

## **WINTER STORM SUMMARY FOR**

### **FEBRUARY 03, 2009 TO FEBRUARY 4, 2009 EVENT**

#### **Synopsis**

A coastal storm developed along a stalled front south of the region on February 2nd, then stayed well offshore as it tracked off towards the northeast on the 3rd. As the coastal storm pulled farther away from the Mid-Atlantic region, an upper level trough over the Ohio Valley pushed eastward. The upper trough moved east and had several shortwaves rotating around the bottom of the 02032009wss trough, each crossing our region through the afternoon and evening hours of the 3rd. The upper trough continued moving eastward and eventually out to sea by the afternoon of the 4th.

#### **Watches/Warnings/Advisories**

A Winter Weather Advisory was issued at 2:53 PM EST on the 2nd, and was effective from 6:00 AM EST on the 3rd until Midnight EST on the 3rd. This advisory was for Carbon, Monroe, Berks, Lehigh, Northampton, Chester, Montgomery, Bucks Counties in Pennsylvania; Sussex, Warren, Morris, Hunterdon, Somerset, all of Monmouth, Middlesex, and Mercer Counties in New Jersey. A Winter Weather Advisory was also issued at 2:53 PM EST on the 2nd, and was effective from 4:00 AM EST on the 3rd until Midnight EST on the 3rd. This advisory was for all of Sussex County in Delaware; Cecil, Kent, Queen Anne's, Talbot and Caroline Counties in Maryland. A Winter Storm Watch was issued at 2:53 PM EST on the 2nd, and was effective for 6:00 AM EST on the 3rd until Midnight EST on the 3rd. The watch was for Delaware and Philadelphia Counties in Pennsylvania; Salem, Gloucester, Camden, all of Burlington, all of Ocean, Cumberland, all of Atlantic and all of Cape May Counties in New Jersey; New Castle and Kent Counties in Delaware. At 5:24 PM EST on the 2nd, the winter weather message product was updated with no headline changes, but to reflect expected accumulations within portions of the advisory area. At 8:48 PM EST on the 2nd, an update was issued to the winter weather message, with no headline changes, but for expected conditions by the morning commute and to adjust accumulation amounts in the some of the advisory area.

At 3:25 AM EST on the 3rd, the Winter Weather Advisory was cancelled for Carbon, Monroe and Berks Counties in Pennsylvania. The watch area was changed to a Winter Weather Advisory at this time. All other advisories remained the same with updates to reflect the current conditions and expected amounts. At 4:55 AM EST on the 3rd, the winter weather message product was updated to remove the cancelled headlines. At 10:45 AM EST on the 3rd, an updated winter weather message was issued with

no changes to the headlines. However, amounts were adjusted across the advisory area to better match other products. At 1:35 PM EST on the 3rd, another update was sent with no headline changes. At 5:46 PM EST on the 3rd, an update was issued with no headline changes, but to indicate the decreasing intensity of the snow through the evening hours. At 6:58 PM EST on the 3rd, the Winter Weather Advisory was cancelled for Kent and all of Sussex Counties in Delaware; Cecil, Kent, Queen Anne's, Talbot and Caroline Counties in Maryland. All other headlines were unchanged with this update. At 9:40 PM EST on the 3rd, the advisory was upgraded to a Winter Storm Warning for Salem, Gloucester, Camden, Cumberland and Atlantic Counties in New Jersey; Delaware and Philadelphia Counties in Pennsylvania and was extended until 4:00 AM EST on the 4th due to an increase in heavy snow over the region. The remaining advisories were left unchanged.

At 12:02 AM EST on the 4th, the advisories were cancelled for Sussex, Warren, Morris, Hunterdon, Somerset, Middlesex, all of Monmouth, Mercer, all of Burlington, all of Ocean, all of Cape May and the coastal strip of Atlantic Counties in New Jersey; Lehigh, Northampton and Bucks Counties in Pennsylvania. The warning headline remained unchanged with adjustments made to expected accumulations. The remaining advisory for Chester and Montgomery Counties in Pennsylvania and New Castle County in Delaware was extended until 4:00 AM EST on the 4th. At 3:45 AM EST on the 4th, all advisories and warnings were cancelled as the storm exited the region and the heaviest precipitation ended.

### **Precipitation/Temperatures/Winds**

Precipitation began as a mix of rain and snow in southern Delaware but quickly changed over to all snow. It remained all snow throughout the region as temperatures stayed just above freezing in most areas. Although it snowed most of the day in parts of the area, the indirect solar insolation provided enough heat to melt the snow at the surface and limited daytime accumulations. After the sun set, temperatures dropped, which allowed for more accumulations to occur.

Some selected snowfall totals from this storm include:

In Delaware: 1.2 inches at the New Castle County Airport in Wilmington and Bear and 1.0 inches at the Dover Air Force Base.

In Maryland: 3.0 inches in Colora and Millington, 2.5 inches in Conowingo, 2.0 inches in Galena, 1.5 inches in Chesapeake City and Chestertown and 1.0 inches in Grasonville. Several reports of around 0.5 inches was reported near Easton.

In New Jersey (Due to the numerous reports from NJ, we have only listed the top 5 reports from each county, if available):

Atlantic County: 4.7 inches in Hammonton, 4.3 inches in Hamilton Township, 4.0 inches in Estell Manor, 3.6 inches in Buena Vista and 3.2 inches in Pleasantville and at the Atlantic City International Airport.

Burlington County: 5.0 inches in Southampton, 4.6 inches in Wrightstown, 4.4 inches in Moorestown, 4.3 inches in Delran and 4.0 inches in Tabernacle. There was also 3.4 inches reported at the NWS Mount Holly Office.

Camden County: 5.5 inches in Sicklerville, 5.4 inches in Somerdale, 3.3 inches in Lindenwold, 3.1 inches in Winslow and 3.0 inches in Merchantville.

Cape May County: 3.7 inches in Upper Township, 2.8 inches in Seaville, 2.6 inches in Woodbine, 2.4 inches in Belleplain and 2.3 inches in Eldora.

Cumberland County: 4.0 inches in Vineland.

Gloucester County: 10.0 inches in Glassboro, 9.5 inches in Glassboro (just SW), 8.4 inches in National Park, 8.0 inches in West Deptford and 7.6 inches in Sewell.

Hunterdon County: 5.2 inches in Stockton, 5.0 inches in Bethlehem, 4.2 inches in Wertsville, 3.8 inches in Flemington and 3.5 inches in Whitehorse.

Mercer County: 5.0 inches in Princeton, 4.7 inches in Hopewell, 4.5 inches in Lawrence, 4.1 inches in Washington Township and 4.0 inches in Ewing and Hamilton Township.

Middlesex County: 5.5 inches in the Brunswicks (East, New, North and South), 5.3 inches in Sayreville and 5.2 inches in Edison.

Monmouth County: 6.4 inches in Red Bank, 6.3 inches in Colts Neck and Holmdel, 6.0 inches in Aberdeen and Middletown and 5.9 inches in Howell and Millstone Townships.

Morris County: 4.8 inches in Denville, 4.5 inches in Rockaway Valley, 4.2 inches in Randolph, 4.0 inches in Roxbury and 3.7 inches in Riverdale.

Ocean County: 5.5 inches in Brick, 5.0 inches in Toms River, 4.0 inches in Point Pleasant Beach, 3.8 inches in Brick Township and 3.5 inches in Tuckerton.

Salem County: 7.6 inches in Pittsgrove.

Somerset County: 5.6 inches in Hillsborough, 5.0 inches in Neshanic, 4.3 inches in Franklin Township, 4.0 inches in Kingston and 3.8 inches in Bernards Township.

Sussex County: 4.5 inches in Vernon, 3.6 inches in Hopatcong, 3.5 inches in Newton, 3.3 inches in Wantage and 3.0 inches in Sparta.

Warren County: 3.7 inches in Allamuchy Township, 3.5 inches in Greenwich Township and Stewartsville, 2.5 inches in Blairstown and 2.4 inches in Hackettstown and Independence Township.

In Pennsylvania (Due to numerous reports, some counties will only have the top 5 snowfalls listed):

Berks County: 4.8 inches in Longswamp, 3.5 inches in Fleetwood, 2.6 inches in Morgantown, 1.5 inches in Blue Marsh Lake and 1.3 inches in West Lawn.

Bucks County: 6.6 inches in Perkasio, 4.8 inches in Morrisville and Springtown, 4.6 inches in Richboro and 4.5 inches in Bensalem and Furlong.

Carbon County: 1.8 inches in Palmerton and 1.5 inches in Jim Thorpe.

Chester County: 7.9 inches in Phoenixville, 6.0 inches in Chesterbrook, 5.3 inches in East Nantmeal, 4.8 inches in Exton and 4.3 inches in West Caln.

Delaware County: 8.3 inches in Wayne, 7.4 inches in Clifton Heights, 7.1 inches in Drexel Hill, 7.0 inches in Media and 6.5 inches in Swarthmore.

Lehigh County: 4.5 inches in Emmaus, 3.1 inches at the Lehigh Valley International Airport in Allentown, 1.2 inches in Slatington and 1.0 inches in Schnecksville.

Monroe County: 3.2 inches in Delaware Water Gap, 3.0 inches in Bossardsville and 2.5 inches in Tobyhanna.

Montgomery County: 7.0 inches in King of Prussia, 6.1 inches in Abington, 6.0 inches in Norristown, Rockledge and Wynnewood and 5.5 inches in Elkins Park and Hatboro.

Northampton County: 4.0 inches in Bethlehem, 2.7 inches in Forks Township and 1.8 inches in Tatamy.

Philadelphia County: 8.4 inches at the Philadelphia International Airport, 5.5 inches at the Franklin Institute and 5.1 inches in Philadelphia (4.7 miles northeast).

**Significant Impacts/Aspects**

The storm moved in during the morning hours on the 3rd but did not pick up until later in the day. Aided by indirect solar insolation, temperatures above freezing, a lighter intensity of the snow, and pre-treating of the roadways, the roads were mainly wet while snow accumulated on unpaved and untreated surfaces. As the sun set during the evening rush hour, the roads became more slippery. As the temperatures continued to fall through the evening and overnight, wet road surfaces began to freeze with areas of black ice reported. Numerous accidents were reported by law enforcement and the media.

A good portion of the region saw over 4 inches of snow while some areas, mainly around Philadelphia and southern New Jersey, saw 6 to 10 inches. Numerous schools were closed and/or delayed on the morning of the 4th.

**Notes**

Information contained in this summary is preliminary. More complete and/or detailed information may be contained in subsequent monthly NOAA storm data publications.

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