

# Evapotranspiration

## Current Plan

Evapotranspiration includes evaporation from all water, soil, ice, vegetative and other surfaces and transpiration from plants. Evapotranspiration losses can be grouped into three categories:

1. Interception losses,
2. Evaporation from undrained basins and
3. Evapotranspiration from soil and groundwater.

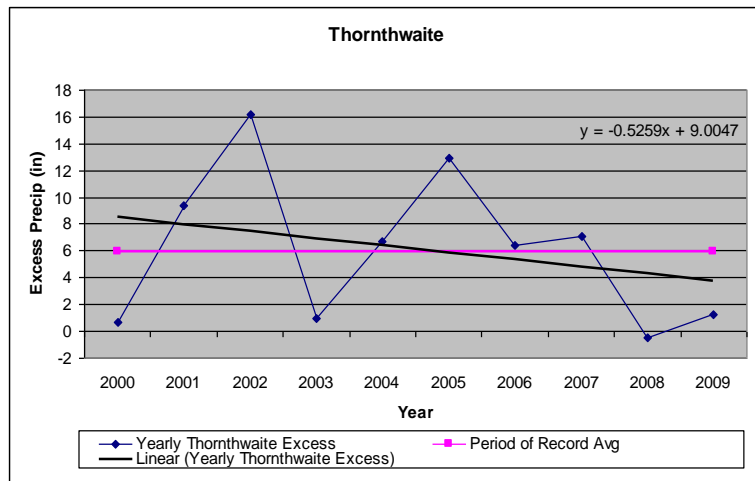
Potential Evapotranspiration (PET), the amount of water that would be lost to the atmosphere if water were not limiting, can be estimated using a number of methods. The Thornthwaite equation (Thornthwaite, 1955) uses mean temperature and latitude to determine monthly potential evapotranspiration

*Estimate of Monthly Potential Evapotranspiration Rates (PET)*

Month	Average Precip. (in)	Thornthwaite PET (in.)	Avg. Precip. minus PET (in)
January	1.13	0.00	1.13
February	0.81	0.00	0.81
March	1.73	0.00	1.73
April	2.62	1.34	1.28
May	3.57	3.55	0.02
June	4.29	4.89	-0.60
July	3.99	5.70	-1.71
August	4.04	4.94	-0.90
September	3.04	3.07	-0.03
October	2.38	1.48	0.90
November	1.92	0.00	1.92
December	1.06	0.00	1.06
<b>Total</b>	<b>30.58</b>	24.98 (80%)	5.61

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## Trends in Evapotranspiration



### Implications of Changes in Evapotranspiration

Approximately 80% of all precipitation falling on the District is lost to evapotranspiration.

#### Greater Potential of Water Loss in the Spring

On average, the largest hydrologic impact due to evapotranspiration occurs during May and April due primarily low humidity levels combined with high incidence of solar radiation (May) and wind (April). July is third highest due to temperatures and solar radiation.

#### Less Excess Evapotranspiration 2000 to 2010

Excess evapotranspiration has decreased over the last decade.

#### Spring is Critical for Water Retention

If average annual temperatures continue to rise, April and May will become pivotal times for water conservation because it is early in the water year and replenished groundwater and filled basins supply baseflows to the creek system.

### Management Needs

#### Encourage Retention in the Spring

Water retention for infiltration needs to be encouraged during the spring, especially April and May.