

Hydrology Effects by Individual Trees

Location: Springfield, Hampden, Massachusetts, United States of America

Project: Springfield Squares, Series: Parks, Year: 2018

Generated: 4/8/2019



Tree ID	Species Name	Leaf Area (ft ²)	Potential Evapotranspiration (ft ³ /yr)	Evaporation (ft ³ /yr)	Transpiration (ft ³ /yr)	Water Intercepted (ft ³ /yr)	Avoided Runoff (ft ³ /yr)	Avoided Runoff Value (\$/yr)	Comments
1	Callery pear	2,414.8	670.6	79.3	243.6	79.3	15.7	1.05	
2	Callery pear	2,334.7	648.3	76.6	235.5	76.7	15.2	1.02	
3	Callery pear	2,334.7	648.3	76.6	235.5	76.7	15.2	1.02	
4	Callery pear	1,544.8	429.0	50.7	155.9	50.7	10.1	0.67	
5	Callery pear	1,667.3	463.0	54.7	168.2	54.7	10.9	0.73	
6	Callery pear	2,334.7	648.3	76.6	235.5	76.7	15.2	1.02	
7	Callery pear	2,198.3	610.4	72.2	221.8	72.2	14.3	0.96	
8	Callery pear	2,460.7	683.3	80.8	248.3	80.8	16.0	1.07	
9	Red maple	3,533.2	981.1	116.0	356.5	116.0	23.0	1.54	
10	Red maple	2,328.9	646.7	76.4	235.0	76.5	15.2	1.01	
11	Red maple	1,987.2	551.8	65.2	200.5	65.2	13.0	0.87	
12	Red maple	2,923.1	811.7	95.9	294.9	96.0	19.1	1.27	
13	Callery pear	1,417.7	393.7	46.5	143.0	46.5	9.2	0.62	
14	Callery pear	1,544.8	429.0	50.7	155.9	50.7	10.1	0.67	
15	Red maple	3,336.5	926.5	109.5	336.6	109.5	21.8	1.45	
16	Red maple	3,187.4	885.1	104.6	321.6	104.7	20.8	1.39	
17	Honeylocust	784.3	217.8	25.7	79.1	25.8	5.1	0.34	
18	Honeylocust	877.4	243.7	28.8	88.5	28.8	5.7	0.38	
19	Honeylocust	819.4	227.5	26.9	82.7	26.9	5.3	0.36	
20	Littleleaf linden	879.2	244.2	28.9	88.7	28.9	5.7	0.38	
21	Littleleaf linden	879.2	244.2	28.9	88.7	28.9	5.7	0.38	
22	Honeylocust	886.3	246.1	29.1	89.4	29.1	5.8	0.39	
23	Kwanzan cherry	1,546.5	429.4	50.8	156.0	50.8	10.1	0.67	
24	Littleleaf linden	782.7	217.3	25.7	79.0	25.7	5.1	0.34	
25	Littleleaf linden	2,348.7	652.2	77.1	237.0	77.1	15.3	1.02	
26	Norway maple	2,995.7	831.9	98.3	302.2	98.4	19.5	1.31	
27	crabapple	1,532.9	425.7	50.3	154.7	50.3	10.0	0.67	
28	crabapple	1,775.1	492.9	58.3	179.1	58.3	11.6	0.77	
29	Norway maple	3,458.3	960.3	113.5	348.9	113.5	22.5	1.51	
30	Sweetgum	3,913.7	1,086.8	128.5	394.8	128.5	25.5	1.71	
31	Kwanzan cherry	2,600.6	722.2	85.4	262.4	85.4	17.0	1.13	
32	crabapple	1,611.4	447.5	52.9	162.6	52.9	10.5	0.70	
33	crabapple	1,939.4	538.5	63.7	195.7	63.7	12.6	0.85	
34	Norway maple	6,182.9	1,716.9	202.9	623.8	203.0	40.3	2.69	

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35	Northern red oak	8,119.6	2,254.7	266.5	819.2	266.6	52.9	3.54	
36	Northern red oak	12,237.5	3,398.2	401.7	1,234.6	401.8	79.8	5.33	
37	Northern red oak	14,400.8	3,998.9	472.7	1,452.9	472.8	93.9	6.28	
38	Northern red oak	4,649.9	1,291.2	152.6	469.1	152.7	30.3	2.03	
39	Northern red oak	12,815.1	3,558.6	420.6	1,292.9	420.8	83.6	5.58	
40	Northern red oak	11,370.4	3,157.4	373.2	1,147.1	373.3	74.1	4.96	
41	Northern red oak	11,008.5	3,056.9	361.3	1,110.6	361.4	71.8	4.80	
42	Northern red oak	9,582.1	2,660.8	314.5	966.7	314.6	62.5	4.18	
43	Littleleaf linden	4,364.5	1,212.0	143.2	440.3	143.3	28.5	1.90	
44	crabapple	1,152.7	320.1	37.8	116.3	37.8	7.5	0.50	
Total		163,063.8	45,280.7	5,352.0	16,451.4	5,354.0	1,063.1	71.07	

Avoided runoff value is calculated by the price \$0.067/ft³. The user-designated weather station reported 37.2 inches of total annual precipitation.