



NOAA Atlas 14, Volume 2, Version 3
Location name: Cincinnati, Ohio, USA*
Latitude: 39.2187°, Longitude: -84.6675°
Elevation: 692 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.382 (0.348-0.418)	0.452 (0.412-0.495)	0.530 (0.483-0.581)	0.589 (0.536-0.644)	0.661 (0.600-0.721)	0.714 (0.646-0.777)	0.762 (0.686-0.828)	0.810 (0.727-0.880)	0.869 (0.775-0.945)	0.911 (0.807-0.989)
10-min	0.593 (0.541-0.649)	0.706 (0.644-0.772)	0.824 (0.751-0.902)	0.909 (0.828-0.994)	1.01 (0.918-1.10)	1.08 (0.979-1.18)	1.15 (1.03-1.25)	1.21 (1.08-1.31)	1.28 (1.14-1.39)	1.33 (1.18-1.44)
15-min	0.727 (0.663-0.796)	0.863 (0.787-0.945)	1.01 (0.922-1.11)	1.12 (1.02-1.22)	1.25 (1.13-1.36)	1.34 (1.21-1.46)	1.42 (1.28-1.55)	1.50 (1.35-1.64)	1.60 (1.42-1.73)	1.66 (1.47-1.80)
30-min	0.962 (0.877-1.05)	1.16 (1.05-1.26)	1.39 (1.26-1.52)	1.55 (1.42-1.70)	1.76 (1.60-1.92)	1.92 (1.73-2.08)	2.06 (1.85-2.24)	2.20 (1.97-2.39)	2.36 (2.10-2.57)	2.48 (2.20-2.70)
60-min	1.18 (1.07-1.29)	1.42 (1.29-1.55)	1.74 (1.58-1.90)	1.98 (1.80-2.16)	2.29 (2.08-2.49)	2.52 (2.28-2.74)	2.75 (2.48-2.99)	2.98 (2.67-3.24)	3.27 (2.91-3.55)	3.49 (3.09-3.79)
2-hr	1.37 (1.25-1.51)	1.66 (1.51-1.83)	2.04 (1.85-2.24)	2.32 (2.11-2.55)	2.70 (2.44-2.96)	2.99 (2.70-3.28)	3.28 (2.95-3.59)	3.57 (3.19-3.90)	3.95 (3.50-4.32)	4.24 (3.74-4.64)
3-hr	1.46 (1.33-1.62)	1.77 (1.60-1.96)	2.17 (1.97-2.41)	2.49 (2.26-2.75)	2.91 (2.63-3.21)	3.24 (2.91-3.57)	3.58 (3.20-3.94)	3.92 (3.48-4.30)	4.38 (3.85-4.80)	4.74 (4.14-5.19)
6-hr	1.78 (1.64-1.96)	2.15 (1.97-2.36)	2.64 (2.41-2.89)	3.01 (2.75-3.30)	3.52 (3.20-3.84)	3.92 (3.55-4.28)	4.33 (3.90-4.71)	4.74 (4.24-5.16)	5.31 (4.70-5.76)	5.75 (5.06-6.25)
12-hr	2.12 (1.95-2.32)	2.56 (2.35-2.79)	3.12 (2.86-3.40)	3.55 (3.25-3.87)	4.12 (3.76-4.48)	4.58 (4.16-4.97)	5.02 (4.55-5.45)	5.48 (4.94-5.94)	6.10 (5.44-6.61)	6.58 (5.83-7.14)
24-hr	2.44 (2.27-2.63)	2.92 (2.72-3.16)	3.57 (3.31-3.85)	4.06 (3.77-4.38)	4.73 (4.37-5.08)	5.25 (4.84-5.64)	5.77 (5.31-6.20)	6.30 (5.78-6.76)	7.00 (6.40-7.51)	7.55 (6.87-8.10)
2-day	2.90 (2.69-3.12)	3.46 (3.22-3.74)	4.20 (3.90-4.54)	4.78 (4.43-5.15)	5.54 (5.12-5.96)	6.13 (5.66-6.59)	6.72 (6.19-7.23)	7.32 (6.72-7.87)	8.12 (7.42-8.74)	8.73 (7.95-9.41)
3-day	3.08 (2.87-3.32)	3.69 (3.43-3.96)	4.45 (4.15-4.79)	5.05 (4.70-5.42)	5.84 (5.43-6.27)	6.46 (5.99-6.93)	7.08 (6.54-7.60)	7.71 (7.10-8.27)	8.55 (7.83-9.18)	9.19 (8.39-9.88)
4-day	3.28 (3.06-3.51)	3.91 (3.65-4.19)	4.70 (4.39-5.04)	5.32 (4.97-5.70)	6.15 (5.73-6.58)	6.80 (6.31-7.27)	7.45 (6.90-7.97)	8.10 (7.48-8.68)	8.98 (8.24-9.62)	9.66 (8.83-10.4)
7-day	3.86 (3.63-4.13)	4.59 (4.31-4.90)	5.51 (5.17-5.88)	6.24 (5.84-6.66)	7.22 (6.75-7.70)	8.00 (7.46-8.52)	8.80 (8.18-9.36)	9.60 (8.90-10.2)	10.7 (9.85-11.4)	11.5 (10.6-12.3)
10-day	4.38 (4.11-4.69)	5.21 (4.88-5.57)	6.23 (5.84-6.66)	7.03 (6.58-7.52)	8.13 (7.59-8.67)	8.99 (8.37-9.58)	9.86 (9.16-10.5)	10.7 (9.94-11.4)	11.9 (11.0-12.7)	12.8 (11.8-13.7)
20-day	6.03 (5.67-6.43)	7.13 (6.70-7.60)	8.41 (7.90-8.96)	9.40 (8.82-10.0)	10.7 (10.0-11.4)	11.7 (11.0-12.5)	12.7 (11.9-13.6)	13.7 (12.8-14.6)	15.0 (13.9-16.0)	16.0 (14.8-17.1)
30-day	7.54 (7.10-8.00)	8.88 (8.36-9.43)	10.3 (9.72-11.0)	11.5 (10.8-12.2)	12.9 (12.1-13.7)	14.0 (13.2-14.9)	15.1 (14.1-16.1)	16.2 (15.1-17.2)	17.6 (16.3-18.7)	18.6 (17.2-19.8)
45-day	9.50 (8.98-10.0)	11.2 (10.5-11.8)	12.9 (12.2-13.6)	14.2 (13.4-15.0)	15.9 (15.0-16.7)	17.1 (16.1-18.1)	18.3 (17.2-19.4)	19.5 (18.3-20.6)	21.0 (19.6-22.2)	22.0 (20.5-23.4)
60-day	11.4 (10.8-11.9)	13.3 (12.6-14.0)	15.2 (14.5-16.0)	16.7 (15.9-17.6)	18.7 (17.7-19.6)	20.1 (19.0-21.1)	21.5 (20.3-22.6)	22.8 (21.5-24.0)	24.5 (23.0-25.8)	25.7 (24.1-27.1)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

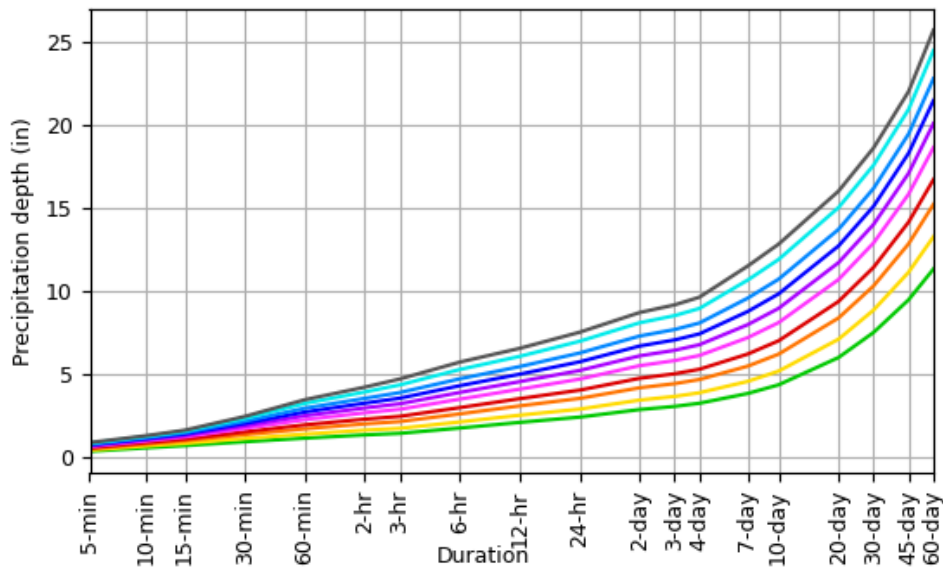
Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

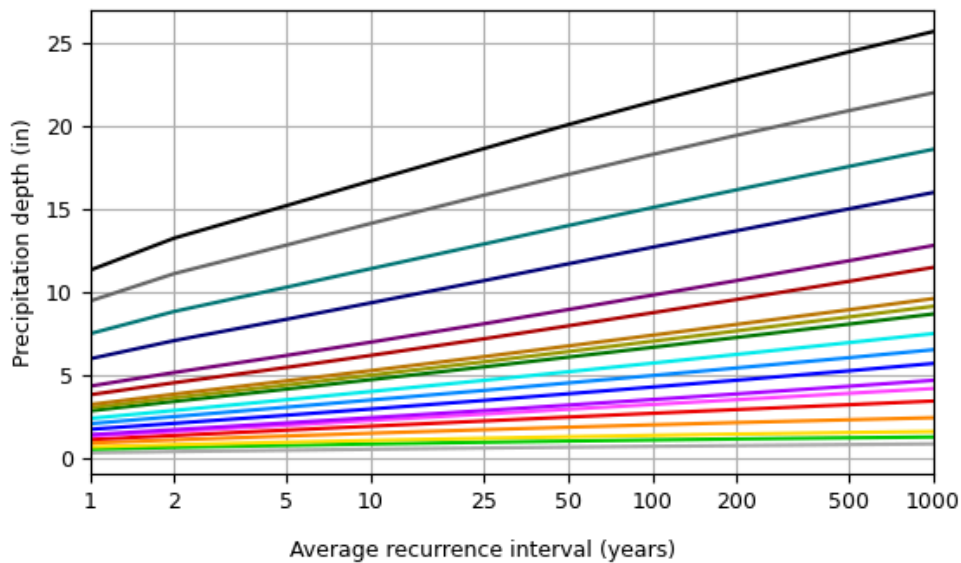
PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 39.2187°, Longitude: -84.6675°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000

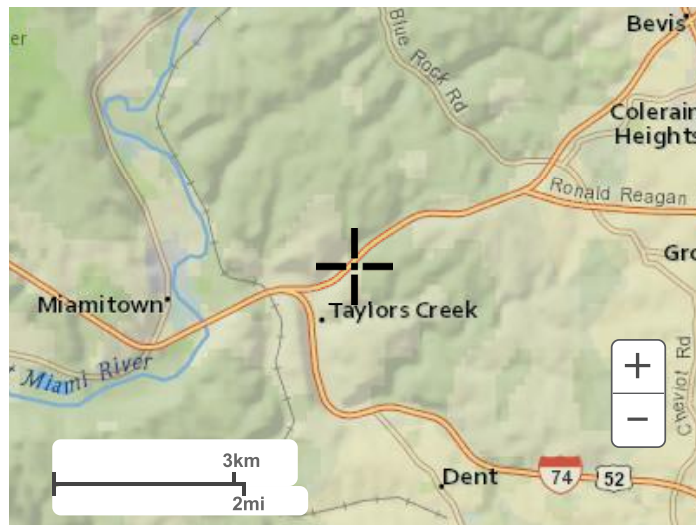


Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

[Back to Top](#)

Maps & aerials

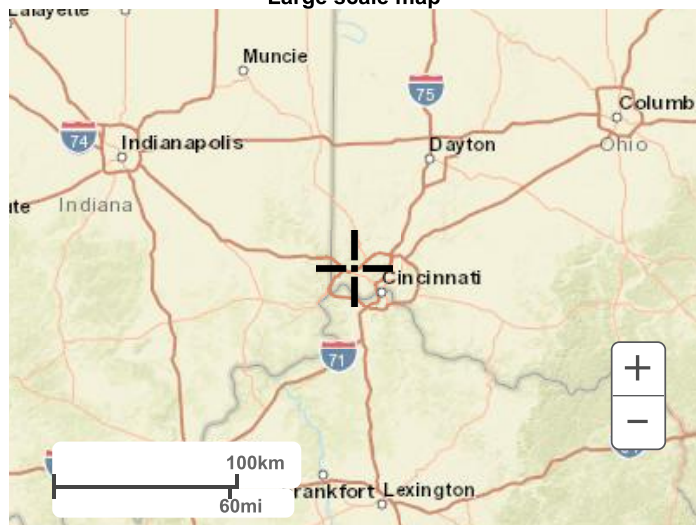
Small scale terrain



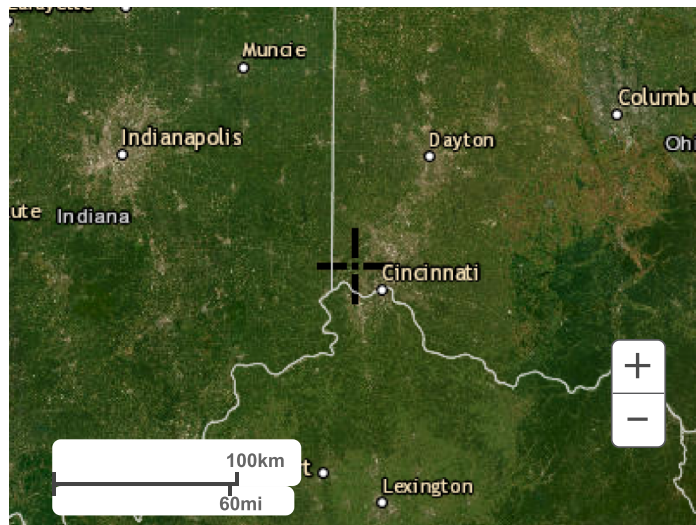
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)