly snowfall rd 68 inches in
	31	0600EST 1600EST			0	0	3К		Flood	
	An ice damag	jam develope e to a big scre	d on the Sturg en television a	geon River, b umong other i	acking up v items. Loca	vater into al official	the flood pl s manually o	ain near V cleared the	Volverine. One home was is ice jam later in the day.	nundated, with
MIZ001-003	Kewe 06 07	enaw - Nort 1700EST 0525EST	hern Houg	nton	0	0			Blizzard	
MIZ001-001>002- 002>004-004>007- 007-000>014-084>085	Kewe Dicki	enaw - On nson - Meno	tonagon - 1 ominee - De	Northern 1 Ita - Southe	Houghton ern Schoo	- Bara lcraft - S	iga - Mar Southern I	quette - Houghto	Alger - Luce - Goge n - Northern Schoolcra	bic - Iron - ft
007-0092014-0042083	07 08	0000EST 0600EST			0	0			Winter Storm	
MIZ001-003-005>006	Arctic snow t freque: during County and 8tl continu- inches blowin Kewe 18	high pressure belts of the Ko the morning y, and Phoenix h to boost the ued into the 8 buried Two 1 g and drifting enaw - Nort 0000EST	building in the eweenaw Peni visibilities to on 6th. Snow a measured 1 storm total to th. Most place Heart in Luce snow. Nume hern Hough	ne northern p nsula, blizza near zero. ' v accumulati 4 inches duri 20 inches. (es near Lake County. Tra rous schools nton - Marc	lains pushe rd condition Temperatur ons of up ng this two Over areas of Superior e vel across and busines quette - A 0	ed cold a ns develo res fell be to a foot o day bliz east of M much of sses were lger 0	ir across La ped as stron elow zero au were comm zard. An add arquette, the unising saw northern U closed in th	ke Superic g gusty w nd wind ci non over 1 ditional 6 lake effec at least 6 pper Mich e affected	or and Upper Michigan. In inds along with falling and nills dropped to as low as he Keweenaw Peninsula a inches of snow fell at Phoe t snow intensity picked up of inches of new snow, and igan was hampered by low areas. Winter Storm	the lake effect blowing snow 35 below zero nd Ontonagon enix on the 7th on the 6th and as much as 20 v visibilities in
	19	1800EST				<u> </u>			D 1 1 1 1 1 1	1
MT7001-003	A quic and ov northw "white stuff p had 6 t	k moving Alb ver the east ov vest winds gus -out" conditio iled up at We o 7 inches wit	erta Chipper's ernight after t ting as high a ns. This round tmore in Alge h low visibilit hern Hough	torm system he clipper's of s 45 mph. Th d of lake effe r County. Iro ies in blowin	brought lak cold front b he strong gu ct snows co onwood me g and drifti	e effect s parreled th usty wind pontinued f asured 12 ng snow.	nows to the prough. Mo s caused con from the 18t 2 inches, and	western U re cold ain nsiderable h into the l Mohawk	pper Peninsula late in the c poured across the Upper C blowing and drifting snow 20th. As much as 13.0 inch , Newberry and the Marque	lay on the 17th Great Lakes on and occasional es of the white ette NWS each
	22	0000EST 0800EST	aler in Hough		0	0			Blizzard	

St	tori	n Data	and	Unusu	ıal W	eatl	her P	heno	mena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed I	r of 1s njured	Estimat Damag Property	ed je Crops	Character of Storm	January 2004
MICHIGAN, Upper MIZ002-006>007-085	Onto 22	nagon - Alger 0800EST 1800EST	- Luce - I	Northern Sch	noolcraft 0	0			Winter Storm	
MIZ002-006>007	Anoth front a especi powde Highw snow. at Pell inches Onto 28	er Alberta Clippe and another bone ally in areas fave ry snow, and fre ay M-28 was cle By the time lake cie near the Bara at Newberry. Te nagon - Alger 1600EST 0700EST	er storm do e chilling a ored by a r equent "whi osed across e effect sno iga and Ho emperatures - Luce	we across Uppe irmass invaded northwest wind ite-out" conditi s Alger and Scl w began to win ughton County s fell below zer	er Michigan the Upper (. Wind gust ons were co noolcraft Co nd down late line, 13 inc o by dawn o 0	on the 21 Great Lat s as high mmon ov unties be in the d hes at Ty n the 22m 0	1st. Once the kes, lake eff a as 35 mph ver the Kewa ecause of occ lay on the 23 wo Heart, 12 nd, and wind	wind turne eet snow b caused ext eenaw Pen- casional ne rd, storm t chills reac	ed northwest behind became widespread ensive blowing and insula until late in t ar zero visibility an otal snowfall reach Phoenix, 11 inches hed as low as 30 to Winter Storm	the associated cold and heavy at times, drifting of the fine he day on the 22nd. d extensive drifting ed around 16 inches at Wetmore and 10 40 below zero.
	As a s low pr Areas freque "white Upper and bl at Ney temper	torm system mo essure system. H from Ontonagon ntly gusting bet -out" conditions Michigan on the owing snow. Sor wberry, and 15 ratures caused bin	wed north leavy snow north thro ween 30 a from the 2 30th, the ne notewor inches at tterly cold	east into Canad showers fell o pugh the Kewed and 40 mph ca 28th into the 3 visibility was s rthy snow accu Phoenix. The wind chills as 1	la from the over the favor enaw Penins used extens 30th. Even t till frequent mulations fr combinatio ow as 40 to	central pl red snow ula bore ive blow hough th ly reduce om the st n of the 45 below	lains, cold ai belts downw the brunt of ving and dri ne intensity ed to one qua torm include a strong and y zero on the	ir poured a vind of Lal this exten- fting snow of the lake urter mile i 20 inches gusty no 30th.	cross Lake Superio ke Superior from the ded winter onslaugh with an extended e effect snow dimir n exposed locations at White Pine and I rthwest wind and	r in the wake of the 27th into the 31st. tt. Northwest winds period of frequent ished over western by the gusty winds Munising, 17 inches well below normal
<u>MICHIGAN, West</u> MIZ050-056>057-	Musk	kegon - Ottawa	a - Kent -	Allegan - Ba	nrry					
004>005	06	1200EST 1900EST			0	0			Blizzard	
MIZ037>040-	Blizza snow f of 35 t thirtee hundre Maso	rd conditions occ fell across Muske to 44 m.p.h. Thi n inches was rep eds of car accider n - Lake - Osc	curred acro egon, Ottav s caused vi ported acro nts across th ceola - Cla	oss the area fro va, Kent, Alleg isibility to be ro oss parts of we he area. are - Oceana	m around no an and Barry educed to a stern Kent o - Newayg	oon on th 7 countie quarter o county fr 0 - Meco	the 6th throug s combined of a mile or le com the 6th osta - Isabe	th 7 pm. I with sustai ess through through th ella - Mo	n this time frame, s ned winds of 20 to 5 n this time period. 7 e 8th. The blizzard ntcalm - Gratiot	ix to nine inches of 30 m.p.h. with gusts Fotal snowfall up to 1 conditions caused - Clinton
043>040-051>052-059	14	0400EST 1900EST			0	0			Heavy Snow	
MIZ037-043-064-071	An Al twelve Isabell area, a Maso 18 20	berta clipper mo inches were con a county, where nd wind speeds v n - Oceana - A 0700EST 0700EST	byed across mmon prim twelve inc were rather Allegan - Y	s the area, pro harily north of a shes of snow w low (5 to 15 m Van Buren	ducing heav a line from H as reported. a.p.h.), so blo 0	y snow Big Rapic Lighter s owing and 0	across centr ds to Alma. snow accumu d drifting of	al lower M The heaving alations we snow was a	Aichigan. Snowfall est snowfall report of the reported across to not a problem. Heavy Snow	amounts of ten to came from Winn, in he remainder of the
MIZ056-064-071	Lake of reported Haven fell act Ottav 23	effect snow deve ed within ten mile to south of Cov- ross the westernm va - Allegan - 0700EST	eloped and es of Lake ert. This an nost portio Van Bure	affected areas Michigan acro rea of heavy sn ns of Mason an en	only west of ss Van Bure ow extended d Oceana co 0	of US-31 n county l north in unties, ir 0	, close to th by the Van l nto southwes ncluding Big	e Lake M Buren Cou tern Allega and Little	ichigan shoreline. A nty Road Commissi an county. Up to se Sable Points. Heavy Snow	A foot of snow was on, from near South ven inches of snow
MIZ037>040- 043>046-050>052- 056>059-064>067-	24 An A southv Creek. Maso Ottav Jacks	0000EST Iberta Clipper s vestern lower M: A maximum sn n - Lake - Os va - Kent - Io son	ystem dro ichigan. Aj owfall repo ceola - C onia - Cli	pped southeas pproximately f ort of eight inch lare - Ocean nton - Allega	t to near C our to six ir nes was rece a - Neway an - Barry	Thicago, iches of ved in so go - Me - Eato	causing mo snow fell m outhern Alleg ecosta - Isa on - Inghan	derate to ainly west gan county abella - N m - Van	heavy snow to br of a line from Gra Juskegon - Mon Buren - Kalama	eak out across far nd Haven to Battle t calm - Gratiot - tzoo - Calhoun -
U/1>U/4	27 28	0700EST 0800EST			0	0			Winter Storm	

		Time Local/	Path Length	Path Width	Number of Persons		Estimated Damage			January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

MICHIGAN, West

MIZ056-064-071

A low pressure system developed over the gulf coast states and moved northeast to southern Lake Huron, bringing a combination of moderate to heavy snow and strong gusty winds that caused blowing and drifting of snow across the area. The snow developed around sunrise on the 27th across extreme southwest lower Michigan and expanded northeast to cover most of central and southern lower Michigan by 10 a.m. This was the heaviest general snowfall across our area for the 2003-2004 winter season. A general six to ten inch snowfall occurred across the area with up to 14 inches of snow just east of Grand Rapids, in Montcalm county. Up to twelve inches of snow was reported across parts of Allegan and Van Buren counties.

Ottav	wa - Allegan - Van Buren			
29	1900EST	0	0	Heavy Snow
30	1900EST			-

Arctic air poured into lower Michigan as a strong arctic high pressure area moved into the northern Plains states. Heavy lake effect snow developed over a narrow area across extreme southwestern Ottawa county and far western Allegan and Van Buren counties, mainly west of US-31. Up to ten inches of snow fell from near South Haven to Paw Paw, in Van Buren county. Eight to ten inches of snow fell in Saugatuck (Allegan county), and seven to ten inches of snow was reported in Grand Haven (Ottawa county).

		Time Local/	Path Length	Path Width	Number of Persons		Estimated Damage			January 2004
location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

MINNESOTA, Central and South Central

MNZ041>045-
047>052-054>070-
073>078-082>085-
091>093

Douglas - Todd - Morrison - Mille Lacs - Kanabec - Stevens - Pope - Stearns - Benton - Sherburne - Isanti -Lac Qui Parle - Swift - Chippewa - Kandiyohi - Meeker - Wright - Hennepin - Anoka - Ramsey - Washington- Yellow Medicine - Renville - Mcleod - Sibley - Carver - Scott - Dakota - Redwood - Brown - Nicollet - LeSueur - Rice - Goodhue - Watonwan - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn242100CST261600CST

JANUARY 25-26, 2004



Low pressure that formed over the Southern Great Plains moved across southeast Minnesota early on the 26th. This storm dropped moderate to heavy snow across central and south central Minnesota between late afternoon on the 24th and early afternoon on the 26th. Snowfall totals ranged from 18 to 20 inches in Todd County and northern Morrison County to around 6 inches in an area extending from Redwood Falls to the western Twin Cities suburbs (see attached graphic). The highest totals included 18 to 20 inches in Staples, 14 inches in Little Falls, 11 inches in Onamia, and 10 inches in Alexandria, Milaca, and Long Prairie. Four to 5 inches of snow fell south and east of the Redwood Falls to Twin Cities line but wind gusts to 25 MPH during this storm caused low visibility.

		Time	Path	Path	Nur	nber of	Estin	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Isons Injured	Property	Crops	Character of Storm	-
MINNESOTA Nor	theast									
MNZ010>012-	Kooc	hiching - N	orthern St.	Louis - N	orthern (Cook / N	orthern I	ake - C	entral St. Louis - So	outhern Lake
019>021-037	Sout	hern Cook -	Southern S	t. Louis / C	arlton			and C	chirdr 5t. Louis 5t	Jutiferin Luke
	13	2000CST			0	0			Heavy Snow	
	14	1100CST								
	Six to	10.5 inches of	f snow fell act	oss the Minr	esota Arro	whead. The	he highest ar	nounts we	ere just inland from Lake	Superior. Finland
MNZ010>012-		hiching - N	orthern St.	Louis - No	orthern (cook / N	orthern L	ake - No	orthern Itasca - Cen	tral St. Louis
018>021-026-037	Sout	hern Lake -	Southern C	ook - South	iern Itaso	a - Sout	hern St. L	ouis / Ca	rlton	
	21	2000CST			0	0			Extreme Cold/Wind	Chill
	22	0800CST	1. 1	20 5 1 1	• •		. 15 . 20	1		50
MNZ012-0195021-	Nort	eratures dipped	1 to as low as	-30 F while v	vinds were	blowing a	t 15 to 30 m Southern	iph, creati	ng wind chills of -40 to -	50. orthorn Cass .
025>026-033>037	Sout	hern Itasca	- Southern	Cass - Cr	ow Wing	- North	ern Aitki	n - Sout	hern Aitkin - South	ern St. Louis
	Carlt	ton		0400 01	o	1.01.01				
	25	0300CST			0	0			Heavy Snow	
	27	0400CST								
	Heavy	snow fell over	er much of no in southern C	ortheastern M	the tip of the	the heavy	snow area head. The m	of eight o	r more inches was in an fell a few miles inland fr	eighty-mile-wind
	from I	Duluth up the r	north shore w	nere amounts	ranged fro	m a foot to	o just over 3	0 inches.	The Duluth NWS had 27	.1 inches, Finland
	DNR	had 26 inches,	Adolph had 2	5 inches whi	le a spotter	2 miles ea	ast of Wales	(southern	Lake County) had 21 in	ches.
MINNESOTA, Nor	thwest									
MNZ001-004>009-01	13 West	Polk - Kitt	tson - Rose	au - Lake	Of The	Woods -	West Ma	arshall -	East Marshall - No	orth Beltrami -
	Penn 02	ington 0440CST			0	0			Winter Storm	
	02	0347CST			Ū	U			Whiter Storm	
MNZ001>002- 004>009-013>017-	A sum northe high p speeds Valley near z Northe West Beltr	east along its i pressure built in s were steady y. At Hallock, zero at times i ern Beltrami co Polk - Nor ami - Penni	n quickly beh at 20 to 30 m MN, winds n the norther ounties, with man - Kitt ington - Re	h, roughly fr ind the depar ph with gust gusted up to n Red River 4 to 6 inches son - Rose d Lake - 1	y morning om Wahpe ting low, c s to 35 mp 45 mph. H Valley. H elsewhere. eau - Lah East Polk	tracked in ton, ND, reating a t h. Wind s Blowing si Blowing si Bight inch Several s ac Of TI - North	at noon, to ight surface speeds were now resulted es of snow chools cance he Woods a Clearwa	Lake of the pressure of the pr	the Woods, MN, by early gradient and gusty northw her across the extreme nu- lities below a half-mile is s portions of Roseau, E es and evening activities Marshall - East Ma uth Beltrami - Mah	g. If then tracked v evening. Arctic vest winds. Wind orthern Red Riven n open areas, and ast Marshall, and on friday. arshall - North nomen - South
022>023	Clear	rwater	-							
	04 06	1900CST 0700CST			0	0			Extreme Cold/Wind	Chill
MNZ006	High Minne over p below Lake	pressure exten esota. This ke portions of nor at Humboldt. Of The Wo	ded from eas pt a steady w rthwest Minn ods	tern Montana est to northw esota. The c	a into centr vest wind a coldest more	al South 1 t 10 to 20 ming lows	Dakota, with) mph and w s on monda	h a decent vind chills y (Januar	surface pressure gradie from 40 below to 60 do y 5th) were 32 below at	nt over northwest egrees below zero Baudette and 29
	13	1600CST			0	0			Heavy Snow	
MNZ001-004>009-	14 An Al north county West	0400CST lberta Clipper of this low tra y, reported 6 in Polk - Kitt	tracked from ack. Most of aches of snow	southeast Sa the snow fe au - Lake	skatchewar ll in the w	n to Fargo arm air al Woods -	o, and then the land of the land of the land of the land of the land the la	to the Mir low. Ang	nneapolis area. Light sn gle Inlet, in northwest La East Marshall - No	ow fell along and ake of the Woods orth Beltrami
013>017	Penn	ington - Red	Lake - Eas	st Polk - No	orth Clean	water -	South Belt	trami		
	21 22	1500CST 0424CST			0	0			Extreme Cold/Wind	Chill
	Surfac 10 to coldes	ce high pressur 20 mph and te st wind chill, at	e built into ce emperatures f t -42 degrees l	entral North I rom 15 belov pelow zero. 1	Dakota, wit w to 25 bel Roseau had	h a tight p ow zero c the colde	pressure grad created wind st morning t	lient over l chills ar emperatur	northwest Minnesota. N bund 40 below zero. Ba e (on the 22nd), at 22 be	orthwest winds an udette posted the low zero.

S	tori	m Data	a and	Unus	ual V	Veat	her Phe	enomena			
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numl Pers Killed	er of ons Injured	Estimated Damage Property Cro	ops Character of Storm	January 2004		
MINNESOTA, North	nwest										
MNZ001>009- 013>017-022>024- 027>032-040	West Beltr Clean Gran	Polk - Norn ami - Penni rwater - Hul 15250057	nan - Clay ngton - Re bbard - We	- Kittson - I d Lake - E st Becker -	Roseau - I ast Polk East Bec	ake Of · North ker - W	The Woods - V Clearwater - Vilkin - West O	West Marshall - Eas South Beltrami - M htter Tail - East Otto	t Marshall - North Iahnomen - South er Tail - Wadena -		
	24 26	1525CST 0315CST			0	0		Winter Storm			
MNZ001>009- 013>017-022>024- 027>032-040	An inverted trough extended into the northern plains from an area of surface low pressure over the central plains. Much of t received over 6 inches of snow. A heavy snow band set up from Cooperstown to Mayville (North Dakota) and toward W Minnesota. Up to 2 feet of snow fell along this line. Wind chills of 20 below to 30 below zero also occurred during the day (January 25th). 17 inches of snow fell at Hillsboro, ND, and 21 inches fell at Ada, MN. Many sunday church services an activities were cancelled. Most schools were closed on monday, or started late. A 15 to 20 car pileup occurred on the Inters bridge between Fargo and Moorhead, with only minor injuries reported. Because of the snow, many areas only had parti service on monday. Such heavy amounts of snow had not been seen since the record setting winter of 1996/97. Many c across Minnesota welcomed the heavy snow, as recent years had been tough for outdoor recreational activities. West Polk - Norman - Clay - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - Beltrami - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami - Mahnomen - Clearwater - Hubbard - West Becker - East Becker - Wilkin - West Otter Tail - East Otter Tail - Wat										
	26	0330CST			0	0		Extreme Cold/V	Vind Chill		
<u>MINNESOTA, South</u> MNZ079-086>088-	all of below aftern- warnin tempe the ten below Perley heater Rapid teast Wab	angle pressure northwest Min v zero on the ad oon of the 28th ng was not extu- ratures abound mperature at Fo v. These were v and Roseau re rs, repairing fla (s) reported brie asha - Dodge	nesota. With fternoon of th 1. Dalton, M ended beyond ed. On the m osston fell to 2 the coldest to ported lows of the tires, and fi of power outage	a subzero tem ne 27th. Ther N, reported a 1 the afternoo corning of the 50 degrees be emperatures r of 34 degrees axing batteries ges. - Winona -	me wind chill peratures at efore, a wi wind chill n of the 28t 27th, Perley low zero, A ecorded dur below zero. s and spark	d wind s nd chill v of 62 be h. Howe / fell to 3 da fell to ing this Auto re plugs.]	speeds of 10 to 20 speeds of 10 to 20 warning was issue low zero. Wind s ever, with the arct 36 below zero. The 48 below, Park R stretch of subzere pair shops were k Residents around e - Houston	o mph, wind chills drop ed from the afternoon o speeds dropped off enou- tic high pressure over the coldest morning occur Rapids fell to 45 below, a o weather. On the mor- cept busy jumping stalle. Moran Lake and Two 1	ped to 40 below to 65 ped to 40 below to 65 f the 27th through the 1gh that the wind chill e area, extremely cold rred on the 30th, when and Thorhult fell to 43 ning of the 31st, both d cars, installing block Inlets Lake (near Park		
094>096	26	0300CST			0	0		Winter Storm			
MININESOTA South	27 Snow includ and 7	0600CST accumulations led 8.4 inches a inches at Waba	of 6 to 8 in at Stewartville asha (Wabash	ches were co e (Olmsted Co a County).	mmon acro ounty), 8 ind	ss southe ches at A	east Minnesota as ustin (Mower Co	a winter storm hit the unty), 7.2 inches at Pres	area. Snowfall totals ston (Fillmore County)		
MNZ071>072- 080>081-089>090- 097>098	Linco	oln - Lyon - I	Murray - C	ottonwood ·	- Nobles -	Jackson	n - Pipestone - I	Rock			
	25 26	1100CST 1600CST			0	0		Winter Storm			
	Snown blowin chills cancel	fall of 5 to 10 ng snow. The v developed late lled.	inches was a vinds also can in the storm a	accompanied used drifting s as actual temp	by winds st now, which eratures fel	rong end contribu . Numer	bugh to reduce vi nted to making tra ous schools were	isibilities to a quarter m vel very difficult. In add closed and many school	tile or less at times in lition, dangerous wind related activities were		
<u>MINNESOTA, West</u>											
MINNESOTA West	NONI Centr	E REPORTED. •al									
MNZ039-046	Trav	erse - Big Sto	one								
	25 26	1300CST 0400CST			0	0		Heavy Snow			
	Heavy Lake a	y snow of 6 to and Ortonville,	10 inches fell 7 inches at B	across Big S rowns Valley	tone and Tr , 9 inches at	averse co Tintah,	ounties. Some sno and 10 inches at V	wfall amounts included, Vheaton.	, 6 inches at Artichoke		

		Time Local/	Path Length	Path Width	Nun Pe	nber of rsons	Estim Dam	ated age	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
MISSISSIPPI, Centr	al								
Adams County									
Natchez	25	0255CST			0	0	2K		Thunderstorm Wind (G50)
MISSISSIPPI, North	A few	trees were blov	vn down on j	power lines.					
MISSISSIPPI, South	NON	E REPORTED.							
MISSISSIPPI, South	NON <u>east</u>	E REPORTED.							
	NON	E REPORTED.							
MISSOURI, East									
MOZ027-034>035	Mari 03 04	ion - Monroe 2330CST 1200CST	- Ralls		0	0			Ice Storm
MOZ018>019-	A nar cover called	row band of fre ed highways. E l it the worst ice	ezing rain hi lectric comp they had see	ts parts of No anies had to 1 n since 1991.	ortheast Mi restore pov	ssouri cau ver to part	ising numero ts of Monroe	ous power e, Marion	outages and several auto accidents on ice and Ralls counties. Officials in Hannibal
026>027	KIIOZ	x - 110 wis - 511	ciby - Mai	ion					
	05 06	2200CST 1000CST			0	0			Extreme Cold/Wind Chill
	Temp	eratures droppin	ng into the s	ingle digits a	long with	10 to 20	mph winds	produced	wind chill readings from 15 to 20 below
MOZ018>019- 026>027-034>036- 041>042-047>052- 059>065-072>075- 084>085-099	Knoz Calla Jeffe	x - Lewis - S away - Montg rson - Crawfe	belby - M gomery - L ord - Wash	arion - Mo incoln - Ga ington - St.	onroe - F sconade Francois	Ralls - P - Warre s - Ste. G	ike - Booi n - St. Cha Senevieve -	ne - Auc arles - F Iron - N	drain - Moniteau - Cole - Osage - ranklin - St. Louis - St. Louis (C) - Aadison - Reynolds
	25	0600CST			0	0			Winter Storm
	A cor rain e mid-n chang region anoth	nbination of fre early Sunday morning with so ged to snow and h. Some power of er fast moving s	ezing rain, s norning. Som me locations accumulated putages were torm brough	leet and snow me places rec s in Central a l another 1 to also reportec t another inch	y fell bring ceived 1/4 and East C 2 inches. I d in Centra or two of	to 1/.2 i to 1/.2 i entral Mi Luckily it Missouri snow Mor	egion to a sta nch of free ssouri receiv was a Sunda i. Many scho nday night ar	andstill. T zing rain. ying 1 to uy, as trans pols across nd early T	he event started with a period of freezing . The freezing rain changed to sleet by 2 inches of sleet. By afternoon, the sleet sportation was brought to a halt across the s the region were closed into mid-week as uesday.
MISSOURI, Lower									
MISSOURI, Northea	NON I <mark>st</mark>	E REPORTED.							
	NON	E REPORTED.							
MISSOURI, Northwe	<u>est</u>								
MOZ003-005>006-	Wor	th - Harrison	- Mercer -	Andrew					
012	04	0600CST 1100CST			0	0			Winter Storm
	A wir	nter storm produ	ced 6 to 7 in	ches of snow	across the	area.			
MOZ044-046-054	John 18	son - Cooper 0200CST 2300CST	- Henry		0	0			Flood
	Heavy Valle	y rains on the 18 y City crested a	8th caused m t 23.60 feet.	inor flooding or 1.6 feet ab	on creeks a	and rivers stage. The	in west cent Petite Salin	ral and ce e Creek n	ntral Missouri. The Blackwater River near lear Boonville crested at 17.15 feet. or 1.2

Valley City crested at 23.60 feet, or 1.6 feet above flood stage. The Petite Saline Creek near Boonville crested at 17.15 feet, or 1 feet above flood stage. The South Grand River near Urich crested at 25.37 feet, or 1.4 feet above flood stage.

		Time Local/	Path Length	Path Width	Nun Pe	ber of rsons	Estin Dan	nated nage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MISSOURI, Northw	est									
MOZ037-039>040- 043>046	Jack	son - Saline -	Howard -	Cass - Johr	nson - Pet	tis - Coo	per			
	25	0530CST 1100CST			0	0			Winter Storm	
	A wid	lespread freezin	ng rain event	left a genera	1 1/4" of ic	e, with 3	to 4 tenths r	eported fr	om Cass county eastw	ard through Cooper
MOZ021>022- 028>032-038	Clint	on - Caldwe	ll - Platte -	Clay - Ray	- Carroll	- Charit	on - Lafay	rette		
	25	0730CST 1200CST			0	0			Winter Storm	
	Wides	spread freezing	rain event hi	t the area on t	he 25th, wi	th ice acc	umulations	up to 1/4 o	of an inch reported.	
MOZ053>054	Bates 25	s - Henry 0800CST 1200CST			0	0			Winter Storm	
	Wides	spread freezing	rain with acc	umulations u	p to 1/4 of	an inch.				
MOZ011>014-020	Holt 25	- Andrew - I 0930CST 1300CST)e Kalb - D	aviess - Bu	chanan 0	0			Winter Storm	
	Wides	spread freezing	rain event or	the 25th, wit	th ice accur	nulations	up to 1/4 of	an inch.		
MISSOURI, Southea	<u>ist</u>			,,			-F			
MOZ076-086>087- 100	Perry	y - Bollinger	- Cape Gir	ardeau - W	ayne					
	25	0700CST 1300CST			0	0			Ice Storm	
	Offici Bollin Green Some outage	als in Bollinge ger County, no ville (Wayne C ice-laden tree es in the city or limbs, Schools	er County repone lasting mo County) to Ca limbs and po f Cape Girard were closed	orted eight to orted han two ope Girardeau ower lines w leau. The put in Greenville	raffic crash or three hou i. The ice t ere brough blic works of the day aft	es, none irs. About ended to t down. A lepartmen er the ice	with serious one quarter be mostly o About 1,100 it in Cape G storm, whic	injuries. inch of ic n trees an customer irardeau re h occurred	Sporadic power outag ee was observed as far d power lines in the n s were without power eported six streets nee t on a Sunday.	es were reported in south as a line from nore southern areas. due to 21 separate ded to be cleared of
MISSOURI, Southw	est	innesi Denoolo	nere erosea		uie duy ui		storin, vine		i on a Sanday!	
MOZ055>058- 067>071-079>083-	Bent Texa	on - Morgan s - Dent - We	- Miller - N ebster - Wr	Maries - St. ight - Shan	Clair - H non	lickory -	Camden	- Pulaski	i - Phelps - Polk - I	Dallas - Laclede -
091>092-098	25	0200CST			0	0			Ice Storm	
		0700CST								
	A stro tempe than a accide	ang upper level rature fields as a quarter of an ents were obser	storm system sumed a stru inch from Jo ved, however	cture conduc oplin to Wes oplin significa	southern ar ive for sign t Plains, ar nt monetar	id central nificant ac id up to a y losses ca	Missouri du cumulation in inch near an be directl	ring the or s of freezi the Hous y related to	vernight hours of Janu ng rain. Accumulatio ston and Salem areas. o the ice.	ary 24th. Low level ns ranged from less Numerous vehicle
MONTANA, Centra	<u>l</u>				_	~ -		~		~
MTZ008>009- 012>014-047>048- 050-052>055	Beav Soutl	erhead - No hern Rocky I	rth Rocky Mountain F	Mountain Front - Judi	Front - (th Basin -	Cascade · Jeffers	- Choute on - Broad	au - Sou water -]	thern Lewis And Meagher - Gallatin	Clark - Blaine -
	01 02	1200MST 1800MST			0	0			Winter Storm	
	A stro centra Yello Maria cause	ong winter stor l Montana. Re wstone, 9 inch s Pass and 5 in d areas of blow	m rang in the ported snow es at the Aug iches at Moco ing and drifti	e new year w fall amounts gusta Agricul casin, Chinoo ng snow forci	vith heavy s included: ture Station ok, Helena	snow, gus 13 inches a, 8 inche 1S, and M asses and 1	ty winds an at Augusta s at Carter lalmstrom A highways to	d cold ter 22SE, 11 4W, 7 in ir Force E close.	nperatures across a lau l inches at Martinsdal ches at Canyon Creek Base. In addition to the	rge portion of north e, 9 inches at West 4SSW, 6 inches at e snow, gusty winds
MTZ009>010	Nort 22	h Rocky Mor 0930MST 1540MST	untain From	nt - Eastern	Glacier 0	0			High Wind (G52)	
	High high y	winds develope	ed over the N sustained win	orthern Rock ds of 45 mph	y Mountain at the Two	front and Medicine	l adjacent pl DOT site a	ains durin nd a gust o	g daylight hours of Jar of 60 mph at Browning	nuary 22. Reports of

S	tor	m Data	and	Unus	ual W	eat	her H	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed I	r of ns injured	Estim Dam Property	ated age Crops	Character of Storm	January 2004
MONTANA, Centra	1									
MTZ009-048	Nort 25 30	h Rocky Mou 1200MST 1700MST	ntain Fro	nt - Souther	rn Rocky M 0	ountaiı 0	n Front		Winter Storm	
	A wir fall ar inches	nter storm develo nounts include: s at Choteau 18V	oped over ti 30 inches a V.	he Rocky Mo t St Mary 14	ountain Front a W, 26 inches a	midday at Maria	on January s Pass, 10 i	25 and conches at C	ontinued for several da hoteau 24W, 9 inches	ys. Reported snow at Browning and 5
	In add Janua of Jan of 54 Marys	lition to the hea ry 30. Some of t uary. Reported y mph at Silver sville.	vy snow, st he winds w wind speeds City and a	rong winds of ere associated include: a the gust of 46 m	leveloped over d with convect nunderstorm gumph at Helena	r portion tive active ast of 60 a. Sleet	ns of North vity that de mph at Ca (accumulat	Central N veloped ov scade 10S ting to a o	Iontana during the late ver southwest Cascade W, a gust of 55 mph at quarter of an inch) wa	morning hours of county on the 30th Great Falls, a gust as also reported at
MONTANA, East										
MTZ016>020-	Cent	ral And Se Pl	hillips - C	entral And	Southern V	alley -	Daniels -	Sherida	n - Western Roose	velt - Garfield -
0222023-039-0012002	01	1900MST	i Pininps	- Northern	valley - Eas	0	ooseven		Winter Storm	
	02	1200MST						6.1.1		
	An ar hours Valley	of the 2nd. 2 to y counties. In ac	4 inches fe dition to the	across northe ll across northe ne snow, nor of a mile in a	east Montana I heast Montana theast winds o	late on t , with is of 15 to	olated amo 25 mph pr	of the 1st unts of 4 t oduced at	and exited the area of o 6 inches in central Ph reas of blowing and di	uring the morning uillips and southern ifting snow which
MTZ016>027-	Cent	ral And Se Ph	nillips - Ce	entral And	Southern Va	alley - I	Daniels - S	Sheridan	- Western Roosevo	elt - Petroleum -
059>062	Garf	ield - Mccone	e - Richla	nd - Daws	on - Prairie	- Wib	aux - Noi	rthern P	hillips - Little Roc	ky Mountains -
	Nort	hern Valley - 2000MST	Eastern R	loosevelt	0	0			Extromo Cold/Win	d Chill
	04	12000MST			U	U			Extreme Colu/ will	
	Temp below into th	eratures of 15 to zero. The follo ne morning hours	o 30 below wing is a lis s of the 5th.	combined wi st of the lowe	th winds of 10 est wind chills	0 to 20 from act	mph to pro ross northea	duce wide ast Montar	spread wind chills of had a during the late eveni	between 40 and 60 ng hours of the 4th
	Danie	ls county: 47 bel	low							
	Daws	on county: 45 be	low							
	Garfie	eld county: 52 be	elow							
	Petrol	eum county: 45	below							
	Phillip	os county: 50 be	low							
	Richl	e county: 44 belo	ow elow							
	Roose	evelt county: 57	below							
	Sheric	lan county: 47 b	elow							
	Wiba	1x county: 45 ber	low							
MTZ016>027-	Cent	ral And Se Ph	nillips - Ce	entral And	Southern Va	alley - I	Daniels - S	Sheridan	- Western Roosevo	elt - Petroleum -
059>062	Garf	ield - Mccone	e - Richla	nd - Daws	on - Prairie	- Wib	aux - Noi	rthern P	hillips - Little Roc	ky Mountains -
	Nort 24 31	nern Valley - 0600MST 1200MST	Eastern R	loosevelt	0	0			Winter Storm	
	A ser additi Most driftir produ Count and pr betwe	ies of storm system of northeast More g snow at time cing 3 to 8 inchoi ies where locall roduced numero en 20 and 30 b	stems move ng wind cor ontana rece es. The first es of snow a y up to 8 in us reports fi elow across	d in off the nbined with v ived between st storm mov across the are ches of snow com spotters of much of the	Pacific during yery cold temp n one and two yed into the a a. The heavies fell. Northeas of snowdrifts se a area on the	the last eratures o feet of rea on to st amour st winds several f night of	t week of J to produce snow. The snow. The the 24th, and the 24th, and which gus eet deep. T the 24th in	Vanuary ar wind chill e strong v nd continu fell across ted to 35 he strong nto the mo	ad affected all of north readings of 40 to 60 b vind produced conside ued into the morning s Valley, Roosevelt, Da mph at times, created b wind also caused the w orning hours of the 25	east Montana. In elow zero at times. rable blowing and hours of the 25th, uniels and Sheridan blizzard conditions, ind chill to drop to th. The next storm
	syster	n moved into th	e area on th	e 26th, and s	snow develope	ed acros	s northeast	Montana	during the evening hou	irs of the 26th and

continued through the 27th. 3 to 6 inches of of snow accumulated across northeast Montana, with local amounts of up to 8 inches. In addition, the combination of temperatures of between 10 and 25 below zero and northwest winds of 20 to 30 mph with gusts to around 40 mph produced wind chills of between 40 and 60 below across all of northeast Montana. The strong wind produced considerable blowing and drifting of the snow which created blizzard conditions at times. The wind chills remained between 40 and 60 below during much of the night of the 27th into the early morning of the 28th. Another storm system quickly followed on the

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	iber of sons Injured	Estin Dam Property	nated nage Crops	January 20 Character of Storm	304
	Dute	Standard	(inites)	(1 m u))	Timou	injureu	riopenty	erops		
<u>MONTANA, East</u>	28th, of the combi emerg snow emerg 50 be border were Plenty	spreading snow snowfall and ined with 15 to ency travel onl across northea ency travel onl low zero. The r into the morni numerous repo	back across 15 to 25 mp 25 mph wi 25 mph wi 26 mph wi 26 mph wi 26 mph wi 26 mph wi 27 mph wi 26 mph wi 27 mph wi 26 mph wi 27 mph wi 26 mph wi 27 mph wi 27 mph wi 26 mph wi 27 mph wi 26 mph wi 27	northeast Mo h winds produ- er storm quice By the eve 0 to 25 mph p ished during he 31st. By the drifts several cted snowfall	ntana durir duced cons ce wind ch kly follow, ning of th produced c the night c he time the feet deep totals durin	ng the day iderable 1 ills of 30 ed late or e 30th, r onsiderab of the 30t last storm with rep ng the last	y, and produce blowing and blowing and to 50 belo n the 29th ir nost roads a ole blowing a h, but stron n system mo ports of sno week of Jar	ced anothe l drifting w zero. M tto the 30 across noi and driftin g wind ar wed out of wdrifts of nuary.	r 2 to 6 inches of snow. The combina snow. In addition, sub-zero temperat Iany roads were again closed or ope h, producing several inches of additi- theast Montana were closed or open g snow, and produced wind chills of 3 d snow lingered along the North Da the area by the morning of the 31st, the y up to 20 to 25 feet in the vicinity	tion ures n to onal n to 30 to kota here y of
MONTANA, South	Glasg Malta Plenty Nashu Port o	ow: 23.9 inches : 20.0 inches wood: 16.3 inc ia: 16.0 inches f Morgan: 11.0	hes inches							
MTZ029-042	Muss 25	selshell - Golo	den Valley		0	0			Hoovy Snow	
	Heavy	snow fell acro	ss northwest	portions of th	e county w	arning are	ea. The follo	wing snov	vfall amounts were observed:	
MONTANA, West	8 inch	es 7SSE Klein;	6 inches 5ES	SE Klein; 6 in	ches in Rye	egate.		-		
MTZ001>004-043	Koot Blacl 01 02	enai/Cabinet xfoot Region 0800MST 0800MST	Region -	West Glaci	ier Regio 0	n - Flat 0	head/Miss	sion Vall	eys - Lower Clark Fork Regio Winter Storm)n -
MTZ002>004-043	An are total s Elmo; occurr West 03 04	ctic cold front p mowfall ranged 14 inches at N red the evening Glacier Reg 0700MST 0000MST	bassed throug from 6 to 8 Joxon; 10 ind of January 1: ion - Flathe	h northwest M inches with P ches at Polsor st, where Colu ead/Mission	Montana pr nigher amo n, Big Fork umbia Falls a Valleys - 0	oducing w unts in th and See recorded Lower 0	videspread h e favored up ley Lake; ar gusts from Clark For	neavy snow oslope are nd 16 inch the northe rk Region	v and strong gusty northeast winds. St as, such as 12 to 16 inches from Plair es at Blacktail Ski Area. Strongest w ast at 41MPH, and Kalispell 32 MPH. a - Blackfoot Region Winter Storm	orm 1s to inds
MTZ001>007-043	A reir Contin betwe 30 dej By 10 Snow inches emerg Koot Misse 05	forcing shot of nental Divide of en Kalispell an grees below zer 00 AM, whiteo drifts of 5 to 5 s in the valleys ency travel onl enai/Cabinet oula / Bitterr 0600MST	cold arctic a during the ea d Columbia l o, with a win ut conditions 7 feet were r s, and up to y, as well as Region - oot Valleys	ir brought da urly morning Falls, causing d chill temper s developed or eported in Cc 10 inches in US-93 in the West Glaci s - Bitterroo	ngerous wi hours of J whiteout c erature of 5 ver the Mis olumbia Fa the mount Mission Va der Regio o	nter weat anuary 3 conditions 2 degrees ssion Vall lls and in ains. Hig alley thro n - Flat ire Mou	her conditio , with north from blowi s below zero ey south of t the Mission hway 200 b ughout the d hhead/Miss intains - B	ns to north least wind ng snow. o reported Flathead I n Valley. Detween E lay from p sion Vall utte / Pir	west Montana. Arctic air spilled over gusts between 40 to 50 MPH recor Wind Chill temperatures dropped to 2 from a weather spotter in Columbia F .ake, as the arctic front moved southw Snowfall totals for the storm were 4 onner and Greenough Hill was decli- or visibility in blowing snow. eys - Lower Clark Fork Region ttlar Region - Blackfoot Region Extreme Cold/Wind Chill	the rded 5 to alls. vard. to 8 ared n -
	06 As sk weste: Poleb: on bo Resor started below 5th, at	1000MST ies cleared and rin Montana. O ridge and Libby th the 5th and t in southwest N d. Official recon- reco on the 5th and 28 below zer	winds dimir n both the 5 / areas in nor 6th. Water p Montana clos rd lows on the h; Polebridge ro on the 6th;	tished behind tith and 6th o thwest Monta ipes in portio ed for the day e 5th and 6th , 45 below ze Drummond,	a strong a of January, na, experie ns of north on the 5th included: E ro on the 5 36 below z	rctic cold minimum enced the west Mos due to ex due to ex cureka, 35 th; Hami ero on the	front, recon n temperatu coldest read ntana froze treme cold t 5 below zero lton, 28 belo 2 5th; and Se	rd cold ter res dropp ings with and/or bro emperatur on the 5th ow zero or eley Lake	peratures were experienced across at ed to 20 to 50 degrees below zero. minimums of 42 to 50 degrees below : ke from the extreme cold. Discovery es. Numerous automobiles had to be ju a, and 31 below zero on the 6th; Olney the 5th; Anaconda, 27 below zero on 40 below zero on the 6th.	ll of The zero Ski ump 7, 34 1 the
MTZ002>003	West 07	Glacier Reg 0800MST 1800MST	ion - Flatho	ead/Mission	Valleys	6			Winter Weather/Mix	

Freezing rain turned to moderate snow over Flathead County causing numerous car accidents throughout the county from very slick roads. One fatality and six injuries were reported from automobile accidents to due icy roads. F39VE

		Time Local/	Path Length	Path Width	Nun Pe	nber of	Estin Darr	nated	Ja	nuary 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
MONTANA, West										
MTZ002-006-043	West 24 25	Glacier Regi 0700MST 1600MST	ion - Bitter	root / Sapp	hire Mou 0	ntains - 0	Blackfoot	Region	Winter Storm	
MTZ005	Miss 25	oula / Bitterro 1200MST 1600MST	oot Valleys		0	0			Heavy Snow	
	The c winter of the up to in the Sapph Highy occurr aftern	ombination of v r weather condi 24th through th 30 MPH in the West Glacier an hire Mountains r vay 93 near Mis red. Portions of oon, due to poo	warm Pacific tions over po he early morn West Glacier nd Blackfoot received 8 to soula, causin f I-90 and H r visibility in	moisture cla rtions of wes ing hours of Region. Win Regions rang 10 inches of g numerous a ighway 93 heavy snow	shing with stern Monta f the 25th, nd chill ten ged from 6 r new snow automobile were tempo and very sl	cold arct ana. As th temperatures inches in 2. During accidents orarily cla ick roads.	ic air spillin he cold air sp ures dropped s also fell to the valleys u the day of the s from icy, sl posed with en	g over the billed over into the s 15 degrees up to 11 in e 25th, he ick roads. mergency	Continental Divide, produ- the Continental Divide from ingle digits with wind gusts s below zero. 24 hour storm ches in the mountains. The eavy snow fell along the I-9 Near East Missoula, a 10 vec travel only for several hou	ced dangerous m late evening s from the east total snowfall Bitterroot and 0 corridor and chicle accident urs during the
MTZ001	Koot 26 27	enai/Cabinet 1600MST 1600MST	Region		0	0			Winter Storm	
MTZ002	West 26 27	Glacier Regi 1600MST 1600MST	ion		0	0			Blizzard	
	A stro West 200 A degree of Gla Depar were to condit the W	ng arctic cold f Glacier Region M and 400 AM es below zero. I acier National F tment of Transp reported at the C tions. 24 hour st est Glacier Reg	ront pushed of and local wh the temperat Heavy wind of Park over a 50 portation advi Canadian bord orm total snot	over the Con niteout condi ure dropped lriven snow o D-mile stretcl sed emergen ler at Port of owfall ranged fts of 3 to 4	tinental Di tions in the 50 degrees created zere h between cy travel o Rooseville l from 6 to feet were re	vide late of e northerr at Logan o visibility West Gla nly from 0 e. Glacier 8 inches i eported in	on January 2 n portions of Pass in Glac y and forced cier and Eas Columbia Ho Park personn n portions o the West Gl	6th into the roothwest cier Nation the closu the closu t	the 27th, causing blizzard co t Montana. In a two hour p hal Park, from 16 degrees ab re of of U.S. 2 around the so As the arctic front moved Vest Glacier, and near white rdered home early due to the enai/Cabinet Region, to 16 t on.	nditions in the eriod between iove zero to 34 outhern corner westward, the iout conditions e poor weather to 30 inches in
MTZ002-043	West 27 28	Glacier Regi 1800MST 0800MST	ion - Blackf	oot Regior	0	0			Heavy Snow	
MTZ002	West 28 29	Glacier Regi 0800MST 0800MST	ion		0	0			Avalanche	
MTZ005-007	Heavy hour s Noisy heavy produ knock to clea Miss	y snowfall conti storm total snow Basin. The arc wet snow by 3 ce eight avalance ted 15 cars off t ar the snow from oula / Bittern	nued along as fall reports w tic frontal be January 28th. ches from Ess he rails, closi n the tracks a oot Valleys	nd near the C vere 6 inches bundary that Wide temp ex to Marias ng the tracks nd highway, - Butte / P	Continental at Seeley I moved thr erature fluc Pass, two s used by A and avalan intlar Re	Divide as Lake, 15 i ough the ctuations : of which i amtrak's E che dange gion	an arctic fro nches at We region on Ja made for an hit an east be Empire Build er continued	ontal boun st Glacier, anuary 26t unstable ound freig er. U.S. 2 to be high	dary remained stationary ov 16 inches at Marias Pass ar h, loaded the area with up snowpack in the West Glad ht train near Essex. These t was closed for several days	ter the area. 24 ad 42 inches at to five feet of cier Region to wo avalanches as crews tried
	30	1015MST			U	U			High Wind (G52)	
NEBRASKA, Centra	A stro thund At the occurr outage al	ong west to ea erstorms allowe e Missoula Airp red in the northe es.	st oriented j d strong win oort, wind gu ern Bitterroot	et stream m ds aloft to m sts to 60 MH Valley and	oved into ix down in PH occurre at Gold Cro	western 1 to the Mia d at 937 2 eek in Poy	Montana du ssoula, north AM. Shortly well County.	ring the mern Bitter thereafter, where do	norning hours of January root and Upper Clark Fork r, estimated wind gusts of 5 wned trees and power lines	30th. Isolated River Valleys. 55 to 60 MPH caused power
NEZ069>071	Chas 04	e - Hayes - Fi 0400CST 0600CST	rontier		0	0			Winter Storm	
	An up favora low le inches	oper level trough able situation fo evel winds, sno s at Lamar in C	h moved east r moderate to wdrifting a Chase County	ward out of occasionally and blowing.	the Rockie y heavy sno created h thes at Cur	es into the ow over th azardous rtis in Fro	High Plains the southern of conditions for ontier Count	s of Nebra counties of for travele y and 6 in	ska and with abundant mois western Nebraska. Along v rs. Snowfall totals for this nches at Hayes Center in F	sture created a with the strong event were 8 Hayes County.

Numerous secondary roads were closed due to snow drifts and blowing snow. At least one non-injury accident occurred in Keith

S	tori	n Data	a and	Unus	ual W	/eat	her H	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estim Dam Property	nated nage Crops	Character of Storm	January 2004
NEBRASKA, Centra	1									
<u>NEBRASKA, East</u> NEZ050>053-	Count	y in which wea	ther conditio	ns contribute - Sarny - S	^{.d.} eward - La	ncaster	- Cass - ()toe - Ne	maha - Richardso	'n
065>068-091-093	03 04	2300CST 1400CST		~~ F J ~	0	0			Winter Storm	_
	Althou the stee contin ending	agh periods of 1 eadier, more wi ued into the m g.	moderate sno despread and id afternoon	ow fell across d accumulation hours on the	s far southeas ng snow mov e 4th, shrinki	t Nebrasl ed into t ng to a b	ka and extre he region d band along	eme south luring the Interstate-	west Iowa during the late evening hours or 80 from Lincoln to C	afternoon of the 3rd, n the 3rd. The snow Dmaha before finally
NEZ011>012-	Snowf inches Knox	fall of between in Oakland and - Cedar - T	5 and 6 inc d Glenwood hurston - A	hes fell acro Iowa and 7 in Antelope -	ss the entire nches in La P Pierce - W	area, wi latte, Gre ayne - I	th some am etna and the Boone - M	ounts a li NWS in V [adison -	ttle higher. The hig Valley, all in Nebrask Stanton - Cumin	her totals included 8 a. g - Burt - Platte -
015>018-030>034- 042>045-050>053- 065>068-078-088>093	Colfa - Jeff	x - Dodge - V erson - Gage	Washingtoi - Johnson	n - Butler - - Nemaha	Saunders - Pawnee -	Dougla Richaro	as - Sarpy lson	- Sewar	d - Lancaster - Ca	ass - Otoe - Saline
	05 06	1900CST 1000CST			1	0			Extreme Cold/Wi	ind Chill
	Bitterl Tempo the reg of 201	y cold temperate eratures fell to a gion during the below to 25 below	tures follow zero or a little early mornin ow were con	ed a winter s e colder by 7 ng hours on t nmon through	storm that str 00 pm on the he 6th. When hout the regio	uck parts 5th and combin n from a	s of souther bottomed of ed with wes round 700 p	ast Nebras ut between sterly wind om on the	ska and southwest Io n 5 below and 10 belo ds around 10 to 15 m 5th through 1000 am	wa a few days prior. ww zero over much of ph, wind chill values on the 6th.
NEZ015-018- 032>034-042>045-	The ex lightly possib Thur Doug	xtreme cold wa dessed woma dy incapacitatin ston - Wayn das - Sarpy -	s responsible n apparently ng her. F720 e - Stanton Seward - I	e for the deat went out to o U n - Cuming Lancaster -	th of a 72-yea check on her g - Burt - 1 - Cass - Oto	ur-old Or car some Platte - oe - Sali	naha woma time after n Colfax - ne - Jeffe	n who die hidnight ar Dodge - rson - G	d of hypothermia on nd slipped on her way Washington - Bu age - Johnson - No	her own porch. The v back into the house, itler - Saunders - emaha - Pawnee -
050>053-065>068- 078-088>093	Richa	ardson								
	25 27	0500CST 0000CST			0	0			Winter Storm	
	Two c and so southy Nebra county mornin county	lifferent low pro- puthwest Iowa, west U.S. broug ska and southw v east through (ng covering mu v Nebraska and	essure syster dropping as the moisture of vest Iowa ear Gage county uch of the re Pottawattam	ns moving ac much as 15 from the sout (ly on Sunday and north ir gion. A few ie county Iov	cross the plai inches of sno hern plains in y the 25th. S nto Butler co y heavy snow wa Sunday af	ns brough w by the nto the re come ice unty. Th bands s ternoon.	t a prolong time the st gion resulti accumulation icing cha et up from	ged winter form ende ng in free: ons of 1/4 nged to si southeast	storm event to much d. The first system to zing rain and sleet ov to 1/2 inch were rep now and quickly spre Nebraska northeast i	of eastern Nebraska hat moved out of the er sections of eastern ported from Jefferson ead northeast Sunday nto western Douglas
	The second combined much signific and recond range school	econd low pres nation of Arctic of Sunday nig icant blowing a iduced visibiliti as actual tempo ls remained close	sure system c air and left ht into Mon nd drifting s tes. As temp eratures fell sed Tuesday	moved out of over moistur day the 26th now Monday peratures con below zero. due to a com	of the norther re from the pr n. The cold γ afternoon in ttinued plung The storm c bination of th	n Rockie evious sy air was to Mond ing Mon aused the le snow c	es Sunday r ystem result ushered in ay night. T day night, v cancellation on the groun	hight bring ed in heav on north The strong wind chill on of mos ad and the	ging Arctic air from 4 yy snowfall rates acro winds that gusted o winds and fluffy sno s fell into the 20 bel- t schools over the reg extremely cold wind	Canada with it. The ss most of the region ver 30 mph causing w caused large drifts ow to 30 below zero gion Monday. Many chills that followed.
	Highe Omah southy receiv	r snowfall tota a Eppley, the N vest Lincoln, H ed between 6 an	ls in eastern NWS in Vali lickman, Ray nd 10 inches.	Nebraska ir ley and in no mond, Papill	ncluded 15 in ortheast Linc lion, Springfi	iches at 2 oln, with eld, Frier	Elkhorn and 12 inches nd and Fort	d Bellevu reported Calhoun.	e, 14 inches at Platts at Lyons, Fremont, U Most other locations	smouth, 13 inches at Jehling, Bennington, s in eastern Nebraska
	Heavi Castar	er totals in sou a and 11 inche	thwest Iowa s at Mapletor	included 14 n and Underv	inches at G wood. Most o	lenwood, ther loca	, 13 inches tions in sou	in Oaklaı Ithwest Iov	nd, 12 inches in Littl wa received 6 to 10 ir	e Sioux, Harlan and aches.

Si	tori	n Data	and	Unusi	ual W	/eat	her P	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Perso Killed	er of ons Injured	Estim Dam Property	ated age Crops	Character of Storm	January 2004
<u>NEBRASKA, East</u> NEZ011>012- 015>018-030>034- 042>045-050>053- 065>068-078-088>093	Knox Colfa - Jeff	: - Cedar - Th x - Dodge - W erson - Gage	urston - A /ashingtor · Johnson	Antelope - P 1 - Butler - S - Nemaha -	ierce - Wa Saunders - Pawnee - 1	ayne - I Dougla Richard	Boone - M as - Sarpy Ison	adison - - Sewar	Stanton - Cuminş d - Lancaster - Ca	g - Burt - Platte - ss - Otoe - Saline
	27	0000CST 1200CST			0	0			Extreme Cold/Wi	nd Chill
NEZ011>012-015- 017>018-030>034- 042>045-050>053-	Extrem storm Monda wind c Most a somew Knox Dodg Jeffer	nely cold wind that dropped bet ay slowly subsic chill values of 2 actual lows ove vhat decreased w c - Cedar - Tl e - Washingt rson - Gage -	chills were ween 6 and led into Tue 0 below to 3 r the area 1 vind allowed nurston - 3 on - Butte Johnson -	bbserved over 15 inches of s sday morning 30 below wer by Tuesday m some recover Pierce - Wa er - Saunde Nemaha - P	all of easter snow across , 1/27/04. F e common t horning wer ry in wind cl ypne - Boo ers - Doug cawnee - R	ern Nebra most of Iowever, hroughou e 5 belo nill value ne - M las - S ichards	aska and so the region. as temperat ut the region w to 15 be so toward no adison - S arpy - Se son	uthwest Id North win tures fell i n from arc low zero. on Tuesda tanton - ward -]	owa on the heels of ti nds of 20 to 30 mph w into the single digits a bund Midnight throug Slowly moderating ay. Cuming - Burt - Lancaster - Cass	he prolonged winter vith higher gusts late and then below zero, h noon on Tuesday. temperatures and a Platte - Colfax - - Otoe - Saline -
065>068-078-088>093	28	0000CST			0	0			Extreme Cold/Wi	nd Chill
	20	1200CST			Ū	U			Extreme Colu, wh	
	The se anothe north v values	econd night in a er surge of Arcti winds increased of 15 below to 2	row of ext c air spilled into the 10 30 below ze	remely cold w south across to 20 mph rar to over much	vind chill va the region. nge. The cor of the area f	alues we Temper nbinatioi rom mid	re observed atures by m n of the cold night throug	across ea idnight or l temperat h noon or	astern Nebraska and s in the 28th fell to arou cures and brisk winds in the 28th.	southwest Iowa as a nd zero or below as produced wind chill
<u>NEBRASKA, Extren</u>	ne Nor	theast					8			
NEZ013>014	Dixor 25 26	1 - Dakota 1000CST 2300CST			0	0			Winter Storm	
<u>NEBRASKA, Extren</u>	Snowf blowir chills cancel ne Sou	fall of 6 to 12 i ng snow. The wi developed late i led. thwest	nches was a nds also cau n the storm	ccompanied l lsed drifting s as actual tem	by winds str now, which peratures fe	cong eno contribu ll. Most	ugh to redu ted to makin schools wer	ce visibil ng travel v re closed	ities to a quarter mile very difficult. In addit and several school re	e or less at times in ion, dangerous wind lated activities were
	NONE	E REPORTED.								
NEBRASKA, South	Centra	<u>al</u>								
NEZ061>064- 072>077_082>085	Buffa	lo - Hall - Ha	milton - `	York - Gosj	per - Phelj	os - Ke	arney - Ao	lams - (Clay - Fillmore - F	urnas - Harlan -
0722077-0022005	63 04	1800CST 0900CST	Γ		0	0	0	0	Winter Storm	
	After a first w from r ending snow,	a balmy start to idespread snow north of Minden 5 by noon on the Hastings about 3	the year wit fall. The sr to about Y 4th. A wid 3 inches, and	h temperature low fell over ork by midda e swath of 6 t l Henderson 6	s in the 60s the course of y on the 3rd to 8 inches f to 8 inches.	on New f about 2 d. Snow ell along	Year's Day, 24 hours and then redev and either s	the regio d in two s eloped by side of Int	n quickly plummeted separate bursts. The f evening and continu erstate 80. Trumbull	into winter with the irst snow swath fell ed overnight before reported 9 inches of
	In the receive snow v	case of areas we ed precipitation was certainly a v	est of Holdre on only 8 d velcome site	ege, this snow ays since Oct in Oxford and	was the first tober 1st and d other areas	t signific d just a t s of drou	cant precipit trace during ght stricken	ation sinc the mont south-cen	e early October. Spec h of December. So t tral Nebraska.	tifically, Oxford had he 6 inches of fresh
NEZ048>049- 062>064-075>077-	Once Minde Minde	the snow had st n dropped to 19 ick - Polk - H	opped, the o degrees bel all - Hami	coldest air of ow zero and L lton - York	the season exington bo - Adams -	settled a ttomed o Clay -	cross the arout at 26 deg	ea. Temp rees belov Webste	peratures fell well bel v zero. r - Nuckolls - Tha y	ow zero by the 6th.
085>087	25 26	1200CST 1600CST			1	0	275K	0	Winter Storm	
	A win along a	ter storm pound and east of U. S.	ed a section Highway 2	of south-cent 81 from late S	ral Nebraska unday even	a with he	avy snow a Monday.	nd strong	winds. The storm pri	marily blasted areas

Snow began in earnest by late Sunday afternoon, and turned heavy at times overnight. The snow lingered across eastern sections of

		Time Local/	Path Length	Path Width	Number Persor	r of 1s	Estimate Damage	ed e		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed I	njured	Property	Crops	Character of Storm	
NEBRASKA, South	Centra	1								
	the are of new falling treache fell bel	a on Monday a snow was rep snow tapered erous. Many so ow zero over r	as the winds orted. Up t off, but the chools cance nearly the er	s increased and o 10 inches wer blowing snow eled classes as a ntire area the nig	temperatures re measured i began. Snow rural roads we ght of January	dropped n Shickle , being w ere almo y 26th.	l. The heaving ey and Nelso whipped by 3 st impassable	est snow fe on and 6 to 5 mph nor e on the 26	ell across York cou 8 inches in the Gra th winds, caused tr 5th. Temperatures	nty where 12 inches and Island area. The avel to become very took a nose dive and
	There the drivinjuries	were numerous ver of a SUV l s. F5VE	s accidents a ost control a	around the regionand hit a truck.	on, including A 5 year old	over 40 girl ridi	in York cour ng in the SU	nty alone. V was thro	In one accident ne own from the vehic	ar the town of York, le and died from her
NEBRASKA, West										
	NONE	REPORTED.								
<u>NEVADA, North</u>										
NVZ031	N Elk 01	o Cnty 0000PST 0100PST			0	0			Heavy Snow	
NVZ031	Wildho N Elk	orse reported 6 o Cnty	inches of n	ew snow which	began during	g the earl	y afternoon o	of the prev	ious day.	
	01	1100PST 1700PST			0	0			Blizzard	
NVZ030-032>033-037	Winds drifts o Humb 01	estimated at 4 of snow in resid coldt - Sw & 1100PST	0 to 50 mpl lential areas Sc Elko -	h reduced visib s in Wildhorse. X E Elko - S	ility to less th Lander & 0	nan 20 fe S Eure 0	eet at times in ka	n blowing	snow. The winds a High Wind (G59)	ilso caused five foot
NVZ031>032-037	A stron 68 mpl Spring N Elk 03	ng winter storm n at the Morey Gulch RAWS o Cnty - Sw 0300PST 0600PST	n brought h Creek RA site in extre & Sc Elke	igh winds to m WS site northea eme eastern Elk o - S Lander	uch of northe ast of Winner o county, and & S Eureka 0	ern Neva nucca, 6 l 62 mph a 0	da and portio 3 mph at Wo at Austin Su	ons of cent ells Summ ummit on h	tral Nevada. Repor it on I-80 east of V ighway 50. Heavy Snow	ts included a gust to Vells, 65 mph at the
NVZ031-034	Heavy southea the pre N Elk 28	snow was repo ast of Austin, 8 vious day. o Cnty - Rul 1100PST	orted across 3 inches at 7 by Mount	portions of nor Tuscarora, and ains/E Humb	rthern and cen 6 inches at th ooldt Range 0	ntral Nev e Nation 0	vada. Reports al Weather S	s included: Service off	8 inches at Bob So ice in Elko. Snow 1 Heavy Snow	cott Summit, 5 miles began around 10 pm
	Snow l end of	began around (the east Humb	0700. Wildh oldt range r	norse ended up eported 9 inche	with 8 inches s of new snow	s of new v.	snow. The H	Iole-In-Th	e-Mountain Snotel	site on the northern
<u>NEVADA, Soum</u>										
	NONE	REPORTED.								
<u>NEVADA, West</u> NVZ003	Great 01	er Reno/Car 0200PST	son City/	Minden Area	1 0	0			High Wind (G52)	
	52 kno	t (60 mph) win	d gust 2 mi	les south of Wa	shoe City in	Washoe	Valley.			
NVZ003	Great 01 02	er Reno/Car 0300PST 0500PST	son City/	Minden Area	0	0			Heavy Snow	
NVZ002	17 inch Great 01 02	nes of snow rep ter Lake Tah 0300PST 0500PST	oorted at Vin 100 Area	rginia City.	0	0			Heavy Snow	
	Snowfa 2 N Inc Mt. Ro	all totals: cline Village (7 se Ski Area	7600 ft.)	30 inches 28-36 inches						

		Time	Path	Path	Nur	nber of	Estim	nated		January 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Pe Killed	ersons Injured	Dam Property	age Crops	Character of Storm	2
NEVADA, West										
NVZ003	Grea 01	ter Reno/Car 0645PST	rson City/N	/linden Area	a 0	0			High Wind (G58)	
NVZ004	58 kno West 01	ot (67 mph) wir ern Nevada l 0700PST	nd gust 5 mile Basin And	es northwest o Range	f Virginia 0	City. 0			High Wind (G52)	
NVZ003	52 kno Grea 01	ot (60 mph) wir ter Reno/Car 0715PST	nd gust at Sut rson City/N	cliffe. /linden Area	a 0	0			High Wind (G55)	
NVZ004	55 kno West 01	ot (63 mph) wir ern Nevada l 0846PST	nd gust 5 mile Basin And	es north of Rea Range	no in Blac 0	k Springs. 0			High Wind (G56)	
NVZ004	56 kno West 01	ot (64 mph) wir ern Nevada l 0903PST	nd gust at Pyr Basin And	amid Lake in Range	Nixon. 0	0			High Wind (G56)	
NVZ001	56 kno Mine	ot (65 mph) wir ral/Southern	nd gust at Dea 1 Lyon	ad Camel Mou	untain RA	WS.			ingi winu (050)	
NVZ005	01 64 knd Nortl	0915PST ot (74 mph) wir hern Washoe	nd gust at Wa	llker Lake.	0	0			High Wind (G64)	
NN/7007	01 55 knc	0944PST ot (63 mph) wir	nd gust at Cat	nip Mountain	0 RAWS.	0			High Wind (G55)	
N V Z005	Norti 01 64 knd	hern Washoe 1057PST ot (74 mph) wir	e nd gust at Bai	rrel Springs R.	0 AWS.	0			High Wind (G64)	
NVZ001	Mine 01	ral/Southern 1209PST	Lyon		0	0			High Wind (G54)	
NVZ005	54 kno Nortl 01	hern Washoe 1352PST	id gust at Ha	wtnorne.	0	0			High Wind (G52)	
NVZ004	52 kno West 01	ot (60 mph) wir ern Nevada l 1530PST	nd gust at Jun Basin And	iiper Springs F Range	RAWS 0	0			High Wind (G54)	
NVZ002	54 kno Grea 02 03	ot (62 mph) wir ter Lake Tal 1300PST 0600PST	nd gust at Sia 10e Area	rd RAWS.	0	0			Heavy Snow	
NVZ001	10 inc Mine 19 20	hes of snow at ral/Southern 1800PST 0800PST	Mt. Rose ski 1 Lyon	area.	0	0			Heavy Snow	
NVZ003	7 inch Grea 19 20	es of snow fell ter Reno/Car 1800PST 0800PST	overnight in rson City/N	Smith Valley. /Iinden Area	a 0	0			Heavy Snow	
NVZ003	4 to 6 Grea 19 20	inches of snow ter Reno/Car 1800PST 0800PST	fell overnigl rson City/N	nt in Gardnerv /Iinden Area	ille. a 0	0			Heavy Snow	
NVZ003	5 to 6 Grea 30	inches of snow ter Reno/Car 0503PST	fell overnigh rson City/N	nt in Virginia (/linden Area	City Highl a 0	lands. 0			High Wind (G63)	
NVZ003	63 kno Grea 30	ot (73 mph) wir ter Reno/Car 0515PST	nd gust report rson City/N	ted by Galena /Iinden Area	RAWS.	0			High Wind (G66)	
	66 1.00	(76 mmh) wie	d anat namam	ad 2 miles and	when of Way	ahaa Citri i	Washaa V	allar		

66 knot (76 mph) wind gust reported 2 miles south of Washoe City in Washoe Valley.

		Time	Path	Path	Numb	er of	Estimated		January 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Perso Killed	ons Injured	Damage Property Crops	Character of Storm	January 2004
NEVADA, West									
NVZ003	Great 30	er Reno/Cars 0840PST	son City/N	finden Area	1 0	0		High Wind (G53)	
NVZ003	53 kno Great 30	t (61 mph) wind er Reno/Cars 0940PST	l gust report son City/N	ed 2 miles nor finden Area	thwest of C	arson Ci	ty.	High Wind (G65)	
NEW HAMPSHIDE	65 kno	t (75 mph) wind	l gust report	ed by trained	spotter 6 mil	es south	west of Gardnerville.	ingi (filu (605)	
NHZ001>010-	North	ern Coos - So	u uthern C	oos - Northe	ern Grafto	n - Noi	rthern Carroll - So	uthern Grafton - So	uthern Carroll
013>014	- Sulli	van - Merrin	ack - Bell	knap - Straf	ford - Inte	rior R	ockingham - Coast	al Rockingham	
	08 10	0100EST 1100EST			0	0		Extreme Cold/Wind	Chill
	Low pr zero we	ressure over Ea ere recorded at	stern Canad	la funneled are the outbreak w	ctic air into which lasted	Norther from Jan	n New England. Win . 7 to Jan. 10.	nd chill values of 20 to	49 degrees below
NHZ001>010-	North	ern Coos - So	outhern C	oos - Northe	ern Grafto	n - Noi	rthern Carroll - So	outhern Grafton - So	uthern Carroll
013>014	- Sulli 13 16	van - Merrin 0000EST 1100EST	nack - Bell	knap - Straf	ford - Inte 0	rior Ro 0	ockingham - Coast	al Rockingham Extreme Cold/Wind	Chill
	An arc Central	tic cold front m Canada Jan. 1	oved throug 4 through J	h Northern Ne an. 16. Wind	ew England chill values	on the a of 33 to	fternoon of Jan. 13. A o 50 degrees below z	Arctic high pressure settl ero were recorded durin	ed southeast from g the peak of this
NUL70015 010	outbrea	ak on the mornin	ng of Jan. 15	5. 	Care ft a	- No-	them Comell S		
NHZ001>010- 013>014	- Sulli	ern Coos - So van - Merrin	outnern C oack - Bell	005 - Northe knan - Straf	ern Gratto ford - Inte	n - Noi rior Ra	rtnern Carroll - So ockingham - Coast	outnern Gratton - So al Rockingham	uthern Carroll
	24 25	0600EST 1200EST	luck Del	inup strui	0	0		Extreme Cold/Wind	Chill
	A stron into the	ng area of low j e Northeast on J	pressure over an. 24 and	er Eastern Car Jan. 25. Wind	ada resulted l chill value	l in stroi s of 22 to	ng northwest winds a o 42 degrees below ze	nd bitter temperatures as ero were recorded across	arctic air spilled the region on the
NEW HAMPSHIRE,	mornin South	g of Jan. 25. <u>ern</u>							
	NONE								
NEW JERSEY, Nort	heast	KEPUKTED.							
NJZ005>006-011	Essex	- Hudson - U	nion						
	15	0600EST			0	0		Heavy Snow	
	With a region. am on	n arctic air mas Light snow de Thursday, Janua	s in place, a veloped dur ary 15th. Th	as a strong All ring Wednesda ne Storm Total	berta clipper ay evening, . I Snowfall ar	moved anuary nounts r	south of Long Island 14th. It became heavy ranged from around 6	, heavy snow occurred a y at times, mainly betwee to 8 inches, as follows:	cross parts of the en midnight and 8
NJZ002>006-011	In Esse In Hud In Unio In Berg In Nort Bloom	ex County, amor son County, amor on County, amor gen County, an a thwest Passaic of ingdale.	unts ranged ounts ranged unts ranged average of 5 County, an Bergen - F	from 5.6 inche d from 5.0 inc from 5.0 inch .9 inches of sr average of 5.9	es at Cedar C thes at Kearr es at Garwo now fell. Ar inches fell. aic - Essey	Grove to by to 7.1 od to 7.5 nounts ra Amounts	7.4 inches at Newark inches at Harrison. 5 inches at Clark and U anged from 4.5 inches nts ranged from 5.0 in son - Union	Airport. Jnion Township. at Saddle Brook to 7.3 i Inches at Greenwood Lak	nches at Lodi. .e to 6.8 inches at
	15 16	1800EST 0800EST	beigen 1	<i>ustern</i> i uss	0	0		Extreme Cold/Wind	Chill
	An arc front th	tic cold front sy rough Wedness	wept southe lay, January	ast across the 14th.	region duri	ng Tues	day afternoon, Januar	y 13th. Extremely cold	air followed this
	As an Thursd high pr low wi	Alberta Clipper ay. The large ressure system nd chill index v	passed sou difference i in Southeas alues from s	th of Long Is n pressure bet t Canada resu sunset Thursda	land Wedne tween a stro lted in the c ty evening th	sday nig ng low ombinat trough s	ght, it rapidly intensif pressure system north ion of extremely low unrise Friday morning	ied as it moved northea neast of New England as temperatures, high wind g, January 16th.	st of Long Island and a strong arctic ds, and extremely

A record low temperature of zero degrees was set at Newark Airport at 2:53 am on January 16th. Low temperatures were around 0 (1 degree above 0 at Teterboro Airport and 1 degree below 0 at Caldwell Airport). The lowest Wind Chill Index (WCI) temperature values ranged from around 20 to 25 degrees below zero. The lowest WCI temperature was 21 degrees below 0 at Newark, Teterboro, and Caldwell Airports, where sustained wind speeds ranged from 16 to 22 mph. Peak wind gusts were between 25 and 35 mph.

i	Stori	n Data	a and	Unus	ual V	Veat	her I	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Nun Per Killed	iber of sons Injured	Estin Dam Property	nated nage Crops	Character of Storm	January 2004
NEW IEDSEV N	wthoost					J	T J			
NJZ002>004	<u>ortneast</u> Westo 27 28	ern Passaic - 2300EST 0100EST	Bergen - I	Eastern Pas	saic 0	0			Heavy Snow	
NJZ005>006-011	Essex 28	- Hudson - V 0100EST	Union		0	0			Winter Storm	
	A cold the Ea second	l high pressure stern Great La lary low rapidly	ridge extend lkes, a secon y intensified	ded southeast ndary low de as it moved n	from Jame eveloped of northeast.	s Bay acro f the Mid	oss New En Atlantic C	gland. As oast durin	the primary low moving Tuesday morning, J	ed northeast toward anuary 27th. This
	A ligh rate in amoun where more r	t mixture of sn creased during its ranged from less mixing oc nixing occurred	ow, sleet, ar the evening around 6 to ccurred. The d.	nd freezing ra , the mixture 12 inches. T e lightest amo	in spread n changed to The highest ounts occurr	orth acros a steady s amounts o red across	s Northeast snow, which occurred acr the urban a	NJ during a became h coss Weste areas of E	g Tuesday afternoon. heavy at times. The St rn Passaic and Norther ssex, Hudson, and Un	As the precipitation orm Total Snowfall n Bergen Counties, ion Counties where
NEW IERSEV So	Here a Passaid Berger Essex Hudso Union	re selected sno c County - fron n County - fron County - from n County - from County - from Northwest	wfall amoun n 8.0 inches n 6.8 inches 6.5 inches at n 5.5 inches 5.5 inches a	ts for: at Greenwood at Rivervale to Bloomfield a at Kearny to t Garwood to	d Lake to 12 o 11.0 incho and West O 8.5 inches a 8.7 inches a	2.2 inches es at Elmv range to 9 t Harrisor at Union 7	at Blooming vood Park. .0 inches at 1. Fownship.	gdale. South Ora	nge.	
NJZ001	Susse	x								
	02	0500EST			0	0			Winter Weather/M	lix
NJZ001	A war the ear accreti Susse 04	m front moving rly morning of ons on exposed X 1800EST	g northeast the 1 the 2 nd in 1 surfaces su	hrough northe Sussex Coun ch as trees an	ern New Jer ty. The rec d power lin 0	sey helpe ent warm es and on 0	d produce w weather pr untreated br	videly scat evented ro ridges and	tered pockets of light : adways from icing. T overpasses. Ice Storm	reezing rain during here were trace ice
NJZ001-007>010- 012>027	Aroun mornin pressu Canad during afterno higher Susse Merc Atlan	d half an inch on ng of the 5th. Tre system that a. The low pre the evening of boon of the 5th. terrain surface x - Warren er - Salem - ttic - Wester	of ice accrue Untreated re formed on ssure system f the 4th, inte While it wa s for the rain - Morris - Gloucester rn Cape I	ed on exposed badways were a cold front i n moved from o northern Wa is warm enou to freeze on Hunterdor r - Camden May - East	l surfaces ir e extremely in the Ohio n near Padu est Virginia gh aloft for contact. n - Somer n - Northw tern Capo	the high hazardou Valley a cah, Kent during th precipita set - Mic vestern H e May -	er terrain of is. The free nd a high p ucky during e morning of tion to fall ddlesex - ³ Burlington Eastern	Sussex Co zing rain pressure ri g the early of the 5th, as rain, er Western a - Weste Atlantic	bunty from the evening was caused by the co- dge that extended into afternoon of the 4th, to the southern Delaw hough cold air remaine Monmouth - Easte rn Ocean - Cumbe e - Eastern Ocean	g of the 4th into the mbination of a low o Ontario Province, to Cincinnati, Ohio are coast during the ed in place near the ern Monmouth - crland - Western - Southeastern
	Burli	ngton	1							
	09 11	1800EST 1200EST			0	0			Extreme Cold/Wir	d Chill
	An arc the 11 winter occurr warmi	tic air mass broth. The low to and the lowes ed with no snothing effects norm	ought some emperature of st reading si ow cover. W nally receive	of the coldest of 4 degrees a ince February inds around t d from the Gr	t weather in at nearby P 5, 1996. V the center o reat Lakes a	years to hiladelphi What mad f the arcti nd subside	New Jersey a Internation le this even ic high pres ence from th	from the e onal Airpo more unu sure system ne Appalac	evening of the 9th thro rt on the 10th was the isual was that the bru m were from the north chian Mountains.	ugh the morning of coldest day of the tally cold air mass and by-passed the
	The un their h afford code b weather breaks	nseasonably co omes. There w to pay their ut lues to assist t er caused many	ld weather v vas a dramati ility bills. A he homeless pipes to fre	vas a dangero ic increase in dditional sch . Teams went eeze and burs pipe and the	bus situation phone call ools and co t outside to t both inside	for the h to social mmunity locate ho e and out	omeless as services by centers wer meless peop side of struc-	well as fo y individua re opened ple and ge ctures as y	r the elderly who coul als who have run out of as shelters. Many mun t them to shelters. The vell as a higher occurr s at the county library.	d not afford to heat of heat or could not hicipalities declared unseasonably cold ence of water main in Toms River The

breaks. In Ocean County, a burst pipe and the subsequent flood ruined thousands of books at the county library in Toms River. The cold weather also led to an increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood developed. Many vehicles were not starting because of dead batteries.

		Time Local/	Path Length	Path Width	Nun Per	ber of	Estin Dam	nated nage	January 20
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
NEW JERSEY, Sou	ith and	Northwest							
NJZ001-007>008-	Speci: Count (Warr 1 deg in Tre Beach Cape pressu Ontar Suss	fic low tempera ty), 4 degrees to ren County) and ree in New Bru enton (Mercer (a (Ocean Count May City. An ure system, or to io/Quebec Prov ex - Warren	tures include below zero i Millville (C nswick (Mic County), 4 d y), 5 degree arctic cold f he core of t ince border o Morris -	ed 10 degrees n Long Valle Cumberland C ddlesex Count legrees at the s in Somerdal front cleared a he arctic air n on the mornin Middlesex	below zero y (Morris ounty), zero y), Somerv Atlantic C le (Camden all of New mass, move g of the 10t • Western	o in High County), o in Flem rille (Som ity Intern county) Jersey or ed from ju h to Virgi Monm	Point (Suss 1 degree be ington (Hun erset County ational Airp , 7 degrees a n the 9th and ust west of inia and Nor outh - Eas	ex County low zero terdon Cc y) and Wr oort, West at the Maa d cleared James Bay th Carolin tern Mo), 8 degrees below zero in Sparta (Sus in Estell Manor (Atlantic County), H unty) and Woodbine (Cape May Coun ightstown (Burlington County), 2 degr Deptford (Gloucester County) and Bi ina within Atlantic City and 8 degree the way for the arctic air mass. The h on the morning of the 9th, to along a on the morning of the 11th. nmouth - Western Ocean - Easte
012>014-020-026	Ocea 14	n 1800EST			0	0			Heavy Snow
NJZ009>010-015- 018>019-027	15 Hunt	terdon - Som	erset - Mei	rcer - Camd	len - Nort	hwester	n Burlingt	on - Sou	theastern Burlington
010/01/01/	14 15	1800EST 1000EST			0	0			Winter Weather/Mix
	An A the st Accur Ocear and sl Garde openi: Speci Holm (Susse Count 4.9 in Base (Ocea The A morni and al	lberta Clipper I tate. Snow beg mulations range a County and m ip-sliding accid en State Parkwa ngs. fic accumulation del (Monmouth ex County), Ho ty), 5.1 inches in ches in New Bi (Burlington Co n County) and 2 Alberta Clipper ng of the 14th, bout 300 miles	ow pressure an falling of d from one i uch of the no lents. There iy. On the 1 ins included 3 c County), 6 pe and Belv n Belle Meaa runswick (M unty) and F 2.0 inches at low pressure to central Ol east of the I	system dropp during the ev to three inche orthern half of were hundred 5th, many scl 8.0 inches in G .5 inches in F videre (Warre d (Somerset C liddlesex Cou lemington (Hi the Atlantic C e system move hio during the Delmarva Pen	ed snow ac vening of s across mu f the state. 7 s of spin-o hools in the Dakhurst (N Tanders (M n County) ounty), 5.0 nty), 4.2 in unterdon C City Interna ed from Alf early even insula by 1	ross all c the 14th ich of the The snow uts and m e northern Aonmouth forris Cot and Whij inches in P ounty), 3 tional Air berta Prov ing on the 0 a.m. ES	of New Jerse and contin e southern ha led to hazar inor accider a county), 7 inty), 6.0 in ppany (Mor Lebanon (F rinceton (M .0 inches in port and Ma vince Canad e 14th, into (ST on the 15	ey with the ued throu- alf of the si- dous trave- tis. Nume is state we: .5 inches in M- ris County funterdon ercer Cou Pennsauk ple Shade a on the n Chesapeak 5th. Precip	e heaviest amounts in the northern hal gh the morning commute on the 1: state and from three to eight inches acr eling conditions with many fender-bence rous minor accidents were reported on re closed, most of the others had dela n Wantage (Sussex County), 7.0 inche etuchen (Middlesex County), Branchy /), 5.5 inches in Bound Brook (Some County) and Toms River (Ocean Coun nty), 4.0 inches at the McGuire Air Fe en (Camden County) and Harvey Cee (Burlington County).
	than of parts of	one quarter of a of the northern l	n inch. The half of New	unseasonably Jersey. It norr	cold air can nally average	used the l ges aroun	iquid equiva d a 10 to 1 ra	lent to sn atio.	ow ratio to reach as high as 30 to 1 act
NJZ001-007>010- 012>027	Susso Mero Atlar Burli	ex - Warren cer - Salem - ntic - Wester ington	- Morris - Gloucester rn Cape I	Hunterdon r - Camden May - East	- Somer - Northw ern Cape	set - Mi vestern l e May -	ddlesex - ` Burlington - Eastern	Western 1 - Weste Atlantio	Monmouth - Eastern Monmout ern Ocean - Cumberland - Weste e - Eastern Ocean - Southeaste
	15 16	1200EST 1200EST			0	0			Extreme Cold/Wind Chill
	Follow slight low te wind utilitie	wing the departi ly higher than t emperatures wer chill factors av es.	ing Alberta (he previous re in the sing eraged arous	Clipper low pr outbreak on t gle numbers (7 nd twenty de	ressure syst he 10th an They were s grees below	em, anoth d 11th, w some read v zero. Th	er arctic air inds were st ings below z his second a	mass inva tronger an zero in nor trctic outb	ded New Jersey. While temperatures w d the wind chill factors were lower. M thwest New Jersey) and the lowest hou reak set some gas usage records for a
	The u their l not af break	nseasonably co nomes. There w ford to pay the	ld weather v as another d ir utility bill	vas a dangero ramatic increa s. Public Serv	us situatior ase in phon- rice Electric catherms of	n for the h e calls to c and Gas	nomeless as social servic set a new r v 23 2003	well as fo ces by indi- natural gas	r the elderly who could not afford to h viduals who have run out of heat or co susage record of 2,429 million decath weather caused additional schools

community centers to be opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. In Northwest New Jersey the cold weather caused many schools, universities and daycare centers to have delayed openings. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks.
		Time Local/	Path Length	Path Width	Nun Pe	iber of rsons	Esti Dai	mated mage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

NEW JERSEY, South and Northwest

Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries. Ferry service between Monmouth County and New York City had to be cancelled because of excessive ice in Raritan Bay and the Hudson River. Commuters had to take buses instead.

Specific low temperatures included 9 degrees below zero in High Point (Sussex County), 4 degrees below zero in Long Valley (Morris County), 3 degrees below zero in Allamuchy (Warren County) and Newton (Sussex County), 1 degree below zero in Flemington (Hunterdon County), Far Hills (Somerset County) and Chatham (Morris County), zero in Hightstown (Mercer County) and New Brunswick (Middlesex County), 1 degree in Freehold (Monmouth County) and Belle Mead (Somerset County), 2 degrees in Mount Holly (Burlington County), 4 degrees at the Atlantic City International Airport and Somerdale (Camden County), 5 degrees in Harvey Cedars (Ocean County), 7 degrees in Williamstown (Gloucester County), 8 degrees in Millville (Cumberland County) and Woodstown (Salem County) and 9 degrees in Woodbine (Cape May County). The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into New Jersey. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th. Lowest hourly wind chill factors included 23 degrees below zero in Belmar (Monmouth County), 22 degrees below zero at the McGuire Air Force Base (Burlington County), 21 degrees below zero in Andover (Sussex County), 19 degrees below zero in Trenton (Mercer County) and 13 degrees below zero at the Atlantic City International Airport.

This second arctic outbreak cemented January as an unseasonably cold month. At the Atlantic City International Airport, the January monthly mean temperature was 26.8 degrees, 5.3 degrees colder than normal. It was not only the 9th coldest January on record, but also the coldest January since 1985.

Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden -Northwestern Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean - Southeastern Burlington

17	1900EST	0	0	Winter Weather/Mix
18	0800EST			

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across central and southern New Jersey during the evening and overnight on the 17th. Precipitation began as snow across the region and started mixing with sleet from south to north around Midnight EST. As more warmer air moved in aloft, precipitation started mixing with and changing to freezing rain between 3 a.m. and 6 a.m. EST on the 18th. Warmer air also moved in near the surface and the freezing rain changed to plain rain between 5 a.m. and 9 a.m. EST. The change happened the quickest along the immediate coast and took the longest in interior central New Jersey. Snowfall accumulations were around one inch in central New Jersey and less than one inch in southern New Jersey. Ice accretions were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through New Jersey during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

NJZ001-007>010

NJZ012>027

Sussex - Warren - Morris - Hunterdon - Somerset 0 17 2100EST Winter Weather/Mix 0 1700EST 18

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across northwestern New Jersey from the evening of the 17th through the afternoon of the 18th. Precipitation began as snow across the region between 9 p.m. EST on the 17th and 1 a.m. EST on the 18th. Toward daybreak on the 18th, sleet started to mix in, especially toward New York City. As more warmer air moved in aloft, precipitation started mixing with and changing to freezing rain during the first half of the morning on the 18th. Toward New York City, enough warm air moved in near the surface to change the precipitation briefly to plain rain during the middle of the morning on the 18th. As a cold front approached the region and precipitation intensity increased, the changeover process reversed itself. Precipitation changed to all snow by Noon EST and ended during the afternoon of the 18th. Snowfall accumulations averaged between 2 and 4 inches and ice accretions averaged around one tenth of an inch.

Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. Many accidents occurred on the 18th. In Somerset County, a pedestrian suffered a serious back injury when a vehicle skidded out of control. Specific accumulations included 4.2 inches in Kenvil (Morris County), 4.0 inches in Budd Lake (Morris County) and Somerville (Somerset County), 3.8 inches in White House (Hunterdon County), 3.5 inches in Hackettstown (Warren County) 3.4 inches in Marcella (Morris County) and Pottersville (Somerset County), 3.1 inches in Stewartsville (Warren County), 2.5 inches in Flemington (Hunterdon County), 1.6 inches in Wantage (Sussex County) and 1.5 inches in Sussex (Sussex County).

The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure

St	torr	n Data	and	Unus	ual V	Veat	ther H	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estim Dam Property	ated age Crops	Character of Sto	January 2004
NEW JERSEY, Sout	h and	Northwest								
NJZ008	system during Morr 25	combined with the afternoon o is	h a cold from of the 18th to	t that moved wring moist	from the U ure from the	pper Miss atmosph	sissippi Valle here onto the	ey the more region.	rning of the 17th	east through New Jersey
		2359EST			-	U			Extreme Con	
NJZ016-019-021>025- 027	An eld well. F Salem - East 25	erly woman in Ier body was fo a - Northwest tern Atlantic 2100EST	Long Hill 7 bund on the 2 tern Burlin - Southeas	Cownship froz 26th. The ove ngton - Cur stern Burlin	ze to death rnight low t nberland ngton 0	after she emperatu - Weste 0	slipped on ic re on the 25t rn Atlanti	ce in her t h in Long c - West	ackyard and fell Valley (Morris C ern Cape May Heavy Snow	into a basement windov county) was zero. F?OU - Eastern Cape May
NJZ017>018-020-026	26 Gloud 25 26	1200EST cester - Camo 2300EST 0900EST	len - West	ern Ocean	- Eastern 0	Ocean 0			Winter Weat	ner/Mix
	Snow Jersey. school Untrea	fell from the se Accumulation s in the souther ted roads were	econd half ns averaged n half of the slippery.	of the evenin between 2 ar e state either of	g of the 25 nd 6 inches closed for th	th throug with the ne day or	gh Monday highest acc had delayed	morning t umulation openings	he 26th across tl s in the southern . Even Ocean Co	ne southern half of New tier counties. Nearly al unty College was closed
	Specif Woodl Cape M inches the Mo in Gla (Glouc inches	ic accumulation bine (Cape May May Courthouss in Cape May C couire Air Forc ssboro (Glouce ester County) a or less.	ns included v County) ar e (Cape May City (Cape May ester Base and ester County and 2.3 inch	6.0 inches i ad Vineland (v County), 4.8 lay County), Willingboro y), 2.6 inche es in Beachw	n Margate Cumberland 3 inches in 1 4.0 inches i (Burlington s in Somer ood (Ocean	(Atlantic l County) Pennsville n Toms R County), dale, 2.5 County).	County) ar 5,4 inches 6 (Salem Cou River (Ocean 3,5 inches a inches in H Accumulati	nd New p in Estell M unty), 4.5 County), at the Atla Pennsauke ions farthe	ort (Cumberland Manor (Atlantic C inches in Avalon Quinton Townshi ntic City Internau n (Camden Cou er north in New Jo	County), 5.5 inches in County), 5.3 inches at the (Cape May County), 4.2 p (Salem County) and a ional Airport, 2.8 inche nty) and West Deptford ersey were generally two
NJZ015>027	The sn second primar Hattera Merc Atlan	ow was caused low pressure s y low and mov as, North Caroli er - Salem - (tic - Wester	d by a low p system then red northeas ina around 7 Gloucester rn Cape M	oressure syste developed of t. It passed c a.m. EST on c - Camden May - East	m that deve f the South lose to Will the 26th be - Northw tern Cape	Carolina Carolina nington, fore it mo restern l e May ·	the lower To coast that ev North Carol oved farther Burlington - Eastern	ennessee vening. Th ina around offshore. - Weste Atlantic	Valley during the e second low pred d 1 a.m. EST on ern Ocean - Cu e - Eastern O	e morning of the 25th. A ssure system became the the 26th and just east o amberland - Western cean - Southeastern
	Burlin 27	ngton 1600EST			0	0			Winter Weat	ner/Mix
NJZ001-007>010- 012>014	28 Susse	0700EST x - Warren -	Morris - I	Hunterdon	- Somerse	t - Midd	llesex - We	estern M	onmouth - Eas	tern Monmouth
	27 28	1700EST 1000EST			0	0			Winter Storm	I
	The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave New Jersey a wintry mix of freezing rain, sleet and snow. Heavy snow fell across the northern half of New Jersey. Some spotty light freezing drizzle or freezing rain fell throughout most of the day on the 27th. The only exception was in Atlantic, Cape May and Cumberland Counties where temperatures rose above the freezing mark. During the late afternoon as a low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and heavier freezing rain and sleet began falling across the area. The exception was in far northwest New Jersey where precipitation started and continued as mainly snow. As colder air moved in from the north, the wintry mix changed to all snow in central and southwest New Jersey between 6 p.m. and 9 p.m. EST (From the northwest to the southeast). In Atlantic, Cape May and Cumberland Counties, the rain changed to snow between 8 p.m. and 10 p.m. EST. The heaviest snow fell across the state between 7 p.m. EST on the 27th and 1 a.m. EST on the 28th. Snowfall rates were averaging one to two inches per hour during the heavier snow in northern New Jersey. The snow ended from south to north between 1 a.m. and 10 a.m. EST. Accumulations averaged between 5 and 10 inches in the northern half of the state and 2 to 5 inches in the southern half									
	Untreated roads were slippery and numerous accidents occurred. There were many spin out accidents. During the freezing drizzle on the morning of the 27th in Burlington County, five cars skidded into each other in the southbound lanes of the New Jersey Turnpike. A couple skidded off the road and one overturned. A female passenger in the car died. The following day, a 48-year-old Mount Laurel (Burlington County) man died of a heart attack while shoveling the snow. Many schools dismissed early on the 27th and many schools were closed in the northern half of the state on the 28th. Drifting snow hampered road crews in the northern half									

		Time Local/	Path Length	Path Width	Num Per	ber of sons	Estima Dama	ated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

NEW JERSEY, South and Northwest

Specific accumulations included 11.5 inches in Butler (Morris County), 11.2 inches in Marcella (Morris County), 9.8 inches in Sparta (Sussex County), 9.0 inches in Vernon (Sussex County), 8.3 inches in Parsippany (Morris County), 8.0 inches in Morristown (Morris County), 7.5 inches in Wantage (Sussex County), 7.3 inches in Morris Plains (Morris County), 7.0 inches in North and South Brunswick (Middlesex County) and Blairstown and Hackettstown (Warren County), 6.2 inches in Belvidere (Warren County), 5.9 inches in Pottersville (Somerset County), 5.8 inches in Manasquan (Monmouth County) 5.5 inches in West Amwell Township (Hunterdon County) and Clarksburg (Monmouth County), 5.0 inches in Flemington (Hunterdon County), 4.8 inches in Hamilton Square (Mercer County), 4.5 inches in Mount Holly (Burlington County) and Belle Mead (Somerset County), 4.0 inches in Princeton, 3.5 inches in Beachwood (Ocean County), 2.4 inches in Maple Shade (Burlington County), 2.2 inches in Somerdale (Camden County), 2.0 inches in Lindenwold (Camden County), Pennsville (Salem County), Galassboro (Gloucester County) and Seabrook (Cumberland County) and 1.5 inches at the Atlantic City International Airport.

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. This high pressure system's influence weakened in southeastern New Jersey where temperatures managed to rise above the freezing mark during the daylight hours and early evening on the 27th. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and by 1 a.m. EST on the 28th, specipitation intensity increased further and the precipitation changed to snow.

NMZ005	Northeast Highlands 02 0200MST 0300MST	0	0	5K	Strong Wind
NMZ017	Gusty overnight winds in Cimarron dat Capitan/Northern Sacramento M 02 1500MST 1730MST	maged several signs a Jountains 0	and at leas	st one carport co 8K	overing. Strong Wind
NMZ001	Gusty winds resulted in about a half d blown over and a roof blown off a walk Northwest Plateau 15 0900MST	lozen damage report kway. 0	s in Ruide 0	oso. Claims inc	luded tree limbs through a roof, a storage shed Winter Weather/Mix
NMZ008	A 73 year Navajo Nation resident was along U.S. 491 near Little Water in Sar Westcentral Mountains 20 1400MST	killed (indirect) wh n Juan County. 0	en his vel 0	nicle slid off the	e road and rolled over during snowy conditions Winter Weather/Mix
NEW MEXICO	A 22 year Navajo Nation resident died McKinley County and then rolled into D , South Central and Southwest	(indirect) from inju the bottom of a ravin	ries when e.	his truck hit a b	ridge during snowy conditions near Iyanbito in
	NONE REPORTED.				

NEW MEXICO, Southeast

NONE REPORTED.

NEW YORK, Central

NYZ009	orthern Onedia				
	5 2200EST	0	0	50K	Heavy Snov
	7 1700EST				
	5 2200EST 7 1700EST	0	0	50K	

A band of heavy lake effect snow set up to the east of Lake Ontario in Northern Oneida County around 4 PM on the 6th. Snowfall rates were 1 to 3 inches an hour at times. The initial burst of heavy snow lasted until around 7 PM when the lake effect snow band shifted north of the county. This band of heavy snow moved back south across the area between 5 and 7 AM the next morning, and then continued into the afternoon. The snow intensity decreased the afternoon of the 7th. Snowfall totals were a widespread 1 to 2 feet.

		Time	Path	Path	Numb	ber of	Estim	ated	Januar	y 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	age Crops	Character of Storm	
NEW VODK Contro	1									
NYZ009-015>018- 022>025-036>037- 044>046-055>057-062	nort Tom Sulli 10	hern Onedia pkins - Mad van 0000EST	i - Yates ison - Sou	- Seneca - thern One	Southern ida - Cort 0	Cayu land - 0	ga - Onon Chenango 180K	daga - - Otse	Steuben - Schuyler - Cher go - Tioga - Broome - Dela Extreme Cold/Wind Chill	nung ware
		1000EST								
NYZ009-037	Arctic the10 areas airpon Oneid was n Nort	thigh pressure th. Temperature did not get abort sites. Low te la, Chenango, a ot as cold with hern Onedia	over central es were well ve zero the da emperatures t ind Cortland lows on the 1 - Southern	Ontario prov below zero d ay before on t the morning of Counties son 0th between a Oneida	ince, Canad uring the ear the 9th. Rec of the 10th v ne locations 0 and 10 bel	a broug ly morn ord low vere gen had low ow.	ht record low ning hours of temperatures nerally betwe v temperature	the 10th. were set en 10 an s betwee	tures to central New York the mo Some locations in the Syracuse at at several cooperative observer an d 20 below zero. In Madison, Or n 20 and 30 below zero. Sullivan	orning o nd Utic Id ASOS nondaga 1 Count
	13 14	2300EST 0900EST			0	0	20K		Extreme Cold/Wind Chill	
NYZ009-015>018- 022>025-036>037- 044>046-055>057-062	A col- center 25 mp morni Nort Tom Sulli 15 16	d front moved t red in the provin oh the afternoor ing of the 14th. hern Onedia pkins - Mad van 1200EST 0900EST	hrough the a nce of Ontari and evening The combin a - Yates ison - Sou	rea the morni to supplying t g of the 13th t ation of wind - Seneca - thern One	ng of the 13 he region wi before becon and cold can Southern ida - Cort 0	th usher th the bining ligh used win Cayu land - 0	ting in anothe itter cold air. at early on the nd chill value ga - Onon Chenango 220K	er arctic a In additi e 14th. T s to drop daga - o - Otse	ir mass. A large area of high press on to the cold, northwest winds we emperatures fell to 20 to 30 below to 15 to 35 below zero on the 13th Steuben - Schuyler - Cher go - Tioga - Broome - Dela Extreme Cold/Wind Chill	sure wa ere 15 to zero the nung ware
NYZ009-018-036>037	create tempe extrem reside Nort 22 23	e northwest win eratures droppir eratures during ne cold. The c ences and busine hern Onedia 2000EST 1500EST	nds of 15 to ag to below a the 14th and old air also esses. - Onondag	 25 mph ac zero. The with 1 15th in the caused problem ga - Madison 	ross the are ind and cold Syracuse an ems with car n - Souther 0	a. The droppe d Utica s and b rn One 0	e northwest v ed wind chill a areas were l uses starting. eida 40K	winds bro values to below zer There w	bught more arctic air to the regi o 20 to 40 below zero. Some of ro. Many schools were closed du ere scattered instances of pipes free Heavy Snow	ion with the high te to the ezing a
NYZ044>046- 056>057-062	A col cold a the 22 Count snow inches 20 inc Cort	d front passed i ir created more and into the 23r ty before slowly band continued s across norther ches were isolat land - Chena	through the r lake effect s d. Snowfall y moving sou l into the 23r n Onondaga ed across ext ngo - Otseg	egion midday now off the e rates were 1 t uth into south rd before becc County, north reme northern go - Broom	y on the 22n east end of L o 2 inches pe ern Oneida, oming less in hern Madiso n Onondaga, e - Delawa	d bringi ake Ont er hour. Madisc ntense la n Count and nor re - Su	ing another re- ario. The sno The main we on, and Onon ate morning of ty, and much rthern and we llivan	bund of A bow was be est to east daga Cou on the 231 of Oneida stern One	arctic air to central New York. The est organized and most intense the snow band started across northerr unties during the evening. The lal d. Snowfall amounts were mostly a County. Some higher amounts o cida Counties.	nis bitte night of n Oneida ke effec y 6 to 12 of around
	27 28	2200EST 0500EST			0	0	300K		Heavy Snow	
NV7000-037	A low coast the 27 amou	v pressure syste later that day th 7th. The snow to nts.	m moved nor nen moved n tapered off to	rtheast into the ortheast to the ortheast to the ortheast to the orthogonal showe	e Ohio Valle e New Engla rs the morni	ey early and coas ng of th	on the 27th. st. Snow ahe e 28th. Snow	Another ad of the vfall amo	low pressure system developed on initial low became heavy the after unts were 6 to 10 inches with a fey	the eas rnoon o w highe
112009-037	Nort 29	0400EST	- Southern	Oneida	0	0	20K		Heavy Snow	
NYZ018	31 A ma across 1 to 3 northy	1200EST jor winter storr s Lake Ontario 3 inches an hou west Oneida Co	n was center into Oneida ur. The sno unty. This w	ed off the N County. A ba w continued vas the longes	ew England and of heavy into the 31s t and most in	coast of lake ef at. Snov ntense la	on the 28th. fect snow sta wfall amount ake effect sno	This stor rted arou s were 1 w event o	m set up a strong west wind of A nd 5 PM on the 28th. Snowfall ra to 4 feet. The highest amounts of the winter.	Arctic ai ites were were in
	31	1400EST 2200FST			0	0	50K		Heavy Snow	
	An in were Baldv	tense band of la as high as 5 i vinsville. The s	ake effect sno inches an ho now tapered	ow moved so our. Snowfa off that eveni	uth into extra ll amounts	eme nor were 10	thern Onond to 20 inch	aga Coun es across	ty the morning of the 31st. Snown this area, which included Syrac	fall rates cuse and

		Time Local/	Path Length	Path Width	Nur Pe	nber of rsons	Estir Dan	nated nage		January 2004			
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm				
NEW YORK, Coas	stal												
NYZ067-073>081	Orar	nge - Bronx -	Richmond	(Staten Is.)) - Kings	(Brookly	n) - Quee	ens - Nas	sau - Northwest Suff	folk - Northeast			
	Suffe 15	olk - Southwe 0700EST	st Suffolk	- Southeast	Suffolk	0			Heavy Snow				
		0900EST			Ŭ	Ū			iicu (j Silo)				
	With region am or	an arctic air ma n. Light snow c n Thursday, Jan	ass in place, leveloped du uary 15th. T	as a strong A ring Wednesd he Storm Tota	lberta clipp lay evening al Snowfall	er moved g, January amounts	south of L 14th. It bee ranged from	ong Island came heav 1 around 6	l, heavy snow occurred y at times, mainly betwee to 8 inches, as follows:	across parts of the en midnight and 8			
	In Or Chest	ange County, a er.	mounts range	ed from 5.0 in	iches at M	ontgomery	, Cornwall	-On-The-H	Iudson, and New Winds	or to 7.4 inches at			
	In the	In the Bronx, 7.0 inches was measured at Riverdale. In extreme Southern Westchester County, snowfall ranged from 6.0 inches a Bronxville to 6.5 inches at Yonkers.											
	In Ma	anhattan, snowfa	all amounts r	rs. anged from 5.	2 inches at	Bryant Pa	ark to 5.7 in	ches at the	e Central Park Zoo.				
	In Sta	ten Island, snov	vfall amount	s ranged from	5.8 inches	at Grasm	ere to 6.4 in	ches at El	tingville.				
	In Die In Qu	ieens, amounts	ranged from	5.8 inches at	John F. Ke	nnedy Ai	rport to 7.0	inches at l	Far Rockaway. At LaG	uardia Airport, 6.8			
	inche In Na	s was measured	nounts range	d from 5.5 inc	hes at Lyn	brook to 7	0 inches at	Farmingd	ale and West Hempstead	ł			
	In Su	ffolk County, r	nost snowfal	l amounts rar	iged from	5.0 inches	at Islip Ai	rport, Islip	p Hamlet, and Manorvil	le to 8.1 inches at			
NVZ067>081	Selde	n. 19 96 - Putnan	ı - Rockla	nd - North	ern Wes	tchester	- Souther	m Weste		(Manhattan) .			
1120072001	Bron	ige - Futnan	d (Staten I	s.) - Kings (Brookly	i) - Quee	ens - Nass	au - Nor	thwest Suffolk - Nor	theast Suffolk -			
	Sout	hwest Suffolk	x - Southea	st Suffolk	0	0							
	15 16	1700ES1 0700EST			U	U			Extreme Cold/Wind	i Chill			
	An ar front	ctic cold front through Wedne	swept southe sday, January	east across the 14th.	e region du	iring Tues	day afterno	oon, Janua	ry 13th. Extremely cold	d air followed this			
	As an Thurs high _l low w	As an Alberta Clipper passed south of Long Island Wednesday night, it rapidly intensified as it moved northeast of Long Islar Thursday. The large difference in pressure between a strong low pressure system northeast of New England and a strong arct high pressure system in Southeast Canada resulted in the combination of extremely low temperatures, high winds, and extreme low wind chill index values from sunset Thursday evening through sunrise Friday morning, January 16th.											
	Record low temperatures were set and tied on the following dates:												
	On Ja	nuary 15th:											
	A record low temperature of 2 degrees above 0 was set at John F. Kennedy Airport. A record low temperature of 1 degree above 0 was set at Islip Airport.												
	On Ja	nuary 16th:											
	A rec A rec	ord low temperation ord low temperation to the second second second second second second second second second s	ature of 1 deg ature of 2 deg	gree above 0 v grees above 0	was set at J was set at	ohn F. Kei Islip Airpo	nnedy Airpo ort.	ort.					
	A rec	ord low tempera	ature of 1 deg	gree above 0 v	vas tied at	Central Pa	rk in New Y	York City.					
NN/7.071	On Ja Monta sustai wind	unuary 16th, lov auk Airport. T ned wind speed gusts were betw	w temperatur he lowest W of 26 mph to yeen 30 and 4	es ranged fro 'ind Chill Ind o 26 degrees b 0 mph.	m 3 degree ex tempera below 0 at	es below z ature value Westchest	zero at Mon es ranged fi er County A	tgomery (rom 19 de Airport wit	County Airport to 4 deg grees below 0 at Monta h a sustained wind speed	rees above zero a auk Airport with a d of 30 mph. Peak			
1N I Z.U/1	Sout. 18	nern westch 1610EST	ester		0	0			Winter Storm				
	With South evening	just enough co least U.S. This ng, January 18th	ld air in plac s second low h.	e, as a low p gradually in	ressure systems tensified a	stem move s it move	ed east of t d northeast	he upper (. It passe	Great Lakes, another low d south then east of Lo	w formed over the ong Island Sunday			
	Light snow developed by 5 am across the region, which was occasionally mixed with sleet and freezing rain through the morning. Snowfall increased in intensity and became heavy by 10 am. By the time the snow ended around 6 pm, the Storm Total Snowfall Amount was around 6 inches.												

Here are selected snowfall amounts for Southern Westchester County: 6.0 inches was measured at both West Harrison and Scarsdale.

ocation	Data	Time Local/ Standard	Path Length (Miles)	Path Width	Numbe Perso Killed	r of ns	Estimated Damage	Character of Storm	January 2004			
	Date	Standard	(wines)	(Tarus)	Killed	iljuicu	rioperty crops	Character of Storm				
<u>NEW YORK, Coasta</u> NWZQC7: 070	<u>ll</u>		D									
NY2007>070	28	nge - Putnam 0000EST 0600EST	- Kockland	l - Norther	n vvestchest 0	0		Heavy Snow				
NYZ071>081	Southern Westchester - New York (Manhattan) - Bronx - Richmond (Staten Is.) - Kings (Brooklyn) - Queens Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk 28 0000EST 0 Winter Storm 0700EST 0 0 Winter Storm											
	A cold high pressure ridge extended southeast from James Bay across New England. As the primary low moved northeast towa the Eastern Great Lakes, a secondary low developed off the Mid Atlantic Coast during Tuesday morning, January 27th. The secondary low rapidly intensified as it moved northeast.											
	A ligh area f Area heavy the tw	ht mixture of sn roads made trav during this time at times. Most vin forks of Lon	ow, sleet, an veling extrem As the pred t Storm Total g Island, whe	d freezing ra ely hazardor cipitation rat Snowfall an re more mix	in spread nort us toward eve e increased du nounts ranged ing occurred.	h across ning. M ring the from are	the area during Tu Many traffic accide evening, the mixtu bund 6 to 12 inches	uesday afternoon. A l nts occurred across th re changed to a steady . There were isolated	ight coating of ice or the NYC Metropolitar snow, which became lower amounts across			
	Here Orang Putna Rockl	are selected sno ge County - fron m County - fror land County - fr	wfall amount n 7.8 inches a n 7.0 inches a om 6.0 inche	s for: at Middletow at Carmel to s at New Cit	n to 10.6 inch 8.0 inches at F y to 9.0 inches	es at Nev atterson at Suffe	w Windsor. ern.					
	Westchester County - from 8.0 inches at Ossining and Yorktown Heights to 10.0 inches at Thornwood and Hasting-On-Hudson. Bronx - 10.4 inches at Parkchester. Manhattan - 10.3 inches at Central Park. Staten Island from 5.5 inches at Westerleigh to 7.0 inches											
	Staten Island - from 5.5 inches at Westerleign to 7.0 inches. Brooklyn - from 7.5 inches at Sheepshead Bay to 8.3 inches at Graves End. Queens - from 6.2 inches at JFK Airport to 10.5 inches at Far Rockaway. Nassau County - from 6.5 inches at Lynbrook to 11.5 inches at Bellmore.											
	Weste Easter	ern and Central rn Suffolk Coun	Suffolk Coun ty - from 4.1	ty - from 6.4 inches at So	inches at Eas uthampton to	t Setauk 6.0 inch	et to 14.6 inches at es at East Quogue.	Dix Hills.				
NEW YORK, East												
NYZ032>033- 038>043-047>054- 058>061-063>066- 082>084	Nort Nort Sout Gree	hern Herkim hern Warrei hern Saratog ene - Eastern	er - Hamil n - Northe a - Wester 1 Greene -	ton - Soutl ern Washi n Albany - Western	iern Herkin ngton - Scl Eastern Al Columbia	ier - So ioharie bany - · Easte	outhern Fulton - Western Sc Western Renss ern Columbia -	- Montgomery - No henectady - Easte elaer - Eastern Rei Western Ulster -	orthern Saratoga rn Schenectady isselaer - Western Eastern Ulster			
	West 15 16	tern Dutchess 1800EST 1000EST	- Eastern	Dutchess -	Northern F 0	ulton - 0	Southeast Warr	ren - Southern Was Extreme Cold/W	shington /ind Chill			
	An ex At the arctic in the result Equiv Wester scatte	tremely cold ai e same time, a p high pressure, 15 to 30 mph r ed in dangerou valent wind chill ern Adirondacks ring of frozen a	rmass moved owerful storr extending fro range, with hi s wind chills l readings ran s. The brutal nd broken wa	l out of Sibe n developed om central C igher gusts. 7 s across eas nged from 25 cold spell re tter pipes.	ria, then plung off the Canadi anada southwa Fhis wind, cor tern New You 5 to 30 below sulted in many	ed south an Mari ard throu nbined v k durin zero in v closed	times. The pressure igh the Ohio Valle with ambient tempe g the night of Jan the Mid Hudson V schools and busine	ada and across the nor e gradient between the y, produced gusty nor ratures ranging from z uary 15 through the alley, to as low as 50 sses on the 16th. The	theast by January 15 intense storm and the th to northwest winds tero to 15 below zero morning of the 16th below zero across the cold also resulted in a			
NYZ038	Sout 22 23	hern Herkim 1600EST 0300EST	er		0	0		Heavy Snow				
	Intens lapse aftern Count	se low pressure, rate and persist noon of the Janu ty. Other areas	, over the Ca ently westerl ary 22 throu to the west	nadian Mari y fetch off t gh early on of this town	times drove a he lake, a plui the 23rd. The n might have	rctic air ne of he result w received	across Lake Ontai eavy lake effect sno as 7 inches of snov 1 locally more. Th	rio on January 22. Du ow fell across the Mol w reported in the town he snow was accompa	e to a steep adiabatic nawk Valley from the of Poland, Herkimen nied by wind, which			
	produ	ced blowing and	d drifting of t	ne snow mai	ang travel ver	y dangei	ous in places.		, 			
NYZ053>054-058-	produ West	iced blowing and tern Renssela	d drifting of t er - Easter	ne snow mai	aer - Weste	rn Gre	ene - Eastern C	olumbia - Westerr	n Ulster - Western			

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard Crops Character of Storm Date (Miles) (Yards) Killed Location Injured Property **NEW YORK, East** Long Island. The two systems combined to produce a marginal winter storm event across portions of eastern New York as a band of moderate to heavy snow moved over the area from around midnight into the early morning hours of the 28th. The temperature profile was cold enough for the precipitation to be all snow. Seven to 11 inches of snow accumulated to the south and east of Albany. Specific amounts included 11.3 inches in Copake, Columbia, 10.6 inches at Platte Cove, Greene County and 9.0 inches in Sushan, Washington County. While slightly lesser amounts of snow fell from the Albany and areas to the north and west, the snow caused many vehicular accidents and delayed school openings throughout eastern New York. **NEW YORK, North** NYZ026 Northern St. Lawrence 0200EST 11 Û 0 10K Flood 1000EST Ice and water on the St Regis River resulted in minor flooding in the Winthrop and Brasher areas. NYZ026>031-Northern St. Lawrence - Northern Franklin - Eastern Clinton - Southeastern St. Lawrence - Southern 034>035-087 Franklin - Western Clinton - Western Essex - Eastern Essex - Southerwestern St. Lawrence 1800EST 13 0 0 **Extreme Cold/Wind Chill** 14 1200EST Weak low pressure moved across northern portions of New York and New England during Monday, January 12th with 2 to 4 inches of snow. Colder air followed this storm. Then an arctic front moved through the area Tuesday, January 13th. Wind chills during Tuesday night, Jan 13th through around noon on Wednesday, January 14th were generally between 25 and 45 below zero. Arctic high pressure then settled across the area during Wednesday, January 14th. **NYZ027 Northern Franklin** 0600EST 14 0 0 30K Flood 16 0600EST Water and ice on the Salmon River in Malone, NY resulted in gradual flooding of low areas impacting a few houses. The water gradually rose and remained high for several days. Water damage to a few houses was reported. NYZ026>031-Northern St. Lawrence - Northern Franklin - Eastern Clinton - Southeastern St. Lawrence - Southern 034>035-087 Franklin - Western Clinton - Western Essex - Eastern Essex - Southerwestern St. Lawrence 15 1200EST 0 A **Extreme Cold/Wind Chill** 16 1200EST Arctic high pressure built southeast from Canada on Thursday, the 15th of January and Friday the 16th of January. Wind chills during Thursday, January 15th and Friday, January 16th were generally between 25 and 45 below zero. Thereafter, it remained cold with arctic high pressure over the area, but winds abated. NYZ087 Southerwestern St. Lawrence 0500EST 26 1 0 **Extreme Cold/Wind Chill** 0700EST A woman froze to death outside her home. She was 101 years old, and officials report her as not dressed for the cold. Early morning minimum temperatures on the 26th were between 12 and 24 degrees below zero in St Lawrence county. Autopsy reports indicate she died from hypothermia. F101OU **NEW YORK, West** NYZ002>003-Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Northern Erie - Wyoming -003>008-010-012-019-**Chautauqua - Cattaraugus** 019>020 0830EST 06 0 0 210K **Heavy Snow** 2300EST 08 This major lake effect storm began early on Tuesday the 6th following a sharp cold front. Off Lake Erie, a strong westerly flow ignited heavy lake snow bands over southern Erie and Wyoming counties. They migrated south and then north, reaching the Buffalo southtowns for awhile Tuesday evening before settling south into ski country later Tuesday night and most of Wednesday before weakening. Accumulations topped two feet over a large portion of northern Cattaraugus and Chautauqua counties with over 30" along the ridges. Specific snowfall reports included: Cassadaga 37"; Stockton 34"; Ellicottville 28"; Colden 22"; South Wales 20"; Jamestown 16"; Dunkirk 12"; and Orchard Park 8". Off Lake Ontario the activity began on a westerly flow across the northern Tug Hill into southern Jefferson county and settled south across Oswego county early on the 7th. One to two feet fell in this area. The band settled a bit further south and extended along the Lake Ontario shore from Orleans through Wayne counties. The band weakened some later Wednesday night into Thursday as it drifted south to about the Thruway. Snowfall totals reported with this activity included: 34" in North Osceola; 32" in Redfield; 20" in Pulaski, Hilton and Highmarket; 18" in Greece; 17" in Webster and Penfield; and 15" in Oswego. NYZ001-010>012 Niagara - Northern Erie - Genesee - Wyoming 2215EST 11 36K Heavy Snow 12 0615EST A storm system moved from the central Great Lakes across New York State and blanketed the Niagara Frontier with seven to twelve inches of snow. Specific snowfall totals included: 12" at Sanborn; 10" at North Tonawanda; 9" at Kenmore, Buffalo, Amherst, and Clarence; 8" at Grand Island, Tonawanda, Alden and Batavia; and 7" at Darien and Bennington.

		Time	Path Longth	Path	Num	ber of	Estin	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
NEW YORK West										
NYZ003>005-011- 019>020	Mon	roe - Wayne	- Northern	Cayuga - (Genesee -	Chauta	uqua - Cat	taraugu	S	
0172020	19 20	0905EST 1045EST			0	0	60K		Heavy Snow	
NYZ005>006-008- 010-019	The la of Lak at Elli Cato; Nort l	ke effect even ces Erie and O cottville; 13" 16" at Phoenix hern Cayuga	t began the af ntario for nea at Perrysburg ; 14" at Roch a - Oswego	ternoon of th rly 60 hours. ; 12" at Sout ester; 11" at I - Lewis - No	e 18th in a c Snowfalls c th Dayton a Fulton; and orthern E	cold north of up to 1 nd Stock 8" at Pen rie - Ch	nwest flow. 7 7" were repo aton; and 8" nbroke. autauqua	The snow orted off b at Dunkir	bands continued and oscil oth lakes. Off Lake Erie, 1 k. Off Lake Ontario, 17"	lated down wind 7" was recorded was recorded at
	22 23	0800EST 0655EST			0	0	25K		Heavy Snow	
	An ard less th to the early West	ctic front cross an 10"prima upper Great L Friday mornin Monroe; 26" at	ed the area an rily due to the akes. Snow for g (22nd-23rd t Minetto; 24'	ad lake effect e ice cover or ell at the rate). Reported s d at Wolcott; 2	snow bands the lake. O of four to fi snowfall an 21" at Cons	s develop Off Lake ve inches ounts in cantia; an	bed in the nor Ontario, the s an hour fro cluded: 36" d 18" at Cate	rthwest flo activity w om Fair Ha at Fair H o.	ow. Off Lake Erie, snow fa as more intense with a dis aven to Fulton at times Th aven and Hannibal; 33" a	all amounts were stinct connectior ursday night and at Fulton; 29" at
NYZ004>005- 005>008-010-012- 019>020	Wayı Catta	ne - Northe araugus	ern Cayuga	- Oswego) - Jeffer	son - I	Lewis - N	orthern	Erie - Wyoming - (Chautauqua ·
0172020	28 31	0710EST 2020EST			0	0	450K		Heavy Snow	
NORTH CAROLINA	sectio Jeffers Saturc 48" in buildi roofec Jeffers cover Repor	n of central Os son counties f lay the 31st. S Oswego; and ngs to collapse l caved in on son and Cayug on the lake. L ted snowfall to <u>tral</u>	swego county or awhile Fri pecific snowl 40" in Fulton e in Monroe a large storag ga counties w ake effect sno otals included	build refinance by Friday af day night, be all totals incl . The weight and Wayne c ge building. I ere declared ow prevailed . 18" at Orang	ternoon (the fore driftin luded: 86" i of this snov counties. In Because of State and I over the hig geville; 14"	2 30th). T g back s n Parish; v, as wel Wayne of the heavy Federal E gher elevy at Warsa	The band drift The band drift couth across (58" in Con 1 as previous county, abou y lake effect Disaster area: ations south w and Arkw	fied north Monroe, stantia; 56 lake effect t 25 boats snows th s. Off Lak of Buffale right; 12"	into southern Lewis and e Wayne and northern Cay s'' in West Monroe; 51'' ir ct storms during the month s were damaged in Sodus proughout the month of Ja ce Erie, snowfalls were li o from late Wednesday (2 at South Wales; and 8'' at	extreme southern uga counties on a North Osceola; , caused several Point when the nuary, Oswego mited by the icc 8th) into Friday Perrysburg.
NCZ007>011-	Perso	on - Granvil	le - Vance -	Warren -	Halifax - I	Forsyth	- Guilford	l - Alam	ance - Orange - Durh	am - Franklin
021>028-038>043- 073>078-083>086-	- Nas Mooi	sh - Edgecon re - Lee - Ha	nbe - David rnett - Way	lson - Rano /ne - Anson	dolph - Cl 1 - Richmo	natham and - Sc	- Wake - otland - H	Johnstor oke - Cu	n - Wilson - Stanly - N mberland - Sampson	Montgomery ·
088>089	26	0430EST 2300EST			0	0			Winter Storm	
	A win snow inches coasta	ter storm occu and sleet over of snow and l plain on the 2	rred on Janua much of the sleet fell ove 26th.	area on the er the Piedmo	26th when s 25th, then ont on the 2	now and became f 25th, with	sleet fell ac freezing rain h as much a	ross centra over the s 1/4 inch	al North Carolina. The pre southeastern sections on of freezing rain reported	the 26th. 3 to 6 in the southerr
NORTH CAROLINA	A, Cen	tral Coasta	<u>al</u>							
NCZ029-044>047- 079>081-090>095-	Mart Jones	in - Pitt - W s - Craven -	/ashington Pamlico - C	- Tyrrell - Carteret - O	Western l nslow - E	Dare - (astern I	Greene - B Dare - East	eaufort ern Hyd	- Western Hyde - Duj le	olin - Lenoir ·
098-103>104	09	1200EST 1700EST			0	0			Winter Weather/Mix	
NCZ029-044>047- 079>081-090>095-098	One to Mart Jones	o three inches o in - Pitt - W s - Craven -	of snow was r / ashington Pamlico - C	eported acros - Tyrrell - Carteret - O	ss the area d Western 1 nslow	uring the Dare - (afternoon he Greene - B	ours. eaufort -	- Western Hyde - Duj	olin - Lenoir ·
	25	1300EST 1900EST			0	0			Winter Storm	
	A win	ter storm prod	uced up to 2 i	nch ice accur	nulations m	ainly acro	oss the coast	al plains o	of eastern North Carolina.	

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St	torr	n Data	and	Unu	sual W	'eat	her Ph	enomena	
Location	Data	Time Local/	Path Length	Path Width	Numbe Perso	er of ins	Estimated Damage	character of Storm	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property Cro	ops Character of Storm	
NORTH CAROLINA NCZ029-044-	<u>, Cen</u> Marti	<u>tral Coastal</u> in - Pitt - Gre	ene - Beau	ıfort - Du	plin - Lenoir	- Jone	s - Onslow		
079>080-090>092-098	24	2000ECT			•	0			
	26 27	2000EST 0200EST			0	0		Winter Storm	
	A wint	ter storm caused	l up to one	half inch ic	e accumulation	s mainly	y across the coas	tal plains of eastern North	Carolina during the
NORTH CAROLINA	night.	eme Southw	vest						
NCZ060>061	Chero	okee - Clay							
	09	0400EST 1000EST			0	0		Winter Storm	
	trace-1	inch snowfall							
	A wint	ter storm system	n moved ac	ross the reg	gion early in the	e mornii	ng January 9th p	roducing light snowfall in	Cherokee and Clay
NORTH CAROLINA	A, Nor	<u>th Coastal</u>	ie generaliy	around an	men or iess.				
NCZ012>017-	North	ampton - H	ertford -	Gates -	Pasquotank	a - Ca	mden - West	tern Currituck - Ber	rtie - Chowan -
030>032-102	Perqu	iimans - Easte	ern Curri	tuck	0	0		Winton Storm	
	09	1600EST			U	U		winter Storm	
	One to 3", Per resulte	three inches of rquimans count d in several acci	snow fell y 3", Gates dents.	across porti county 2"	ions of northear	st North k count	Carolina. Some y 1.5-2". The sr	higher amounts included: low produced very slippe	Pasquotank county ry roadways, which
NCZ012>017-	North	ampton - H	ertford -	Gates -	Pasquotank	a - Ca	mden - West	tern Currituck - Ber	rtie - Chowan -
030>032-102	Perqu 25 26	iimans - Easte 1400EST 1100EST	ern Curri	tuck	0	0		Winter Storm	
	Two to Northa	o four inches of mpton county 4 roduced very slip	snow and s ", Ahoskie ppery roady	leet fell act in Hertford vays, which	ross portions of d county 4", Be resulted in nur	f northea ertie cou nerous a	ast North Carolin inty 3", and Curr accidents and sch	a. Some higher amounts i ituck in Currituck county ool closings for a few days	ncluded: Jackson in 2.5". The snow and
NORTH CAROLINA	i, Nort	thwest and N	North Ce	<u>ntral</u>					
NCZ001	Ashe	0201EST			0	0		High Wind (C64)	
	Strong	low pressure m	oving acros	s the Ohio '	Valley brought	a high w	vind gust to the a	irport at Jefferson, NC.	
NCZ001	Ashe		U						
	24 Strong	1421EST	ternoon of t	ha 24th bl	1	1 vohiala	5K regulting in one	Strong Wind	26VE
NCZ001>006-018>020	Ashe 25	- Alleghany - 0630EST 2300EST	Surry - S	tokes - Ro	ockingham - (0	Caswel 0	l - Watauga - '	Wilkes - Yadkin Heavy Snow	30VE
	A wint	ter storm dumpe	d 4 to 8 inc	hes of snow	across the nor	thwester	n North Carolina	mountains, foothills, and	piedmont during the
NC7001 001 019 019	day of	the 25th. Some	of the highe	er amounts i	fell in southern	sections	of the piedmont	counties.	
NCZ001-001-018-018	Ashe 28	- watauga 0500EST 0605EST			0	0		High Wind (G55)	
	A stron	ng cold front me	oved throug	the area	late on the 27th	, usheri	ng in strong win	ds during the morning of	he 28th. These high
NORTH CAROLINA	winds	aowned trees, w th Coastal	mich fell on	to powerlin	ies in Watauga	County.	rees were also	blown down in Ashe Coun	ty.
NCZ087-096	Robe	son - Bladen							
	25	1400EST 2200EST			0	0	2.5M	Ice Storm	
	Freezin	ng rain began fa	alling over	the area th	e morning of J	an 25th	, with ice accum	ulations reaching a quart	er of an inch by the

afternoon. Tree limbs snapped from the weight of the ice, causing widespread power outages. Much of the monetary damages were due to debris removal and utility company expenses. Many homes were also damaged when the tree limbs fell on them.

St	tori	n Data	a and	Unus	ual W	'eat	ther Pher	nomena
Location	Data	Time Local/	Path Length	Path Width	Numbe Perso	r of ns	Estimated Damage	January 2004
Location	Date	Standard	(miles)	(i ards)	Nilled	njurea	Property Crops	Character of Storini
<u>NORTH CAROLINA</u> NCZ087-096>097-099	A <u>, Sou</u> Robe	<u>th Coastal</u> son - Bladen	- Pender -	Columbus				
	26 27	1100EST 0330EST			0	0	13M	Ice Storm
NORTH CAROLINA	Anoth sleet to coast t limbs, bridge damag home	er round of fro o areas that alre o as much as th as well as sig s and overpasse es totaled over repair.	zen precipita eady had ove hree quarters nificant strue es, with num a million do	tion moved is r a quarter in of an inch ov ctural damage erous traffic a illars per cour	nto the area of ch of ice still ver interior se to many ho accidents report nty in some p	on the l in the ctions. mes. 7 orted. No parts of	neels of the storm of trees. The total ice a The weight of the ic there was some ice fany residences were Nouth Carolina, due	Jan 25th, bringing more freezing rain and accumulations ranged from a trace near the e caused major power outages from falling accumulations on the roads, especially or e without power for over a week. Monetary to cleanup of debris, utility expenses, and
NCZ033>037-	Aver	v - Caldwell -	- Alexande	r - Iredell -	Davie - Ma	adison	- Yancey - Mitch	ell - Swain - Haywood - Buncombe
048>055-057>058-072	Mcdo 09	well - Burke 0000EST	- Rowan -	Graham - (Cabarrus 0	0	Tuncey Mitten	Winter Weather/Mix
NCZ033>037-	Light inches border Aver	snow develope had accumulat Many roads b y - Caldwell -	d across muc ed across mu ecame slick a - Alexande	ch of western ich of the area and hazardous r - Iredell -	North Caroli a. There were 3. Davie - Ma	na duri some i dison	ng the early morning solated 3 inch amour	g hours of the 9th. By mid morning, 1 to 2 ts in the higher terrain along the Tennessee ell - Buncombe - Mcdowell - Burke -
048>050-053>057- 062>067	Catav	wba - Rowan	- Macon -	Southern J	ackson - Ti	ransyl	vania - Henderson	- Polk - Rutherford
	25	1200EST 1800EST			0	0		Heavy Snow
NCZ034>037- 055>057-066>072-082	Light intensi Accun Caldy Gasto 25	snow develope ified throughou nulations as hig well - Alexan on - Mecklen 1400EST	d early in th at the mornir th as 8 inches ader - Irede burg - Cab	e morning ac g and afterno occurred in r ell - Davie - arrus - Uni	ross the mou oon, and by e nountainous a Burke - Ca on 0	ntains, early ev areas al- atawba 0	foothills, and norther rening 3 to 5 inches ong the Tennessee bo a - Rowan - Polk	rn piedmont of North Carolina. The snow had accumulated across much of the area order. - Rutherford - Cleveland - Lincoln - Sleet Storm
NCZ066>068-	During in the betwee top of fatalat Polk	g the early after evening. In the en 1 and 2 inch the layer of sl ies. Numerous i - Rutherford	rnoon, snow e southern p es across the leet. Very sli injuries also	began to mix iedmont, prec area. A light ck roads were occurred due d - Gaston	with sleet act spitation fell freezing rain e responsible to falls. - Mecklenb	coss the almost develo for hur	foothills and norther exclusively as sleet ped during the eveni dreds of traffic accie Cabarrus - Union	n piedmont, before becoming all sleet late. . Total sleet accumulations were generally ng, which resulted in a thin glaze of ice or lents, some of which involved injuries and
070>072-082	27	0000EST			0	0		Winter Weather/Mix
NCZ033-048>052-058	Light i added in som injurie Avery	0600EST freezing rain de an additional la the areas. Hundi s and some fata y - Madison -	eveloped duri ayer of glaze reds of traffi alaties. The ic • Yancey -]	ng the early n to the mixtur c accidents oc was slow to Mitchell - S	norning hours the of sleet and ccurred overn to melt, and tra wain - Hay	s of the l ice that night ar affic acc wood	27th across the south at was already presen d into the morning i cidents continued for - Graham	tern foothills and southwest piedmont. This it. The layer of ice was as thick as 2 inches rush hour. Many of the accidents involved another 2 days.
	27 28	1800EST 0600EST			U	0		Winter Weather/Mix
NORTH DAKOTA	Light hours	snow develope of the 28th. Acc al and West	d across the cumulations	Tennessee bo of 1 to 3 inche	order counties es occurred, n	during nainly r	the evening of the sight along the state li	27th, and continued into the early morning ne.
NDZ001>005- 009>013-017>023-	Divid Dunn	e - Burke - F - Mercer -	Renville - B Oliver - N	ottineau - I Iclean - She	Rolette - W eridan - W	illiams ells -	s - Mountrail - W Foster - Golden	ard - Mchenry - Pierce - Mckenzie Valley - Billings - Stark - Morton
025-031>037- 040\048\050\051	Burle	igh - Kidder	· - Stutsma	n - Slope -	Hettinger -	Gran	t - Bowman - Ad	ams - Sioux - Emmons - Logan - La
v7v2v70702v2V2I	04 05	1800CST 1200CST	- ыскеу		0	0		Extreme Cold/Wind Chill
	A stron Januar 30 bel the sul	ng arctic high p y and brought o ow zero Sunda bzero temperati	pressure syste extremely co y night and r ures created	m over Britis ld temperature emained betw wind chills ra	h Columbia C es and gusty v veen 10 and 2 inging from 4	Canada winds to 20 belov 5 to 58	moved southeast into o western and central w zero on Monday. W below zero over we	the northern plains Sunday, the 4th of North Dakota. Temperatures reached 20 to Vest winds of 10 to 25 mph combined with stern and central North Dakota. The winds

S	Stor	m Data	and	Unus	ual W	Veat	her I	Phen	omena
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estin Dan Property	nated nage Crops	January 2004 Character of Storm
NORTH DAKOTA	Centr	al and West							
NDZ001>005- 009>013-017>023- 025-032-034>037- 045>048-050>051	also c snow Divid Dum Stuts	reated low visib over parts of nor de - Burke - R n - Mercer - sman - Sioux -	ilties in blow thern North enville - B Oliver - I Emmons	ving snow in Dakota. The ottineau - 1 Mclean - S - Logan - L	frigid tempe Rolette - W Sheridan - a Moure -	of the r ratures la Villiams Wells Mcinto	egion. Some ead to powe s - Mountr - Foster osh - Dicke	e roads we r outages a rail - Wa - Billings ey	re closed due to the blowing and drifting nd water line breaks in several areas. rd - Mchenry - Pierce - Mckenzie - s - Morton - Burleigh - Kidder -
	24 25	0800CST 1600CST			0	0			Winter Storm
ND7001>005	Low 24th heavi The s mph throu some	pressure over the and 25th. A per est band of snow torm began as fr accompanied the ghout the region minor injuries be	e central Ro sistent snow v fell from the eezing rain a e storm resu was impacted ut no details	ckies intensi event produ ne northwest nd sleet over ulting in cor ed due to red on the injure	fied into a n aced 6 to 12 through cen north centra nsiderable bl aced visibili d.	hajor win inches tral North l North I lowing a ties and	nter storm in of snow ov th Dakota w Dakota befo and drifting blocked roa	mpacting N er most of there snow ore turning snow and ads. Numer	North Dakota on the weekend of January western and central North Dakota. The fall amounts ranged from 9 to 12 inches. over to all snow. Gusty winds of 15 to 25 d wind chills to 30 below zero. Travel rous vehicle accidents were reported with
009>013-017>023- 025-031>037-	Divid	n - Mercer - (eigh - Kidder	Oliver - M - Stutsma	Iclean - Sh n - Slope -	eridan - V Hettinger	Vells - - Gran	Foster - C t - Bowma	Fall - Wa Folden V an - Adai	alley - Billings - Stark - Morton - ms - Sioux - Emmons - Logan - La
040>048-050>051	Mou 27 28	re - Mcintosh 1800CST 1130CST	- Dickey	Ĩ	0	0			Extreme Cold/Wind Chill
NDZ001>003-	An ap extrem below south a 35 pressu Divid	proaching arctic nely cold tempe zero combined west North Dako year old male lo ure system settled de - Burke - R	high pressur ratures and l with north ota, in Adam est control of d over the re- enville - W	re system over bitter wind c west winds s County, icy f his vehicle gion late Wea 'illiams - M	er southern C hills to west to 30 mph f 7 roads and r and rolled s dnesday mor [ountrail -	Canada an tern and resulted educed v several ti ning on t Ward -	nd exiting lo central Nor in widespre visibilities in imes. The d the 28th of J • Mckenzie	w pressure th Dakota. ead wind on blowing s river was of anuary and e	e system over the northern plains brought Ambient temperatures ranging 20 to 35 chill factors of 40 to 65 below zero. In snow resulted in a fatality (indirect) when ejected from the vehicle. The arctic high d brought diminishing winds to the area.
009>011-017	30 21	1800CST			0	0			Winter Storm
NODTH DAVOTA	Low j band up to by lar no tra	pressure system of heavy snow a 8 inches of snow ge snow drifts. S vel due to the dr	over Montar nd wind to r accumulate Snow drifts u ifting snow a	a intensified northwest and d. Winds to 3 p to 10 feet v and blocked r	and moved d north centr 35 mph cause were reported oads. Numer	into Nor al North ed consid d over pa rous trav	th Dakota F Dakota. Th derable blow arts of the no elers who vo	Friday ever the heaviest ving and dr orthwest. T entured out	ing the 30th. The winter storm brought a snow fell from Williston to Minot where rifting snow. Many roads became blocked 'he North Dakota Highway Patrol advised became stranded.
<u>NDZ006>008-</u> 014>016-024-	<u>, East</u> Tow Wale	ner - Cavalier	- Pembin	a - Benson	- Ramsey	- East	ern Walsh	ı - Eddy	- Nelson - Grand Forks - Western
026>027-054	vv als								
	02 03	0440CST 0347CST			0	0			Winter Storm
NDZ006>008- 014>016-024-	A sur north high j speed Valle near 2 4 to 6 count near 1 Tow Steel	face low over we east along its im- pressure built in s were steady at y. At Hallock, I zero at times in th 5 inches elsewhe y. Two semi tru Minnewaukan wa ner - Cavalier e - Traill - We	estern South verted trougl quickly behi 20 to 30 mp MN, winds g ne northern F rre. Several icks collided as blocked by - Pembin estern Wal	Dakota frida n, roughly fr nd the depart oh with gusts gusted up to 4 Red River Va schools can on Interstat y snowdrifts. a - Benson sh	y morning tr om Wahpeto ting low, cree s to 35 mph. 45 mph. Blo lley. Eight i celled classe e 29 near Dr - Ramsey	acked in on, ND, a ating a ti Wind s owing sn nches of s and ev ayton, c - East	to eastern S at noon, to ight surface peeds were now resulted is now fell a vening activ ausing mino ern Walsh	South Dako Lake of th pressure gr a bit higher i n visibili cross porti- ities on fri- or injuries h - Eddy	ta by late friday morning. It then tracked e Woods, MN, by early evening. Arctic radient and gusty northwest winds. Wind er across the extreme northern Red River ties below a half-mile in open areas, and ons of Benson and Ramsey counties, with iday. No travel was advised in Pembina to one of the drivers. U.S. Highway 281 - Nelson - Grand Forks - Griggs -
u2o>u3u-u54	04	1900CST			0	0			Extreme Cold/Wind Chill
	06 High Dako north colde	0700CST pressure extende ta. This kept a s east North Dako st monday morni	d from easte steady west t ta. The cold ing lows wer	ern Montana o northwest lest sunday (re Cando, at 3	into central S wind at 10 to January 4th) 35 below, an	South Da o 20 mpl morning d Langd	kota, with a h and wind g lows were on, at 32 be	decent sur chills from Cando, at low. The (rface pressure gradient over eastern North 40 below to 60 degrees below zero over 32 below, and Baker, at 28 below. The Grand Forks hospital reported one case of

	Stor	n Data	and	Unus	ual V	Veat	her F	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estim Dam Property	ated age Crops	Character of Storm	January 2004
NORTH DAKOTA	A, East									
NDZ006>008- 014>016-024- 026>027-054	frostb Town Wals	ite and one case ner - Cavalier h	of hypother - Pembin	mia. 1 a - Benson	- Ramse	y - Easte	ern Walsh	- Eddy	- Nelson - Grand	Forks - Western
	21 22	1500CST 0424CST			0	0			Extreme Cold/Wi	nd Chill
NDZ006>008- 014>016-024- 026>030-038>039- 049-052>054	Surfac at 10 report Town Steel	the high pressure to 20 mph and to ed lows of 22 be ner - Cavalier e - Traill - Ba	built into ce emperatures clow zero on - Pembin rnes - Cas	ntral North D from 15 belo the morning a - Benson s - Ransom	Pakota, with w to 25 be of the 22nd - Ramse - Sargent	a tight pi low zero c y - Easte - Richla	ressure grad created winc ern Walsh and - West	ient over 1 1 chills ard 1 - Eddy 2 cern Wal	northeast North Dakot bund 40 below zero. - Nelson - Grand sh	ta. Northwest winds Cando and Langdon Forks - Griggs -
	24 26	1525CST 0315CST			0	0			Winter Storm	
NDZ006>008- 014>016-024- 026>030-038>039-	An in receiv Minne (Janua schoo betwe pileup had ne Town Steel	verted trough ex ed over 6 inche esota. Up to 2 fe ury 25th). 17 in ls closed on mo en Grand Forks on the Intersta ot occurred since her - Cavalier e - Traill - Ba	tended into s of snow. eet of snow f ches of snow nday, while and Fargo the P4 bridge the record s - Pembin rnes - Cass	the northern p A heavy snov cell along this v fell at Hills others started around 6:15 p between Far setting winter a - Benson s - Ransom	blains from w band set line. Wind boro, ND. d late. Sor om sunday, go and Mo of 1996/97 - Ramse - Sargent	an area of up from (l chills of Many sum ne areas (and rema orhead, w y - Easte - Richla	f surface low Cooperstow 20 below to nday church only saw pa ained closed ith only mi ern Walsh and - West	v pressure n to Mayv 30 below services a rtial mail until 8 a nor injurio - Eddy tern Wal	over the central plair ville (North Dakota) a v zero also occurred du and other activities w service on monday. m on monday. There es reported. Snowfal - Nelson - Grand sh	as. Much of the area and toward Wadena, uring the day sunday ere cancelled. Most Interstate 29 closed was a 15 to 20 car 1 amounts like these Forks - Griggs -
049-052>054	26 31	0330CST 2359CST			0	0			Extreme Cold/Wi	nd Chill
	Arctic all of below aftern 28th. and C below 39 bel and th and M low te below tempe Pembi shops of fro the se fixed.	high pressure b eastern North D zero on the aft oon of the 28th. However, with rary reported lo . Fargo and Gra ow. Baker, Cra e Grand Forks I layville dropped mperature (sinc zero. Record I rature at Mayvil na Gorge report were kept busy stbite was repor vere cold, causi 400 north Farg	uilt into the bakota. With ernoon of th Wind spee the arctic hi w temperatu and Forks bo ry, Michigan nternational to 41 below e 1941) was ows were al le fell to 45 edly fell to 45 edly fell to 45 ijumping car ted at Altru ng indoor te o residents la	northern plain a subzero tem le 27th. Ther ds dropped of gh pressure o ures of 28 bel th set record h, and Mayvil Airport set a d. A record le set at the Gra so set at the Gra so set at the Gra so set at the Gra below and W 50 below. On h, installing b Hospital in Comperatures to ost power for	ns in the wa peratures a refore, a wi ff enough t ver the are low zero. lows at 31 le all repor record low ow of 40 be and Forks I city of Gra a halla fell to the mornin lock heater or hall to the 3 hours on	the of the individual sector of the individual	January 24t speeds of 10 warning was nd chill wan nperatures a orning of th n the mornin ng lows of 3 low. On the set at the Gr hal Airport c at 39 below bw. An uno B1st, Hillsbo g flat tires, a d Forks hou ny of its rei- ng of the 30	h-26th sno b to 20 mp issued fr rning was bounded. the 27th, M ng of the 2 88 below. the morning and Forks on the 30tf 7, and at F fficial the oro and St. and worki using com sidents sle th, when a	owstorm, which dropp oh, wind chills droppe om the afternoon of t not extended beyond On the morning of t layville reported a lov 28th, Cando reported a Devils Lake set a rec of the 29th, Walhalla International Airport a, when the temperatu Fargo, at 36 below. A ermometer along the F Thomas dipped to 30 ng on batteries and sp plex had heat generat pt elsewhere until its a powerline burned do	bed heavy snow over ed to 40 below to 65 the 27th through the the afternoon of the he 26th, both Cando w temperature of 36 a low temperature of ord low of 36 below a dipped to 42 below . An all-time record the fell to 43 degrees also on the 30th, the Pembina River in the b below. Auto repair park plugs. One case ion problems due to heating system was wn.
OHIO, East							•		-	
OHZUSY	Belm 03	ont 2015EST 0630EST			0	0			Flood	
OHZ058	04 Boggs night, Brook Guer	Creek flooded other roads wer side.	Route 331 n re flooded: G	ear Holloway County Rd 4	7. At 825 P near Colera	M, Aults I in, Rte 50	Run flooded 6 near Mayr	l Interstate hard, Rout	e 70 just east of St. Cl e 331 near Flushing,	airsville. During the and US Rte 40 near
	US Crook	2045E51 2300EST ed Creek floode	d Phillips R	1.4 miles sou	U thwest of C	U Cambridge			r 1000	

		Time Local/	Path Length	Path Width	Nun	iber of	Estim	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
OHIO, East									
OHZ050	Jeffe 03 04	rson 2045EST 0000EST			0	0	50K		Flood
	Near floode Warre	Rayland, Short ed near Connor enton. People w	Creek flood sville; and S ere stranded	ed county roa SR 152 near in their home	ads 1, 7. C Smithfield s by 10 PM	ounty Rd There w on the 31	8 near Smit vas basement rd.	hfield was t flooding	s buckled by flood waters. County Rd 1: in 70 houses in Adena, Dillonvale, and
OHZ039-048-058	Tusc 04 10	arawas - Cos 0600EST 0700EST	hocton - G	uernsey	0	0	100K		Flood
	Rivers Janua River Wills on 8th stage 5th; fe 5th; F	s began to rise ry 3 and 4, cau at Coshocton r Creek at Camb h. Stillwater Cr 1 AM on 9th. ell below flood lood stage is 11	January 2 b sing rivers in ose above flo ridge rose ab reek at Uhrich Tuscarawas H stage at 12 n ft.	ecause of sn Eastern Ohi od stage (15 ove flood sta hsville rose a River at New oon on the 5t	ow melt ar o to rise. N ft) 6 AM o age (15 ft) 6 bove flood Philadelph th. The Tus	nd temper fumerous n 4th; cre 5 PM on 4 stage (5 ia rose ab carawas I	ratures 20 de small strean sted 18 ft at 4th; crested 2 ft) 530 PM o oove flood st River at New	egrees abo ns flooded 6 AM on 20.1 ft at 6 on 4th; cre age (7 ft) vcomerstov	ove normal. Two to 3 inches of rain fel first, followed by the rivers: Muskingun 5th; fell below flood stage 7 AM on 10th 6 AM on 5th; fell below flood stage 1 PM ested 9.6 ft 9 AM on 6th; fell below flood 930 PM on 4th; crested 7.3 ft at 2 AM on wn crested 10.3 ft the early evening of the
OHZ049	Harr 04 05	ison 1055EST 2200FST			0	0			Flood
	Strear and C still fl	ns were reporte ounty Rd 10 w ooded. SR 151	d out of their ere closed by near Scio and	banks in Jev flooding; an SR 800 near	wett and Sc d SR 331 v r Freeport v	io. By 44 vas closed vere the la	0 PM, SR 15 l northwest o ast to be unco	51 flooded of Hollowa overed by	in Bowerston; and near Freeport, SR 800 ay. By 940 PM, SR 800 near Freeport wa flood waters.
OHZ058	Guer 04 07	nsey 1130EST 0600EST			0	0	200K		Flood
OHZ050	This r Camb 6 AM Jeffe	nearly 3-day flor ridge flooded. on the 6th. Aft rson	ood began wh By 930 PM o er 12 noon or	nen Vocation on the 4th, ov on the 6th, wat	Rd and Frank er 50 roads er levels be	ankfort R were floo gan to fal	d flooded in oded county- 1. Flooded er	East Cam wide. Standed the n	nbridge. At 425 PM, numerous roads nea te Routes 66 and 209 were still flooded a norning of the 7th.
	04 06	1140EST 1200EST			0	0	400K		Flood
OHZ057	This 2 miles were 2 west of Count State 2 off its Brillia Musl	2-day flood star north of Marti flooded 10 mil- of Rayland and ty. During this f Routes 150 and s foundation by ant, 22 homes w kingum	ted with the ns Ferry. By es west of St Tiltonsville, lood, the foll 152. County a mud slide vere flooded.	flooding of (325 PM, Co eubenville. E numerous ro owing were f Rd 74 near A . A house wa Some familie	County Rd 15 unty Rd 15 By 941 PM wads flooded: cou looded: cou Adena had as threatene es were evan	8 east of 60 near D on the 44 d. As late anty roads a mud slid ed by a n cuated. So	Adena, and illonvale wa th, Route 15 as 6 AM or s 1, 2, 7, 8, 1 de. On CR 7- nud slide on chools were o	other road as closed b 2 near Di a 6th, road 4, 17, 18, 4 near Min County F closed for	ds. By 1 PM, Beach Spring Rd flooded - by flooding. By 445 PM, numerous road llonvale was closed by flooding; and jus ls were still flooded in southern Jefferson 26, 28, 34, 43, 47, 53, 54, 68, 74, and 77; ngo Junction, a mobile home was knocker Rd 8 near Dillonvale. In Wells Twp, nea 2 days.
	04 06	1140EST 1200EST			0	0	20K		Flood
	This 2 and in floode	2-day flood star a Gaysport (Blu ed. At last as 6 A	ted with num e Rock), a ho AM on 6th, so	erous roads : ouse was floo ome roads we	flooded nea ded so its c ere still floo	ar Zanesv occupants oded.	ille. By 415 were evacua	PM, SR 1 ited. By 94	46 and Old Falls Rd flooded near Dillon 47 PM, Gaysport reported numerous road
OHZ048	Cosh 04 05	octon 1145EST 1500EST			0	0			Flood
OHZ039	SR 79 floode floodi Tuse	flooded near l ed; and northwe ng near Nellie; arawas	New Guilford est of Coshoc and County I	l and SR 751 ton, SR 60 ar Rd 439 was c	flooded ne nd US Rte 3 losed south	ear Bakers 6 floodec east of W	sville. By 43 l near Blissfi akatomika.	Opm, wes ield and L	t of Nellie, State Routes 79, 206, and 71: ayland. By 925 pm, SR 715 was closed by
JILIVU/	04 07	1150EST 0800EST			0	0			Flood
	The al had fl	lmost 3-day flo ooded in the U	od began who hrichsville ar	en several roa nd Dennison	ads were rep areas, and	ported flo the floodi	oded in the l	New Phila d around N	delphia area. By 955 PM, numerous road New Philadelphia. As last as 6 AM on the

6th, some roads were still flooded.

		Time	Path	Path	Nur	nber of	Estin	ated		January 2004
Location	Date	Local/ Standard	(Miles)	(Yards)	Killed	rsons Injured	Property	Crops	Character of Storm	-
OHIO. East										
OHZ059	Belm 04 05	ont 1300EST 2100EST			0	0	250K		Flood	
0112040	It star from 1 slides house demoi report 147 (I River: Janua The C 37 ft.	ted with Tunne Flushing to Brid and high water on Route 647, lished for safety ed on County R Baileys Mills), S s began to rise ry 3 and 4, caus Dhio River at Po	l Rd flooding lgeport. By 4 c; plus, there two miles w 7. During the d 30 (Kirkw SR 148 (Pow January 2 b ing rivers to whatan Poin	g near Belmo PM, McMał were mud sl vest of Martir e early morni rood Heights) hatan Point), a ecause of sno rise. Numero t crested 36.8	nt and Con toon Creek ides in Br is Ferry, w ng of the ; CR 54 (4 and County ow melt a us small st 3 ft and Pil	inty Rd 50 flooded Si idgeport. J vas threate 5th, there i mi west of y Rd 34. nd temper reams floo ce Island c	5 flooding n R 149 in Gld At the end of ned by a mi was a huge of SR 147), atures 20 d oded first, th rested 36.4	ear Mayn encoe. By of the floo ad slide, s mud slide and on SF egrees ab en the Oh ft the mor	ard. By 340 PM, Whee 855 PM, Twp Rd 220 od, newspapers reporter started 6 PM on the 4th e near Armstrong Milli R 331. Other roads clos ove normal. Two to 3 io River crested inches ning of the 6th. Both h	ling Creek flooded was closed by mud 1 23 mud slides. A 1. House was later s. Mud slides were ed by flooding: SR inches of rain fell below flood stage: ave flood stages of
OHZ040	Carr 04 05	oll 1430EST 1500EST			0	0			Flood	
OHZ041	Just so these Colu 04 05	outh of Carrollt roads, plus SR3 mbiana 1630EST 1500EST	on, Antigua 3. And north	Rd, Canyon I of Carrollton	Rd, and Ch , Bacon Ro 0	napel Rd v d and SR 4 0	vere flooded 13 flooded.	, as was S	5R 39. By 910 PM, floo Flood	oding continued on
OHZ068	It star from I Nobl 05	ted when nume Little Beaver Cr e 0105EST 1530EST	rous roads f eek By 920 l	looded 5 mile PM, there was	es east of l s a mud sli 0	Lisbon. By de on Dew 0	y 510 PM, C vey Ave near	Canfield R East Live	Rd and Lisbon Rd were erpool. Flood	flooded in Salem,
OHZ069	Sever Mon 05	al state routes cl roe 0105EST 2100EST	osed near De	exter City bec	ause of flo	ooding: 54	145, 247, 2	60, 513, 5	74. Flood	
OHZ058	State Ridge Guer 17	Route 26 flood , time unknown nsey 2000EST 2330EST	ed near Rina	ld Mills, abo	ut 13 mile 0	s south of 0	Woodsfield	l. There v	vas a mud slide on SR Ice Storm	556, near Headley
OHZ039-068	Sleet result Tusc 25 26	and freezing rai ing in numerous arawas - Nob 2100EST 0600EST	n began the accidents. le	afternoon of	the 17th. A	An ice glaz 0	ze, at least o	ne quarter	r inch thick, was reache Heavy Snow	ed before midnight,
OHZ049	Snow Harr 27 28	began the aftern ison 2300EST 0700EST	noon of the 2	5th and ended	d before m 0	idnight. C	aldwell and	New Phila	adelphia reported 6 inch Heavy Snow	ies.
OHIO, North OHZ003-006>009- 017>018	Snow Luca	began the aftern	noon of the 2 ttawa - Sar	7th. By 11 PM ndusky - Er	M, Hopeda ie - Hanc	le reported cock - Se	1 6 inches of neca	snow.		
	04 05	1300EST 0500EST			0	0	1.1M		Winter Storm	
	An ar as rai	ea of low press n but quickly cl	are moved up	the Ohio Va	alley sprea	ding mixe	d precipitati fternoon ho	on across	Northwest Ohio. The precipitation changed	precipitation began

as rain but quickly changed to freezing rain and sleet during the afternoon hours. The precipitation changed to snow during the evening hours with accumulations of 4 to 5 inches reported in Lucas and Wood counties by early morning. Snow accumulations further south and east were generally 1 to 3 inches. Some ice accumulation was also reported across the area. Many accidents and significant travel delays resulted from this storm.

		Time	Path	Path	Nur	nber of	Estim	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	rsons Injured	Property	age Crops	Character of Storm
OHIO, North									
OHZ038	Holm 04 07	ies 2000EST 1100EST			0	0	250K		Flood
	Nearly county until n were c	two inches of during the fol nidday on Janua damaged by floo	rain fell on lowing days. ary 7th. The oding. Many	Holmes Cour Killbuck Cr creek crested roads had to	nty on the 3 reek went i d at 16.5 fee be closed i	Brd and 4th nto flood et during t in the court	h of January during the ea he afternoon nty, includin	. Widesp arly morn of the 5t g State Ro	read lowland flooding occurred across the ing hours of the 5th and remained in flood h. Several homes along and near the creek oute 60 both north and south of Killbuck.
OHZ032	Stark 04 06	2300EST 0600EST			0	0	250K	0	Flood
OHZ032	Nearly Count across becaus county Stark	v two inches of y Airport with the county beg se of flooding over closed bo	rain fell on p 1.61 inches a ginning late on the 5th. 1 ecause of flo	portions of W at the Ohio A in the evenin Flood waters oding. State	Vayne Coun gricultural g on Janua in this are Route 302	ty on the f Experime ry 4th. T a were rep just south	3rd and 4th on ntal Station. hree homes ported to be west of Woo	of January Widespr along Pra as much ster was c	7. Officially, 1.46 inches fell at the Wayne read stream and lowland flooding occurred uirie Lane in Wooster had to be evacuated as four feet deep. Many roads across the closed for over a day.
	05 06	0200EST 2200EST			0	0	200K		Flood
OHZ012>014	Nearly Akron Creek Miner Lake 06	v two inches of -Canton Airpor left it's banks i va areas also su - Geauga - A 0300EST	rain fell on rt on those d in the southe ustained mino Ashtabula	portions of S ays. Widesp rn part of the or flood dama	tark Count read stream e county ca age. Severa 0	y on the 3 n and lowl using min l roads in 0	rd and 4th o land flooding or damage to the county h	of January g occurred o a couple ad to be c	 Officially, 1.52 inches of rain fell at the d in the county on the 5th and 6th. Sandy e homes. Other homes in the Navarre and closed because of flooding. Heavy Snow
	08	0800EST			Ū	Ū			
OHZ012>014	Very of Januar on the Geaug of sno causeo accide Lake 14	cold westerly w y 6th. This act 8th. Snowfal a and Ashtabul w fell on portic d whiteout cond nts were report - Geauga - A 0800EST 1400EST	vinds blowing ivity intensif l totals for the la Counties. ons of Interse litions and the ed. Ashtabula	g across Lake fied during th his event rang A maximum tate 90 in As rifts over ten	e Erie cause e late aftern ged from 8 a of 36 inch htabula Coi feet tall. T 0	ed lake eff noon and o to 12 inch les was re- unty. We ravel was 0	fect snow sh evening hours es over muc ported in Mo sterly winds nearly impo 650K	owers to 6 rs of the 6 h of Lake ontville T gusting to ossible due	develop during the early morning hours of oth and finally tapered off around daybreak county to two to three feet in portions of ownship (Geauga County). Over two feet o over 30 mph accompanied the snow and ring the peak of the storm and hundreds of Winter Storm
	An are and 15 was er inches dozens	ea of low press oth. A band of hhanced by Lak with the heavi s of accidents w	The over low moderate to the Erie as it to the snow fall where reported	ver Michigan heavy snow moved over t ling during tl	moved sou developed the northeas the afternoo	utheast ac to the nor stern corne n and eve	ross Ohio an th of the low er of Ohio. ning hours o	nd into so as it mov Total acc of the 14th	buthwestern Pennsylvania on January 14th yed through the region. This band of snow umulations in this area ranged from 6 to 8 n. Travel was hampered by this event and
OHZ013	Geau 19	ga 0200EST 2200EST			0	0	100K		Heavy Snow
OH7017-027\030-	Cold persist Count	northwest wind ted into the even y with lesser an	ls blowing a ening hours nounts to the	cross Lake I of the 19th a south. Man	Erie caused and then di by accidents	l lake effe ssipated. were repo	ect snow she Accumulati orted.	owers to ons range	develop early on the 19th. This activity ed from 6 to 8 inches in northern Geauga
036>038-047	25 26	1800EST	lot - Clawl	oru - Kichi	0	0	3.0M	0110w -	Winter Storm
	Low p during This li inches	the evening he ght mixture co	he southern j ours of the 2 ntinued throutest amounts	plains moved 6th. Light fr 1gh the midd along and ju	l northeast reezing rain le part of th ust south o	across Ol began to he day. Sr f U.S. Ro	hio. Snow a mix with th now accumul ute 30. The minutes Sc	associated le snow di lations the precipitation states	I with this low spread into northern Ohio uring the early morning hours of the 27th. rough noon on the 27th ranged from 3 to 5 ation intensified during the late afternoon was also reported during this period. Los

This light mixture continued through the middle part of the day. Snow accumulations through noon on the 27th ranged from 3 to 5 inches with the greatest amounts along and just south of U.S. Route 30. The precipitation intensified during the late afternoon hours with moderate to heavy freezing rain falling for around 90 minutes. Some sleet was also reported during this period. Ice accumulations of up to one half inch resulted from this period of heavy precipitation. This created extremely treacherous driving conditions and resulted in hundreds of accidents. Many downed power lines were also reported. The freezing rain diminished in intensity during the evening hours and finally ended just before midnight.

		Time	Path	Path	Nur	nber of	Estin	nated	January 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Pe Killed	ersons Injured	Darr Property	age Crops	Character of Storm
						J	1 5		
<u>OHIO, North</u>									
OHZ003-006>007	Luca: 26 27	s - Wood - O 1900EST 1200EST	ttawa		0	0	1M		Winter Storm
	An are middle Some Ice ace Ottawa	ea of low press e part of the mo snow mixed w cumulations of a counties. Ma	ure moved ac orning. Freezi ith the freezi at least one only accidents	cross Northw zing rain asso ing rain beging quarter inch a resulted from	vest Ohio ea ociated with nning durin along with n this event	arly on Jar the low b ong the earl one or two . There w	nuary 27th and began during y morning h b inches of survere also a fe	nd moved the eveni ours. The now were w reports	over the west end of Lake Erie during the ng of the 26th and continued into the 27th. e precipitation tapered off around midday. reported across much of Lucas, Wood and of downed power lines.
OHIO , Northwest									
OHZ015>016- 024>025	Paulo	ling - Putnar	n - Van Wo	ert - Allen					
	26	0100EST 0500EST			0	0	0		Winter Storm
	Snow mph c	accumulated 4 ausing extensiv	to 6 inches blowing ar	across Allen nd drifting sn	, Putnam, V ow. Snow o	/an Wert, lrifts were	and Pauldin as high as 4	g countie feet acro	s with east to northeast winds of 20 to 30 ss some county roads.
<u>OHIO, Southeast</u> OHZ066>067- 075>076-083>085	Perry	y - Morgan -	Athens - W	Vashington	- Jackson	1 - Vinto	n - Meigs		
	04 07	1100EST 1400EST			0	0	1.7M		Flood
	A stro south. Valley	ng frontal bour Late on the 4 7.	ndary pushed 4th and into	d across sout the 5th, a lo	heast Ohio w pressure	late on th wave lift	ne 3rd. By o ed northeast	dawn on t , along th	he 4th, the frontal zone stalled just to the is boundary, and through the Ohio River
	Rains the Sc Anoth Washi includ Bever	of 1.5 to 3.3 in ioto River Val er maximum of ington County. ed 2.6 inches ly, 1.6 inches fi	iches fell on lley, across to of rain extend McArthur at Athens, 2 rom both New	saturated gro the northern ded out of c measured 3.3 2.3 inches at w Lexington	bund, during half of Per entral Vint inches of McConnel and Jackson	g about a f rry Count on County rain for the lsville, 2.2 n.	36 hour time y, then cont y, across cer he event. O 2 inches fro	e span. O inued nor ntral Athe ther rain m Nelson	ne rain maximum extended northeast from theast into the Muskingum River Valley, ns County, and into central and northern measurements from cooperative observers ville, 2 inches at Marietta, 1.9 inches at
	Wides limited Water	pread small str d to townships and debris force	ream flooding near the Vint ced numerous	g occurred of on County be s road closure	n Sunday th order. Wat es. As the	he 4th and er was 2 to water rece	l Monday th o 3 feet deep eded, cleanuj	e 5th. In in the str was com	Jackson County, the stream flooding was eets of Glenford of northern Perry County. pplicated by some ice formation.
	River backw 12.7 f About Morga	flooding follow vater flooding. eet. Flood stat 27 homes and an County, were	ved on the M During the ge is 11 feet 1 business a e affected to	Iuskingum, the morning of t . This was the along the rive some degree.	he Hocking he 5th, the he highest er in Morg	, and on t Musking water lev an County	he Ohio. Th um River cr el at McCor v sustained a	ne swoller ested at M nnelsville t least ma	n rivers also caused feeder streams to have AcConnelsville of Morgan County around since the 12.8 feet back in August, 1980. jor damage. All total, about 77 homes in
	At Atl 1998 Athen River to the the 20 comm service	hens, the Hock were higher at s County. Nea from County R roof, but was s s. When rescu ented, about h e, but somehow	ing River cre Athens. The ar dawn on t oute 4. She wept off the led by boat, I ow lucky she y she got a sig	ested around e county eng he 6th, York called 911 or vehicle by th her head was e was. He s gnal.	21.3 feet a ineer repor a Township her cell pl e rushing w poking ou said the spo	bout midd ted about o firemen none, whil vater. Sha t of the way of where s	lay on the 6 a dozen roa rescued a w e the water v e was in the ater and one she drove in	th. Flood d slippag oman whe was rushir water for t arm was to the wa	stage is 20 feet. The floods of 1997 and es and a dozen road washouts on roads in ose vehicle was washed into the Hocking ig into her vehicle. She got outside and on nearly 45 minutes, with air temperatures in hanging on to a brush pile. The fire chief ter is usually a dead zone for cell phone
	The O crested	hio River crest d at 39.3 feet. 1	ed at Mariet Further down	ta at 36.8 fee the Ohio Ri	et during the ver, the creater	e afternoo st at Racir	n of the 6th. ne was 44.7 f	Flood st eet, plus r	age is 34 feet. The flood of January 1996 hear 47.3 feet at Pomeroy, both on the 7th.
	In Wa Marie	shington Coun tta. Three occu	ty, the heavion in the	est flood dan 1gs were des	nage was al troyed in V	ong the M Vashingto	luskingum R n County.	tiver, plus Over 200	the usual low lying sections in the city of dwellings were affected to some degree.

Local fire departments in Washington County performed several rescues, most of which were along County Route 32, known as the Muskingum River Road.

Athens, Morgan, Perry, and Washington Counties were included in a major federal disaster declaration. See FEMA disaster 1507 for the specifics.

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Crops Date Standard (Miles) (Yards) Killed Character of Storm Location Injured Property **OHIO**, Southeast OHZ066>067-Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence 075>076-083>087 25 1200EST 0 0 Winter Storm 0200EST 26 Snow and sleet spread north through southeast Ohio during Sunday afternoon, the 25th. The snow and sleet accumulations ranged from 1 to 2 inches in Lawrence and Gallia Counties, to as much as 3 to 5 inches across Washington, Morgan, Athens, Vinton, and Perry Counties. The snow and sleet changed to freezing rain during the late afternoon and evening. Ice accumulated a quarter to a half inch from the freezing rain. No major power outages occurred. **OHIO**, Southwest OHZ026-034>035-Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark -042-042>043-Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler -043>044-044>045-Warren - Clinton - Ross - Hocking - Hamilton 045>046-046-051-051>052-052>053-053>054-054-054>055-055-055>056-056-060-060>061-061>062-062>063-063-063>064-064-064>065-065-065-070-070-070>071-071-071>073> 04 1250EST Û 0 Flood 2345EST A nearly stationary front produced widespread heavy rain across much of southwest, western and central Ohio throughout the day. Many locations received two to four inches of rain, causing widespread flooding of roads and low-lying areas. Numerous creeks and streams rose out of their banks and many homes sustained basement flooding. OHZ026-034>035-Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark -042>046-051>056-Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler -060>065-070>074-Warren - Clinton - Ross - Hocking - Hamilton - Clermont - Brown - Highland - Adams - Pike - Scioto 077>082-088 1700EST 25 A 0 Winter Storm 2330EST Low pressure overspread the Ohio Valley and produced significant icing along and south of the Ohio River. North of the river, snowfall totals averaged 4 to 6 inches. **OKLAHOMA**, Eastern NONE REPORTED. **OKLAHOMA**, Extreme Southeast

NONE REPORTED.

OKLAHOMA, Panhandle

NONE REPORTED.

OKLAHOMA, Western, Central and Southeast

OKZ019>020-	Loga	an - Payne - Oklahon	na - Lincoln - Mcclain - C	leveland -	- Pottawatomie - Seminole - Hughes - Comanche -
025>026-028>032-	Step	hens - Pontotoc - Coa	al - Carter - Johnston - At	oka - Mai	rshall - Bryan
038>039-042>043-	-				•
046>048-051>052					
	13	2300CST	0	0	Dense Fog

13 2300CST 0 0 14 1100CST 0

Dense fog reduced visibilities to a quarter mile or less across the area causing hazardous driving conditions. Many traffic accidents were reported due to foggy conditions. One man was injured when he was hit by a train in Lincoln county. Another person was injured in one of several accidents that occurred in the same area of Stephens county. The fog eventually burned off by midday.

S	torm Data	a and	Unus	ual W	Veat	her P	henon	iena	
Location	Time Local/ Date Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estimat Damaş Property	ted ge Crops Cha	racter of Storm	January 2004
OKLAHOMA West	ern. Central and 9	Southeast							
OKZ007>008- 012>013-016>020- 022>031-035>042- 044>046-050	Grant - Kay - Ga Oklahoma - Lince Comanche - Steph	rfield - Not oln - Grady iens - Garv	ole - Custer 7 - Mcclain in - Murra	- Blaine - - Clevelar y - Pontoto	Kingfi nd - Po oc - Cot	sher - Loga ttawatomie ton - Jeffer	n - Payne - - Seminole son - Carter	Washita - Cae - Kiowa - Jac - Love	ddo - Canadian kson - Tillman
	16 0700CST 2000CST			0	0		De	nse Fog	
OKZ004>021- 023>026-030	Patchy dense fog thro lift in the late afternor Harper - Woods - Custer - Blaine - Pottawatomie 25 2200CST	oughout the a on to early ev Alfalfa - G - Kingfishe	rea caused nu ening hours f t rant - Kay r - Logan	imerous dela from west to - Ellis - V - Payne 0	ays and c east acro oodwa - Beck	cancellation o oss Oklahoma rd - Major ham - Cad	f 49 flights. Th - Garfield - ldo - Canac Wi	nis day long fog Noble - Roge lian - Oklaho nter Weather/M	eventually began to r Mills - Dewey oma - Lincoln Jix
OREGON, Central a	A strong cold front is surfaces. One to three the blowing snow. T areas. With falling te hazardous roads. Two due to other accidents and East Eastern Columbi	noved across e inches of sn emperatures mperatures, s o fatalities occ s.	the area cat ow also fell a behind the fr trong north w curred a mile	using precip across the ar ront continu- vinds, and sr north of I-4	itation the ea. Stror ed to fall ow, num 0 on Hig	hat initially fe ng winds gust l throughout herous traffic hway 377 in l	ell as rain or c ing above 40 r the day eventu accidents occu Pottawatomie c	lrizzle to freeze nph caused visit ially reaching si rred across the a county. Seven in	on roads and othe bility problems from ingle digits in som urea due to slick an- juries were reporte
ORZ041>044-046	Eastern Columbia Mountains	a River Go	orge - Nort	h Central	Orego	n - Central	Oregon - I	Lower Colum	bia Basin - Blu
	01 0100PST 1600PST			0	0		He	avy Snow	
	A powerful winter st Oregon, as well as so some of the snow tota Eastern Columbia Riv North Central Orego inches Central Oregon: Siste Lower Columbia Bass Blue Mountaine: Uki	orm hit the F boutheast Was als from this e ver Gorge: Th n: 1N Camp rs 11 inches, in: 5 N Lexin h 12 inches	Pacific North hington. Thi event the Dalles 6-8 Polk 14 inch Sunriver 9 in gton 5 inches	west on New is resulted in inches les, Camp S iches, La Pin s, Hermiston	v Years heavy s herman 1 herman 1 herman 2 herman 2 herman 2 herman 2	Day. A deep snow on the r 10 inches, Wa es	o surface low t northwest side arm Springs 7	racked across c of the surface l inches, Mosier	entral and northeas ow track. Here ar 6 inches, Maupin
ORZ045-047-049	Foothills Of The I	Blue Mount	ains - John	Day Basi	n - Gra	nd Ronde V	alley		
	01 0200PST 1700PST			0	0		Wi	nter Weather/N	Лix
	A powerful winter st Oregon, as well as sc inches of snow in th Mountain Foothills, a between Heppner and from 1:21 pm - 2:43 between 1:21 pm - 1 10-vehicle pile-up or minor indirect injurie winds developed. T blowing snow were a their carriers.	orm hit the F putheast Wasl e Blue Mour a sudden surg d Condon wh pm with a pu 58 pm due to Rieth Ridge is resulted fro his created b also observed	Pacific North- nington. A b tatin Foothill ge of strong w ere four foot eak gust of 3 b snow and b west of Pen- om the accide rief blizzard in the Grand	west on Nev pand of mois as, as well a vesterly win snow drifts 8 knots. In lowing snow dleton, whice ent. As the conditions de Ronde V	v Years ture mov s five in ds devel- occurred addition v. Redu- h closed low trach in Monu alley, wh	Day. A deep yed north out ches in Monu oped. Brief b 1. At the Pend t, visibilities 1 ced visibilities interstate 84 ked north of t iment where the hich prevented	b surface low t ahead of the l ument. As the olizzard condit dleton Airport lowered to bet s, slick roads, in both direct he John Day H the visibility v d some resider	racked across c ow and dumped b low tracked no ions were repor , wind gusts ove ween a quarter r and blustery wi ions for more th Basin, strong sou vas lowered to tts from receivin	entral and northeas anywhere from 1- ortheast of the Blu ted on highway 20 r 30 knots persiste nile and a half mil nds contributed to an two hours. Tw th to southwesterl 20 feet. Snow an ng newspapers from
ORZ041	Eastern Columbia	n River Gor	ge	0	0		He	avy Snow	
ORZ041>050	Heavy snow fell in th Eastern Columbia Of The Blue Mou Valley - Wallowa 04 2000PST	e Eastern Col a River Gou intains - Bl County	umbia River ge - North ue Mounta	Gorge, with Central C ains - John 0	8 inches Dregon n Day I 0	s of snow repo - Central O Basin - Och	orted in The Da Oregon - Low Noco-John D	ulles. /er Columbia ay Highlands treme Cold/Wiy	Basin - Foothill - Grand Rond nd Chill
	05 1000PST	wad couth	t of Driving (Johnmein	tting de:	ly moord lar-	temporature	for Japuary 54-	Maaaham hualis

An arctic air mass moved south out of British Columbia, setting daily record low temperatures for January 5th. Meacham broke an all time record low temperature on the morning of January 5th, with a low temperature of -31 degrees Fahrenheit. Some other low temperatures, several of which were daily records, observed in degrees Fahrenheit included: -20 at Pendleton experimental station;

		Time Local/	Path Length	Path Width	Numbe	er of ns	Estimated Damage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property Crops	Character of Storm	
OREGON, Central	and Ea	st							
ORZ049	-16 in Miltor tempe Gran	a Elgin; -15 Pil n-Freewater, an eratures and slic ad Ronde Val	ot Rock; -14 d Austin; -9 k roadways r ley	in Union; -1 in La Grande resulted in sev	13 Boardman e, and Joseph eral school c	; -12 in ; -7 in F losures a	Hermiston; -11 at the Hermiston; -11 at the Heppner; -6 Arlingtor and cancellations.	ne Pendleton Airport; - a; -4 in Madras; and -2	10 in Long Creek, in Bend. The cold
	05 06	2000PST 1000PST			1	0		Extreme Cold/Win	d Chill
	A three without	ee year old tode ut winter clothi	fler was four ng during the	nd dead outsi middle of the	de his home e night. M3C	at appro U	oximately 3:30 am or	January 6th. The boy	had left his house
ORZ041>042-	Easte	ern Columbi	a River G	orge - Nort	th Central	Orego	n - Lower Colun	ibia Basin - Foothi	lls Of The Blue
044>045	Mou 06 07	ntains 0600PST 1200PST			0	0		Heavy Snow	
	Heavy Easter North Lowe Footh	y snow fell acro rn Columbia Ri Central Oregon r Columbia Bas ills of the Blue	ss much of c ver Gorge: T a: Tygh Valle in: Irrigon 5- Mountains: C	entral and nor he Dalles 8 in ey 8-12 inches 6 inches Condon 8.5 in	thern portion ches s, Maupin 8 in ches	s of Ore	gon. Snow reports fr	om this event included:	
ORZ049	Gran 06	d Ronde Val 1452PST 2122PST	ley		0	0		Blizzard	
ORZ041-043>045	A tigh closed near L Easte 08 09	nt pressure grad d at Ladd Canyo La Grande also o ern Columbia 1600PST 0800PST	ient develope on due to nea closed due to a River Go t	ed across the r zero visibili whiteout con rge - Centra	Grande Rond ty, with susta ditions. al Oregon - 0	e Valley ined wir Lower 0	y resulting in blizzard nds of 35-45 MPH an r Columbia Basin	 conditions. At 440 PM d gusts between 45-60 Foothills Of The E Winter Weather/M 	A, interstate 84 was MPH. Highway 30 Blue Mountains lix
	A mix	of sleet and fre	ezing rain o	ccurred with i	ce accumulat	ions less	s than a quarter inch.		
ORZ042-047	Nort 08 09	h Central Or 2000PST 0800PST	egon - Joh	n Day Basir	0	0		Ice Storm	
ORZ044>045	Signif accum Valley Lowe 09	ficant ice accu nulations includ y, .2550 inche er Columbia 1230PST 1700PST	mulations oc led .75 inche s of ice accur Basin - Foc	ccurred acros as near Warm nulated in For othills Of T I	s north centr Springs, .5 i ssil, and .25 i he Blue Mo 0	ral Oreg nches n nches 12 untain 0	gon and the John D lear Moody, and up t 2 miles north of Mitcl s	ay Basin. In north c o .25 inches in Madras nell. Dense Fog	entral Oregon, ice s. In the John Day
ORZ046-049	Dense milep Traffi Blue 15	e fog with visib ost 193 on inter c was backed u Mountains - 0400PST	ilities less th state 84. We p for more th Grand Ro t	aan 50 yards, estbound lane: an a mile beh nde Valley	as well as ic s of interstate ind the collise 0	y roadw 84 were ion. 0	ays contributed to a e closed from Pendlet	collision consisting of on to Stanfield from 12 Winter Weather/M	two semi-trailers at 2:30 pm to 5:00 pm. lix
	Freezi	1000PST ing rain on inter	state 84 led 1	to several acci	idents, one in	volving	a paint truck at miler	ost 259 just north of La	Grande.
ORZ049	Gran 22 23	id Ronde Val 1100PST 1407PST	ley		0	0	,	High Wind (G51)	
	An au wind	tomated weathe gust of 59 MPH	er station at the station at the station at the station at the state of the state o	he base of Lac corded one mi	dd Canyon re le southwest	corded s	sustained winds betw n.	een 39-46 MPH, with g	usts to 58 MPH. A

Storm Data and Unusual Weather Phenomena Number of Estimated Time Path Path January 2004 Width Local/ Length Persons Damage Standard (Miles) (Yards) Killed Property Character of Storm Location Date Injured Crops **OREGON, Central and East Blue Mountains ORZ046** 0156PST Ice Storm 23 0 0 0700PST 24 Ice coating on power lines near Emigrant Springs. A significant ice storm resulted in widespread power outages and considerable tree damage in Meacham and Emigrant Springs. Most residences lost power for about a day, but a few remained without power for as long as six days. Widespread ice accumulations of one inch, locally up to two inches, occurred in Meacham. Interstate 84 over the Blue Mountains was closed on several occasions due to the ice storm. **ORZ049 Grand Ronde Valley** 0335PST 0 23 0 Winter Storm 24 1300PST A winter storm brought widespread freezing rain and snow to the Grande Ronde Valley. Six inches of snow fell in the town of Union with ice accumulations of .25-.50 inches. In addition, sustained wind speeds of 30-35 MPH caused blowing and drifting snow at the base of Ladd Canyon, resulting in treacherous driving conditions. **ORZ043 Central Oregon** 2100PST 0 0 Heavy Snow 26 27 0900PST Heavy snow fell across central Oregon with nine inches in north Hampton, eight inches near La Pine and Sunriver, and five inches in Brothers. **ORZ048 Ochoco-John Day Highlands** 0000PST 0 0 27 Heavy Snow 1100PST Six inches of snow fell 18 miles southwest of Paulina.

		Time Local/	Path Length	Path Width	Nur Pe	nber of	Estin Dan	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
OREGON, Central	l and Ea	<u>st</u>							
ORZ046	Blue 28 29	Mountains 1800PST 0900PST			0	0			Winter Weather/Mix
	Aroun snow a am on Resort	d 11 inches of and ice knocke January 29th. from too much	snow, combi d trees down The road wa n snow.	ined with sle on highway as open agai	eet and free 204, prom n at 4:45 p	zing rain, opting the m. Night	fell above 4 Oregon Dej skiing on Ja	000 feet i partment o anuary 29	n the Blue Mountains. The weight of the of Transportation to close the road at 5:30 th was cancelled at the Spout Springs Ski
ORZ042	North 29 30	n Central Or 2200PST 0200PST	egon		0	0	3K		High Wind (G52)
ORZ047	A win the roo John	d gust of 60 M of off a greenho Day Basin	PH was reco ouse in Ashwo	rded five mi ood. The pro	les WSW o operty dama	f Shaniko age from t	by the Dep his event is o	artment of estimated a	Highways. In addition, high winds blew at \$3,000.
	30	0200PST 0530PST			0	0	0.50K		High Wind (G50)
	E CERT						Manument		× 30 2004 1

ORZ044>045

High winds knocked down several trees in monument. Lower Columbia Basin - Foothills Of The Blue Mountains 30 0300PST 0 0 5K 0430PST

A line of convective showers associated with a strong surface cold front brought a brief period of high winds to the Lower Columbia Basin and the Blue Mountain Foothills. Wind gusts included 75 MPH four miles WSW of Umatilla, 64 MPH at the Pendleton Airport, 60 MPH in Condon, and 58 MPH in Hermiston, and 57 MPH in Helix. The winds knocked a tree down onto the side of a home in Heppner. Some roof damage to a small out building in Athena occurred due to the high winds. A locust tree was knocked down onto Echo's Main Street. Two UEC transmission poles fell across highway 207, which closed the highway for several hours. The winds also blew down a few road signs, and caused scattered power, cable, and internet outages. Tumbleweed accumulated to a height covering the first floor of a home in Umatilla. Property damage from this event is estimated at \$4,000.

High Wind (G65)

		Time	Path Langth	Path	Nur	nber of	Estin	nated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
OREGON. Central	and Ea	st							
ORZ050	Wall 30	owa County 0500PST 0645PST			0	0	0.50K		Strong Wind
ORZ042	Strong Nort 30	g winds blew a h Central Or 0700PST 1618PST	tree down in 'egon	Enterprise.	0	0			Heavy Snow
ORZ048	A wea Ocho 31	ather spotter on Oco-John Day 1800PST 2359PST	e mile north o 7 Highlands	of Camp Polk	received s	ix inches 0	of snow, wit	h four incl	hes falling between 12:00 pm - 4:05 pm. Heavy Snow
	7.5 in 7:25 A	ches of snow f AM on Februar	ell nine miles v 1st.	s northwest o	f Seneca.	The snow	accumulati	on occurre	ed from 6:00 PM on January 31st through
OREGON , Northwe	est		,						
ORZ001>013	Nort Oreg Valle Casc 06 09	hern Oregon gon - Lower (ey - Western ade Foothills 0600PST 0900PST	i Coast - Co Columbia - Columbia 5 In Lane C	entral Oreg Greater Po River Gor ounty - Cas	gon Coas ortland M ge - Nort scades In 0	t - Coas Ietro Ar th Oreg Lane Co 0	t Range O ea - Centr on Cascad ounty	f Nw Oı al Willa es Footh	regon - Central Coast Range Of W mette Valley - Southern Willamette iills - Northern Oregon Cascades - Winter Storm
ORZ009	West 06 08	tern Columb 1000PST	ia River Go	orge	0	0			Blizzard
ORZ011	A strc east v result Casca low p rain ti North of up follow over 1 during longer Oregc Wash Gorge witho barn i others White of dar	ong winter storn vinds through ed in widespree ide Mountains ressure system hroughout the a Oregon Coast to 2 inches of ved by one to to 1300 flights at g the peak of t r in many areas on and Hood ington during t e. Weight from ut power, and n Forest Grove s. Snowfall in t e River. Preside nages to public hern Oregon	n packing the and near the and near the ad power ou by January 5t brought mois trea, and blizz to from 2 to sleet and free wo inches of s Portland Inte he freezing ra s. Blizzard co River Orego he same period the snow an collapsed roo that killed 4 he Cascades mt Bush decl. property at \$ Cascades	Powerful pu Columbia R tages and pro- th, which for at Pacific air card condition 8 inches in the card condition 8 inches in the rnational Ain ain January 6 nditions in th n, and Wash d, halting ea- dice buildu fs at Portland horses. The fr anged from ared Northwe 16 million. N	nen of a fr iver Gorge operly dan ced frigid : over the to ns in Colur he Willame lowed the zing rain, v port, stran 5th and 7th he Columbi hington St st-west trav p resulted d's Gunder roof over a 8 inches a estern Oreg Io deaths or	Igid arctic snarled sage in N air throug p of this of his a River the Valley snowfall. vhich limit ding 90,0 . Most bu a River C ate Route rel throug in widesp son Steel boat mar t Blue Bo on a Diss r serious i	e armass, ne travel, force orthwestern h the Colum cold dome, p r Gorge. Snc and up to 2 The Portlan- ited or haltec 00 passenge usinesses and Gorge resulte e 14 betwee h the Gorge pread downe and Rail, Fr ina in Scapp tx Pass and 1 stster Area, a njuries were	avy snow d the clos Oregon. I bia River producing owfall tota 7 inches i d metropol most form rs. Portlar d schools d in the c en Washc and strand d trees ar red Meyer oose colla Bennett P nd Oregon attributed	steet and freezing rain, along with strong sure of most schools and businesses, and Strong high pressure built up east of the Gorge into Northwest Oregon. A Pacific the widespread snowsleetand freezing lis ranged from 2 to 3 inches along the the n the Cascade Mountains. Accumulations litan area received 5 to 8 inches of snow, ms of travel and resulted in cancellation of nd's light rail train system was shut down were also closed on January 6th and 7th, losure of Interstate 84 between Troutdale, ougal, Washington and White Salmon , ling hundreds of trucks at both ends of the dower lines, leaving 46,000 customers e stores in Gateway and Clackamas, and a psed, sinking 4 boats and damaging many ass to 27 inches at Timberline Lodge and n Governor Kulongoski estimated the cost to the storm.
ORZUII	26	0900PST 2100PST	Cascauts		0	0			Heavy Snow
ORZ011	Heavy North 27 29	y snows were re hern Oregon 0900PST 0900PST	eceived by the Cascades	e ski lodges. T	Fimberline 0	received 0	13 inches, M	t Hood M	eadows 9 inches, and Hoodoo 3 inches. Heavy Snow
	A seri	ies of Pacific s s, Mt Hood Me	torms moved adows 13 incl	onshore brir hes, Governm	nging heav	y snows t 5 inches,	o higher ele Santiam Pas	vations. Ii s, White R	h 48 nours Timberline Lodge received 16 liver and Bennett Pass each 3 inches.
Benton County Countywide	27 29	0900PST 0900PST			0	0			Heavy Rain
Clackamas County Countywide	27 29	0900PST 0900PST			0	0			Heavy Rain

		Time Local/	Path Lenoth	Path Width	Num Per	ber of sons	Estir Dar	nated nage		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
OREGON , Northwe	est									
Clatsop County										
Countywide	27	0900PST			0	0			Heavy Rain	
	29	0900PST								
Columbia County	27	AAAADGT			0	0				
Countywide	27 29	0900PS1 0900PST			U	U			Heavy Rain	
Hood River County		0,001.01								
Countywide	27	0900PST			0	0			Heavy Rain	
·	29	0900PST							·	
Lane County										
Countywide	27	0900PST			0	0			Heavy Rain	
	29	0900151								
Lincoin County Countywide	27	AQAAPST			0	0			Hoovy Doin	
Countywhee	29	0900PST			U	U			neavy Kalli	
Linn County										
Countywide	27	0900PST			0	0			Heavy Rain	
	29	0900PST								
Marion County										
Countywide	27	0900PST			0	0			Heavy Rain	
Multnomah County	29	0700131								
Countywide	27	0900PST			0	0			Heavy Rain	
county white	29	0900PST			Ŭ	Ū			ficu vy faint	
Polk County										
Countywide	27	0900PST			0	0			Heavy Rain	
	29	0900PST								
Tillamook County	27	AAAADGT			0	0				
Countywide	27 29	0900PS1 0900PST			U	U			Heavy Kain	
Washington County										
Countywide	27	0900PST			0	0			Heavy Rain	
·	29	0900PST							·	
Yamhill County										
Countywide	27	0900PST			0	0			Heavy Rain	
	29	0900151	• 6•			(NT (1		C	6.1.1.	. 1 1
	A seri	es of strong Pac	cific storm s	ystems brough	11 heavy rai 4 30 inches	n to North the Asto	nwest Oreg	on. Some of the 4.29 inch	of the heavier amounts es Seaside 4.00 inche	Include: Tillamoo
	Laure	1 Mt 4.88 inche	es, Detroit E	Dam and Scot	ts Mill 2.0	inches, F	alls City 2	.80 inches	, Bonneville Dam 2.1	inches, Salem 0.8
	inches	s and elsewhere	from one-ha	If inch at the	Portland Int	ernational	l Airport to	2 inches a	bove the Willamette V	alley floor.
ORZ001>003-007	Nort	hern Oregon	Coast - Co	entral Orego	on Coast -	Coast F	Range Of	Nw Oreg	on - Central Willa	mette Valley
	29 30	0200PST 0200PST			0	0			High Wind (G75)	
	A stro	ng Pacific low	nressure svs	tem brought h	igh winds t	o Northwe	est Oregon	Along the	coast Garibaldi repor	ted sustained wind
	of 53	mph with gusts	to 70 mph,	Newport Jett	y gusts to 6	52 mph, C	annon Bea	ch gusts to	o 64 mph, Newport Jet	tty gusts to 62 mpl
	Newp	ort Airport gust	s to 53 mph	, and Florence	gusts to 50) mpĥ. Nu	merous rep	orts were	received of downed tre	e limbs and trees i
	the Ce	entral Willamet	te Valley, re	sulting in pov	ver outages	for 16,00	00 custome	rs, as well	as reports of damaged	d cars and homes i
OR7011-013	Ine Sa Nortl	hern Oregon		In the Coast R	ange report	ed a wind	gust to 86	mpn.		
011-015	29	1500PST	Cascaucs	- Cascaucs		0 0			Heavy Snow	
	30	2100PST							y ~~	
	A Pac	ific cold front o	lumped heav	y snows in th	e Cascade	Mountain	s. Timberli	ne Lodge	reported 19 inches of r	new snow, Mt Hoo
0.5.5.0.1	Mead	ows 13 inches, 1	Bennett Pass	and Willame	tte Pass 12	inches, an	d Santiam	Pass and B	lue Box Pass 15 inche	8.
ORZ001	Nort	hern Oregon	Coast		•	Δ			Flood	
	29 30	1500PS1 1000PST			U	U			r 1000	
	The h	eavy rains Dece	ember 27-29	caused nume	rous rivers	in Northu	vestern Ore	gon to swe	ell to above bankfull	with the Wilson an
	Nehal	em Rivers crest	ing right are	und flood sta	ge late Dec	ember 20	and early	December	30 Even though the V	Vilson Diver creste

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Nun Pe Killed	iber of rsons Injured	Estim Dam Property	aated aage Crops	January 2004 Character of Storm
OREGON, Northwes	t								
	resulted	l from high ru	noff from the	heavy rains i	into the Wi	lson Rive	r below the o	official riv	er gage.
OREGON, Southeast	-								
ORZ062	Baker 01	1200MST 1900MST			0	0			Heavy Snow
ORZ061>064	See nar Harne 07	rative for Hea y - Baker - 1 0300MST 1700MST	vy Snow in I Malheur -	daho this date Lower Trea	e. asure Val 0	ley 0			Heavy Snow
	A Pacif January morning Halfwa	ic storm system 2004. This s g before movi y in northeast	em with spre system dropp ng in to Idal Baker Count	ad snow mov bed 5 inches on no. Some sno y with 10 inc.	ve eastward or more of w amounts hes of new	I from the new snow from this snow.	e Pacifc Coa over much s system wer	ast into Ea 1 of Easter re Drewse	istern Oregon the afternoon of Tuesday or rn Oregon Tuesday night into Wednesda ey with 5 inches, Baker City 5 inches and
Baker County Countywide	30	0710MST 0740MST			0	0			Thunderstorm Wind (G60)
Malheur County Central Portion	30	0715MST 0810MST			0	0			Thunderstorm Wind (G62)
OREGON Southwes	See nar. f	rative for Seve	ere Thunders	torms in Ada,	, Canyon, C	Wyhee ar	nd Elmore co	ounties Ida	aho.
ORZ022-022-022-022	L Curry	County Co	ast						
	01	0400PST 0600PST			0	0			High Wind (G92)
ORZ029-031	This gu A quick Warnin the war Klama	st recorded at c hitting low p g was issued f ning, and obvi th Basin - (Gold Beach. ressure syste for ORZ022 ously the wa Central & I	em brought a s at 0605 PST o rning was iss E astern Lal	short perio on 01/01/04 ued late. Se County	d of high 4 and expi	winds to the ired at 0925	southern PST on 0	Oregon coast this morning. A High Wind 1/01/04. The above observations verified
	01	0742PST 0821PST			0	0			Blizzard
ORZ026-030-030-030	Spotter Jackso 01	KL09 in Klan on County - 0800PST	nath reported Northern	blizzard con & Eastern 1	ditions. Klamath 0	County o	& Western	n Lake C	County Heavy Snow
	Spotter An extr were iss	2236PST JA45 in Butte aordinary win sued to cover t	Falls report ter storm str his event. T	ed 4 inches of uck Oregon a he Oregon wa	f snow 1200 nd Norther arnings are)-1800 PS n Califorr summariz	T. nia on Janua zed below. N	ry 1, 2004 Verifying (A multitude of warnings and advisorie observations are listed above.
	ORZ02 0514 PS	4/026 ST, et at 01/01/04	Winter Stor	rm Warning ex	issued at 1 pired at 01	2/31/03 a /01/04 at	t 1500 PST 0958 PST. PST	, changed Warning e	to Heavy Snow Warning at 01/01/04 a elevation was above 2000 feet, lowered to
	ORZ02 was abo	5 5 9ve	Heavy Sno	w Warning is 1500 feet.	sued at 01/	01/04 at 0)514 PST, ex	xpired at (01/01/04 at 0958 PST. Warning elevation
	ORZ02 ORZ02 ORZ02 have	7 8 9/030/031Bliz	Winter Stor Winter Stor zard Warnir	m Warning is m Warning is ng issued at 0	ssued at 01/ ssued at 12/ 01/01/04 at	01/04 at 0 31/03 at 1 0807 PST	0514 PST, ex 1500 PST, ex Γ, expired at	xpired at 0 xpired at 0 t 01/01/04	01/01/04 at 0958 PST. 01/01/04 at 0958 PST. at 1445 PST. Northern ORZ030 should
ORZ024-024-024-024- 026-026-026>027	Easter	n Curry Co	unty & Jo	sephine Cou	unty - Jac	snow was ckson Co	ounty - Sou	ith Cent	ral Oregon Cascades
	02	0730PST 1544PST			0	0			Heavy Snow
	Spotter A Heav	JO01 in Gran y Snow Warn	ts Pass repor ing was issu	ted 4.5 inches ed for Oregor	of snow ir	10 hours 7021/022	ending at 10 /023/024/02	000 PST. 5/026 at 1	122 PST on 01/02/04 and expired at 173-

A Heavy Snow Warning was issued for Oregon zones ORZ021/022/023/024/025/026 at 1122 PST on 01/02/04 and expired at 1734 PST on 01/02/04. As the reports above indicate, this was a valid warning, but it was issued late. It also should have included ORZ027.

		Time	Path Length	Path Width	Num	iber of	Estin	ated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
OREGON Southwes	t								
ORZ021-021-021>022	<u>r</u> South	Central Or	egon Coast	- Curry Co	ounty Cos	nst			
0111011 011 011 011	06 07	1930PST 1000PST	egon coust	curry co	0	0			High Wind (G69)
	Cape E PST or	Blanco recorde n 01/06.	d winds in ex	cess of 40 m	ph continua	ully during	g this time p	eriod. The	e peak sustained wind was 55 mph at 2300
	A High on 01/0	h Wind Warnii 07. The above	ng was issued observations	for the head verified the	lands of Or warning.	egon zon	es ORZ021/	022 at 143	35 PST on 01/05 and expired at 0410 PST
ORZ021-021>022-022	South 07 08	Central Or 2100PST 0000PST	egon Coast	- Curry Co	ounty Coa 0	nst 0			High Wind (G62)
	Cape E 2300 P	Blanco winds e PST on 01/07.	xceeded 40 n	nph continuo	usly during	this time	interval. Th	e maximu	m recorded sustained wind was 55 mph at
ORZ021>022	The ab South	ove observation Central Or	ns indicate the gon Coast	at High Wind - Curry Co	d Warning o Dunty Coa	criteria wa ast	as met briefl	y this ever	ningbut no warning was issued.
	09	1130PST 1330PST			0	0			High Wind (G60)
	Cape E A Hig 0835 P	Blanco sustaine h Wind Warni PST on 01/09.	d winds were ng was issue The above of	e near 40 mph d for the coa servations in	h during this stal headlar dicate that	s interval. nds of Or the warning	egon zones ng was canc	ORZ021/0 elled too e	022 at 1400 PST on 01/08 and expired at arly.
ORZ021	South 26 27	Central Or 1900PST 0000PST	egon Coast		0	0			High Wind (G40)
	Cape E This w	Blanco recorde as a missed hig	d sustained w gh wind even	inds 40 mph t. No warnin	or greater c gs were iss	ontinuous ued for th	sly during th is event.	is time int	erval.
ORZ029-029>030	Klam 27	ath Basin - I 0523PST 0800PST	Northern &	Eastern K	lamath C 0	ounty & 0	z Western	Lake Co	bunty Heavy Snow
	Spotter	r KL75 near C	niloquin reco	rded 11 inche	s of snow t	etween 1	500 PST on	1/26 and (0500 PST on 1/27.
	This w (where	as a missed ev the snow amo	ent. No wari unts did not i	nings or advis neet warning	sories were criteria) an	in effect. Id a strip j	The belt of ust east of the	heavy sno he Cascado	ow appeared to be limited to the Cascades es.
ORZ021>022	South 29	Central Or 2300PST	egon Coast	- Curry Co	ounty Coa	nst 0			High Wind (G89)
	Cape E A Higl 0455 F Blanco 58 mpl	Blanco recorde h Wind Warni PST on 01/30. precorded gust h gust at 0300	d a peak gust ng was issue The above s meeting Hi PST on 01/30	of 89 mph. d for the coa observations gh Wind War	stal headlar verified the ming criteri	nds of Or e warning a continu	egon zones , and were ously from 2	ORZ021/0 the highes 2100-2300	022 at 0500 PST on 01/29 and expired at st gusts recorded during this event. Cape PST on 01/29. It also recorded one more
PACIFIC	50 mpi	n gust at 0500	151 0101/50						
	NOT F	RECEIVED.							
<u>PENNSYLVANIA, C</u>	entral	<u> </u>							
PAZ005-010>011		an - Elk - Ca 1600EST	ameron		0	0			Ico Storm
	04	0700EST			U	U			
	Weak Januar Trees a	low pressure y 4th through and power line	prought a mi the morning s were reporte	x of sleet an of Monday J ed down in th	d freezing anuary 5th lese countie	rain to th Over Me s as a rest	e northern cKean, Elk ult of the ice	tier of Per and Came accumula	nnsylvania during the evening of Sunday ron counties, significant ice accumulated. ttion.
PAZ024	Camt 04 05	oria 2300EST 0530EST			0	0			Flood
	Numer Bens (ous flooded b Creek Road. Po	asements wer rtage Townsł	re reported th hip Road was	nroughout t washed ou	he county	y. Several ro	oads flood	ed including Croyle Township Road and
PAZ017	Clear 05	field 0100EST	6		0	0			Flood
	Minor Eventu	flooding bega ally, several re	n across the bads were clo	county during sed across the	g the eveni e county. R	ng hours oads were	of Sunday, e submerged	January 4	th. As rain continued, flooding increased. s, with several other road closures near the

city of Clearfield.

		Time	Path	Path	Number	of	Estimated	January 2004
Location	Date	Local/ Standard	(Miles)	(Yards)	Killed In	jured	Property Crops	Character of Storm
PENNSYLVANIA, O	Centra	<u> </u>						
PAZ018>019-045	Nort 06	hern Centre 1115EST 1130EST	- Southern	Centre - S	outhern Clin 6	ton 12	1.5M	Winter Weather/Mix
PA 7004	An ar band cover on In other Miles ??VE	ctic cold front c of intense snow ed and icy. Twe terstate 80, bet vehicles were burg. Three tra , ??VE, ??VE, ?	erossed centra squalls. The o multi-vehic ween Lock H involved wi ctor trailers w ??VE, ??VE,	al Pennsylva se squalls ca le accidents Iaven and Be th this accid vere involved ??VE	hia during the n used the visibili occurred aroun ellefonte, and i ent. The secor I with this accid	nid morr ity to dro d the tin nvolved id accid lent.	ning hours of Tuesd op to near zero, and ne that these squalls 6 fatalities and nu lent also occurred o	ay, January 6th, accompanied by a narrow caused roadways to quickly become snow affected the area. One accident occurred merous injuries. Many tractor trailers and on Interstate 80, between Bellefonte and
1 AZ007	07	0000EST 1600EST			0	0		Heavy Snow
PAZ010>011-	Cold early preva Elk -	winds crossing morning hours, lent across the c Cameron - (the warm wa tapering off county, althou C learfield -	ters of Lake to lighter sno 1gh isolated a Northern	Erie produced l ow showers dur umounts in exce Centre - Sout	ake effe ing the l ss of a f hern (ect snow bands across late afternoon of the coot occurred near B Centre - Cambria	ss Warren County. Snow began during the e 7th. A total of 4 to 8 inches of snow was ear Lake in northwest Warren County. a - Blair - Huntingdon
017>019-024>026	14	1600EST			0	0		Heavy Snow
	15	0000EST				-1 D		1.4 farmer - n herrer - f Tenrer - 1.44h. Th
PAZ004	A fas snow War	t moving low p became heavy o ren	during the ear	m spread sno rly evening h	ow across centr ours, depositing	al Penns g betwee	en 5 and 8 inches be	late afternoon hours of January 14th. The fore tapering off shortly after midnight.
	19 20	1800EST 0100EST			0	0		Heavy Snow
PAZ024>026-	Cold Mond and S Cam	air moving act lay, January 19 ugar Grove repo bria - Blair -	ross the relat th. Localized orting 8 inche Huntingdo	tively warm amounts in es.	waters of Lak excess of 6 inc	e Erie p hes occi - Fulto	produced numerous urred in northern po on - Franklin - A(snow squalls across Warren County or rtions of the county, with both Bear Lake
033>036-064>065	25	0200EST	Tuningu		0	0		Heavy Snow
PAZ017-024-033-042-	A low redeve across occur Clea	w pressure syst eloping along t s portions of so red across the re rfield - Camb	em develope he mid Atlan outh central egion. This s oria - Some	ed across the ntic coast Su Pennsylvania nowfall adve rset - Sulli	e Ohio Valley inday night and Sunday eveni irsely impacted van - Souther	late Sur l early l ng into travel ac n Lyco	nday afternoon, Jan Monday. This produ- early Monday mor cross the region Sun oming - Montour	nuary 25th, and moved eastward, before uced a swath of moderate to heavy snow ning. Average amounts of 6 to 8 inches day night and Monday morning. - Northumberland - Columbia
046-051>053	27	1800EST			0	0	U	Heavy Snow
	28	0200EST						
	A low An an snow the sn accide	v pressure syste rea of snow mo fall rates of up t now produced ents across cent	m approache oved from we to 2 inches pe poor visibili ral Pennsylva	d Pennsylvan est to east ac er hour. Tota ties and roa- unia. The sno	nia from the we cross central Pe al snowfall accu d conditions du ow tapered off f	est durin ennsylva umulatio uring th rom wes	g the afternoon and unia during the late ons across the area ra- be evening commut st to east early Wedr	l evening hours of Tuesday, January 27th afternoon and evening hours, with some anged from 5 to 8 inches. The intensity of e on Tuesday, contributing to numerous nesday morning.
PENNSYLVANIA, E	Last							
PAZ054>055	Cart 02	on - Monroe 0400EST 0800EST			0	0		Winter Weather/Mix
DA 7054-055	A was of the trees a	rm front movin 2nd. The received and power lines	g northeast the st the state of	nrough the P ther prevente ated bridges	oconos helped d roadways fro and overpasses	produce m icing.	some pockets of lig . There were trace i	ght freezing rain during the early morning ce accretions on exposed surfaces such as
1 ALVU 7 /VUU	04 05	1800EST 1000EST			0	0		Ice Storm
	Aroun morni pressu Canac during	nd half an inch ing of the 5th. ure system that da. The low pre- g the evening o	of ice accrue Untreated ro formed on a essure system f the 4th, into	ed on expose adways were a cold front a moved fron o northern W	d surfaces in the extremely has in the Ohio Va n near Paducah est Virginia dur	ne highe zardous. Illey and Kentuc ring the	er terrain of the Poc The freezing rain d a high pressure ri cky during the early morning of the 5th,	onos from the evening of the 4th into the was caused by the combination of a low dge that extended into Ontario Province afternoon of the 4th, to Cincinnati, Ohio to the southern Delaware coast during the

S	tor	m Data	and	Unus	ual W	'eat	her I	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed 1	r of ns Injured	Estin Dan Property	aated aage Crops	Character of Storm	January 2004
PENNSYLVANIA.	East									
DA 7055	aftern highe	oon of the 5th. r terrain surface	While it wa s for the rain	s warm enou to freeze on	gh aloft for p contact.	recipitat	tion to fall	as rain, ei	nough cold air remaine	d in place near the
FAL055	06	roe 1400EST 1700EST			0	0			Winter Weather/M	lix
PAZ054>055-	Snow accide Coun tracto fourte a thre Cart	r squalls in nort ents on Intersta ty) exits after n or-trailer struck een vehicles coll e vehicle accide con - Monroe	thern Monro te 380. Inter nore than a d two vehicles lided with the nt occurred of - Berks - I	e County can estate 380 wa lozen vehicles that stopped e wreckage. T on U.S. Route Lehigh - No	used slippery as closed betw s and three tra- l in the right fwo people re e 209 in Lansf rthampton	travelin veen the actor-tra lane bec quired h ord. - Chest	ng condition e Tobyhanr illers collid cause of po nospitalizati ter - Mon	ns on unti aa (Monro ed in Coo or visibili on. In nea tgomery	reated roadways and le e County) and Goulds Ibaugh Township near ty. Minutes later three rby Carbon County, sq - Bucks - Delaware	ed to multi-vehicle sboro (Lackawanna mile marker 10. A tractor-trailers and ualls contributed to - Philadelphia
060>062-067>071	09 11	1800EST 1200FST			2	0			Extreme Cold/Win	d Chill
	An ar morni Interr tempe Mour cover receiv A Ph found unsea home pay th to ass cause North Catho emerg was f chim	retic air mass br ing of the 11th. hational Airport erature of zero a erature since Fe tt Pocono (Mon . Winds around yed from the Gro iladelphia man I dead within h isonably cold w s. There was a c heir utility bills. sist the homeles d many pipes to hampton County blic Elementary gency rooms. Fin reezing in hose hey fires and a g	ought some It also clain on the 10th t the Lehigh bruary 6, 19 roe County) the center of eat Lakes and was found d er South Ph eather was a lramatic incr Additional s s. Teams we freeze and I , a Wilson B School was re fighters w s and the tru eneral shorta	of the coldes ned the lives n was the co Valley Interr 96. A record What made f the arctic hi l subsidence f lead in his ho iladelphia un dangerous si ease in phone schools and c ent outside to burst both ins forough nursi closed becaus ere having princks. Fire figinge of firewoo	t weather in y of two Philad ldest day of hational Airpo breaking (for this even mo gh pressure sy from the Appa ome on Irving heated home ituation for th e calls to socia ommunity cer o locate home ide and outsid ng home was se of broken p oblems battlir hters were injo d developed.	years to elphia r the win rt on the the cal re unusy ystem w dachian g Street. It was a servic thers we less pec les of str evacuat bipes. Th ag blaze: ured sli Many v	Eastern Pe esidents. Th ter and the e 10th was endar day) ual was tha ere from th Mountains There was so cold ir less as well res by indiv re opened a ople and ge uctures as v ted after a p he cold wei s as the wat pping and ehicles wer	nnsylvania ne low ter also the co low temp t the bruta e north an no heat i t the hom l as for the iduals whi is shelters. t them to well as a h sipe burst. ather also er quickly falling on e not start	a from the evening of nperature of 4 degrees eading since February oldest reading of the wi erature of 10 below ze ally cold air mass occu d by-passed the warmi n the house. An 89-ye e, that the water in the e elderly who can not o have run out of heat Many municipalities of shelters. The unseaso igher occurrence of wa Easton City Hall was led to an increase in w turned to ice. In some the ice. There was a l ing because of dead bat	the 9th through the at the Philadelphia 5, 1996. The low inter and the lowest ro was recorded in urred with no snow ng effects normally ear-old woman was a toilet froze. The afford to heat their or can not afford to declared code blues nably cold weather ther main breaks. In flooded and Easton orokload in hospital instances the water nigher incidence of terries.
PAZ055	Speci (Luze zero Valle colde just v Virgin Mon	fic low tempera erne County), 2 in Lehighton (C y Forge (Cheste r air moved thro vest of James B nia and North C roe	tures include degrees belo Carbon Court er County) ar ough all of P Gay on the m arolina on th	ed 10 degrees ow zero in Per tty), zero at t and 4 degrees ennsylvania b norning of the e morning of	s below zero i rkasie (Bucks the Lehigh V at the Philade by the 9th. Th e 9th, to alon the 11th. M?	in Moun County alley In elphia In he high I g the O PH, F89	nt Pocono () and Forkat ternational pressure system ntario/Quel PPH	Monroe C s Townshi Airport, Airport, Airport, S stem, or th bec Provir	ounty), 8 degrees belo p (Northampton Count l degree in Reading () The arctic cold front w the core of the arctic air nee border on the more	w zero in Hazleton ty), 1 degree below Berks County) and hich ushered in the mass, moved from ning of the 10th to
	14 15	1600EST 0700EST			0	0			Heavy Snow	
PAZ054-061>062-069	Carb 14 15	oon - Lehigh - 1700EST 0800EST	Northamj	pton - Buck	s 0	0	stern Danne	vlvania w	Winter Weather/M	lix
	An A Snow avera aroun	began falling of ged one to thread d five inches in	during the la e inches in a the Lehigh	te afternoon and around th Valley and C	on the 14th a ne greater Phi arbon County	and cont and cont ladelphi and up	tinued into a Metropol to seven ir	the morni itan Area iches in M	ing commute on the 1: as well as Berks Cour Ionroe County. Some s	5th. Accumulations ty. They averaged chools were closed

averaged one to three inches in and around the greater Philadelphia Metropolitan Area as well as Berks County. They averaged around five inches in the Lehigh Valley and Carbon County and up to seven inches in Monroe County. Some schools were closed on the 15th in the Poconos. The snow led to slippery traveling conditions especially in the Lehigh Valley and the Poconos. In Monroe County, a 56-year-old man was killed on Eastbound Interstate 80 in Jackson Township. His vehicle rolled over and he was ejected. In Northampton County, a woman was critically injured in Lower Nazareth Township after her vehicle struck a pole. Numerous accidents occurred in the Lehigh Valley on Pennsylvania State Routes 33 and 611 and on Interstate 78. A tractor-trailer accident in the northbound lanes of Route 33 closed the roadway north of Wind Gap (Northampton County) just as the snow was arriving. The snow and detoured traffic caused gridlock in and around Wind Gap and on Pennsylvania State Route 191 as tractor-trailers were stuck on hill tops. Several accidents with injuries closed roads in Berks County. The following morning (the 15th) a fatal accident occurred in Tredyffrin Township (Chester County) when a driver lost control of his vehicle on northbound

		Time Local/	Path Length	Path Width	Number of Persons		Estimated Damage			January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

PENNSYLVANIA, East

U.S. Route 202, slid across a snow covered median and was struck broadside by a southbound heading vehicle. Elsewhere on U.S. Route 202, a truck crashed into a "Jersey divider" while braking for the stopped traffic from the previous accident. Pieces of the concrete divider struck and damaged two vehicles that were heading in the opposite direction. U.S. Route 202 was closed for nearly six hours.

Specific accumulations included 7.0 inches in Saylorsburg (Monroe County), 6.5 inches in East Stroudsburg (Monroe County), 5.5 inches in Lehighton (Carbon County), 5.3 inches at the Lehigh Valley International Airport, 5.0 inches in Jim Thorpe (Carbon County) and Forks Township (Northampton County), 4.4 inches in Springtown (Bucks County), 2.5 inches in Southampton (Bucks County), 2.0 inches in Reading (Berks County), 1.8 inches at the Philadelphia International Airport, 1.3 inches in Rosemont (Delaware County) and Exton (Chester County) and 1.0 inch in Honey Brook (Chester County).

The Alberta Clipper low pressure system moved from Alberta Province Canada on the morning of the 13th into Wisconsin on the morning of the 14th, to central Ohio during the early evening on the 14th, into Chesapeake Bay just after midnight EST on the 15th and about 300 miles east of the Delmarva Peninsula by 10 a.m. EST on the 15th. Precipitation amounts were light, generally less than one quarter of an inch. The unseasonably cold air caused the liquid equivalent to snow ratio to reach as high as 30 to 1 across parts of the Poconos and Lehigh Valley. It normally averages around a 10 to 1 ratio.

PAZ054>055-060>062-067>071 Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

15	1200EST	1	0	Extreme Cold/Wind Chill
16	1200EST			

Following the departing Alberta Clipper low pressure system, another arctic air mass invaded Pennsylvania. While temperatures were slightly higher than the previous outbreak on the 10th and 11th, winds were stronger and the wind chill factors were lower. Another Philadelphian lost his life because of the extreme cold. Most low temperatures were in the single numbers (They were some readings below zero in the Poconos) and the lowest hourly wind chill factors averaged between fifteen degrees and thirty degrees below zero. This second arctic outbreak set some electrical and gas usage records for area utilities.

A Philadelphia man was found dead on railroad tracks within the city. His body temperature dropped to 67 degrees. The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was another dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their utility bills. PECO Energy set a new winter time usage record of 6,450 megawatts surpassing the old record of 6,346 megawatts on January 23, 2003. The utility also came close to setting a new gas usage record. Pennsylvania Power and Light set a new all-time usage record of 7,549 megawatts surpassing the previous record of 7,155 megawatts on January 23, 2003. The cold weather caused additional schools and community centers to be opened as shelters. This was exacerbated in Monroe County when power outages in Brodheadsville, Effort and Saylorsburg caused the county to open temporary shelters in Brodheadsville and Long Pond. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. In the Lehigh Valley the cold weather caused many schools, universities and daycare centers to have delayed openings. Senior citizen centers, food banks and meals on wheels were cancelled in the valley. Bus service was also delayed. In Carbon County, a burst pipe damaged a Penn Kidder Township School. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries.

Specific low temperatures included 12 degrees below zero in Mount Pocono (Monroe County), 9 degrees below zero at the Pocono Mountain Municipal Airport, 3 degrees below zero in East Stroudsburg (Monroe County), zero at the Lehigh Valley International Airport and Lehighton (Carbon County), 1 degree in Valley Forge (Chester County) and Doylestown (Bucks County), 2 degrees in Green Lane (Montgomery County), 3 degrees in Pottstown (Montgomery County) and Hamburg (Berks County), 4 degrees in Reading (Berks County) and Media (Delaware County) and 7 degrees at the Philadelphia International Airport. The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into Pennsylvania. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th. Lowest hourly wind chill factors included 32 degrees below zero in Mount Pocono (Monroe County), 23 degrees below zero at the Lehigh Valley International Airport. 19 degrees below zero in Doylestown (Bucks County) and 14 degrees below zero at the Philadelphia International Airport.

This second arctic outbreak cemented January as an unseasonably cold month. At the Philadelphia International Airport, the monthly mean temperature of 26.1 degrees was 6.2 degrees colder than normal. It was the 13th coldest January on record and the coldest January since 1982. To add further to the discomfort, it was also the windiest January in Philadelphia in 12 years with an average wind speed of 12.3 miles per hour. At the Lehigh Valley International Airport, the 22.0 degree monthly mean temperature

St	tori	n Data	and	Unus	ual W	eat	her Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number Person Killed Ir	of s njured	Estimated Damage Property Crops	Character of Storm	January 2004
DENINGVI VANITA F	0.04	Sundid	(1.11103)	(1000)	Timbu II	-,	croporty crops	character of profili	
<u>reining i lvainia, e</u>	was 5.	1 degrees colde	r than norma	al. It was the	10th coldest Ja	nuary o	n record and the cold	dest January since 19	94. M40OU
PAZ054>055-060>062	Carb 16	on - Monroe 0900EST 1600EST	- Berks - I	.ehigh - No	rthampton 0	3	15K	Strong Wind	
	The pr Great Tobyh tractor Utility hit me Valley	essure differen Lakes produce anna Townshij -trailer slid dov Vehicles in Jac dians and rollec International A	ce between a d measured p (Monroe wn a 300 fo ckson and C d over. Both Airport.	a low pressur wind gusts County), gus ot embankme oolbaugh Toy drivers were	e system over as strong as sty winds cause ent and the dri wnships (both hospitalized.	the Car 49 mpł sed a tr ver esc Monroe The pea	adian Maritimes and i in Berks County, ractor-trailer to jacl aped with just mino county) lost contro k wind gust in Read	d a building high pre the Lehigh Valley kknife on Interstate or injuries. Two sepa of their vehicles du ling was 49 mph and	ssure system over the and the Poconos. In 380. The jackknifed rate drivers of Sports e to the strong winds, 36 mph at the Lehigh
PAZ054>055-	Carb	on - Monroe	- Berks - I	ehigh - No.	rthampton -	Chest	er - Montgomery	- Bucks	
060>062-067>069	17 18	1800EST 1700EST			0	0		Winter Weather	/Mix
	A low of pre- began Philad started throug plain change Valley 18th. S	pressure system cipitation across as snow across elphia. The mix mixing with au h the first half rain during the cover process re- and in Berks C Snowfall accum	n from the sc s most of ea the region of ting with sle and changing of the morning of eversed itsel County and ti ulations ave	buthern plaim: stern Pennsy during the ev et took much to freezing ra- ing. Near Phi of the 18th. f. Precipitation he Philadelph raged betwee	s combined with lvania from the ening of the 1' of the night to ain after 5 a.m. ladelphia, enous As a cold fro on changed to a ia northwest su n 2 and 5 inches	th a cold e evenii 7th. Aft o reach t EST o ugh war nt appr all snow uburbs a es and ic	d front from the upping of the 17th throuter midnight EST, so the Poconos. As monthe 18th. Precipitation air moved in near oached the region v by the middle of the around Noon EST. The accretions average	er Mississippi Valley gh the afternoon of t ome sleet started to n re warmer air moved tion in the Poconos r r the surface to chang and precipitation in he morning in the Po The snow ended durin ed around one tenth o	to bring a wintry mix he 18th. Precipitation nix in, especially near in aloft, precipitation emained a wintry mix ge the precipitation to tensity increased, the conos and the Lehigh g the afternoon of the f an inch.
	Untrea occurr 61-yea the we Berks struck she sk Route Count and ut	tted roads beca ed on the 18th. tr-old man, 65- estbound lane, s County, the we the center med idded and strue 33. Interstate 7 y, many accide ility poles.	me very haz A fatal acc year-old man skidded off t stbound land lian in Green ck a tree. In 8 was close nts occurred	ardous and s ident occurre n and 64-yea he road, bou es of Interstat nwich Towns Northampto d in Williams on Pennsylv	lippery, especi d on Pennsylv r-old man wer nced off a gua e 78 were closs hip. In Lehigh n County, five s Township wh ania State Rou	ally sin- rania St e killed rd rail a ed for tw count people nen a tru ate 100	ce the recent weath ate Route 73 in Rus when the driver of and hit a tree twenty wo and a half hours y, a 47-year-old Sla were injured in a uck containing haza and U.S. Route 422	er was unseasonably combmanor Townsh their Sports Utility V y feet down an emba after a tractor-trailer of tington woman was of three vehicle crash of rdous material jackkn 2. Cars skidded into of	cold. Many accidents ip (Berks County). A Vehicle lost control in nkment. Elsewhere in driver lost control and critically injured after on Pennsylvania State hifed. In Montgomery each other, guardrails
	Specif County (North (Berks Doyles in Eas Consh	ic accumulatio y), 3.8 inches in ampton County county), 3.4 stown (Bucks C t Stroudsburg (I ohocken (Mont	ns included n Palm (Mon y), 3.5 inches inches in E County), 3.0 Monroe Cou gomery Cou	4.5 inches antgomery Cors in Springtov ast Saylorsbuinches in Eas nty), 1.1 inch nty).	in Kutztown (unty), 3.6 inch wn (Bucks Cou urg (Monroe (st Nantmeal Tc ues in West Cho	Berks es at th inty), B County) ownship ester (C	County), 4.0 inches e Lehigh Valley Inte ethlehem (Northamp 3.3 inches in Photo (Chester County) and hester County) and 1	s in Lower Macungi ernational Airport an oton County), Boyerto enixville (Chester C nd Lehighton (Carbo 1.0 inch in Neshamin	te Township (Lehigh d Williams Township own and Bechtelsville ounty), 3.2 inches in n County), 1.5 inches y (Bucks County) and
PAZ070>071	The lo the Te system Pennsy Delay	w pressure systemessee Valley n combined wi ylvania during t vare - Philad	tem responsi the mornin th a cold f he afternoon elphia	ible for the way of the 18th Front that more of the 18th the the the the the 18th the 18th the 18th the 18th the 18th the 18th the the the the the the the the the t	rintry mix mov h and east of l oved from the o wring moistu	ed from Long Is Upper ure from	the Oklahoma/Tex land during the late Mississippi Valle the atmosphere onto	as border on the mor e afternoon of the 18 y the morning of th o the region.	ning of the 17th, into 8th. The low pressure ne 17th east through
	17 18	1930EST 0730EST	•		0	0		Winter Weather	/Mix
	A low of pre snow a freezin near th less an especi 0.8 inc 17th, i pressu	pressure system cipitation across across the regio ng rain around 4 he surface and the adly since the re- ches. The low p into the Tennes re system comb	n from the s s extreme s n and mixec 4 a.m. EST o he freezing r ns were gen ccent weather ressure syste see Valley f bined with a	outhern plaim outheastern F I with sleet m ain changed in changed r was unsease em responsib the morning cold front th	s combined with Pennsylvania d early from the d changed to j to plain rain be han one-tenth onably cold. The le for the winth of the 18th and hat moved from	th a cold uring th start. A ust free: tween 7 of an he snow y mix r d east co n the U	d front from the uppe he evening and over Xs warmer air moved zing rain by 5 a.m. F 7 a.m. and 8 a.m. ES inch. Untreated roa rfall accumulation at noved from the Okla of Long Island durin pper Mississippi Va	er Mississippi Valley rnight on the 17th. F d in aloft, precipitation EST on the 18th. War T. Snowfall accumula dds became very haz the Philadelphia Inte ahoma/Texas border ng the late afternoon alley the morning of	to bring a wintry mix Precipitation began as on started mixing with mer air also moved in ations were an inch or cardous and slippery, rrnational Airport was on the morning of the of the 18th. The low the 17th east through

St	tori	n Data	and	Unus	ual V	Veat	her l	Phen	omena		
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estin Dan Property	nated nage Crops	January 2004 Character of Storm		
PENNSYLVANIA, E	ast										
PAZ060-067>068- 070>071	Penns Berk	ylvania during (s - Chester - 1	he afternoor Montgome	n of the 18th to e ry - Delawa	o wring moi 1 re - Phila	isture from delphia	n the atmos	phere onto	o the region.		
	23 2200EST 0 0 Winter Weather/Mix 24 0600EST 0 0 0 0 0										
D.4 72071	A wea evenin than a elevate Berks includ	ak and fast mo ng on the 23rd n inch elsewhe ed roadways be County and U ed 1.4 inches in	ving Alberta until around re. Neverthe ecame slippe .S. Route 42 west Chest	a Clipper low sunrise on th eless, the well ery. Interstate 22 in Berks a er (Chester Co	pressure s the 24th. Acc below free 95 was clo and Montgo pounty) and (system brocumulatio ezing tem osed in Plomery Co 0.8 inches	ought light ns in Chest peratures p hiladelphia unties were s at the Phila	snow acr er County ermitted t because of snarled l adelphia In	oss southeast Pennsylvania from the late v averaged around one inch, but were less he snow to stick easily and untreated and of accidents. In addition Interstate 176 in because of minor crashes. Accumulations international Airport.		
PAZ0/1	25 25	0000EST 2359EST			1	0			Extreme Cold/Wind Chill		
PAZ060-067>071	The un Philad Berk s	nseasonably co elphia home on s - Chester -]	ld weather c the 25th. Th Montgome	laimed a third ne low temper ry - Bucks -	d victim in ature at the • Delawar	Philadelp Philadelp e - Phila	hia. A 60-y hia Internat i delphia	ear-old m ional Airr	an was found dead in his unheated North port on the 25th was 8 degrees. M60PH		
	25 26	2200EST 1000EST			0	0			Winter Weather/Mix		
	Accun vehicl few c. Delaw roadw Specif inches inches (Chest Langh The st second primat Hatter	nulations avera es sliding into j ancellations at vare and Philac ays. In Berks C Tic accumulation in Bechtelsvil in Media (Dei ter County), 2.6 orne (Bucks Co now was caused d low pressure = ry low and mov as North Carol	ged between poles. Hospi the Philade lelphia Cour ounty, a 44 ns included 4 le (Berks Cour binches at the pounty) and 2. d by a low p system then red northeas	a 2 and 4 inch tals reported a lphia Internat nties, they we year-old man 4.0 inches in C ounty) and He aty), 3.2 inches the Philadelphi 0 inches in Do pressure system developed off t. It passed cl a m EST on	tes. Hundre an increase tional Airp ere cancell was serious Datelaunee oney Brook is in Chade in Chade oylestown (in that deve if the South ose to Wilh	eds of traf in the nu ort. Meet ed. In Ph ly injured Township ((Chester ls Ford (I onal Airpo Bucks Co cloped in (Carolina o nington, I fore it mo	ffic acciden imber of sli ings were hiladelphia, after he sle o (Berks Co r County), J Delaware C ort, 2.5 inch ounty) and C the lower T coast that e North Carol	ts occurre p and fall postponec several b dded into unty) and 3.4 inches ounty), 3. hes in Hat Green Land 'ennessee vening. TI lina aroun offshore	 d; most of them were fender benders and accidents. There were flight delays and a d. Schools had delayed openings, but in us routes were changed to avoid hillier a tree. Willow Grove (Montgomery County), 3.5 in Blue Bell (Montgomery County), 3.3 0 inches in Glenmoore and West Chester boro (Montgomery County), 2.3 inches in e (Montgomery County). Valley during the morning of the 25th. A he second low pressure system became the d 1 a.m. EST on the 26th and just east of 		
PAZ054>055-060>062	Carb	on - Monroe	- Berks - I	Lehigh - Noi	rthampto	n n		onshore.			
	27 28	1500EST 1500EST			0	0			Winter Storm		
PAZ067>071	Chest 27 28	ter - Montgor 1500EST 0600EST	mery - Buo	cks - Delawa	are - Phila 0	delphia 0			Winter Weather/Mix		
	The co Lakes freezin drizzle systen falling from t EST (accum lingero Untrea closed	ombination of a before dissipa ng rain, sleet an e or freezing rain n was forming g across the area he wintry mix of (From northwe ulations were a ed into the after ated roads were the roadway for	high pressu ting and and a now. He in fell throug over the Vin a. The except changed to a st to southe averaging or noon in the l slippery an or several bo	re system over other that form avy snow fell ghout most of rginia coastal tion was in the Il snow around ast) across so he to two incl Poconos. Accu d numerous ac ours. A five v	r nearby C. med over t l from Berk the day on waters, pre- e Poconos v d 6 p.m. ES outheastern nes per hou umulations ccidents oc- ehicle cras	anada and he Virgin cs County the 27th. ecipitation where prec T in Berk Pennsyl- ir in the I averaged curred. In h closed I	a pair of k ia coastal y and the Le During the intensity i cipitation st ss County av vania. The Poconos. The between 2 a Berks Cou	ow pressui waters gates ehigh Val second ha ncreased arted and nd the Lef heaviest he snow e and 6 inch nty, sever 422 for or	re systems - one that moved into the Great ve Eastern Pennsylvania a wintry mix of ley northward. Some spotty light freezing alf of the same afternoon as a low pressure and heavier freezing rain and sleet began continued as snow. As colder air moved in nigh Valley and between 6 p.m. and 9 p.m. snow fell during the evening. Snowfall ended just before sunrise on the 28th, but es with higher amounts in the Poconos. al tractor-trailer accidents on Interstate 78 he hour in Douglass Township. In Monroe		
	Count with t 28th) i	y, three vehicle wo Sports Utili in the Lehigh V	crashes cau ty Vehicles alley and the	sed injuries as slid into each Poconos.	s they struc other in Le	k either trehighton.	rees or guy Many schoo	wires. In ols were c	Carbon County, five persons were injured losed for three days (the 26th through the		

Specific accumulations included 7.5 inches in Penn Forest Township (Carbon County) and East Stroudsburg (Monroe County), 7.1 inches in Middle Smithfield Township (Monroe County), 7.0 inches in Jim Thorpe (Carbon County), 7.0 inches in Upper Milford

		Time Local/	Path Length	Path Width	Number of Persons		Estimated Damage			January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

PENNSYLVANIA, East

Township (Lehigh County), 6.0 inches in Fredericksville (Berks County), 5.6 inches at the Lehigh Valley International Airport, 5.5 inches in Furlong (Bucks County), 5.3 inches in Phoenixville (Chester County), 5.2 inches in Williams Township (Northampton County), 5.0 inches in Fleetwood (Berks County), Green Lane (Montgomery County) and Perkasie (Bucks County), 4.0 inches in Newtown Square (Delaware County), 3.8 inches in Trappe (Montgomery County), 3.5 inches in Levittown (Bucks County) and Conshohocken (Montgomery County), 3.0 inches in Media (Delaware County), 2.8 inches in Exton (Chester County) and 1.6 inches at the Philadelphia International Airport.

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and its upper air support moved across the Middle Atlantic States, precipitation intensity increased further and the precipitation changed to snow.

PENNSYLVANIA, Northeast

PAZ038>040- 043\044-047\048	Bradford - Susquehanna - Northern Wayne - Wyoming - Lackawanna - Luzerne - Pike									
0432044-0472040	10	0200EST 0800EST	0	0	35K	Extreme Cold/Wind Chill				
PAZ038>040-	Arctic tempe Record 10th w Brad	high pressure over central Ontario ratures below zero in most locations. d low temperatures were set at severa vere generally between zero and 15 be ford - Susquehanna - Northern	b province, Car This extreme of al cooperative o low zero. Wayne - Wyo	nada bro cold air o bserver : o ming -	ought northeast I came in on north and ASOS airport Lackawanna -	Pennsylvania record cold temperatures with winds ahead of the high on the 9th and 10th. t sites. Low temperatures the morning of the Luzerne - Pike				
043>044-047>040	15 16	1800EST 0800EST	0	0	70K	Extreme Cold/Wind Chill				
	A deep create cold a The co pipes.	p low pressure system in southeast Ca northwest winds of 15 to 25 mph acr nd wind combined to produce wind c old air also caused problems with cars	nada combined oss the area. T hill values of 15 and buses start	with a la his high 5 to 35 b ing. In a	arge area of high p pressure system a elow zero. Many addition, some resi	pressure in the province of Ontario, Canada to also ushered in below zero temperatures. The schools were closed due to the extreme cold. idences and business had damage from frozen				
PAZ039>040-044-048	Susqu 28	Jehanna - Northern Wayne - La 0000EST 0500EST	ickawanna - H 0	Pike 0	200K	Heavy Snow				
PENNSYLVANIA. N	A low coast 1 the 27 amour	pressure system moved northeast into ater that day then moved northeast to th. The snow tapered off to snow sho tts.	the Ohio Valle the New Engla owers the morni	y early o nd coast ng of the	on the 27th. Anoth Snow ahead of e 28th. Snowfall	her low pressure system developed on the east the initial low became heavy the afternoon of amounts were 6 to 8 inches with a few higher				
PAZ001>003	North	<u>est</u> 1ern Erie - Southern Erie - Crav	wford							
	06 08	0300EST 1200EST	0	0	1.1M	Heavy Snow				
PAZ001>003	Very of Januar on the section Hatch accum Spring and dr North 14	cold westerly winds blowing across L y 6th. This activity intensified during 8th. Snowfall totals for this event in ns of the county. Officially, 17.0 inch Hollow. Observers in Edinboro and ulation was reported mainly across th s with 8 inches at Sagertown. Wester ifts over ten feet tall. Travel was near tern Erie - Southern Erie - Crav 0900EST	ake Erie caused g the late afterned h Erie County ra hes of snow fell d Corry also me he northern third dy winds gusting ly impossible du wford 0	lake eff oon and nged fro at Erie I asured of of the o g to over uring the 0	ect snow showers evening hours of om 8 to 18 inches nternational Airpo over two feet of s county. A maxim 30 mph accompa peak of the storm 900K	to develop during the early morning hours of the 6th and finally tapered off around midday near Lake Erie to over two feet across inland ort with a maximum of 31.5 inches reported at now. In Crawford County, significant snow num of 20 inches was measured at Cambridge nied the snow and caused whiteout conditions and hundreds of accidents were reported. Winter Storm				
	An are and 15	ea of low pressure over lower Michig ith. A band of moderate to heavy sno	gan moved south w developed to	neast act the north	ross Ohio and into h of the low as it i	o southwestern Pennsylvania on January 14th noved through the region. This band of snow				

		Time Loca ^{1/}	Path	Path	Nun	iber of	Estin	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
PENNSYLVANL	A. Northy	vest								
PAZ002>003	was e Count A ma Intern Sout 19 20	nhanced by Lal ties ranged fron ximum of 13.1 hational Airport. hern Erie - C 0100EST 1400EST	te Erie as it : a 6 to 10 inc inches of sr Travel was rawford	moved over t hes most area now was mea severely ham	he northwe as with the soured in no pered by th 0	stern corn heaviest s ortheastern is event a 0	ner of Penns now falling n Crawford nd dozens o 500K	ylvania. during th County v f accident	Total accumulations in e afternoon and evenir vith 9.7 inches officia s were reported. Heavy Snow	n Erie and Crawford 1g hours of the 14th. Ily recorded at Erie
PAZ001>003	Cold persis midni lightn during south accun and d Nort	northwest wind tted into the eve ght on the 20th ing were observ g the predawn ern Erie and non nulation. Some ozens of acciden hern Erie - So	Is blowing a ning hours o n, an intense ved with this hours. Accu- thern Crawf- locations say nts were repo- pothern Er	across Lake F of the 19th and band of snot band and snot umulations froord counties. w nearly two orted. tie - Crawfo	Erie caused d then dissi w redeveld owfall rates om midnig The snow feet of snow	lake effe pated. Ac oped over s exceeded th to day finally tap w during t	ct snow sh ccumulation southern E d three inch break on th bered off du his two day	owers to s on the 1 rie and ne es per hou ne 20th ra ring the af event. T	develop early on the 9th ranged from 6 to orthern Crawford cou Ir at times. The band inged from 8 to 14 ir fternoon hours after se ravel was severely har	19th. This activity 10 inches. Just after nties. Thunder and moved slowly west inches over much of veral more inches of npered by this storm
	27	0300ES1 1800EST			U	U	900K		winter Storm	
	An ar began precip during accide	tea of low press in northwest F pitation mixed v g the evening. 1 ents were report	ure moved a cennsylvania with and then ce accumula ed. A few p	cross Ohio an by the early n changed co tions greater ower lines we	d Lake Eri morning h mpletely to than one qu ere also doy	e on the n ours of th o snow du uarter inch wned.	norning of J e 27th and ring the aft along with	anuary 27 continued ernoon ho 1 to 3 inc	th. Freezing rain asso through the middle p ours. The precipitation thes of snow fell durin	ciated with this low art of the day. The a finally tapered off g this event. Many
PENNSYLVANI	A, West		I I I							
PAZ029	Was 03	hington 2040EST 2330EST			0	0			Flood	
PAZ030	Coal i south West 03	Bluff Rd floode of Houston. tmoreland 2300EST	d in Union T	Swp, 1 mile so	outheast of 0	Finleyvill 0	e. At 1045 I	PM, Racet	rack Rd flooded in Ch Flood	artiers Twp, 2 miles
PAZ020	10 roa Beav 04	ads closed by flo ver 0858EST 1000EST	ooding throug	ghout the cou	nty, includi 0	ng Route 0	119 near Yo	oungwood	Flood	
PAZ014	Trave Butle 04 05	er 1100EST 1100EST 1500EST	ed near Hars	haville.	0	0			Flood	
PAZ021	It star Rd wa Way o Alleg	ted with numero as closed in Lan closed in Center gheny	ous roads flo caster Twp, Twp, 3 mile	oded around a 4 miles north es N of Butler	Saxonburg. east of Zeli . By 1230 a	By 335 P enople; Ca un on 5th,	M, Little B reek Rd clos Sandy Hill	ull Creek sed in Pen Rd was cl	flooded Sarver. By 930 n Twp, 5 miles S of Bi losed by flooding 2 mi) PM, Yellow Creek utler; and Glenwood les east of Mars.
	04 05	1115EST 1500FST			0	0	25K		Flood	
PAZ029	In Mo muds were : Was 04	bunt Lebanon, E lide on Route 2 flooded in Mont hington 1115EST	anksville Rc 8 between 3 roeville (and	l flooded. In 1 1st and 40st elsewhere).	Russellton, Street bridg 0	Little Dee ges in Mil 0	er Creek flo llvale. And	oded. Sho in Etna, r	rtly after 1245 AM on numerous streets were Flood	the 5th, there was a flooded. Basements
PAZ022	Route floode closed	e 980 in Cecil, F ed near Burgetts d by flooding in strong	ace Track R stown. By 1 Canonsburg	d in Canonsb 015 PM, Fact	urg, and Co ory Way w	ourtney Hi vas floode	ill Rd in Fin d by Catfish	leyville fl ı Creek in	ooded. By 340 PM, nu Washington; and Rac	imerous streams had e Trace Rd was still
1 [11]144	04 05	1125EST 1500EST			0	0			Flood	
	Route	e 66 flooded in ened a house in	North Vand North Vande	lergrift. At 4: ergrift, and nu	55 PM, Bu imerous str	ffalo Cree eams were	ek flooded _	just south Armstro	of Boggsville. By 5 ng County.	45 PM, a mudslide

		Time Local/	Path Length	Path Width	Nur Pe	nber of	Estim	ated	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
PENNSVI VANIA V	Vest								
PAZ023	<u>India</u>	na							
	04 05	1125EST 1500EST			0	0	70K		Flood
	Route cars w	1008 flooded i ere inundated l	in Indiana. B by floods from	y 915 PM, R m Two Lick,	outes 22 an Yellow, Bl	d 119 wer ack Leggs	e flooded ea , and Crooke	st of Blain ed creeks.	rsville, after 3 inches of rain. Business and
PAZ030	West 04 05	moreland 1130EST 1500EST			0	0			Flood
	Nume	rous roads floo	ded in Ligon	ier, Lower B	urrell, and '	Vandergrif	t. By 915 PM	M, numero	ous state and county roads were flooded.
PAZ020	Beave 04 05	er 1535EST 1500EST			0	0			Flood
	Racco reporte Conno	on Creek cause ed on Reno St oquenessing Cr	ed the floodii in Rochester eek closed R	ng of Backbo ;; SR 151 in oute 65 near	ne Rd, Parl Independer Ellwood Ci	c Rd, Ridg ace; and Si ty, betwee	e Rd, and R R 4047 in C n Chapel Dr	oute 30 ne Dhioville. 1 and Rte 2	ear Harshaville. By 9 PM, mud slides were By 240 AM on the 5th, flooding from the 288.
PAZ013	Lawr 04 05	ence 1540EST 1500EST			0	0			Flood
PAZ009-016	It start miles s	ted when Nash southeast of Ne st - Jefferson	ua Rd and S ew Castle; an	R 168 floode d Route 388	ed near New was closed	w Castle. I by flood.	3y 915 PM,	streams v	vere still flooding SR 168 near Nashua, 2
	05	0100EST 0700EST			0	0			Ice Storm
PAZ007>009- 015>016-023	A peri Merc	od of freezing er - Venange	rain caused n 5 - Forest -	umerous acc Clarion - J	idents and l	eft a coatin - Indiana	ng of ice at l	east one q	uarter inch thick.
	14 15	1900EST 1000EST			0	0			Heavy Snow
DA 7021-022	Snow inches	began falling at Tionesta; 8	the afternoor Franklin; 7 E	of the 14th. Brookville and	Many plac d Mercer; 6	ces reached Indiana.	d 6" betwee	n 7 and 9	PM on 14th. Total accumulations were 9
r A2031>032	17	2000EST 2330EST			0	0			Ice Storm
DA 7017 001, 000 000	Sleet a resulti	and freezing rang in numerou	in began the s accidents.	afternoon of	the 17th. A	An ice glaz	e, at least o	ne quarter	inch thick, was reached before midnight,
PAZ016-021>022-030	Jeffer 26	rson - Allegh 0200EST 1200EST	eny - Arm	strong - Wo	estmorela 0	nd 0			Heavy Snow
	Snow counti	began the after es; 7 in Jeffers	rnoon of the on; and 8 in V	25th and end Westmorelan	ed by noon d.	on 26th.	Fotal accum	ulations w	vere 6 inches in Allegheny and Armstrong
PAZ008-015>016- 022>023-030-032	Vena	ngo - Clario	n - Jefferso	on - Armstr	ong - Ind	iana - W	estmorela	nd - Fay	ette
	27 28	1700EST 1000EST			0	0			Heavy Snow
	Snow midnig Indian the mi	began the after ght on 28th. By a; 6 in Fayette sery and cause	rnoon of the the time it v and Jefferso d numerous t	27th. Some p vas over, tota n. Westmore raffic acciden	laces in no l accumulat land Count nts.	rthern Pen tions were y had total	nsylvania re 12 inches in s ranging fr	ached 6" Armstron om 6 to 14	by evening; Indiana County reached 6" by ng County; 9 in Clarion and Venango; 7 in 4 inches. Patches of freezing rain added to
PUERTO RICO									
RHODE ISLAND	NOT I	RECEIVED.							
RIZ003-006	West 27 28	ern Kent - W 2000EST 1500EST	Vashington		0	0			Winter Storm
	A win much	ter storm track of Connecticut	ting south o	f New Engla n Rhode Isla	nd brought nd. Snowf	heavy sno all totals o	ow to souther of 4 to 8 inc	ern New H hes were	England, from western Massachusetts into common in areas to the west and south of

Providence.

Storm Data and Unusual Weather Phenomena											
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estima Dama Property	ted ge Crops	January 2004 Character of Storm		
RHODE ISLAND											
	Officially, the snowfall total at T.F. Green State Airport in Warwick was 3.7 inches.										
SOUTH CAROLINA	Other North	snowfall totals, a Kingstown; and t	as reported 6 inches on	by trained sp Block Island	otters, inclu	ded 9 inc	hes in South	Kingstor	n; 7 inches in Coventry, Middletown, and		
SCZ015>016	Lanca 25 27	aster - Chester 1500EST 1400EST	rfield		0	0		0	Winter Storm		
SCZ018-020>022- 025>031-035>038-041	Mcco Sumt 25 27	rmick - Newl er - Barnwell 1730EST 1600EST	oerry - F - Orangel	airfield - K burg - Calh	Cershaw - oun - Clar 0	Edgefie endon - 0	eld - Salud Bamberg	a - Lex 0	ington - Richland - Lee - Aiken - Ice Storm		
	An ice Midlar accum accum countie Cheste Damag	An ice storm began over the North Midlands of South Carolina on Sunday night and gradually spread south into the Central Midlands and CSRA on Monday. The storm continued into Tuesday, but was mainly freezing drizzle during that time. Ice accumulations of 1/2 to 3/4 of an inch occurred which brought numerous trees and powerlines down. The heaviest ice accumulations occurred in Lancaster, Chesterfield, Fairfield, Newberry, Saluday, McCormick, Orangeburg, and Clarendon counties. Over 250,000 homes, businesses, and schools were without power for several days. Sleet also fell in Lancaster and Chesterfield counties and accumulated up to 2 inches. Six people were injured in traffic related accidents and there were no deaths. Damage estimates from State Emergency Management were \$28.5 mil.									
SOUTH CAROLINA	<u>, Nort</u> Moril	<u>h Coastal</u> horo Dorling	ton Dill	~ m							
502017-0252024	25	1400EST 2200EST	,ton - Din	UII	0	0	3.0M		Ice Storm		
SCZ017-023>024- 032>034-039	Freezin afterno were d Marll	ng rain began fa oon. Tree limbs ue to debris remo boro - Darling	Illing over snapped fr oval and ut ton - Dill	the area the rom the weig ility company on - Florence	morning of ht of the icc expenses. N ce - Mario	Jan 25th e, causing Many hon n - Hor t	, with ice ac g widespread nes were also ry - Williar	cumulation power of damaged nsburg	ons reaching a quarter of an inch by the butages. Much of the monetary damages d when the tree limbs fell on them.		
	26 27	1100EST 0330EST			0	0	23.2M		Ice Storm		
	Another episode of frozen precipitation occurred on the heels of the storm of January 25th, bringing more freezing rain and sleet to areas that already had over a quarter inch of ice still in the trees. The total ice accumulations ranged from a trace near the coast to as much as three quarters of an inch over interior sections. The weight of the ice caused major power outages from falling limbs, as well as significant structural damage to many homes. The state declared a forest disaster for the first time in two years. There was some ice accumulations on the roads, especially on bridges and overpasses, with numerous traffic accidents reported. Many residences were without power for over a week. Monetary damages totaled into the millions per county in some parts of South										
SOUTH CAROLINA	, Nort	<u>hwest</u>	p or debris	, utility experi	ses, and non	ie repuir.					
SCZ001>003	Ocon 25	ee Mountains 1200EST 1800EST	- Pickens	Mountains	- Greenvi 0	lle Mou 0	intains		Heavy Snow		
567004-010 012-014	Light s and aft	snow began durin ernoon. By early	ng the early evening, 3	morning acr to 5 inches h	oss the Sout ad accumula	h Carolin ated acros	na mountains ss most of the	, and grade area.	dually intensified throughout the morning		
5CZ004>010-012>014	Laure	er Oconee - ens - Union - C	Chester	Pickens -	Greater G	reenvii	ie - Sparta	anburg	- Cherokee - York - Anderson -		
	25 26	1400EST 0000EST			0	0			Sleet Storm		
SCZ001-004>005-	Heavy sleet developed during the afternoon across portions of the Upstate and continued into the late evening. Total sle accumulations were generally 1 to 2 inches. During the evening, a light freezing rain developed, which resulted in a thin glaze ice on top of the layer of sleet. Very slick roads were responsible for hundreds of traffic accidents. Some of the accidents involv injuries and fatalaties. Numerous injuries also occurred due to falls.								inued into the late evening. Total sleet veloped, which resulted in a thin glaze of accidents. Some of the accidents involved ille - Laurens - Greenwood		
010>012-019	25	1800EST			0	0			Ice Storm		
	20 UDUES I During the early evening, sleet began to mix with freezing rain across northwest portions of the Upstate, while precipitation developed in the form of freezing rain across southern portions of the Upstate. By the morning of the 26th, ice accretion of up to 1/2 inch occurred across the area. Numerous power outages resulted, especially in Greenwood and Abbeville Counties, where thousands were without power for several hours. Numerous injuries also occurred as a result of falls.										

St	torr	n Data	a and	Unusu	al W	'eat	her Pl	nen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed	r of ns Injured	Estimate Damage Property (d Crops	Character of Storm	January 2004
SOUTH CAROLINA	Nort	hwest								
SCZ004>005- 010>011_010	Greater Oconee - Greater Pickens - Anderson - Abbeville - Greenwood									
010/011-019	26 27	2100EST 0000EST			0	0			Ice Storm	
SCZ006>009-012>014	Freezing rain redeveloped across western portions of the Upstate during the late evening of the 26th. Additional ice accretion of inch or so occurred. This resulted in additional power outages. The glaze of ice also caused numerous traffic accidents on morning of the 27th. Greater Greenville - Spartanburg - Cherokee - York - Laurens - Union - Chester 27 0000EST 0 Winter Weather/Mix									ice accretion of 1/4 ic accidents on the fix
SOUTH CAROLINA	A light glaze t rush ho anothe	t freezing rain o the mixture our. Many of t r 2 days. h Coastal	developed du of sleet and ic the accidents i	tring the early more that was alread any olved injuries	norning ho dy present s and some	urs of th . Hundre fatalatie	e 27th across f eds of traffic ac es. The ice was	much of ccidents s slow to	the Upstate. This add occurred overnight a p melt, and traffic acci	led another layer of nd into the morning idents continued for
SCZ040-043>045-050	Allen 26 27	dale - North 1100EST 0130EST	ern Colleto	n - Dorcheste	r - Berke 0	ley - C 0	harleston		Ice Storm	
	A strong northear generation the low	ng wedge was ast on the 26th lly in the 1/4 i v country for s	s in place ove h and into the inch to around several days.	r the Carolinas a early morning h 1/2 inch range.	and Georg hours of th There wer	ia. An a e 27th, p e trees, l	rea of low pre producing free large limbs and	essure de zing rai d power	eveloped off the coas n and freezing drizzle lines down that disru	t and tracked to the . Ice accretion was pted the power over
SOUTH DAKOTA, C	Centra	l and Nort	<u>h</u>							
SDZ008-020>023	Rober 25 26	rts - Coding 1200CST 0400CST	ton - Grant	- Hamlin - Do	euel 0	0			Heavy Snow	
SOUTH DAKOTA, S	Heavy Milbar	snow of 6 to hk, Bryant, Sis ast	11 inches fe seton, Watert	ll across far nor own, 8 inches at	rtheast Sou Wilmot, 9	ith Dako	ota. Some snov at White Rock	wfall an , and 11	nounts included, 6 in inches at Victor.	ches at Clear Lake,
SDZ039>040- 054>056-060>062- 066>071	Kings Homi	sbury - Bro ne - Yankto	okings - Mi on - Clay - U	iner - Lake - Union	Moody -	Hanso	on - Miccook	s - Mii	nnehaha - Turner	- Lincoln - Bon
	25 26	1000CST 0400CST			0	0			Winter Storm	
	Snowf blowin chills activiti	all of 5 to 10 ag snow. The developed lat ies, mostly bas	f 5 to 10 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in ow. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind cloped late in the storm as actual temperatures fell. Numerous schools were closed or delayed. Several after school nostly basketball games, were postponed.							
SOUTH DAKOTA, V	Vest									
SDZ024>025	North 25	ern Black I 0600MST 1500MST	Hills - North	ern Foot Hill	s 0	0	0	0	Heavy Snow	
	A stor Black	m system mo Hills. Snowfal	ved across the	e Northern Rock 5 to 8 inches we	kies and in re reported	to the N from Le	Northern Plains ead and Deadv	s, bringi vood, no	ing heavy snow to pa orthwestward to near S	urts of the Northern Spearfish.
TENNESSEE, Centra	<u>al</u>									
TENNESSEE. East	NONE	REPORTED								
TNZ012>014- 035>041-067>074- 081>086-098>101	Scott Cocke - Nor Monr	- Campbel e/Smoky Me th Sevier - roe - Marion	l - Claibor ountains - F Sevier/Sm - Hamiltor	ne - Morgan Roane - Loudo oky Mountain 1 - Bradley - V	- Ander on - Knox ns - Seq Vest Polk	son - x - Jeffe uatchie	Union - Gr erson - Nort e - Bledsoe	ainger hwest - Rhea	- Hamblen - No Blount - Blount/Su a - Meigs - Mcm	rthwest Cocke - noky Mountains inn - Northwest
	09	0000EST 1000EST			0	0			Winter Storm	
	2-3 inc A wint 1 to 4 amoun	enes snowfall er storm syste inches. Mos ts were gener	em moved into t of East Ter ally an inch o	the region early nessee averaged r less and the hi	y in the mo d 2-3 inch gher terrai	rning Ja es of sn n on the	nuary 9th. The ow with excep Cumberland I	e storm ption of Plateau	produced snowfall and the southeast corner where slightly higher	ounts ranging from of the state where totals ranging from

Storm Data and Unusual Weather Phenomena										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Persor Killed I	r of ns injured	Estim Dam Property	ated age Crops	January 2004 Character of Storm	
TENNESSEE Fost										
TNZ015>018-042	2-4 inc Mount Hance 09	ches were reporte Leconte measure ock - Hawkins 0300EST	d. Interesti ed only 3 in - Sulliva	ingly, with this iches of snow. n - Johnson -	 particular s Northwe 0 	storm sys st Gree 0	stem, the hi e ne	ghest elev	vations in the Smoky Mountains including Winter Storm	
TNZ018-044>045-047	1-4 inc A wint as 1 in countie Johns 25	1000EST thes snowfall ter storm system in the to as much a es of Northeast T son - Washingt 0800EST 2000EST	moved into s 4 inches ennessee w ton - Unic	the region earl of snow across as 2-3 inches. oi - Southeas	y in the mo s Northeast st Carter 0	rning on Tenness 0	January 9t see. The m	h producin nost comm	ng snowfall amounts ranging from as little ion range of snowfall reported across the Ice Storm	
TENNESSEE, South	1/4 inc Storm across around accum	th ice with 1-3 ind system moved no Southwest Virgi 1 1/8 inch to as ulations ranging the al	ches snow a orth from th inia and th much as 1 from 1 to 3	and sleet the Gulf of Mer- e mountains o 1/4 inch across inches at eleva	xico spreadi f Northeast s much of ttions above	ng mois t Tennes this reg 3500 fe	ture laden a ssee. Freezi ion. In ad eet.	air over su ng rain p ldition, sn	inface based freezing temperatures mainly roduced ice accumulations ranging from low and sleet also fell with the greatest	
<i>i</i>										
TENNESSEE, West Fayette County	NOT F	RECEIVED.			0	0	517			
Somervine	One he brick c	2000CS1 2005CST ome was struck b off the front porci	by lightning h were blow	g. The lightning wn. Some brick	g caused the	e family ick of th	's van tires e house we	to be flatt re chipped	ened and the car wouldn't start. Pieces of d and cracked. Pictures hanging on a wall	
TEXAS, Central	marae	ule house were k	noekeu uov							
Coleman County .1 S Novice to .3 N Novice	16	1710CST 1712CST	0.5	75	0	0	10K		Tornado (F0)	
	A torn	ado developed f	rom a low	topped storm	south of the	e comm	unity of No	ovice and	moved northwest across the community.	
TEXAS, Central Sou	theast	is of two foots w	ele blowii (on nonnes an	la numerous	s window	ws were bro	KCII.		
Madison County Normangee	17	1832CST 1835CST			0	0	1K		Hail (0.75)	
Montgomore County	0.75" ł	nail reported at O	SR and Hw	y 39 in Norma	ngee.					
7 NNE Conroe to 7 NNW Conroe	17	2045CST 2050CST			0	0	7K		Hail (1.50)	
Montgomery County	1.50" ł	nail reported 5 mi	les north of	f Lake Conroe	Dam that co	overed th	ne ground.			
Willis	17	2105CST 2110CST			0	0	3K		Hail (0.75)	
Montgomery County	0.75" ł	nail in Willis.								
Cut And Shoot	17	2130CST 2135CST			0	0	5K		Hail (1.00)	
Montgomory County	1.00" ł	nail along Hwy 10	05 in Cut ai	nd Shoot that c	overed grou	nd. Law	officer had	l to pull of	ff road during the event.	
.5 SE Willis	17	2148CST 2155CST			0	0	5K		Hail (1.00)	
Liborty Court-	1 inch	hail along FM 24	32, Willis-	Waukegan roa	d, outside of	f Willis.				
5 N Hardin	25 Small	0122CST tree down.			0	0	1K		Thunderstorm Wind (G55)	
		Time Local/	Path Length	Path Width	Numl	per of	Estimate Damage	ed e	January 2	2004
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
TEXAS, Extreme W	<u>est</u>									
	NONI	FREPORTED								
TEXAS, Mid - South	<u>l</u>									
TEVAC North	NON	E REPORTED.								
<u>IEAAS, NOrth</u> Boll County										
Killeen	16	1536CST 2130CST			0	0			Flash Flood	
	28 per high y	rsons from a tr vater. Some str	railer park ar	d a day care	center were r three feet d	evacuat	ed due to high	water.	Numerous roads were barricaded of	lue to
Tarrant County	0					1				
Ft Worth	16	1940CST 2040CST			0	0			Flash Flood	
Bell County	A car	was submerged	l in water at '	Frinity and Pr	ecinct Line	Road.				
Killeen	16	2046CST 2130CST			0	0			Flash Flood	
	Roads	s were reported	barricaded by	the Killeen	Police Depa	rtment. V	Water was also	over re	oads on the east side of Fort Hood.	
Ft Hood Aaf	16	2046CST 2130CST			0	0			Flash Flood	
	Water	covered roads	across the we	estern part of	Fort Hood.					
Bell County 6 SE Killeen to Killeen	16	2110CST 2210CST			0	0			Flash Flood	
	A farr	n-to-market roa	d was closed	due to high v	water near H	arker He	ights.			
TEXAS, North Panh	andle									
	NON	E REPORTED.								
TEXAS, Northeast	11011									
	NON	E REPORTED.								
TEXAS, South										
	NON	E REPORTED.								
TEXAS, South Centr	<u>ral</u>									
Countywide	16	1630CST 2000CST			0	0	3K	0	Flash Flood	
	Gener betwe	al 1 to 2 inch en Yorktown ar	totals fell ac nd Cuero, wit	ross the cour h highway 87	nty with isol 7 blocked by	ated amo high wa	ounts to 3 incl ter in Cuero.	nes in t	he southeast portion. Roads were c	losed
Gonzales County Countywide	16	1700CST 1900CST			0	0	5K	0	Flash Flood	
	Gener Peach	al 1 to 2 inch to Creek was in f	otals fell acro lood and was	ss Gonzales reported ove	County. Iso er FM795.	lated amo	ounts to 3 inch	es were	e reported in the eastern part of the co	ounty.
Kendall County Northwest Portion	16	1730CST 1930CST			0	0	5K	0	Flash Flood	
	Gener were d	al 1 to 2 inch t closed due to fla	totals fell act ash flooding.	oss Kendall	County, wit	h isolate	d amounts to 3	3 inche	s in the northwest portion. Several	roads
Medina County			. 0.		<u>_</u>	~		~		
Countywide	16	1730CST 1930CST			0	0	3K	0	Flash Flood	
	Rainfa the no	all over Medina orthwest part of	a County was the county.	generally be Roads were c	etween one l losed in the	half inch Natalia a	and one inch. rea in the south	Isolate heast pa	ed totals to near 3 inches were report art of the county.	ted in

S	stori	n Data	a and	Unus	ual W	/eat	her P	hen	omena
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Perso Killed	er of ons Injured	Estima Dama Property	ted ge Crops	January 2004 Character of Storm
TEXAS South Cont	rgl					-			
Bandera County	<u>1 al</u>								
East Portion	16	1800CST 2000CST			0	0	10K	0	Flash Flood
	Bande	ra County repo	rted a genera	al rainfall of t	between 1 an	d 2 inch	es over the co	ounty, w	ith isolated totals with isolated amounts to
Travis County	3 inch	es between Pip	e Creek and I	Bandera. Nui	merous roads	were clo	osed in and a	round Pi	pe Creek.
Countywide	16	1800CST 2200CST			0	0	10K	0	Flash Flood
	A gen Althou water	eral one inch r agh the worst fl rescues were pe	ain fell acro looding took erformed.	ss Travis Cou part in the w	unty, with is restern part of	olated and f the cou	mounts of up inty, roads we	to to 4 ere close	inches in the western part of the county. d in the city of Austin where several high
Williamson County West Portion	16	1800CST			0	0	5K	0	Flash Flood
	Rainfa betwee Count	2200CST Ill in Williamso en Liberty Hill y.	on County av and Florenc	veraged near a second s	1 in the west vestern edge	and one of the c	-half inch in ounty. Num	the east erous ro	Isolated totals to 4 inches were reported ads were closed over western Williamson
Burnet County Countywide	16	1830CST 2130CST			0	0	3K	0	Flash Flood
	Genera and Tr closed	al 1 rain was re avis Counties, across the court	eported over where totals nty.	most of Burr to 3 inches w	net County. '	The high . Nume	nest amounts rous county r	were alc oads, inc	ong the eastern boundary with Williamson cluding DR 211, 212, 213, and 243E, were
Hays County Northwest Portion	16	1830CST 2200CST			0	0	3K	0	Flash Flood
	Rainfa	ll over Hays C	ounty averag	ed near 1 incl	h with isolate	d totals	in the northw	est part o	of the county to 3 inches.
Llano County West Portion	16	1830CST			0	0	3К	0	Flash Flood
	Llano roads	County reporte	ed a general western Llan	rainfall of are	ound 1 inch,	with iso	lated amount	ts to 3 in	the northwest portion. Several
Bastrop County	Totals	nere erosea m		o county					
Countywide	16	1900CST 2100CST			0	0	3K	0	Flash Flood
	Rainfa Synop afterno develo covere	Il over Bastrop sis: In advance oon of January pping across lov ed South Centra	County aver e of an uppe 16. Due to w water cross il Texas, with	raged near 1 is r level low a the saturated sings with accomposated max	nch with isol approaching a nature of so cumulations a kimum totals	ated tota slowly f ils over as little a of up to	ls to 3 inches rom the west the area, nea as one half in 4 inches.	betweer t, light t rly all ra ch. A ge	n Rosanky, Bastrop and Elgin. o moderate rain began falling in the mid ainfall became runoff, with flash flooding eneral rainfall of one-half inch to one inch
TEXAS, South Panh	nandle		· · · · ·						
<u>TEXAS, Southeast</u>	NONE	E REPORTED.							
	NONE	E REPORTED.							
<u>TEXAS, West</u>	~ .								
TXZ258	Guad 03 04	lalupe Moun 1300MST 0800MST	tains Of C	ulberson Co	ounty 0	0	0	0	High Wind (G89)
	A low Height Mount The B Park S of the	amplitude long t gradients in t tains. Gusts free owl (7,755 FT Service rangers area, no damag	gwave trough the base of quently exce MSL). The e reported an ge occurred to	a slowly propa the trough w eded 80 MPH extreme winds unknown nun o man-made s	agated east ac ere tight, and I during the n s were genera nber of trees tructures and	cross the d resulte ighttime ally restr that had there we	Southern Pla ed in severe hours. At 02 icted to rural been blown ere no injurie	ins late winds in 200 MST areas of down by s.	on the 3rd and into the first half of the 4th. a the higher elevations of the Guadalupe b a peak gust of 102 MPH was observed at the Guadalupe Mountains National Park. a the winds. Given the uninhabited nature
TXZ061>062	Ector 26	- Midland 0800CST 1100CST			0	0	22K	0	Strong Wind

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) Property Crops Character of Storm Date (Yards) Killed Location Injured **TEXAS**, West A cold front swept south across the Permian Basin during the morning of the 26th bringing strong northwest winds. Measured wind gusts were generally between 40 and 50 MPH as recorded by area ASOS sites and the Texas Mesonet. Minor roof damage was sustained to a business in Midland. In Odessa, the winds sent roof debris flying off of two businesses, a few large signs were blown down, and a couple of power poles were damaged. TEXAS, Western North NONE REPORTED. UTAH, East **UTZ027 Grand Flat And Arches** 01 0000MST 0 0 **Dense Fog** 0800MST Extensive low level moisture and a strong inversion in the valleys of east-central Utah caused widespread dense fog to form. This dense fog episode began on the morning of December 31 with widespread visibilities below 1/4 mile which continued through the early morning hours of January 1. Grand County law enforcement and the Canyonlands ASOS indicated the fog had dissipated shortly after daybreak. UTZ022>025-027>029 Southeast Utah - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau - Grand Flat And Arches - La Sal & Abajo Mountains - Canyonlands / Natural Bridges 01 0000MST Drought 2359MST 31 A number of storms moved across eastern Utah during the month resulting in a slight improvement in the protracted drought situation across extreme eastern Utah. However, drought severity remained in the "extreme" category across most of the area with a small area of "exceptional" drought conditions across southwestern San Juan County. See the February, 2004 Storm Data publication for a continuation on this drought situation. UTZ023-025-028 Eastern Uinta Mountains - Tavaputs Plateau - La Sal & Abajo Mountains 01 2100MST 0 Winter Storm 2300MST 03 A strong and moist winter storm produced 1 to 2 feet of snow across the mountains of eastern Utah. The Camp Jackson SNOTEL in the Abajo Mountains recorded the largest snowfall amount with 26 inches. Windy conditions in high exposed areas resulted in blowing and drifting snow. **UTZ027 Grand Flat And Arches** 0700MST 0 08 A **Dense Fog** 1230MST High pressure over the area and snow cover produced a strong inversion in the central valleys of extreme eastern Utah. This resulted in widespread dense fog with visibilities less than 1/4 mile. Major highways were affected by the dense fog, including Interstate 70. **UTZ027 Grand Flat And Arches** 1653MST 09 0 0 **Dense Fog** 14 1500MST Trapped low level moisture and a strong inversion resulted in a prolonged period of dense fog in the valleys of east-central Utah. The Utah Highway Patrol, weather spotters, and automated sensor data indicated widespread visibilities below 1/4 mile. Additionally, below freezing temperatures allowed icy patches to form on roadways. **UTZ024 Eastern Uinta Basin** 1800MST 11 0 0 **Dense Fog** 1500MST 14 Trapped low level moisture and a strong inversion resulted in a prolonged period of widespread dense fog, with reported and measured visibilities less than 1/4 mile. Additionally, below freezing temperatures allowed icy patches to form on roads. **UTZ022** Southeast Utah 15 2300MST A A **Dense Fog** 1100MST 16 Low level moisture and stable conditions produced widespread visibilities below 1/4 mile across the valleys of southeast Utah. **UTZ028** La Sal & Abajo Mountains 30 1400MST 0 0 Winter Weather/Mix 31 2145MST A storm system and associated cold front moved from northwest to southeast across southeast Utah and produced 5 to 6 inches of

A storm system and associated cold front moved from northwest to southeast across southeast Utah and produced 5 to 6 inches of snow in the La Sal and Abajo Mountains.

St	tori	m Data	and	Unus	ual W	eatl	her P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Persor Killed I	r of 1s njured	Estimat Damag Property	ed je Crops	Character of Storm	January 2004
UTAH. West and Cer	ntral									
UTZ002>003- 006>010-015	North Valle West 01 04	hern Wasatch xys/Huntsville/ ern Unita Mou 1200MST 0600MST	Front/Br Park City untains - V	igham City y/Heber - N Wasatch Pla	7/Ogden Bor Wasatch M ateau/Book 0	untiful ountain Cliffs - 0	- Salt Lak Is I80 Nor West Cen 2K	e And ' th - W tral Ut 0	Toole Valleys - Wa Vasatch Mountains ah/Delta Winter Storm	asatch Mountain 5 South Of I80 -
	A stro valley inches strong mph, report	ong and cold upp and mountain 1 s, Beaver 14 inch g winds accompar Tooele 66 mph, ed along State Ro	per-level Pa ocations in ues, Gunniso nied the snot and Lost (oad 111 nea	cific trough a northern Uta on 12 inches, ow. Some of Creek 62 mp ar Bacchus.	moved into no ah. Some of and Salina 10 the stronger g h. Large sno	orthern U the high inches. usts incluion w drifts	Jtah. This s ner snow tot Power was ude Sherwoo also caused	storm br als inclu lost to 1 od Hills	ought heavy snow acc ade Alta UDOT 29 in 3500 homes in the Wa 85 mph, Stockton 75 r prtation problems. A	cumulations to both aches, Snowbird 21 asatch Front as very nph, Signal Peak 72 drift of 8 feet was
UTZ002>003- 006>008-010	North Valle	hern Wasatch ys/Huntsville/	Front/Br Park City	igham City y/Heber - V	/Ogden Bo Wasatch M	untiful ountair	- Salt Lak Is 180 Nor	e And th - W	Toole Valleys - Wa Vasatch Mountains	asatch Mountain 5 South Of I80 -
	25 vv asa	0000MST	OOK CHIIS	i	0	0	100K	0	Heavy Snow	
UTZ004-008-010-017	A cold includ South	d Pacific storm sy le Alta UDOT 20 hern Wasatch	ystem move inches, Sno Front/Lei hwest Mo	ed into Utah a owbird 20 inc hi/Provo/No	nd affected m hes, Spruces e phi - Wasa	ainly no 18 inches t ch Mo	rthern sectio s, Farmington puntains So	ns of the n Canyo outh Of	e state. Some of the la n 18 inches, and Snow f I80 - Wasatch Pla	arger snowfall totals basin 18 inches. hteau/Book Cliffs
	30 31	1600MST 1230MST	nwest wie	untains	0	0	0	0	Heavy Snow	
	An up mount Farmi	oper level trough tain areas. Son ngton Canyon 6	moved intention inches, and	o Utah from arger snowfa Gooseberry F	the northwest Il totals inclu Ranger Station	and affo ude Sun 6 inches	ected northe dance 8 inc s.	rn valley hes, Alt	ys and mountains as y ta UDOT 6 inches, s	well as the southern Snowbird 6 inches,
<u>VERMONT, North a</u> VTZ001>012-016>019	nd Ce Gran	e <u>ntral</u> id Isle - Weste	rn Frank	lin - Orlear	ıs - Essex -	Wester	n Chittend	len - La	amoille - Caledoni	a - Washington -
	West	ern Addison - son - Fastern l	Orange -	- Western I	Rutland - V	Vindsor	- Eastern	Frank	lin - Eastern Chit	tenden - Eastern
	13 14	1800EST 1200EST	Kutianu		0	0			Extreme Cold/Win	nd Chill
	Weak follow 13th t across	low pressure m yed this storm. T hrough noon on the area during	oved across hen an arct Wednesday Wednesday	s northern No tic front mov , January 14 , January 14th	ew England c ed through th th were gener 1.	luring M e area T ally betv	londay, Janu luesday, Janu veen 25 and	ary 12th ary 13ti 45 belo	h with 2 to 4 inches h. Wind chills during w zero. Arctic high p	of snow. Colder air Tuesday night, Jan pressure then settled
VTZ001>012-016>019	Gran West	d Isle - Weste ern Addison -	rn Frank Orange	lin - Orlear - Western I	ns - Essex - Rutland - V	Wester Vindsor	n Chittend · - Eastern	len - La Frank	amoille - Caledoni lin - Eastern Chit	a - Washington - tenden - Eastern
	Addi 15	son - Eastern 1 1200EST	Rutland		0	0	100K		Extreme Cold/Win	nd Chill
	16 Arctic during froze a There at seve record county	1200EST thigh pressure b g Thursday, Janu and burst in seve after, it remained eral Vermont loc t was minus 10. y), minus 9F, pre	uilt southea ary 15th ar ral area loc cold with a ations on T Montpelies vious record	ast from Cana ad Friday, Jan ations. One lo arctic high pro- hursday, Janu r (Washingto d was minus o	ada on Thurso nuary 16th wo ocation on the essure over th nary 15th: Th n county), m 6F, and Burlin	lay, the ere gener Univers e area, b ne summi inus 11F gton (Ch	15th of Janu rally between ity of Vermo ut winds aba it of Mount I 5, previous r nittenden cou	ary and n 25 and ont camp tted. Re Mansfiel ecord w nty), mi	Friday the 16th of Ja d 45 below zero. Som ous resulted in 100,000 cord low maximum te ld (Lamoille county), n vas minus 8F. St. Jo nus 7F, previous recon	nuary. Wind chills the sprinkler systems) dollars of damage. mperatures were set ninus 24F, previous hnsbury (Caledonia td was minus 6F.
VERMONT, South	D	•	TT ⁷ • 11	E.	****					
V1Z013>015	Benn 15 16	ington - Westo 1900EST 1100EST	ern Wind	ham - Easte	ern Windha 0	m 0			Extreme Cold/Win	nd Chill
	An ex At the arctic in the below of the	tremely cold airr same time, a po high pressure, e: 15 to 30 mph r zero, resulted in 16th. Equivalent	nass moved werful storr stending fro ange, with dangerous wind chill	l out of Siber n developed o om central Ca higher gusts. wind chills a readings rang	ia, then plung off the Canadi unada southwa This wind, c cross extreme ed from 30 to	ed south an Marit ard throu ombined southern 40 below	times. The pr gh the Ohio with ambies n Vermont dr w zero.	h Canad ressure g Valley, nt tempe uring the	la and across the north gradient between the ir produced gusty north eratures ranging from e night of January 15 t	heast by January 15. Intense storm and the to northwest winds 5 below zero to 15 hrough the morning

N	Stori	n Data	and	Unus	ual W	eat	her l	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Persor Killed I	r of ns njured	Estir Dar Property	nated nage Crops	Character of Storm	January 2004
VERMONT, South	1									
VTZ013>015	Benni 28	ington - West 0000EST 0400EST	ern Windl	nam - Easte	rn Windha 0	m 0			Winter Storm	
	A con Appala Island heavy enougl Sunder	nplex low press achians to form a . The two system snow moved ov h for all snow. S rland, Benningto	sure area n a secondary ns combined er the area f Seven to 13 on County an	noved into the storm, off the l to produce a from around to inches of sno ad 7.5 inches	ne Ohio Val e mid Atlantic marginal win nidnight into ow accumulat at West Ward	ley on coast b nter stor the earl ted acro lsboro, '	January 2 by midnigh rm event in ly morning oss much o Windham (7. Energy t. This seco extreme so hours of th f the area. County.	from this storm tra nd storm moved nort outhern Vermont as a he 28th. The temperat Specific amounts inc	nsferred across the neast, south of Long band of moderate to ure profile was cold uded 12.6 inches at
VIRGIN ISLANDS										
VIRGINIA, East	NOT F	RECEIVED.	Duinas	Edward	Cumborlor		aaabland	Maabl	anhung Tunanhu	Nottomor
VA2048>049- 060>062-065>070- 079>081-087>089- 092>098	Amel South	ia - Powhatai ampton - Isle	- Cheste Of Wight	rfield - Bru - Newport	unswick - I News - Nor	la - G Dinwid rfolk -	ldie - Pri Suffolk -	- Meckie nce Georg Chesapea	ge - Greensville - ake - Virginia Bea	Sussex - Surry - ch
	09	0000EST 1600EST			0	0			Winter Storm	
VAZ048>049- 060>064-067>069-	Two to include Blacks City o accide Fluva Powh	o as much as fived: Victoria in tone in Nottow: f Emporia 2.5-3 nts.	re inches of Lunenburg ay county 3 ", and Loui - Prince 1 o - Essex	snow fell ac: g county 5", -4", City of I sa in Louisa Edward - C	ross portions Farmville in Portsmouth 3 county 2.5".	of centra Prince .5-4", F The sno I - Go o	ral, southco Edward Iuvanna co ow produce ochland -	entral, and scounty 4", ounty 3-4", ounty 3-4", od very slip	southeast Virginia. So Great Bridge in Ch South Hill in Meckl pery roadways, which r - Caroline - Not	ome higher amounts esapeake city 3-4", enburg county 2-3", n resulted in several toway - Amelia -
071-074	25 26	1400EST 1100EST			0	0			Winter Storm	
VAZ065>066-070- 072>073-079>084- 086>000_002	Four to in Prin county and slo Meck Georg	o as much as six nee Edward cour 5", Goochland eet produced ver lenburg - Lun ge - Charles	inches of s inty 6", Cur in Goochlar y slippery ro nenburg - City - Ne	now and slee mberland in ad county 5", padways, whi Chesterfiel w Kent - (t fell across p Cumberland o Glen Allen in ch resulted in d - King W Gloucester	oortions county n Henrid numero 'illiam - Mat	of central 6", Montp co county f ous acciden - King A hews - G	Virginia. S elier in Ha 5", and Tap its and scho nd Queen Freensville	ome higher amounts nover county 6", Co pahannock in Essex o ol closings for a few n - Brunswick - D i e - Sussex - Surr	included: Farmville lumbia in Fluvanna ounty 5". The snow lays. nwiddie - Prince 7 - James City -
080>090-092	South 25	ampton 1400EST			0	0			Winter Storm	
	Three includ 5", Ma in Prin which	to as much as fi ed: Chesterfield angohick in King ice George coun resulted in nume	ive inches of in Chesterf g William of ty 4.5", and erous accide	f snow and s ield county 5 ounty 5", New Sussex Cour ents and school	leet fell acros ", Toano in Ja v Kent Courtl thouse in Sus ol closings for	ss portion times Cir nouse in sex cour a few c	ons of sout ty county 5 1 New Ken inty 4.5". T lays.	hcentral an ", King Wi t county 5". 'he snow ar	d eastern Virginia. So Iliam Courthouse in F , Surry in Surry count ad sleet produced very	ome higher amounts (ing William county y 5", Prince George y slippery roadways,
VAZ075>078-085-	West	moreland - Ri	ichmond -	Northumb	erland - La	ncaste	r - Midd	lesex - Yo	rk - Isle Of Wight	- Newport News
091-093>100	- Nor 25 26	tolk - Suffolk 1400EST 1100EST	- Chesape	ake - Virgi	nia Beach - 0	Accon 0	nack - No	orthampto	on Winter Storm	
	Two to include 3-4", O in New numer	o as much as fo ed: Chincoteag Colonial Beach i vport News 3.2.2 ous accidents an	our inches oue in Accor n Westmore 5", and City d school clo	f snow and s mack county eland county of Virginia psings for a fe	sleet fell acro 4.5", City of 4", Yorktown Beach 3". Th w days.	ss porti Hampt in Yorl e snow	ions of eas on 4", Otto k county 4 and sleet	tern and so oman in La ", Reedville produced v	butheast Virginia. So incaster county 3.5", in Northumberland of ery slippery roadway	me higher amounts Downtown Norfolk county 3.5", Grafton s, which resulted in
VIRGINIA, Extrem	ne South	west		-	-					
VAZ001>002- 005>006-008	Lee -	Wise - Scott -	Russell -	Washington	n A	A			Winton Starm	
	2-4 inc	1000EST			v	U			WING SOUTH	

A winter storm moved into the region during the early morning hours of January 9th producing snowfall amounts ranging from 2 to

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	_	Time Local/	Path Length	Path Width	Numb	er of	Estimated Damage	January 20
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property Crops	Character of Storm
VIRGINIA, Extreme	Sout	nwest						
	4 inch	es across the l	ower elevation	ns while dum	ping as muc	h as 6 in	ches of snow at the	highest elevations of Russell County an
VAZ001>002-005>006	Lee -	Wise - Scott	Russell	Scott County	<i>.</i>			
	25	0800EST 2000EST			0	0		Ice Storm
	1/10-1 Ice ac from a	1/8 inch ice acc cumulated to a around 8 am S	umulation thickness ran unday mornir	ging from 1/ ng to around	10 to 1/4 inc 8 pm Sunda	h across iy evenii	a large part of South	hwest Virginia during the period extend or snow accumulations were also repor
VIDCINIA North	across	this area.						
VAZ021-025>026- 036>038-042-053>055	High	land - Augus	sta - Rocking	gham - Nel	lson - Albe	marle -	Greene - Loudou	n - Fairfax - Arlington - Stafford
	08 09	1700EST 1700EST			0	0		Winter Weather/Mix
VAZ042-053>055-057	An arc snow less o either Loud	ea of low press across the She f snow. This 1 closed on Frid loun - Fairfa	ure tracked act nandoah Valle ight snow cau ay the 9th or o x - Arlingto	ross Central a ey and the Co used widespr pened two ho n - Staffore	and Northern entral Foothi ead traffic p ours late. d - King G	Virginia lls of Vi roblems e orge	a on the 8th and 9th. rginia. Other areas o . Numerous automo	This system produced one to two inches f Northern Virginia reported a half inch bile accidents were reported, and scho
	10	0100EST 1100EST			0	0		Extreme Cold/Wind Chill
	Very digits, dozen	cold Arctic air , and north wir s of cases of br	settled over the settled over the settled over a settled over a settled over a settled over the settled over	he portions on the portions on the portion of the p	of Northern V h. This produ er pipes due t	Virginia. uced wir	The minimum temper and chills on the avera tremely cold tempera	eratures ranged from the lower teens to age of 10 degrees below zero. There w tures.
VAZ042-053>054	Loud 15 16	loun - Fairfa 2300EST 1100EST	x - Arlingto	n	0	0		Extreme Cold/Wind Chill
VA 7042 052 054	A fast trace of single below	moving storm of snowfall. Ho digits and tee zero on the nig	system broug owever, there ns. Strong non ght of the 15th	ht light snow was some ve rthwest and and the early	v to the regio ery cold air b west winds (y morning of	n on the ehind th 20 to 25 the 16th	14th and 15th. Most is system. Minimum 5 mph with gusts to 1.	areas of Northern Virginia only receive temperatures across the region were in 35 mph) produced wind chills of 5 to
VAZ042-055>054	Loud 17 18	1800EST 1600EST 1600EST	x - Ariingto	n	0	0		Winter Weather/Mix
V 4 7029	Two a amoun Severa	areas of low protection one qual automobile a	ressure merge uarter to one in accidents occur	d over the re nch were rec rred when me	egion to pro corded in Nor otorists lost c	duce a n rthern V control o	nix of snow and free irginia. Ice accumula f their vehicles when	ezing rain on the 17th and 18th. Snow ttions of one tenth inch were also report they encountered glazed pavements.
VALU20	23 24	1900EST 1200EST			0	0		Winter Storm
	An ar	ea of low press	sure developed	d over the Lo Virginia and	ower Great I Maryland F	Lakes an	d brought more sno	w to the region on the 23rd and 24th. T
VAZ021-025>031- 037>038-040>042- 053>054	High Rapp	land - Augus ahannock -	sta - Rockin Fauquier - I	gham - She Loudoun -	enandoah Fairfax - A	· Frede rlingto	rick - Page - War on	ren - Clarke - Albemarle - Green
000/004	25 26	1200EST 1000EST			1	0		Winter Storm
	An ard and fr and fi back distric	ea of low press eezing drizzle nally changed of a snow plo tts closed. M43	sure developed over the regio over to freezin w. Several ot SVE	l off the coas n. Five to six ng drizzle be her minor ac	st of North C c inches of sr efore tapering ccidents occ	Carolina now fell g off. A i urred ac	and tracked north. The over Northern and C man died in Fairfax cording to Emergen	his storm produced widespread snow, sl entral Virginia. The snow mixed with sl County when his vehicle slammed into cy Operations Centers. Dozens of sch
VAZ036-039- 050>051-055>057	Nelso	on - Madison	- Orange -	Culpeper -	Stafford -	Spotsy	lvania - King Geo	orge
	25 26	1200EST 1000EST			0	0		Winter Weather/Mix
	An are and fr	ea of low pres reezing drizzle	sure develope over the regi	d off the coa on. Two to	st of North C four inches	Carolina of snow	and tracked north. The fell over the Centra	his storm produced widespread snow, sl al Foothills and the Northern Piedmont

and freezing drizzle over the region. Two to four inches of snow fell over the Central Foothills and the Northern Piedmont of Virginia. The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. Several other minor accidents occurred according to Emergency Operations Centers. Dozens of school districts closed.

		Time	Path	Path	Nur	nber of	Estin	nated		January 2004
Location	Date	Local/ Standard	(Miles)	Width (Yards)	Pe Killed	rsons Injured	Dan Property	age Crops	Character of Storm	•
VIRGINIA, North										
VAZ042-053>054	Loud 26 27	oun - Fairfa 1530EST 2230EST	x - Arlingto	on	2	0			Winter Weather/M	ix
VAZ042	An are across on the vehicl breaks Loud	ea of low press the region. Du 27th. Two fat es rear ended s in natural gas oun	ure moved ac te to the incle alities were to now plows. services. Son	cross the area ement weather reported in L Other less so ne schools we	a on the 26 er Federal a oudoun Co evere injuri ere closed a	th and 27t gencies ir punty from les were a again on th	th. This low in the Washir in separate a ilso blamed ine 27th. M4	produced agton DC 1 utomobile on the ice 5VE, M38	a second round of freez Metropolitan area close accidents. The motoris , along with scattered p BVE	ting rain and snow d three hours early ts died when their power outages and
	31	0300ES1 1000EST			U	U			Extreme Cold/Wind	1 Chill
	Very o lower below	cold arctic air c teens. Wind sp zero.	combined wit eeds average	h strong Nor d 20 mph. Gu	thwest win 1sts of 30 n	ids to proo nph were	duce danger observed. T	ous wind his produc	chills. Minimum temper ced wind chill values of	ratures were in the five to ten degrees
VIRGINIA, Northwo	est	20101								
VAZ003	Dicke 02	enson 1100EST 1400EST			0	0			Flood	
VAZ003>004	Rains affecte Dicke	of 1.25 to 2 in ed streams incluents of the streams of the streams incluents of the streams of the stream of the s	ches fell in a ided Pine Cre anan	bout a 6 hou eek, Bearpen	r time spar Branch, an	n. This ca d Road B	aused small ranch.	streams to	o overflow and block ro	ads. A few of the
	25	0800EST 1400EST			0	0			Ice Storm	
VIRGINIA, Southwee VAZ012>014- 016>017-019>020- 022>024-032>035- 043>047-058>059	Freezi No wi <u>est</u> Wyth Patri Halif	ng rain accumu despread power ne - Pulaski ck - Frankli ax - Charlott	ilated a quart r outages wer - Montgom n - Bedfor te	er to a half in re reported. nery - Carr rd - Amher	roll - Floj rst - Hen	and powe yd - Alle ry - Pit	er lines. Ter eghany - I tsylvania	nperatures Bath - R - Campt	s rose above freezing du oanoke - Botetourt oell - Appomattox -	ring the afternoon. - Rockbridge - Buckingham -
	25	0645EST 2345EST			0	0			Heavy Snow	
VAZ015	A win southy Nume highw accide Gray 28	ter storm on th vest into portic rous accidents ay in Carroll C nts due to slick son 0445EST	the 25th dump ons of the No were reporte County result roads.	ed from 4 tr ew River Va ed, due to sli ed in one mi	o 7 inches lleywith ick roads, inor injury. 0	across W local high but the m . Several 0	estern Virgi her amounts hajority acro injuries wer	nia. The h in portion ss the reg e also rep	higher amounts fell from ns of Campbell County ion were minor. One a orted in Pittsylvania co High Wind (G55)	n Roanoke County , in the piedmont. ccident on a slick unty from vehicle
	A stro	ng cold front i	noved across	the county	during the	evening o	of the 27th.	High wind	ds behind the front resu	lted in trees being
WASHINGTON, No	rtheas	t aown during u	ne morning o	i ule 2801.						
WAZ032>033- 036>038-041-044	Lowe High 01	er Garfield lands - Wena 1800PST	& Asotin atchee Area	- Washing - Watervil	gton Palo lle Platea 0	ouse - S u 0	Spokane A 0	Area - N	Northeast Mountain Heavy Snow	ns - Okanogan
WAZ033-036>038- 041>043	02 From Washi northe other f Wash Slope 04	2100PST the evening of ngton. Spotter ast Spokane ar eports were rec s Northern (0100PST	January 1st t at Pullman r nd 10 inches ceived from s use - Spoka Cascades - (hrough the even eported 8 income was reported potters with a one Area - Okanogan	vening of J ches of snov d just east amounts rat Northeas Valley 0	anuary 2n w while at of Colvill nging fror t Mount 0	nd a winter s t Oaksdale tl le. A spotte n 4 to 7 inch t ains - Ok a	torm dum hey had 7. er in East es. anogan I	ped heavy snow across 5 inches. Eight and one Wenatchee reported 7 i Highlands - Wenatc Extreme Cold/Wine	portions of eastern half inches fell in nches. Numerous hee Area - East I Chill
	06 From 5th, Pt and Sp The ex	1200PST January 4th thr ullman reported oringdale minus streme cold rest	rough the mo 1 minus 17,T s 32. Other r ulted in nume	rning of Janu urnbull Wild eports includ erous broken	uary 6th ex life Refuge e Republic water pipes	treme colo minus 34 minus 24 s and seve	d gripped ea 4, Davenpor , Twisp min ral areas wit	stern Was t minus 25 us 21, Wi h power o	shington. On the coldest 5, Spokane minus 22, Do nthrop minus 20, and N utages.	e morning, January eer Park minus 28, espelem minus 17.

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Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) Property Crops Date (Yards) Killed Character of Storm Location Injured WASHINGTON, Northeast WAZ033>035-Washington Palouse - Moses Lake Area - Upper Columbia Basin - Okanogan Valley - Waterville Plateau 043>044 06 1600PST 0 0 0 Heavy Snow 2000PST 07 A winter storm dumped heavy snow over portions of Whitman, Grant, Douglas and Okanogan Counties during the evening of January 6th into the evening of January 7th, A spotter in Whitman County reported 8 inches of snow. Spotters in Douglas and Grant Counties reported 6 inches of new snow. 7 inches of new snow fell in the Okanogan Valley. Numerous other reports were received ranging from 4 to 5.5 inches. WAZ035>037 Upper Columbia Basin - Spokane Area - Northeast Mountains 22 1600PST Heavy Snow 23 1200PST A winter storm dumped heavy snow over Lincoln, Spokane, Stevens, and Pend Oreille Counties from the evening of January 22nd through the morning of January 23. A spotter in Newport reported 7 inches of new snow. A Loon Lake spotter reported 4.5 inches of snow while one at Rosalia reported 4 inces of new snow. WAZ041>042 Wenatchee Area - East Slopes Northern Cascades 30 0400PST 1 High Wind (G50) A 0800PST A 71 year old man was killed when high winds blew a tree down on him as he was cross country skiing near Leavenworth. The high winds also blew a tree into a house in the same area destroying the home. In Wenatchee a blown down tree caused major damage to an apartment. Several other reports of minor damage in the area were received. WASHINGTON, Northwest WAZ001>002 San Juan - Western Whatcom 0000PST 03 0 0 25K High Wind (G61) 0600PST High winds caused scattered power outages in the San Juan islands and the islands off western Whatcom county. Central Cascade Foothills - Tacoma Area - Southwest Interior WAZ004-008-011 0730PST 03 Heavy Snow 0730PST 04 5 to 12 inches of snow closed some major travel arteries, including state highways 512 and 410 for several hours. Washington State Patrol responded nearly 200 collisions in Pierce and Thurston counties, most involving cars sliding into ditches. WAZ003-005>008-Northern Cascade Foothills - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma 010>011-014>015 Area - Hood Canal/Kitsap Peninsula - Southwest Interior - Western Strait Of Juan De Fuca - North Coast 0200PST 06 0 1MHeavy Snow 1900PST It snowed over much of western Washington before turning to freezing rain in the evening. Most locations reported between 3 and 11 inches of snow, with 4 to 8 inches being most common. Although most schools were closed and a lot of people stayed home, there were still some major traffic problems on I-5 and Highway 16 in Tacoma. State patrol required chains in some areas. Many state, local and federal offices closed early. About 30 streets were closed in the city of Seattle. Out of the hundreds of accidents only about 10 of them had injuries. Broken water pipes was a common problem. **WAZ004 Central Cascade Foothills** 0930PST 0 0 High Wind (G50) 06 1400PST High winds blew over the central cascade foothills, effecting the towns of North Bend and Enumclaw. WAZ002>008-Western Whatcom - Northern Cascade Foothills - Central Cascade Foothills - Northwest Interior - Everett 010>011 And Vicinity - Seattle Metropolitan Area - Tacoma Area - Hood Canal/Kitsap Peninsula - Southwest Interior 1900PST 06 Winter Weather/Mix 07 0600PST During the evening of the 6th, most of the snowfall changed to freezing rain over western Washington. This caused most of the nearly 150,000 power outages. It also wreaked havoc with the airlines, Alaska and Horizon cancelled about 2/3 of their flights. In some places, like the Shelton area, schools were closed for a third straight day. WAZ006>008-011 Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Southwest Interior 0530PST 29 Flood 31 0400PST After 1 to 4 inches of rain fell, minor flooding occurred on the Snohomish, Tolt and Skookumchuck rivers, with moderate flooding on the Snoqualmie. A few roads were closed in the Snoqualmie valley. **WAZ009 Admiralty Inlet Area** 0400PST 30 A 10K High Wind (G52) 0900PST

High winds caused some power outages, mainly in Island county, but a few in southwest Skagit and eastern Clallam counties. A

	Storm 1	Data and	d Unus	ual W	Veatl	her Ph	enomer	a
Location	Tim Loc: Date Stan	e Path al/ Lengt dard (Miles	Path h Width s) (Yards)	Numb Pers Killed	er of ons Injured	Estimated Damage Property C	rops Character	January 2004
WASHINGTON,	Northwest							
WASHINGTON	truck was bl	own sideways agai	nst the guardrai	l of the Dece	ption Pass	bridge.		
WAZ024-026>028	East Colui	nbia River Gor	ge - Kittitas V	Valley - Yal	kima Val	ley - Lower	Columbia Basi	n
	01 010 200	0PST 0PST	0	0	0	·	Heavy Si	10W
	A powerful Oregon, as v winds in the Eastern Colu Yakima Vall Lower Colu Kittitas Vall	winter storm hit th well as southeast V Tri-Cities area also umbia River Gorge ley: Yakima 6 inch nbia Basin: 2 NE I ey: 7 miles west of	he Pacific North Washington. T o led to snow dh : 6-8 inches les, Selah 4 inch Richland 7 inch Thorp 8.5 inch	nwest on New his resulted i ifts up to 20 i les es, Kennewic es	v Years D n heavy s inches. He k 6 inches	ay. A deep s now on the n re are some of , 5 NE Prosser	urface low tracked orthwest side of th the snow totals from 4 inches	l across central and northeast ne surface low track. Breezy om this event
WAZ029	Blue Mour 01 0910 1600	1tain Foothills 0PST 0PST		0	0		Winter V	Veather/Mix
	A powerful Oregon as w in Walla W westerly wir to the wind to 55 MPH a	winter storm hit the vell as SE Washing alla and Whitman ids developed. Hig and ice. Between und visibilities betw	he Pacific North gton. A band of Mission. As th ghway patrol re 2:20 and 3:30 p veen zero and o	nwest on New f moisture m he low tracke ported that ca om, brief bliz: ne quarter of	w Years D oved north ed northea ars were be zard condi a mile.	Day. A deep so n out ahead of st of the Blue eing blown of tions were rep	urface low tracked the low and dump Mountain Foothi f the road on high ported in Waitsburg	I across central and northeast ed anywhere from 1-4 inches Ils, a sudden surge of strong vay 12 near nine mile hill due g and Dayton with wind gusts
WAZ024	East Colui 03 130 04 1002	nbia River Gor 0PST 2PST	ge	0	0		Heavy Si	10W
WAZ024>030	Eight inches East Colu	of snow was repor mbia River Go	rted in the Easte orge - East S	rn Columbia Slopes Sout	River Gor hern Ca	ge. scades - Ki	ttitas Valley -	Yakima Valley - Lower
	Columbia 04 200 05 100	Basin - Blue Mo 0PST 0PST	ountain Footl	nills - North 0	west Blu 0	ie Mountair	is Extreme	Cold/Wind Chill
WAZ024-026>028	An arctic air daily low te Ellensburg; and -6 in Ric East Colur 06 020 07 122	r mass moved sout emperatures, sever -15 Eltopia; -14 in chland. Frigid tem nbia River Gor 0PST 4PST	th out of British al of which w Yakima, and S peratures and po ge - Kittitas V	a Columbia, s ere records, elah; -12 Wal oor driving co V alley - Yal 0	etting dail observed lla Walla, onditions c cima Val 0	ly low record in degrees Fa Wapato, and I aused numero lley - Lower	low temperatures hrenheit included Dayton; -10 Bickle us school closures Columbia Basi Heavy Su	for January 5th. Some of the : -21 Whitman Mission; -16 ton; -9 Sunnyside; -8 Prosser; and cancellations. n tow
WAZ024-027>028	Heavy snow Interstate 90 conditions. Eastern Colu Yakima Vall Lower Colu Kittitas Vall East Colu	fell across much was closed from The snow and icy r umbia River Gorge ley: Sunnyside 5 in nbia Basin: 10 incl ey: Ellensburg 7 in nbia River Gor	of the Eastern North Bend to roadways contri : 8 inches iches in a 12 ho hes near Prosser iches ge - Yakima	Columbia Ri Ellensburg buted to 70 tr ur period end r, 8 inches Ri Valley - Lo	iver Gorge from 3:45 raffic accid ing at 9:55 chland wer Colu	e, as well as t AM to 5:00 lents. Snow re 5 AM	he Yakima Valley PM on January 7 eports from this ev	and Lower Columbia Basin. th due to treacherous driving ent included:
	08 160 09 080	OPST OPST	8	0	0		Winter V	Veather/Mix
WAZ025>026	A mix of sle East Slope 08 220 09 040	et and freezing rain s Southern Case OPST OPST	n occurred with cades - Kittit	ice accumula as Valley 0	tions less t	than a quarter	inch. Ice Storr	a
WAZ027	Significant i Kittitas Valle Yakima V 15 030	ice accumulations ey. Weather spotte alley OPST	occurred along ers in Ellensburg	g portions of g, Cle Elum, a 0	the east s and Golder 0	slopes of the ndale reported	southern Washing ice accumulations Dense Fo	ton Cascades, as well as the between .2550 inches. g
WAZ025	0500 Dense fog av two hours, w East Slope 24 1700	nd icy roadways le vith no serious inju s Southern Case OPST	ed to a 20 vehic ries. cades	le pile-up ou 0	tside of Se 2	elah which blo	cked westbound la Winter V	anes of interstate 82 for about Veather/Mix

		Time	Path Length	Path Width	Nun	iber of	Estin	nated		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	
WASHINGTON, Sor	itheast									
WAZ026	A blind Two pe Kittita	ling snowstorn cople were tran as Valley	n two miles w sported by ar	vest of Cle Elu nbulance to Ki	m led to a ttitas Val	a 13-vehic ley Comn	cle pileup be nunity Hosp	tween fou ital and lat	r semi-trucks and nine ter released.	passenger vehicles.
	28	0700PST 0830PST			0	0			Winter Weather/N	ſix
	A brief injuries	f period of fre	ezing rain le	d to six accid	ents on i	nterstate	90 between	Ellensbur	g and Kittitas, resultin	ng in several minor
WAZ028>029	Lower 30	r Columbia I 0215PST 0430PST	Basin - Blu	e Mountain	Foothill 0	s 0	17K		High Wind (G60)	
WA7024	A weat Bentom off from few how north of pickup	ther spotter in City recorded n the base. A mes in Waitsbu of Dayton, the was severly da	Dayton repo a wind gust 1994 Ford v urg, and also wind snappe maged when	rted a wind gu of 69 MPH. ' vas totaled wh blew out a beo d an 18-inch t a tree was blo	ast of 61 Tree dam en strong froom win hick Colu- wn onto t	MPH. Ir age in Wa winds blo ndow. Pa umbia RE he truck.	addition, a aitsburg incl ew a tree or rt of a home A power po The propert	in automat luded upro- nto the veh e run fence ole off at ty damage	ted weather station 16 boted trees, large limbs nicle. The high winds was also destroyed by the base. In Prosser, from this event is estin	miles northwest of s, and trees snapped blew shingles off a y a falling tree. Just a 1997 Dodge Ram mated at \$17,000.
WAZ024	20 East C	0218PST	ver Gorge		0	0			High Wind (G51)	
WAZ027	Yakin 30	na Valley 0230PST 0400PST			0	0	4K		Strong Wind	
	Strong winds \$4,000	winds in Gran also resulted in	ndview cause a scattered po	d a tree to top ower outages f	ple onto rom Nacł	a car. Thes to Wh	he tree had iite Swan.	no root ba The proper	all to hold it into the g ty damage from this e	ground. The strong event is estimated at
WASHINGTON, Sou	ithwest	<u>t</u>						c i		N T T T TT /
WAZ019>023- 039>040	West Colun 06	Slopes South abia River G 0600PST	hern Casca Forge - Van	ides And Pa couver Area	asses - South 0	southwe ern Cas 0	st Interio	r - Souti hills	1 Coast - Lower C Winter Storm	Columbia - West
MIA 7000	09	0900PST								
WAZU23	West 06 08	Columbia Ri 1000PST 0800PST	iver Gorge		0	0			Blizzard	
W/4/7020	A stror east wi resulted Cascad Pacific freezin to 5 in Cascad River (Route the Goo downed cost be	g winter storm inds through a d in widesprea e Mountains b low pressure s g rain througho ches at Raymo es. Accumulat Gorge resulted 14 between Wa rge and strandi d trees and pov tween \$1 and \$	a packing the nd near the d power out by January 5 system broug but the area, a ond and Long ions of up to in the closu tshougal, Wa ng hundreds wer lines, lea 61.5 million,	powerful pund Columbia Riv ages and prop th, which force th moist Pacifi and blizzard co gview, 7 inche o 2 inches of s re of Interstate shington and V of trucks at bo ving 2000 cus while the city of	ch of a fri er Gorge erly dama ded frigid ic air ove onditions es in Van leet and fe e 84 betw White Sal- th ends of tomers w of Vancou	gid arctic snarled t age in So air throu er the top in Columi couver, 8 reezing ra- veen Trou- mon, Was f the Gorg ithout po- iver estim	airmass, he travel, force uthwest Wa of this cold of this cold bia River Go inches in C ain followed ttdale, Oreg shington dur ge. Weight fi wer in Clark tates up to \$	avy snow, d the clos shington. umbia Riv l dome, pr orge. Snow Grays Rive l the snow on and He ing the sar com the sn c County. 5500,000 in	sleet and freezing rain oure of most schools a Strong high pressure er Gorge into Southw oducing the widesprea- vfall totals ranged from er, and two feet in the rfall. Blizzard condition ood River Oregon, and ne period, halting east- ow and ice buildup res Clark Public Utilities in damages.	n, along with strong ind businesses, and built up east of the 'est Washington. A id snowsleetand a 3 inches in Camas South Washington ons in the Columbia d Washington State -west travel through ulted in widespread estimated the storm
WAZ039	Vanco 23	ouver Area 1200PST			0	0			Heavy Snow	
	24 A wint	1200PST er storm broug	ht a blanket o	of snow the the	area. Ho	ckinson re	eceived one	inch		
WEST VIRGINIA, E	<u>last</u>	er storm sroug.			urou rio					
WVZ054	Pendl 08	eton 1700EST			0	0			Winter Weather/N	Лix
	09 An area inch of Virgini	1400EST a of low pressu snow or less a. The small ar	across the P nounts of sno	across Southern anhandle of E ow caused wide	n West V astern We espread tr	irginia an est Virgin affic prob	d Central V hia and one blems. Nume	irginia on to two ind erous autor	the 8th and 9th. This ches of snow across p mobile accidents were	system produced an ortions of Northern reported.
WVZ051>053	Morga 10	an - Berkeley 0100EST 1100EST	y - Jefferso	n	0	0			Extreme Cold/Wir	ıd Chill

Storm Data and Unusual Weather Phenomena Time Path Path Number of Estimated January 2004 Local/ Length Width Persons Damage Standard (Miles) Property Crops Date (Yards) Killed Character of Storm Location Injured WEST VIRGINIA, East Very cold Arctic air settled over the portions of Northern and Central Virginia. The minimum temperatures were in the lower teens and single digits with North winds averaging 10 to 15 mph. This produced wind chills on the average of 10 degrees below zero. There were dozens of cases of broken water mains and pipes due to the extremely cold temperatures. WVZ051>053 Morgan - Berkeley - Jefferson 2300EST 15 A 0 **Extreme Cold/Wind Chill** 16 1100EST A fast moving storm system brought light snow to the region on the 14th and 15th. The Eastern Panhandle of West Virginia only received one half to an inch of snowfall. There was some very cold air behind this system. Minimum temperatures across the region were in the single digits and teens. Strong northwest and west winds (15 to 20 mph with gusts to 30 mph) produced wind chills of 5 to 10 below zero on the night of the 15th and the early morning of the 16th. WVZ051>053 Morgan - Berkeley - Jefferson 17 **1800EST** Û 0 Winter Weather/Mix 18 1600EST Two areas of low pressure merged over the region to produce a mix of snow and freezing rain. Snow amounts of two to three inches were recorded over the Panhandle of Eastern West Virginia. There were also reports of ice accumulations up to two tenths inch. WVZ052 Berkeley 23 0500EST A A **Extreme Cold/Wind Chill** 1000EST An arctic front ushered more cold air into the area on the 22nd and 23rd. Minimum temperatures were in the lower to mid teens. Strong north winds of 15 to 25 mph with gusts near 30 mph helped to produce wind chills of 5 to 10 degrees below zero. WVZ048>053 Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson 1900EST 23 Δ Winter Storm 24 1200EST An area of low pressure developed over the Lower Great Lakes and brought more snow to the region on the 23rd and the 24th. The low tracked across West Virginia, Virginia and Maryland. Snowfall amounts across Eastern West Virginia averaged five to seven inches. WVZ048>055 Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy 25 1200EST 0 0 Winter Storm 1000EST 26 An area of low pressure developed off the coast of North Carolina on the 25th and 26th. This storm produced widespread snow, sleet and freezing drizzle over the region. Five to seven inches of snow fell across Eastern West Virginia . The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. Several accidents with minor injuries were reported to Emergency Operations Centers. Many school districts closed due to the inclement weather. WVZ049 Mineral 26 1530EST 0 Winter Storm 27 2230EST A weak area of low pressure moved across the region on the 26th. This low produced a second round of snow and freezing rain on the 27th. An additional five inches of snow fell in Mineral County. WVZ051>053 Morgan - Berkeley - Jefferson 0300EST 31 0 0 **Extreme Cold/Wind Chill** 1000EST Very cold arctic air combined with strong northwest winds to produce dangerous wind chills. Minimum temperatures were in the lower teens. Wind speeds averaged 20 mph. Gusts of 30 mph were observed. This produced wind chill values of five to ten degrees below zero. WEST VIRGINIA, North WVZ003 Ohio 2050EST 0 03 0 Flood 2330EST Short Creek Rd, Huffs Rd, and G C & P Rd closed by high water and mud slides. **WVZ002** Brooke 2300EST 03 Û 0 Flood 2359EST Near Bethany, 3 roads closed by flooding and mud slides. WVZ002 Brooke 04 1105EST A 0 Flood 05 2100EST Rte 67 flooded near Wellsburg. By 325 PM, numerous streams were flooded just south of Wellsburg. By 451 PM, mud slides were

Rte 67 flooded near Wellsburg. By 325 PM, numerous streams were flooded just south of Wellsburg. By 451 PM, mud slides were reported on Rte 2 between Wellsburg and Windsor Heights. Also, Rte 67 was flooded by Greens Run and Hukill Run. At 930 PM on the 4th, Hukills Rd near Bethany flooded; and Pierce Run Rd flooded near McKinleyville.

		Time Local/	Path Length	Path Width	Nur Pe	nber of rsons	Estin Dam	nated nage	January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<u>WEST VIRGINIA,</u>	North								
WVZ001	Hanc 04 05	cock 1110EST 1500EST			0	0			Flood
	In We Kings	eirton, Kings C Creek Rd.	reek Rd flood	led. At 455 P	M, Hardin	Run floo	ded at New	Cumberla	nd. At 930 PM, there were mud slides on
WVZ003	Ohio 04 05	1500EST 1500EST			0	0	60K		Flood
	It bega PM, a 930 Pl	an when Weidr bout 2 miles w M. Pierce Rd fl	nan Run floo est of West l ooded near M	ded 2 miles so Liberty, a brid IcKinlevville.	outh of Wo dge was w	est Liberty ashed awa	A. By 5 PM, and a mu	Middle C d slide mo	Creek Rd flooded near Triadelphia. By 920 oved a house along South Creek Road. At
WVZ004	Mars 05 06	shall 0112EST 1000EST			0	0	60K		Flood
N/37/2004	Turke flood	y Run, near Vi waters. Four ve	ola, flooded	Majorsville. I lamaged. Som	Early in the roads we	e morning ere still flo	g of the 5th, boded as late	Route 250 as 6 AM	0 about 5 miles of Cameron, collapsed by on the 6th.
W V Z004	Mars 05 06	5hall 1600EST 1700EST			0	0			Flood
XXV/2041	Rivers Januar Moun- the 6th	s began to rise ry 3 and 4, c. dsville rose ab h. At Wheeling	January 2 b ausing rivers ove flood sta , the Ohio Ri	ecause of sno to rise. Nur ge (37 feet) a ver crested 36	ow melt a merous sn t 4 PM on 5.4 feet, jus	nd temper nall strear the 5th; c t below th	ratures 20 d ns flooded rested 37.5 he flood stage	egrees abo first, follo ft 10 AM e of 37 fee	ove normal. Two to 3 inches of rain fell owed by the rivers: The Ohio River at on 6th; fell below flood stage at 5 PM on et.
W V Z041	1 UCK 15	er 0700EST 1000EST			0	0			Heavy Snow
WVZ004-012- 021>023-041	It start Mars	ted early on the shall - Wetze	morning of t I - Marion	he 15th. Cana • Monongal	aan Valley ia - Prest	reported 7 con - Tuc	" of snow. E ker		
	17	1800EST 2330EST			0	0			Ice Storm
WVZ023-041	Sleet a resulti Prest 24	and freezing ra ing in numerou ton - Tucker 0500EST	in began the s accidents.	afternoon of t	the 17th. A	An ice glaz	ze, at least o	ne quarter	r inch thick, was reached before midnight,
	A tota	0800EST 0800EST Il of 8 to 9 inch	es of snow f	ell from the e	vening of	the 23rd i	nto the morr	ning of the	e 24th. Initially, the snow was caused by a
WVZ022>023-041	northy over the Mone	west flow of ai: he highest eleva ongalia - Pre	r over Lake I ations in thes ston - Tuck	Erie, but a lov e counties. A er	w pressure	center de	veloped in (Dhio and 1	moved east, enough to enhance the snows
	26	0000EST 1200EST			0	0			Heavy Snow
WVZ001-023-041	Snow Kingw Hanc	began the aft wood; and 12 Te cock - Prestor	ernoon of th erra Alta. In 7 n - Tucker	e 25th and e Fucker County	nded by n y, sleet and	oon 26th I freezing	. Total accu rain occurre	mulations d after 2 A	were 6 inches in Tyrone; 7 Parsons; 8 AM on 26th.
	27 28	1400EST 0000EST			0	0			Heavy Snow
WVZ023	Snow Presto Prest	began the afte on. Con	rnoon of the	27th. Total a	ccumulatio	ons by mic	lnight were	6 inches i	in Hancock County, 6 in Tucker, and 9 in
	30	0500EST 0900EST			0	0			Heavy Snow
WEST VIDCINIA	Snow Fellov	began on the over the sector of the sector o	evening of th burg, and Ter	e 29th, and a ra Alta.	ccumulate	d 6 inche	s by 5 AM	on 30th. E	By end of storm, 7 inches was reported in
WVZ045	Groo	<u>ast</u> nhrier							
11 Y LU43	25 26	1000EST 0100EST			0	0			Heavy Snow
	A win	ter storm dum	ed 4 to 5 inc	hes of snow a	across the	county fro	m the late n	orning of	the 25th through the early morning of the

S	tori	n Data	and	Unus	ual W	Veat	her Pl	nenomena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estimate Damag Property	d S Crops Character of Storm	January 2004
WEST VIRGINIA, S	outhe	ast							
WEST VIDCINIA V	26th. 7 Vest	The highest amou	unts were re	eported across	s the souther	n and eas	tern sections c	f the county.	
WVZ005>011- 013>020-024>040-047	Wayr Calho - Mcd	ne - Cabell - M oun - Ritchie - lowell - Wyon	1ason - Ja Doddrid 1ing - Ral	ackson - W ge - Mingo eigh - Faye	ood - Pleas - Logan - tte - Nicho	ants - 7 Boone - las - Wo	Fyler - Linco - Clay - Braz ebster - Ups	oln - Putnam - Kanawl kton - Gilmer - Lewis - hur - Barbour - Rando	ha - Roane - Wirt - Harrison - Taylor Iph
	25 26	0200EST			U	U		winter Storm	
WVZ046	Pocal 25 26	nontas 1300EST 0200EST			0	0		Heavy Snow	
	Sleet Clarks accum around Elkins	started across M burg, and Elkins ulated less than Beckley, plus t vicinities.	Mingo and corridor a an inch as hrough the	McDowell fter 1500E. F far north at F Parkersburg	Counties by Further north Huntington a to Sutton re	1000E. , the pred nd Charl gion. Th	The precipicipitation start leston, and in pree inches of	tation spread north, reacted as snow, but changed to the 1 to 3 inch range for the snow and sleet accumulate	hing the Parkersburg, sleet. Snow and sleet he southern mountains d in the Clarksburg to
WICCONSIN North	The sm around mainly County above	how and sleet ch l 1500E for Hun v in the frozen f y, before being t freezing. Treach	anged to fr tington and form across opped off v nerous road	eezing rain w l Charleston, s Pocahontas vith some fre s were comm	with temperat then after da County. N ezing drizzle on, but no m	ures still irk for Pa ew snow e. As the ajor pow	in the low and arkersburg, Cla accumulation precipitation ver outages occ	d mid 20s. This transition urksburg, and Elkins. The is ranged from 4 to 9 incl ended overnight, temperatu urred.	to freezing rain began precipitation remained nes across Pocahontas ures climbed to near or
WISCONSIN, North	east Kewa	unee - Manito	woe						
W12040-050	09	0400CST	JWUC		0	0		Heavy Snow	
	Cold a develo inches	air aloft moving opment of snow at Two Rivers (1	across the showers. T Manitowoc	warmer wa The heaviest s co.).	ters of Lake snowfall tota	Michig ls were '	an caused the 7.6 inches 6 n	atmosphere to become un illes south of Kewaunee (H	nstable and led to the Kewaunee co.) and 7.5
WIZ005-010>013-	Vilas	- Oneida - F	orest - Fl	orence - N	orthern M	arinett	e - Northern	n Oconto - Door - Ke	waunee - Southern
021>022-040-075	14	0000CST 1400CST			0	0		Heavy Snow	
	A low northe Bay, 8 include	ast sections of the 3.3 inches fell ne ed 8.0 inches ne	n moved the he state. T ear Carlsvil ear Manito	trough south he highest to le and 8.0 in wish Waters	ern Wiscons tals were in ches fell nea (Vilas co.),	in and p Door cou ar Bailey 7.1 inch	broduced a sw unty where 10 vs Harbor and es at Athelsta	ath of heavy snow across 0 inches of snow fell 4 m Sturgeon Bay. Other sign ne (Marinette co.) and 7.0	the north-central and iles northeast of Sister ificant snowfall totals inches at Long Lake
WIZ022-039>040- 050-073	Door	- Brown - Key	waunee -	Manitowoc	- Souther	n Marin	nette		
	26 27	1200CST 0000CST			0	0		Winter Storm	
	Low p Northe snowfa (Door inches	ressure that move east winds off L all totals include co.) and Mariner at Green Bay (B	ved from th Lake Michi ed 10.5 inc tte (Marine Brown co.).	e Ohio Valley gan enhanced hes near Eph tte co.), 7.5 in	y into southe l the snowfa traim (Door thes at Two	ast Mich all near t co.), 9.3 Rivers (tigan brought the lake and control inches at Cas Manitowoc co	5 to 10 inches of snow to e aused blowing and driftin lsville (Door co.), 8.5 inc .), 6.7 inches at Valders (N	ast-central Wisconsin. g snow. The highest hes at Baileys Harbor fanitowoc co.) and 5.8
WISCONSIN, North	west	, (,						
WIZ001>003	Doug 13 14	las - Bayfield 2300CST 1000CST	- Ashland	l	0	0		Heavy Snow	
	Six to had 7"	eight inches of s	now fell ov	er far northw	estern Wisco	onsin ove	rnight. South I	Range had 8.5", Upson repo	orted 7.8", while Brule
WIZ001	Doug 21 22	las 2000CST 0800CST			0	0		Extreme Cold/V	Vind Chill
11/1/2004	Winds	were blowing at	t 15 to 30 n	ph while tem	peratures dij	pped to w	vell below zero	, creating wind chills of -4	0 to -50.
W1Z001	Doug 25 27	las 1000CST 2300CST			0	0		Heavy Snow	

S	tori	m Data	and	Unus	ual W	eat	her Phen	omena	
		Time	Path	Path	Numbe	r of	Estimated		January 2004
Location	Date	Local/ Standard	Length (Miles)	Width (Yards)	Perso Killed	ns Injured	Damage Property Crops	Character of Storm	, , , , , , , , , , , , , , , , , , ,
WISCONSIN, North	west								
WISCONSIN, South	Aroun east	nd 10 inches of s	now fell in S	Superior.					
WIZ046>047- 051>052-056>060- 062>068-068>072	Marc Iowa	quette - Gree - Dane - Jeffe	n Lake - I erson - Wa	Fond Du La aukesha - M	ac - Sheboy Iilwaukee -	gan - S Lafaye	Sauk - Columbia Atte - Green - Rocl	- Dodge - Washi k - Walworth - Ra	ngton - Ozaukee - acine - Kenosha
0022000-0002072	04 05	1200CST 0300CST			0	0		Winter Weather	/Mix
WIZ046\047	The fi 400 vo inch n 4 inch occurr accide delaye	rst widespread s ehicle accidents neasurement in J ees. Road surfac red near the Int ents were report ed and 10 were c	At least a d funeau (Dod ces become v rersection of ed, while in cancelled.	the winter sea dozen injuriea (ge Co.). Mil- very slippery. f Interstates (Kenosha Co	ason to affect s required me waukee (Milw Just east of 90 and 94. I unty, several	south-c dical trea vaukee C Madisor Drifts w dozens	entral and southeast atment. Generally 3 Co.) picked up 5 inch a, two multi-vehicle a erer reported to be o occurred. At Mitche	Wisconsin resulted i to 5 inches of snow t es while Madison (D accidents (44 and 17 one-foot deep. In M ell Field (Milwaukee Dodge, Wacki	n an estimated 300 to fell, with an isolated 6 ane Co.) came in with vehicles respectively) ilwaukee County, 27 Co.), 30 flights were
W12046>047- 051>052-056>060- 062>072	Marc Iowa	- Dane - Jeffe	n Lake - I erson - Wa	rond Du La nukesha - M	ac - Sheboy Iilwaukee -	gan - S Lafaye	Sauk - Columbia ette - Green - Rocl	- Dodge - Washi k - Walworth - Ra	ngton - Ozaukee - ncine - Kenosha
	16 17	1200CST 0600CST			0	0		Winter Weather	/Mix
	South slippe collide accide Wisco	-central and sou ry due to initial ed head-on with ents were noted onsin and 2 to 4 i	theast Wisc ice glazings a semi-trac elsewhere. inches from	onsin were a s of 1/16 to 1 tor trailer. T Snow accu Lafayette and	ffected by a f /8 inch. Wes 'he driver of t mulations at I Iowa Counti	reezing t of For he car v the end es north	rain event that switc t Atkinson (Jeffersor vas killed instantly (of this event range east to Sheboygan Co	hed to snow. Road a Co.), a car slid acro indirect death). Seve ed from 1/2 to 2 in- pounty.	surfaces became very oss the center line and eral dozens of vehicle ches across southeast
WIZ059-065>066	Wash 26 27	hington - Wau 1200CST 1200CST	ıkesha - M	lilwaukee	0	0		Heavy Snow	
	A lon period vehicl old str by 9.3 (Milw	g-duration, heav ls, with the firs e accidents were udent on the wa b inches at a loc vaukee Co.). Els	y snow ever t period con e noted in ne y to school ation 4 mile ewhere acro	ent affected t nsisting of "s ewspapers. Ir (indirect deat es south of the oss south-cent	hree counties ystem snow" h Jefferson Co h). In Germa e city of Wau ral and southe	in south and the ounty, ne intown (kesha (V ast Wise	heast Wisconsin. M second period com- car Lake Mills, a roll- Washington Co.), 9. Waukesha Co.), and consin, generally 2 to	tost of the snow occ sisting of "lake-effec- over accident claime 9 inches of snow wa 8.9 inches on the UV 9 5 inches of snow wa	urred in two separate ct" snow. Dozens of d the life of a 14-year as measured, followed V-Milwaukee campus as reported.
WISCONSIN, South	west			~					
W1Z032>033-041	Buffa 26 27	alo - Trempea 0500CST 0600CST	leau - La (Crosse	0	0		Winter Storm	
	Parts includ Weath	of southwest W led 7 inches at her Service (La G	isconsin we Waumandee Crosse Coun	re hit by a w e (Buffalo Co ty).	inter storm th ounty) and Ar	at produ cadia (T	uced snow accumula 'rempealeau County)	tions of 6 to 7 inches and 6.5 inches at th	es. Snowfall amounts he La Crosse National
WISCONSIN, West	S4 0	· D'	D D						
W1Z023>028	26 27	0000CST 2359CST	Dunn - P	epin - Chip	pewa - Eau 0	0		Winter Storm	
	Low p moder Claire In add	pressure that for rate snow across to 4 inches nea lition to the snow	med over the smuch of w much of w Balsam La vfall, wind g	ne Southern C vest central V uke. Specific gusts to 25 mp	Great Plains n Visconsin on totals include oh led to reduc	noved ac the 26th d Hudso ced visib	cross central Wiscon . Snowfall totals ra on and Chippewa Fal ilities with blowing s	sin early on the 26th nged from 8 inches lls at 6 inches and M snow.	a. This storm dropped near Durand and Eau enomonie at 5 inches.

		Time Local/	Path Length	Path Width	Nun Per	ber of sons	Estima Dama	ited ige		January 2004
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	

WYOMING, Central and West

WYZ001>002-012>015-023>025-027

Yellowstone National Park - Absaroka Mountains - Teton & Gros Ventre Mountains - Jackson Hole - Wind River Mountains West - Wind River Mountains East - Star Valley - Salt River & Wyoming Ranges - Upper Green River Basin Foothills - South Lincoln County

0000MST 01 0 **Heavy Snow** 0400MST 02



Photograph taken on January 2, 2004 in Alpine, Wyoming after 5 feet of new snow fell in a little over a week. Picture courtesy of Paul Skrbac.

Three vigorous weather systems slammed into the western mountains and valleys of Wyoming dropping significant snowfall as 2003 came to a close. Holiday travel was significantly impacted as snow began with the first storm on Christmas Night. The final storm pushed out of western Wyoming on 1/1/04. Total snowfall accumulation during this eight day stretch approached 4 to 5 feet in the western mountains and northern Star Valley. Two to three feet of new snow was recorded in the rest of the western valleys during this time frame. Several roads were closed across western and central Wyoming including Highway 28 at South Pass and Highway 22 at Teton Pass. The beginning of this event is provided in the December 2003 Storm Data publication.

WYZ019	Green Mountains & Rattlesnake R 06 1430MST	ange 0	0	High Wind (G54)
WYZ028>029	Rock Springs & Green River - Flan 10 2200MST 11 0900MST	ming Gorge 0	0	Dense Fog
WYZ019	Visibilities frequently dropped to one-quarter Transportation and ASOS.	arter of a mile or	less at times du	uring this period as reported by Wyoming Department of
	27 0630MST	0	0	High Wind (G60)

0630MST	0	0	High Wind (G60)
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Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estima Dama Property	nted age Crops	Character of Storm	January 2004
				. ,		5				
<u>WYZ019</u>	Green	<u>vest</u> 1 Mountains & 0945MST	Rattlesn	ake Range	0	0			High Wind (G52)	
WYOMING, Extrem	e Sout	hwest							0	
WYOMING, North C	NONE Central NONE	REPORTED. L								
WYZ054>055	North 01 02	ern Campbell 2100MST 0200MST	- South C	ampbell	0	0	0	0	High Wind (G51)	
WYZ054	Strong gusts to North 25	southwest winds o around 60 mph, ern Campbell 0400MST 1500MST	developed were obser	across North ved across m	east Wyor uch of the 0	ming durin area. 0	ng the overn 0	ight hour: 0	s. Sustained winds of a Heavy Snow	30 to 45 mph, with
WYOMINC Southoo	A stor Wyom County	m system moved ing. Snowfall amo	across the ounts were	e Northern Regenerally 2 to	ockies and o 4 inches	l into the across the	Northern P area, with le	lains, bri ocal amou	nging heavy snow to unts of 6 inches across	parts of Northeast northern Campbell

WYOMING, Southeast

NONE REPORTED.

S	Storm Data and Unusual Weather Phenomena												
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	per of ons Injured	Estim Dam Property	nated nage Crops	April 2003 Character of Storm				
			Add	ditions	s/Corr	ectio	<u>ons</u>						
TEXAS, North													
Young County Padgett	05	1710CST			0	0			Hail (2.75)				
Stephens County 1 N Crystal Falls	05	1729CST			0	0			Hail (1.75)				
Young County Eliasville	05	1732CST 1737CST			0	0			Hail (1.00)				
Young County Graham	05	1743CST 1747CST			0	0			Hail (4.00)				
Palo Pinto County 6 W Graford	05	1808CST 1814CST			0	0			Hail (4.00)				
Palo Pinto County	Golft	oall to softball si	ze hail occur	red for 6 min	nutes.								
Possum Kingdom Lake	05	1808CST			0	0			Hail (1.75)				
Palo Pinto County 5 N Graford	05	1818CST			0	0			Hail (2.75)				
Palo Pinto County 5 N Graford	05	1818CST			0	0			Thunderstorm Wind (G69)				
Palo Pinto County													
12 W Graford	05 Brief	1820CST 1822CST tornado touchde	0.3 own reported	100 l on the east	0 side of Possu	0 1m Kingd	250K lom Lake.	25 mobile	Tornado (F1) homes were damaged or destroyed at Sky				
Voung County	Camp	p, Lefty's, and P.	. K. Lodge.	No people w	ere injured.	C							
3 N Eliasville	05	1840CST			0	0			Hail (2.75)				
Parker County 5 E Peaster	05	1906CST			0	0			Hail (1.75)				
Jack County 4 S Bryson	05	1917CST			0	0			Hail (0.88)				
Parker County Springtown	05	1918CST 1923CST			0	0			Hail (1.75)				
Tarrant County Saginaw	05	1933CST			0	0			Hail (1.75)				
Tarrant County Saginaw	05	1940CST			0	0			Hail (2.75)				
Tarrant County Saginaw	05	1940CST			0	0			Thunderstorm Wind (G69)				
Tarrant County 2 E Eagle Mtn Lake	05	1943CST			0	0			Hail (1.75)				

Storm Data and Unusual Weather Phenomena											
		Time Local/	Path Length	Path Width	Num Per	ber of sons	Estim Dam	ated	April 200)3	
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm	_	
			<u>Add</u>	litions	s/Corr	ectio	<u>ons</u>				
<u>TEXAS, North</u> Tarrant County Keller	05	2005CST			0	0			Hail (3.00)		
Tarrant County North Richland Hills	05	2005CST 2007CST	0.5	100	0	0	20K	2K	Tornado (F0)		
Townout Country	A sm	all short lived to	rnado did mi	nor roof dan	nage and bro	oke numer	rous tree bra	nches.			
Ft Worth	05	2012CST			0	0			Thunderstorm Wind (G60)		
Dellas Courter	Occu	urred at the interse	ection of Loc	op 820 and N	/lark IV Parl	cway.					
Dallas-Ft Worth Intl	05	2015CST 2020CST			0	0	750K		Hail (1.75)		
Tarrant County	Weat	ther observer repo	orted golf ba	ll size hail.	59 aircraft v	were dama	aged and 12	1 flights w	ere cancelled due to severe weather.		
2 SW Grapevine	05	2015CST			0	0			Hail (2.00)		
Tarrant County 2 E Euless to 2.5 E Euless	05	2019CST 2021CST	0.5	100	0	0	1K		Tornado (F0)		
	A sm	all short lived to	rnado moved	l east across	the south en	d of DFW	V Airport pro	operty.			
Dallas Dallas	05	2020CST			0	0			Hail (2.75)		
	Occu	rred at Interstate	635 and Nor	rth McArthu	r in North D	allas.					
1 W Irving to 8 W Irving	05	2021CST 2022CST	0.2	100	0	0	1K		Tornado (F0)		
Dollag County	This	is a continuation	of the tornad	to path acros	ss the south	end of the	DFW Airpo	ort propert	у.		
Irving	05	2027CST			0	0			Hail (1.75)		
Parker County Briar	05	2052CST			0	0			Hail (2.25)		
Wise County Newark	05	2103CST			0	0			Hail (1.50)		
Dallas County Dallas	05	2117CST			0	0			Hail (1.75)		
	Occu	rred at Interstate	635 and Nor	rth McArthu	r in North D	allas.					
Dallas County Irving	05	2120CST			0	0			Hail (1.75)		
	Occu	rred at Valley Ra	anch in far no	orth central I	rving.						
Denton County 2 N Roanoke	05	2123CST			0	0			Hail (1.75)		
	Occu	rred at Interstate	35 and High	way 114.							
Dallas County Dallas	05	2126CST			0	0			Hail (1.50)		

Valley View Mall in North Dallas had heavy ping pong ball size hail.

Storm Data and Unusual Weather Phenomena												
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estim Dam Property	ated age Crops	Character of Storm	April 2003		
			Ad	dition	s/Corr	ectio	<u>ons</u>					
<u>TEXAS, North</u> Rockwall County Rockwall	05	2130CST			0	0			Hail (4.50)			
Denton County Roanoke	05	2131CST			0	0			Hail (0.88)			
Denton County 1 W Lewisville	05	2145CST			0	0			Hail (1.00)			
Denton County 2 E Argyle	05	2146CST			0	0			Hail (1.00)			
Dallas County Sachse	05	2150CST			0	0			Hail (1.25)			
Denton County 3 SW Lewisville	05	2150CST			0	0			Hail (1.00)			
Hunt County Greenville	05	2150CST			0	0			Hail (1.00)			
Hunt County Caddo Mills	05	2151CST			0	0			Hail (1.00)			
Rockwall County Rockwall	05	2205CST			0	0			Hail (1.00)			
Montague County 2 N Bowie	05	2214CST			0	0			Hail (1.75)			
Collin County Plano	05	2216CST			0	0			Hail (2.00)			
Montague County	Occur	rred in western	part of Planc	o at Spring C	reek and Tol	lway.						
Stoneburg	05	2223CST			0	0			Hail (1.75)			
Cooke County Lindsay	05	2230CST			0	0			Hail (2.50)			
Collin County Plano	05	2232CST			0	0			Hail (3.00)			
Hunt County Caddo Mills	05	2235CST			0	0			Hail (1.00)			
Hopkins County Cumby	05	2250CST			0	0			Hail (1.75)			
Hunt County 1 S Greenville	05	2313CST			0	0			Hail (2.00)			
Cooke County Gainesville	05	2321CST			0	0	4 M		Hail (2.50)			

Large hail damaged approximately 1,000 cars and about the same number of homes.

	Stor	m Data	and	Unus	ual V	Veat	her P	hen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	oer of sons Injured	Estimate Damag Property	ed e Crops	Character of Storm	April 2003
			Ad	ditions	/Corr	ectio	<u>ons</u>			
<u>TEXAS, North</u> Cooke County Gainesville	05	2321CST			0	0			Thunderstorm Wind	(G52)
Hunt County Caddo Mills	05	2322CST			0	0			Hail (1.75)	
Hopkins County Sulphur Spgs	05	2340CST			0	0			Hail (2.00)	
Hunt County Cash	05	2341CST			0	0			Hail (1.75)	
Hopkins County 3 S Sulphur Spgs	05	2345CST			0	3			Hail (2.75)	
	Three	persons injured	by baseball	size hail.						
Grayson County Whitesboro	05	2355CST			0	0	250K		Hail (2.75)	
Grayson County 1 SW Sherman	06	0030CST			0	0	10M		Hail (2.75)	
	Hail u	p to baseball siz	ze did exten	sive damage	in Sherman	to cars an	nd houses. Th	nis is the	e same storm that hit the	Whitesboro area
Hopkins County Sulphur Spgs	06	0035CST			0	0			Hail (1.00)	
Hopkins County Sulphur Spgs	06	0035CST			0	0	5K		Thunderstorm Wind	(G60)
	Trees	and utility lines	were blowr	ı down by hig	h winds.					
Fannin County Ector	06	0112CST			0	0			Hail (1.75)	
Fannin County Savoy	06	0112CST			0	0			Hail (1.75)	
Fannin County 4 N Bonham	06	0135CST			0	0			Hail (1.75)	
Lamar County Paris	06	0222CST			0	0			Hail (1.00)	

Dime to quarter size hail covering the ground.

On April 5th, a lone supercell thunderstorm developed around 300 pm southeast of Claremont, in Kent County. This storm quickly became severe, and by 500 pm had moved eastward into western Young County in North Central Texas. This storm produced large hail, straight line damaging winds, and at least four weak tornadoes across North Central Texas from 510 pm cdt until 1050 pm cdt. This storm quickly dissipated after the last severe weather report at 1050 pm. The damage path across North Texas extended from Padgett, in western Young County, to west of Sulphur Springs in Hopkins County, a distance of approximately 192 miles. This was one of the costliest storms on record to hit North Texas, with damage estimates approximately 885 million dollars.

	Stor	m Data	and	Unus	ual V	Veat	her Phe	enomena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	ber of sons Injured	Estimated Damage Property Crop	May 2	2003
			Add	ditions	s/Corr	ectio	ons		
<u>TEXAS, North</u> Eastland County									
8 NW Cisco to	15	2100CST	2.4	300	0	0	5K	Tornado (F0)	
10 NNW CISCO	The to Stepho throug	ornado moved 1 ens County bef gh.	mostly throu fore lifting 3	gh open cou miles south	ntry damagi east of Eolia	ng fences an. This	and tearing shee was reported by a	t metal off a barn, then moved into sou a rancher, whose property the tornado p	thern
Stephens County 10.6 S Eolian to	15	2105CST	9.6	300	0	0	5K	Tornado (F0)	
3 SE Eolian	The te	2130CST	huomah anan	aanneen dan	anaina fanaa	a and trac	a hofore lifting 2	miles contheast of Falian. This was not	outod
	by a ra	ancher, whose [property the	tornado pass	sed through.	s and tree	s before mulig 5	nines southeast of Eonan. This was rep	oneu
6 S La Casa	15	2140CST			0	0		Hail (1.00)	
Eastland County									
1 NW Ranger	15	2213CST	0.1	50	0	0		Tornado (F0)	
	A brie	ef tornado was o	bserved by a	a trained spot	tter.				
Palo Pinto County	15	2248CST		Ĩ	0	0		Hoil (1.50)	
2 N Gordon	15	22480.51			U	U		Hall (1.50)	
Hood County 5 S Granbury	16	0200CST			0	0	100K	Lightning	
	Lightr tempo power	ning hit an On orarily shut dow r was restored.	cor transmis n. 300,000	to 400,000	etween Som customers a	ervell Co cross Tex	unty and Parker as were without o	County, causing at least 4 power plan electricity from 15 minutes to 2 hours b	its to refore
5 E Bowie	16	0200CST			0	0		Thunderstorm Wind (G52)	
	A tree	was blown ont	o a road by t	hunderstorm	winds				
Tarrant County	11 uoc		o u toud by t	nunderstörm	winds.				
Ft Worth	16	0300CST			0	0	90K	Lightning	
Navarro County	A ligh	ntning started fir	e in northeas	st Ft Worth s	everely dam	aged a ho	use and it's conter	its.	
3 SE Corsicana	16	1555CST			0	0		Hail (1.75)	
Navarro County 3 SE Corsicana	16	1610CST			0	0		Hail (1.75)	
	Golfb	all size hail was	reported at	Mildred.					
Navarro County 4 S Corsicana	16	1612CST			0	0		Hail (0.88)	
	Nicke	l cize hail was r	enorted at A	ngus					
Van Zandt County	Nieke		eponed at A	ligus.					
6 E Canton	16	1619CST			0	0		Hail (1.75)	
Navarro County	Golfb	all size hail cov	ered the grou	und.					
Eureka	16	1621CST			0	0		Hail (2.75)	
Van Zandt County Van	16	1635CST			0	0		Hail (0.88)	

S	tori	orm Data and Unusual Weather Phenomena										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	er of ons Injured	Estim Dam Property	ated age Crops	Character of Storm	May 2003		
			Ado	ditions	c/Corr	ectio	<u>ons</u>					
TEXAS, North												
6 S Athens	16	1706CST			0	0			Hail (1.75)			
Navarro County 5 E Eureka	16	1707CST			0	0			Hail (1.75)			
Henderson County Chandler	16	1720CST			0	0			Hail (0.75)			
Anderson County Cayuga	16	1724CST			0	0			Hail (1.75)			
Freestone County 2 N Fairfield	16	1817CST			0	0			Hail (1.75)			
Anderson County Neches	16	1820CST			0	0			Hail (0.88)			
Anderson County Tucker	16	1905CST			0	0			Hail (0.88)			
Limestone County New Hope	16	1920CST			0	0			Hail (1.75)			
Leon County	Occur	rred on the east	side of Lake	Limestone.								
Centerville	16	2000CST			0	0			Hail (1.75)			
Robertson County 2 E Franklin	16	2030CST 2033CST			0	0			Hail (2.75)			
Milam County	Golfb	all to baseball s	size hail was	reported.								
4 SE Milano	16	2125CST			0	0			Hail (0.75)			
Jack County 12.2 NNW Jacksboro to Jacksboro	16	2200CST			0	0			Thunderstorm Wind	l (G53)		

The 61 mph wind gust occurred at Bear Mountain just west of Highway 148.

	Stor	m Data	and	Unus	ual V	Veat	her H	Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	iber of rsons Injured	Estim Dam Property	aated age Crops	June Character of Storm	2003
			Ade	ditions	s/Corr	ectio	<u>ons</u>			
<u>NEW MEXICO, C</u> Colfax County	entral an	<u>d North</u>								
24 SE Raton	04	1229MST	0.5	100	0	0			Tornado (F0)	
	A we of Ca	ak tornado was pulin.	observed by	storm chase	rs over the c	open range	eland of east	central C	olfax County or about 15 miles sou	ıthwest
OKLAHOMA, Par	nhandle									
OKZ003	Beav	er								
	28 29	2320CST 2330CST			0	0	5K		Strong Wind	

A strong thunderstorm over Beaver county about eight miles west and one and a half miles south of Slapout Oklahoma knocked out electricity and tree branches were blown off. Also...four big power line poles were blown down. The Oklahoma Mesonet site at Slapout Oklahoma was only about one quarter of a mile from this location and only registered thirty-seven knots at the time of the high winds.

St	orn	n Data	and l	U nus u	al W	'eatl	her Phen	omena	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numbe Perso Killed I	r of ns injured	Estimated Damage Property Crops	Character of Storm	October 2003
			<u>Add</u>	itions/	Corre	ectio	<u>ns</u>		
ATLANTIC OCEAN Fire Island Inlet Ny To Sandy Hook Nj Out 20Nm Sandy Hook Bay	15	0136EST 0200EST			0	0		Marine Tstm Wind	
Montauk Point Ny To Sandy Hook Nj 20 To 40Nm									
Sandy Hook Bay	15	0136EST 0200EST			0	0		Marine Tstm Wind	
Long Island Sound E Of New Haven Ct To Port Jefferson Ny 2 E New London Harbo	As a l: Buoy a 29	ine of showers a at Sandy Hook at 0842EST	nd thunders 2:36 am and	torms moved 1 at 3:00 am.	east, peak	wind gus 0	sts to 41 knots was a	measured by the Nation Marine Tstm Wind	nal Ocean Service
Moriches Inlet To Fire Island Inlet Ny Out 20Nm	A seve Observ	ere thunderstorm ving System at G	produced a roton-New I	34 knot wind London Airpor	gust, whic t.	h was me	easured by the Nation	nal Weather Service's A	Automated Surface
6 NW Moriches Inlet	29	0846EST 0915EST			0	0		Marine Tstm Wind	
Montauk Point To Moriches Inlet Ny Out 20Nu	A seve Observ	ere thunderstorm ving System at Sh	produced a nirley-Brook	34 knot wind haven Airpor	gust, whic	h was me	easured by the Nation	nal Weather Service's A	Automated Surface
23 SW Montauk Point	29	0900EST			0	0		Marine Tstm Wind	
Long Island Sound E Of New Haven Ct To Port Jefferson Ny	A seve	ere thunderstorm	produced a 3	34 knot wind ;	gust, which	was mea	sured by the Nationa	l Data Buoy Center Buo	oy 44017.
2 E New London Harbo	29	0955EST			0	0		Marine Tstm Wind	

A severe thunderstorm produced a 36 knot wind gust, which was measured by the National Weather Service's Automated Surface Observing System at Groton-New London Airport.

Storm Data and Unusual Weather Phenomena												
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Num Per Killed	iber of sons Injured	Estimate Damag Property	ed ge Crops	Character of Storm	November 2003		
			Ado	ditions	s/Cori	ectio	ons					
<u>MICHIGAN, Upper</u> MIZ001>005-009-084	Kew 12 13	eenaw - Onto 1800EST 0527EST	onagon - No	orthern Ho	ughton - F 0	3araga - 0	Marquette ·	- Gogel	pic - Southern Ho Winter Storm	oughton		
MIZ006>007-085	Alge 13	r - Luce - No 0000EST 0527EST	rthern Sch	oolcraft	0	0			Blizzard			
	A rap centra areas Coun Marq	bidly deepening al Upper Michi of blowing an ties with freque uette counties a	storm move gan and becar d drifting sn ent periods or and some road	ed across nor me heavy at ow. Blizzard f zero visibil ds were block	thern Wisco times. North conditions ity. School ked in Houg	onsin east west wind occurred s and a fe ghton and	ward into sout ds behind the s near Lake St w businesses Keweenaw co	theast Ca storm in uperior i were cl ounties.T	anada. Snow develo creased to as high a n Alger, Luce and osed in Gogebic, On he snow was wet an	ped over western and s 40 mph, resulting in Northern Schoolcraft ntonagon, Baraga and d heavy, breaking off		

tree branches and downing power and telephone lines and hampering plowing and cleanup efforts. Roads were slick and hazardous, restricting travel across the area.

Storm Data and Unusual Weather Phenomena									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Numb Pers Killed	oer of ons Injured	Estimated Damage Property Crops	Character of Storm	December 2003
			Ad	ditions	s/Corr	ectio	ons		
FLORIDA West Cont	tral								
FLZ039	Levv								
	07	0400EST 0700EST			0	0		Frost/Freeze	
Loo Countr	Light	winds and clea	r skies allow	ed temperatu	res to drop to	30 degr	ees near Bronson.		
Cape Coral	16	1730EST			0	0	20K	Thunderstorm V	Wind (G50)
	Thunderstorms along a strong cold front produced damaging winds that knocked down several trees and power lines at the intersection of Nicholas Parkway and 4th Avenue Southeast.								
FLZ039-042-048	Levy 18	- Citrus - He 0400EST 0700EST	ernando		0	0		Frost/Freeze	
	A cold 30 in 1	d front passed t Inverness.	through the a	rea a day ear	lier allowing	overnigl	ht temperatures to dre	op to 30 in Bronson,	28 in Brooksville, and
FLZ039-042>043-048- 051>052	Levy - Citrus - Sumter - Hernando - Hillsborough - Polk								
	21	0100EST 0800EST			0	0		Frost/Freeze	
MICHICAN University	Clear low te degree	skies and light emperatures in es in Brooksvil	winds behin the low to m le, 22 in Chio	d a cold front id 20s were f efland, 25 in 1	t lead to the f ound in Levy Inverness, an	ïrst hard 7, Citrus, d around	freeze of the season Hernando, and Sum 30 degrees along the	for parts of west cent ter counties. Low ten e Hillsborough/Polk c	ral Florida. Overnight peratures included 20 ounty line.
MICHIGAN, Upper MIZ001>007-009- 013>014-085	Kewe	enaw - Ont	onagon -	Northern 1	Houghton	- Bara	ga - Marquette -	Alger - Luce -	Gogebic - Delta -
015/014-005	10 12	1200EST 2249EST	1 alt - 1101 t	nern Schoo		0		Heavy Snow	
	A low over U the co Kewe Count inches	y pressure syste Upper Michiga ombination of enaw County a sy, 17 inches at s at McMillan i	em that deve n on the 9th, system and and 22 inche Ironwood, 1 n Luce Coun	loped in the and then cha lake effect s at the Man 5 inches at B ty and at Ger	plains, move anged to a he snows depos rquette Natio Bruce Crossir mfask in Sch	d northe eavy wet ited as a onal Wea on Ont oolcraft	ast through the centri snow on 10th. By the much as 23 inches ather Service office. onagon County, 12 I County	al Great Lakes. Rain the time the storm mo at Phoenix and 22 Nineteen inches fell nches at Wetmore in	a and snow developed ved away on the 12th, nches at Mohawk in at Watton in Baraga Alger County, and 11
MICHIGAN, West	A 11	V. D							
W11Z004-071	Alleg 19 20	an - van Bu 0300EST 0100EST	ren		0	0		Heavy Snow	
MIZACA	A nart to twe though heavie	row dominant a slve inches of s h the event las est snowfall rep	lake effect sr snow fell in a sted for twe port was rece	now band dev a band from H hty two hour ived from Pav	veloped over Holland to Pa s, from the o w Paw (Van	the west w Paw. early mo Buren co	ern half of Allegan c Most of the snow fe rning hours of the 1 punty), where twelve	ounty and most of V Il between 6 a.m. an 9th until around 1 a inches of snow was r	an Buren county. Six d 10 p.m. on the 19th, 1.m. on the 20th. The eported.
W112/U04	Alleg	an 1300EST			0	0		Heavy Snow	
	25	0700EST					C 11		11
	This was a combination low pressure system and lake enhanced snowfall event. Up to six inches of snow fell in a narrow area of Allegan county west of US-31.								

Reference Notes:

Storm Data Disclosure

Storm Data is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event.

Some of the information appearing in <u>Storm Data</u> may have been provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies, private companies, individuals, etc. An effort is made to use the best available information, but because of time and resource constraints, information from these sources may be unverified by the NWS. Therefore, when using information from <u>Storm Data</u>, customers should be cautious as the NWS does not guarantee the accuracy or validity of the information. Further, when it is apparent information appearing in <u>Storm Data</u> originated from a source outside the National Weather Service (frequently credit is provided), <u>Storm Data</u> customers requiring additional information should contact that source directly. In most cases, NWS employees will not have the knowledge to respond to such requests. In cases of legal proceedings, under Department of Commerce regulations and/or rules of the court, NWS employees are not legally obligated to provide written or verbal testimony.

Fatality Codes: For events that include a fatality, there is a code containing the gender, age and fatality location at the end of the event narrative.

Mobile Home

Outside/Open Areas Permanent Home

Other

School Telephone Under Tree Vehicle

1st letter: Gender $(M/F) - 2^{nd}$ numbers: Age $- 3^{rd}$ letters Fatality location (see table below) Example: M51IW – Male, 51 years of age, fatality occurred In Water.

Fatality Location Abbreviations:

BF	Ball Field	MH
BO	Boating	OT
BU	Business	OU
CA	Camping	PH
EQ	Heavy Equipment/Construction	SC
GF	Golfing	TE
IW	In Water	UT
LS	Long Span Roof	VE

List of Acronyms:

NWS	- National Weather Service					
NOAA	- National Oceanic and Atmospheric Administration					
WCM	- Warning Coordination Meteorologist – The meteorologist at each NWS Office					
	responsible for reporting	severe weather events				
LST	- Local Standard Time	Storm Data attempts to always use "Standard Time"				
EST	- Eastern Standard Time					
EDT	- Eastern Davlight Time					

CST	- Central Standard Time
CDT	- Central Daylight Time
PST	- Pacific Standard Time
PDT	- Pacific Daylight Time

Other Notes:

An "Episode" is an entire storm system and can contain many different types of events.

An "Event" is an individual type of storm event.

When listing wind speed values under "Character of Storm", ex. High Wind (G81), the G indicates a "Gust" which is a peak 5-second averaged wind speed in Knots (kts). 1 kt. = 1.152 mph. This number can be either E (estimated) by damage caused, or M (measured) by known calibrated anemometers. Ex. (M61) = measured 61 knots or E(75) = estimated at 75 knots.

All wind speeds listed are estimated by NWS personnel by the amount and type of damage unless otherwise noted with an "M" which represents an actual wind speed as measured by official NWS approved anemometer.

When listing hail size under "Character of Storm", ex. Hail (2.25), the hail size is given in inches and hundredths of inches.

When listing property and crop damage, the figures indicated are the best guess made by the NWS from the available sources of information at the time of the printing.

The fatalities, injuries, and damage amounts appearing in tropical cyclone events are attributed only to wind damage experienced in the coastal counties/parishes listed. Other tropical cyclone related events such as tornadoes and flooding are listed within their separate event types.

The Saffir-Simpson Scale

Category One Hurricane:

Winds 74-95 mph (64-82 kt or 119-153 kph). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

Category Two Hurricane:

Winds 96-110 mph (83-95 kt or 154-177 kph). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

Category Three Hurricane:

Winds 111-130 mph (96-113 kt or 178-209 kph). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large tress blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

Category Four Hurricane:

Winds 131-155 mph (114-135 kt or 210-249 kph). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).

Category Five Hurricane:

Winds greater than 155 mph (135 kt or 249 kph). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

The Fujita Scale

F-Scale	Intensity	Wind Speed (mph)	Typical Damage (Suggested)
F0	Gale Tornado	40 - 72	Tree branches broken, chimneys damaged, shallow-rooted trees pushed over; sign boards damaged or destroyed, outbuildings and sheds destroyed
F1	Moderate	73 - 112	Roof surfaces peeled off, mobile homes pushed off foundations or overturned, moving autos pushed off the roads, garages may be destroyed.
			Category 1-2 hurricane wind speed
F2	Significant	113 - 157	Roofs blown off frame houses; mobile homes rolled and/or destroyed, train boxcars pushed over; large trees snapped or uprooted; airborn debris can cause damage.
			Category 3-4 hurricane wind speed
F3	Severe	158 - 206	Roofs and walls torn off well constructed houses; trains overturned; large trees uprooted, can knock down entire forest of trees.
			Category 5 hurricane wind speed
F4	Devastating	207 - 260	Well-constructed frame houses leveled; structures with weak foundations blown off some distance; automobiles thrown, large airborn objects can cause significant damage.
F5	Incredible	261 - 318	Brick, stone and cinderblock buildings destroyed, most debris is carried away by tornadic winds, large and heavy objects can be hurled in excess of 100 meters, trees debarked, asphalt peeled off of roads, steel reinforced concrete structures badly damaged.
F6	Inconceivable	319 - 379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the damage produced by F4 and F5 wind speeds that would surround the F6 winds.



Typical F0 Tornado Damage Note the trees are stripped of leaves, but the trees remain standing. Only light roof damage and a few missing shingles.



Typical F1 Tornado Damage Note the uprooted trees and missing shingles from the roof. There is significant roof damage.



Typical F2 Tornado Damage

This home is missing it's entire roof but the exterior walls remain intact. Some of the stronger hardwood trees remain standing.



Typical F4 Tornado Damage This home is almost completely obliterated, with no walls standing. The debris from the home is where the house once stood.



Typical F5 Tornado Damage The asphalt surface has been peeled off of this road.



Typical F3 Tornado Damage This home is missing the entire roof as well as some of the exterior walls. Trees are blown over or snapped near the base and outbuildings are destroyed.



Typical F5 Tornado Damage These homes have been completely removed from their original locations. The debris field has been scattered some distance from their foundation.

(All photographs courtesy of Brian Smith, Meteorologist, National Weather Service, Valley NE.) **COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS**



COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS



MODERNIZED COUNTY WARNING AREAS



These and other publications are available from the National Climatic Data Center

Hourly Precipitation Data

This publication contains hourly precipitation amounts obtained from recording rain gages located at National Weather Service, Federal Aviation Administration, and cooperative observer stations. Published data are displayed in inches and tenths or inches and hundredths at local standard time. **HPD** includes maximum precipitation for nine (9) time periods from 15 minutes to 24 hours, for selected stations.

Climatological Data

Monthly editions contain station daily maximum and minimum temperatures and precipitation. Some stations provide daily snowfall, snow depth, evaporation, and soil temperature data. Each edition also contains monthly summaries for heating and cooling degree days (65 degree F base). The July issue contains a recap of monthly heating degree days and snow data for the preceding July though June.

The Annual issue contains monthly and annual averages of temperature, precipitation, temperature extremes, freeze data, soil temperatures, evaporation, and a recap of monthly cooling degree days.

Storm Data

Monthly issues contain a chronological listing, by states, of occurrences of storms and unusual weather phenomena. Reports contain information on storm paths, deaths, injuries, and property damage. An "Outstanding storms of the month" section highlights severe weather events with photographs, illustrations, and narratives. The December issue includes annual tornado, lightning, flash flood, and tropical cyclone summaries.

Monthly Climatic Data for the World

This publication contains monthly means for temperature, pressure, precipitation, vapor pressure, and sunshine for approximately 2,000 surface data collection stations worldwide and monthly mean upper air temperatures, dew point depressions, and wind velocities for approximately 500 observing sites.

Local Climatological Data

LCD publications summarize temperature, relative humidity, precipitation, cloudiness, wind speed and direction observations for severalhundred cities in the U.S. and its territories. Each monthly publication also containes the 3 hourly weather observations for that month and an hourly summary of precipitation. Annual **LCD** publications contain a summary of the past calendar year as well as historical averages and extremes.

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