

Newtown Township

Municipal  
Separate Storm  
Sewer System  
(MS4)

Rainfall  
Presentation

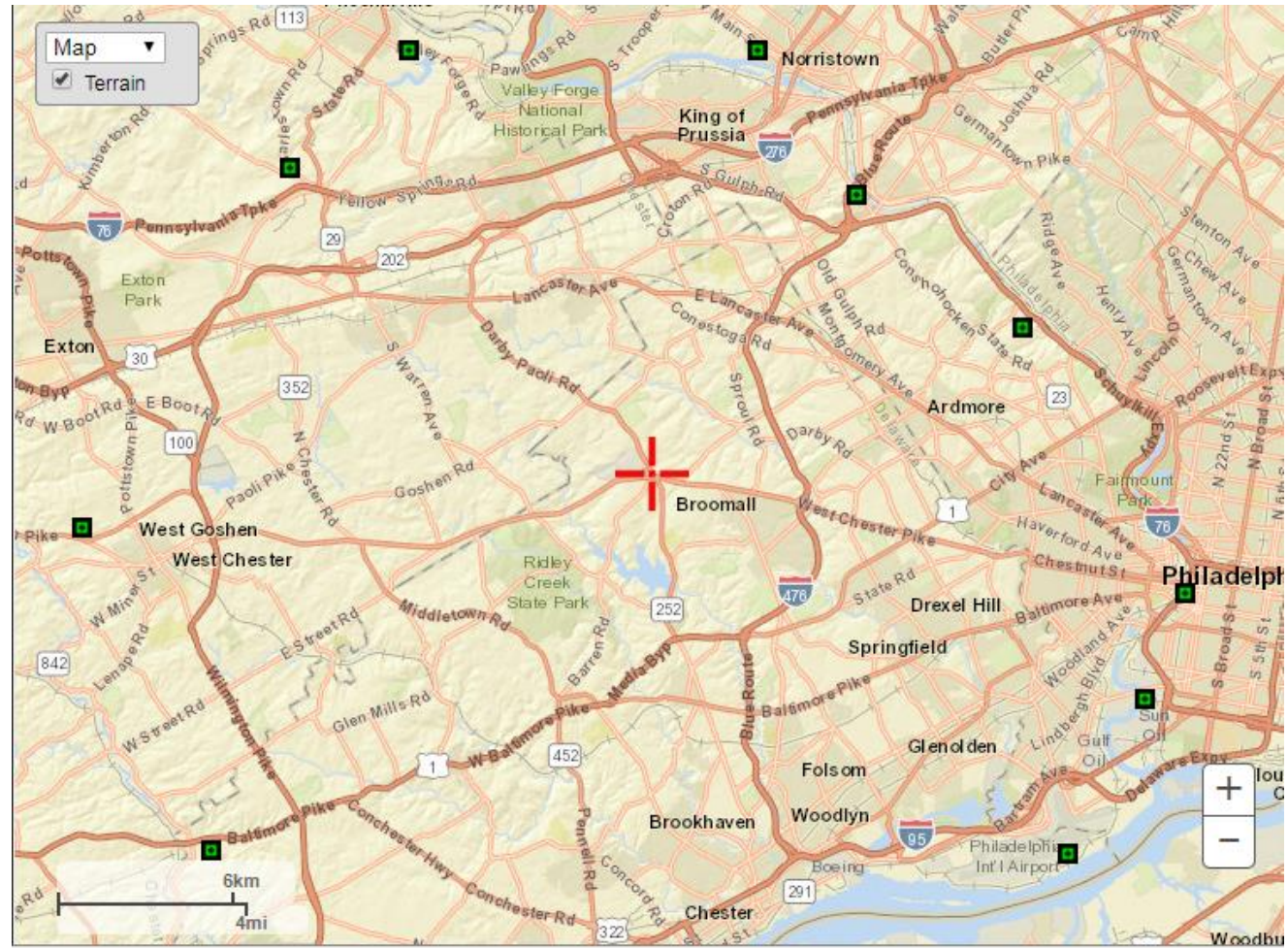


# Where is the Rainfall measured?

Official totals are measured and reported by the National Weather Service

Nearby Stations include:

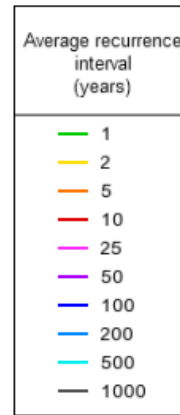
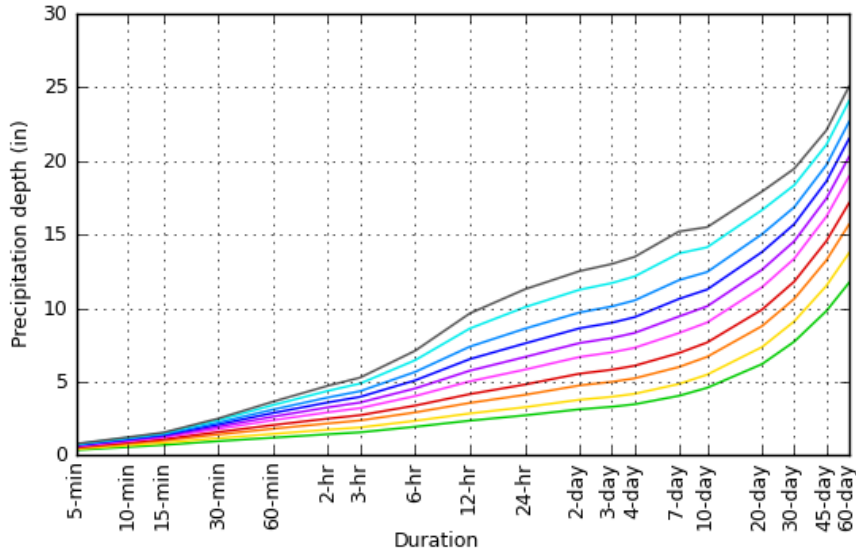
- Philadelphia Airport
- West Chester
- Chadds Ford
- Marcus Hook
- Malvern



Source: <https://hdsc.nws.noaa.gov>

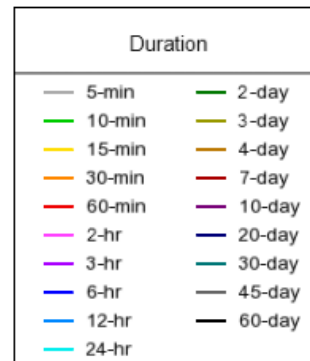
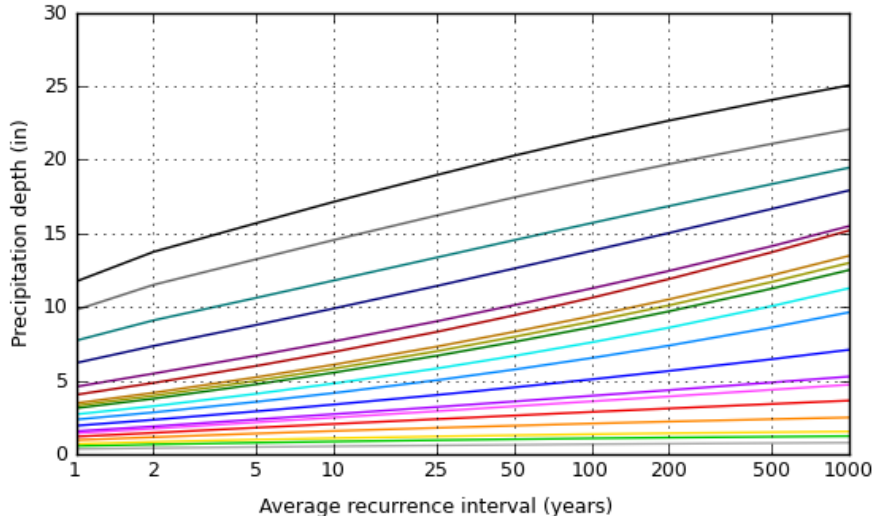
# What is a 1-Year Storm? 5-Year? 100?

PDS-based depth-duration-frequency (DDF) curves  
Latitude: 39.9877°, Longitude: -75.4065°



Categorized based on:

- Return Period  
(ex. 100 year of 1% chance of occurring)
- Duration  
(Typically 24 hours)
- Depth  
(Inches)



Note:  
Curves based on Newtown Square from <https://hdsc.nws.noaa.gov>

# What is a 1-Year Storm, 5-Year, 100-Year?

## Newtown Township

	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
1-hr	1.19	1.45	1.80	2.05	2.38	2.63	2.87
2-hr	1.43	1.47	2.16	2.49	2.92	3.26	3.59
3-hr	1.56	1.89	2.36	2.72	3.20	3.58	3.97
6-hr	1.94	2.34	2.91	3.37	4.02	4.54	5.08
12-hr	2.35	2.84	3.56	4.16	5.02	5.75	6.53
24-hr	2.71	3.26	4.10	4.80	5.82	6.67	7.60
4-Day	3.46	4.17	5.23	6.08	7.30	8.31	9.38

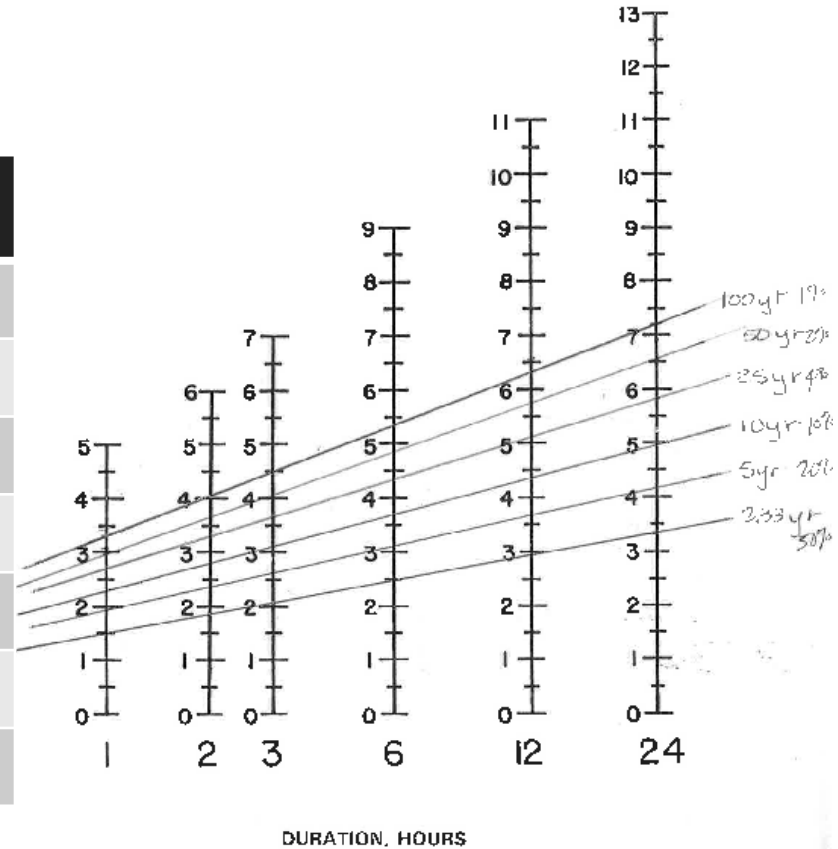


FIGURE 1

Region 5

Source: NOAA Atlas 14

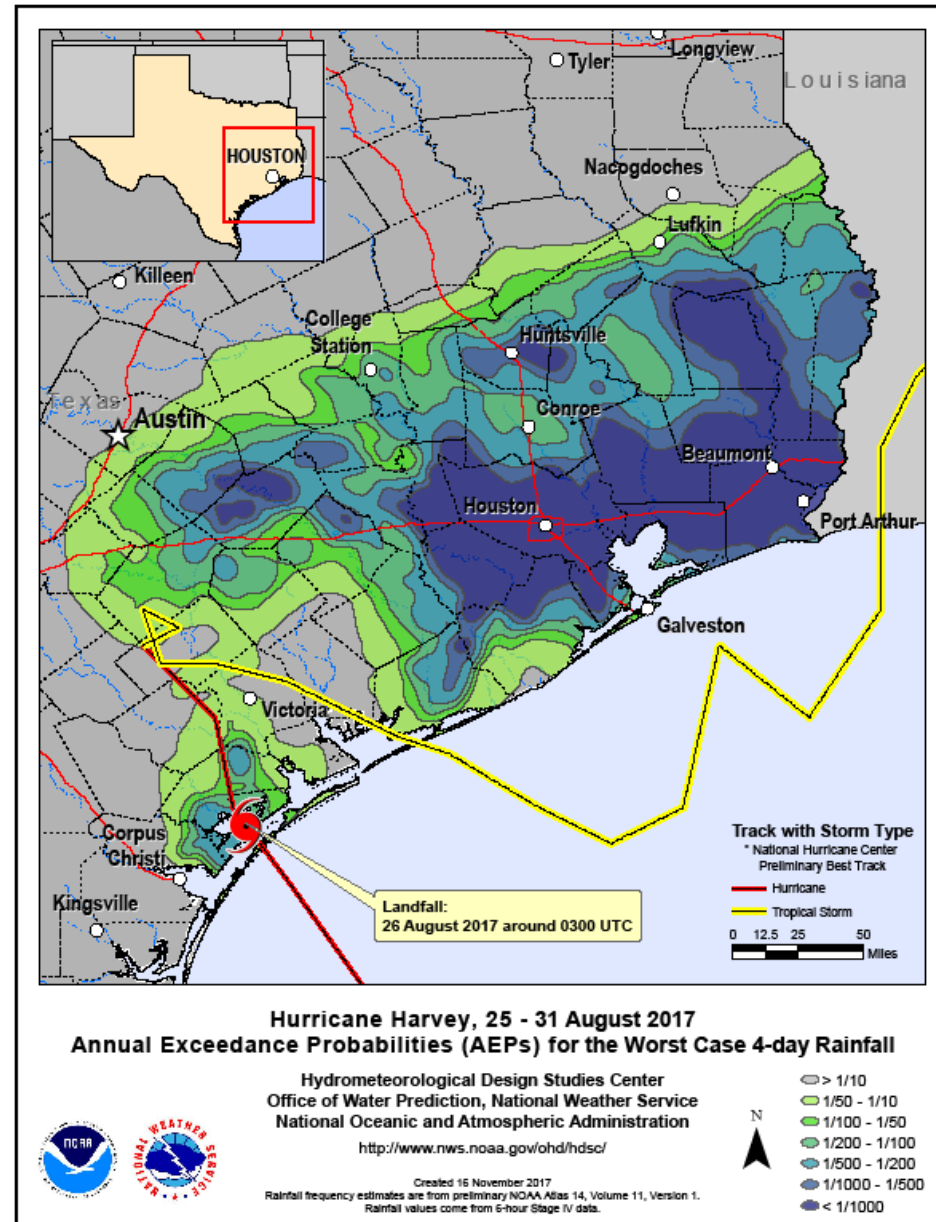
# Hurricane Harvey

At Houston,  
Exceeded the 1 in a 1000 Annual  
Probability Amount of Rainfall in a 4  
Day Period

Or

Greater than 1000-year 4 Day Storm

At Austin,  
Between a 10- and 50-year 4 Day  
Storm



Source: <http://www.nws.noaa.gov>



# What have We Experienced?

## Philadelphia International Airport, 24 Hour Period

	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
1955-2000	5	13	6		1		
2000-2010	4	1	2	1			
2010-2018	1	5	3	1			1
Total	10	19	11	2	1		1

## Philadelphia International Airport, 4 Day Period

	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
1955-2000	18	12	3	2	1		
2000-2010	5	1	1	1			
2010-2018	3	3	3	2	1		
Total	26	16	7	5	2		

# Philadelphia Shatters Record for the Heaviest Rain in a Day

By [Kristina Pydynowski](#), senior meteorologist

July 30, 2013, 4:33:14 PM EDT

[Share this article:](#)

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Torrents of rain over the Philadelphia metro area late on Sunday afternoon turned roads into lakes, submerged cars and made travel very difficult.

A whopping 8.02 inches of rain fell at the Philadelphia International Airport, with 7.35 inches falling between 3 p.m. and 7 p.m. EDT.

Runoff from the heavy rain flooded ramps between Interstate 95 and Broad Street in Philadelphia. Flooding also ensued on Interstate 76 in nearby Gloucester City, N.J.

With the added rain, numerous rainfall records were broken in Philadelphia.

-The 8.02 inches of rain on Sunday shattered the previous record for the day of 3.28 inches set in July 1969. -The 8.02 inches also established a new record for the most rain on any calendar day, breaking the previous record of 6.63 inches on Sept. 16, 1999 during Tropical Storm Floyd. -The 13.00 inches through July 28th makes this July the wettest on record and the third wettest month overall, behind 19.31 inches in August 2011 and 13.07 inches in September 1999.