Precipitation
Current Plan

The average annual precipitation in the watershed during the period of record is approximately 30 inches (UM, 1999). About 70 percent of the annual precipitation (22 inches) falls between April and September. About 6 inches of precipitation occurs during the spring groundwater recharge period of April and May.

Measurable precipitation of 0.01 inches occurs on about 110 days per year, 4 of which have 1 inch or more. Annual amounts of precipitation have ranged from a low of 15.56 inches in 1976 to a high of 43.03 inches in 1991 (UM, 1999). The most precipitation occurring in any month was 9.35 inches in June 1975.

Amount

Month	Monthly Average (in)	3 years in 10 Less Than (in)	3 years in 10 More Than (in)
January	1.13	0.75	1.50
February	0.81	0.51	1.05
March	1.73	1.32	2.30
April	2.62	1.82	3.48
May	3.57	2.85	4.39
June	4.29	3.46	5.13
July	3.99	3.28	4.97
August	4.04	3.51	4.99
September	3.04	2.40	3.73
October	2.38	1.49	3.28
November	1.92	1.46	2.48
December	1.06	0.53	1.32
Annual	**30.60**	**28.26**	**34.11**

Storm Size and Intensity

The size of a storm can be described by the total amount of precipitation, the intensity of the precipitation (amount per time period), and how often this type of storm is expected to occur (frequency). Thus, a 10-year, 24-hour storm can be thought of as a storm with a 10% chance of occurrence in any given year, producing a given amount of rain in 24 hours. A rainfall intensity of 1.5 inches per hour can be expected to occur once every 3 years and has and annual probability of 33%

Precipitation

Frequency (Yrs)	Yearly Probability (%)	30 Min (in)	1-Hr (in)	2-Hr (in)	6-Hr (in)	12-Hr (in)	24-Hr (in)	10-Day (in)
1 Year	99%	0.9	1.15	1.4	1.65	1.95	2.3	3.8
2 Year	50%	1.1	1.4	1.6	2.1	2.4	2.7	
5 Year	20%	1.4	1.8	2.1	2.65	3.05	3.5	6.3
10 Year	10%	1.6	2.05	2.5	3	3.55	4.1	7.4
25 Year	4%	1.9	2.35	2.8	3.5	4.1	4.7	8.8
50 Year	2%	2.1	2.6	3.1	3.95	4.6	5.2	9.8
100 Year	1%	2.4	2.8	3.5	4.4	5.1	5.85	10.9

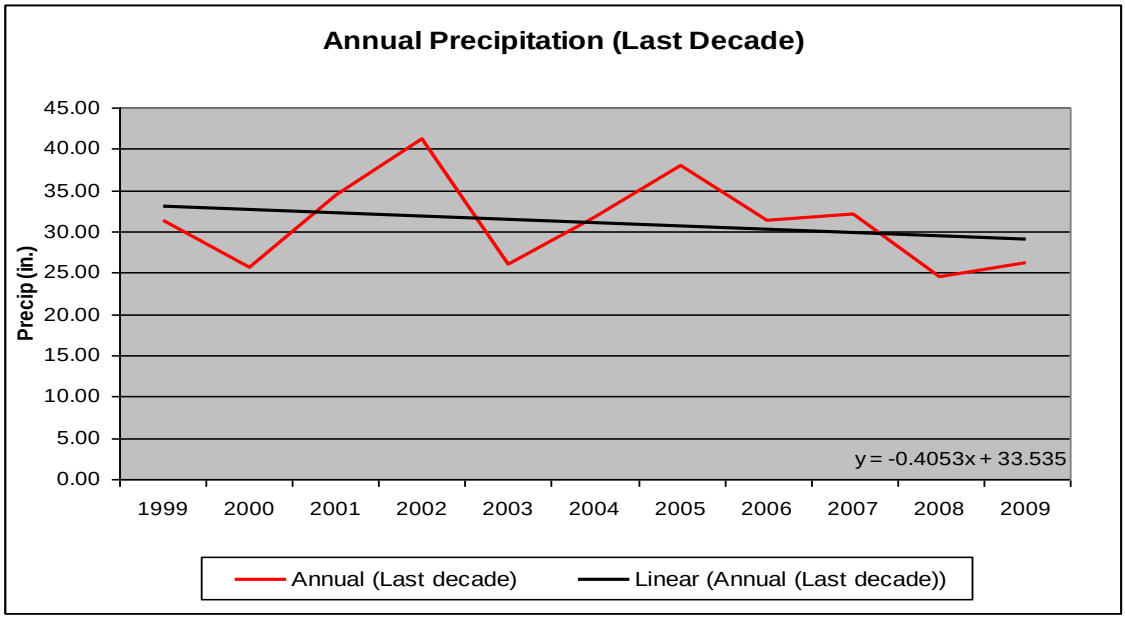
Snowfall

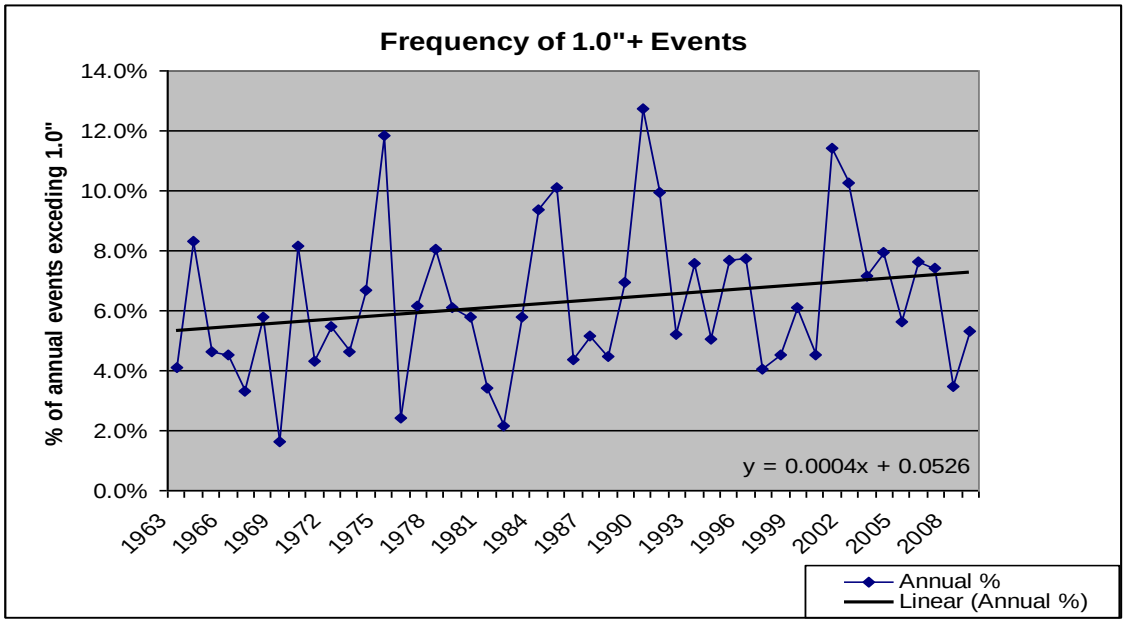
The first measurable snowfall typically occurs in the middle of October (1 year in 10), and the last mid-April or later (3 years in 10). The annual snowfall average is 43.2 inches. Since 1932, annual snowfall has ranged from 5.4 inches (1958 - 59) to 81.6 inches (1950 - 1951). An average of four major snowstorms occur each winter

Month	Snow days: (1" or More)	Average depth (in):
January	27	10.4
February	25	11.3
March	20	10.2
April	3	2.4
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	>0.5	2.0
November	9	3.9
December	23	6.9

Precipitation

Trends in Precipitation





Implications of Changes in Precipitation

There are three implications for the changes in precipitation observed within the Coon Creek Watershed of these trends continue through 2020:

Less Rainfall If trends continue to 2020 there will be 5% less annual precipitation by that year (An annual average of approximately 28.5 inches)

Precipitation

Less Effective Precipitation	If the probability of larger events continues to increase, the amount of precipitation that infiltrates will decrease
Less Infiltration	Less naturally-occurring infiltration

Management Needs

Retention	Capture and Retain maximum amount of precipitation
	Break up routing of stormwater to maximize retention and detention to benefit water quality, flood control, habitat and water supply
Infiltration	Adopt ‘treatment train’ approach to the management and retention of water