



Lemon Bay

WATERSHED MANAGEMENT PLAN



Appendix E

Water Budget Data



August 2010



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1.0 LEMON BAY WATERSHED

1.1 CURRENT CONDITIONS

Table 1-1 Monthly Rainfall for Lemon Bay Watershed (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.29	2.25	1.29	2.85	0.58	21.02	16.40	8.04	9.04	10.37	0.85	1.30	77.29
1996	1949	2016	3.34	1.16	3.97	1.94	4.83	3.82	3.46	5.96	4.67	6.25	0.34	0.80	40.54
1997	1950	2017	1.69	0.32	1.26	5.52	1.40	3.02	3.55	3.48	8.77	2.21	3.86	5.91	40.99
1998	1951	2018	5.31	4.92	4.43	0.19	1.71	2.39	6.60	4.92	7.59	0.84	3.93	0.56	43.40
1999	1952	2019	2.24	0.06	1.66	0.34	0.96	6.14	5.02	7.44	7.62	2.52	0.56	1.66	36.23
2000	1953	2020	1.09	0.45	0.82	1.87	0.60	5.01	4.72	7.00	5.55	0.22	0.76	0.59	28.69
2001	1954	2021	0.22	0.01	6.83	0.35	0.33	6.42	12.22	5.43	10.46	1.56	0.21	0.31	44.36
2002	1955	2022	0.54	4.28	0.23	1.56	2.77	6.61	3.44	11.20	3.51	0.95	4.90	4.47	44.47
2003	1956	2023	0.04	0.80	1.94	3.11	3.78	15.43	4.65	12.25	11.85	0.57	0.51	3.67	58.61
2004	1957	2024	1.56	3.87	0.79	3.52	1.12	5.70	7.13	7.32	4.69	3.04	2.04	2.98	43.78
2005	1958	2025	1.60	2.84	4.34	2.25	4.96	16.40	8.63	5.06	3.63	9.07	3.19	0.28	62.25
2006	1959	2026	0.44	2.75	0.31	0.05	1.72	5.22	10.49	7.21	5.21	1.15	0.46	2.47	37.48
2007	1960	2027	1.35	1.46	0.31	2.25	0.64	4.48	4.37	3.60	4.75	4.11	0.59	0.84	28.76
Average			1.75	1.94	2.17	1.98	1.96	7.82	6.98	6.84	6.72	3.30	1.71	1.99	45.14



Table 1-2 Current Total Volume for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	3,539.4	2,306.6	1,742.3	1,898.0	851.0	35,309.8	29,326.9	13,416.5	17,818.0	19,201.3	3,560.6	2,499.0	131,469.4
1996	4,480.3	1,975.1	3,457.5	2,082.9	5,047.1	2,612.6	2,627.0	5,751.3	4,361.3	9,414.6	1,935.9	1,700.4	45,446.0
1997	2,130.6	846.0	1,380.4	4,223.8	942.3	1,733.3	1,731.4	1,789.1	10,029.3	2,369.8	4,623.8	8,158.4	39,958.3
1998	10,686.2	8,768.3	8,329.1	1,912.6	2,099.2	1,984.8	5,733.4	3,831.5	8,018.9	2,875.3	6,272.5	1,429.9	61,941.6
1999	2,106.1	767.1	1,297.1	635.4	637.0	2,909.7	3,854.3	5,980.1	9,647.2	4,721.1	2,106.2	2,528.2	37,189.6
2000	1,645.9	944.3	911.2	1,468.7	691.1	2,044.9	2,395.5	8,283.0	6,041.8	1,714.5	1,430.8	1,143.0	28,714.7
2001	815.4	599.3	6,618.6	680.2	558.3	3,967.2	15,440.6	9,760.3	16,565.4	3,703.5	1,950.9	1,456.3	62,115.9
2002	1,212.5	4,793.7	836.8	1,179.6	1,953.9	3,818.4	2,194.6	11,285.1	5,403.0	2,502.9	8,788.9	5,298.0	49,267.5
2003	1,918.5	1,481.2	1,779.1	3,881.8	3,735.8	22,106.4	5,598.5	20,085.3	24,152.6	3,411.1	2,064.4	4,936.1	95,150.6
2004	1,872.8	4,855.4	1,454.4	3,395.4	1,060.7	3,441.9	5,106.4	8,443.9	6,519.8	5,899.2	3,234.8	4,332.2	49,617.1
2005	2,679.1	4,216.3	5,807.1	1,809.9	5,028.0	22,018.3	14,617.3	5,829.8	4,655.2	14,978.5	5,289.8	2,133.9	89,063.3
2006	1,505.3	2,998.7	994.9	730.2	1,101.3	2,514.9	9,175.4	8,334.8	6,741.8	3,153.0	1,744.9	2,817.5	41,812.6
2007	1,560.6	1,290.3	719.5	1,680.0	645.8	2,020.1	1,907.5	1,745.8	2,537.6	3,162.6	1,269.2	1,129.1	19,668.1
Average	2,781.0	2,757.1	2,717.5	1,967.6	1,873.2	8,190.9	7,669.9	8,041.3	9,422.5	5,931.3	3,405.6	3,043.2	57,801.1



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Table 1-3 Current Direct Runoff for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1,445.2	545.3	241.4	394.9	43.6	28,995.1	22,352.2	7,271.9	11,081.3	11,872.2	110.1	214.0	84,567.2
1996	1,697.6	303.0	1,410.3	597.8	3,272.1	1,105.1	998.9	3,127.5	1,876.7	5,242.3	15.2	115.1	19,761.6
1997	715.9	13.1	421.8	2,556.8	144.0	815.9	785.5	652.3	7,934.9	905.3	2,851.2	4,931.1	22,727.8
1998	6,550.7	4,426.3	4,674.1	4.0	311.4	498.7	3,345.4	1,528.4	4,100.7	108.3	3,796.6	67.8	29,412.5
1999	691.6	0.1	289.7	27.4	93.8	1,332.3	2,192.0	3,123.2	5,275.2	1,052.1	78.2	792.7	14,948.1
2000	375.1	32.1	57.5	514.9	95.3	884.3	1,104.5	5,875.8	3,108.5	16.3	88.6	83.9	12,236.8
2001	9.2	0.0	4,674.6	26.5	13.2	2,430.7	10,950.6	4,742.3	10,659.0	263.0	18.6	8.9	33,796.9
2002	28.4	3,117.3	23.7	337.7	1,001.3	2,101.2	723.6	7,904.7	1,371.9	210.3	6,284.3	2,375.1	25,479.4
2003	0.0	69.7	336.4	2,457.2	2,221.3	17,204.6	1,665.5	13,247.1	17,326.2	80.6	26.5	2,765.5	57,400.6
2004	432.1	3,183.4	215.0	1,921.9	157.7	1,858.7	2,738.8	4,495.6	2,437.6	2,907.3	1,295.4	2,510.0	24,153.4
2005	1,164.9	2,788.6	3,885.8	424.7	3,033.7	15,701.4	8,239.2	1,517.4	1,223.9	10,341.7	1,873.2	3.0	50,197.5
2006	17.3	1,411.6	45.6	0.4	180.5	1,124.8	6,040.9	4,236.7	2,340.5	531.0	42.8	1,039.8	17,012.0
2007	295.9	250.4	23.0	709.2	53.5	736.2	679.8	446.5	989.1	1,270.5	91.1	129.1	5,674.2
Average	1,032.6	1,241.6	1,253.8	767.2	817.0	5,753.0	4,755.1	4,474.6	5,363.5	2,677.0	1,274.8	1,156.6	30,566.8



Table 1-4 Summary of Annual Current Total Volume Inputs for Lemon Bay Watershed (ac-ft/yr)

	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	30,688.4	84,567.2	437.9	66.0	586.5	15,123.4
1996	16,781.6	19,761.6	444.3	66.0	592.3	7,800.2
1997	9,066.7	22,727.8	443.2	66.0	598.3	7,056.3
1998	22,875.5	29,412.5	448.8	65.9	603.0	8,535.8
1999	14,258.5	14,948.1	450.8	32.6	610.3	6,889.3
2000	10,351.8	12,236.8	455.8	59.3	615.9	4,995.2
2001	18,676.5	33,796.9	460.4	46.0	621.9	8,514.2
2002	14,608.5	25,479.4	463.4	51.2	629.9	8,035.1
2003	25,997.7	57,400.6	466.4	57.6	637.1	10,591.2
2004	16,371.6	24,153.4	471.3	23.5	644.1	7,953.2
2005	25,409.0	50,197.5	471.3	21.0	649.1	12,315.3
2006	16,827.3	17,012.0	471.3	21.2	649.1	6,831.8
2007	6,848.4	5,674.2	471.3	16.8	649.1	6,008.3
Average	17,597.0	30,566.8	458.2	45.6	622.1	8,511.5

Table 1-5 Annual Total Volume to Rainfall Coefficients for Lemon Bay Watershed

	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	48.83	77.29	0.63
1996	16.88	40.54	0.42
1997	14.84	40.99	0.36
1998	23.01	43.40	0.53
1999	13.81	36.23	0.38
2000	10.67	28.69	0.37
2001	23.07	44.36	0.52
2002	18.30	44.47	0.41
2003	35.34	58.61	0.60
2004	18.43	43.78	0.42
2005	33.08	62.25	0.53
2006	15.53	37.48	0.41
2007	7.31	28.76	0.25
Average	21.47	45.14	0.45



Table 1-6 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Watershed			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.03	1.75	0.59
Feb	1.02	1.94	0.53
Mar	1.01	2.17	0.47
Apr	0.73	1.98	0.37
May	0.70	1.96	0.36
Jun	3.04	7.82	0.39
Jul	2.85	6.98	0.41
Aug	2.99	6.84	0.44
Sep	3.50	6.72	0.52
Oct	2.20	3.30	0.67
Nov	1.26	1.71	0.74
Dec	1.13	1.99	0.57

Table 1-7 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	42.74	64.87	0.66
1996	9.20	24.16	0.38
1997	6.56	21.03	0.31
1998	8.34	22.35	0.37
1999	10.07	28.74	0.35
2000	7.61	22.50	0.34
2001	18.36	36.10	0.51
2002	9.36	25.72	0.36
2003	27.99	44.75	0.63
2004	10.92	27.89	0.39
2005	23.06	42.79	0.54
2006	11.11	29.28	0.38
2007	4.22	21.31	0.20
Average	14.58	31.65	0.42



Table 1-8 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	6.09	12.42	0.49
1996	7.68	16.38	0.47
1997	8.28	19.96	0.42
1998	14.67	21.05	0.70
1999	3.74	7.49	0.50
2000	3.06	6.19	0.49
2001	4.71	8.26	0.57
2002	8.94	18.76	0.48
2003	7.35	13.86	0.53
2004	7.50	15.89	0.47
2005	10.02	19.46	0.51
2006	4.42	8.20	0.54
2007	3.08	7.45	0.41
Average	6.89	13.49	0.51

Table 1-9 Annual Direct Runoff to Rainfall Coefficients for Lemon Bay Watershed			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	31.41	77.29	0.41
1996	7.34	40.54	0.18
1997	8.44	40.99	0.21
1998	10.92	43.40	0.25
1999	5.55	36.23	0.15
2000	4.55	28.69	0.16
2001	12.55	44.36	0.28
2002	9.46	44.47	0.21
2003	21.32	58.61	0.36
2004	8.97	43.78	0.20
2005	18.64	62.25	0.30
2006	6.32	37.48	0.17
2007	2.11	28.76	0.07
Average	11.35	45.14	0.23



Table 1-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.38	1.75	0.22
Feb	0.46	1.94	0.24
Mar	0.47	2.17	0.21
Apr	0.28	1.98	0.14
May	0.30	1.96	0.16
Jun	2.14	7.82	0.27
Jul	1.77	6.98	0.25
Aug	1.66	6.84	0.24
Sep	1.99	6.72	0.30
Oct	0.99	3.30	0.30
Nov	0.47	1.71	0.28
Dec	0.43	1.99	0.22

Table 1-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	30.30	64.87	0.47
1996	4.59	24.16	0.19
1997	4.12	21.03	0.20
1998	3.56	22.35	0.16
1999	4.82	28.74	0.17
2000	4.08	22.50	0.18
2001	10.79	36.10	0.30
2002	4.57	25.72	0.18
2003	18.39	44.75	0.41
2004	5.36	27.89	0.19
2005	13.75	42.79	0.32
2006	5.30	29.28	0.18
2007	1.53	21.31	0.07
Average	8.55	31.65	0.23



Table 1-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	1.11	12.42	0.09
1996	2.75	16.38	0.17
1997	4.32	19.96	0.22
1998	7.37	21.05	0.35
1999	0.73	7.49	0.10
2000	0.46	6.19	0.07
2001	1.76	8.26	0.21
2002	4.89	18.76	0.26
2003	2.93	13.86	0.21
2004	3.61	15.89	0.23
2005	4.89	19.46	0.25
2006	1.02	8.20	0.12
2007	0.58	7.45	0.08
Average	2.80	13.49	0.18



1.2 HISTORICAL CONDITIONS

Table 1-13 Historical Total Volume for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	2,594.4	1,565.6	1,015.5	1,218.3	581.0	33,643.9	27,219.1	10,608.7	14,582.7	16,044.7	1,972.8	1,445.7	112,492.4
1949	3,292.0	1,244.8	2,547.4	1,497.9	4,329.6	1,927.7	1,692.6	4,099.3	3,102.4	7,440.8	1,121.8	1,124.7	33,420.9
1950	1,669.0	645.6	1,085.7	3,618.1	717.8	1,455.0	1,342.9	1,353.5	8,614.2	1,533.8	3,879.4	7,019.2	32,934.2
1951	9,301.2	7,657.0	6,249.0	1,140.9	1,447.5	1,500.5	5,343.9	3,139.8	6,769.0	1,619.2	4,985.7	992.0	50,145.9
1952	1,598.8	616.1	978.7	548.2	517.1	2,293.0	3,628.2	4,756.9	7,846.8	2,897.7	1,213.7	1,751.2	28,646.4
1953	1,237.8	734.9	736.9	1,160.3	541.7	1,451.1	1,876.4	7,247.5	4,863.3	1,090.4	1,013.6	837.3	22,791.2
1954	649.0	489.0	5,585.9	631.3	530.1	3,683.2	15,571.7	8,058.1	14,065.2	2,004.0	1,126.8	975.2	53,369.4
1955	890.9	4,520.2	667.6	896.6	1,427.7	3,655.0	1,724.9	10,152.8	3,587.1	1,411.2	7,564.3	4,517.7	41,016.1
1956	1,354.6	1,140.6	1,430.7	3,713.5	3,543.3	21,845.5	3,644.5	16,967.9	21,305.4	1,639.0	1,134.6	3,924.1	81,643.9
1957	1,334.3	3,754.7	1,059.3	2,899.6	877.8	2,635.0	4,345.7	6,763.4	4,774.1	4,096.2	2,205.0	3,702.8	38,448.0
1958	1,910.6	3,494.5	4,718.1	1,148.5	3,726.8	20,046.8	11,504.7	3,460.0	2,645.0	12,601.4	3,715.5	1,250.9	70,222.8
1959	1,035.6	2,286.9	745.0	601.7	835.2	1,897.5	8,603.2	6,629.2	4,528.5	1,678.4	1,042.3	2,152.5	32,036.0
1960	1,248.6	934.3	558.9	1,183.3	530.7	1,399.6	1,337.3	1,322.5	1,731.7	2,146.2	706.1	680.4	13,779.7
Average	2,162.8	2,237.2	2,106.1	1,558.3	1,508.2	7,494.9	6,756.5	6,504.6	7,570.4	4,323.3	2,437.0	2,336.5	46,995.9



Table 1-14 Historical Direct Runoff for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	1,065.31	325.35	31.98	41.10	2.21	27,849.93	22,053.65	6,993.26	10,373.77	11,432.10	51.65	21.87	80,242.19
1949	1,394.31	70.64	839.11	334.91	2,796.13	680.45	443.85	2,163.43	1,465.15	4,632.70	0.25	16.98	14,837.92
1950	553.59	0.04	264.87	2,054.75	8.67	601.75	473.65	347.12	6,758.52	419.09	2,504.88	4,592.54	18,579.47
1951	6,265.14	4,708.28	3,818.17	0.06	143.72	325.12	3,198.74	1,191.27	3,800.47	22.54	3,162.03	1.05	26,636.60
1952	409.08	0.00	67.75	0.24	15.49	744.31	2,071.42	2,360.10	4,655.13	769.09	2.36	489.95	11,584.92
1953	253.70	0.10	4.13	291.44	5.88	335.11	641.36	5,148.06	2,671.39	3.92	25.78	12.93	9,393.82
1954	0.01	0.00	3,723.41	9.94	2.58	2,155.94	11,545.37	4,897.94	10,229.03	136.43	1.39	0.00	32,702.02
1955	0.03	3,038.03	13.87	159.32	546.22	2,020.22	433.12	7,282.83	1,101.63	61.07	5,588.77	2,265.17	22,510.30
1956	0.00	0.55	142.91	2,377.48	2,071.81	17,522.31	1,251.35	12,704.02	16,895.95	6.06	0.11	2,296.01	55,268.56
1957	208.61	2,333.76	73.37	1,580.04	72.08	1,123.29	2,333.62	4,035.62	2,229.75	2,266.66	930.18	2,298.31	19,485.29
1958	753.32	2,301.93	3,155.58	96.86	2,097.52	15,199.82	7,764.65	1,011.30	706.31	9,410.39	1,477.46	2.30	43,977.45
1959	0.04	1,010.69	0.38	0.00	4.74	570.03	5,801.22	3,655.66	1,921.58	267.88	1.99	792.32	14,026.54
1960	252.12	90.46	0.10	302.26	0.58	165.56	163.45	144.96	421.05	766.77	29.20	17.46	2,353.97
Average	858.10	1,067.68	933.51	557.57	597.51	5,330.30	4,475.04	3,995.04	4,863.82	2,322.67	1,059.70	985.15	27,046.08

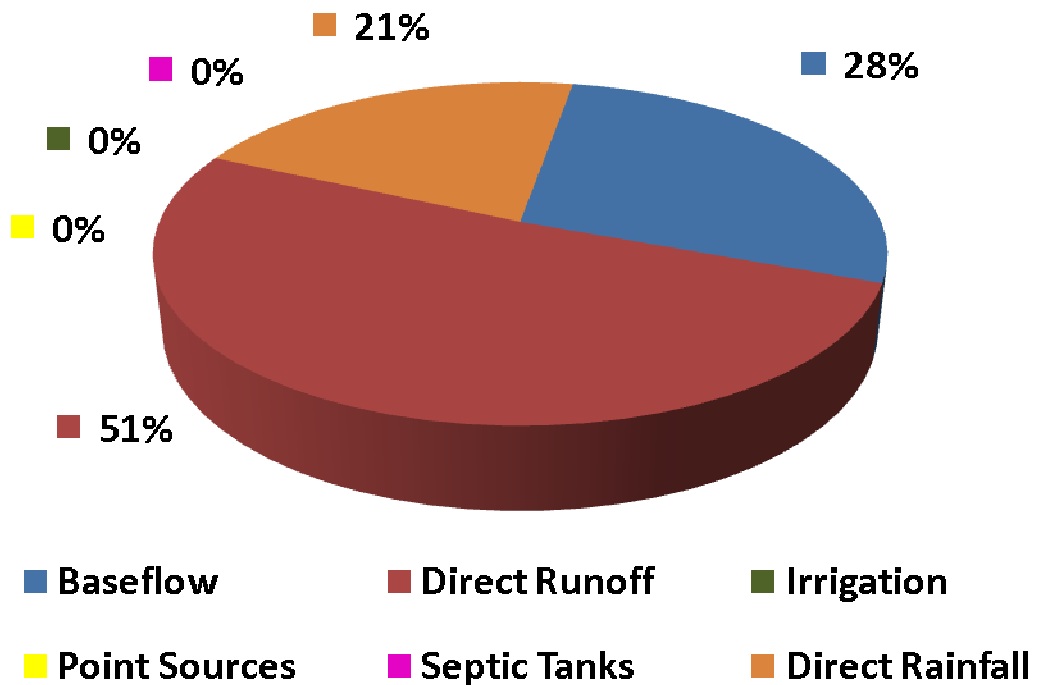


Figure 1-1 Lemon Bay Watershed Historical Total Volume Water Budget

Table 1-15 Summary of Annual Historical Total Volume Inputs for Lemon Bay Watershed (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	17,126.8	80,242.2	0.0	0.0	0.0	15,123.4
1949	10,782.7	14,837.9	0.0	0.0	0.0	7,800.2
1950	7,298.3	18,579.5	0.0	0.0	0.0	7,056.3
1951	14,973.3	26,636.6	0.0	0.0	0.0	8,535.8
1952	10,172.0	11,584.9	0.0	0.0	0.0	6,889.3
1953	8,402.1	9,393.8	0.0	0.0	0.0	4,995.2
1954	12,153.0	32,702.0	0.0	0.0	0.0	8,514.2
1955	10,470.6	22,510.3	0.0	0.0	0.0	8,035.1
1956	15,784.1	55,268.6	0.0	0.0	0.0	10,591.2
1957	11,009.4	19,485.3	0.0	0.0	0.0	7,953.2
1958	13,930.0	43,977.4	0.0	0.0	0.0	12,315.3
1959	11,177.5	14,026.5	0.0	0.0	0.0	6,831.8
1960	5,417.3	2,354.0	0.0	0.0	0.0	6,008.3
Average	11,438.2	27,046.1	0.0	0.0	0.0	8,511.5

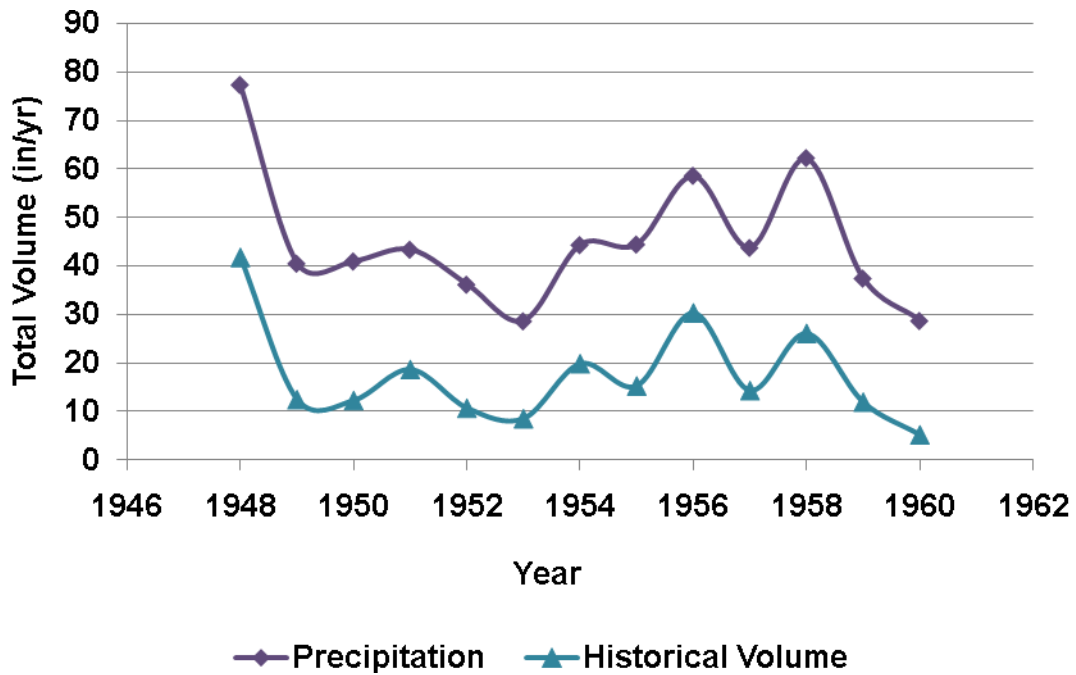


Figure 1-2 Annual Variability of Precipitation and Total Volume for the Lemon Bay Watershed

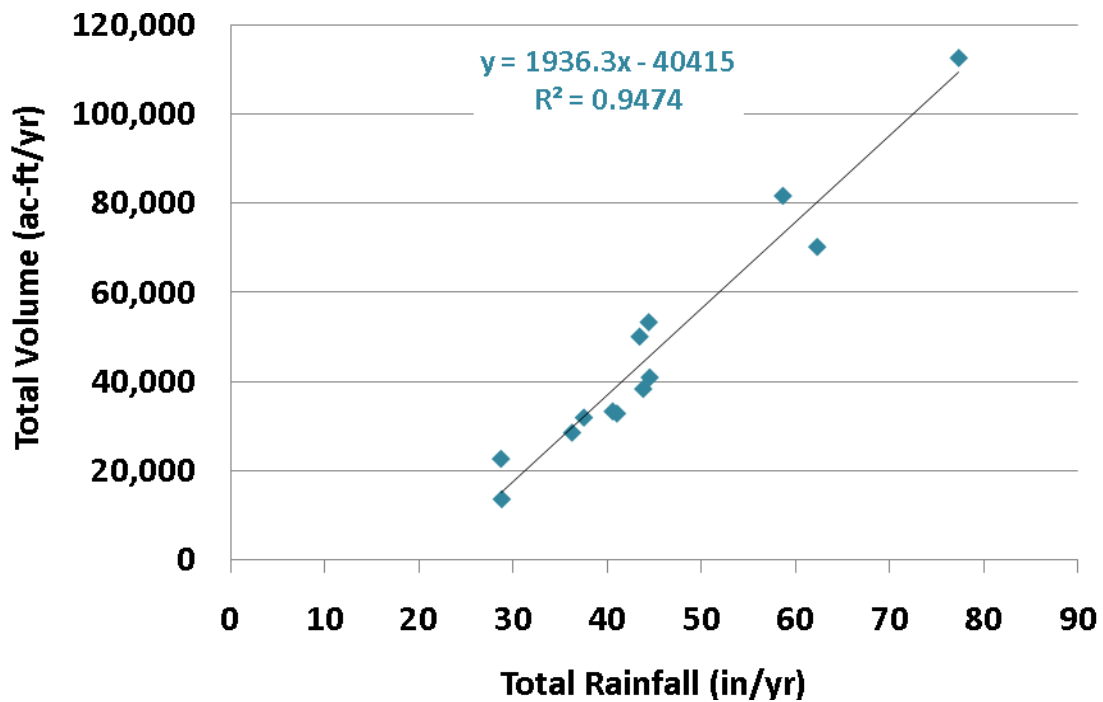


Figure 1-3 Correlation of Annual Total Volume to Rainfall for the Lemon Bay Watershed



Table 1-16 Annual Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	41.78	77.29	0.54
1949	12.41	40.54	0.31
1950	12.23	40.99	0.30
1951	18.63	43.40	0.43
1952	10.64	36.23	0.29
1953	8.47	28.69	0.30
1954	19.82	44.36	0.45
1955	15.23	44.47	0.34
1956	30.32	58.61	0.52
1957	14.28	43.78	0.33
1958	26.08	62.25	0.42
1959	11.90	37.48	0.32
1960	5.12	28.76	0.18
Average	17.46	45.14	0.36

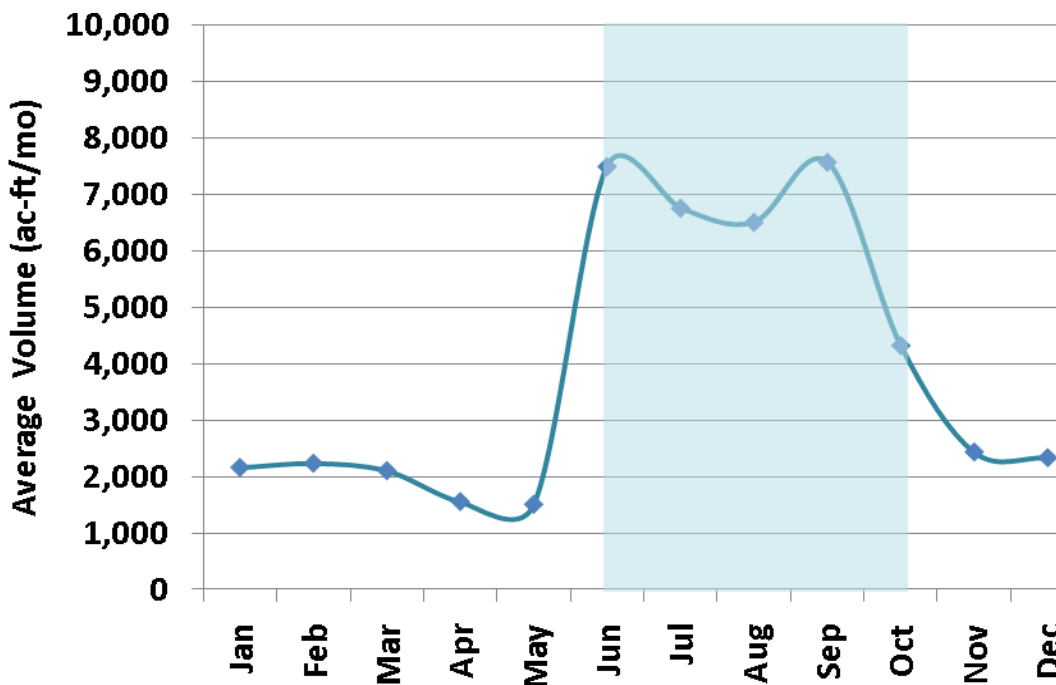


Figure 1-4 Variability of Average Monthly Total Volume in the Lemon Bay Watershed



Table 1-17 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Watershed			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.80	1.75	0.46
Feb	0.83	1.94	0.43
Mar	0.78	2.17	0.36
Apr	0.58	1.98	0.29
May	0.56	1.96	0.29
Jun	2.78	7.82	0.36
Jul	2.51	6.98	0.36
Aug	2.42	6.84	0.35
Sep	2.81	6.72	0.42
Oct	1.61	3.30	0.49
Nov	0.91	1.71	0.53
Dec	0.87	1.99	0.44

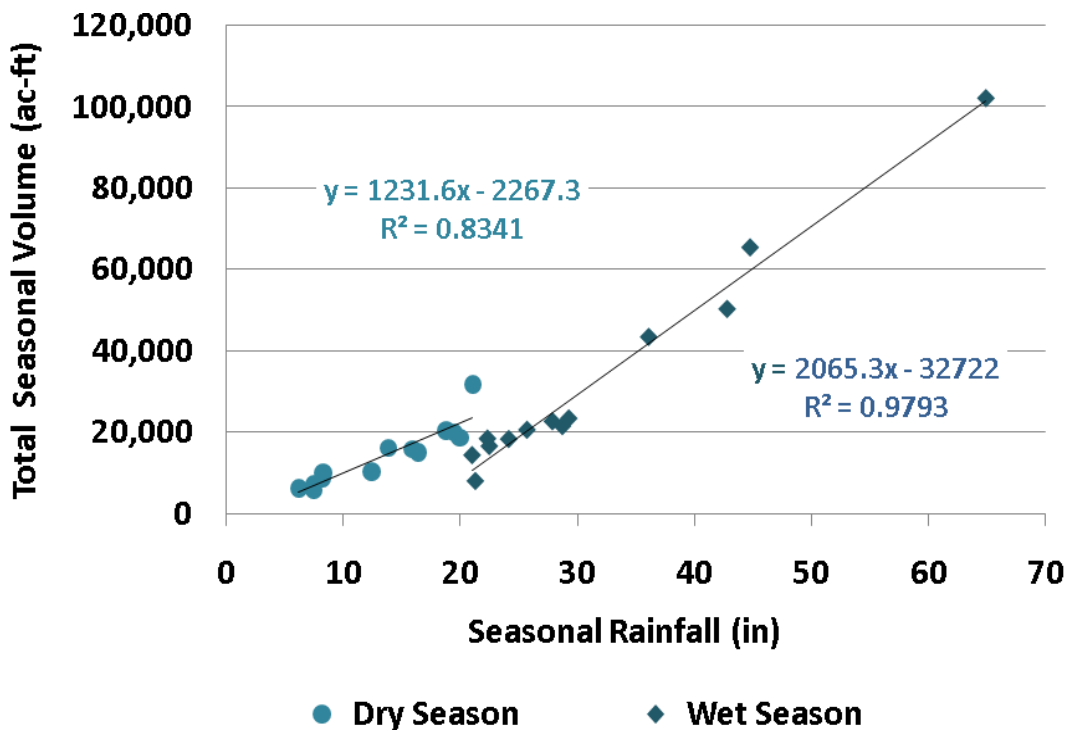


Figure 1-5 Correlation of Seasonal Total Volume to Rainfall for the Lemon Bay Watershed



Table 1-18 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	37.92	64.87	0.58
1949	6.78	24.16	0.28
1950	5.31	21.03	0.25
1951	6.82	22.35	0.31
1952	7.96	28.74	0.28
1953	6.14	22.50	0.27
1954	16.11	36.10	0.45
1955	7.63	25.72	0.30
1956	24.29	44.75	0.54
1957	8.40	27.89	0.30
1958	18.67	42.79	0.44
1959	8.67	29.28	0.30
1960	2.95	21.31	0.14
Average	12.13	31.65	0.34

Table 1-19 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	3.86	12.42	0.31
1949	5.63	16.38	0.34
1950	6.92	19.96	0.35
1951	11.80	21.05	0.56
1952	2.68	7.49	0.36
1953	2.33	6.19	0.38
1954	3.71	8.26	0.45
1955	7.61	18.76	0.41
1956	6.03	13.86	0.44
1957	5.88	15.89	0.37
1958	7.42	19.46	0.38
1959	3.23	8.20	0.39
1960	2.17	7.45	0.29
Average	5.33	13.49	0.39

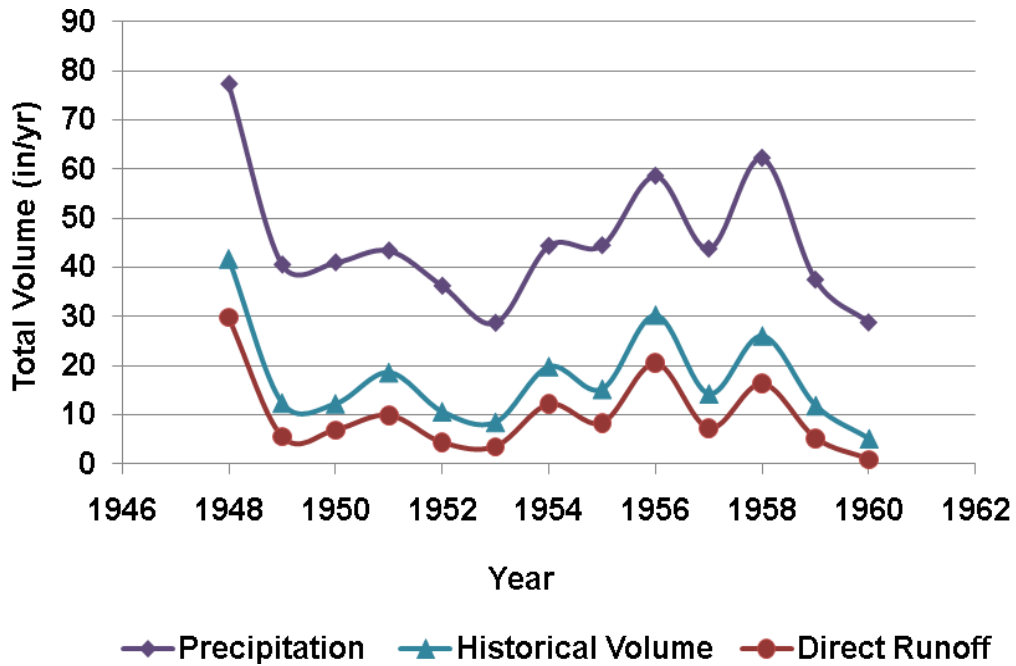


Figure 1-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for the Lemon Bay Watershed

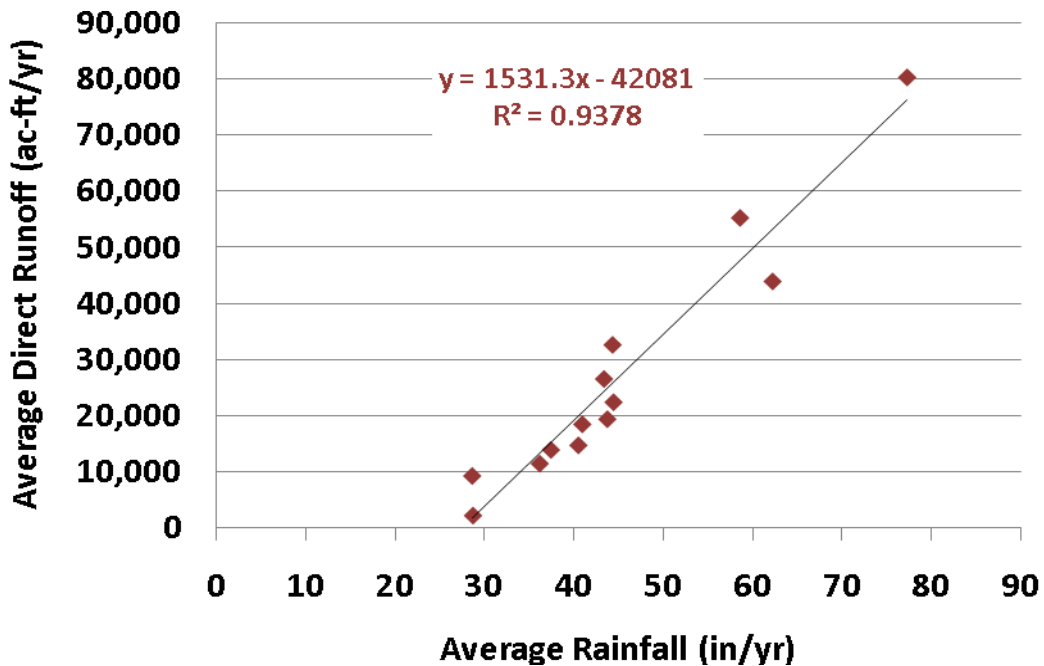


Figure 1-7 Correlation of Average Annual Direct Runoff to Rainfall for the Lemon Bay Watershed



Table 1-20 Annual Direct Runoff to Rainfall Coefficients for Lemon Bay Watershed			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	29.80	77.29	0.39
1949	5.51	40.54	0.14
1950	6.90	40.99	0.17
1951	9.89	43.40	0.23
1952	4.30	36.23	0.12
1953	3.49	28.69	0.12
1954	12.15	44.36	0.27
1955	8.36	44.47	0.19
1956	20.53	58.61	0.35
1957	7.24	43.78	0.17
1958	16.33	62.25	0.26
1959	5.21	37.48	0.14
1960	0.87	28.76	0.03
Average	10.05	45.14	0.20

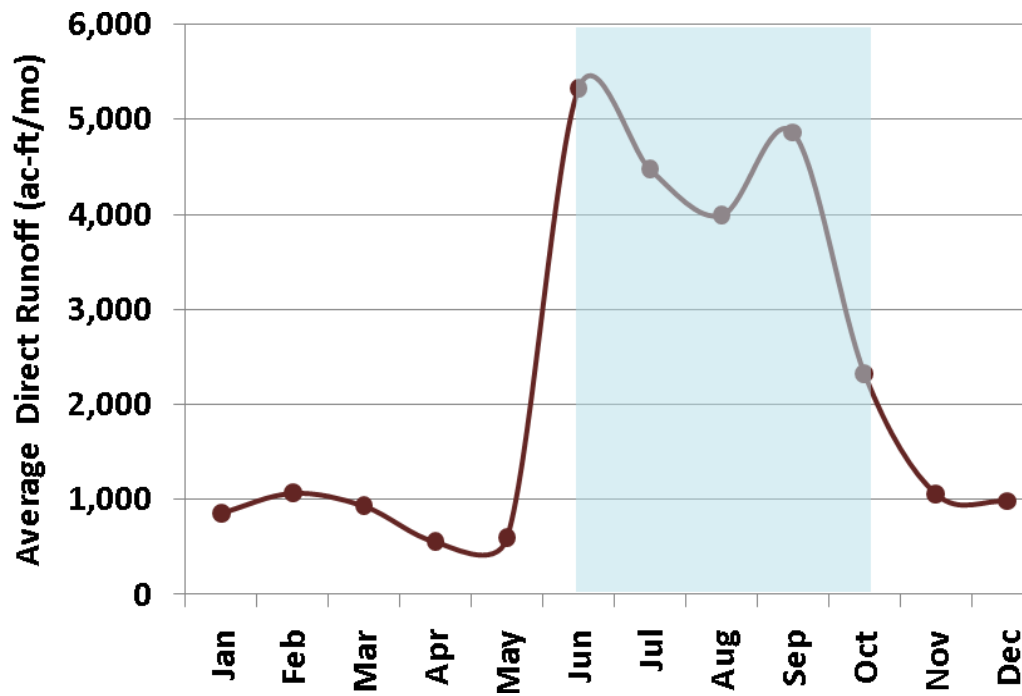


Figure 1-8 Variability of Average Monthly Direct Runoff to the Lemon Bay Watershed



Table 1-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.32	1.75	0.18
Feb	0.40	1.94	0.20
Mar	0.35	2.17	0.16
Apr	0.21	1.98	0.10
May	0.22	1.96	0.11
Jun	1.98	7.82	0.25
Jul	1.66	6.98	0.24
Aug	1.48	6.84	0.22
Sep	1.81	6.72	0.27
Oct	0.86	3.30	0.26
Nov	0.39	1.71	0.23
Dec	0.37	1.99	0.18

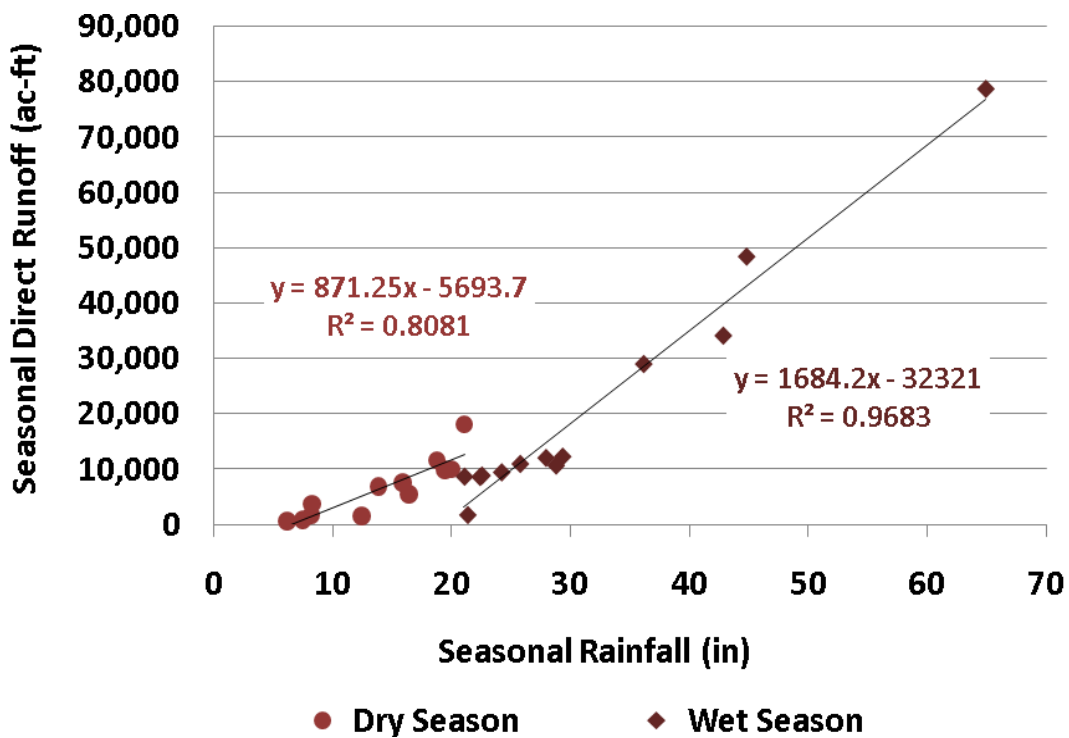


Figure 1-9 Correlation of Seasonal Direct Runoff to Rainfall for the Lemon Bay Watershed



Table 1-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	29.23	64.87	0.45
1949	3.49	24.16	0.14
1950	3.19	21.03	0.15
1951	3.17	22.35	0.14
1952	3.94	28.74	0.14
1953	3.27	22.50	0.15
1954	10.76	36.10	0.30
1955	4.05	25.72	0.16
1956	17.97	44.75	0.40
1957	4.45	27.89	0.16
1958	12.66	42.79	0.30
1959	4.54	29.28	0.15
1960	0.62	21.31	0.03
Average	7.79	31.65	0.21

Table 1-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.57	12.42	0.05
1949	2.03	16.38	0.12
1950	3.71	19.96	0.19
1951	6.72	21.05	0.32
1952	0.37	7.49	0.05
1953	0.22	6.19	0.04
1954	1.39	8.26	0.17
1955	4.31	18.76	0.23
1956	2.56	13.86	0.18
1957	2.78	15.89	0.18
1958	3.67	19.46	0.19
1959	0.67	8.20	0.08
1960	0.26	7.45	0.03
Average	2.25	13.49	0.14



1.3 FUTURE CONDITIONS

Table 1-24 Future Total Volume for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	4,463.2	3,019.7	2,283.8	2,345.3	991.5	36,966.9	32,343.8	16,929.2	21,375.0	22,676.6	5,094.0	3,412.9	151,902.0
2016	5,642.6	2,477.2	4,107.2	2,315.8	5,516.5	3,314.3	3,492.8	7,172.3	5,781.6	11,565.5	2,757.7	2,198.2	56,341.7
2017	2,354.5	960.4	1,444.6	4,209.1	1,030.3	1,933.7	1,939.6	2,086.6	11,389.2	3,130.3	5,495.8	9,379.4	45,353.5
2018	11,527.5	9,871.1	10,182.9	2,680.9	2,626.7	2,362.8	6,304.4	4,740.8	9,889.2	4,319.7	7,578.5	1,809.8	73,894.3
2019	2,481.0	825.1	1,420.1	637.1	679.4	3,311.6	4,144.5	7,086.3	11,630.9	6,251.3	2,851.4	3,107.8	44,426.6
2020	1,826.6	1,034.7	981.0	1,543.4	704.6	2,382.9	2,651.1	8,970.6	7,454.0	2,289.5	1,737.2	1,326.0	32,901.6
2021	886.2	618.1	7,540.6	611.4	478.6	4,049.1	15,522.5	11,266.2	19,588.2	5,497.3	2,709.9	1,852.1	70,620.3
2022	1,438.0	4,673.8	902.7	1,375.3	2,318.0	4,265.8	2,460.8	12,666.0	7,220.4	3,553.2	9,923.8	6,283.3	57,081.2
2023	2,293.2	1,652.2	1,893.4	3,602.8	3,522.9	22,736.4	7,606.0	24,332.9	26,820.9	5,111.4	2,936.6	5,749.6	108,258.2
2024	2,278.5	5,604.1	1,642.5	3,462.1	1,100.2	3,765.1	6,119.7	10,253.5	8,671.0	7,571.6	4,181.4	5,108.9	59,758.6
2025	3,141.0	4,480.3	6,634.8	2,235.4	6,040.1	24,767.5	17,983.5	8,527.2	6,881.4	17,662.5	6,890.5	2,929.5	108,173.6
2026	1,853.7	3,599.8	1,097.0	750.9	1,206.1	2,797.6	9,960.8	10,199.4	9,087.2	4,552.8	2,404.8	3,258.9	50,769.0
2027	1,882.4	1,483.2	778.2	1,942.1	674.7	2,407.8	2,258.7	1,981.8	3,018.4	3,931.4	1,624.2	1,338.2	23,321.0
Average	3,236.0	3,100.0	3,146.8	2,131.6	2,068.4	8,850.9	8,676.0	9,708.7	11,446.7	7,547.2	4,322.0	3,673.4	67,907.8



1

Table 1-25 Future Direct Runoff for Lemon Bay Watershed (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	1,901.7	818.6	384.1	639.0	83.0	30,168.1	23,295.7	7,961.4	11,983.1	12,519.1	156.3	324.7	90,234.9
2016	2,131.4	446.2	1,888.5	723.7	3,628.8	1,550.1	1,440.1	3,925.9	2,475.4	6,030.3	39.0	181.0	24,460.3
2017	712.4	23.7	433.2	2,527.5	244.5	1,045.9	1,029.1	933.4	9,091.2	1,266.8	3,345.4	5,434.6	26,087.8
2018	6,319.5	4,062.9	5,292.6	9.4	386.9	616.0	3,772.7	2,059.6	4,798.4	196.4	4,405.8	97.8	32,018.1
2019	902.0	0.1	404.2	50.0	173.5	1,778.7	2,527.6	3,946.3	6,228.6	1,214.6	132.0	1,008.3	18,365.9
2020	377.9	49.6	105.1	597.6	136.1	1,261.4	1,406.5	6,396.8	3,862.6	40.8	123.0	120.7	14,478.1
2021	14.0	0.0	5,607.2	57.8	38.6	2,615.6	10,799.0	4,493.9	11,554.8	426.1	30.3	17.2	35,654.5
2022	54.9	2,903.5	35.3	526.4	1,383.4	2,581.5	958.8	8,722.4	1,530.3	268.4	6,931.8	2,856.1	28,753.0
2023	0.0	115.7	432.8	2,222.5	2,086.0	17,293.2	1,962.6	14,791.4	17,594.1	124.7	44.9	3,102.9	59,770.8
2024	603.7	3,811.8	333.4	1,987.9	237.7	2,241.5	3,577.8	4,991.7	2,809.9	3,369.5	1,601.1	2,931.6	28,497.6
2025	1,407.1	2,945.1	4,480.5	643.9	3,851.0	17,032.4	8,953.6	2,166.7	1,722.9	11,471.3	2,278.0	4.6	56,957.0
2026	29.9	1,820.1	59.0	0.5	295.9	1,436.8	6,581.7	4,868.6	2,878.6	705.8	67.1	1,109.8	19,853.6
2027	418.2	349.1	38.2	965.6	98.1	1,151.2	1,066.8	705.1	1,390.3	1,721.2	146.6	178.0	8,228.5
Average	1,144.1	1,334.3	1,499.5	842.5	972.6	6,213.3	5,182.5	5,074.1	5,993.9	3,027.3	1,484.7	1,335.9	34,104.6

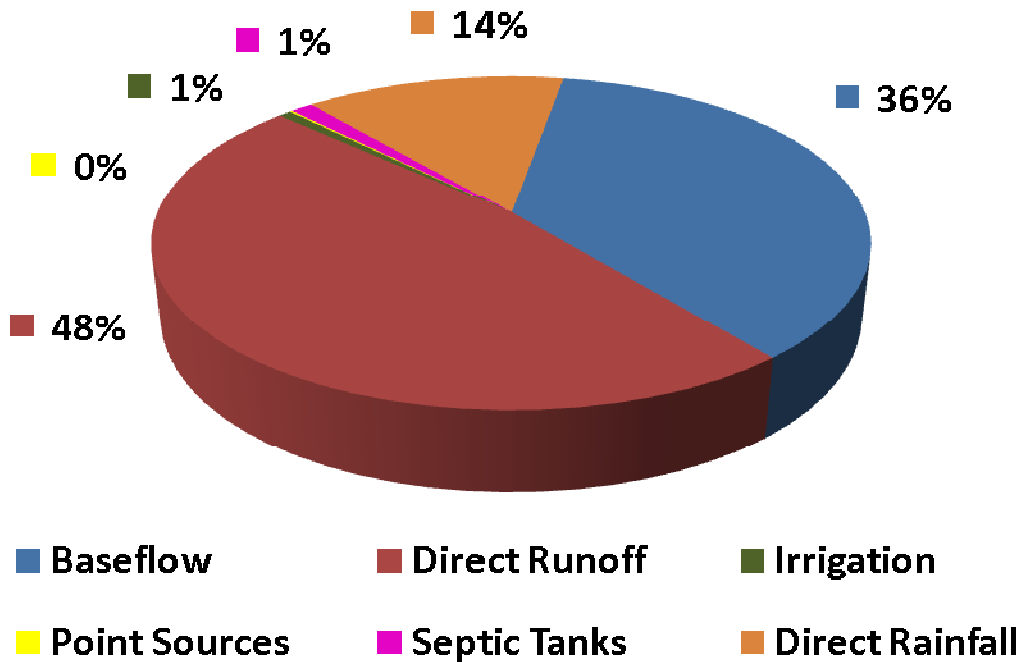


Figure 1-10 Lemon Bay Watershed Future Total Volume Water Budget

Table 1-26 Summary of Annual Future Total Volume Inputs for Lemon Bay Watershed (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	45,428.4	90,234.9	369.7	101.9	643.7	15,123.4
2016	22,965.8	24,460.3	369.7	101.9	643.7	7,800.2
2017	11,094.1	26,087.8	369.7	101.9	643.7	7,056.3
2018	32,218.7	32,018.1	369.7	108.3	643.7	8,535.8
2019	18,058.7	18,365.9	369.7	99.3	643.7	6,889.3
2020	12,324.7	14,478.1	369.7	90.1	643.7	4,995.2
2021	25,367.2	35,654.5	369.7	70.8	643.7	8,514.2
2022	19,200.5	28,753.0	369.7	79.2	643.7	8,035.1
2023	36,788.7	59,770.8	369.7	94.0	643.7	10,591.2
2024	22,257.9	28,497.6	369.7	36.4	643.7	7,953.2
2025	37,856.1	56,957.0	369.7	31.8	643.7	12,315.3
2026	23,042.8	19,853.6	369.7	27.4	643.7	6,831.8
2027	8,044.3	8,228.5	369.7	26.4	643.7	6,008.3
Average	24,203.7	34,104.6	369.7	74.6	643.7	8,511.5

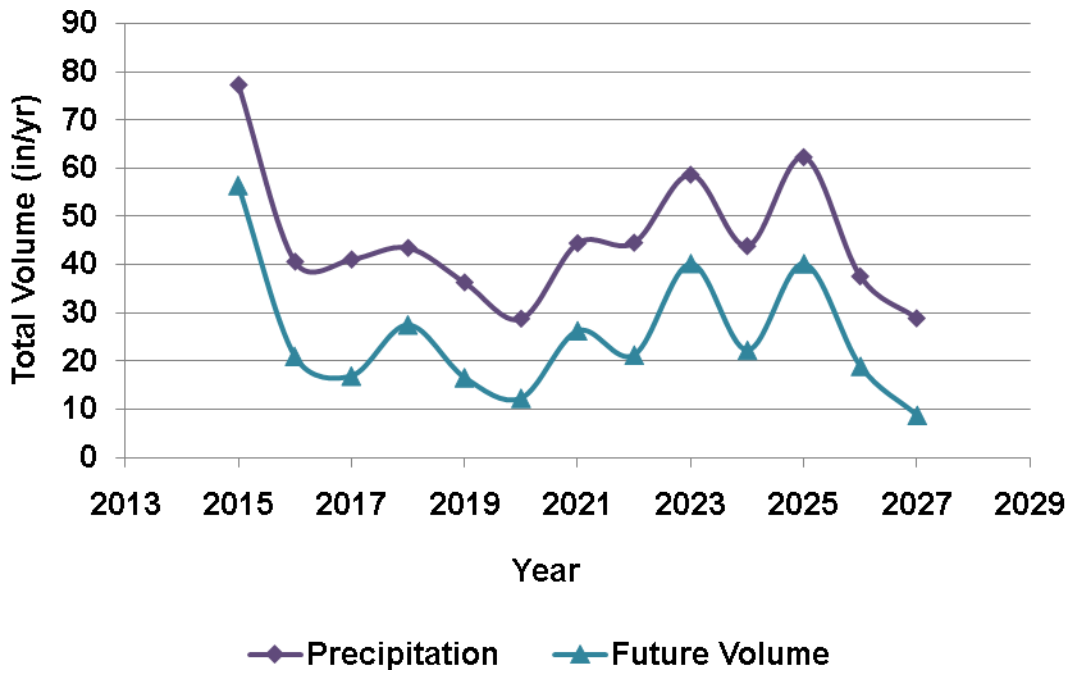


Figure 1-11 Annual Variability of Precipitation and Total Volume for the Lemon Bay Watershed

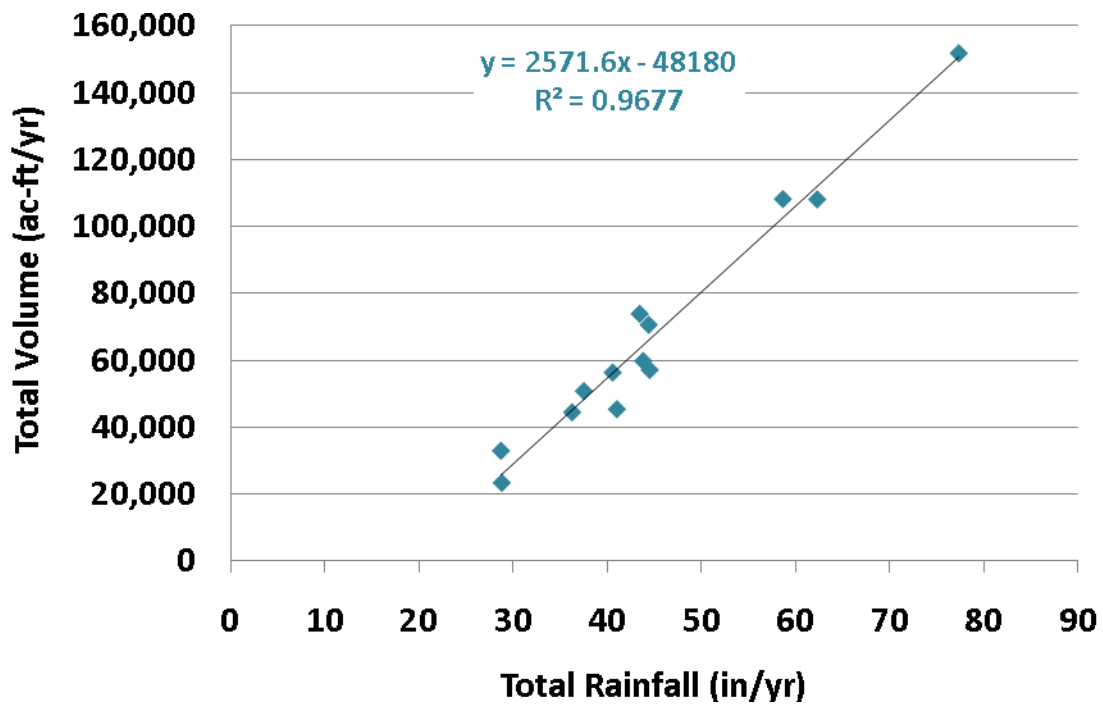


Figure 1-12 Correlation of Annual Total Volume to Rainfall for the Lemon Bay Watershed



Table 1-27 Annual Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	56.42	77.29	0.73
2016	20.93	40.54	0.52
2017	16.85	40.99	0.41
2018	27.45	43.40	0.63
2019	16.50	36.23	0.46
2020	12.22	28.69	0.43
2021	26.23	44.36	0.59
2022	21.20	44.47	0.48
2023	40.21	58.61	0.69
2024	22.20	43.78	0.51
2025	40.18	62.25	0.65
2026	18.86	37.48	0.50
2027	8.66	28.76	0.30
Average	25.22	45.14	0.53

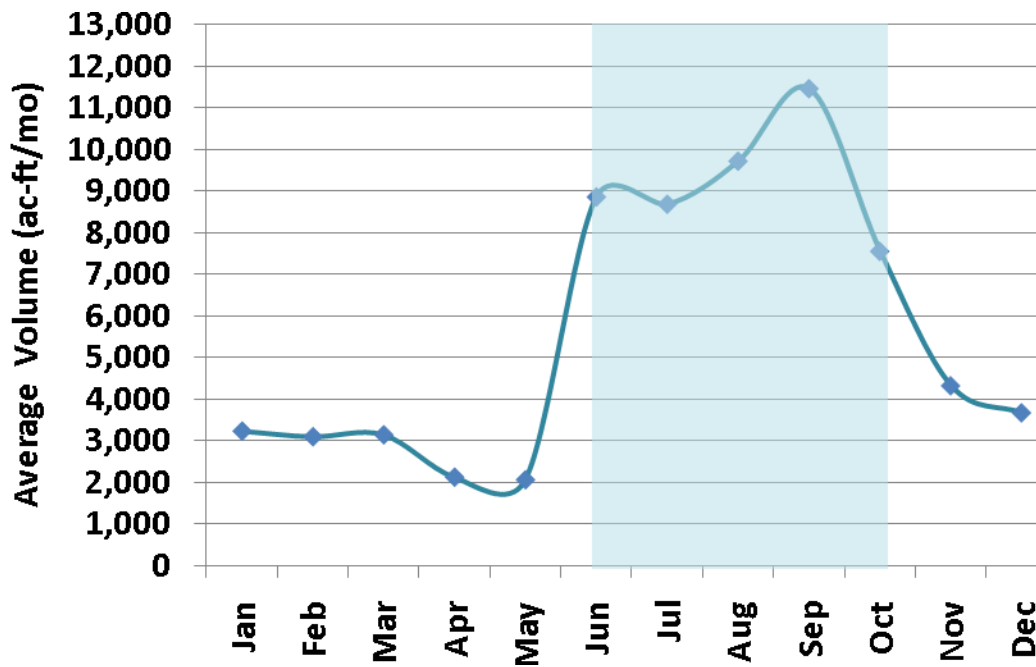


Figure 1-13 Variability of Average Monthly Total Volume in the Lemon Bay Watershed



Table 1-28 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Watershed			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.20	1.75	0.69
Feb	1.15	1.94	0.59
Mar	1.17	2.17	0.54
Apr	0.79	1.98	0.40
May	0.77	1.96	0.39
Jun	3.29	7.82	0.42
Jul	3.22	6.98	0.46
Aug	3.61	6.84	0.53
Sep	4.25	6.72	0.63
Oct	2.80	3.30	0.85
Nov	1.61	1.71	0.94
Dec	1.36	1.99	0.69

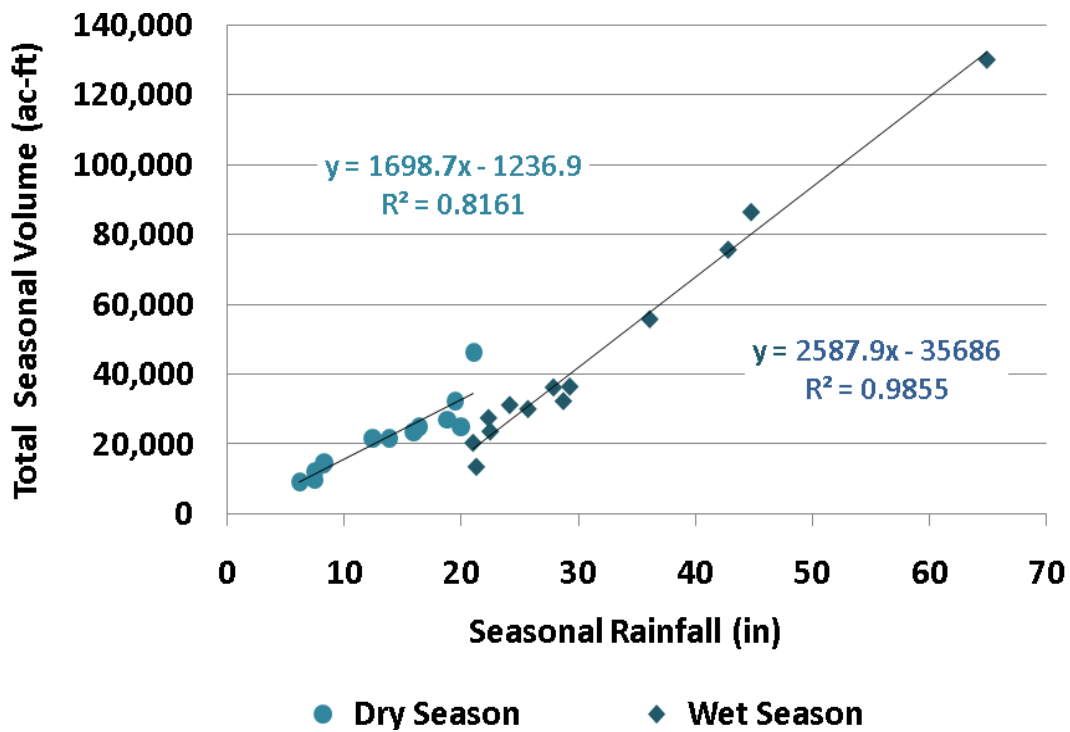


Figure 1-14 Correlation of Seasonal Total Volume to Rainfall for the Lemon Bay Watershed



Table 1-29 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	48.39	64.87	0.75
2016	11.64	24.16	0.48
2017	7.61	21.03	0.36
2018	10.26	22.35	0.46
2019	12.04	28.74	0.42
2020	8.82	22.50	0.39
2021	20.77	36.10	0.58
2022	11.20	25.72	0.44
2023	32.17	44.75	0.72
2024	13.51	27.89	0.48
2025	28.16	42.79	0.66
2026	13.59	29.28	0.46
2027	5.05	21.31	0.24
Average	17.17	31.65	0.49

Table 1-30 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Watershed			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	8.03	12.42	0.65
2016	9.29	16.38	0.57
2017	9.24	19.96	0.46
2018	17.19	21.05	0.82
2019	4.46	7.49	0.60
2020	3.40	6.19	0.55
2021	5.46	8.26	0.66
2022	10.00	18.76	0.53
2023	8.04	13.86	0.58
2024	8.68	15.89	0.55
2025	12.02	19.46	0.62
2026	5.26	8.20	0.64
2027	3.61	7.45	0.48
Average	8.05	13.49	0.59

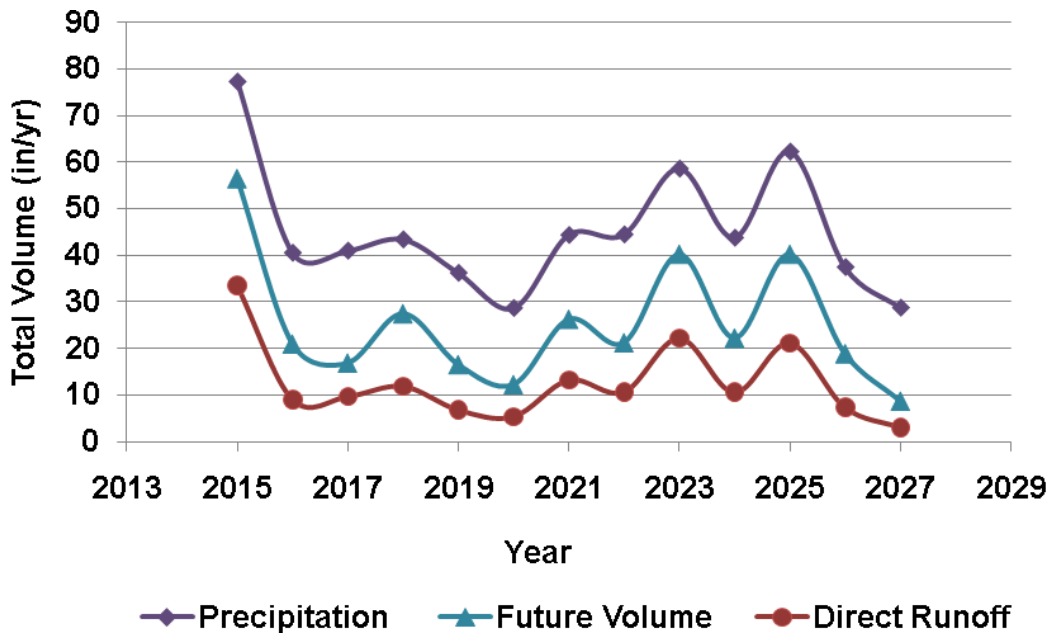


Figure 1-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for the Lemon Bay Watershed

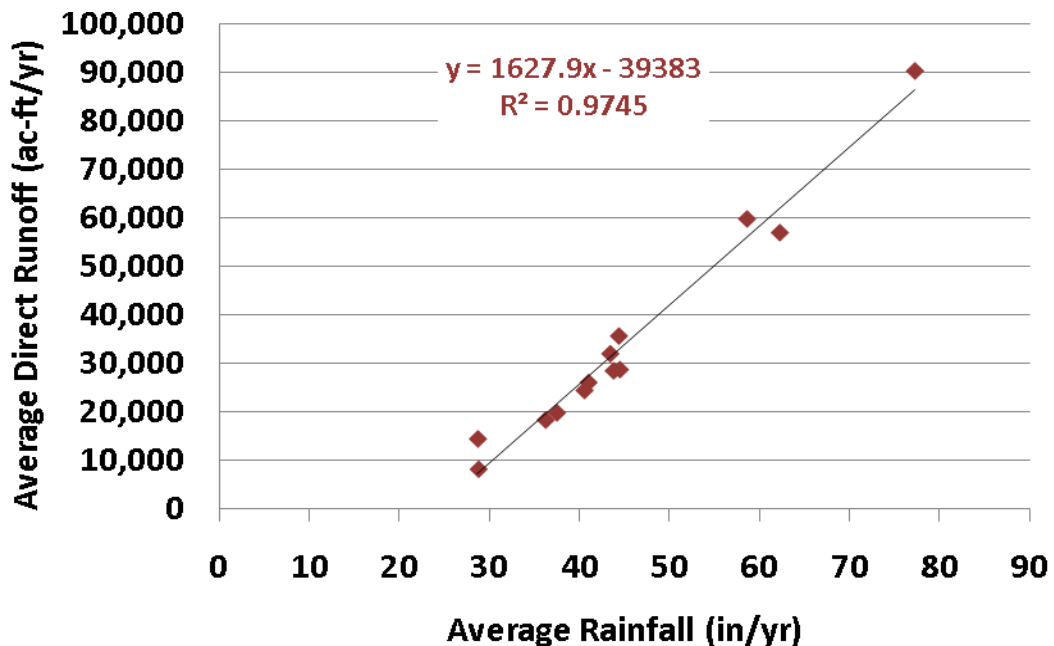


Figure 1-16 Correlation of Average Annual Direct Runoff to Rainfall for the Lemon Bay Watershed



Table 1-31 Annual Direct Runoff to Rainfall Coefficients for Lemon Bay Watershed

	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	33.52	77.29	0.43
2016	9.09	40.54	0.22
2017	9.69	40.99	0.24
2018	11.89	43.40	0.27
2019	6.82	36.23	0.19
2020	5.38	28.69	0.19
2021	13.24	44.36	0.30
2022	10.68	44.47	0.24
2023	22.20	58.61	0.38
2024	10.58	43.78	0.24
2025	21.16	62.25	0.34
2026	7.37	37.48	0.20
2027	3.06	28.76	0.11
Average	12.67	45.14	0.26

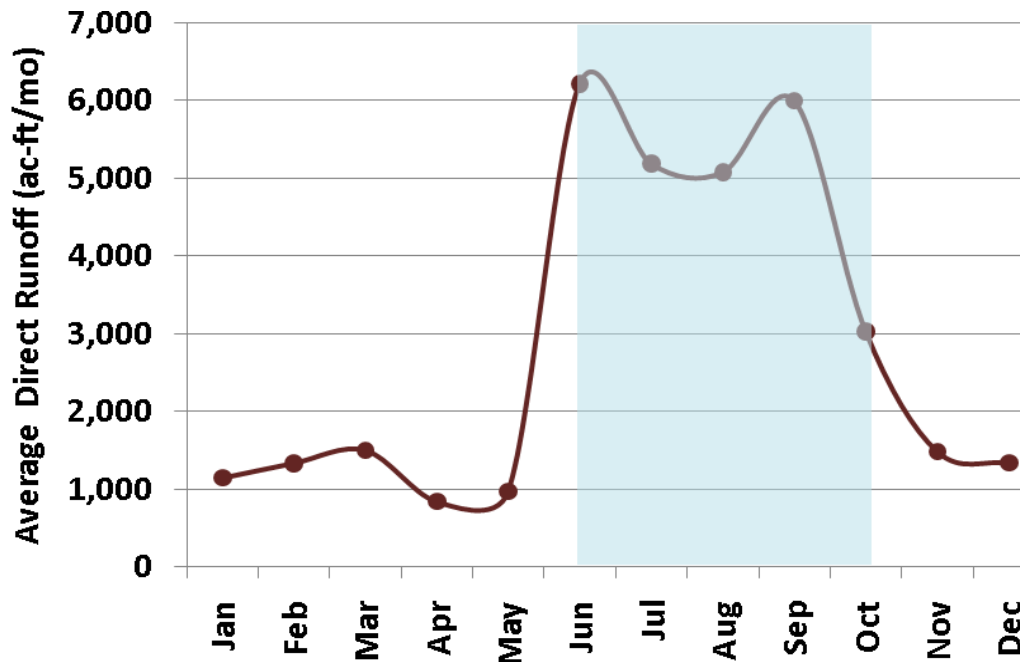


Figure 1-17 Variability of Average Monthly Direct Runoff to the Lemon Bay Watershed



Table 1-32 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.42	1.75	0.24
Feb	0.50	1.94	0.26
Mar	0.56	2.17	0.26
Apr	0.31	1.98	0.16
May	0.36	1.96	0.18
Jun	2.31	7.82	0.30
Jul	1.92	6.98	0.28
Aug	1.88	6.84	0.28
Sep	2.23	6.72	0.33
Oct	1.12	3.30	0.34
Nov	0.55	1.71	0.32
Dec	0.50	1.99	0.25

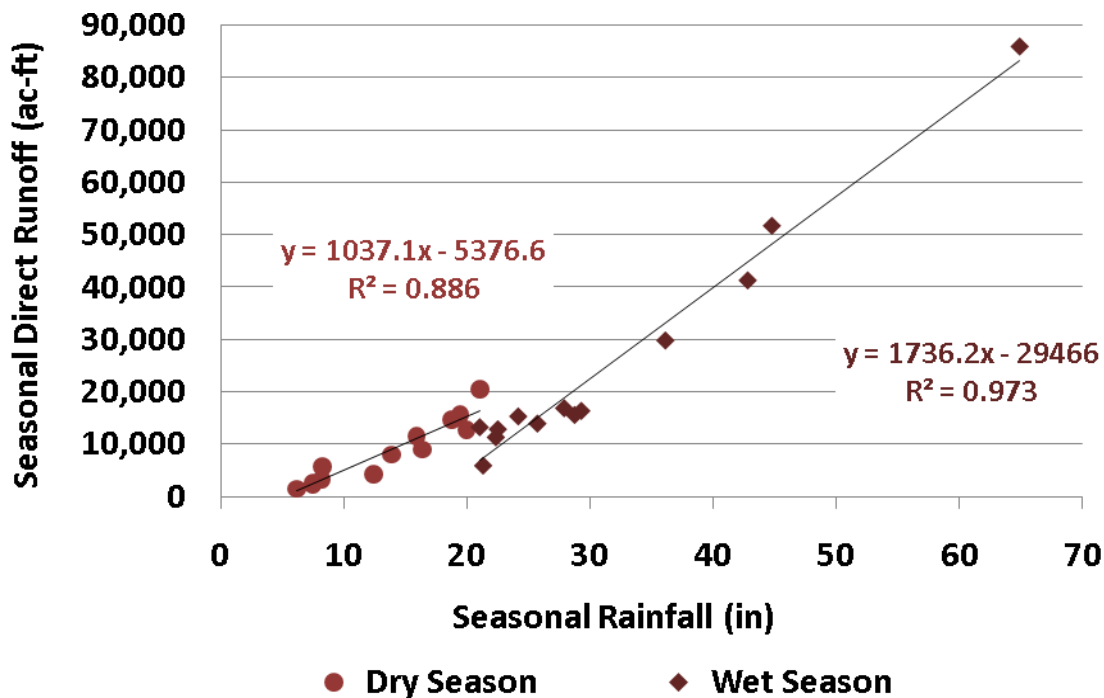


Figure 1-18 Correlation of Seasonal Direct Runoff to Rainfall for the Lemon Bay Watershed

Table 1-33 Wet Season Direct Runoff to Rainfall Coefficients	
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	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	31.92	64.87	0.49
2016	5.73	24.16	0.24
2017	4.96	21.03	0.24
2018	4.25	22.35	0.19
2019	5.83	28.74	0.20
2020	4.82	22.50	0.21
2021	11.10	36.10	0.31
2022	5.22	25.72	0.20
2023	19.23	44.75	0.43
2024	6.31	27.89	0.23
2025	15.36	42.79	0.36
2026	6.12	29.28	0.21
2027	2.24	21.31	0.11
Average	9.47	31.65	0.26

Table 1-34 Dry Season Direct Runoff to Rainfall Coefficients

	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	1.60	12.42	0.13
2016	3.36	16.38	0.20
2017	4.72	19.96	0.24
2018	7.64	21.05	0.36
2019	0.99	7.49	0.13
2020	0.56	6.19	0.09
2021	2.14	8.26	0.26
2022	5.46	18.76	0.29
2023	2.97	13.86	0.21
2024	4.27	15.89	0.27
2025	5.80	19.46	0.30
2026	1.26	8.20	0.15
2027	0.81	7.45	0.11
Average	3.20	13.49	0.21



1.4 WATER BUDGET CHANGES

Table 1-35 Change in Total Volume from Historical to Current Conditions			
Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	112,492	131,469	18,977
2	33,421	45,446	12,025
3	32,934	39,958	7,024
4	50,146	61,942	11,796
5	28,646	37,190	8,543
6	22,791	28,715	5,924
7	53,369	62,116	8,747
8	41,016	49,267	8,251
9	81,644	95,151	13,507
10	38,448	49,617	11,169
11	70,223	89,063	18,841
12	32,036	41,813	9,777
13	13,780	19,668	5,888
Average	46,996	57,801	10,805

Table 1-36 Change in Total Volume from Current to Future Conditions			
Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	131,469	151,902	20,433
2	45,446	56,342	10,896
3	39,958	45,354	5,395
4	61,942	73,894	11,953
5	37,190	44,427	7,237
6	28,715	32,902	4,187
7	62,116	70,620	8,504
8	49,267	57,081	7,814
9	95,151	108,258	13,108
10	49,617	59,759	10,142
11	89,063	108,174	19,110
12	41,813	50,769	8,956
13	19,668	23,321	3,653
Average	57,801	67,908	10,107



Table 1-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	80,242	84,567	4,325
2	14,838	19,762	4,924
3	18,579	22,728	4,148
4	26,637	29,413	2,776
5	11,585	14,948	3,363
6	9,394	12,237	2,843
7	32,702	33,797	1,095
8	22,510	25,479	2,969
9	55,269	57,401	2,132
10	19,485	24,153	4,668
11	43,977	50,198	6,220
12	14,027	17,012	2,985
13	2,354	5,674	3,320
Average	27,046	30,567	3,521

Table 1-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1995-2007	Future Direct Runoff (ac-ft) 2015-2027	Direct Runoff Change (ac-ft) (future-current)
1	84,567	90,235	5,668
2	19,762	24,460	4,699
3	22,728	26,088	3,360
4	29,413	32,018	2,606
5	14,948	18,366	3,418
6	12,237	14,478	2,241
7	33,797	35,655	1,858
8	25,479	28,753	3,274
9	57,401	59,771	2,370
10	24,153	28,498	4,344
11	50,198	56,957	6,759
12	17,012	19,854	2,842
13	5,674	8,228	2,554
Average	30,567	34,105	3,538



2.0 ALLIGATOR CREEK BASIN

2.1 CURRENT CONDITIONS

Table 2-1 Monthly Rainfall for Alligator Creek Basin (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.42	1.91	1.42	2.86	0.91	17.06	17.88	9.03	11.22	11.90	0.87	1.51	80.00
1996	1949	2016	3.66	1.63	4.60	1.67	5.55	3.98	3.64	7.85	4.70	5.97	0.15	0.61	44.01
1997	1950	2017	1.72	0.38	1.07	6.17	1.49	2.93	4.07	4.02	7.99	2.49	4.18	6.94	43.44
1998	1951	2018	4.34	5.35	4.86	0.15	1.68	2.19	5.91	5.14	7.24	0.60	4.30	0.91	42.67
1999	1952	2019	2.51	0.09	1.94	0.35	1.32	6.73	5.51	9.62	6.65	3.48	0.50	1.86	40.55
2000	1953	2020	0.99	0.48	0.75	2.30	0.84	6.24	5.97	6.99	6.20	0.02	0.79	0.92	32.51
2001	1954	2021	0.30	0.00	6.56	0.21	0.21	7.74	12.76	5.59	11.67	1.07	0.14	0.32	46.56
2002	1955	2022	0.51	4.16	0.25	1.52	2.72	6.32	4.23	11.44	3.62	1.60	4.50	5.05	45.91
2003	1956	2023	0.04	0.88	1.70	3.33	4.13	15.02	6.25	13.46	13.33	0.73	0.47	4.54	63.89
2004	1957	2024	1.57	4.09	0.61	4.71	1.24	6.68	7.27	8.24	4.81	2.86	2.34	3.14	47.55
2005	1958	2025	1.91	3.11	4.74	2.73	4.61	16.02	8.97	4.01	2.87	9.21	3.44	0.36	61.97
2006	1959	2026	0.46	2.92	0.73	0.07	1.98	5.48	10.58	8.31	5.84	1.40	0.45	2.40	40.62
2007	1960	2027	1.13	1.64	0.41	2.55	0.53	4.39	3.87	3.02	4.97	4.30	0.31	0.80	27.91
Average			1.74	2.05	2.28	2.20	2.09	7.75	7.45	7.44	7.01	3.51	1.73	2.26	47.51



Table 2-2 Current Total Volume for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	924.2	528.1	491.1	438.6	251.4	5,077.8	6,714.0	3,471.1	5,037.8	5,074.5	1,048.1	694.1	29,750.7
1996	1,247.0	637.6	894.7	536.0	1,227.5	663.4	754.3	2,003.1	1,154.8	2,201.2	587.3	438.9	12,345.7
1997	479.7	220.5	271.3	1,001.9	220.7	378.0	408.4	425.7	2,030.1	658.6	1,269.6	2,149.3	9,513.7
1998	1,851.6	1,995.6	2,124.0	584.3	514.7	464.6	982.6	839.7	1,617.7	734.5	1,533.7	386.9	13,629.9
1999	544.5	208.8	301.9	150.4	181.6	630.3	936.6	1,926.2	2,114.6	1,493.3	650.0	702.3	9,840.6
2000	394.4	237.4	202.6	374.1	186.5	596.0	726.9	2,003.1	1,732.8	583.8	413.4	350.1	7,801.2
2001	235.5	171.0	1,317.1	158.6	133.1	969.6	3,157.2	2,347.3	4,410.5	1,022.5	571.5	408.9	14,902.8
2002	311.7	956.8	206.3	252.1	445.1	589.6	566.3	2,523.7	1,462.4	851.1	1,822.7	1,398.7	11,386.4
2003	570.8	370.6	353.7	894.1	855.7	4,044.3	1,686.7	5,364.4	5,912.5	1,129.7	623.3	1,527.6	23,333.3
2004	454.3	1,238.5	370.1	987.5	290.1	1,001.8	1,395.3	2,343.6	1,789.5	1,454.1	982.8	1,075.3	13,383.2
2005	792.2	1,110.5	1,417.2	551.2	1,107.3	4,471.6	3,475.6	1,310.1	970.3	3,370.3	1,333.3	604.7	20,514.4
2006	392.8	729.2	294.8	191.5	246.5	534.4	1,854.1	2,288.9	1,888.2	998.5	501.5	681.7	10,602.1
2007	359.7	327.1	189.5	426.6	136.2	381.2	310.4	273.1	579.4	699.3	330.0	270.7	4,283.2
Average	658.3	671.7	648.8	503.6	445.9	1,523.3	1,766.8	2,086.2	2,361.6	1,559.4	897.5	822.2	13,945.2



Table 2-3 Current Direct Runoff for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	441.2	128.1	104.5	164.7	33.7	4,569.8	5,587.7	1,993.6	3,476.9	3,406.0	40.2	92.7	20,039.1
1996	560.7	170.8	496.1	159.9	905.6	339.4	359.5	1,425.3	507.9	1,258.2	0.4	25.2	6,209.2
1997	177.4	7.0	84.0	847.9	66.3	251.8	264.1	233.2	1,785.6	342.5	944.9	1,515.5	6,520.3
1998	1,001.0	1,038.7	1,252.4	0.1	90.5	154.3	706.8	468.5	979.1	20.8	1,057.4	48.2	6,817.8
1999	277.9	0.1	125.1	11.5	62.8	514.1	642.1	1,340.5	1,196.1	432.9	28.8	273.7	4,905.6
2000	85.8	13.5	15.3	221.5	54.6	475.4	533.1	1,503.6	1,017.6	0.0	25.5	53.1	3,998.9
2001	6.2	0.0	1,160.5	3.6	2.7	853.2	2,520.1	1,101.0	3,088.2	35.7	2.0	4.2	8,777.4
2002	11.2	737.0	7.1	95.7	311.3	455.4	308.8	1,995.9	384.3	165.9	1,355.0	757.8	6,585.5
2003	0.0	25.9	74.1	678.5	664.4	3,508.3	668.9	3,657.8	4,387.0	42.2	9.6	1,071.0	14,787.7
2004	117.8	944.0	41.6	741.4	70.5	808.4	950.3	1,298.3	665.0	599.1	441.6	675.8	7,353.8
2005	423.1	846.1	1,056.8	218.7	748.0	3,485.9	1,972.8	301.9	253.5	2,565.5	584.2	2.3	12,458.7
2006	9.0	416.5	39.0	0.2	86.3	390.9	1,473.6	1,418.4	779.8	216.2	22.2	330.9	5,183.0
2007	85.2	115.9	12.0	285.3	15.9	277.3	201.1	123.2	373.1	375.7	8.3	43.2	1,916.3
Average	245.9	341.8	343.7	263.8	239.4	1,237.2	1,245.3	1,297.0	1,453.4	727.8	347.7	376.4	8,119.5

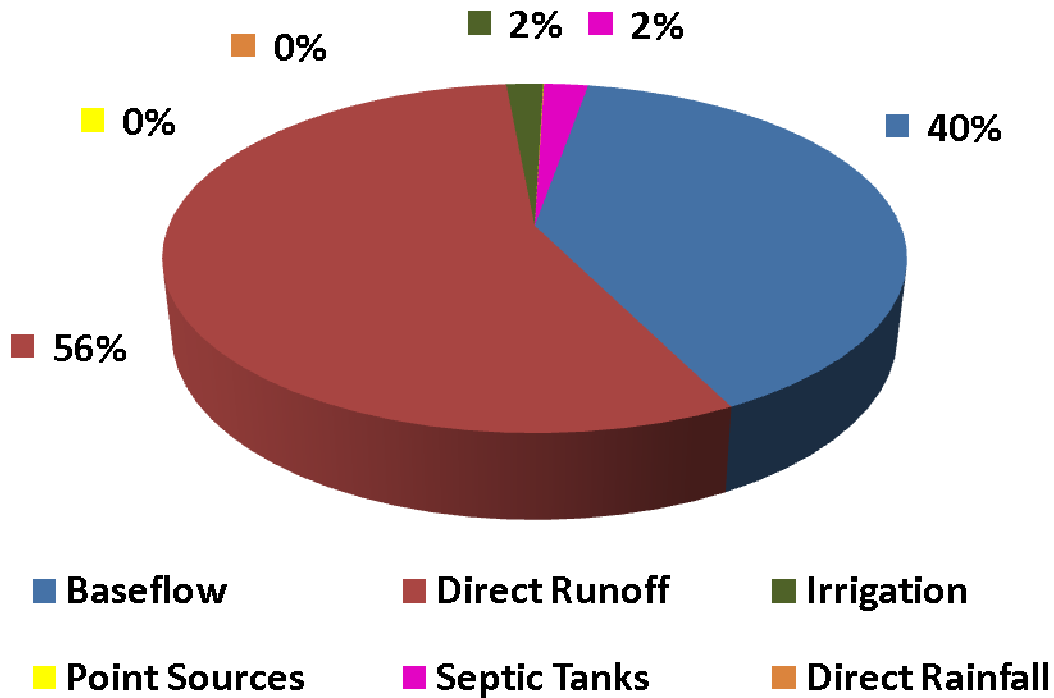


Figure 2-1 Alligator Creek Basin Current Total Volume Water Budget

Table 2-4 Summary of Annual Current Total Volume Inputs for Alligator Creek Basin (ac-ft/yr)						
Volume Inputs	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	9,271.9	20,039.1	195.8	3.4	240.5	0.0
1996	5,689.7	6,209.2	201.3	3.4	242.2	0.0
1997	2,545.4	6,520.3	200.5	3.4	244.0	0.0
1998	6,357.8	6,817.8	205.3	3.3	245.6	0.0
1999	4,475.8	4,905.6	207.3	2.9	249.0	0.0
2000	3,335.9	3,998.9	212.4	3.4	250.5	0.0
2001	5,653.4	8,777.4	216.4	2.9	252.8	0.0
2002	4,323.2	6,585.5	218.5	3.1	256.1	0.0
2003	8,065.1	14,787.7	218.8	2.7	259.0	0.0
2004	5,541.7	7,353.8	221.9	3.1	262.7	0.0
2005	7,565.5	12,458.7	221.9	3.4	264.9	0.0
2006	4,928.9	5,183.0	221.9	3.5	264.9	0.0
2007	1,877.5	1,916.3	221.9	2.6	264.9	0.0
Average	5,356.3	8,119.5	212.6	3.2	253.6	0.0

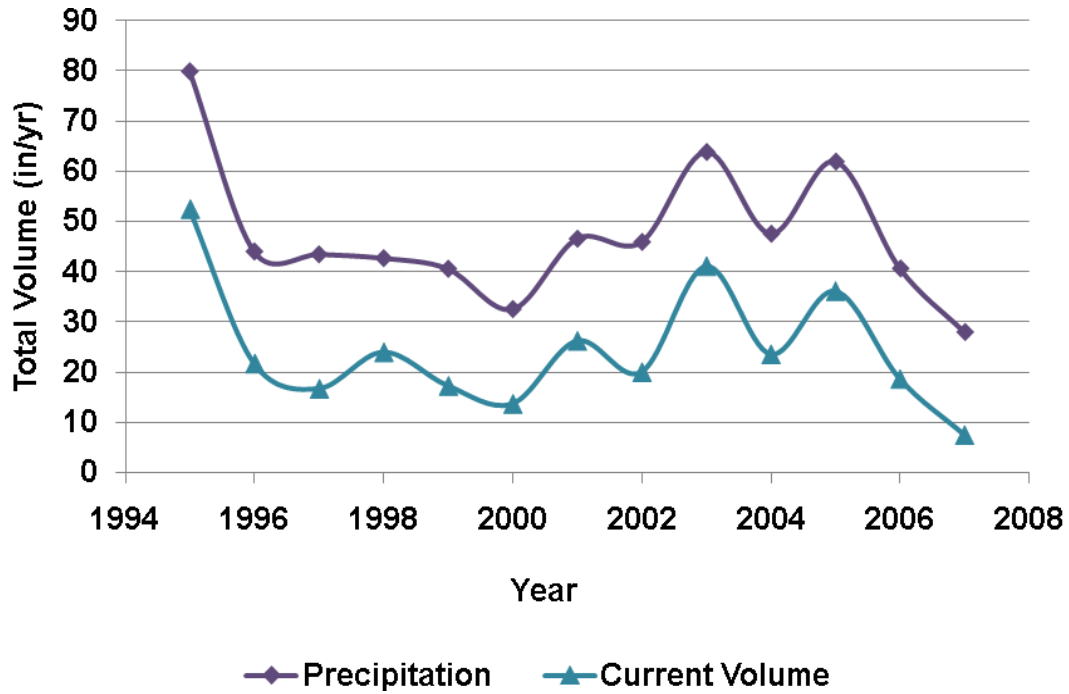


Figure 2-2 Annual Variability of Precipitation and Total Volume for Alligator Creek Basin

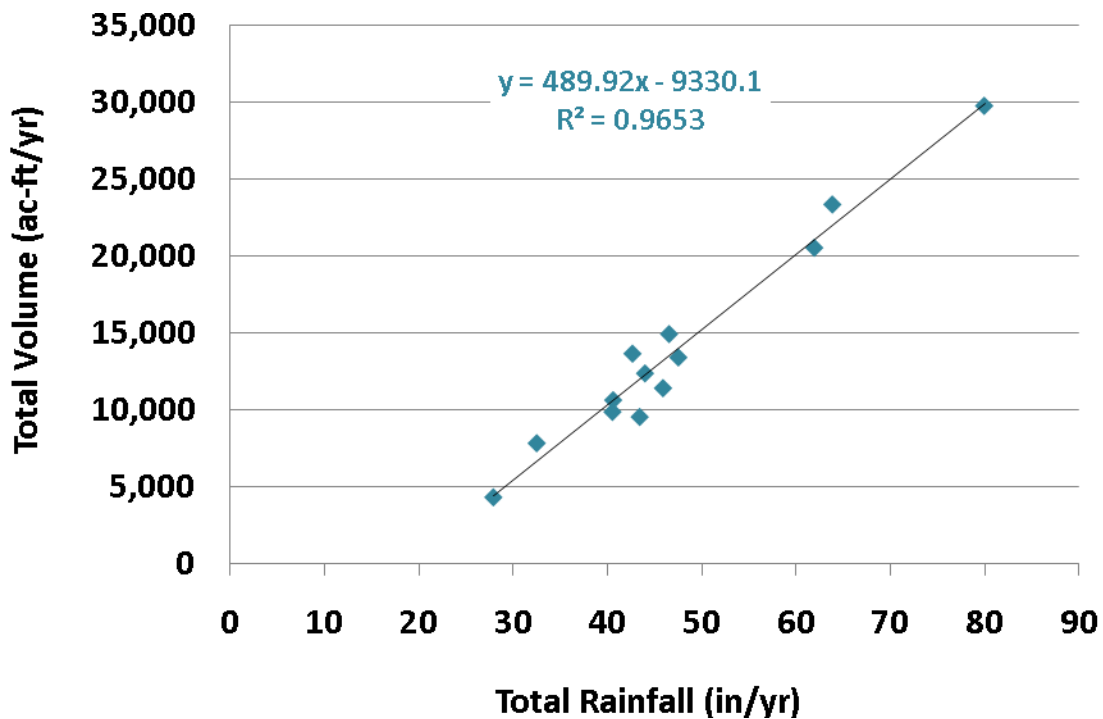


Figure 2-3 Correlation of Annual Total Volume to Rainfall for Alligator Creek Basin



Table 2-5 Annual Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	52.51	80.00	0.66
1996	21.79	44.01	0.50
1997	16.79	43.44	0.39
1998	24.06	42.67	0.56
1999	17.37	40.55	0.43
2000	13.77	32.51	0.42
2001	26.30	46.56	0.56
2002	20.10	45.91	0.44
2003	41.18	63.89	0.64
2004	23.62	47.55	0.50
2005	36.21	61.97	0.58
2006	18.71	40.62	0.46
2007	7.56	27.91	0.27
Average	24.61	47.51	0.49

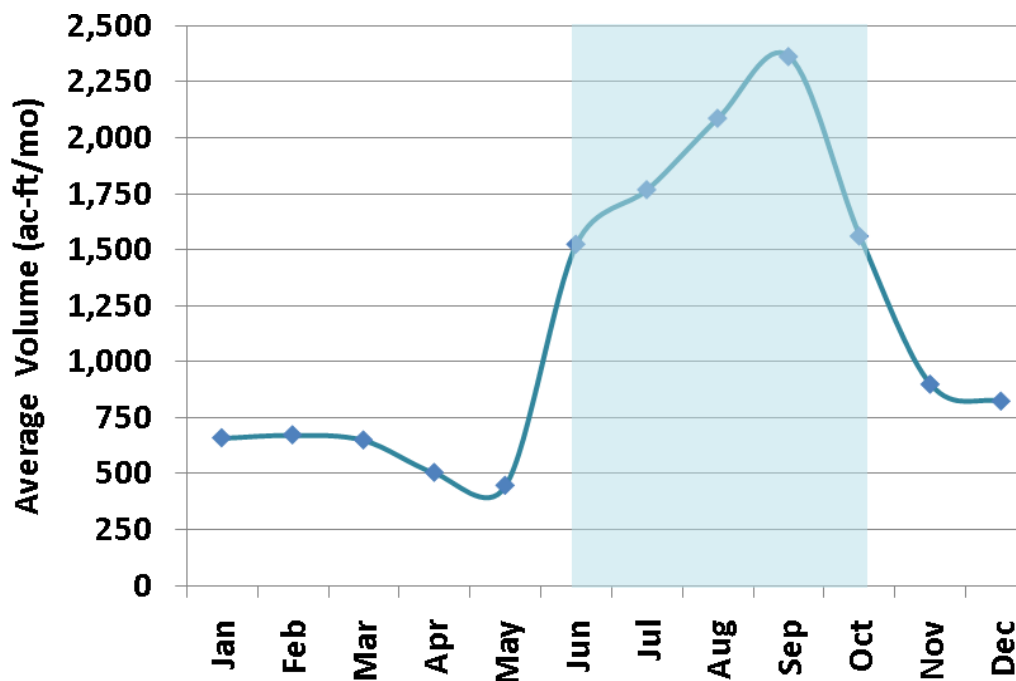


Figure 2-4 Variability of Average Monthly Total Volume in Alligator Creek Basin



Table 2-6 Average Monthly Rainfall to Total Volume Coefficients for Alligator Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.16	1.74	0.67
Feb	1.19	2.05	0.58
Mar	1.15	2.28	0.50
Apr	0.89	2.20	0.40
May	0.79	2.09	0.38
Jun	2.69	7.75	0.35
Jul	3.12	7.45	0.42
Aug	3.68	7.44	0.49
Sep	4.17	7.01	0.59
Oct	2.75	3.51	0.78
Nov	1.58	1.73	0.92
Dec	1.45	2.26	0.64

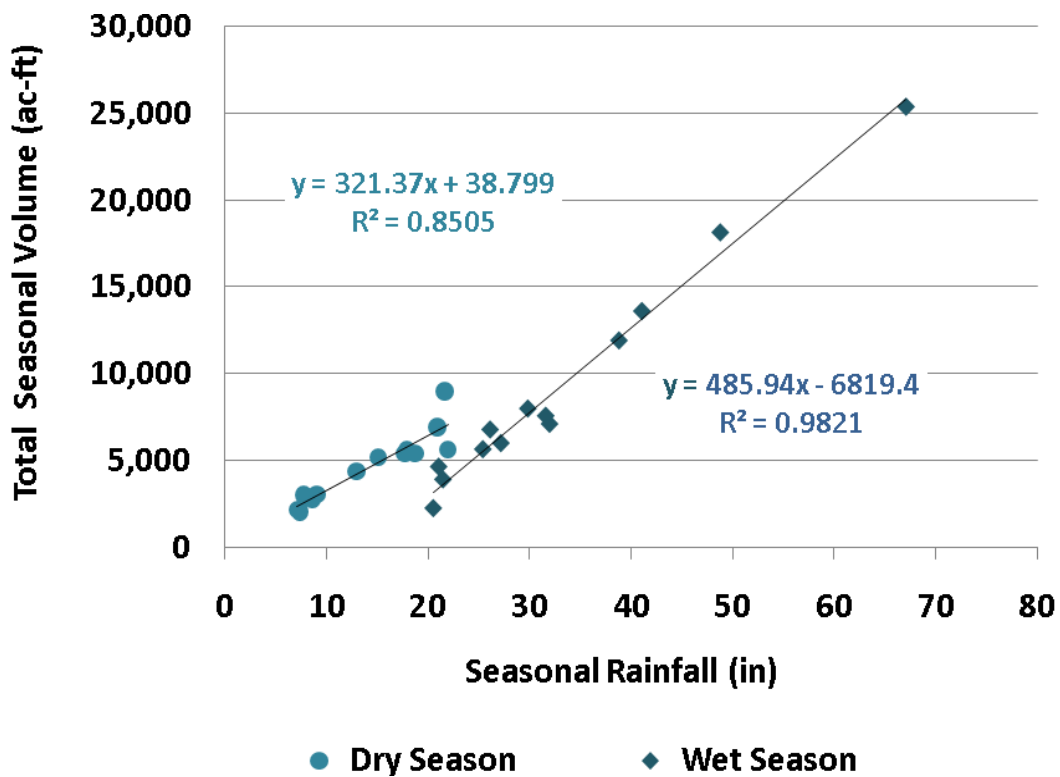


Figure 2-5 Correlation of Seasonal Total Volume to Rainfall for Alligator Creek Basin



Table 2-7 Wet Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	44.79	67.09	0.67
1996	11.96	26.14	0.46
1997	6.88	21.50	0.32
1998	8.19	21.08	0.39
1999	12.53	31.99	0.39
2000	9.96	25.43	0.39
2001	21.02	38.83	0.54
2002	10.58	27.21	0.39
2003	32.01	48.80	0.66
2004	14.09	29.86	0.47
2005	24.00	41.08	0.58
2006	13.35	31.61	0.42
2007	3.96	20.55	0.19
Average	16.41	33.17	0.45

Table 2-8 Dry Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	7.72	12.92	0.60
1996	9.83	17.87	0.55
1997	9.91	21.94	0.45
1998	15.87	21.60	0.73
1999	4.83	8.56	0.56
2000	3.81	7.08	0.54
2001	5.29	7.73	0.68
2002	9.52	18.71	0.51
2003	9.17	15.09	0.61
2004	9.53	17.69	0.54
2005	12.21	20.89	0.58
2006	5.36	9.01	0.60
2007	3.60	7.36	0.49
Average	8.20	14.34	0.57

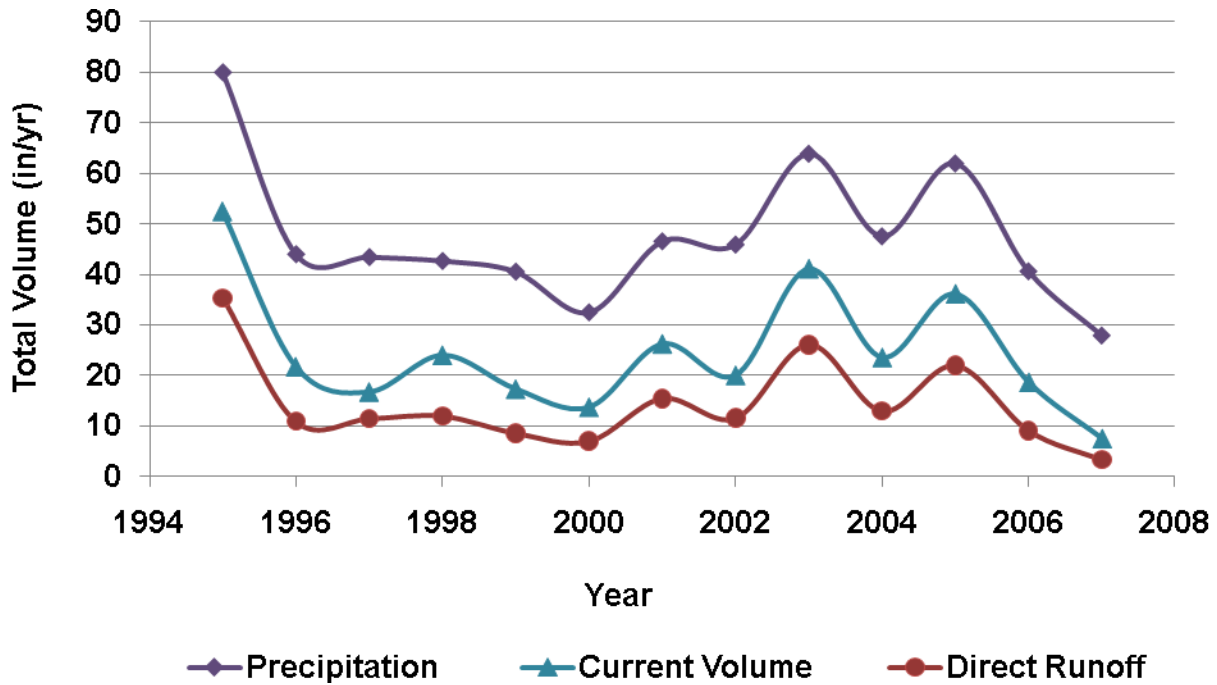


Figure 2-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Alligator Creek Basin

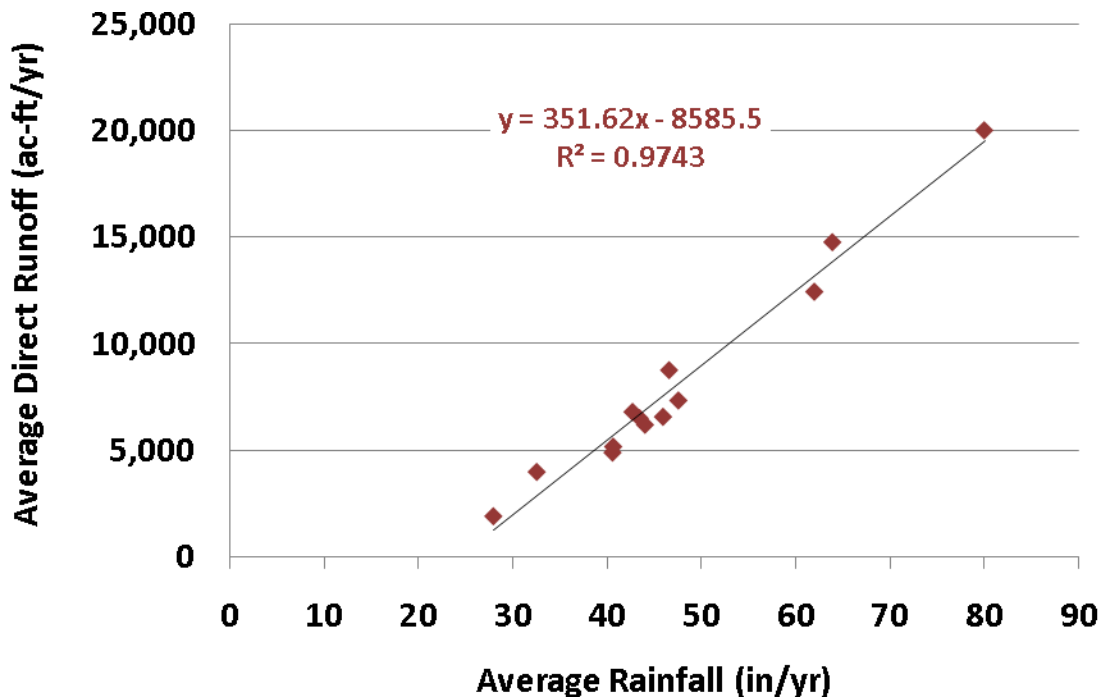


Figure 2-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 2-9 Annual Direct Runoff to Rainfall Coefficients for Alligator Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	35.37	80.00	0.44
1996	10.96	44.01	0.25
1997	11.51	43.44	0.26
1998	12.03	42.67	0.28
1999	8.66	40.55	0.21
2000	7.06	32.51	0.22
2001	15.49	46.56	0.33
2002	11.62	45.91	0.25
2003	26.10	63.89	0.41
2004	12.98	47.55	0.27
2005	21.99	61.97	0.35
2006	9.15	40.62	0.23
2007	3.38	27.91	0.12
Average	14.33	47.51	0.28

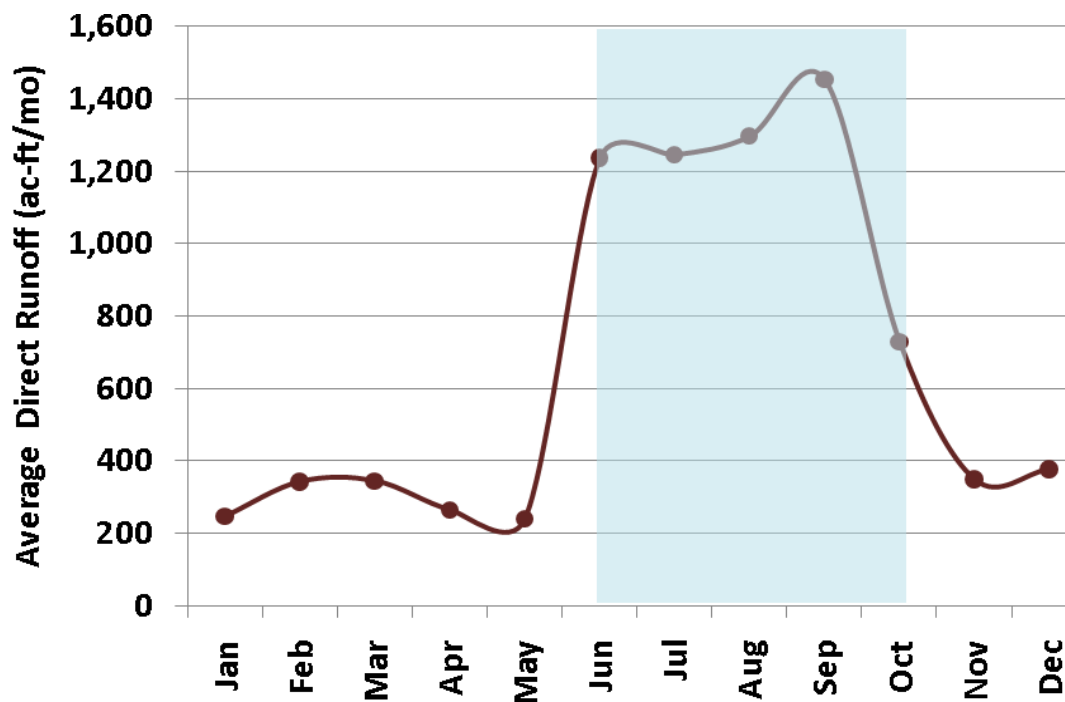


Figure 2-8 Variability of Average Monthly Direct Runoff to Alligator Creek Basin



Table 2-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.43	1.74	0.25
Feb	0.60	2.05	0.29
Mar	0.61	2.28	0.27
Apr	0.47	2.20	0.21
May	0.42	2.09	0.20
Jun	2.18	7.75	0.28
Jul	2.20	7.45	0.29
Aug	2.29	7.44	0.31
Sep	2.57	7.01	0.37
Oct	1.28	3.51	0.37
Nov	0.61	1.73	0.36
Dec	0.66	2.26	0.29

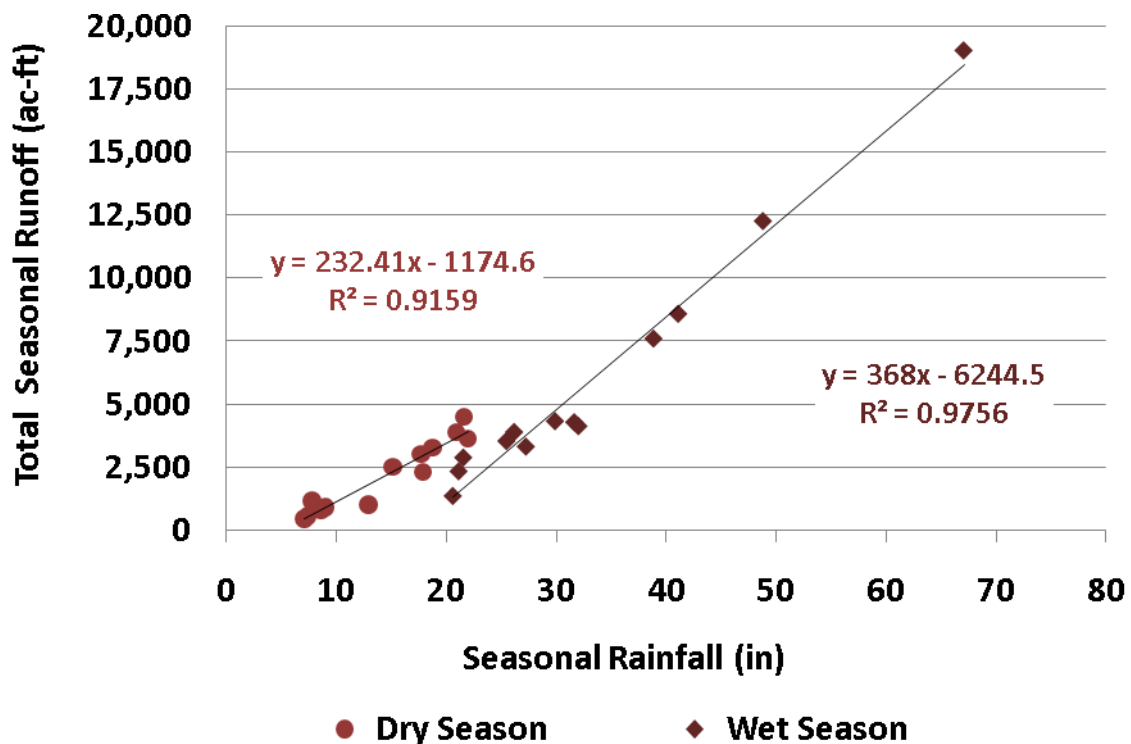


Figure 2-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 2-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	33.59	67.09	0.50
1996	6.87	26.14	0.26
1997	5.08	21.50	0.24
1998	4.11	21.08	0.20
1999	7.28	31.99	0.23
2000	6.23	25.43	0.24
2001	13.41	38.83	0.35
2002	5.84	27.21	0.21
2003	21.65	48.80	0.44
2004	7.63	29.86	0.26
2005	15.14	41.08	0.37
2006	7.55	31.61	0.24
2007	2.38	20.55	0.12
Average	10.52	33.17	0.28

Table 2-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	1.77	12.92	0.14
1996	4.09	17.87	0.23
1997	6.43	21.94	0.29
1998	7.92	21.60	0.37
1999	1.38	8.56	0.16
2000	0.83	7.08	0.12
2001	2.08	7.73	0.27
2002	5.78	18.71	0.31
2003	4.45	15.09	0.30
2004	5.35	17.69	0.30
2005	6.85	20.89	0.33
2006	1.60	9.01	0.18
2007	1.00	7.36	0.14
Average	3.81	14.34	0.24



2.2 HISTORICAL CONDITIONS

Table 2-13 Historical Total Volume for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	504.0	255.9	216.3	174.7	141.1	4,138.1	5,872.9	2,375.9	3,807.6	3,963.3	506.3	319.8	22,275.9
1949	691.3	327.0	480.5	279.6	777.6	319.7	333.5	1,157.3	570.4	1,438.2	326.8	264.0	6,965.8
1950	324.4	157.1	175.9	731.2	135.1	206.0	203.5	198.7	1,301.4	320.3	914.0	1,549.8	6,217.3
1951	1,401.6	1,573.1	1,346.1	321.1	276.5	281.9	672.4	477.1	1,071.6	390.4	1,043.9	248.3	9,104.1
1952	320.6	163.6	163.1	122.7	109.5	318.3	714.8	1,222.0	1,330.4	756.5	315.0	380.5	5,917.0
1953	240.3	164.2	146.2	237.9	116.2	274.6	442.6	1,528.3	1,114.1	333.8	247.9	216.8	5,063.0
1954	169.1	128.9	831.8	163.7	138.3	769.6	2,951.3	1,738.3	3,274.8	438.5	284.3	234.2	11,122.9
1955	191.8	812.9	149.4	133.4	199.3	341.6	376.5	1,871.7	795.5	401.1	1,315.1	935.3	7,523.7
1956	376.8	252.9	232.4	805.1	765.8	3,516.1	874.9	3,903.9	4,864.2	475.1	287.1	1,026.5	17,380.8
1957	262.9	785.5	258.2	686.2	236.5	584.1	886.1	1,463.6	981.2	726.8	516.6	711.1	8,098.8
1958	492.3	778.5	993.3	288.3	667.4	3,415.0	2,292.7	474.5	384.7	2,324.5	783.3	326.6	13,221.0
1959	239.1	386.9	179.8	141.2	123.9	215.7	1,339.9	1,524.3	971.1	446.6	256.4	399.5	6,224.4
1960	249.9	181.5	139.0	196.0	103.6	125.4	117.0	140.8	240.4	328.6	179.4	127.7	2,129.1
Average	420.3	459.1	408.6	329.3	291.6	1,115.9	1,313.7	1,390.5	1,592.9	949.5	536.6	518.5	9,326.4



Table 2-14 Historical Direct Runoff for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	227.88	33.50	5.76	11.03	0.56	3,742.47	5,249.82	1,729.58	3,101.50	3,203.06	13.69	3.83	17,322.68
1949	319.73	36.04	213.12	43.66	546.15	93.14	101.15	873.20	257.99	934.86	0.00	0.36	3,419.39
1950	112.71	0.01	29.33	607.58	2.81	95.66	65.56	36.76	1,126.29	103.99	706.43	1,145.89	4,033.01
1951	863.19	1,016.40	863.19	0.00	17.58	78.41	453.45	175.79	671.19	0.04	732.69	0.95	4,872.89
1952	111.03	0.00	13.21	0.02	3.48	203.56	415.15	802.86	857.55	265.43	0.11	124.73	2,797.13
1953	32.20	0.06	0.06	112.83	3.74	165.61	247.30	1,132.92	699.20	0.00	0.90	10.77	2,405.61
1954	0.01	0.00	704.31	0.00	0.00	642.18	2,406.02	1,139.80	2,679.25	0.44	0.00	0.00	7,572.01
1955	0.00	663.34	0.01	12.95	91.39	220.74	137.07	1,514.73	243.59	49.02	1,032.59	527.56	4,492.98
1956	0.00	0.11	0.41	610.71	572.02	3,117.28	364.69	3,141.65	4,191.08	0.39	0.00	745.52	12,743.86
1957	13.34	562.64	0.93	474.24	33.18	400.03	580.13	943.13	492.10	344.41	235.61	463.71	4,543.44
1958	231.83	583.14	731.31	43.13	420.63	2,867.45	1,682.08	72.26	71.01	1,941.94	363.99	1.12	9,009.89
1959	0.01	183.23	0.21	0.00	1.55	93.30	1,023.09	1,034.06	482.88	85.36	0.49	183.85	3,088.01
1960	53.17	24.60	0.00	78.70	0.00	33.94	15.11	4.51	86.65	135.64	0.16	0.46	432.96
Average	151.16	238.70	197.07	153.45	130.24	904.14	980.05	969.33	1,150.79	543.43	237.44	246.83	5,902.60

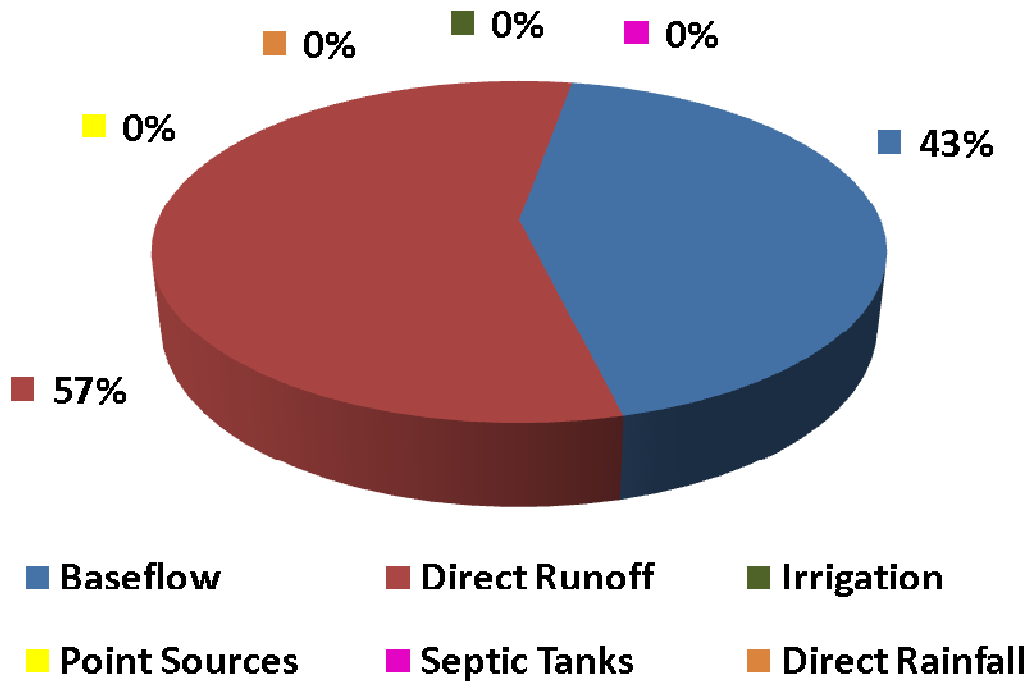


Figure 2-10 Alligator Creek Basin Historical Total Volume Water Budget

Table 2-15 Summary of Annual Historical Total Volume Inputs for Alligator Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	4,953.2	17,322.7	0.0	0.0	0.0	0.0
1949	3,546.3	3,419.4	0.0	0.0	0.0	0.0
1950	2,184.2	4,033.0	0.0	0.0	0.0	0.0
1951	4,231.2	4,872.9	0.0	0.0	0.0	0.0
1952	3,119.8	2,797.1	0.0	0.0	0.0	0.0
1953	2,657.3	2,405.6	0.0	0.0	0.0	0.0
1954	3,550.8	7,572.0	0.0	0.0	0.0	0.0
1955	3,030.6	4,493.0	0.0	0.0	0.0	0.0
1956	4,636.8	12,743.9	0.0	0.0	0.0	0.0
1957	3,555.3	4,543.4	0.0	0.0	0.0	0.0
1958	4,211.0	9,009.9	0.0	0.0	0.0	0.0
1959	3,136.3	3,088.0	0.0	0.0	0.0	0.0
1960	1,696.1	433.0	0.0	0.0	0.0	0.0
Average	3,423.8	5,902.6	0.0	0.0	0.0	0.0

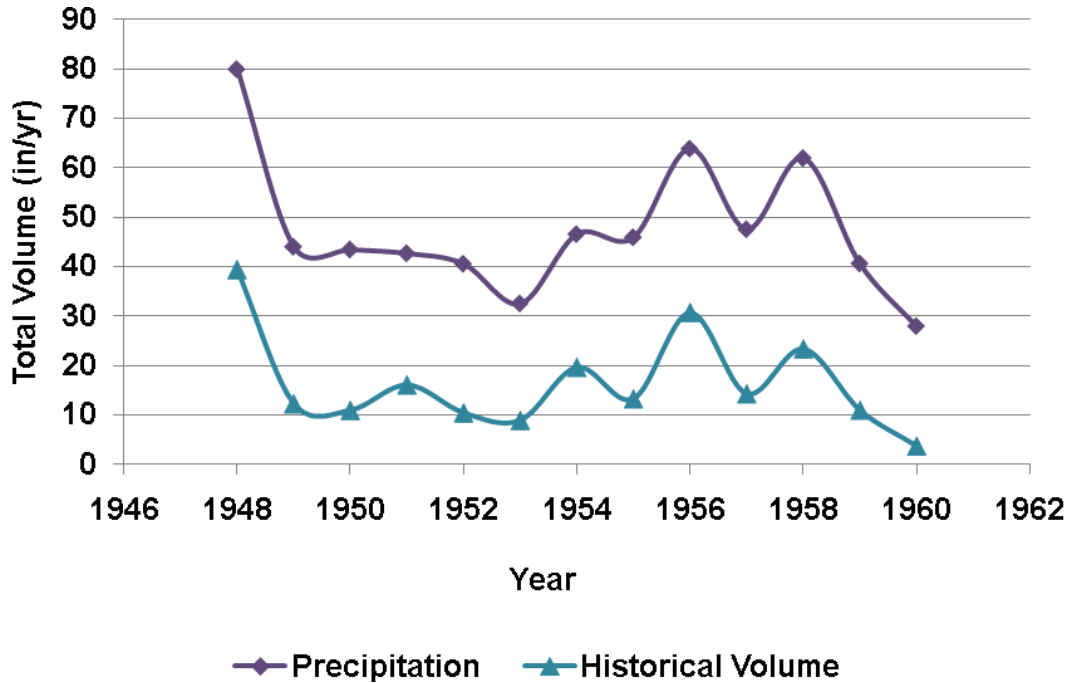


Figure 2-11 Annual Historical Variability of Precipitation and Total Volume for Alligator Creek Basin

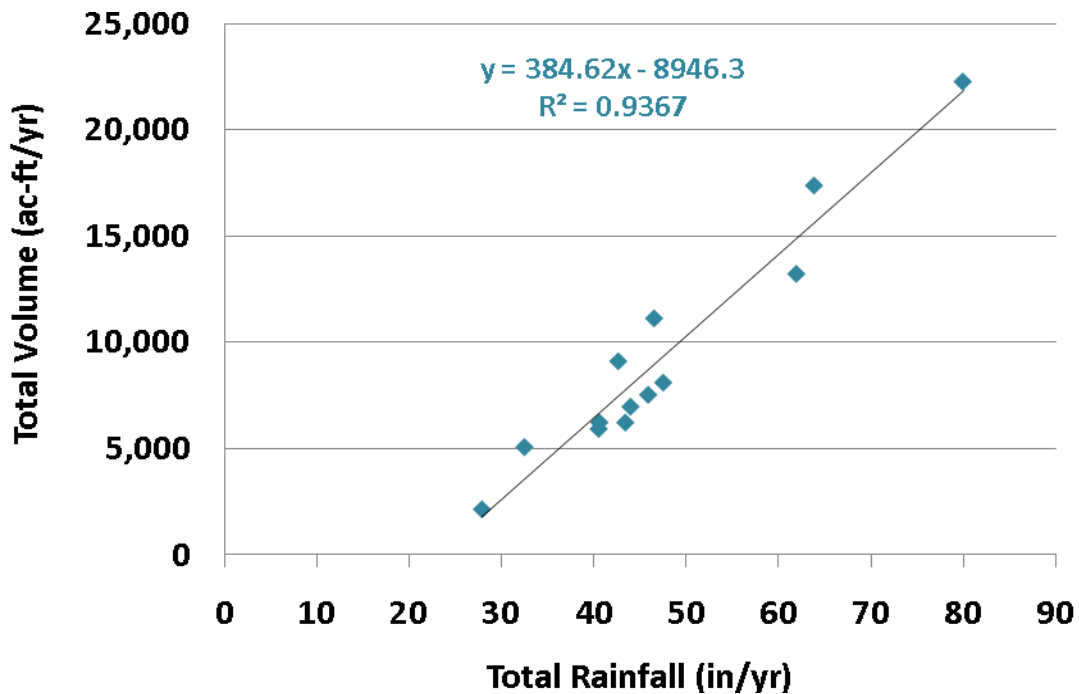


Figure 2-12 Correlation of Annual Total Volume to Rainfall for Alligator Creek Basin



Table 2-16 Annual Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	39.32	80.00	0.49
1949	12.29	44.01	0.28
1950	10.97	43.44	0.25
1951	16.07	42.67	0.38
1952	10.44	40.55	0.26
1953	8.94	32.51	0.27
1954	19.63	46.56	0.42
1955	13.28	45.91	0.29
1956	30.68	63.89	0.48
1957	14.29	47.55	0.30
1958	23.33	61.97	0.38
1959	10.99	40.62	0.27
1960	3.76	27.91	0.13
Average	16.46	47.51	0.32

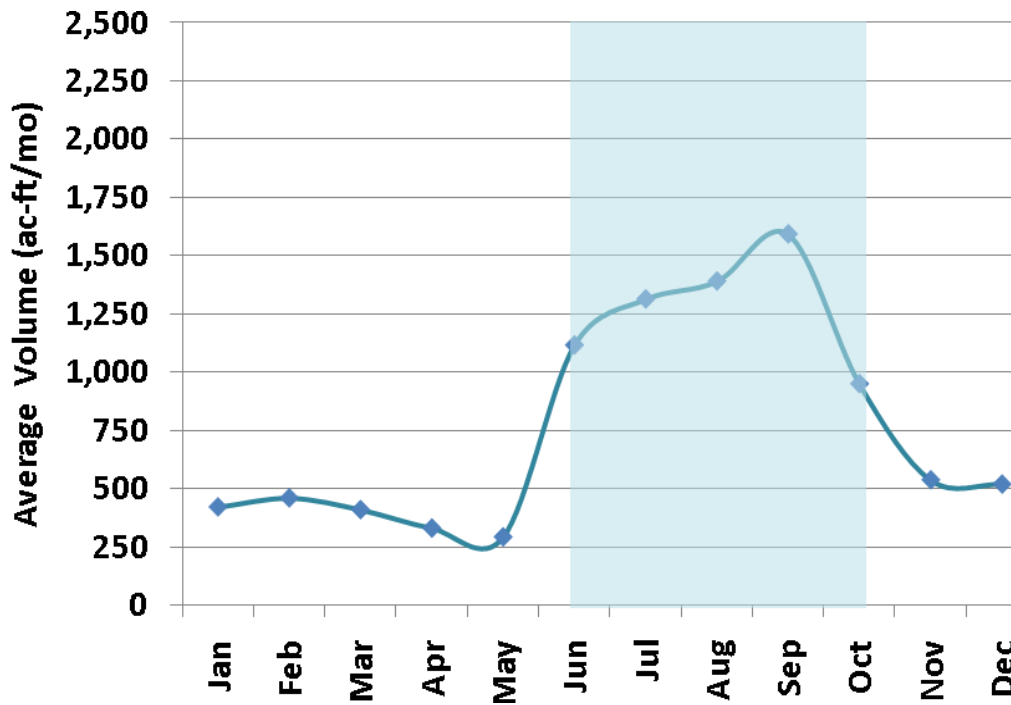


Figure 2-13 Variability of Average Monthly Total Volume in Alligator Creek Basin



Table 2-17 Average Monthly Rainfall to Total Volume Coefficients for Alligator Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.74	1.74	0.43
Feb	0.81	2.05	0.40
Mar	0.72	2.28	0.32
Apr	0.58	2.20	0.26
May	0.51	2.09	0.25
Jun	1.97	7.75	0.25
Jul	2.32	7.45	0.31
Aug	2.45	7.44	0.33
Sep	2.81	7.01	0.40
Oct	1.68	3.51	0.48
Nov	0.95	1.73	0.55
Dec	0.92	2.26	0.41

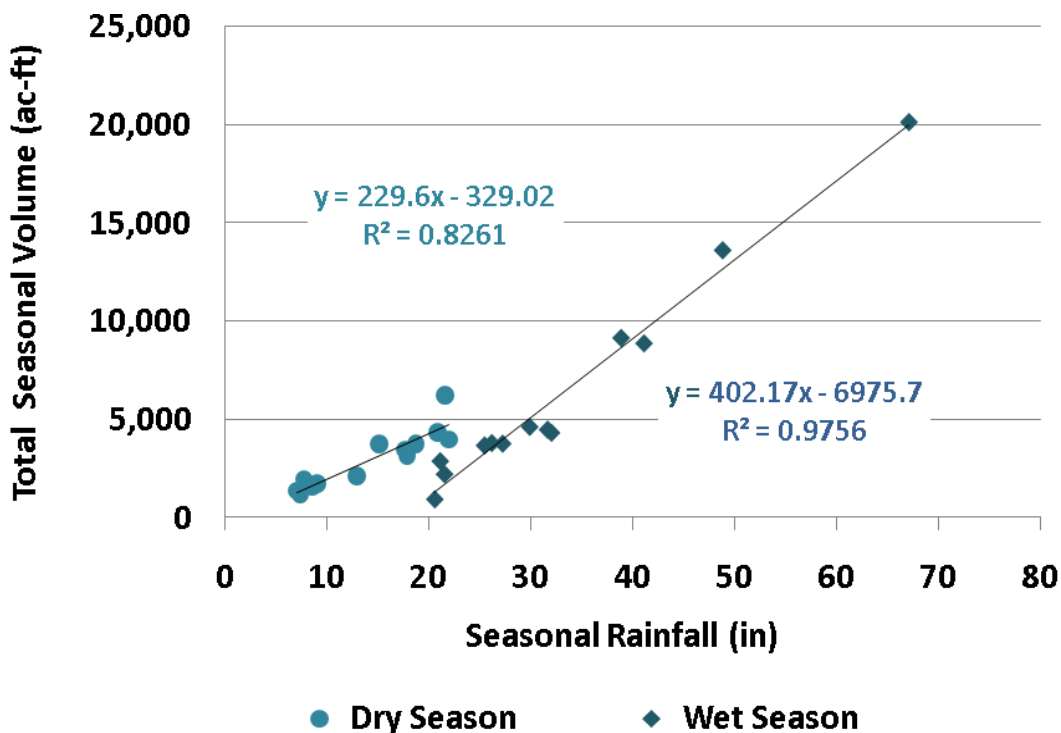


Figure 2-14 Correlation of Seasonal Total Volume to Rainfall for Alligator Creek Basin



Table 2-18 Wet Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	35.58	67.09	0.53
1996	6.74	26.14	0.26
1997	3.94	21.50	0.18
1998	5.11	21.08	0.24
1999	7.66	31.99	0.24
2000	6.52	25.43	0.26
2001	16.19	38.83	0.42
2002	6.68	27.21	0.25
2003	24.06	48.80	0.49
2004	8.19	29.86	0.27
2005	15.69	41.08	0.38
2006	7.94	31.61	0.25
2007	1.68	20.55	0.08
Average	11.23	33.17	0.30

Table 2-19 Dry Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	3.74	12.92	0.29
1996	5.55	17.87	0.31
1997	7.04	21.94	0.32
1998	10.96	21.60	0.51
1999	2.78	8.56	0.32
2000	2.42	7.08	0.34
2001	3.44	7.73	0.45
2002	6.60	18.71	0.35
2003	6.61	15.09	0.44
2004	6.10	17.69	0.34
2005	7.64	20.89	0.37
2006	3.05	9.01	0.34
2007	2.08	7.36	0.28
Average	5.23	14.34	0.36

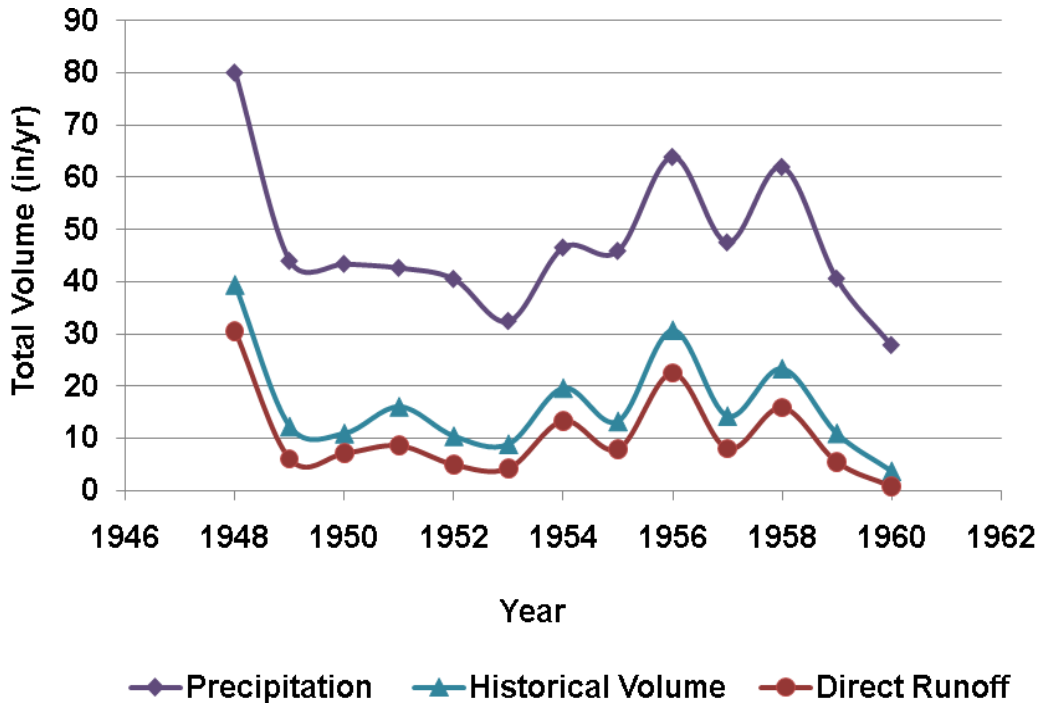


Figure 2-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Alligator Creek Basin

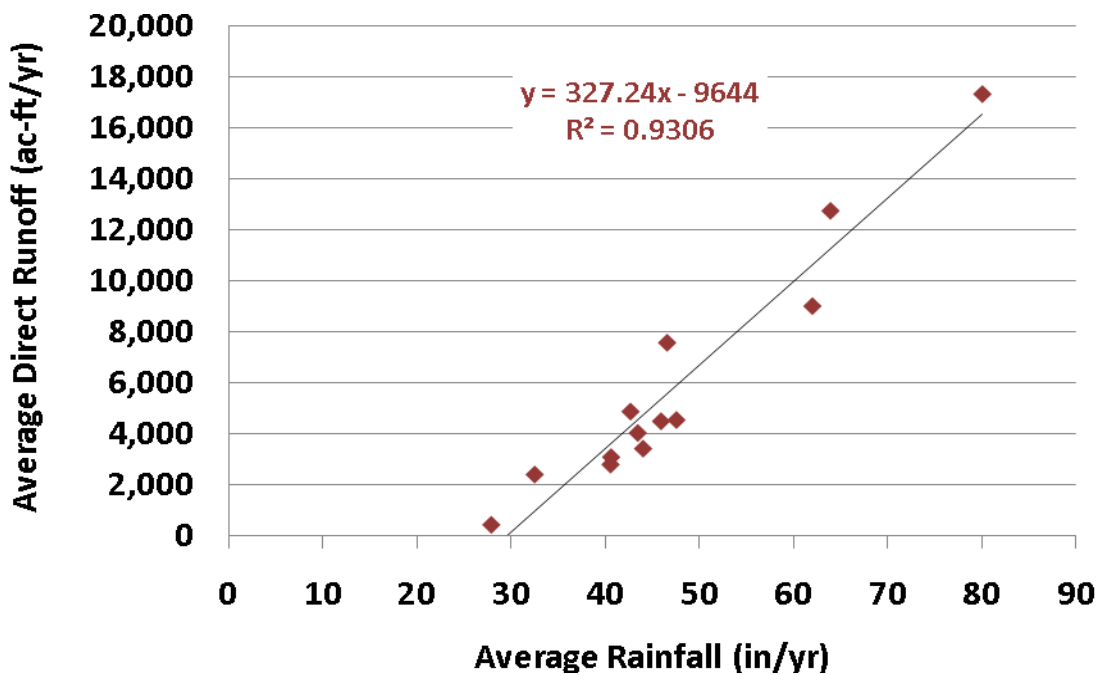


Figure 2-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 2-20 Annual Direct Runoff to Rainfall Coefficients for Alligator Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	30.57	80.00	0.38
1949	6.04	44.01	0.14
1950	7.12	43.44	0.16
1951	8.60	42.67	0.20
1952	4.94	40.55	0.12
1953	4.25	32.51	0.13
1954	13.36	46.56	0.29
1955	7.93	45.91	0.17
1956	22.49	63.89	0.35
1957	8.02	47.55	0.17
1958	15.90	61.97	0.26
1959	5.45	40.62	0.13
1960	0.76	27.91	0.03
Average	10.42	47.51	0.20

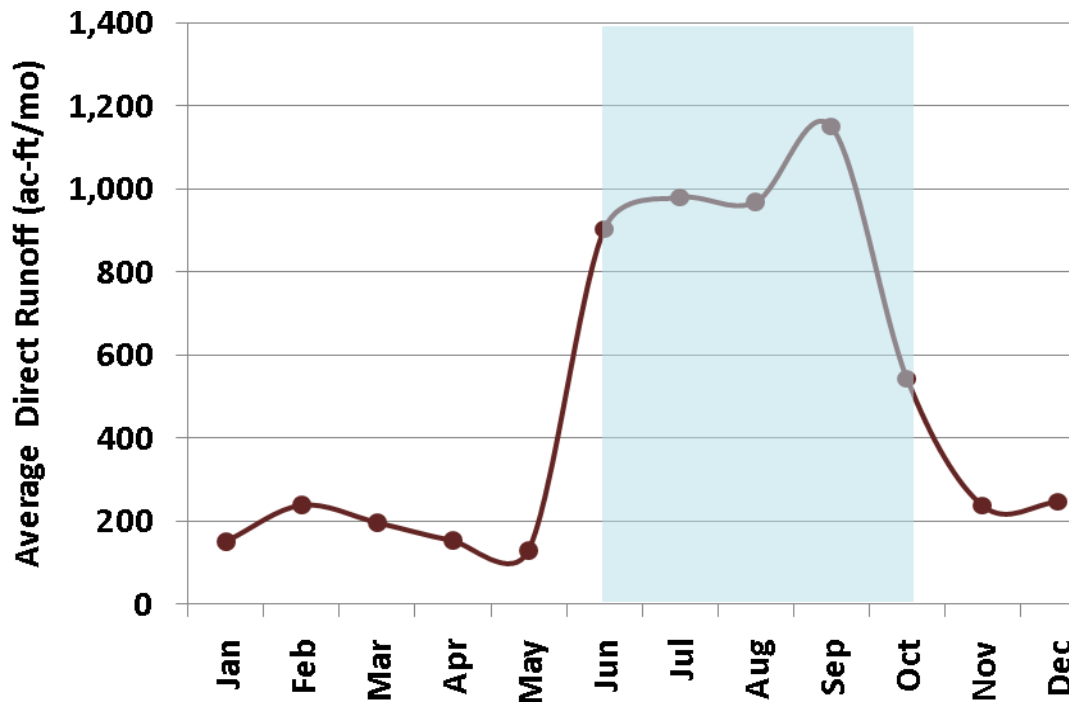


Figure 2-17 Variability of Average Monthly Direct Runoff to Alligator Creek Basin



Table 2-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.27	1.74	0.15
Feb	0.42	2.05	0.21
Mar	0.35	2.28	0.15
Apr	0.27	2.20	0.12
May	0.23	2.09	0.11
Jun	1.60	7.75	0.21
Jul	1.73	7.45	0.23
Aug	1.71	7.44	0.23
Sep	2.03	7.01	0.29
Oct	0.96	3.51	0.27
Nov	0.42	1.73	0.24
Dec	0.44	2.26	0.19

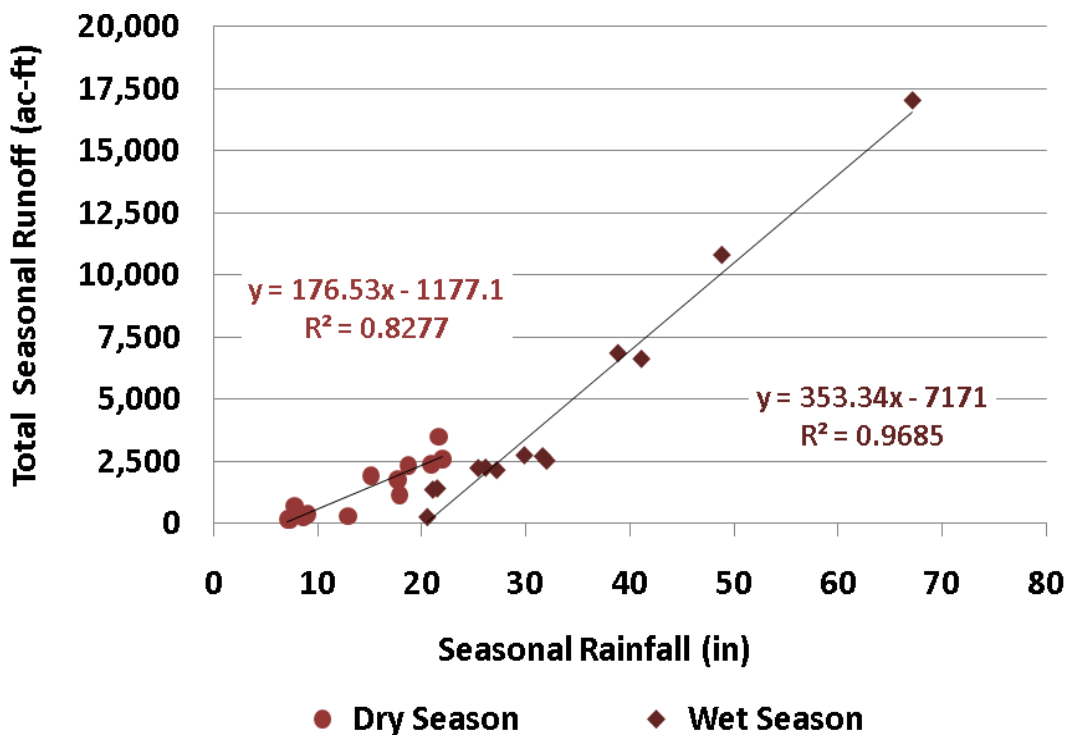


Figure 2-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 2-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	30.05	67.09	0.45
1949	3.99	26.14	0.15
1950	2.52	21.50	0.12
1951	2.43	21.08	0.12
1952	4.49	31.99	0.14
1953	3.96	25.43	0.16
1954	12.12	38.83	0.31
1955	3.82	27.21	0.14
1956	19.09	48.80	0.39
1957	4.87	29.86	0.16
1958	11.71	41.08	0.29
1959	4.80	31.61	0.15
1960	0.49	20.55	0.02
Average	8.03	33.17	0.20

Table 2-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.52	12.92	0.04
1949	2.05	17.87	0.11
1950	4.60	21.94	0.21
1951	6.17	21.60	0.29
1952	0.45	8.56	0.05
1953	0.28	7.08	0.04
1954	1.24	7.73	0.16
1955	4.11	18.71	0.22
1956	3.40	15.09	0.23
1957	3.15	17.69	0.18
1958	4.19	20.89	0.20
1959	0.65	9.01	0.07
1960	0.28	7.36	0.04
Average	2.39	14.34	0.14



2.3 FUTURE CONDITIONS

Table 2-24 Future Total Volume for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	1,021.0	588.6	548.3	485.3	271.5	5,294.1	6,949.3	3,812.1	5,397.8	5,398.9	1,203.7	788.8	31,759.5
2016	1,374.6	704.7	975.0	583.6	1,320.6	734.2	842.9	2,192.5	1,299.8	2,415.1	663.9	484.6	13,591.4
2017	501.8	232.7	280.6	1,000.7	229.5	400.1	429.3	455.6	2,144.9	729.2	1,354.1	2,280.1	10,038.7
2018	1,936.0	2,099.1	2,307.4	662.4	568.8	497.6	1,028.5	918.5	1,760.5	842.7	1,644.2	417.2	14,682.9
2019	577.9	211.0	313.6	148.0	184.3	663.9	968.8	2,063.1	2,292.0	1,660.4	728.5	764.8	10,576.3
2020	416.8	248.1	209.0	379.4	190.1	627.7	765.6	2,102.2	1,883.7	651.2	452.0	373.9	8,299.9
2021	247.2	176.0	1,380.8	153.9	127.1	968.8	3,186.4	2,488.8	4,690.5	1,162.1	636.8	445.7	15,664.1
2022	332.9	948.7	212.5	263.8	471.2	614.4	591.9	2,598.4	1,596.7	942.3	1,910.8	1,487.4	11,971.0
2023	609.4	388.3	366.4	875.0	839.8	4,116.0	1,846.5	5,667.0	6,105.6	1,274.4	697.4	1,597.7	24,383.5
2024	480.0	1,294.6	379.0	995.7	291.6	1,034.5	1,478.1	2,470.9	1,959.0	1,588.9	1,062.6	1,136.0	14,171.0
2025	830.0	1,151.0	1,475.4	578.7	1,141.9	4,622.2	3,701.6	1,459.3	1,071.3	3,555.1	1,436.2	656.8	21,679.5
2026	415.3	772.6	305.5	192.9	255.2	560.1	1,910.3	2,430.8	2,079.0	1,114.8	554.3	709.7	11,300.4
2027	382.8	344.6	193.4	446.3	135.7	406.8	328.8	282.3	608.2	749.7	350.2	282.6	4,511.3
Average	702.0	704.6	688.2	520.5	463.6	1,580.0	1,848.3	2,226.3	2,529.9	1,698.8	976.5	878.9	14,817.7



Table 2-25 Future Direct Runoff for Alligator Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	488.5	146.2	121.1	190.0	42.5	4,749.7	5,647.0	2,050.7	3,556.3	3,430.9	44.0	109.7	20,576.7
2016	603.4	193.8	546.9	179.3	980.3	384.7	400.9	1,532.1	554.3	1,334.5	0.7	29.6	6,740.6
2017	177.5	8.9	87.9	844.9	76.1	276.6	288.3	261.1	1,884.2	382.1	998.4	1,575.3	6,861.4
2018	984.6	1,010.2	1,318.0	0.2	98.4	160.6	741.2	520.6	1,037.4	24.6	1,117.9	54.9	7,068.6
2019	301.9	0.1	138.6	13.2	70.6	553.2	678.8	1,436.9	1,261.5	453.5	32.9	296.4	5,237.7
2020	88.9	15.4	17.8	226.1	59.6	509.8	578.2	1,570.8	1,080.9	0.0	29.0	56.3	4,232.8
2021	7.0	0.0	1,222.2	4.7	3.4	859.9	2,511.0	1,078.9	3,183.2	41.5	2.3	4.8	8,919.0
2022	12.7	719.0	7.9	105.8	338.0	482.4	335.3	2,030.5	388.3	180.3	1,402.7	793.1	6,796.1
2023	0.0	29.3	82.2	660.8	653.1	3,549.5	712.8	3,739.4	4,386.4	46.0	10.6	1,103.2	14,973.2
2024	129.8	993.5	45.7	751.5	77.4	847.1	1,011.5	1,303.7	678.5	629.2	466.6	707.4	7,641.8
2025	446.3	881.4	1,103.6	238.8	773.3	3,543.1	2,012.6	327.1	273.5	2,665.4	618.3	2.5	12,885.9
2026	10.0	445.9	42.8	0.2	96.2	419.4	1,515.5	1,467.3	822.4	232.5	24.0	329.8	5,405.8
2027	93.0	127.2	13.5	305.9	18.0	306.3	223.6	136.7	402.2	412.0	10.0	46.5	2,094.9
Average	257.2	351.6	365.2	270.9	252.8	1,280.2	1,281.3	1,342.7	1,500.7	756.3	366.0	393.0	8,418.0

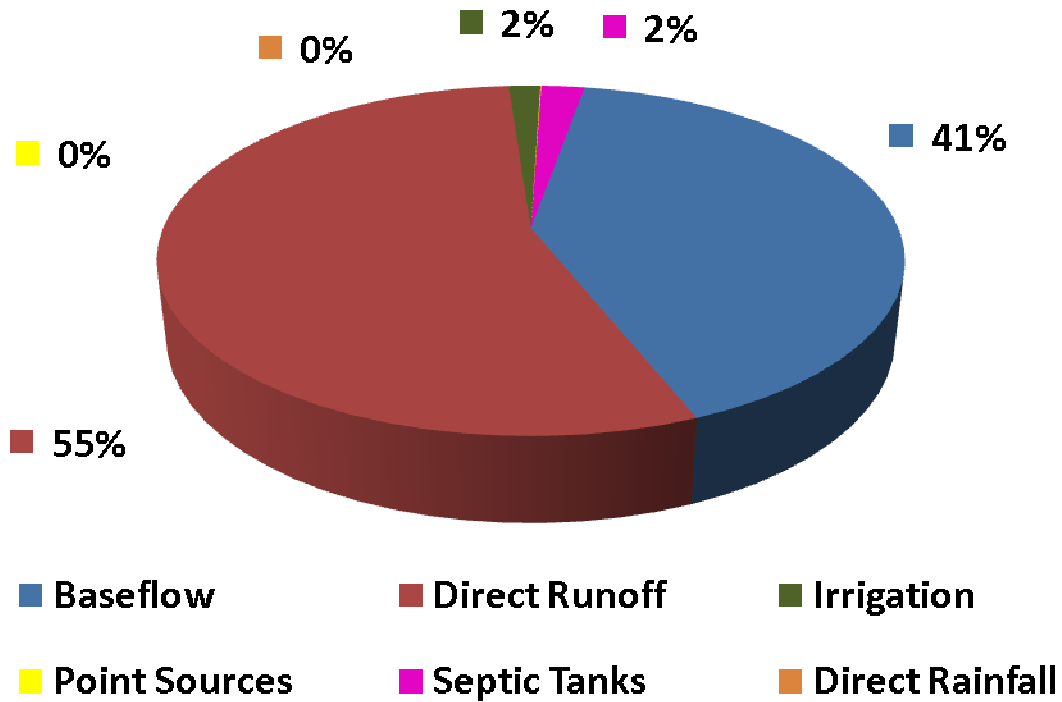


Figure 2-19 Alligator Creek Basin Future Total Volume Water Budget

Table 2-26 Summary of Annual Future Total Volume Inputs for Alligator Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	10,720.5	20,576.7	193.3	5.1	263.9	0.0
2016	6,388.5	6,740.6	193.3	5.1	263.9	0.0
2017	2,715.1	6,861.4	193.3	5.1	263.9	0.0
2018	7,152.1	7,068.6	193.3	5.0	263.9	0.0
2019	4,876.9	5,237.7	193.3	4.5	263.9	0.0
2020	3,604.7	4,232.8	193.3	5.2	263.9	0.0
2021	6,283.6	8,919.0	193.3	4.3	263.9	0.0
2022	4,713.0	6,796.1	193.3	4.7	263.9	0.0
2023	8,948.6	14,973.2	193.3	4.6	263.9	0.0
2024	6,067.3	7,641.8	193.3	4.7	263.9	0.0
2025	8,331.3	12,885.9	193.3	5.1	263.9	0.0
2026	5,432.1	5,405.8	193.3	5.3	263.9	0.0
2027	1,954.8	2,094.9	193.3	4.5	263.9	0.0
Average	5,937.6	8,418.0	193.3	4.9	263.9	0.0

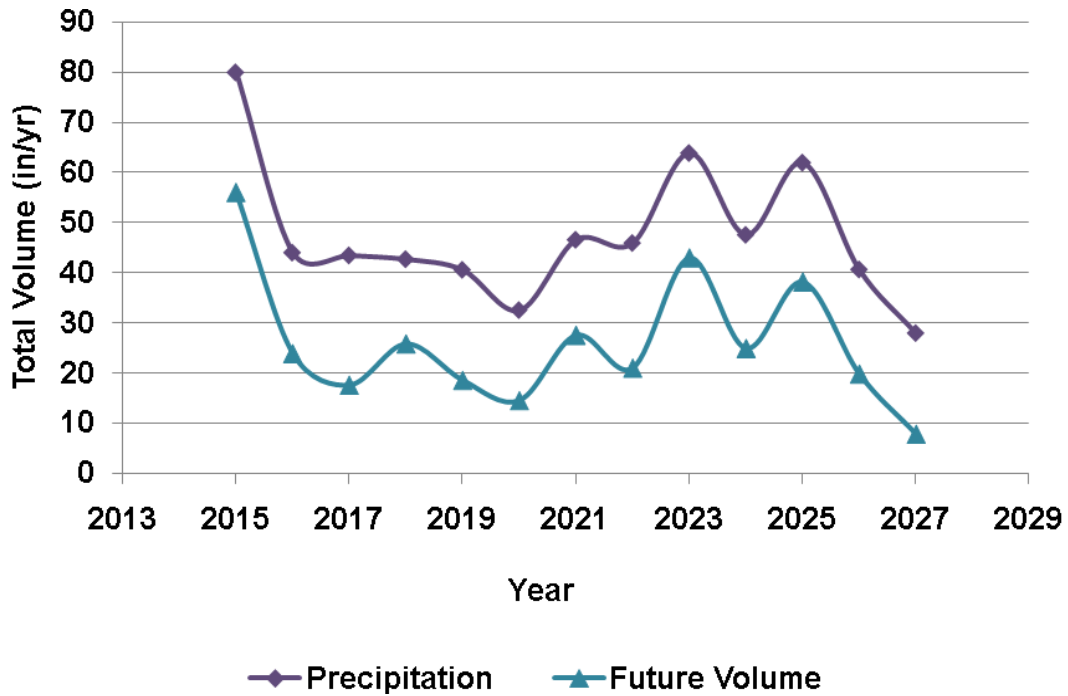


Figure 2-20 Annual Variability of Precipitation and Total Volume for Alligator Creek Basin

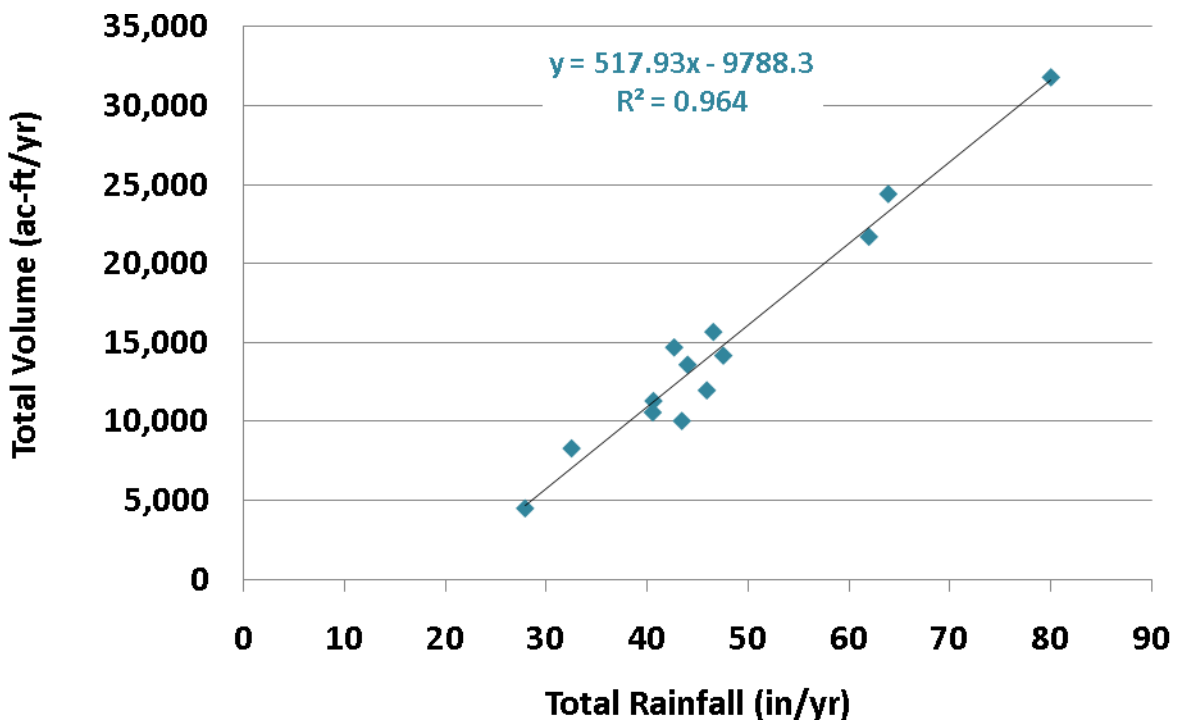


Figure 2-21 Correlation of Annual Total Volume to Rainfall for Alligator Creek Basin



Table 2-27 Annual Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	56.05	80.00	0.70
2016	23.99	44.01	0.55
2017	17.72	43.44	0.41
2018	25.91	42.67	0.61
2019	18.67	40.55	0.46
2020	14.65	32.51	0.45
2021	27.65	46.56	0.59
2022	21.13	45.91	0.46
2023	43.04	63.89	0.67
2024	25.01	47.55	0.53
2025	38.26	61.97	0.62
2026	19.94	40.62	0.49
2027	7.96	27.91	0.29
Average	26.15	47.51	0.52

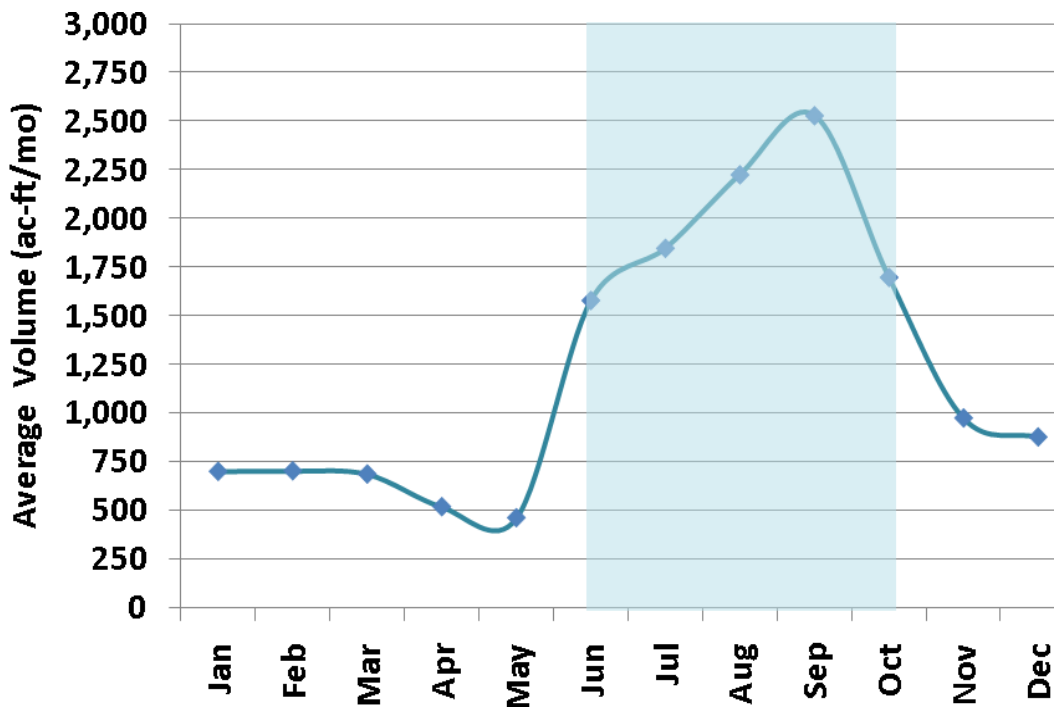


Figure 2-22 Variability of Average Monthly Total Volume in Alligator Creek Basin



Table 2-28 Average Monthly Rainfall to Total Volume Coefficients for Alligator Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.24	1.74	0.71
Feb	1.24	2.05	0.61
Mar	1.21	2.28	0.53
Apr	0.92	2.20	0.42
May	0.82	2.09	0.39
Jun	2.79	7.75	0.36
Jul	3.26	7.45	0.44
Aug	3.93	7.44	0.53
Sep	4.47	7.01	0.64
Oct	3.00	3.51	0.85
Nov	1.72	1.73	1.00
Dec	1.55	2.26	0.69

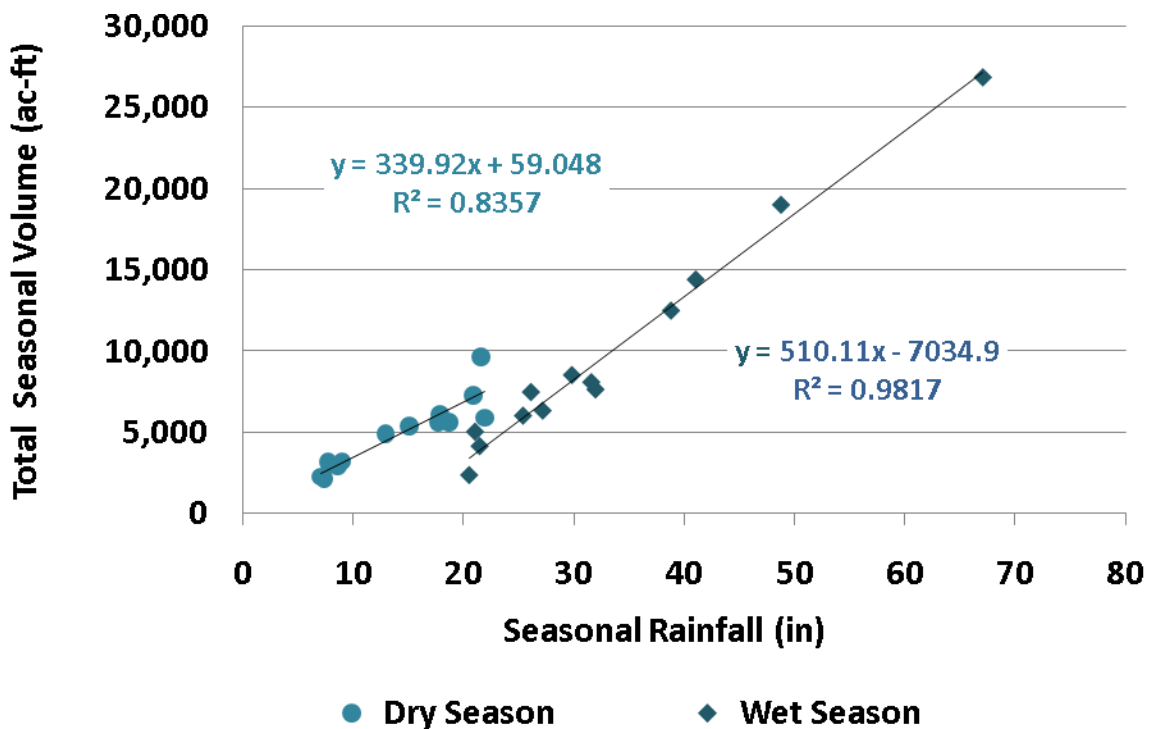


Figure 2-23 Correlation of Seasonal Total Volume to Rainfall for Alligator Creek Basin



Table 2-29 Wet Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	47.39	67.09	0.71
2016	13.21	26.14	0.51
2017	7.34	21.50	0.34
2018	8.91	21.08	0.42
2019	13.50	31.99	0.42
2020	10.64	25.43	0.42
2021	22.06	38.83	0.57
2022	11.20	27.21	0.41
2023	33.55	48.80	0.69
2024	15.06	29.86	0.50
2025	25.43	41.08	0.62
2026	14.29	31.61	0.45
2027	4.19	20.55	0.20
Average	17.44	33.17	0.48

Table 2-30 Dry Season Total Volume to Rainfall Coefficients for Alligator Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	8.66	12.92	0.67
2016	10.78	17.87	0.60
2017	10.38	21.94	0.47
2018	17.01	21.60	0.79
2019	5.17	8.56	0.60
2020	4.01	7.08	0.57
2021	5.59	7.73	0.72
2022	9.93	18.71	0.53
2023	9.48	15.09	0.63
2024	9.95	17.69	0.56
2025	12.83	20.89	0.61
2026	5.66	9.01	0.63
2027	3.77	7.36	0.51
Average	8.71	14.34	0.61

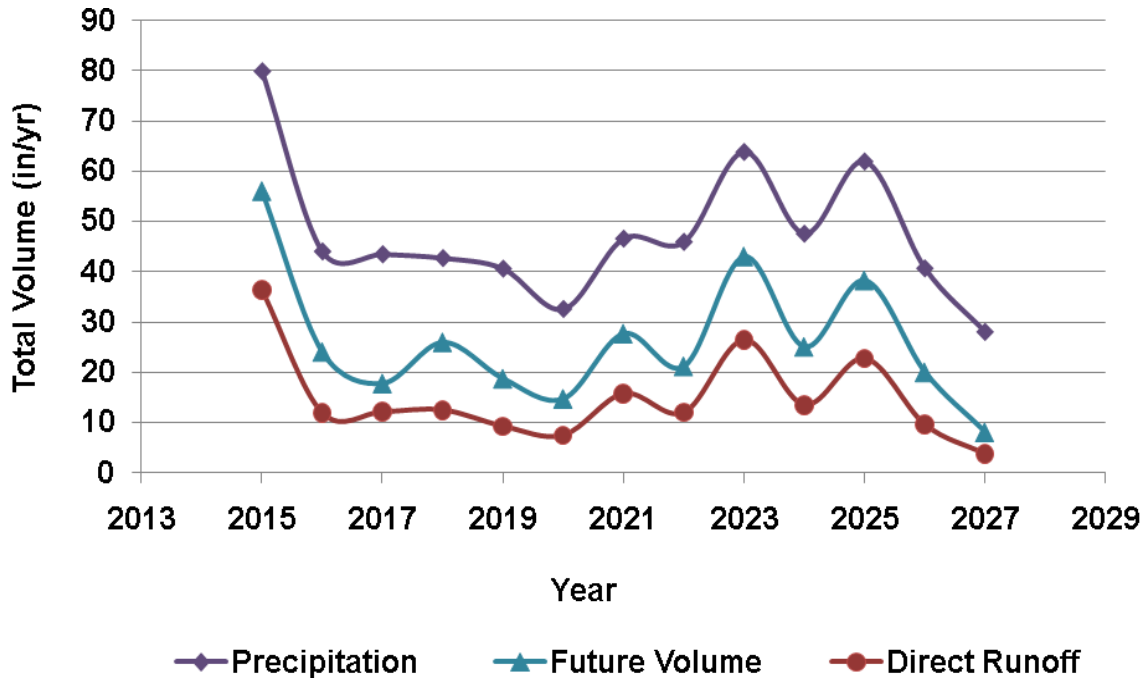


Figure 2-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Alligator Creek Basin

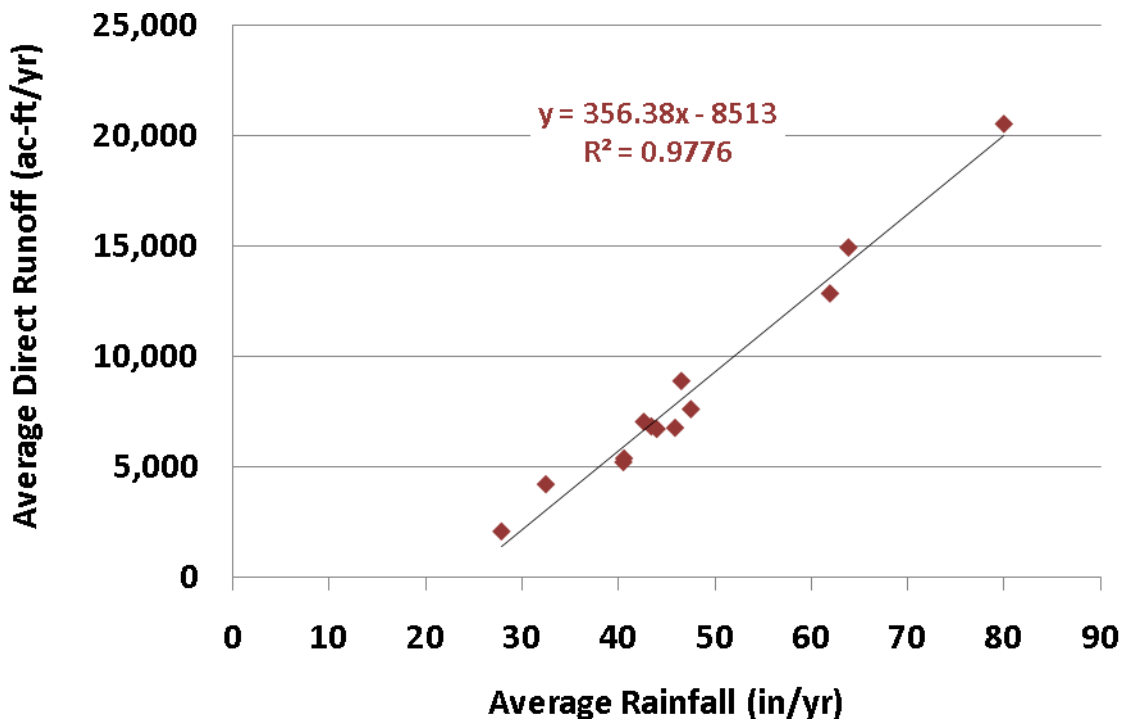


Figure 2-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 2-31 Annual Direct Runoff to Rainfall Coefficients for Alligator Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	36.32	80.00	0.45
2016	11.90	44.01	0.27
2017	12.11	43.44	0.28
2018	12.48	42.67	0.29
2019	9.24	40.55	0.23
2020	7.47	32.51	0.23
2021	15.74	46.56	0.34
2022	11.99	45.91	0.26
2023	26.43	63.89	0.41
2024	13.49	47.55	0.28
2025	22.74	61.97	0.37
2026	9.54	40.62	0.23
2027	3.70	27.91	0.13
Average	14.86	47.51	0.29

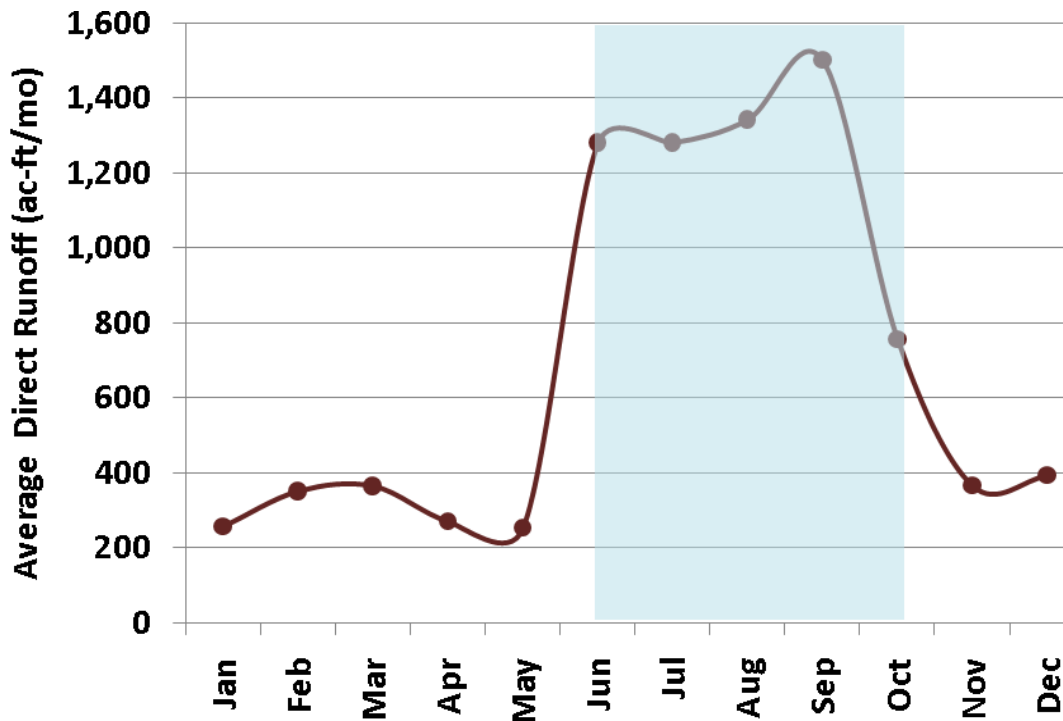


Figure 2-26 Variability of Average Monthly Direct Runoff to Alligator Creek Basin



Table 2-32 Average Monthly Rainfall to Direct Runoff Coefficients for Alligator Creek Basin			
	Average Direct Runoff Volume (in)	Average Rainfall (in)	Average Direct Runoff Volume / Average Rainfall
Jan	0.45	1.74	0.26
Feb	0.62	2.05	0.30
Mar	0.64	2.28	0.28
Apr	0.48	2.20	0.22
May	0.45	2.09	0.21
Jun	2.26	7.75	0.29
Jul	2.26	7.45	0.30
Aug	2.37	7.44	0.32
Sep	2.65	7.01	0.38
Oct	1.33	3.51	0.38
Nov	0.65	1.73	0.37
Dec	0.69	2.26	0.31

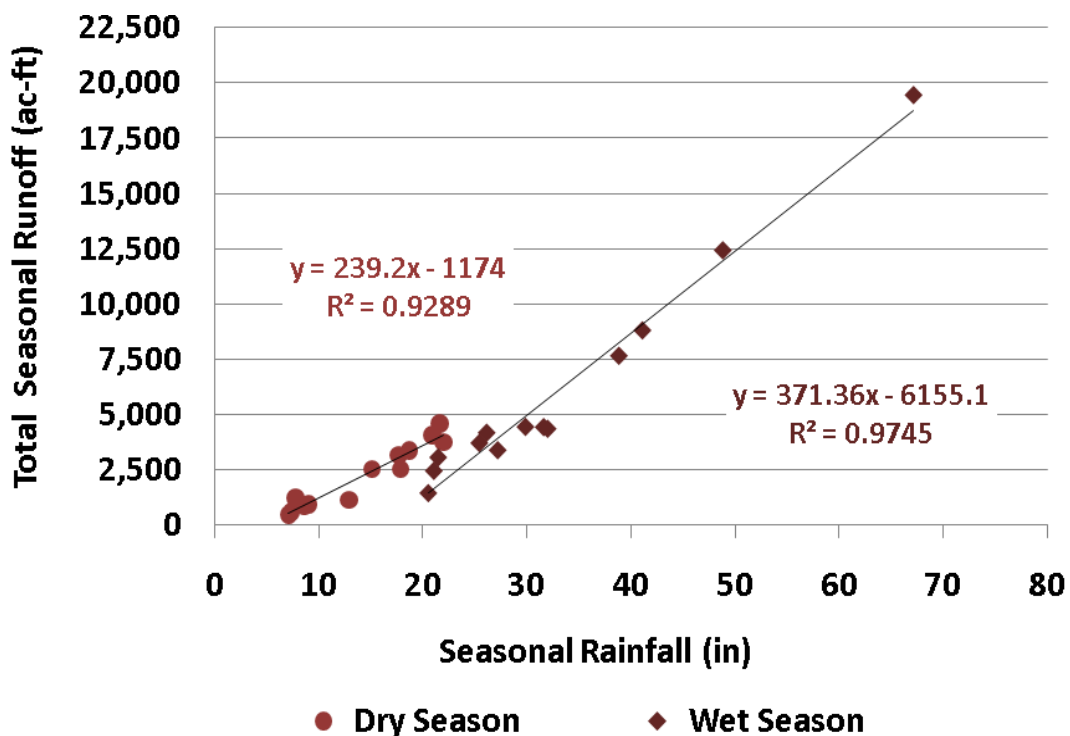


Figure 2-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 2-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	34.30	67.09	0.51
2016	7.42	26.14	0.28
2017	5.46	21.50	0.25
2018	4.38	21.08	0.21
2019	7.74	31.99	0.24
2020	6.60	25.43	0.26
2021	13.54	38.83	0.35
2022	6.03	27.21	0.22
2023	21.95	48.80	0.45
2024	7.89	29.86	0.26
2025	15.57	41.08	0.38
2026	7.87	31.61	0.25
2027	2.61	20.55	0.13
Average	10.87	33.17	0.29

Table 2-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	2.02	12.92	0.16
2016	4.47	17.87	0.25
2017	6.65	21.94	0.30
2018	8.09	21.60	0.37
2019	1.51	8.56	0.18
2020	0.87	7.08	0.12
2021	2.20	7.73	0.28
2022	5.96	18.71	0.32
2023	4.48	15.09	0.30
2024	5.60	17.69	0.32
2025	7.17	20.89	0.34
2026	1.67	9.01	0.19
2027	1.08	7.36	0.15
Average	3.98	14.34	0.25



2.4 WATER BUDGET CHANGES

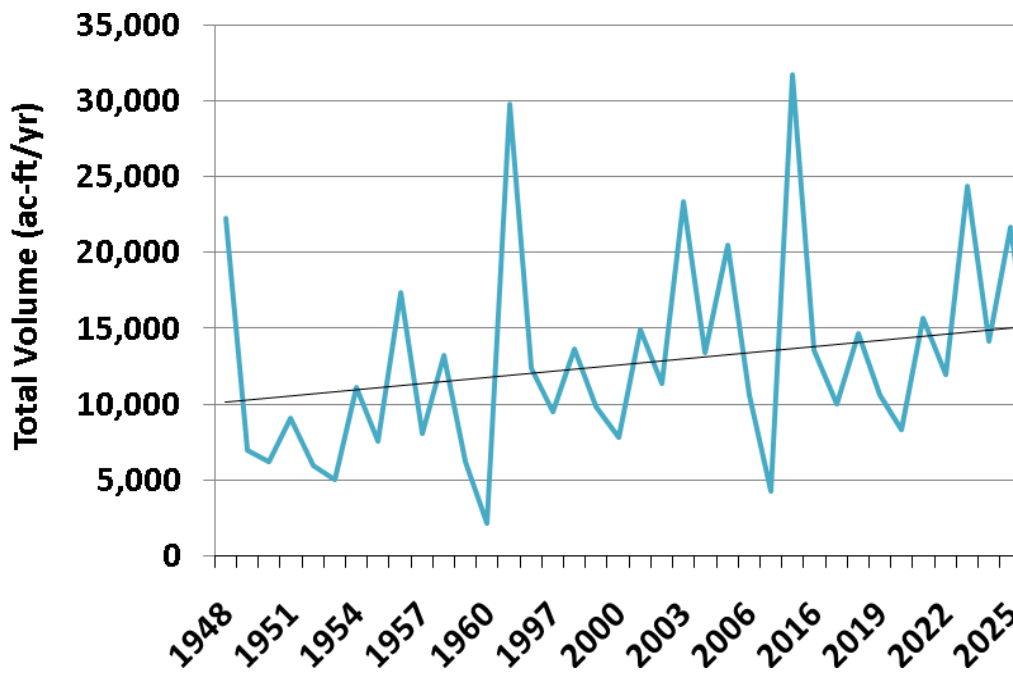


Figure 2-28 Trend in Total Volume from Historical through Future Time Series

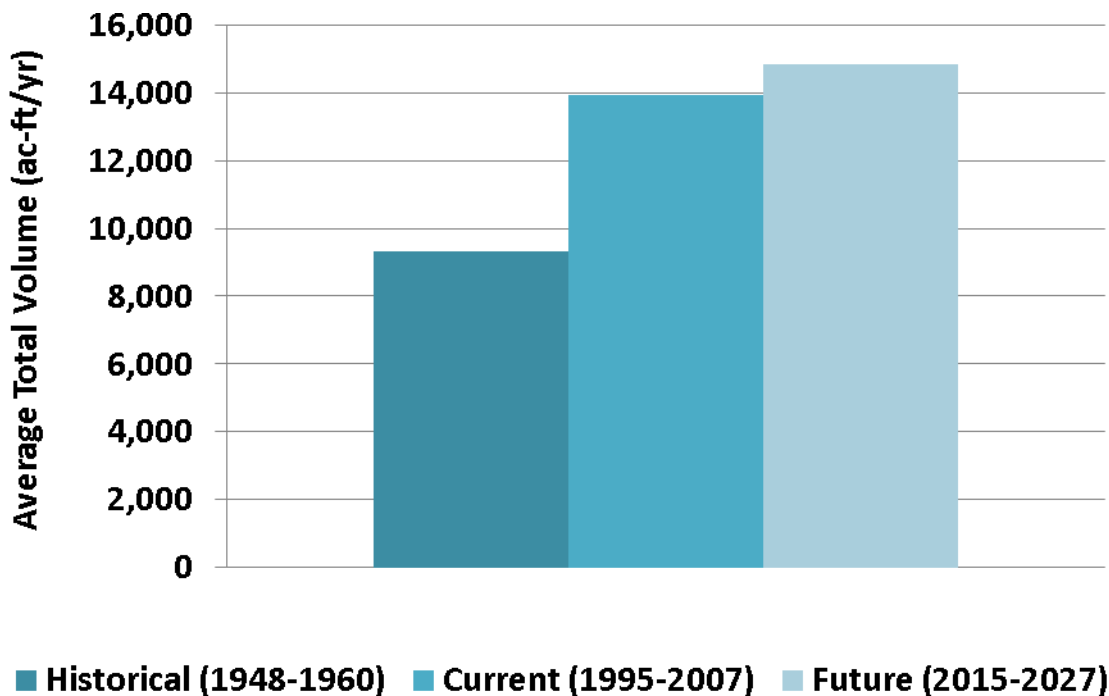


Figure 2-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay



Table 2-35 Change in Total Volume from Historical to Current Conditions			
Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	22,276	29,751	7,475
2	6,966	12,346	5,380
3	6,217	9,514	3,296
4	9,104	13,630	4,526
5	5,917	9,841	3,924
6	5,063	7,801	2,738
7	11,123	14,903	3,780
8	7,524	11,386	3,863
9	17,381	23,333	5,953
10	8,099	13,383	5,284
11	13,221	20,514	7,293
12	6,224	10,602	4,378
13	2,129	4,283	2,154
Average	9,326	13,945	4,619

Table 2-36 Change in Total Volume from Current to Future Conditions			
Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	29,751	31,759	2,009
2	12,346	13,591	1,246
3	9,514	10,039	525
4	13,630	14,683	1,053
5	9,841	10,576	736
6	7,801	8,300	499
7	14,903	15,664	761
8	11,386	11,971	585
9	23,333	24,383	1,050
10	13,383	14,171	788
11	20,514	21,679	1,165
12	10,602	11,300	698
13	4,283	4,511	228
Average	13,945	14,818	872

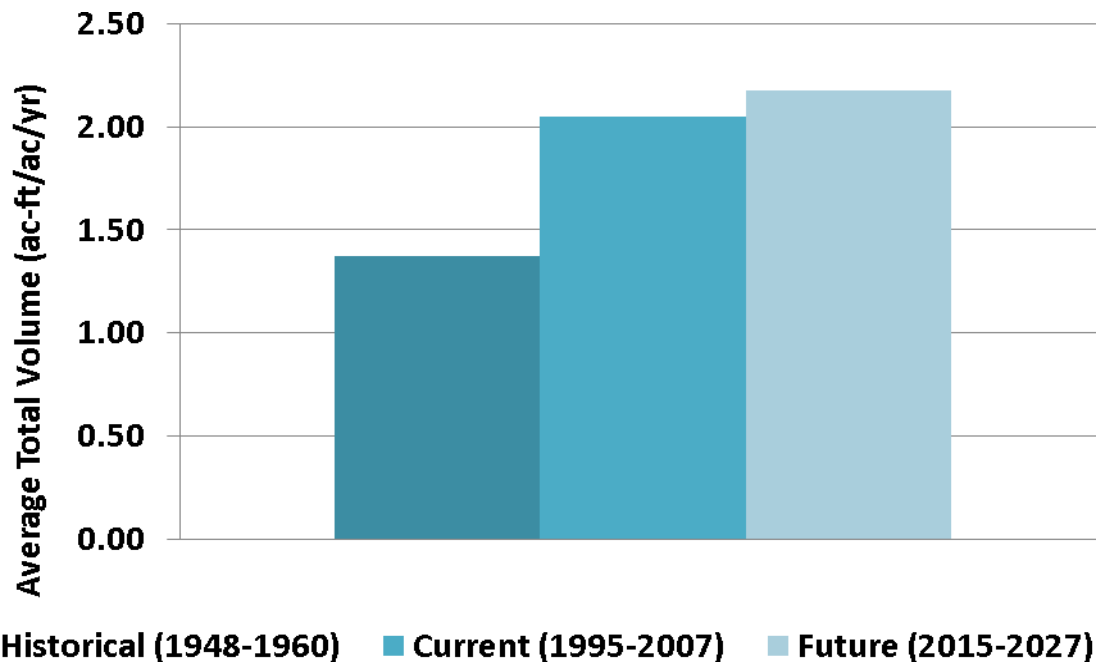


Figure 2-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay

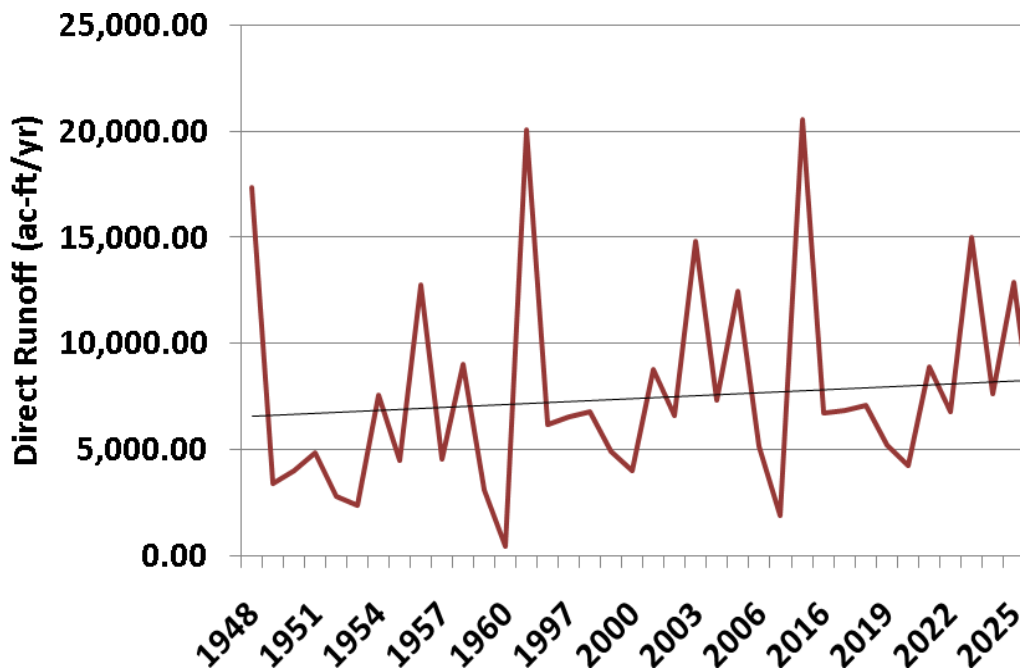


Figure 2-31 Trend in Direct Runoff from Historical through Future Time Series

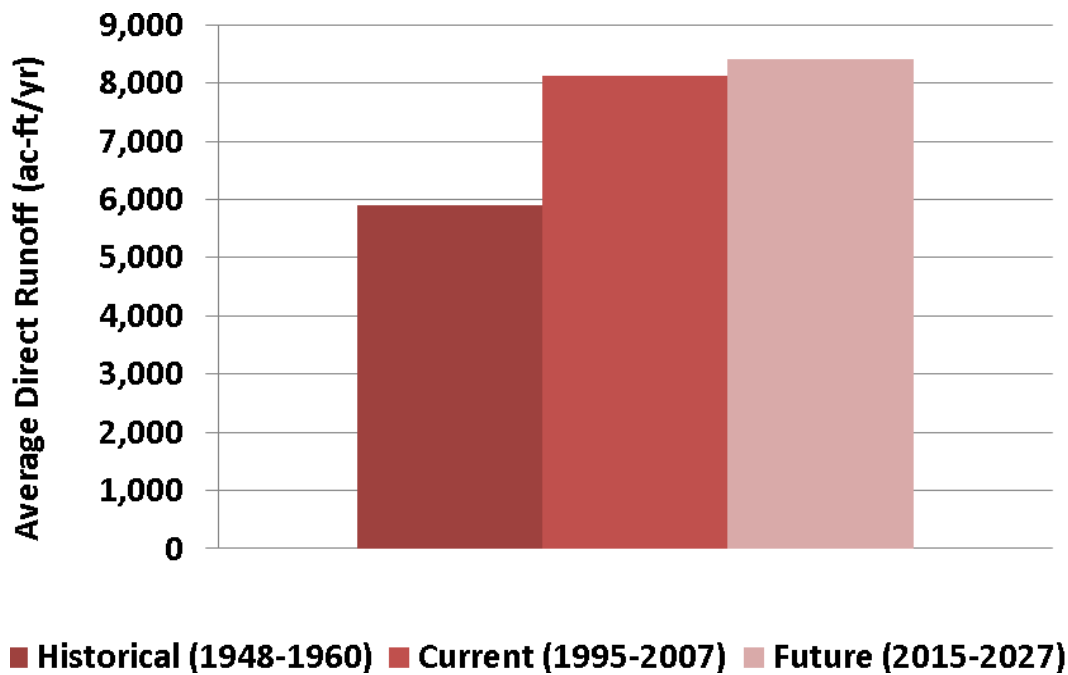


Figure 2-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay

Table 2-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	17,323	20,039	2,716
2	3,419	6,209	2,790
3	4,033	6,520	2,487
4	4,873	6,818	1,945
5	2,797	4,906	2,108
6	2,406	3,999	1,593
7	7,572	8,777	1,205
8	4,493	6,586	2,093
9	12,744	14,788	2,044
10	4,543	7,354	2,810
11	9,010	12,459	3,449
12	3,088	5,183	2,095
13	433	1,916	1,483
Average	5,903	8,119	2,217



Table 2-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1995-2007	Future Direct Runoff (ac-ft) 2015-2027	Direct Runoff Change (ac-ft) (future-current)
1	20,039	20,577	538
2	6,209	6,741	531
3	6,520	6,861	341
4	6,818	7,069	251
5	4,906	5,238	332
6	3,999	4,233	234
7	8,777	8,919	142
8	6,586	6,796	211
9	14,788	14,973	186
10	7,354	7,642	288
11	12,459	12,886	427
12	5,183	5,406	223
13	1,916	2,095	179
Average	8,119	8,418	299

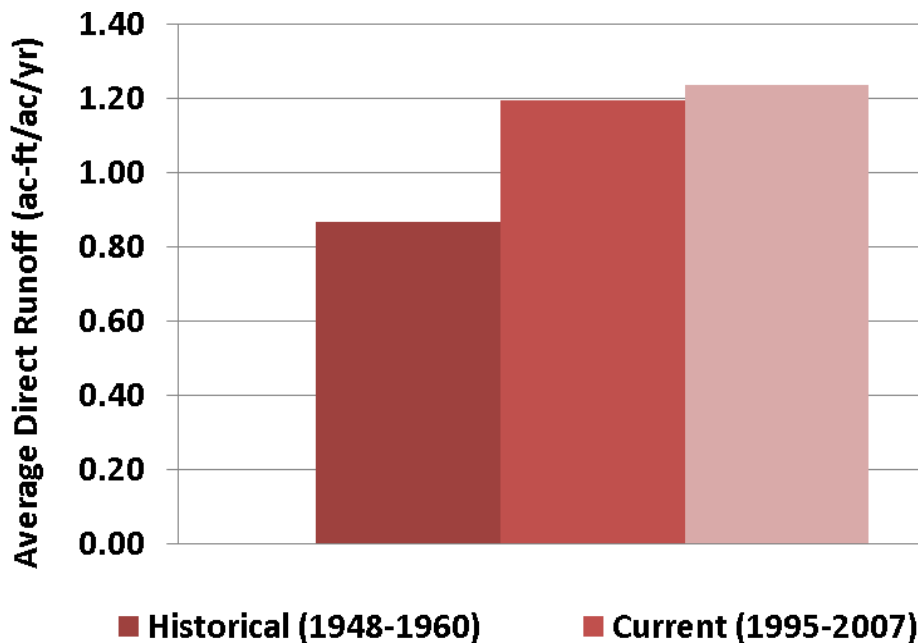


Figure 2-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay



3.0 WOODMERE CREEK BASIN

3.1 CURRENT CONDITIONS

Table 3-1 Monthly Rainfall for Woodmere Creek Basin (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.18	2.01	1.32	2.99	0.31	18.90	17.71	6.65	10.95	10.99	0.88	1.34	77.22
1996	1949	2016	3.67	1.42	4.13	1.60	3.94	3.34	3.68	6.34	3.65	5.61	0.16	0.54	38.08
1997	1950	2017	1.62	0.23	1.14	5.67	1.34	2.87	3.30	2.96	7.33	2.54	4.05	6.55	39.61
1998	1951	2018	4.41	5.16	4.15	0.18	1.74	2.32	5.58	4.47	7.44	0.47	4.12	0.72	40.75
1999	1952	2019	2.54	0.08	1.64	0.25	0.79	6.41	4.24	8.89	7.43	2.85	0.52	1.84	37.49
2000	1953	2020	1.17	0.50	0.58	2.25	0.83	5.66	4.30	7.67	6.17	0.00	0.87	0.74	30.73
2001	1954	2021	0.29	0.01	6.56	0.21	0.16	6.79	13.05	6.30	10.77	1.19	0.09	0.28	45.69
2002	1955	2022	0.48	4.13	0.25	1.47	2.86	4.85	3.92	12.02	4.07	0.75	4.45	5.03	44.28
2003	1956	2023	0.04	0.86	1.45	3.46	3.95	13.36	5.02	14.04	13.26	0.58	0.45	4.25	60.72
2004	1957	2024	1.32	4.26	0.83	3.95	1.23	5.86	5.71	5.60	4.26	3.44	2.63	2.92	42.00
2005	1958	2025	1.97	3.30	4.44	2.42	4.79	17.01	8.02	4.60	2.86	8.32	3.54	0.28	61.52
2006	1959	2026	0.36	2.80	0.24	0.06	1.78	5.23	10.14	6.28	5.32	1.30	0.33	2.37	36.21
2007	1960	2027	1.14	1.63	0.35	2.68	0.62	4.52	4.39	3.27	4.72	4.49	0.54	0.71	29.07
Average			1.71	2.03	2.08	2.09	1.87	7.47	6.85	6.85	6.79	3.27	1.74	2.12	44.87



Table 3-2 Current Total Volume for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	168.5	102.7	95.8	86.9	47.6	1,217.2	1,421.7	584.2	1,012.9	981.6	233.8	155.1	6,107.9
1996	248.8	121.9	146.5	92.8	182.1	90.6	99.3	238.6	136.0	383.9	107.9	85.6	1,934.0
1997	88.3	49.7	59.7	149.3	43.4	62.9	56.9	48.2	271.7	81.5	198.6	381.6	1,492.0
1998	371.7	422.4	400.0	127.1	111.4	101.2	178.5	123.1	306.5	159.4	309.6	80.8	2,691.6
1999	107.2	44.7	56.2	34.2	34.2	106.3	86.8	289.0	446.1	272.8	135.5	147.3	1,760.2
2000	91.2	55.8	47.1	70.4	42.4	86.3	74.3	414.1	316.1	109.6	85.2	68.8	1,461.4
2001	52.3	40.8	268.5	34.6	29.9	134.3	626.9	555.0	849.7	225.2	129.6	95.9	3,042.7
2002	74.9	176.9	50.8	56.6	79.4	70.2	81.3	428.1	320.2	154.9	361.3	272.3	2,127.0
2003	127.4	86.2	78.8	180.8	156.3	676.2	286.2	1,140.8	1,256.9	248.6	145.5	275.4	4,658.9
2004	88.8	254.6	81.6	142.6	56.4	113.7	142.8	248.0	251.6	289.2	203.9	210.5	2,083.5
2005	164.0	250.6	275.7	94.0	209.0	984.5	710.6	273.2	207.0	612.3	261.4	132.9	4,175.2
2006	89.9	133.3	55.8	43.7	50.2	86.4	280.7	305.3	320.2	190.1	104.2	125.2	1,785.1
2007	76.9	68.7	44.5	83.3	34.7	78.8	70.0	52.2	88.6	144.2	71.9	54.2	868.0
Average	134.6	139.1	127.8	92.0	82.8	293.0	316.6	361.5	444.9	296.4	180.6	160.4	2,629.8



Table 3-3 Current Direct Runoff for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	70.6	19.6	14.8	28.0	0.4	1,117.3	1,158.7	258.8	676.0	611.1	6.2	14.8	3,976.4
1996	106.2	22.7	65.6	21.7	126.2	45.5	54.9	161.0	54.9	232.9	0.3	4.3	896.3
1997	24.2	0.9	15.2	112.0	10.3	34.7	30.5	23.2	245.4	47.7	150.6	260.9	955.6
1998	184.2	200.7	210.8	0.1	15.8	28.8	116.1	59.9	185.3	1.4	206.2	4.8	1,214.2
1999	48.1	0.0	16.4	1.2	4.9	80.4	56.1	205.0	270.5	58.6	5.1	52.9	799.2
2000	20.6	2.6	1.1	32.2	8.7	57.0	46.1	360.4	200.6	0.0	7.0	5.8	742.1
2001	0.9	0.0	230.4	0.9	0.0	107.8	498.0	267.3	561.3	8.0	0.1	0.9	1,675.8
2002	1.7	121.5	1.3	16.1	44.1	39.2	49.7	361.8	88.2	4.8	262.0	140.4	1,130.5
2003	0.0	4.7	10.7	127.3	110.8	571.8	91.5	789.2	928.2	4.2	1.0	169.4	2,808.9
2004	11.9	192.7	15.3	91.6	13.6	77.9	92.9	125.9	88.7	139.1	97.4	128.9	1,076.0
2005	87.8	191.5	203.8	26.9	144.4	768.2	383.1	64.2	56.7	452.3	102.8	0.1	2,481.6
2006	1.2	68.3	0.9	0.0	12.6	54.1	220.1	154.5	117.9	34.6	1.5	46.1	711.9
2007	15.0	21.0	2.3	48.0	4.4	52.6	44.9	25.2	53.9	85.1	4.9	4.4	361.7
Average	44.0	65.1	60.6	38.9	38.2	233.5	218.7	219.7	271.4	129.2	65.0	64.1	1,448.5

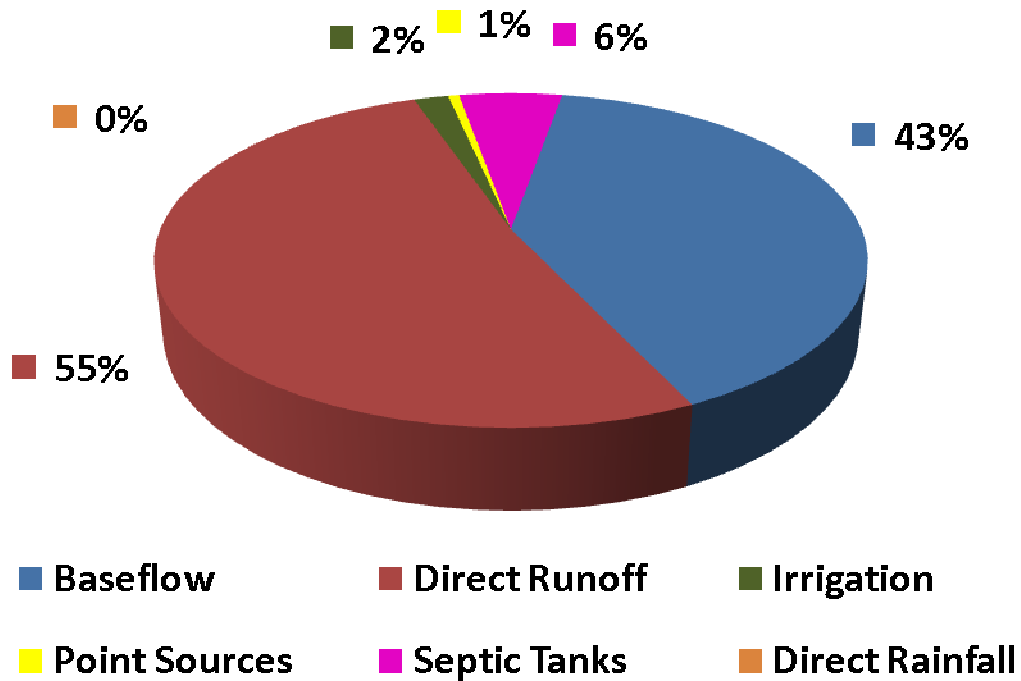


Figure 3-1 Woodmere Creek Basin Current Total Volume Water Budget

Table 3-4 Summary of Annual Current Total Volume Inputs for Woodmere Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	1,966.4	3,976.4	39.9	14.6	110.6	0.0
1996	871.1	896.3	39.9	14.6	112.2	0.0
1997	367.8	955.6	39.9	14.6	114.1	0.0
1998	1,306.3	1,214.2	40.7	14.6	115.8	0.0
1999	793.8	799.2	40.7	9.3	117.4	0.0
2000	552.9	742.1	40.7	6.8	118.9	0.0
2001	1,199.3	1,675.8	40.7	6.7	120.3	0.0
2002	821.0	1,130.5	40.7	12.0	122.8	0.0
2003	1,660.8	2,808.9	40.7	24.1	124.5	0.0
2004	824.8	1,076.0	40.7	16.2	125.9	0.0
2005	1,512.8	2,481.6	40.7	12.8	127.3	0.0
2006	893.4	711.9	40.7	11.9	127.3	0.0
2007	324.2	361.7	40.7	14.2	127.3	0.0
Average	1,114.2	1,520.0	40.5	13.3	120.3	0.0

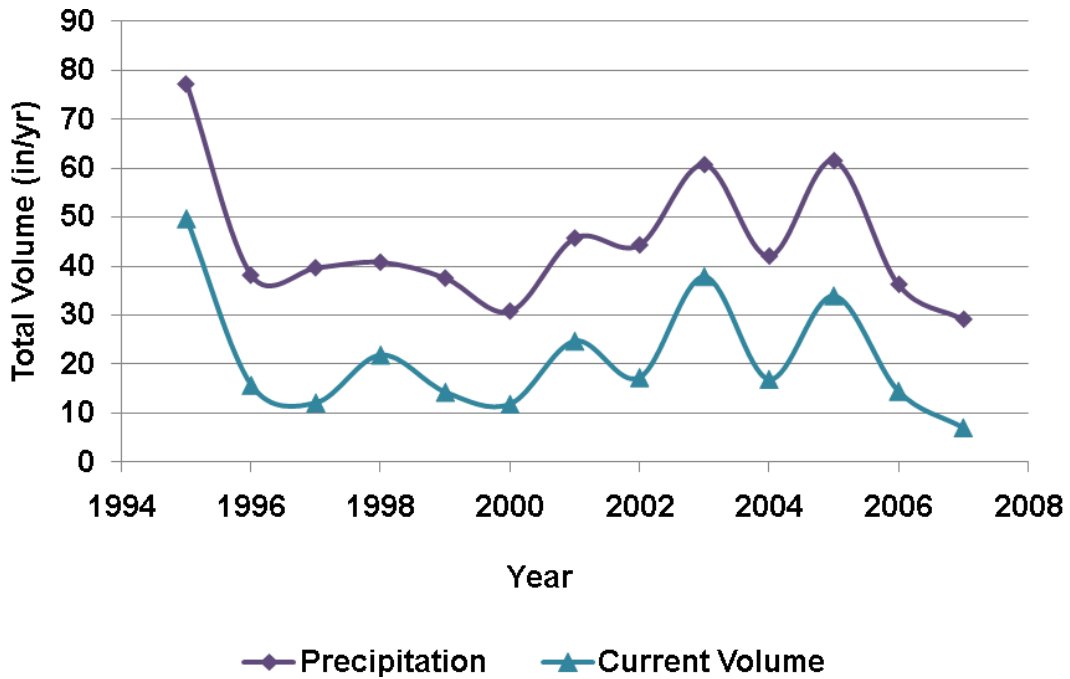


Figure 3-2 Annual Variability of Precipitation and Total Volume for Woodmere Creek Basin

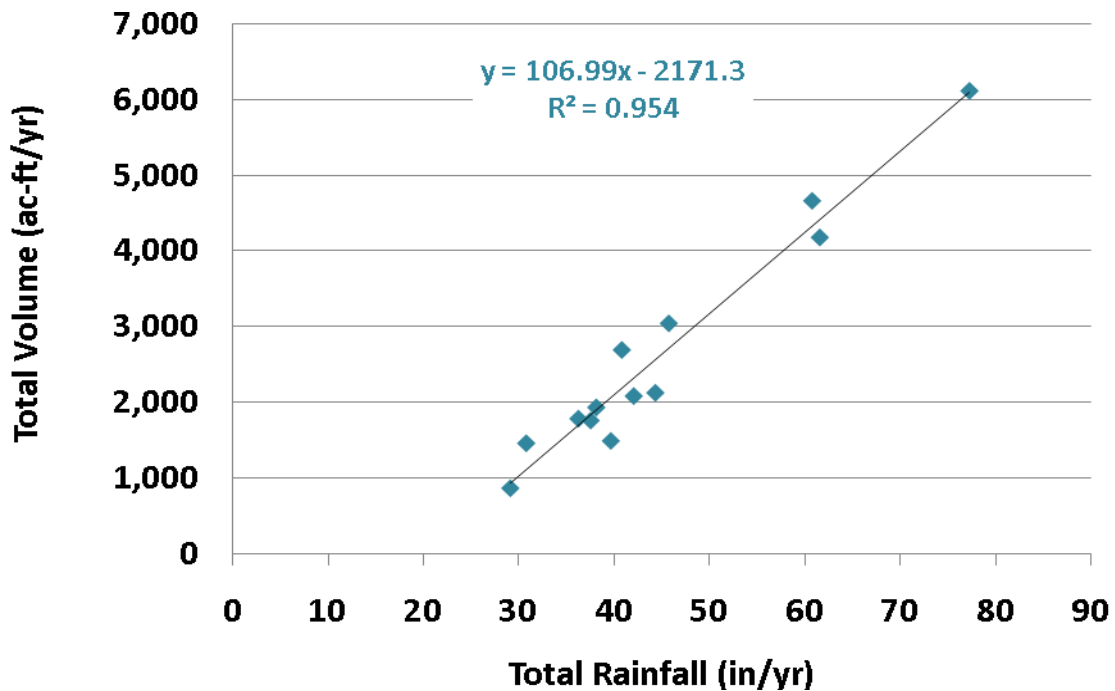


Figure 3-3 Correlation of Annual Total Volume to Rainfall for Woodmere Creek Basin



Table 3-5 Annual Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	49.70	77.22	0.64
1996	15.74	38.08	0.41
1997	12.14	39.61	0.31
1998	21.90	40.75	0.54
1999	14.32	37.49	0.38
2000	11.89	30.73	0.39
2001	24.76	45.69	0.54
2002	17.31	44.28	0.39
2003	37.91	60.72	0.62
2004	16.95	42.00	0.40
2005	33.97	61.52	0.55
2006	14.53	36.21	0.40
2007	7.06	29.07	0.24
Average	21.40	44.87	0.45

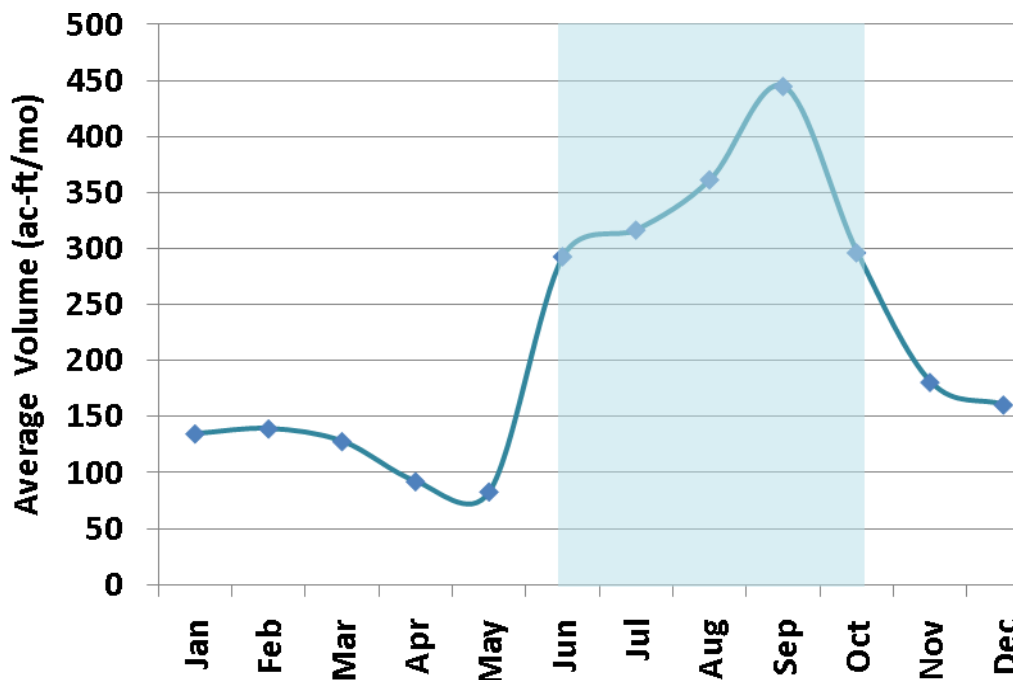


Figure 3-4 Variability of Average Monthly Total Volume in Woodmere Creek Basin



Table 3-6 Average Monthly Rainfall to Total Volume Coefficients for Woodmere Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.10	1.71	0.64
Feb	1.13	2.03	0.56
Mar	1.04	2.08	0.50
Apr	0.75	2.09	0.36
May	0.67	1.87	0.36
Jun	2.38	7.47	0.32
Jul	2.58	6.85	0.38
Aug	2.94	6.85	0.43
Sep	3.62	6.79	0.53
Oct	2.41	3.27	0.74
Nov	1.47	1.74	0.84
Dec	1.31	2.12	0.62

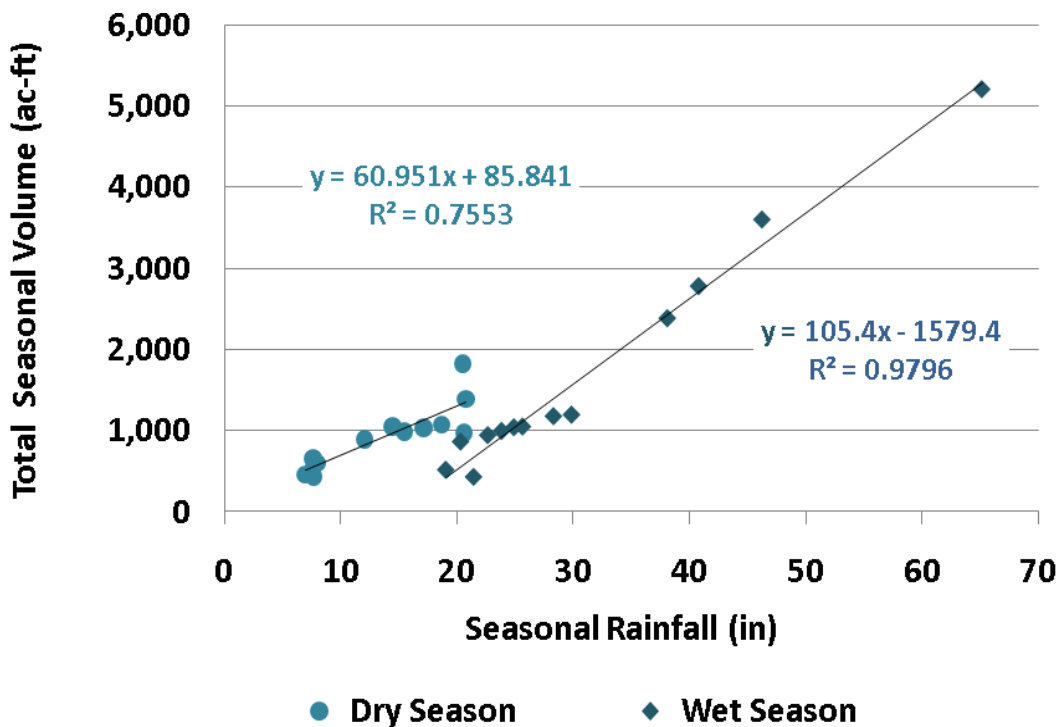


Figure 3-5 Correlation of Seasonal Total Volume to Rainfall for Woodmere Creek Basin



Table 3-7 Wet Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	42.46	65.19	0.65
1996	7.72	22.62	0.34
1997	4.24	19.00	0.22
1998	7.07	20.27	0.35
1999	9.77	29.83	0.33
2000	8.14	23.80	0.34
2001	19.46	38.09	0.51
2002	8.58	25.61	0.34
2003	29.36	46.25	0.63
2004	8.50	24.87	0.34
2005	22.68	40.79	0.56
2006	9.62	28.28	0.34
2007	3.53	21.40	0.16
Average	13.93	31.23	0.39

Table 3-8 Dry Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	7.25	12.03	0.60
1996	8.02	15.47	0.52
1997	7.90	20.61	0.38
1998	14.83	20.48	0.72
1999	4.55	7.66	0.59
2000	3.75	6.93	0.54
2001	5.30	7.60	0.70
2002	8.73	18.67	0.47
2003	8.55	14.47	0.59
2004	8.45	17.13	0.49
2005	11.29	20.72	0.54
2006	4.90	7.93	0.62
2007	3.53	7.67	0.46
Average	7.47	13.64	0.56

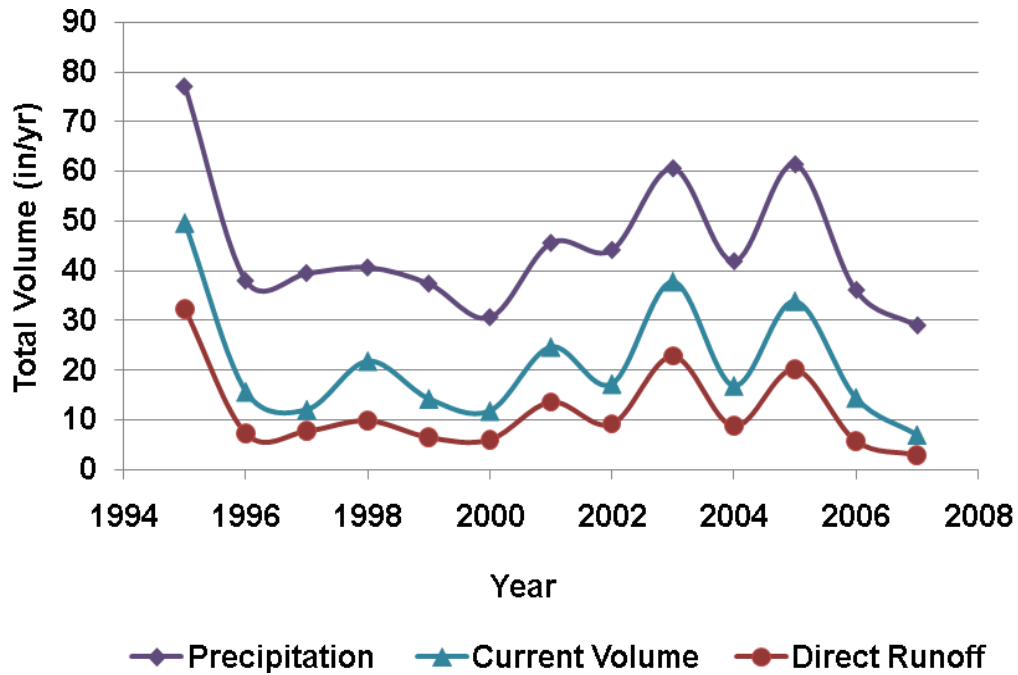


Figure 3-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Woodmere Creek Basin

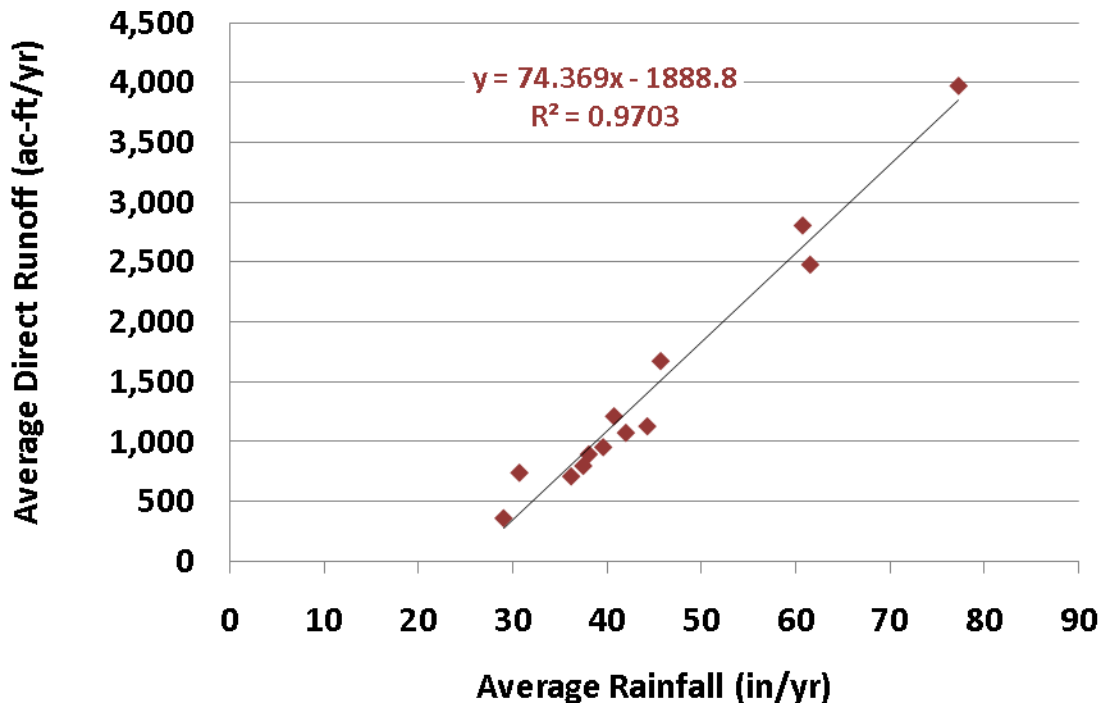


Figure 3-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 3-9 Annual Direct Runoff to Rainfall Coefficients for Woodmere Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	32.36	77.22	0.42
1996	7.29	38.08	0.19
1997	7.78	39.61	0.20
1998	9.88	40.75	0.24
1999	6.50	37.49	0.17
2000	6.04	30.73	0.20
2001	13.64	45.69	0.30
2002	9.20	44.28	0.21
2003	22.86	60.72	0.38
2004	8.76	42.00	0.21
2005	20.19	61.52	0.33
2006	5.79	36.21	0.16
2007	2.94	29.07	0.10
Average	11.79	44.87	0.24

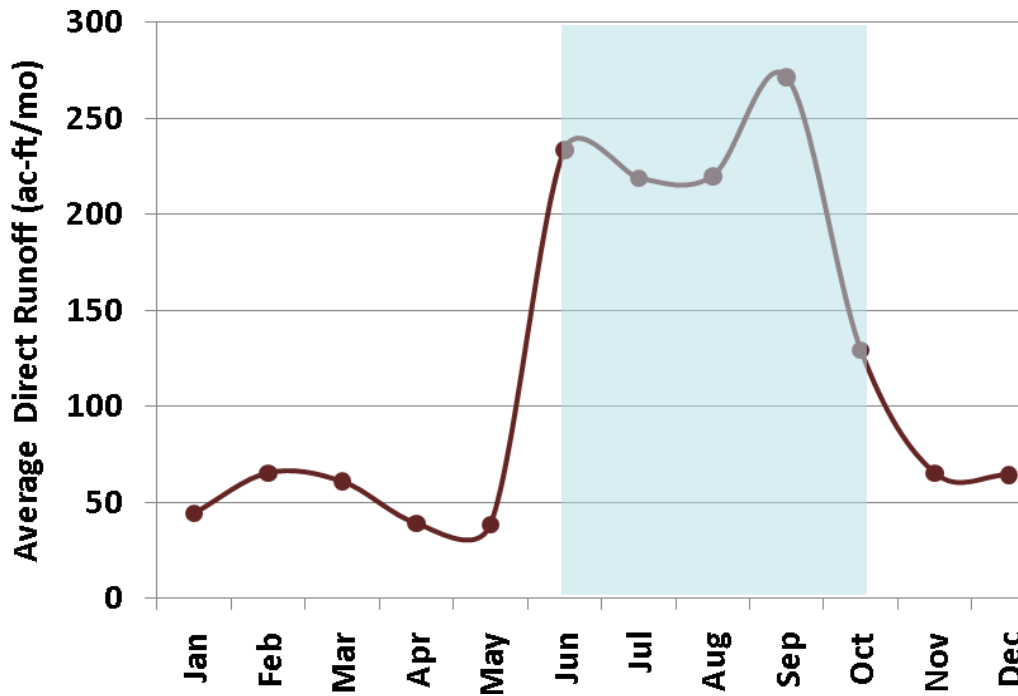


Figure 3-8 Variability of Average Monthly Direct Runoff to Woodmere Creek Basin



Table 3-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.36	1.71	0.21
Feb	0.53	2.03	0.26
Mar	0.49	2.08	0.24
Apr	0.32	2.09	0.15
May	0.31	1.87	0.17
Jun	1.90	7.47	0.25
Jul	1.78	6.85	0.26
Aug	1.79	6.85	0.26
Sep	2.21	6.79	0.33
Oct	1.05	3.27	0.32
Nov	0.53	1.74	0.30
Dec	0.52	2.12	0.25

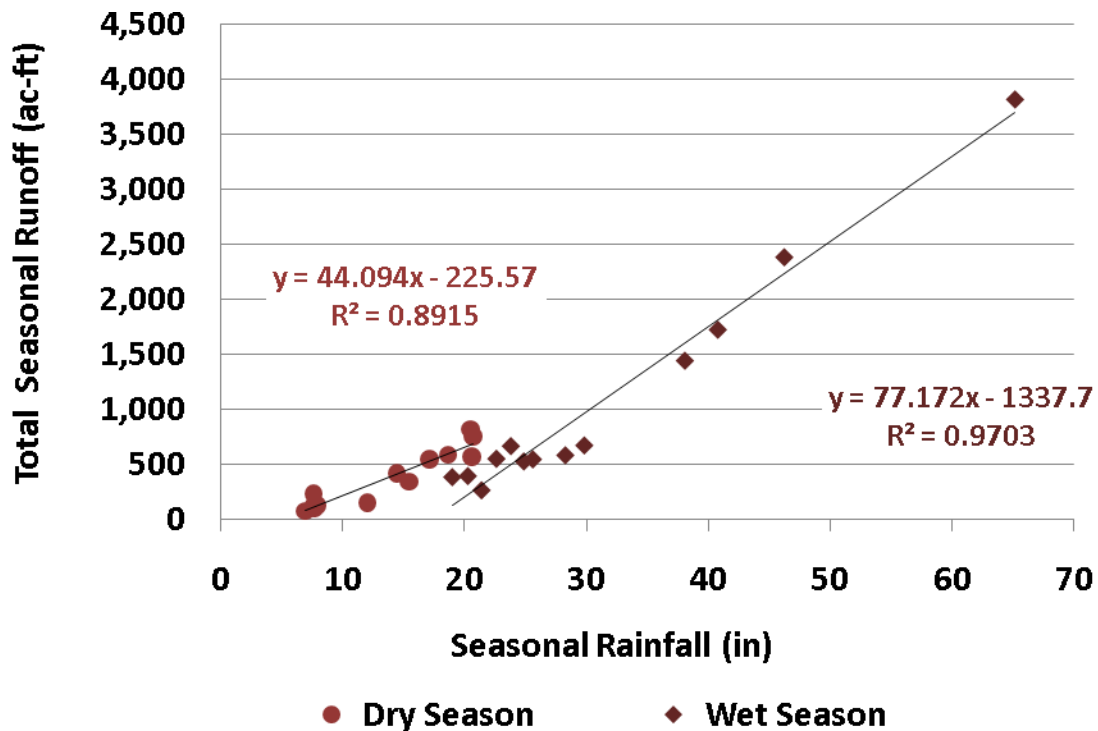


Figure 3-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 3-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	31.10	65.19	0.48
1996	4.47	22.62	0.20
1997	3.10	19.00	0.16
1998	3.19	20.27	0.16
1999	5.46	29.83	0.18
2000	5.40	23.80	0.23
2001	11.74	38.09	0.31
2002	4.42	25.61	0.17
2003	19.41	46.25	0.42
2004	4.27	24.87	0.17
2005	14.03	40.79	0.34
2006	4.73	28.28	0.17
2007	2.13	21.40	0.10
Average	8.73	31.23	0.24

Table 3-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	1.26	12.03	0.10
1996	2.82	15.47	0.18
1997	4.67	20.61	0.23
1998	6.69	20.48	0.33
1999	1.05	7.66	0.14
2000	0.63	6.93	0.09
2001	1.90	7.60	0.25
2002	4.78	18.67	0.26
2003	3.45	14.47	0.24
2004	4.49	17.13	0.26
2005	6.16	20.72	0.30
2006	1.06	7.93	0.13
2007	0.81	7.67	0.11
Average	3.06	13.64	0.20



3.2 HISTORICAL CONDITIONS

Table 3-13 Historical Total Volume for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	84.2	37.4	28.7	24.0	21.2	1,076.7	1,272.1	317.5	693.4	716.4	87.1	57.6	4,416.4
1949	150.5	51.7	63.1	40.2	143.4	39.5	33.7	102.7	55.5	231.7	45.8	40.9	998.8
1950	53.1	27.3	35.4	110.0	21.5	37.1	23.4	16.4	150.1	22.6	152.2	264.6	913.6
1951	249.9	328.9	225.6	52.0	51.8	58.0	143.2	64.1	201.4	60.8	201.6	41.5	1,679.0
1952	61.3	27.7	30.1	22.8	20.7	48.6	62.1	178.7	276.1	102.6	51.8	72.7	955.3
1953	51.7	31.1	29.0	45.1	22.7	33.6	43.3	348.5	208.4	51.6	43.1	37.9	945.9
1954	32.6	25.8	187.6	25.1	22.6	112.7	649.7	396.6	616.2	68.0	48.5	43.0	2,228.4
1955	36.9	158.1	27.9	26.0	34.9	20.3	45.1	323.7	162.5	56.0	252.2	196.1	1,339.6
1956	66.2	47.3	45.5	174.6	146.7	613.5	132.7	868.8	994.3	77.8	49.6	191.9	3,408.9
1957	40.2	154.7	40.8	101.7	38.8	46.1	72.9	115.8	128.9	135.9	102.0	149.7	1,127.5
1958	91.4	170.1	186.5	35.8	110.9	817.1	444.6	73.1	65.5	431.8	113.9	49.9	2,590.6
1959	40.9	67.0	29.9	25.3	22.9	29.5	227.5	166.4	128.3	69.5	44.5	72.3	923.9
1960	47.3	32.0	24.6	40.2	18.8	24.7	21.4	14.3	23.2	74.6	19.7	16.8	357.6
Average	77.4	89.2	73.4	55.6	52.1	227.5	244.0	229.7	284.9	161.5	93.2	95.0	1,683.5



Table 3-14 Historical Direct Runoff for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	43.81	6.68	0.37	0.60	0.00	1,020.62	1,171.03	217.77	584.27	594.16	3.37	1.49	3,644.17
1949	90.87	2.72	19.10	4.22	111.31	12.54	9.60	77.01	32.15	180.31	0.00	0.25	540.06
1950	18.17	0.00	8.94	87.59	0.50	19.30	7.26	2.44	137.82	9.52	137.50	216.63	645.67
1951	167.14	238.40	151.78	0.00	5.87	19.84	105.51	28.79	153.13	0.00	153.90	0.00	1,024.37
1952	25.77	0.00	3.23	0.00	0.01	31.03	41.72	134.26	211.62	32.21	0.00	27.14	506.99
1953	13.15	0.00	0.00	20.67	0.63	14.82	26.00	322.82	160.55	0.00	0.55	0.08	559.28
1954	0.00	0.00	162.24	0.00	0.00	92.92	571.39	296.60	527.50	0.11	0.00	0.00	1,650.75
1955	0.00	128.99	0.00	2.51	13.66	2.38	28.49	300.17	78.55	0.14	206.75	131.46	893.10
1956	0.00	0.00	0.54	137.09	113.08	557.98	61.15	756.73	890.55	0.01	0.00	145.58	2,662.72
1957	0.09	121.65	2.68	70.19	10.73	22.36	51.07	78.81	69.69	85.10	59.50	111.75	683.60
1958	54.60	140.22	151.76	2.61	81.24	740.56	350.36	16.67	21.17	383.28	53.57	0.09	1,996.13
1959	0.00	35.52	0.00	0.00	0.03	10.13	195.93	106.83	66.54	13.80	0.00	32.63	461.40
1960	13.63	6.23	0.00	19.38	0.00	8.67	6.86	1.71	12.03	59.30	0.63	0.00	128.43
Average	32.86	52.34	38.51	26.53	25.93	196.40	202.03	180.05	226.58	104.46	47.37	51.32	1,184.36

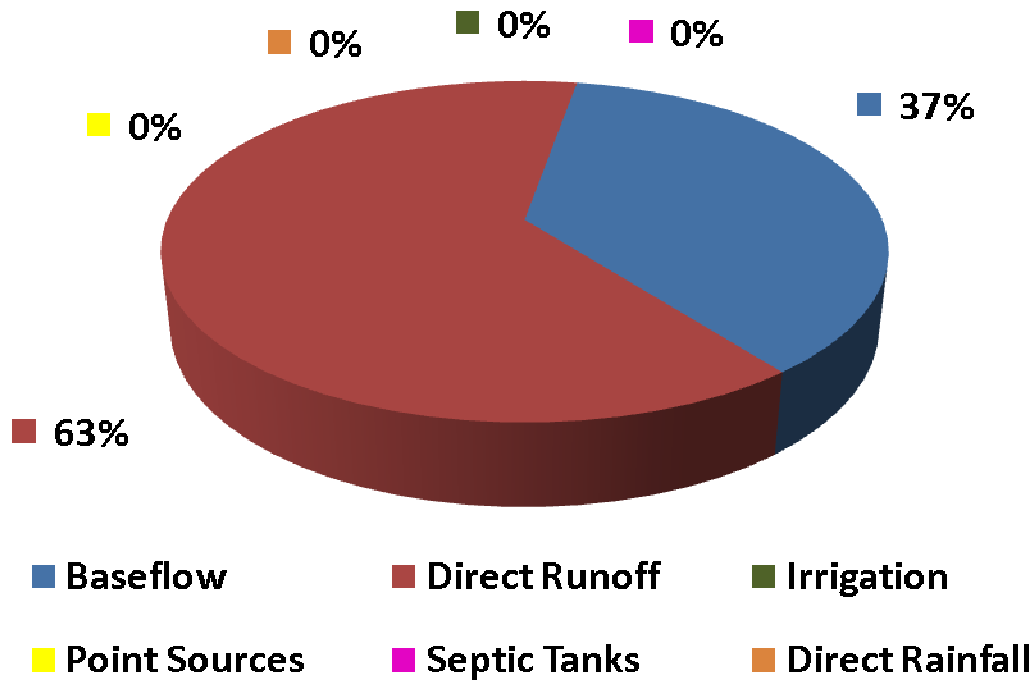


Figure 3-10 Woodmere Creek Basin Historical Total Volume Water Budget

Table 3-15 Summary of Annual Historical Total Volume Inputs for Woodmere Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	772.3	3,644.2	0.0	0.0	0.0	0.0
1949	458.7	540.1	0.0	0.0	0.0	0.0
1950	268.0	645.7	0.0	0.0	0.0	0.0
1951	654.6	1,024.4	0.0	0.0	0.0	0.0
1952	448.3	507.0	0.0	0.0	0.0	0.0
1953	386.7	559.3	0.0	0.0	0.0	0.0
1954	577.6	1,650.8	0.0	0.0	0.0	0.0
1955	446.5	893.1	0.0	0.0	0.0	0.0
1956	746.2	2,662.7	0.0	0.0	0.0	0.0
1957	443.9	683.6	0.0	0.0	0.0	0.0
1958	594.4	1,996.1	0.0	0.0	0.0	0.0
1959	462.5	461.4	0.0	0.0	0.0	0.0
1960	229.2	128.4	0.0	0.0	0.0	0.0
Average	499.1	1,184.4	0.0	0.0	0.0	0.0

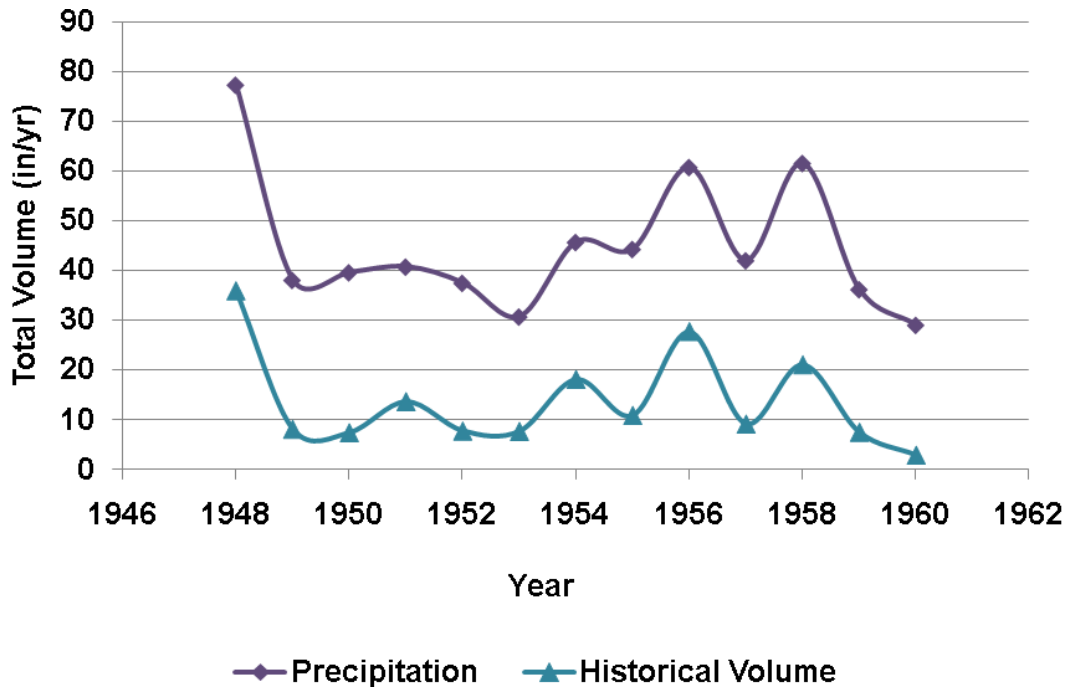


Figure 3-11 Annual Historical Variability of Precipitation and Total Volume for Woodmere Creek Basin

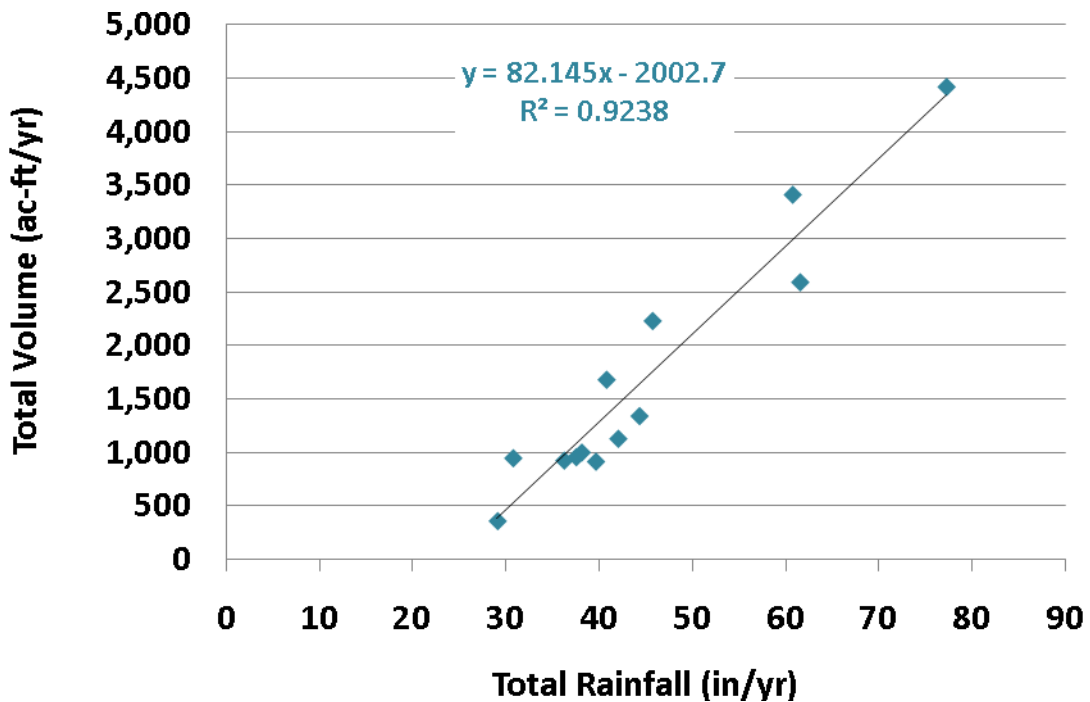


Figure 3-12 Correlation of Annual Total Volume to Rainfall for Woodmere Creek Basin



Table 3-16 Annual Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	35.94	77.22	0.47
1949	8.13	38.08	0.21
1950	7.43	39.61	0.19
1951	13.66	40.75	0.34
1952	7.77	37.49	0.21
1953	7.70	30.73	0.25
1954	18.13	45.69	0.40
1955	10.90	44.28	0.25
1956	27.74	60.72	0.46
1957	9.17	42.00	0.22
1958	21.08	61.52	0.34
1959	7.52	36.21	0.21
1960	2.91	29.07	0.10
Average	13.70	44.87	0.28

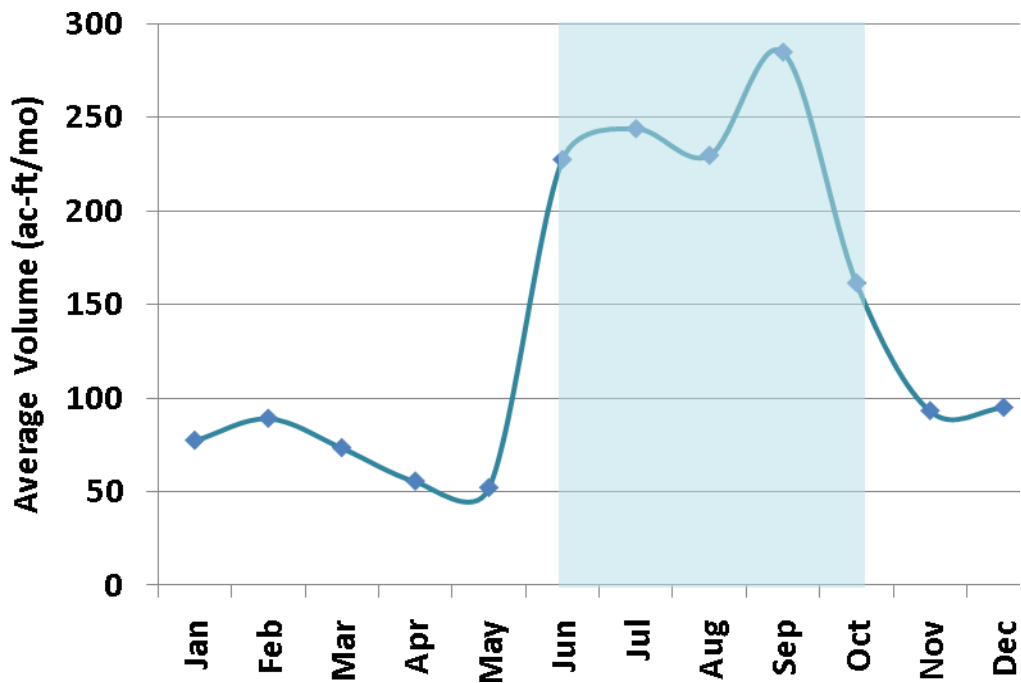


Figure 3-13 Variability of Average Monthly Total Volume in Woodmere Creek Basin



Table 3-17 Average Monthly Rainfall to Total Volume Coefficients for Woodmere Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.63	1.71	0.37
Feb	0.73	2.03	0.36
Mar	0.60	2.08	0.29
Apr	0.45	2.09	0.22
May	0.42	1.87	0.23
Jun	1.85	7.47	0.25
Jul	1.99	6.85	0.29
Aug	1.87	6.85	0.27
Sep	2.32	6.79	0.34
Oct	1.31	3.27	0.40
Nov	0.76	1.74	0.44
Dec	0.77	2.12	0.36

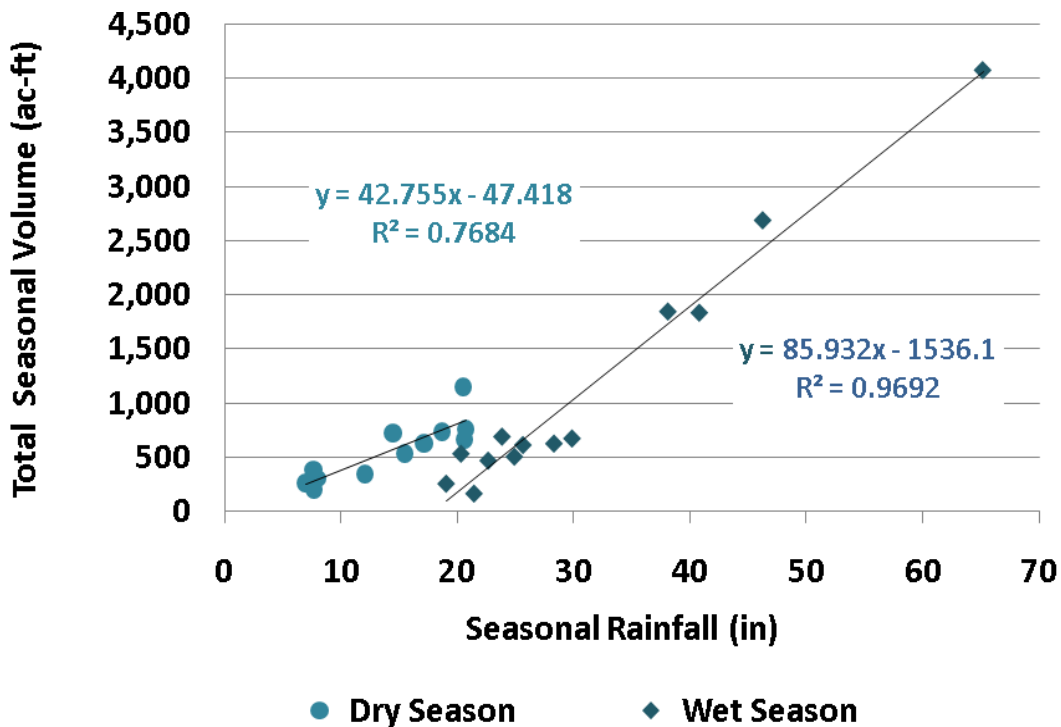


Figure 3-14 Correlation of Seasonal Total Volume to Rainfall for Woodmere Creek Basin



Table 3-18 Wet Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1948	33.17	65.19	0.51
1949	3.77	22.62	0.17
1950	2.03	19.00	0.11
1951	4.29	20.27	0.21
1952	5.44	29.83	0.18
1953	5.58	23.80	0.23
1954	15.00	38.09	0.39
1955	4.94	25.61	0.19
1956	21.87	46.25	0.47
1957	4.06	24.87	0.16
1958	14.91	40.79	0.37
1959	5.05	28.28	0.18
1960	1.29	21.40	0.06
Average	9.34	31.23	0.25

Table 3-19 Dry Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1948	2.77	12.03	0.23
1949	4.36	15.47	0.28
1950	5.40	20.61	0.26
1951	9.37	20.48	0.46
1952	2.34	7.66	0.31
1953	2.12	6.93	0.31
1954	3.13	7.60	0.41
1955	5.96	18.67	0.32
1956	5.87	14.47	0.41
1957	5.11	17.13	0.30
1958	6.17	20.72	0.30
1959	2.46	7.93	0.31
1960	1.62	7.67	0.21
Average	4.36	13.64	0.32

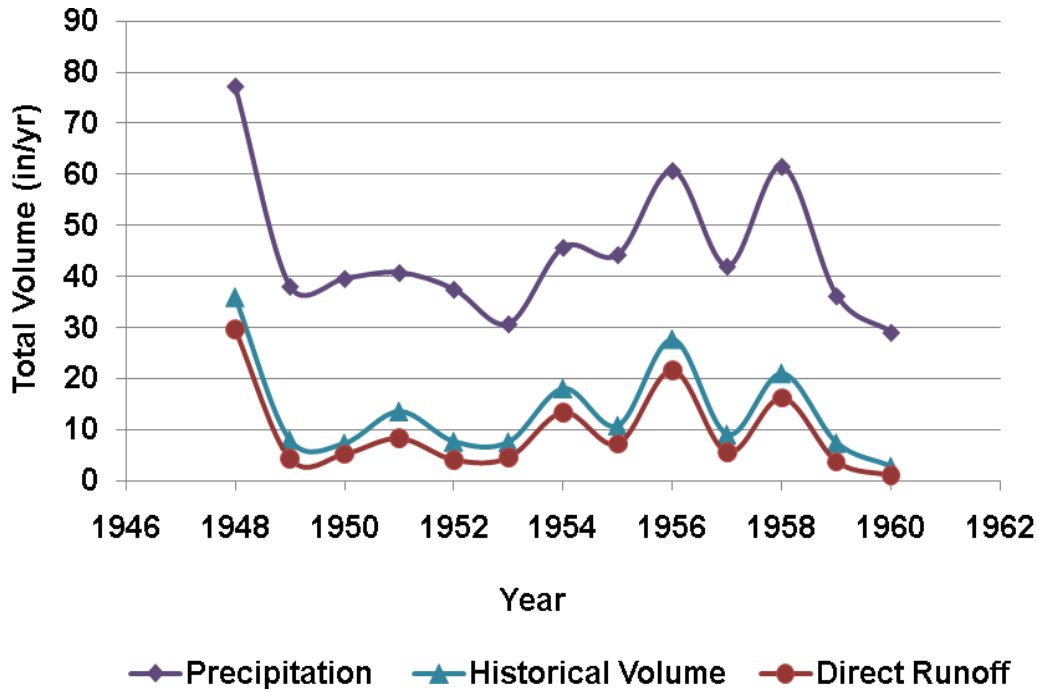


Figure 3-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Woodmere Creek Basin

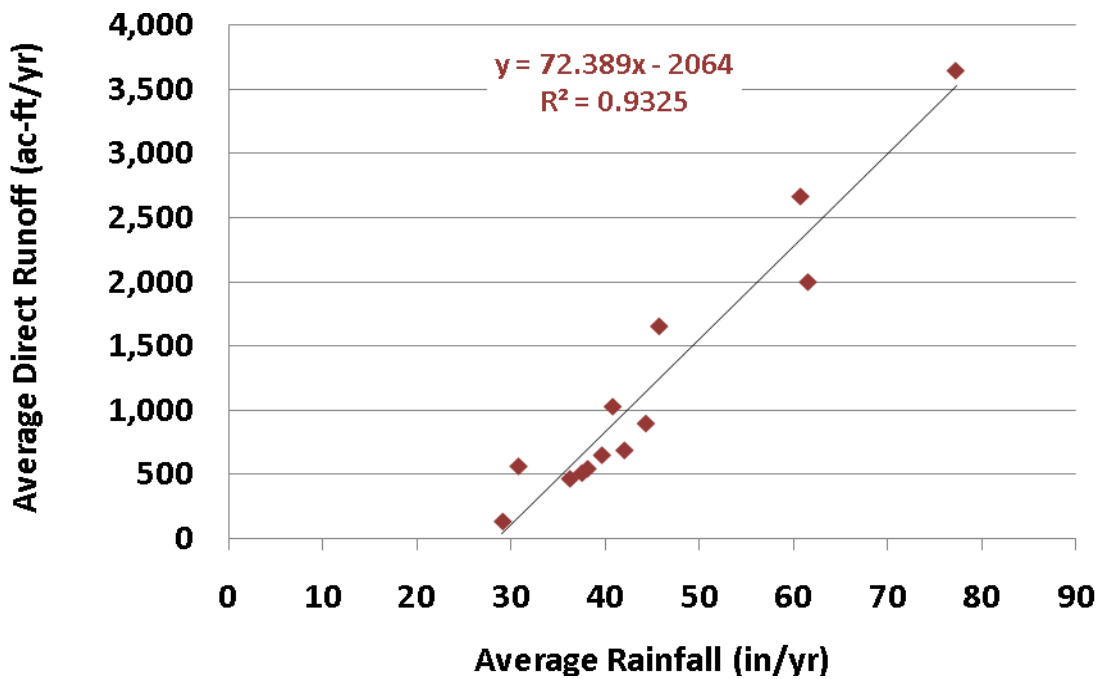


Figure 3-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 3-20 Annual Direct Runoff to Rainfall Coefficients for Woodmere Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	29.65	77.22	0.38
1949	4.39	38.08	0.12
1950	5.25	39.61	0.13
1951	8.34	40.75	0.20
1952	4.13	37.49	0.11
1953	4.55	30.73	0.15
1954	13.43	45.69	0.29
1955	7.27	44.28	0.16
1956	21.67	60.72	0.36
1957	5.56	42.00	0.13
1958	16.24	61.52	0.26
1959	3.75	36.21	0.10
1960	1.05	29.07	0.04
Average	9.64	44.87	0.19

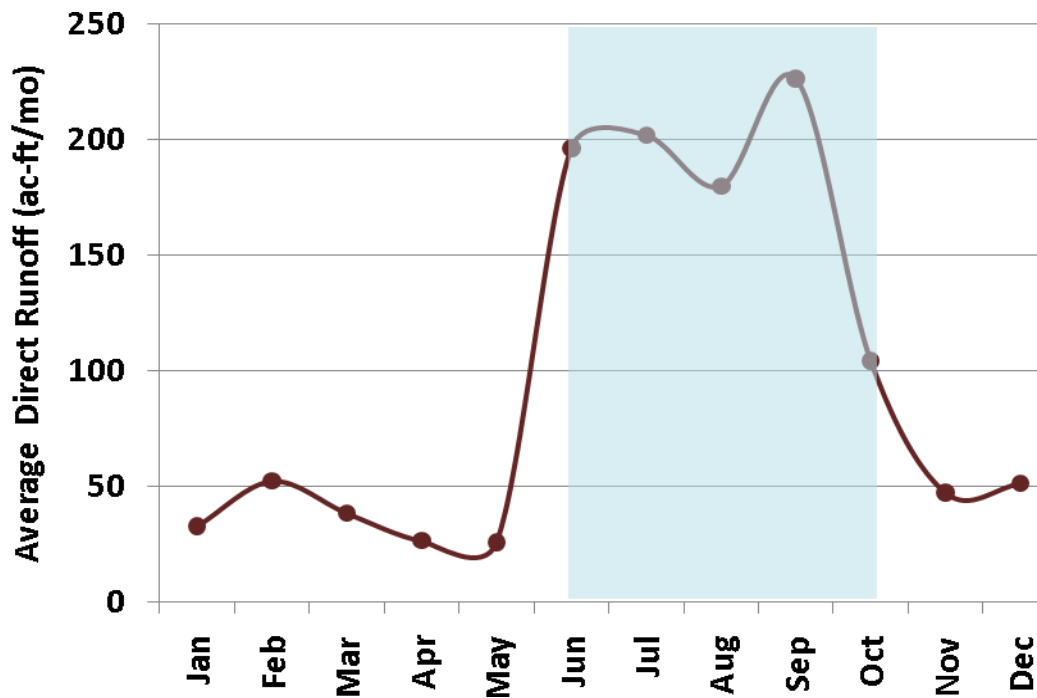


Figure 3-17 Variability of Average Monthly Direct Runoff to Woodmere Creek Basin



Table 3-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.27	1.71	0.16
Feb	0.43	2.03	0.21
Mar	0.31	2.08	0.15
Apr	0.22	2.09	0.10
May	0.21	1.87	0.11
Jun	1.60	7.47	0.21
Jul	1.64	6.85	0.24
Aug	1.47	6.85	0.21
Sep	1.84	6.79	0.27
Oct	0.85	3.27	0.26
Nov	0.39	1.74	0.22
Dec	0.42	2.12	0.20

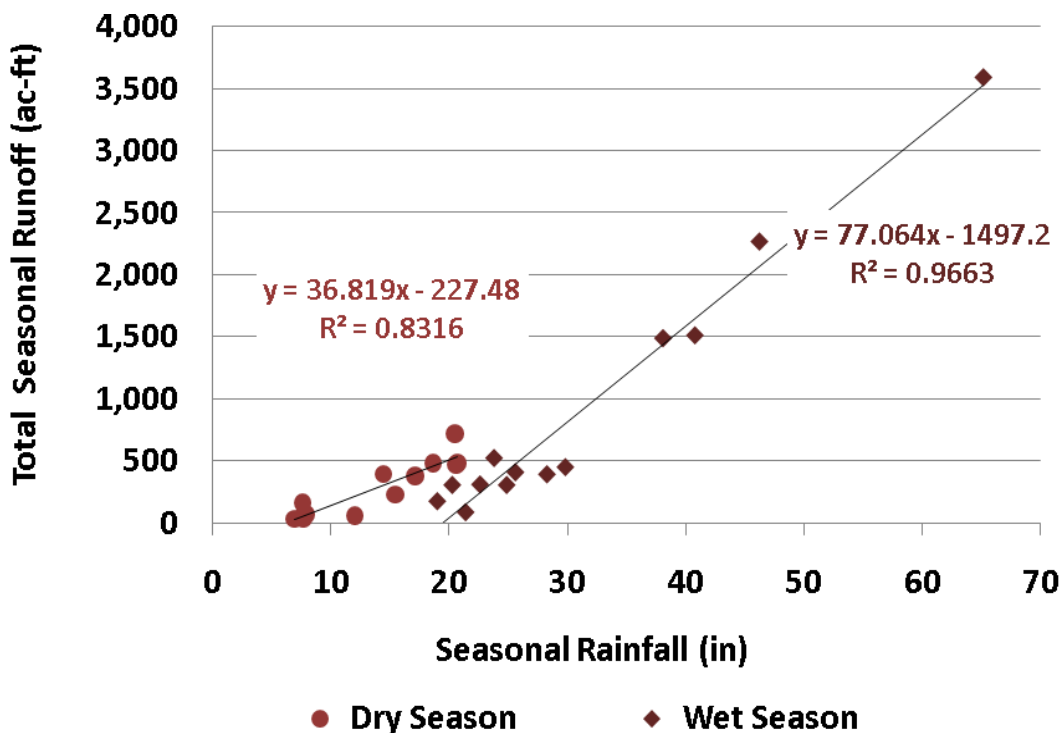


Figure 3-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 3-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	29.20	65.19	0.45
1949	2.54	22.62	0.11
1950	1.44	19.00	0.08
1951	2.50	20.27	0.12
1952	3.67	29.83	0.12
1953	4.27	23.80	0.18
1954	12.11	38.09	0.32
1955	3.33	25.61	0.13
1956	18.44	46.25	0.40
1957	2.50	24.87	0.10
1958	12.30	40.79	0.30
1959	3.20	28.28	0.11
1960	0.72	21.40	0.03
Average	7.40	31.23	0.19

Table 3-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.46	12.03	0.04
1949	1.86	15.47	0.12
1950	3.82	20.61	0.19
1951	5.84	20.48	0.28
1952	0.46	7.66	0.06
1953	0.29	6.93	0.04
1954	1.32	7.60	0.17
1955	3.93	18.67	0.21
1956	3.22	14.47	0.22
1957	3.06	17.13	0.18
1958	3.94	20.72	0.19
1959	0.55	7.93	0.07
1960	0.32	7.67	0.04
Average	2.24	13.64	0.14



3.3 FUTURE CONDITIONS

Table 3-24 Future Total Volume for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	187.7	116.5	109.0	98.6	52.2	1,261.7	1,469.2	647.9	1,097.0	1,053.3	266.9	175.6	6,535.5
2016	275.9	135.0	161.6	101.3	183.1	98.5	110.5	268.8	155.4	420.3	120.7	93.7	2,124.9
2017	93.7	53.3	63.2	152.7	46.3	68.5	62.4	52.9	290.0	91.7	212.4	415.0	1,602.2
2018	397.6	446.5	435.0	142.1	122.1	107.5	186.2	134.6	332.2	177.6	331.1	86.8	2,899.4
2019	113.3	46.2	59.1	34.6	34.8	117.2	91.4	313.8	486.1	308.0	151.3	160.5	1,916.4
2020	96.5	58.9	48.9	72.4	44.2	94.2	77.6	423.7	344.0	119.4	91.5	72.8	1,544.3
2021	54.1	41.6	286.3	34.1	28.9	139.6	634.4	587.8	910.0	258.0	145.5	105.4	3,225.7
2022	80.9	177.0	53.4	60.4	86.6	77.0	85.8	455.6	353.4	173.2	380.9	295.1	2,279.3
2023	137.3	91.7	82.9	176.2	152.4	696.6	319.6	1,207.9	1,317.5	284.2	164.6	290.2	4,921.2
2024	96.3	271.1	87.5	148.0	58.2	122.2	156.8	275.0	278.6	317.6	222.4	224.8	2,258.4
2025	175.7	263.9	292.3	103.0	223.8	1,034.8	771.3	314.4	234.0	654.6	289.4	148.1	4,505.1
2026	97.7	144.9	58.5	44.6	52.4	94.1	295.2	334.6	358.7	212.1	114.1	130.7	1,937.7
2027	81.8	73.3	46.0	90.1	35.1	85.8	76.2	56.1	96.9	157.1	78.3	57.9	934.7
Average	145.3	147.7	137.2	96.8	86.2	307.5	333.6	390.2	481.1	325.2	197.6	173.6	2,821.9



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Table 3-25 Future Direct Runoff for Woodmere Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	78.5	22.9	17.5	33.2	0.7	1,154.7	1,170.0	269.8	706.8	625.0	7.1	17.4	4,103.7
2016	116.0	26.3	74.7	24.8	124.3	51.6	63.6	180.5	62.4	248.3	0.4	5.0	977.9
2017	24.5	1.1	15.9	113.5	12.2	39.6	35.4	27.5	262.7	55.0	158.5	279.8	1,025.6
2018	189.5	197.6	221.7	0.2	17.4	29.6	120.6	68.2	198.9	1.8	217.9	5.7	1,269.0
2019	51.4	0.0	18.5	1.5	5.8	91.6	61.2	224.8	289.5	64.8	6.0	57.6	872.9
2020	21.1	3.1	1.4	33.4	10.1	64.9	49.4	366.9	217.2	0.0	8.1	6.8	782.2
2021	1.1	0.0	247.9	1.1	0.0	114.1	499.5	261.1	579.3	9.4	0.1	1.0	1,714.7
2022	2.0	118.1	1.5	18.5	50.5	45.8	54.0	383.5	93.2	5.7	272.9	152.1	1,197.7
2023	0.0	5.6	12.5	122.0	107.2	585.3	102.1	806.1	941.0	5.0	1.3	173.7	2,861.7
2024	14.1	205.5	17.4	95.5	15.3	87.0	104.9	138.6	96.8	148.9	104.8	136.6	1,165.3
2025	93.9	201.2	215.0	31.3	155.4	792.2	393.5	73.6	62.9	473.5	112.6	0.1	2,605.2
2026	1.5	75.6	1.1	0.0	14.9	62.1	232.7	169.1	130.0	38.2	1.8	46.0	773.1
2027	16.7	23.7	2.6	54.3	5.2	60.4	51.9	29.6	61.6	93.5	5.6	5.3	410.5
Average	46.9	67.8	65.2	40.7	39.9	244.5	226.1	230.7	284.8	136.1	69.0	68.2	1,520.0

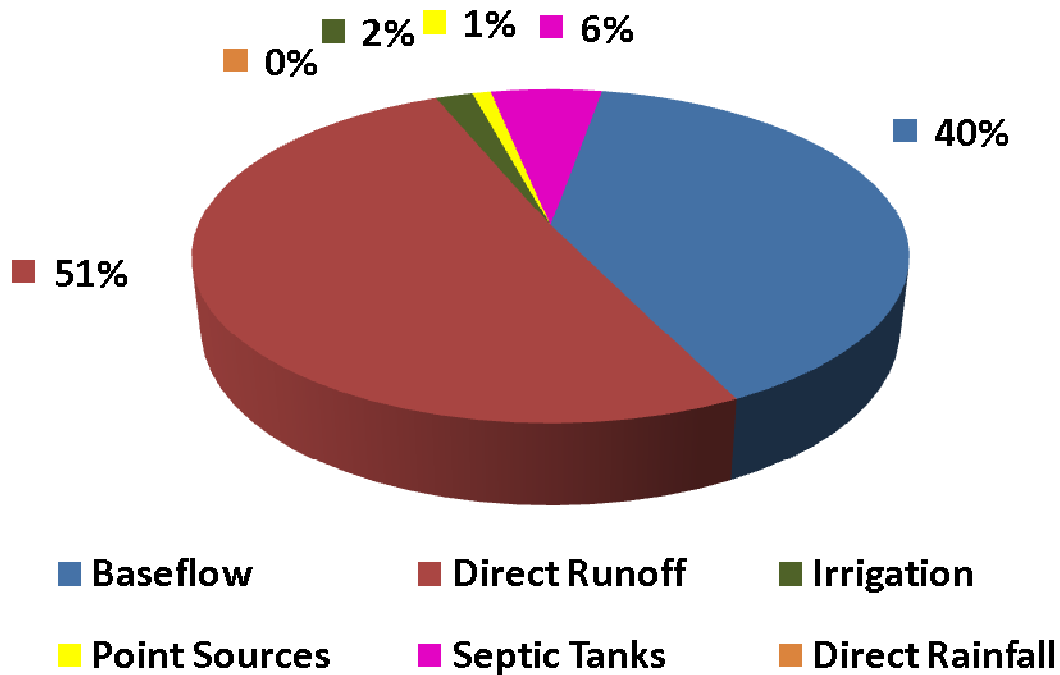


Figure 3-19 Woodmere Creek Basin Current Total Volume Water Budget

Table 3-26 Summary of Annual Future Total Volume Inputs for Woodmere Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	2,242.0	4,103.7	40.5	22.6	126.7	0.0
2016	957.1	977.9	40.5	22.6	126.7	0.0
2017	386.7	1,025.6	40.5	22.6	126.7	0.0
2018	1,440.6	1,269.0	40.5	22.6	126.7	0.0
2019	862.0	872.9	40.5	14.3	126.7	0.0
2020	584.3	782.2	40.5	10.6	126.7	0.0
2021	1,333.5	1,714.7	40.5	10.3	126.7	0.0
2022	895.8	1,197.7	40.5	18.6	126.7	0.0
2023	1,855.0	2,861.7	40.5	37.2	126.7	0.0
2024	900.9	1,165.3	40.5	25.0	126.7	0.0
2025	1,712.9	2,605.2	40.5	19.8	126.7	0.0
2026	978.9	773.1	40.5	18.5	126.7	0.0
2027	335.0	410.5	40.5	21.9	126.7	0.0
Average	1,114.2	1,520.0	40.5	20.5	126.7	0.0

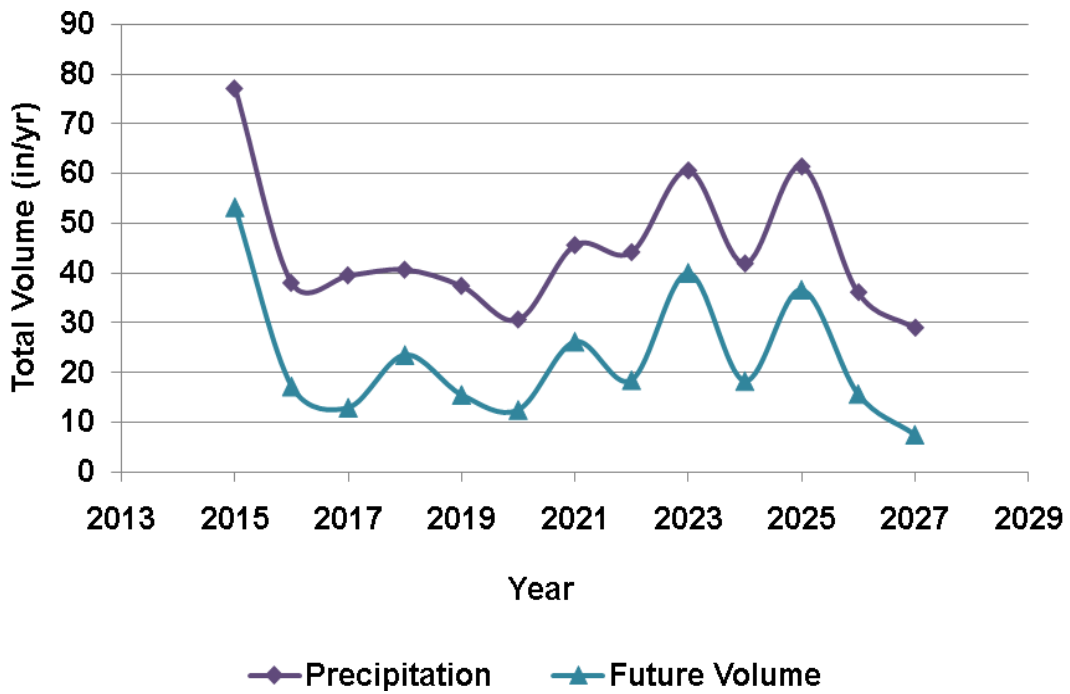


Figure 3-20 Annual Variability of Precipitation and Total Volume for Woodmere Creek Basin

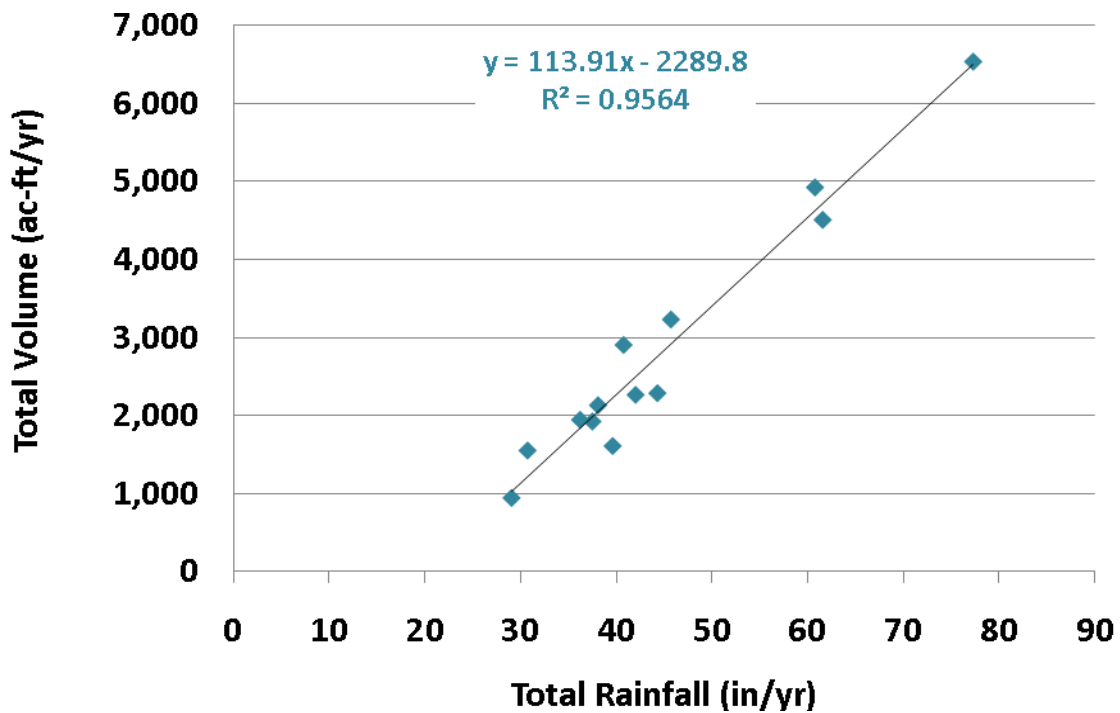


Figure 3-21 Correlation of Annual Total Volume to Rainfall for Woodmere Creek Basin



Table 3-27 Annual Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	53.18	77.22	0.69
2016	17.29	38.08	0.45
2017	13.04	39.61	0.33
2018	23.59	40.75	0.58
2019	15.59	37.49	0.42
2020	12.57	30.73	0.41
2021	26.25	45.69	0.57
2022	18.55	44.28	0.42
2023	40.04	60.72	0.66
2024	18.38	42.00	0.44
2025	36.66	61.52	0.60
2026	15.77	36.21	0.44
2027	7.61	29.07	0.26
Average	22.96	44.87	0.48

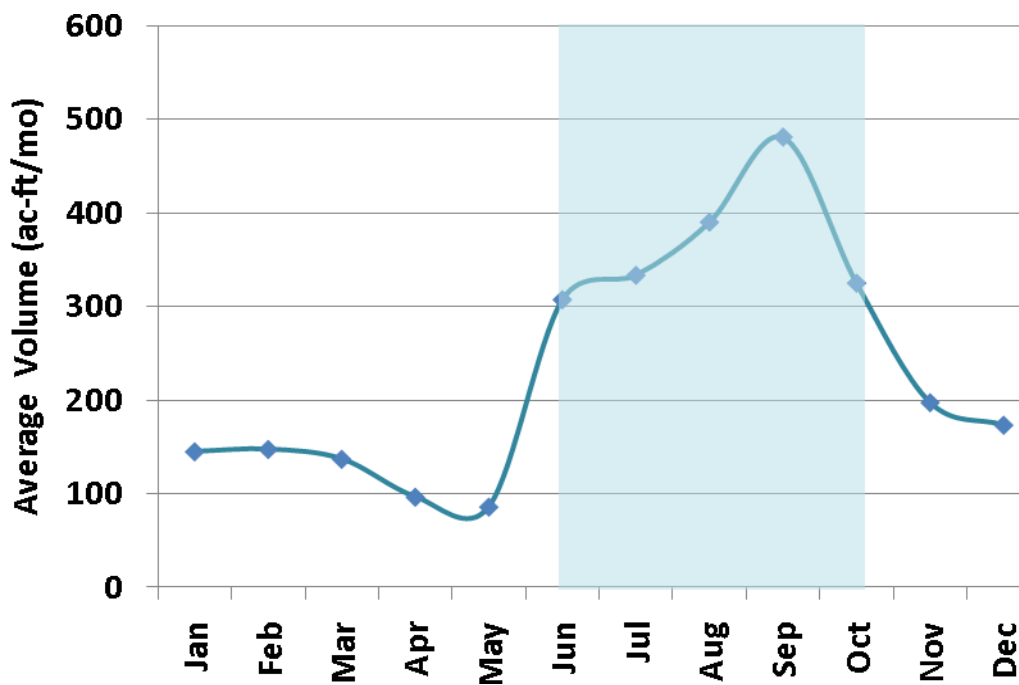


Figure 3-22 Variability of Average Monthly Total Volume in Woodmere Creek Basin



Table 3-28 Average Monthly Rainfall to Total Volume Coefficients for Woodmere Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.18	1.71	0.69
Feb	1.20	2.03	0.59
Mar	1.12	2.08	0.54
Apr	0.79	2.09	0.38
May	0.70	1.87	0.37
Jun	2.50	7.47	0.34
Jul	2.71	6.85	0.40
Aug	3.18	6.85	0.46
Sep	3.91	6.79	0.58
Oct	2.65	3.27	0.81
Nov	1.61	1.74	0.92
Dec	1.41	2.12	0.67

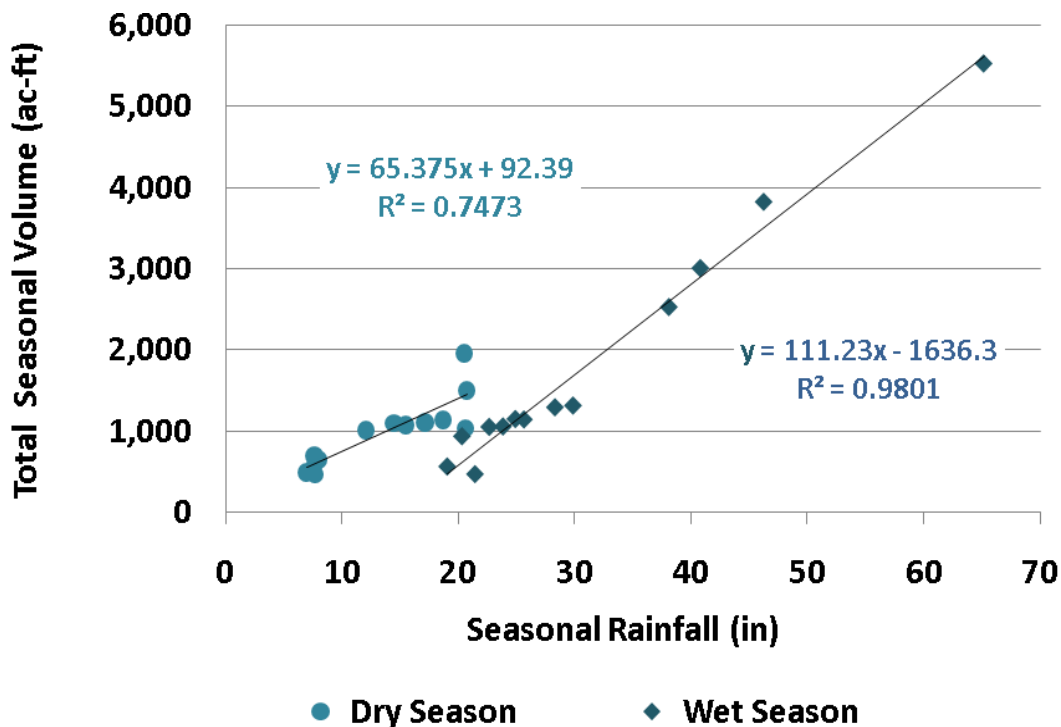


Figure 3-23 Correlation of Seasonal Total Volume to Rainfall for Woodmere Creek Basin



Table 3-29 Wet Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	44.99	65.19	0.69
2016	8.57	22.62	0.38
2017	4.60	19.00	0.24
2018	7.63	20.27	0.38
2019	10.71	29.83	0.36
2020	8.62	23.80	0.36
2021	20.59	38.09	0.54
2022	9.32	25.61	0.36
2023	31.13	46.25	0.67
2024	9.36	24.87	0.38
2025	24.48	40.79	0.60
2026	10.54	28.28	0.37
2027	3.84	21.40	0.18
Average	14.95	31.23	0.42

Table 3-30 Dry Season Total Volume to Rainfall Coefficients for Woodmere Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	8.19	12.03	0.68
2016	8.72	15.47	0.56
2017	8.44	20.61	0.41
2018	15.96	20.48	0.78
2019	4.88	7.66	0.64
2020	3.95	6.93	0.57
2021	5.66	7.60	0.75
2022	9.23	18.67	0.49
2023	8.91	14.47	0.62
2024	9.02	17.13	0.53
2025	12.17	20.72	0.59
2026	5.23	7.93	0.66
2027	3.76	7.67	0.49
Average	8.01	13.64	0.60

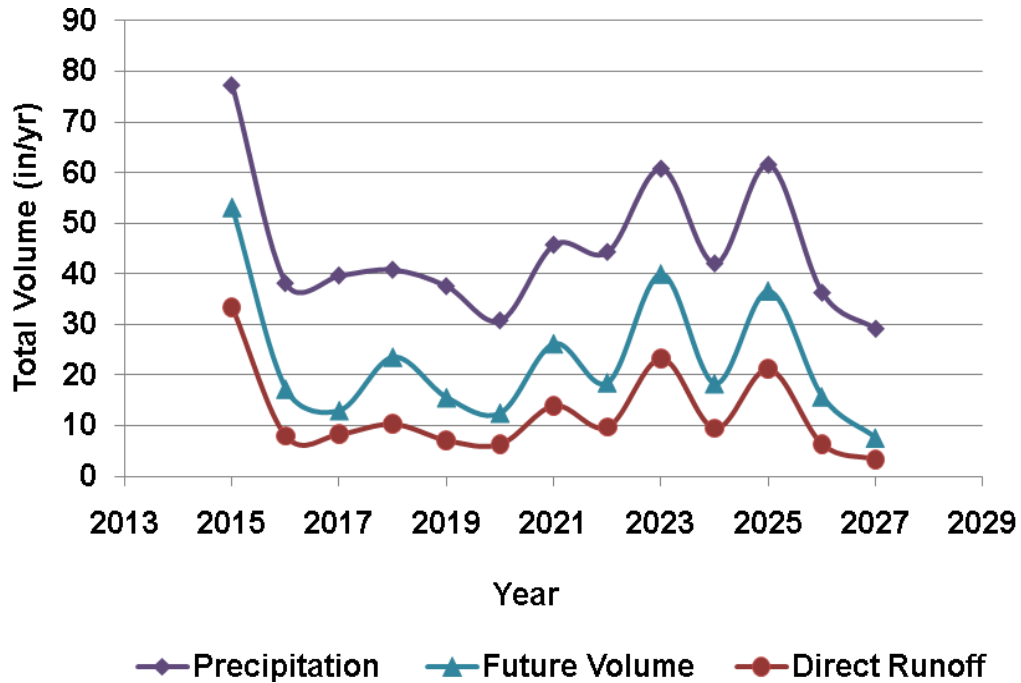


Figure 3-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Woodmere Creek Basin

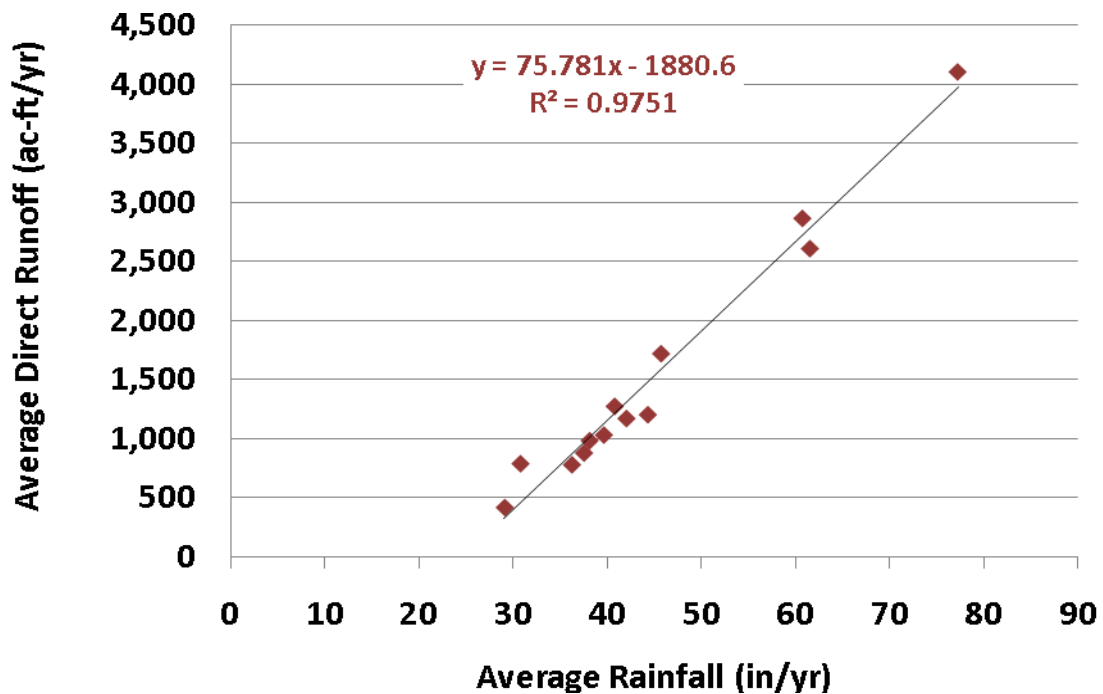


Figure 3-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 3-31 Annual Direct Runoff to Rainfall Coefficients for Woodmere Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	33.39	77.22	0.43
2016	7.96	38.08	0.21
2017	8.35	39.61	0.21
2018	10.33	40.75	0.25
2019	7.10	37.49	0.19
2020	6.36	30.73	0.21
2021	13.95	45.69	0.31
2022	9.75	44.28	0.22
2023	23.29	60.72	0.38
2024	9.48	42.00	0.23
2025	21.20	61.52	0.34
2026	6.29	36.21	0.17
2027	3.34	29.07	0.11
Average	12.37	44.87	0.25

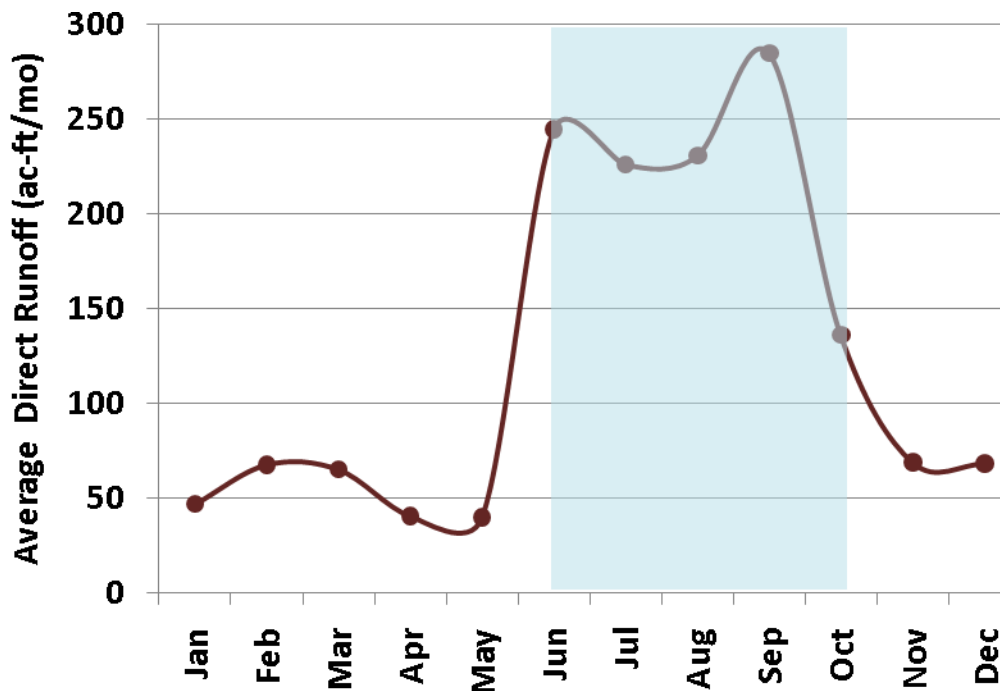


Figure 3-26 Variability of Average Monthly Direct Runoff to Woodmere Creek Basin



Table 3-32 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.38	1.71	0.22
Feb	0.55	2.03	0.27
Mar	0.53	2.08	0.25
Apr	0.33	2.09	0.16
May	0.32	1.87	0.17
Jun	1.99	7.47	0.27
Jul	1.84	6.85	0.27
Aug	1.88	6.85	0.27
Sep	2.32	6.79	0.34
Oct	1.11	3.27	0.34
Nov	0.56	1.74	0.32
Dec	0.56	2.12	0.26

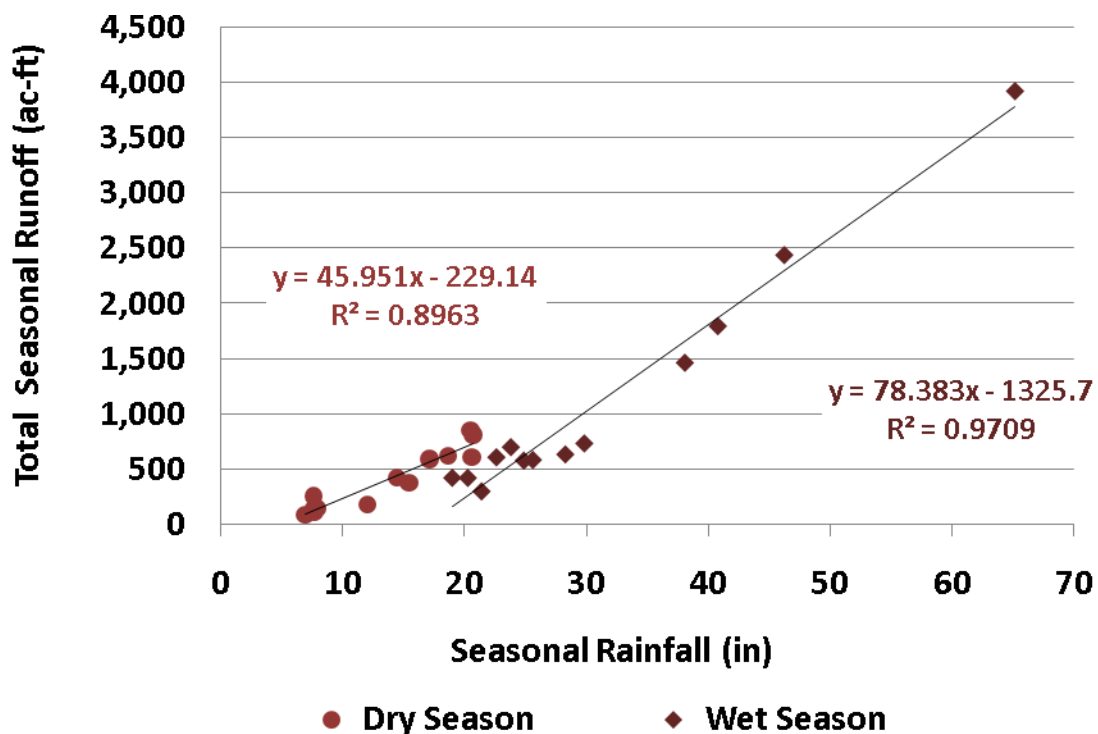


Figure 3-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 3-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	31.95	65.19	0.49
2016	4.93	22.62	0.22
2017	3.42	19.00	0.18
2018	3.41	20.27	0.17
2019	5.96	29.83	0.20
2020	5.68	23.80	0.24
2021	11.91	38.09	0.31
2022	4.74	25.61	0.18
2023	19.85	46.25	0.43
2024	4.69	24.87	0.19
2025	14.61	40.79	0.36
2026	5.14	28.28	0.18
2027	2.42	21.40	0.11
Average	9.13	31.23	0.25

Table 3-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	1.44	12.03	0.12
2016	3.02	15.47	0.20
2017	4.93	20.61	0.24
2018	6.92	20.48	0.34
2019	1.15	7.66	0.15
2020	0.68	6.93	0.10
2021	2.04	7.60	0.27
2022	5.01	18.67	0.27
2023	3.44	14.47	0.24
2024	4.79	17.13	0.28
2025	6.59	20.72	0.32
2026	1.15	7.93	0.14
2027	0.92	7.67	0.12
Average	3.24	13.64	0.21



3.4 WATER BUDGET CHANGES

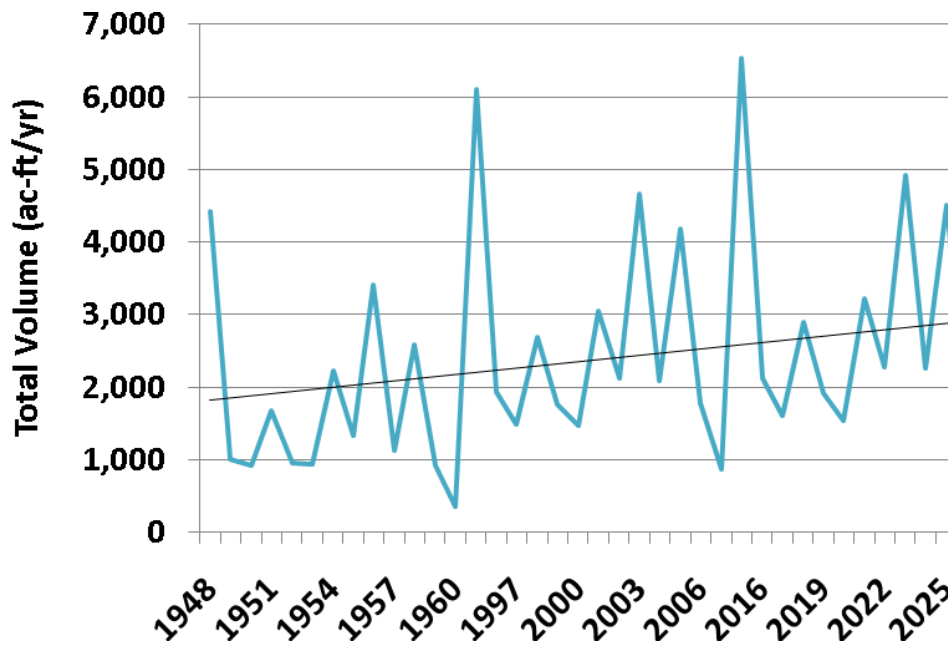


Figure 3-28 Trend in Total Volume from Historical through Future Time Series

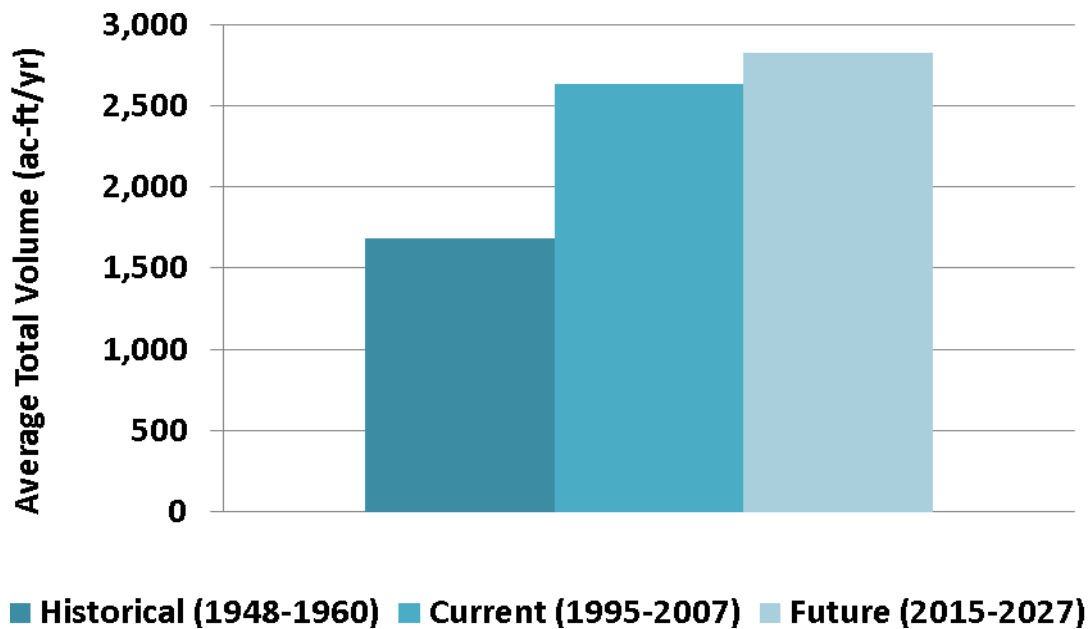


Figure 3-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay



Table 3-35 Change in Total Volume from Historical to Current Conditions			
Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	4,416	6,108	1,691
2	999	1,934	935
3	914	1,492	578
4	1,679	2,692	1,013
5	955	1,760	805
6	946	1,461	515
7	2,228	3,043	814
8	1,340	2,127	787
9	3,409	4,659	1,250
10	1,127	2,083	956
11	2,591	4,175	1,585
12	924	1,785	861
13	358	868	510
Average	1,683	2,630	946

Table 3-36 Change in Total Volume from Current to Future Conditions			
Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	6,108	6,536	428
2	1,934	2,125	191
3	1,492	1,602	110
4	2,692	2,899	208
5	1,760	1,916	156
6	1,461	1,544	83
7	3,043	3,226	183
8	2,127	2,279	152
9	4,659	4,921	262
10	2,083	2,258	175
11	4,175	4,505	330
12	1,785	1,938	153
13	868	935	67
Average	2,630	2,822	192

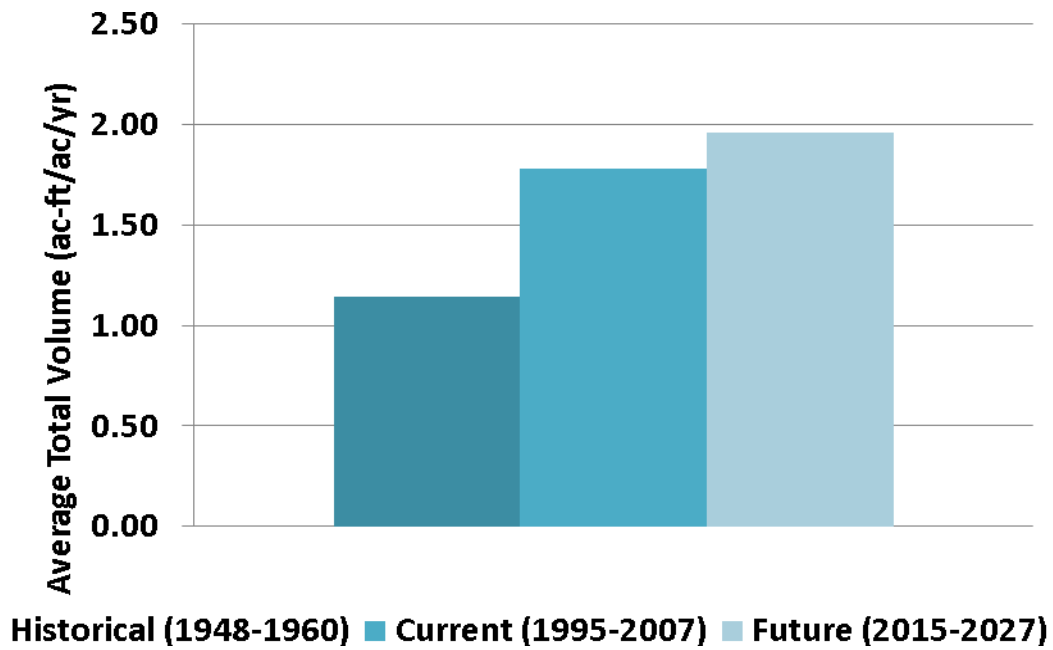


Figure 3-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay

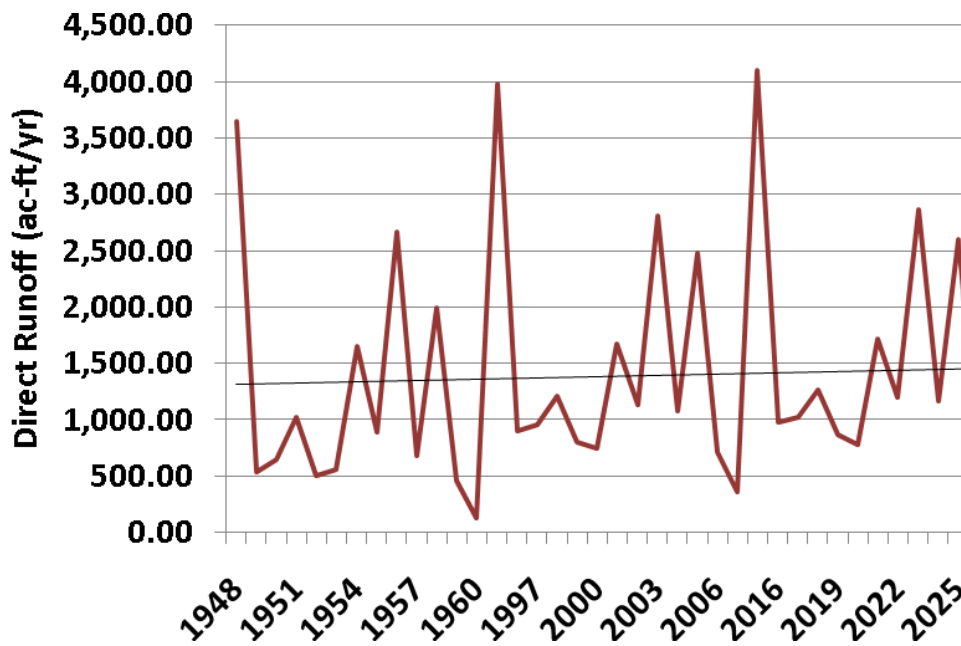


Figure 3-31 Trend in Direct Runoff from Historical through Future Time Series

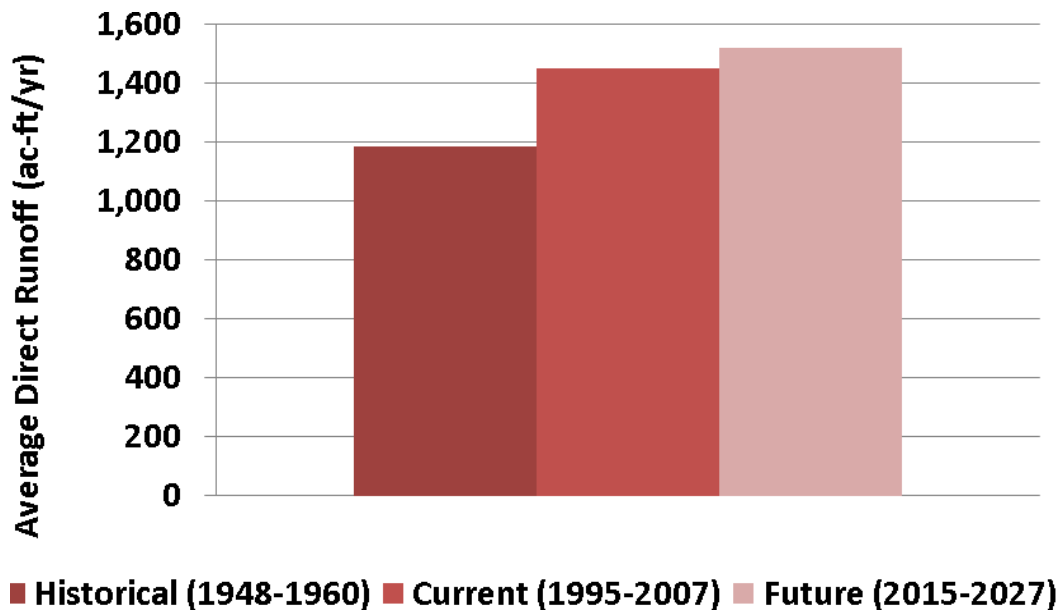


Figure 3-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay

Table 3-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	3,644	3,976	332
2	540	896	356
3	646	956	310
4	1,024	1,214	190
5	507	799	292
6	559	742	183
7	1,651	1,676	25
8	893	1,131	237
9	2,663	2,809	146
10	684	1,076	392
11	1,996	2,482	485
12	461	712	250
13	128	362	233
Average	1,184	1,448	264



Table 3-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1995-2007	Future Direct Runoff (ac-ft) 2015-2027	Direct Runoff Change (ac-ft) (future-current)
1	3,976	4,104	127
2	896	978	82
3	956	1,026	70
4	1,214	1,269	55
5	799	873	74
6	742	782	40
7	1,676	1,715	39
8	1,131	1,198	67
9	2,809	2,862	53
10	1,076	1,165	89
11	2,482	2,605	124
12	712	773	61
13	362	411	49
Average	1,448	1,520	71

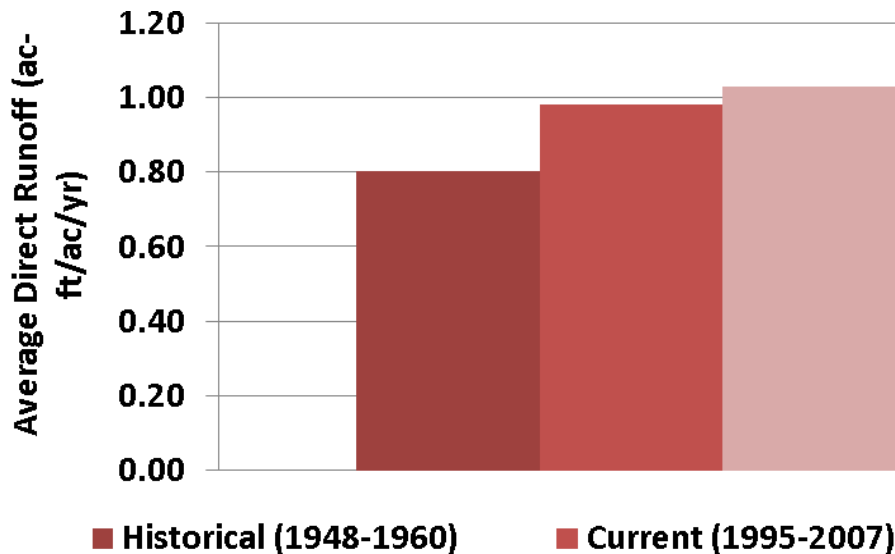


Figure 3-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay



4.0 FORKED CREEK BASIN

4.1 CURRENT CONDITIONS

Table 4-1 Monthly Rainfall for Forked Creek Basin (inches)

Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.41	2.16	1.30	2.96	0.64	21.52	18.18	7.41	9.57	10.56	0.86	1.46	80.03
1996	1949	2016	3.45	1.45	4.09	1.88	4.55	3.86	3.52	6.22	4.49	6.05	0.36	0.86	40.78
1997	1950	2017	1.58	0.21	1.31	5.85	1.46	3.37	3.16	3.52	9.38	2.56	4.35	6.12	42.88
1998	1951	2018	5.37	5.09	4.56	0.15	1.74	2.50	6.84	5.23	8.35	0.92	3.93	0.57	45.25
1999	1952	2019	2.42	0.06	1.78	0.34	0.50	6.56	5.79	7.97	8.12	2.57	0.58	1.68	38.37
2000	1953	2020	1.18	0.47	0.69	2.05	0.68	5.13	4.43	8.67	5.78	0.03	1.15	0.52	30.78
2001	1954	2021	0.33	0.01	7.04	0.40	0.28	6.83	12.99	5.69	10.54	1.62	0.18	0.27	46.19
2002	1955	2022	0.55	4.22	0.26	1.47	3.30	5.57	3.71	12.02	3.90	0.78	5.07	4.69	45.54
2003	1956	2023	0.04	0.86	1.97	3.43	3.79	14.56	4.56	13.62	12.84	0.63	0.51	3.95	60.77
2004	1957	2024	1.36	3.88	0.85	3.32	1.11	6.06	6.95	6.28	4.62	3.13	2.54	2.97	43.07
2005	1958	2025	1.85	3.05	4.47	2.32	4.96	18.30	7.96	5.01	3.59	9.27	3.34	0.24	64.36
2006	1959	2026	0.36	2.66	0.18	0.03	1.86	5.33	9.50	7.11	5.56	1.23	0.30	2.36	36.48
2007	1960	2027	1.38	1.61	0.30	2.38	0.71	5.08	4.74	3.51	5.04	5.04	1.02	0.75	31.54
Average			1.79	1.98	2.22	2.05	1.97	8.05	7.10	7.10	7.06	3.41	1.86	2.03	46.62



Table 4-2 Current Total Volume for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	478.8	255.3	217.1	198.7	124.4	5,612.8	5,496.4	1,922.4	2,967.8	2,984.3	559.9	379.8	21,197.6
1996	664.6	301.0	451.8	252.1	683.4	301.2	262.7	794.8	520.7	1,312.1	317.6	273.0	6,135.1
1997	289.4	137.8	196.2	601.0	116.0	226.8	158.3	165.3	1,537.7	356.7	850.8	1,303.5	5,939.6
1998	1,742.2	1,471.3	1,335.8	313.5	297.6	283.1	905.8	518.0	1,284.9	506.4	1,006.6	242.3	9,907.6
1999	310.9	137.8	171.2	106.5	90.4	294.5	611.4	873.3	1,536.1	753.6	337.8	372.8	5,596.3
2000	260.8	150.2	132.6	190.9	105.3	180.0	182.8	1,922.8	827.6	278.4	238.1	176.4	4,645.9
2001	141.3	108.0	962.3	108.2	91.4	507.2	2,685.3	1,588.7	2,585.8	547.8	310.6	236.8	9,873.5
2002	188.8	665.0	134.7	142.8	272.1	233.0	227.9	1,709.3	896.4	367.4	1,383.7	795.4	7,016.5
2003	332.2	226.5	237.6	657.2	501.2	2,967.1	740.3	3,531.7	4,415.4	543.4	320.0	799.2	15,271.7
2004	227.2	661.9	211.9	403.1	139.8	362.6	536.3	932.5	784.5	780.9	561.1	648.4	6,250.3
2005	459.0	701.6	893.7	235.8	684.4	4,080.5	2,157.4	729.5	638.6	2,373.7	817.8	350.7	14,122.7
2006	248.0	381.7	157.0	125.5	133.8	235.7	887.7	1,006.5	972.5	499.4	282.5	365.8	5,296.0
2007	227.2	171.0	118.8	198.6	91.7	194.4	190.7	143.8	256.3	552.3	283.6	190.0	2,618.4
Average	428.5	413.0	401.6	271.8	256.3	1,190.7	1,157.2	1,218.4	1,478.8	912.0	559.2	471.9	8,759.3



Table 4-3 Current Direct Runoff for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	245.7	57.5	25.1	54.4	3.2	5,266.8	4,793.2	1,142.3	2,175.0	2,120.7	19.6	40.9	15,944.3
1996	303.2	42.3	239.5	68.2	524.3	159.1	112.2	564.3	265.2	846.5	3.6	33.2	3,161.5
1997	103.0	0.8	70.4	497.1	19.4	146.6	79.5	90.2	1,441.0	192.4	671.0	925.5	4,237.1
1998	1,210.2	881.4	857.4	0.3	51.4	93.2	689.5	260.2	849.5	17.3	687.6	3.5	5,601.5
1999	125.4	0.0	46.1	4.5	0.4	217.5	448.7	578.6	1,053.3	210.7	12.8	125.0	2,822.9
2000	69.1	4.5	4.4	85.5	12.6	101.6	105.9	1,758.5	527.9	0.0	31.5	5.7	2,707.3
2001	1.2	0.0	859.5	4.2	0.9	428.7	2,292.1	951.4	1,931.5	42.2	2.1	1.1	6,514.8
2002	3.8	525.0	3.0	37.4	180.1	149.1	119.3	1,522.7	305.2	5.9	1,129.1	436.9	4,417.7
2003	0.0	9.0	45.7	501.4	362.1	2,645.1	230.8	2,721.4	3,670.3	10.8	2.9	543.0	10,742.5
2004	27.6	501.4	35.6	264.2	21.3	264.0	407.3	563.6	359.1	432.6	308.9	440.9	3,626.5
2005	248.6	540.8	699.2	57.6	513.9	3,516.0	1,377.5	236.7	205.3	1,923.1	349.9	0.1	9,668.6
2006	2.1	201.4	0.1	0.0	24.2	143.9	711.9	614.0	421.7	84.4	1.6	143.3	2,348.8
2007	52.0	39.7	2.9	105.3	10.5	125.3	123.8	67.0	154.0	348.9	45.7	11.4	1,086.3
Average	184.0	215.7	222.2	129.2	132.6	1,019.8	884.0	851.6	1,027.6	479.7	251.3	208.5	5,606.1

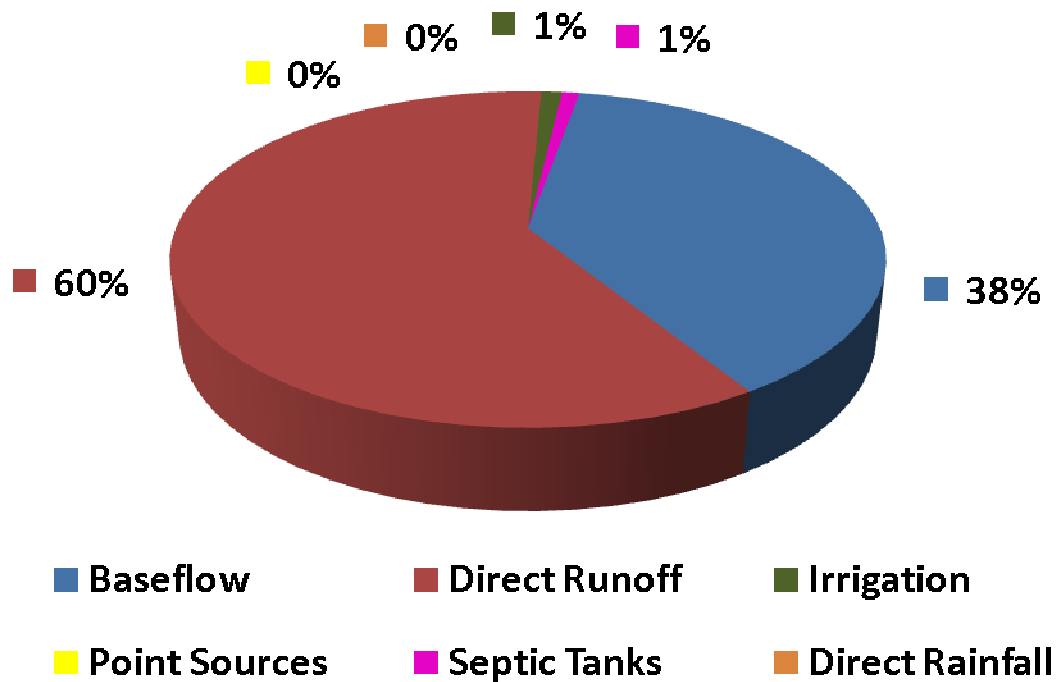


Figure 4-1 Forked Creek Basin Current Total Volume Water Budget

Table 4-4 Summary of Annual Current Total Volume Inputs for Forked Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	5,123.5	15,944.3	71.8	0.0	58.0	0.0
1996	2,842.5	3,161.5	72.4	0.0	58.7	0.0
1997	1,571.4	4,237.1	72.1	0.0	59.1	0.0
1998	4,174.6	5,601.5	72.1	0.0	59.4	0.0
1999	2,641.2	2,822.9	72.1	0.0	60.1	0.0
2000	1,805.9	2,707.3	72.1	0.0	60.6	0.0
2001	3,224.9	6,514.8	72.7	0.0	61.0	0.0
2002	2,464.0	4,417.7	73.6	0.0	61.3	0.0
2003	4,393.7	10,742.5	73.6	0.0	61.8	0.0
2004	2,486.8	3,626.5	74.4	0.0	62.6	0.0
2005	4,316.3	9,668.6	74.4	0.0	63.3	0.0
2006	2,809.5	2,348.8	74.4	0.0	63.3	0.0
2007	1,394.4	1,086.3	74.4	0.0	63.3	0.0
Average	4,503.4	6,402.3	43.8	0.0	61.0	0.0

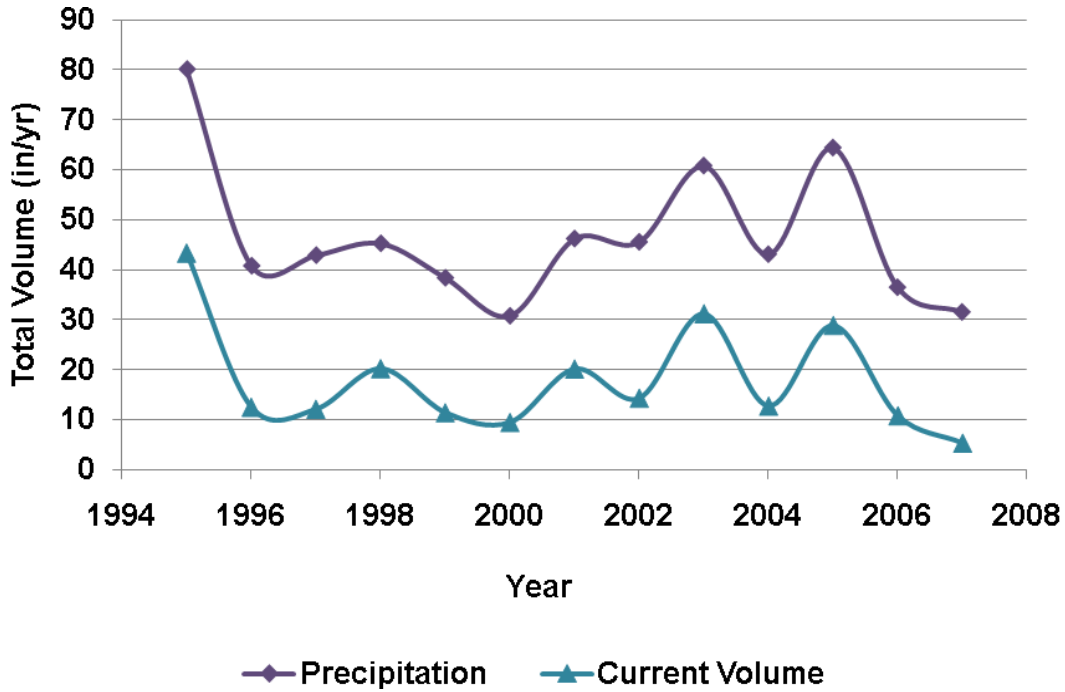


Figure 4-2 Annual Variability of Precipitation and Total Volume for Forked Creek Basin

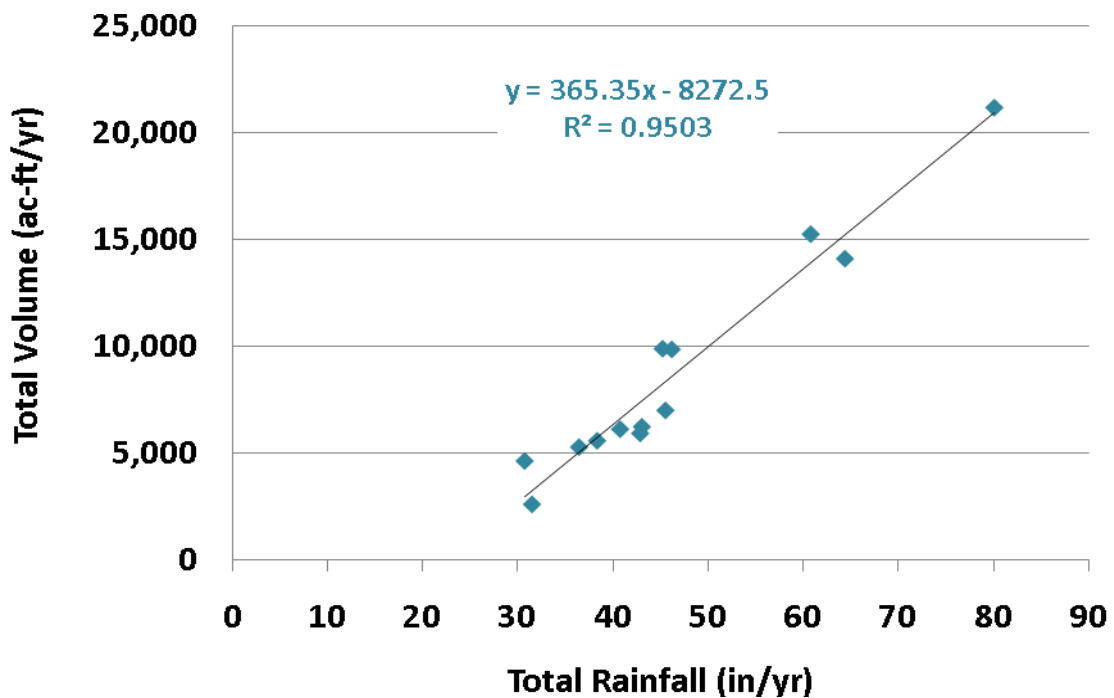


Figure 4-3 Correlation of Annual Total Volume to Rainfall for Forked Creek Basin



Table 4-5 Annual Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
1995	43.39	80.03	0.54
1996	12.56	40.78	0.31
1997	12.16	42.88	0.28
1998	20.28	45.25	0.45
1999	11.45	38.37	0.30
2000	9.51	30.78	0.31
2001	20.21	46.19	0.44
2002	14.36	45.54	0.32
2003	31.26	60.77	0.51
2004	12.79	43.07	0.30
2005	28.91	64.36	0.45
2006	10.84	36.48	0.30
2007	5.36	31.54	0.17
Average	17.93	46.62	0.36

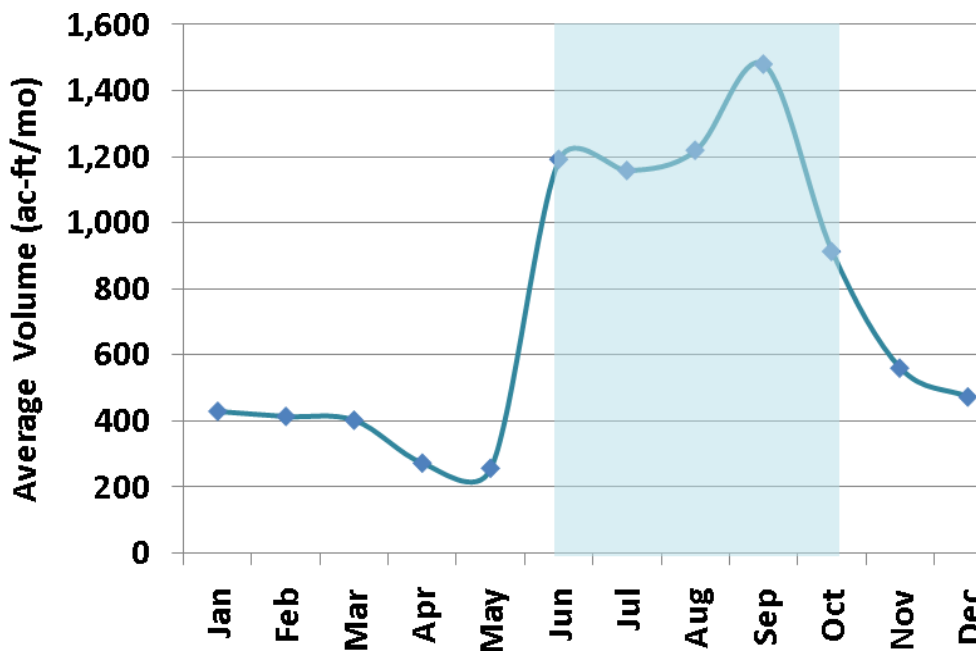


Figure 4-4 Variability of Average Monthly Total Volume in Forked Creek Basin



Table 4-6 Average Monthly Rainfall to Total Volume Coefficients for Forked Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.88	1.79	0.49
Feb	0.85	1.98	0.43
Mar	0.82	2.22	0.37
Apr	0.56	2.05	0.27
May	0.52	1.97	0.27
Jun	2.44	8.05	0.30
Jul	2.37	7.10	0.33
Aug	2.49	7.10	0.35
Sep	3.03	7.06	0.43
Oct	1.87	3.41	0.55
Nov	1.14	1.86	0.61
Dec	0.97	2.03	0.47

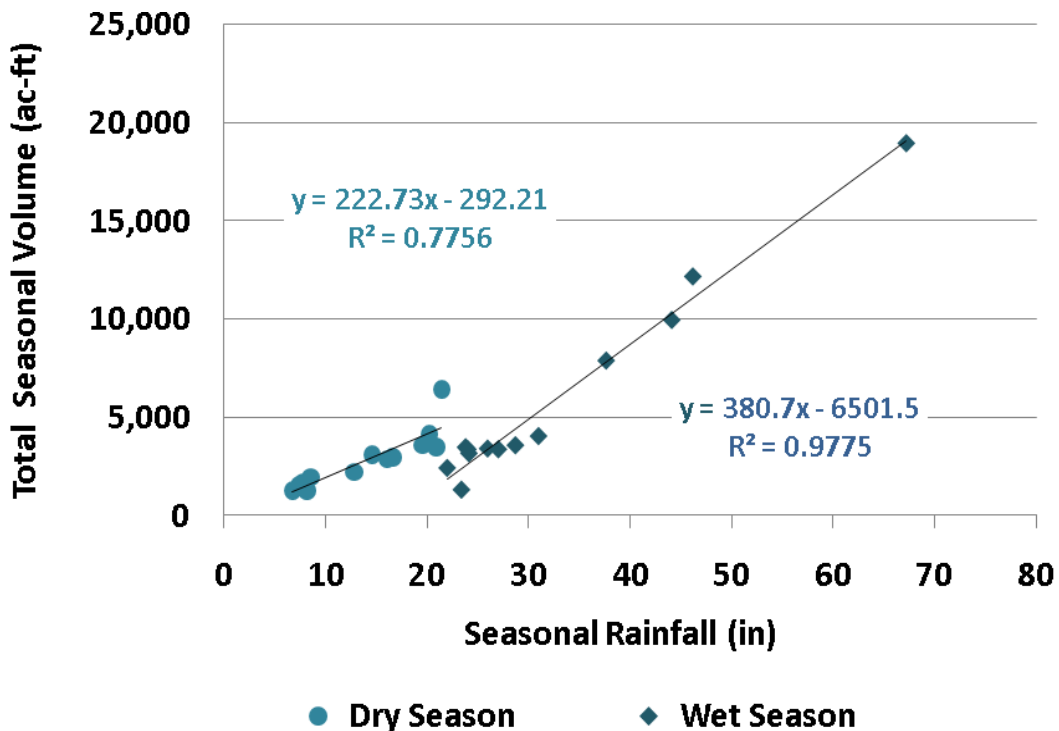


Figure 4-5 Correlation of Seasonal Total Volume to Rainfall for Forked Creek Basin



Table 4-7 Wet Season Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	38.86	67.24	0.58
1996	6.53	24.14	0.27
1997	5.00	22.01	0.23
1998	7.16	23.83	0.30
1999	8.33	31.00	0.27
2000	6.94	24.04	0.29
2001	16.20	37.67	0.43
2002	7.03	25.99	0.27
2003	24.97	46.21	0.54
2004	6.95	27.04	0.26
2005	20.43	44.13	0.46
2006	7.37	28.73	0.26
2007	2.74	23.41	0.12
Average	12.19	32.72	0.33

Table 4-8 Dry Season Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	4.53	12.78	0.35
1996	6.03	16.64	0.36
1997	7.15	20.88	0.34
1998	13.12	21.42	0.61
1999	3.13	7.36	0.42
2000	2.57	6.74	0.38
2001	4.01	8.52	0.47
2002	7.33	19.56	0.37
2003	6.29	14.56	0.43
2004	5.84	16.03	0.36
2005	8.48	20.23	0.42
2006	3.47	7.76	0.45
2007	2.62	8.14	0.32
Average	5.74	13.89	0.41

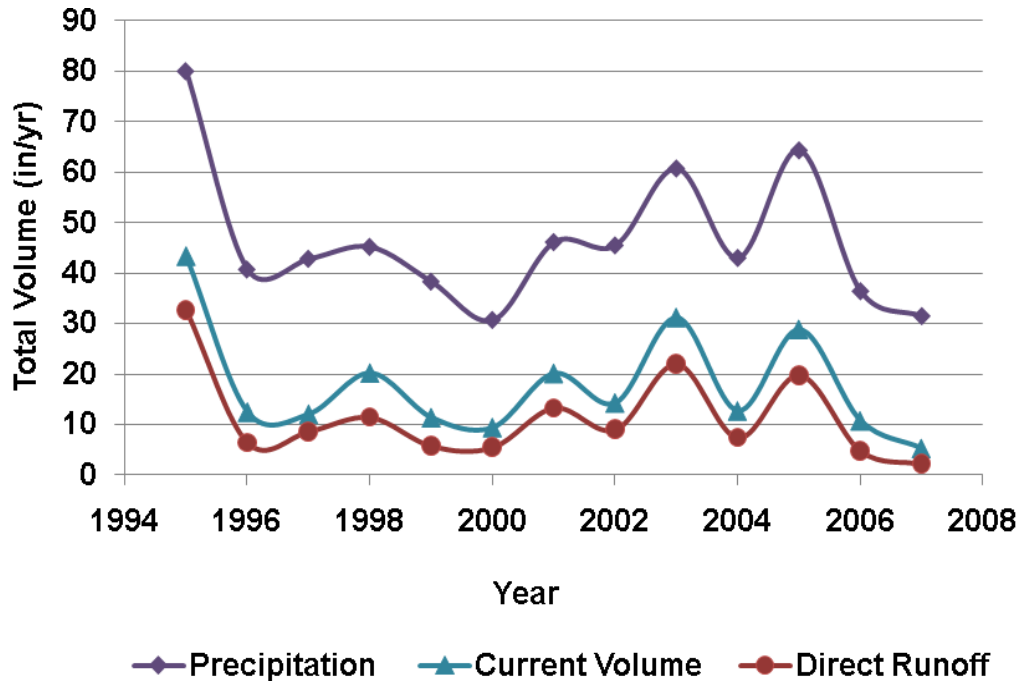


Figure 4-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Forked Creek Basin

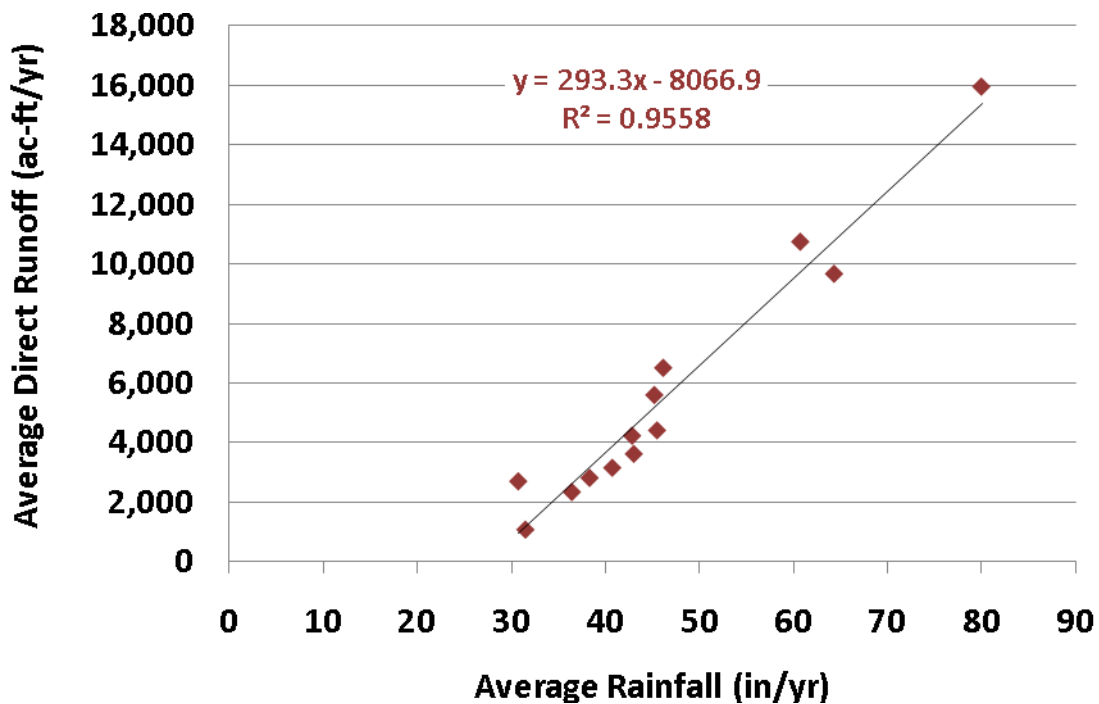


Figure 4-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 4-9 Annual Direct Runoff to Rainfall Coefficients for Forked Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	32.64	80.03	0.41
1996	6.47	40.78	0.16
1997	8.67	42.88	0.20
1998	11.47	45.25	0.25
1999	5.78	38.37	0.15
2000	5.54	30.78	0.18
2001	13.34	46.19	0.29
2002	9.04	45.54	0.20
2003	21.99	60.77	0.36
2004	7.42	43.07	0.17
2005	19.79	64.36	0.31
2006	4.81	36.48	0.13
2007	2.22	31.54	0.07
Average	11.48	46.62	0.22

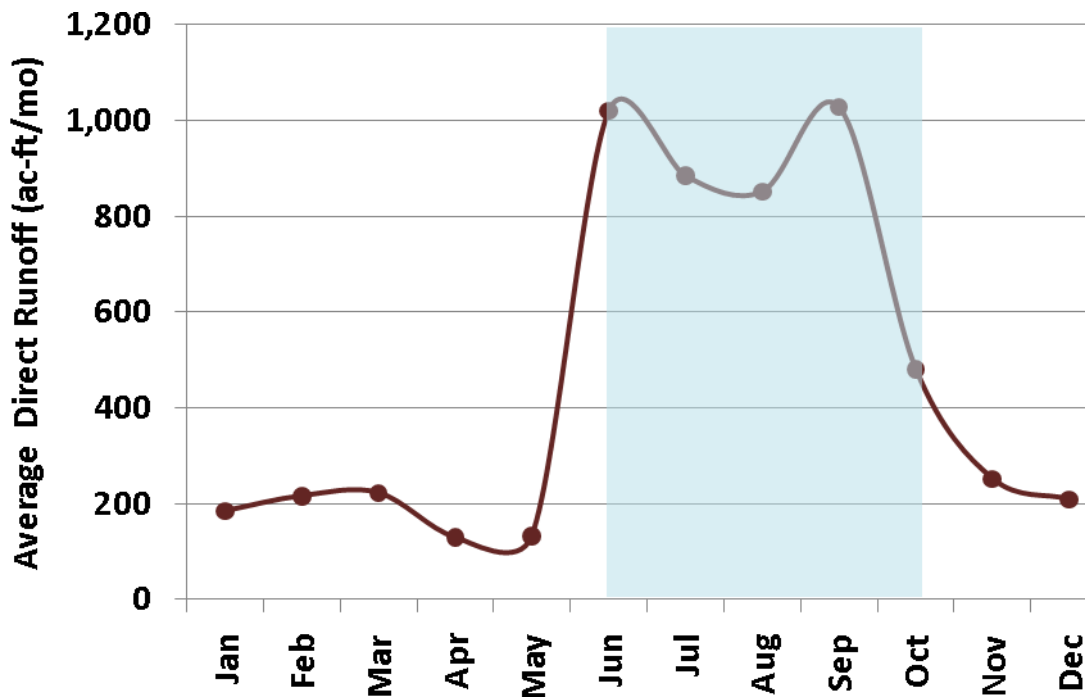


Figure 4-8 Variability of Average Monthly Direct Runoff to Forked Creek Basin



Table 4-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.38	1.79	0.21
Feb	0.44	1.98	0.22
Mar	0.45	2.22	0.21
Apr	0.26	2.05	0.13
May	0.27	1.97	0.14
Jun	2.09	8.05	0.26
Jul	1.81	7.10	0.25
Aug	1.74	7.10	0.25
Sep	2.10	7.06	0.30
Oct	0.98	3.41	0.29
Nov	0.51	1.86	0.28
Dec	0.43	2.03	0.21

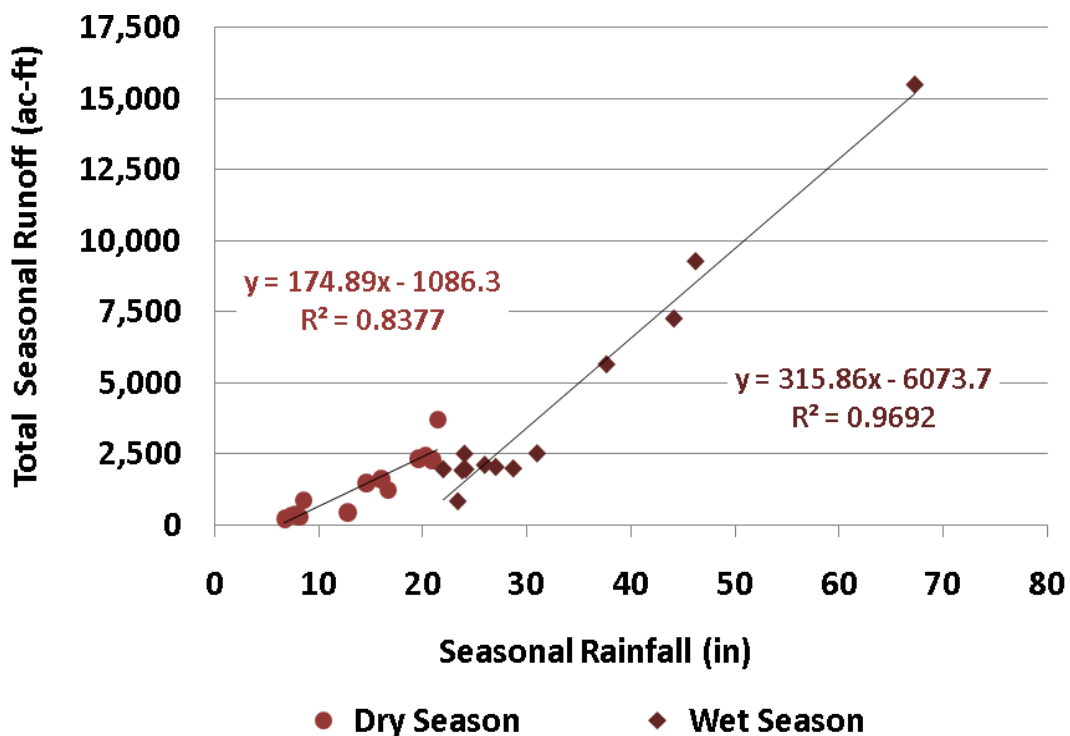


Figure 4-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 4-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	31.72	67.24	0.47
1996	3.99	24.14	0.17
1997	3.99	22.01	0.18
1998	3.91	23.83	0.16
1999	5.14	31.00	0.17
2000	5.10	24.04	0.21
2001	11.56	37.67	0.31
2002	4.30	25.99	0.17
2003	18.99	46.21	0.41
2004	4.15	27.04	0.15
2005	14.86	44.13	0.34
2006	4.04	28.73	0.14
2007	1.68	23.41	0.07
Average	8.73	32.72	0.23

Table 4-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	0.91	12.78	0.07
1996	2.49	16.64	0.15
1997	4.68	20.88	0.22
1998	7.56	21.42	0.35
1999	0.64	7.36	0.09
2000	0.44	6.74	0.06
2001	1.78	8.52	0.21
2002	4.74	19.56	0.24
2003	3.00	14.56	0.21
2004	3.27	16.03	0.20
2005	4.93	20.23	0.24
2006	0.76	7.76	0.10
2007	0.55	8.14	0.07
Average	2.75	13.89	0.17



4.2 HISTORICAL CONDITIONS

Table 4-13 Historical Total Volume for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	356.7	153.9	116.3	98.1	85.2	5,328.5	5,139.4	1,504.3	2,501.5	2,499.9	323.2	216.6	18,323.5
1949	497.6	196.4	334.6	166.2	625.7	191.6	131.3	525.7	338.0	1,017.3	187.9	175.6	4,387.9
1950	221.3	110.3	155.5	540.9	87.0	200.2	116.1	110.0	1,364.1	218.5	732.1	1,139.5	4,995.4
1951	1,522.0	1,296.2	1,017.1	191.7	199.3	211.3	885.6	434.3	1,134.6	273.5	806.1	167.7	8,139.5
1952	238.4	112.4	131.9	92.2	83.6	215.5	597.3	731.5	1,243.8	471.1	195.0	258.9	4,371.7
1953	198.0	117.0	109.4	150.3	84.4	111.8	116.5	1,757.8	680.3	190.2	174.9	138.4	3,829.0
1954	119.3	94.4	829.2	95.5	85.6	486.5	2,805.8	1,316.7	2,249.2	287.1	188.1	166.3	8,723.7
1955	142.9	641.5	111.1	105.5	194.7	179.3	173.4	1,597.5	601.8	209.8	1,205.0	712.8	5,875.2
1956	245.9	177.5	186.6	641.0	467.8	2,973.8	482.5	3,137.6	4,029.3	281.5	184.9	689.8	13,498.2
1957	151.7	511.5	145.6	345.8	109.5	230.7	445.4	699.8	572.0	547.1	444.2	587.3	4,790.7
1958	333.3	608.7	722.7	142.1	467.0	3,845.0	1,702.0	367.7	317.8	2,031.6	592.0	214.4	11,344.4
1959	177.9	301.2	130.9	110.3	100.6	159.8	826.4	791.3	651.4	266.0	172.0	269.1	3,956.7
1960	179.2	121.1	93.1	139.0	71.4	97.5	89.9	67.6	130.6	364.1	143.6	105.7	1,602.8
Average	337.2	341.7	314.1	216.8	204.8	1,094.7	1,039.4	1,003.2	1,216.5	666.0	411.5	372.5	7,218.4



Table 4-14 Historical Direct Runoff for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	203.66	33.16	1.85	3.86	0.00	5,083.83	4,744.68	1,111.62	2,086.56	2,043.12	13.06	8.63	15,334.03
1949	276.69	14.79	170.91	31.40	504.88	89.18	39.26	419.96	225.81	775.45	0.04	10.09	2,558.45
1950	79.87	0.00	48.56	450.27	2.04	127.92	49.74	51.82	1,301.24	119.03	631.25	913.05	3,774.80
1951	1,189.31	950.28	742.57	0.00	29.98	70.41	713.78	243.52	873.48	0.80	612.54	0.02	5,426.70
1952	94.72	0.00	23.11	0.10	0.00	144.34	464.82	524.99	969.54	177.38	0.71	87.80	2,487.51
1953	52.85	0.03	0.34	58.11	0.99	40.87	52.09	1,647.28	489.59	0.00	18.83	0.16	2,361.15
1954	0.00	0.00	736.19	0.10	0.00	411.31	2,503.11	953.82	1,913.94	21.02	0.01	0.00	6,539.50
1955	0.01	528.75	2.27	13.92	111.76	106.67	94.05	1,481.73	268.00	0.14	1,033.92	459.73	4,100.95
1956	0.00	0.10	17.89	500.23	340.44	2,748.81	191.16	2,707.79	3,641.24	1.72	0.00	519.13	10,668.52
1957	5.23	391.63	13.80	236.65	11.57	147.58	361.14	482.00	323.61	344.56	279.58	439.40	3,036.75
1958	187.08	490.80	594.05	25.30	360.94	3,533.68	1,334.06	145.84	126.14	1,800.72	308.12	0.14	8,906.89
1959	0.02	163.39	0.00	0.00	0.86	75.05	691.96	550.40	390.54	49.02	0.01	116.32	2,037.56
1960	49.87	22.84	0.04	60.36	0.19	37.05	34.75	16.78	81.75	277.72	20.71	0.32	602.38
Average	164.56	199.67	180.89	106.18	104.90	970.52	867.28	795.20	976.27	431.59	224.52	196.52	5,218.09

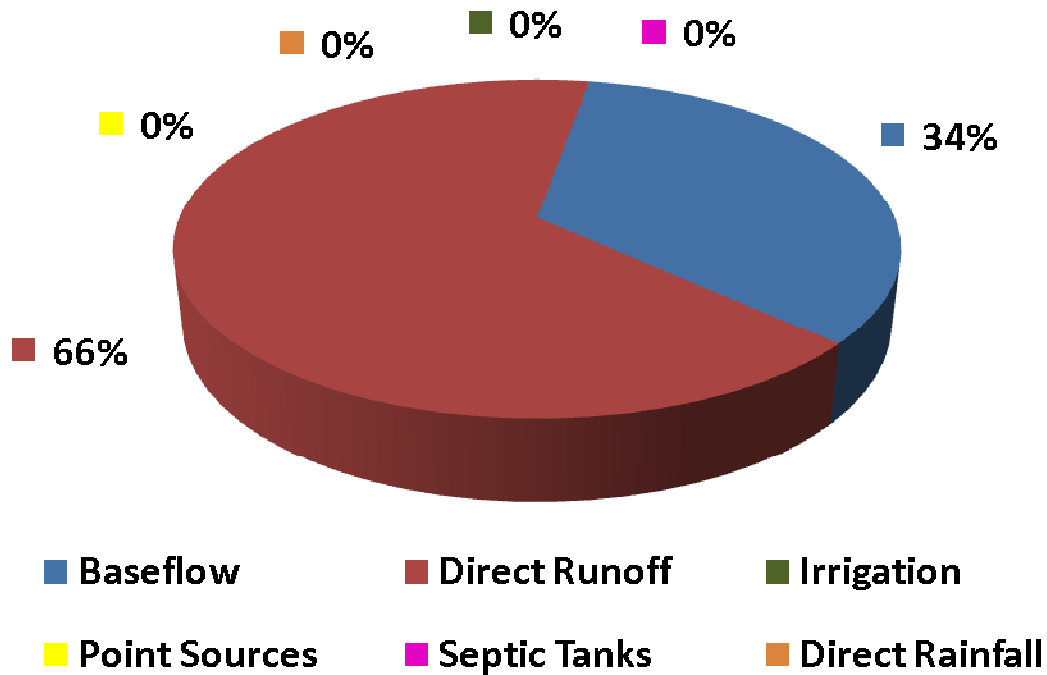


Figure 4-10 Forked Creek Basin Historical Total Volume Water Budget

Table 4-15 Summary of Annual Historical Total Volume Inputs for Forked Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	2,989.5	15,334.0	0.0	0.0	0.0	0.0
1949	1,829.5	2,558.4	0.0	0.0	0.0	0.0
1950	1,220.6	3,774.8	0.0	0.0	0.0	0.0
1951	2,712.8	5,426.7	0.0	0.0	0.0	0.0
1952	1,884.2	2,487.5	0.0	0.0	0.0	0.0
1953	1,467.9	2,361.2	0.0	0.0	0.0	0.0
1954	2,184.2	6,539.5	0.0	0.0	0.0	0.0
1955	1,774.2	4,101.0	0.0	0.0	0.0	0.0
1956	2,829.7	10,668.5	0.0	0.0	0.0	0.0
1957	1,753.9	3,036.8	0.0	0.0	0.0	0.0
1958	2,437.5	8,906.9	0.0	0.0	0.0	0.0
1959	1,919.1	2,037.6	0.0	0.0	0.0	0.0
1960	1,000.5	602.4	0.0	0.0	0.0	0.0
Average	2,000.3	5,218.1	0.0	0.0	0.0	0.0

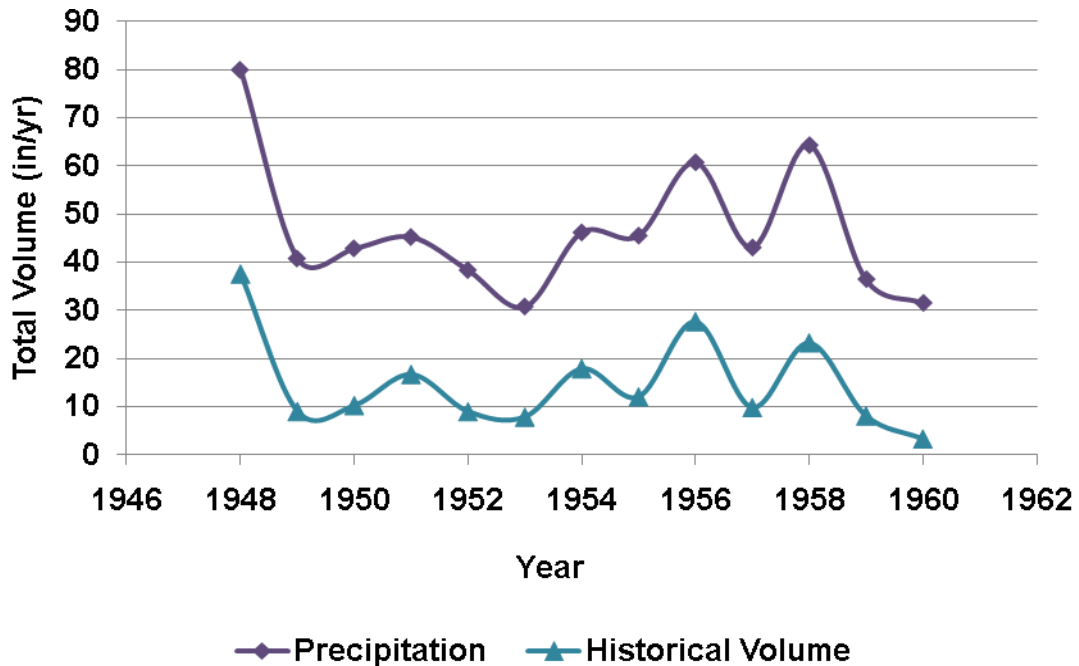


Figure 4-11 Annual Historical Variability of Precipitation and Total Volume for Forked Creek Basin

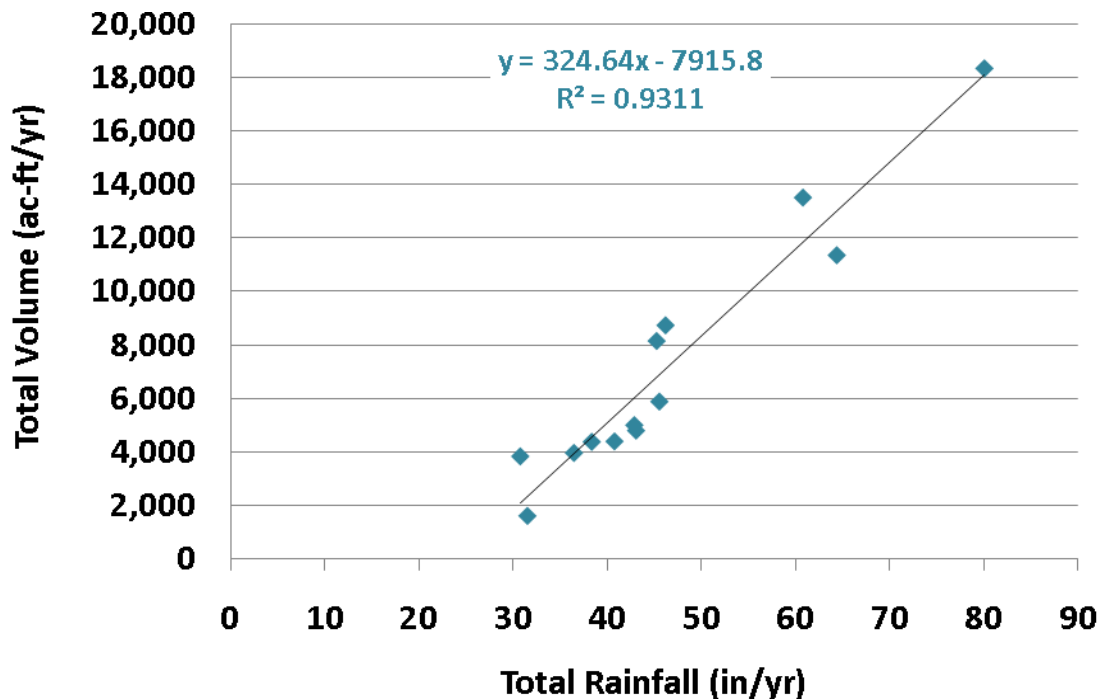


Figure 4-12 Correlation of Annual Total Volume to Rainfall for Forked Creek Basin



Table 4-16 Annual Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	37.51	80.03	0.47
1949	8.98	40.78	0.22
1950	10.23	42.88	0.24
1951	16.66	45.25	0.37
1952	8.95	38.37	0.23
1953	7.84	30.78	0.25
1954	17.86	46.19	0.39
1955	12.03	45.54	0.26
1956	27.63	60.77	0.45
1957	9.81	43.07	0.23
1958	23.22	64.36	0.36
1959	8.10	36.48	0.22
1960	3.28	31.54	0.10
Average	14.78	46.62	0.29

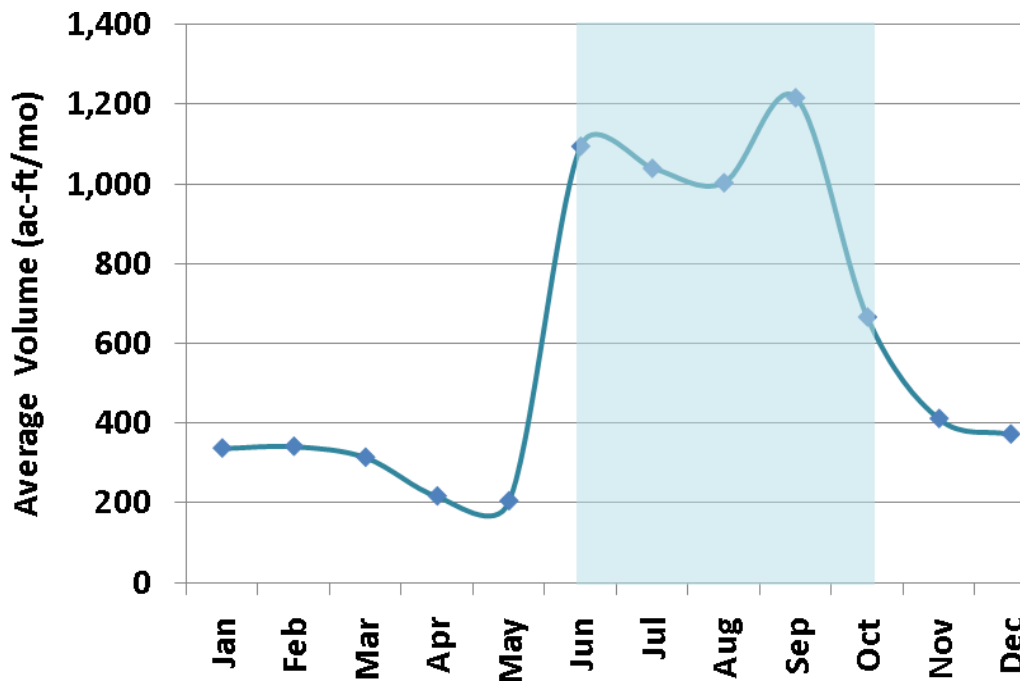


Figure 4-13 Variability of Average Monthly Total Volume in Forked Creek Basin



Table 4-17 Average Monthly Rainfall to Total Volume Coefficients for Forked Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.69	1.79	0.39
Feb	0.70	1.98	0.35
Mar	0.64	2.22	0.29
Apr	0.44	2.05	0.22
May	0.42	1.97	0.21
Jun	2.24	8.05	0.28
Jul	2.13	7.10	0.30
Aug	2.05	7.10	0.29
Sep	2.49	7.06	0.35
Oct	1.36	3.41	0.40
Nov	0.84	1.86	0.45
Dec	0.76	2.03	0.37

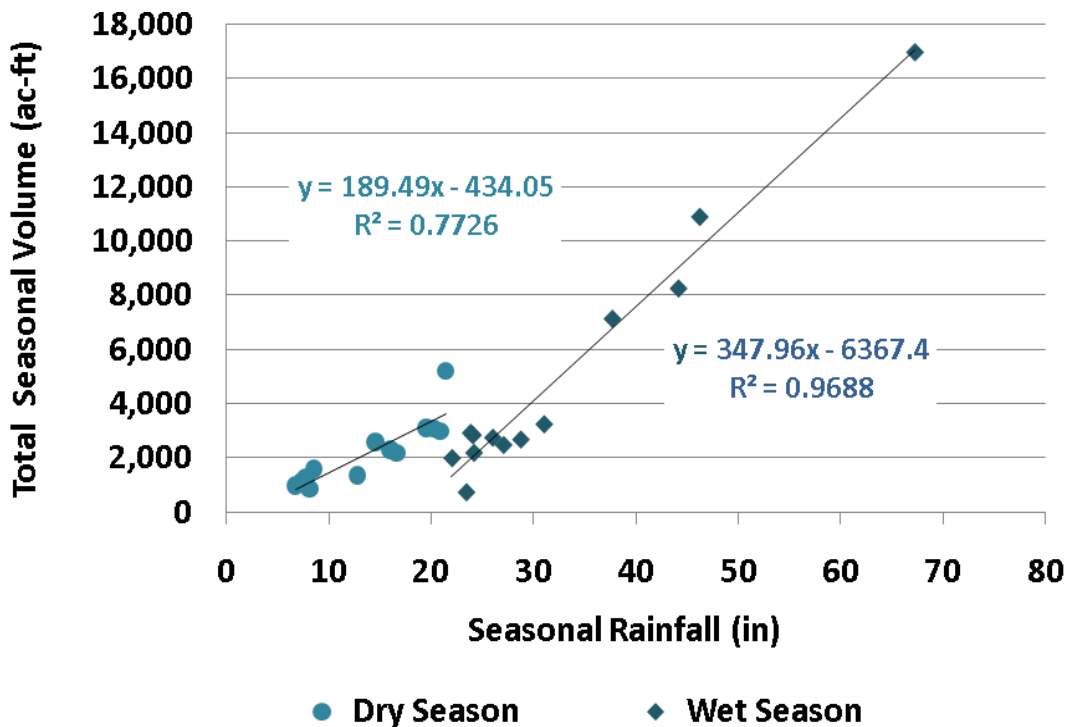


Figure 4-14 Correlation of Seasonal Total Volume to Rainfall for Forked Creek Basin



Table 4-18 Wet Season Total Volume to Rainfall Coefficients			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	34.74	67.24	0.52
1996	4.51	24.14	0.19
1997	4.11	22.01	0.19
1998	6.02	23.83	0.25
1999	6.67	31.00	0.22
2000	5.85	24.04	0.24
2001	14.63	37.67	0.39
2002	5.65	25.99	0.22
2003	22.32	46.21	0.48
2004	5.11	27.04	0.19
2005	16.92	44.13	0.38
2006	5.52	28.73	0.19
2007	1.53	23.41	0.07
Average	10.27	32.72	0.27

Table 4-19 Dry Season Total Volume to Rainfall Coefficients			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	2.76	12.78	0.22
1996	4.47	16.64	0.27
1997	6.11	20.88	0.29
1998	10.64	21.42	0.50
1999	2.28	7.36	0.31
2000	1.99	6.74	0.30
2001	3.23	8.52	0.38
2002	6.37	19.56	0.33
2003	5.31	14.56	0.36
2004	4.70	16.03	0.29
2005	6.30	20.23	0.31
2006	2.58	7.76	0.33
2007	1.75	8.14	0.21
Average	4.50	13.89	0.32

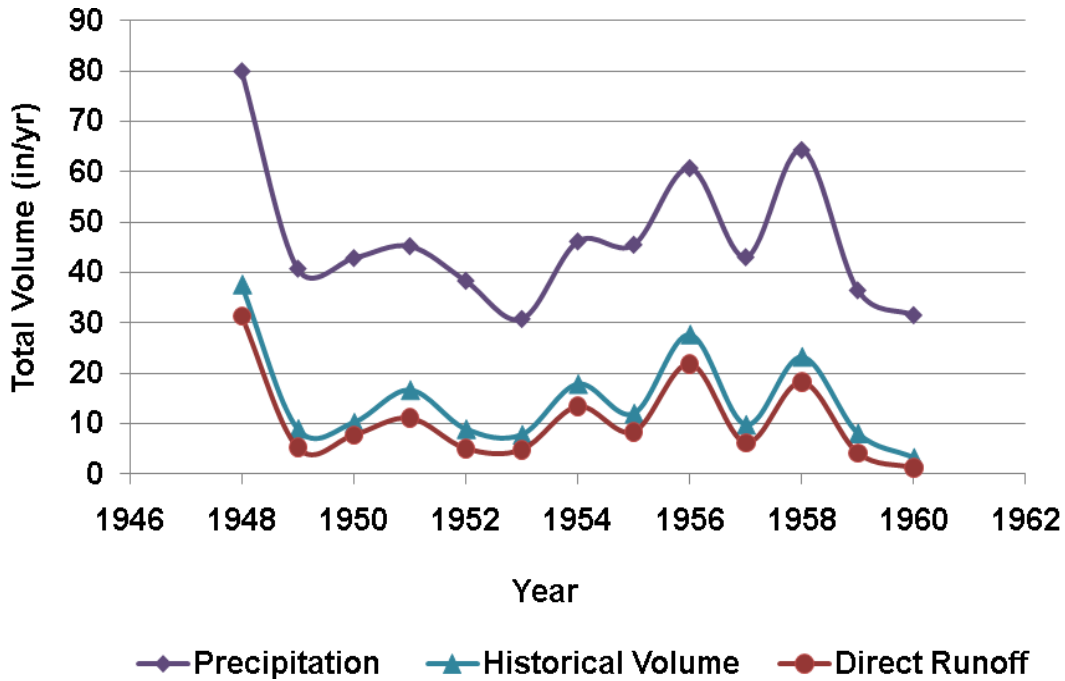


Figure 4-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Forked Creek Basin

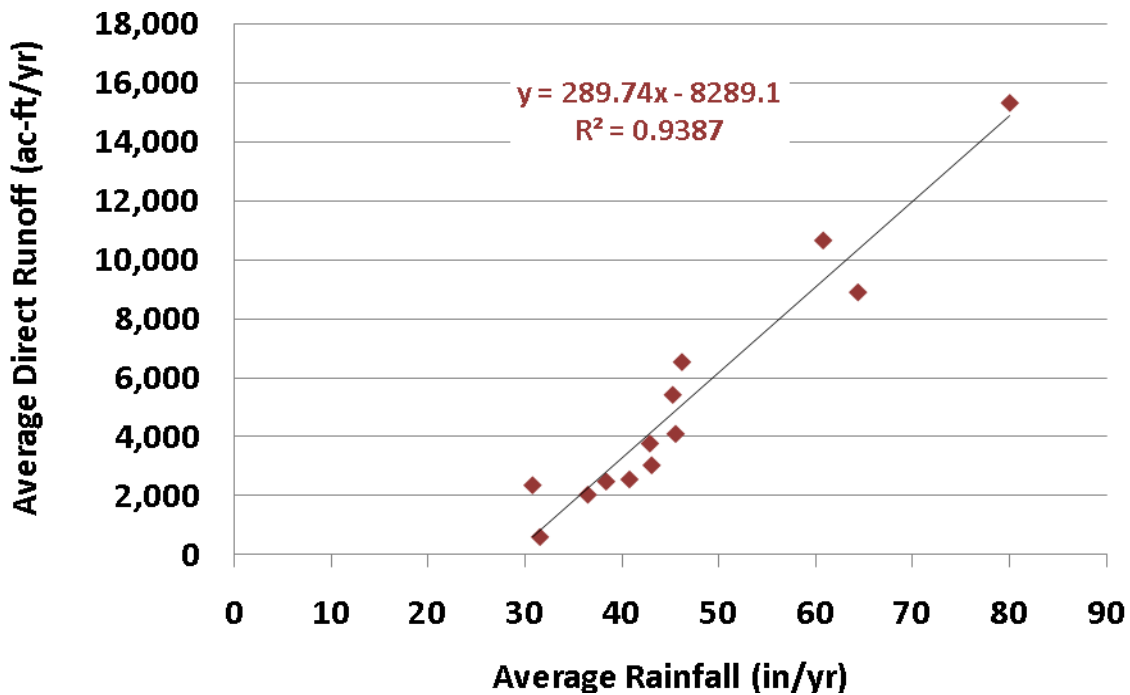


Figure 4-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 4-20 Annual Direct Runoff to Rainfall Coefficients for Forked Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	31.39	80.03	0.39
1949	5.24	40.78	0.13
1950	7.73	42.88	0.18
1951	11.11	45.25	0.25
1952	5.09	38.37	0.13
1953	4.83	30.78	0.16
1954	13.39	46.19	0.29
1955	8.39	45.54	0.18
1956	21.84	60.77	0.36
1957	6.22	43.07	0.14
1958	18.23	64.36	0.28
1959	4.17	36.48	0.11
1960	1.23	31.54	0.04
Average	10.68	46.62	0.20

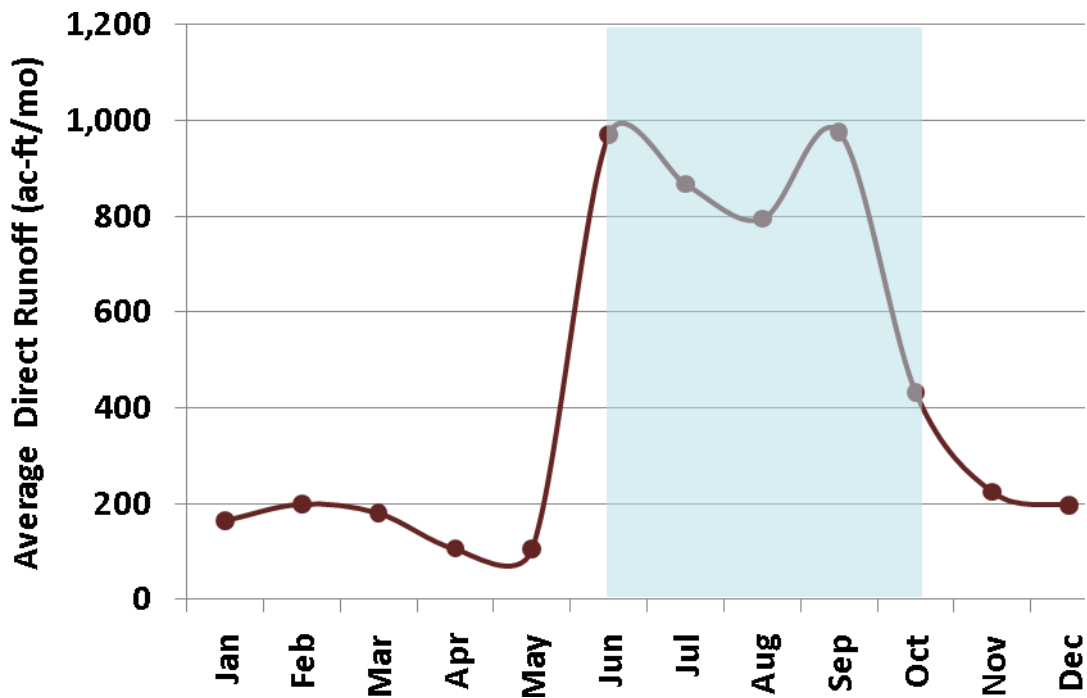


Figure 4-17 Variability of Average Monthly Direct Runoff to Forked Creek Basin



Table 4-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.34	1.79	0.19
Feb	0.41	1.98	0.21
Mar	0.37	2.22	0.17
Apr	0.22	2.05	0.11
May	0.21	1.97	0.11
Jun	1.99	8.05	0.25
Jul	1.78	7.10	0.25
Aug	1.63	7.10	0.23
Sep	2.00	7.06	0.28
Oct	0.88	3.41	0.26
Nov	0.46	1.86	0.25
Dec	0.40	2.03	0.20

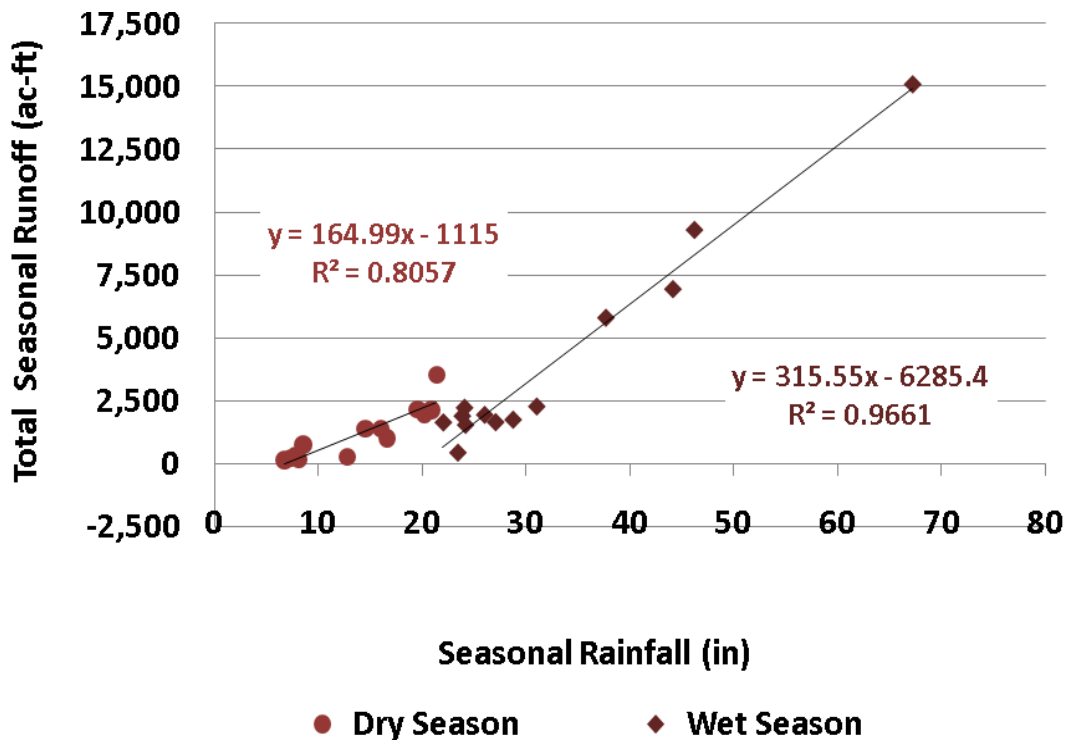


Figure 4-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 4-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	30.85	67.24	0.46
1949	3.17	24.14	0.13
1950	3.38	22.01	0.15
1951	3.89	23.83	0.16
1952	4.67	31.00	0.15
1953	4.56	24.04	0.19
1954	11.88	37.67	0.32
1955	3.99	25.99	0.15
1956	19.02	46.21	0.41
1957	3.40	27.04	0.13
1958	14.21	44.13	0.32
1959	3.60	28.73	0.13
1960	0.92	23.41	0.04
Average	8.27	32.72	0.21

Table 4-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.54	12.78	0.04
1949	2.06	16.64	0.12
1950	4.35	20.88	0.21
1951	7.21	21.42	0.34
1952	0.42	7.36	0.06
1953	0.27	6.74	0.04
1954	1.51	8.52	0.18
1955	4.40	19.56	0.23
1956	2.82	14.56	0.19
1957	2.82	16.03	0.18
1958	4.03	20.23	0.20
1959	0.57	7.76	0.07
1960	0.32	8.14	0.04
Average	2.41	13.89	0.15



4.3 FUTURE CONDITIONS

Table 4-24 Future Total Volume for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	672.6	387.4	325.9	294.3	155.7	6,085.4	6,085.9	2,676.9	3,845.6	3,794.5	924.0	598.6	25,846.9
2016	957.2	439.2	603.5	331.3	717.2	433.3	427.7	1,161.4	805.1	1,761.9	478.4	371.3	8,487.5
2017	330.9	155.1	210.7	582.6	132.3	278.4	190.8	207.2	1,756.9	524.6	1,050.3	1,590.7	7,010.7
2018	1,912.0	1,727.3	1,780.6	497.6	424.1	362.2	1,027.1	704.4	1,675.4	840.6	1,309.5	329.8	12,590.8
2019	382.2	146.6	193.6	101.9	82.0	393.9	676.6	1,163.1	2,037.2	1,142.2	524.0	520.5	7,363.8
2020	308.0	174.7	146.6	206.5	111.0	261.4	228.8	2,006.7	1,148.4	394.6	306.6	214.6	5,507.8
2021	155.6	108.5	1,184.3	93.5	70.8	538.0	2,668.7	1,974.2	3,321.5	983.7	499.8	338.7	11,937.3
2022	248.2	643.9	149.9	177.7	362.9	316.0	260.7	1,981.9	1,293.6	609.0	1,651.0	1,043.3	8,738.1
2023	429.1	271.4	270.2	584.1	457.8	3,212.0	1,147.7	4,452.0	5,024.6	971.6	540.4	971.7	18,332.6
2024	309.8	841.1	267.7	432.9	149.0	439.2	728.7	1,274.8	1,210.6	1,145.2	795.9	825.7	8,420.5
2025	585.1	826.4	1,081.0	320.1	851.5	4,589.5	2,873.9	1,293.8	1,097.0	2,971.0	1,183.2	533.0	18,205.5
2026	326.8	500.1	167.2	121.4	153.9	306.7	1,039.3	1,365.4	1,499.7	812.8	423.9	447.8	7,165.0
2027	297.0	217.5	129.3	266.3	96.9	295.7	268.5	186.8	366.9	775.2	399.1	241.5	3,540.8
Average	531.9	495.3	500.8	308.5	289.6	1,347.1	1,355.7	1,573.0	1,929.4	1,286.7	775.9	617.5	11,011.3



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Table 4-25 Future Direct Runoff for Forked Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	350.1	106.4	55.0	109.6	14.5	5,639.1	4,884.8	1,224.1	2,423.1	2,263.6	30.5	71.3	17,172.0
2016	410.2	89.9	348.5	110.8	534.2	252.3	209.4	784.4	378.5	1,022.8	8.1	49.3	4,198.3
2017	103.7	2.0	79.2	480.5	42.6	208.5	124.0	144.4	1,644.8	301.2	801.3	1,055.8	4,988.0
2018	1,123.6	785.9	1,004.1	0.4	69.1	110.1	785.8	391.9	1,006.3	30.9	831.8	13.4	6,153.3
2019	162.8	0.0	71.2	9.2	4.7	330.7	538.3	805.4	1,286.9	254.2	24.8	180.4	3,668.6
2020	70.0	9.6	11.8	102.5	24.6	192.1	163.3	1,821.0	715.2	0.0	43.1	15.0	3,168.2
2021	4.4	0.0	1,087.4	11.5	3.6	483.1	2,201.2	866.3	2,134.2	74.7	3.7	2.8	6,872.8
2022	9.6	478.6	6.5	71.2	275.3	240.7	160.6	1,721.1	326.1	15.8	1,282.4	557.7	5,145.7
2023	0.0	20.5	72.9	438.9	337.5	2,801.2	308.8	2,992.3	3,701.4	24.3	6.0	599.0	11,302.6
2024	59.0	652.7	65.3	289.6	38.4	354.1	581.2	697.7	462.2	542.0	403.2	539.9	4,685.3
2025	319.3	640.1	844.5	108.1	654.0	3,702.7	1,441.3	370.1	309.6	2,187.7	454.4	0.2	11,031.9
2026	3.8	289.8	2.0	0.0	53.8	227.3	856.2	802.2	571.2	126.9	3.9	144.9	3,081.9
2027	79.3	68.3	6.9	174.5	21.7	234.9	211.9	120.4	251.7	496.3	75.1	20.9	1,761.8
Average	207.4	241.8	281.2	146.7	159.5	1,136.7	959.0	980.1	1,170.1	564.6	305.2	250.1	6,402.3

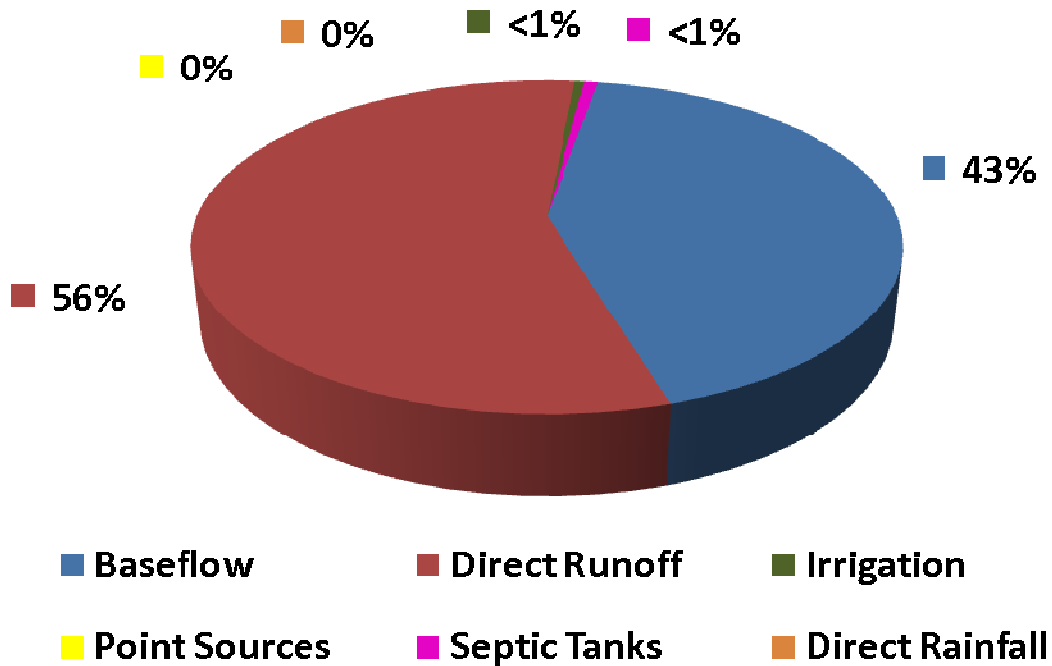


Figure 4-19 Forked Creek Basin Current Total Volume Water Budget

Table 4-26 Summary of Annual Future Total Volume Inputs for Forked Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	8,569.4	17,172.0	43.8	0.0	61.8	0.0
2016	4,183.6	4,198.3	43.8	0.0	61.8	0.0
2017	1,917.1	4,988.0	43.8	0.0	61.8	0.0
2018	6,331.8	6,153.3	43.8	0.0	61.8	0.0
2019	3,589.5	3,668.6	43.8	0.0	61.8	0.0
2020	2,234.0	3,168.2	43.8	0.0	61.8	0.0
2021	4,958.9	6,872.8	43.8	0.0	61.8	0.0
2022	3,486.7	5,145.7	43.8	0.0	61.8	0.0
2023	6,924.4	11,302.6	43.8	0.0	61.8	0.0
2024	3,629.7	4,685.3	43.8	0.0	61.8	0.0
2025	7,068.1	11,031.9	43.8	0.0	61.8	0.0
2026	3,977.6	3,081.9	43.8	0.0	61.8	0.0
2027	1,673.5	1,761.8	43.8	0.0	61.8	0.0
Average	4,503.4	6,402.3	43.8	0.0	61.8	0.0

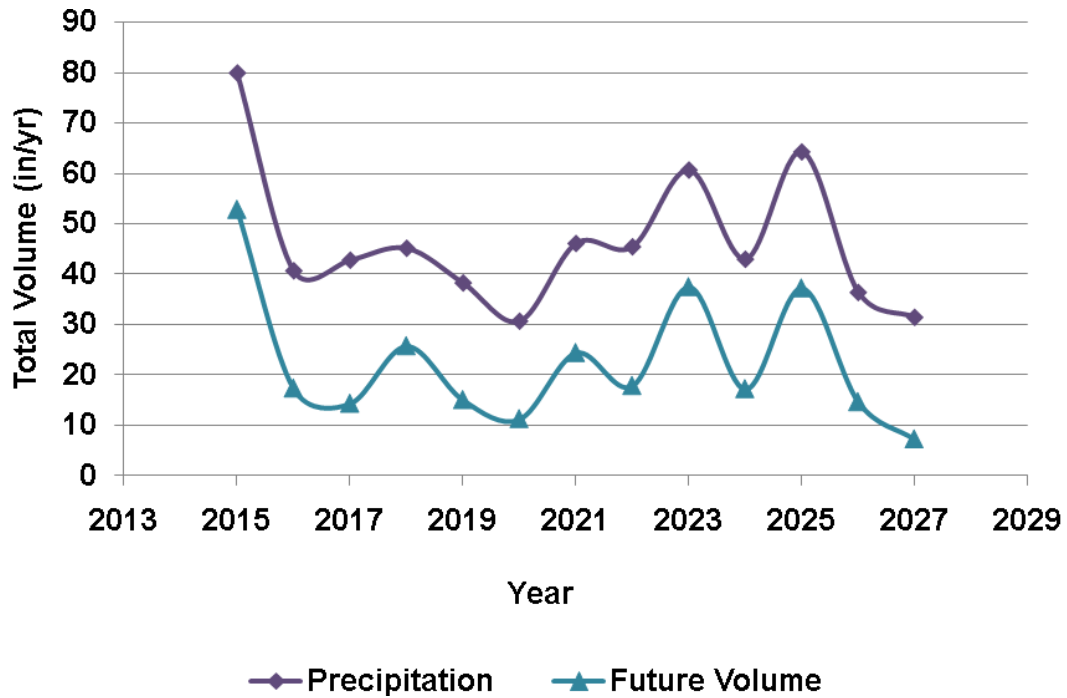


Figure 4-20 Annual Variability of Precipitation and Total Volume for Forked Creek Basin

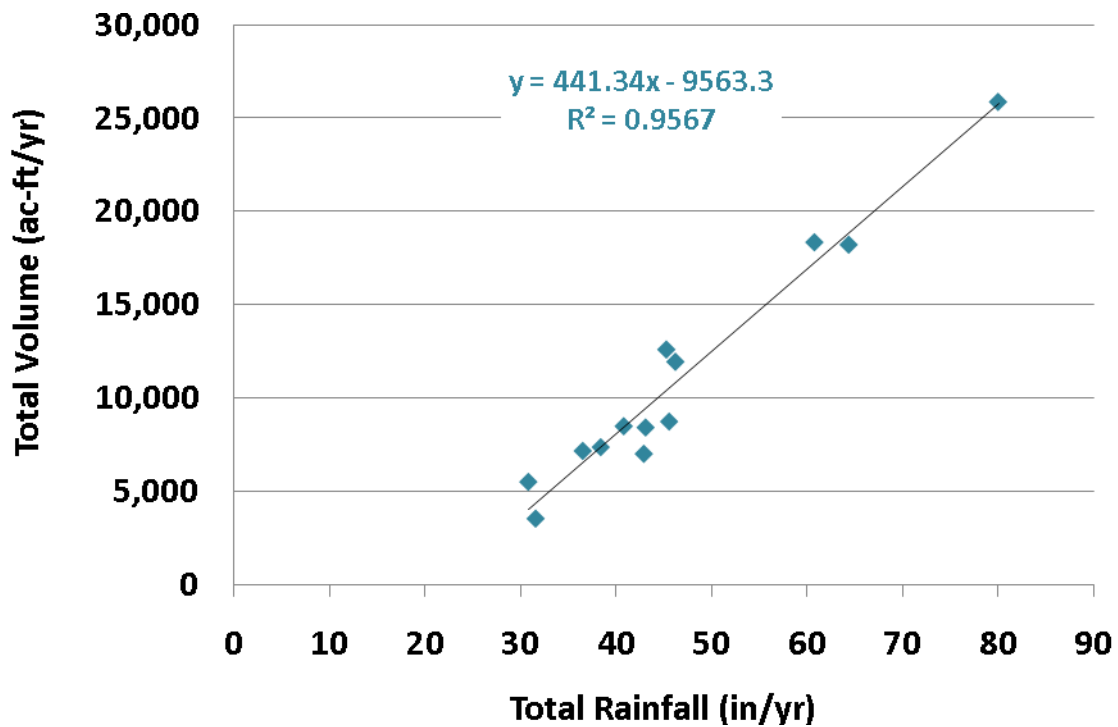


Figure 4-21 Correlation of Annual Total Volume to Rainfall for Forked Creek Basin



Table 4-27 Annual Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	52.91	80.03	0.66
2016	17.37	40.78	0.43
2017	14.35	42.88	0.33
2018	25.77	45.25	0.57
2019	15.07	38.37	0.39
2020	11.27	30.78	0.37
2021	24.43	46.19	0.53
2022	17.89	45.54	0.39
2023	37.52	60.77	0.62
2024	17.24	43.07	0.40
2025	37.26	64.36	0.58
2026	14.67	36.48	0.40
2027	7.25	31.54	0.23
Average	22.54	46.62	0.45

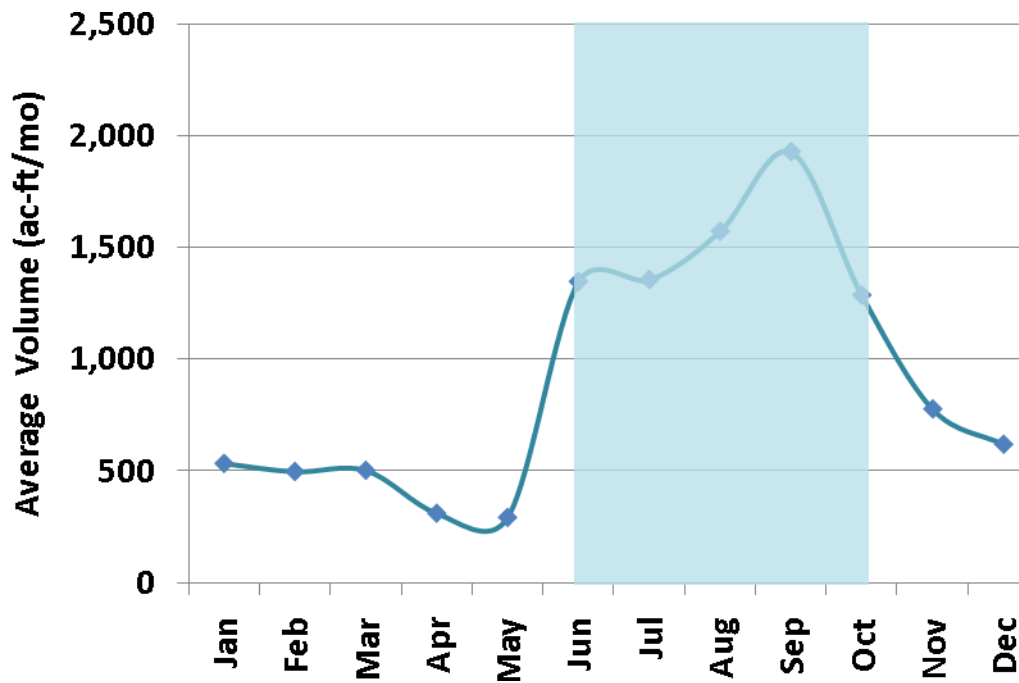


Figure 4-22 Variability of Average Monthly Total Volume in Forked Creek Basin



Table 4-28 Average Monthly Rainfall to Total Volume Coefficients for Forked Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.09	1.79	0.61
Feb	1.01	1.98	0.51
Mar	1.03	2.22	0.46
Apr	0.63	2.05	0.31
May	0.59	1.97	0.30
Jun	2.76	8.05	0.34
Jul	2.78	7.10	0.39
Aug	3.22	7.10	0.45
Sep	3.95	7.06	0.56
Oct	2.63	3.41	0.77
Nov	1.59	1.86	0.85
Dec	1.26	2.03	0.62

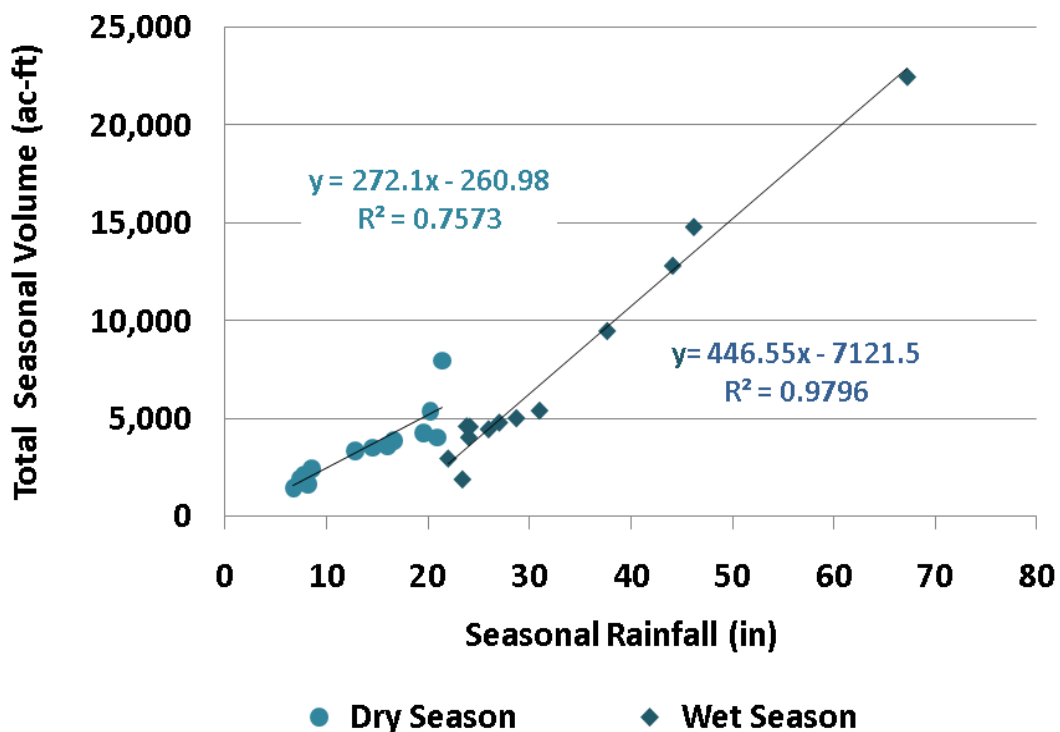


Figure 4-23 Correlation of Seasonal Total Volume to Rainfall for Forked Creek Basin



Table 4-29 Wet Season Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	46.03	67.24	0.68
2016	9.39	24.14	0.39
2017	6.05	22.01	0.28
2018	9.44	23.83	0.40
2019	11.08	31.00	0.36
2020	8.27	24.04	0.34
2021	19.42	37.67	0.52
2022	9.13	25.99	0.35
2023	30.31	46.21	0.66
2024	9.82	27.04	0.36
2025	26.25	44.13	0.59
2026	10.28	28.73	0.36
2027	3.88	23.41	0.17
Average	15.33	32.72	0.42

Table 4-30 Dry Season Total Volume to Rainfall Coefficients for Forked Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	6.87	12.78	0.54
2016	7.98	16.64	0.48
2017	8.30	20.88	0.40
2018	16.34	21.42	0.76
2019	3.99	7.36	0.54
2020	3.00	6.74	0.45
2021	5.02	8.52	0.59
2022	8.75	19.56	0.45
2023	7.21	14.56	0.50
2024	7.41	16.03	0.46
2025	11.01	20.23	0.54
2026	4.38	7.76	0.56
2027	3.37	8.14	0.41
Average	7.20	13.89	0.51

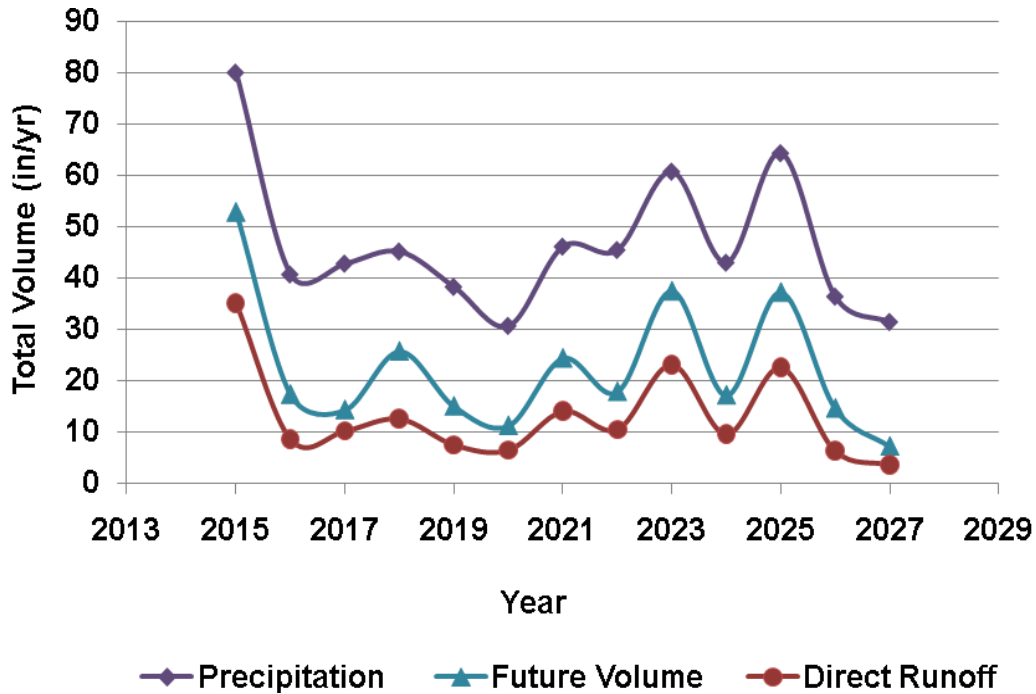


Figure 4-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Forked Creek Basin

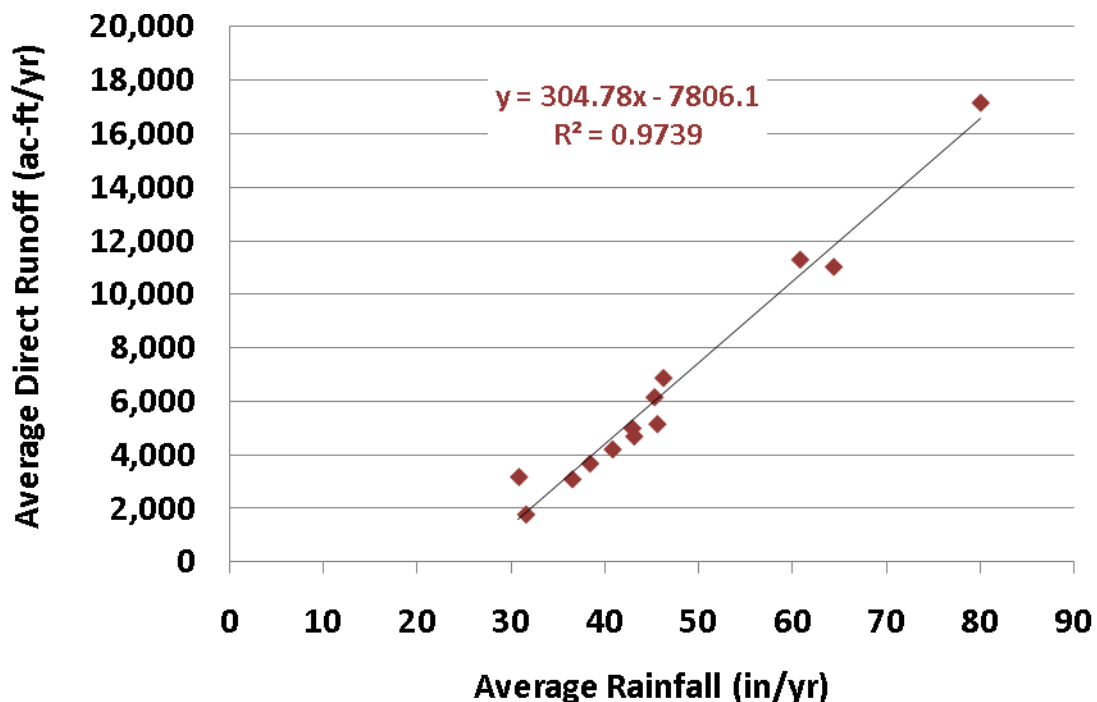


Figure 4-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 4-31 Annual Direct Runoff to Rainfall Coefficients for Forked Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	35.15	80.03	0.44
2016	8.59	40.78	0.21
2017	10.21	42.88	0.24
2018	12.60	45.25	0.28
2019	7.51	38.37	0.20
2020	6.48	30.78	0.21
2021	14.07	46.19	0.30
2022	10.53	45.54	0.23
2023	23.13	60.77	0.38
2024	9.59	43.07	0.22
2025	22.58	64.36	0.35
2026	6.31	36.48	0.17
2027	3.61	31.54	0.11
Average	13.10	46.62	0.26

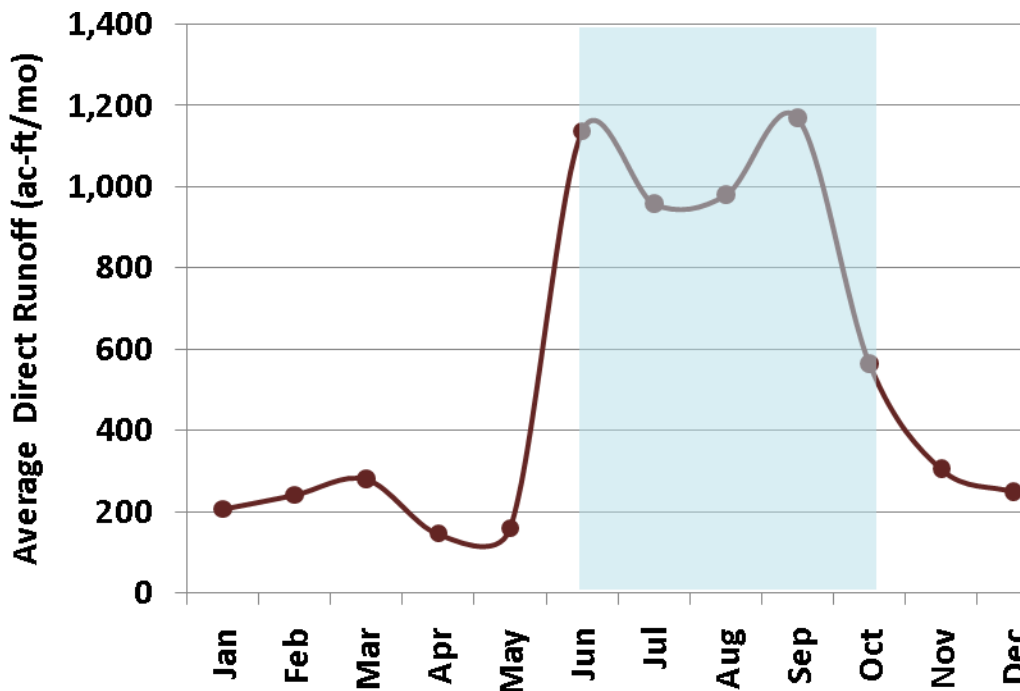


Figure 4-26 Variability of Average Monthly Direct Runoff to Forked Creek Basin



Table 4-32 Average Monthly Rainfall to Direct Runoff Coefficients for Forked Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.42	1.79	0.24
Feb	0.49	1.98	0.25
Mar	0.58	2.22	0.26
Apr	0.30	2.05	0.15
May	0.33	1.97	0.17
Jun	2.33	8.05	0.29
Jul	1.96	7.10	0.28
Aug	2.01	7.10	0.28
Sep	2.40	7.06	0.34
Oct	1.16	3.41	0.34
Nov	0.62	1.86	0.34
Dec	0.51	2.03	0.25

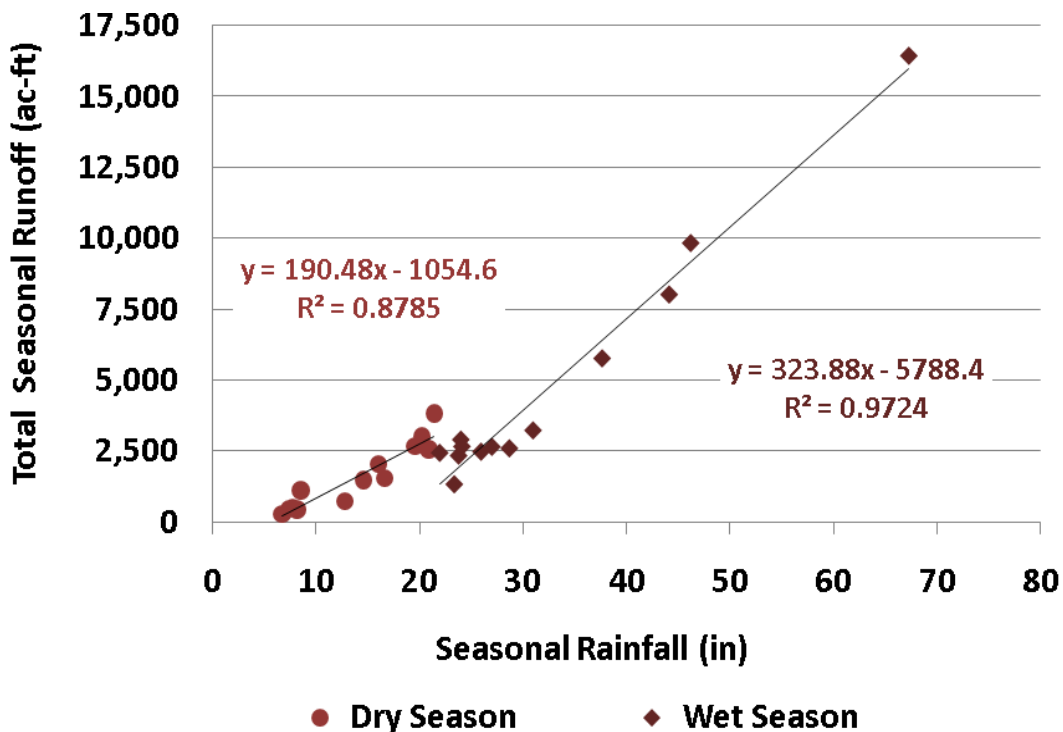


Figure 4-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 4-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	33.64	67.24	0.50
2016	5.42	24.14	0.22
2017	4.96	22.01	0.23
2018	4.76	23.83	0.20
2019	6.58	31.00	0.21
2020	5.92	24.04	0.25
2021	11.79	37.67	0.31
2022	5.04	25.99	0.19
2023	20.12	46.21	0.44
2024	5.40	27.04	0.20
2025	16.40	44.13	0.37
2026	5.29	28.73	0.18
2027	2.69	23.41	0.12
Average	9.85	32.72	0.26

Table 4-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	1.51	12.78	0.12
2016	3.17	16.64	0.19
2017	5.25	20.88	0.25
2018	7.84	21.42	0.37
2019	0.93	7.36	0.13
2020	0.57	6.74	0.08
2021	2.28	8.52	0.27
2022	5.49	19.56	0.28
2023	3.02	14.56	0.21
2024	4.19	16.03	0.26
2025	6.18	20.23	0.31
2026	1.02	7.76	0.13
2027	0.91	8.14	0.11
Average	3.26	13.89	0.21



4.4 WATER BUDGET CHANGES

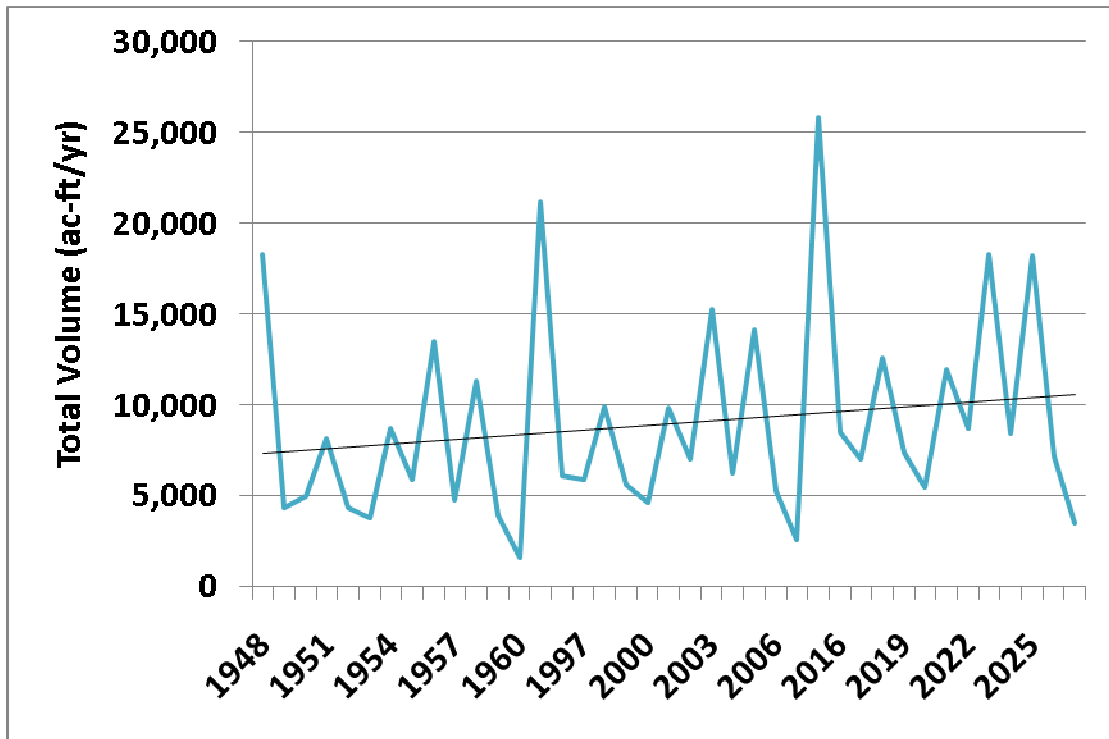


Figure 4-28 Trend in Total Volume from Historical through Future Time Series

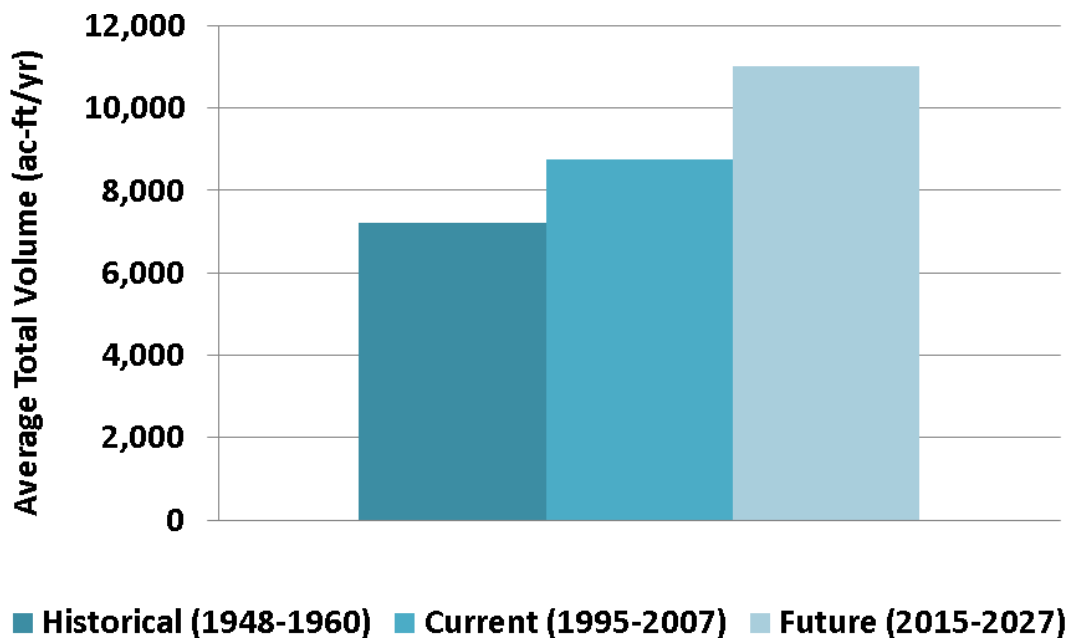


Figure 4-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay



Table 4-35 Change in Total Volume from Historic to Current Conditions

Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	18,324	21,198	2,874
2	4,388	6,135	1,747
3	4,995	5,940	944
4	8,139	9,908	1,768
5	4,372	5,596	1,225
6	3,829	4,646	817
7	8,724	9,873	1,150
8	5,875	7,017	1,141
9	13,498	15,272	1,773
10	4,791	6,250	1,460
11	11,344	14,123	2,778
12	3,957	5,296	1,339
13	1,603	2,618	1,016
Average	7,218	8,759	1,541

Table 4-36 Change in Total Volume from Current to Future Conditions

Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	21,198	25,847	4,649
2	6,135	8,488	2,352
3	5,940	7,011	1,071
4	9,908	12,591	2,683
5	5,596	7,364	1,767
6	4,646	5,508	862
7	9,873	11,937	2,064
8	7,017	8,738	1,722
9	15,272	18,333	3,061
10	6,250	8,421	2,170
11	14,123	18,206	4,083
12	5,296	7,165	1,869
13	2,618	3,541	922
Average	8,759	11,011	2,252

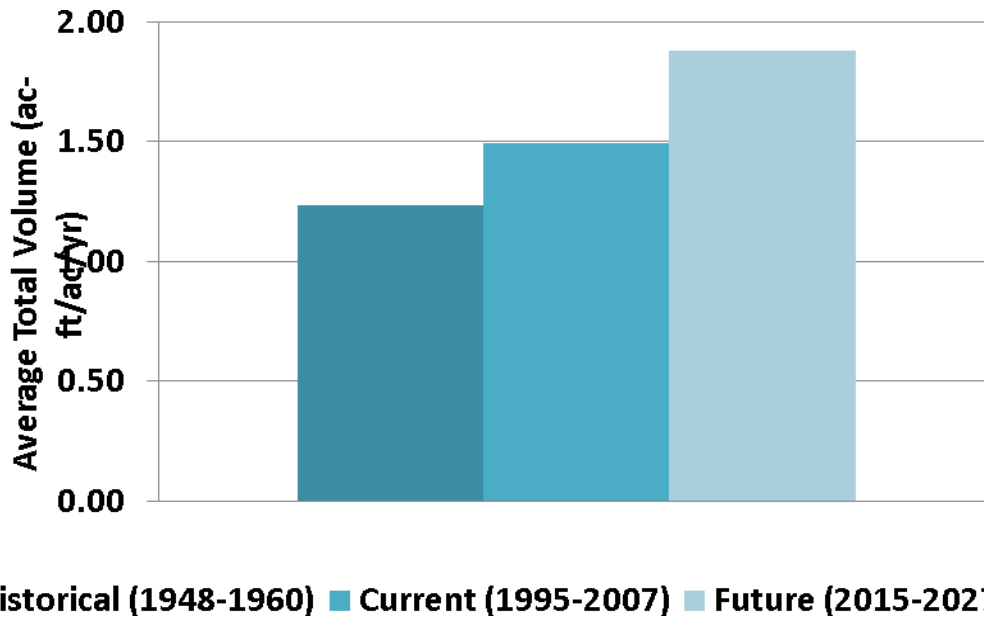


Figure 4-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay

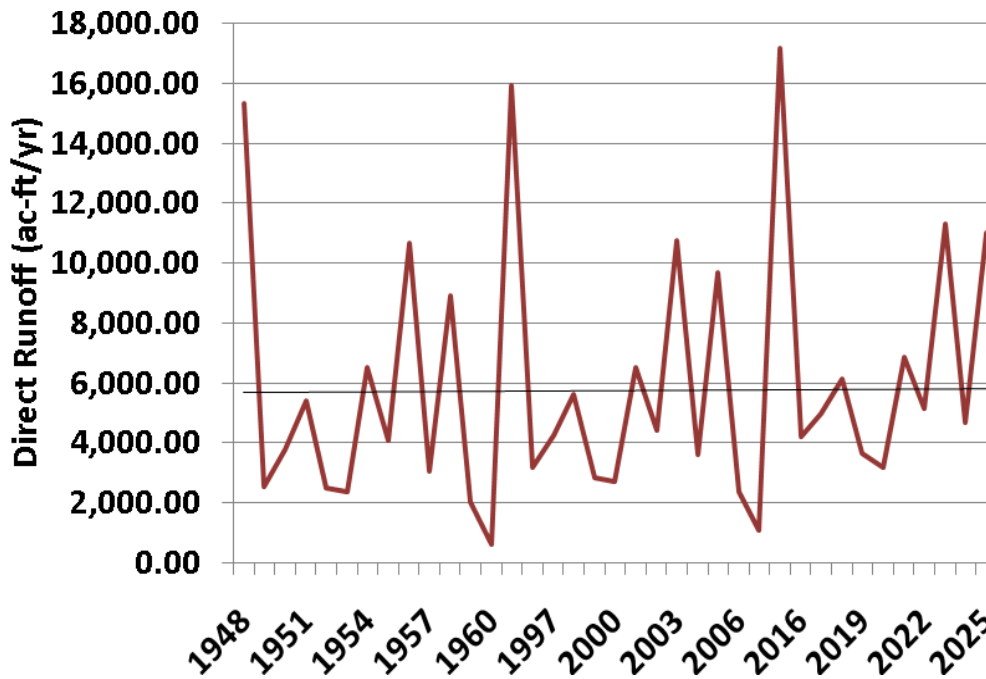


Figure 4-31 Trend in Direct Runoff from Historical through Future Time Series

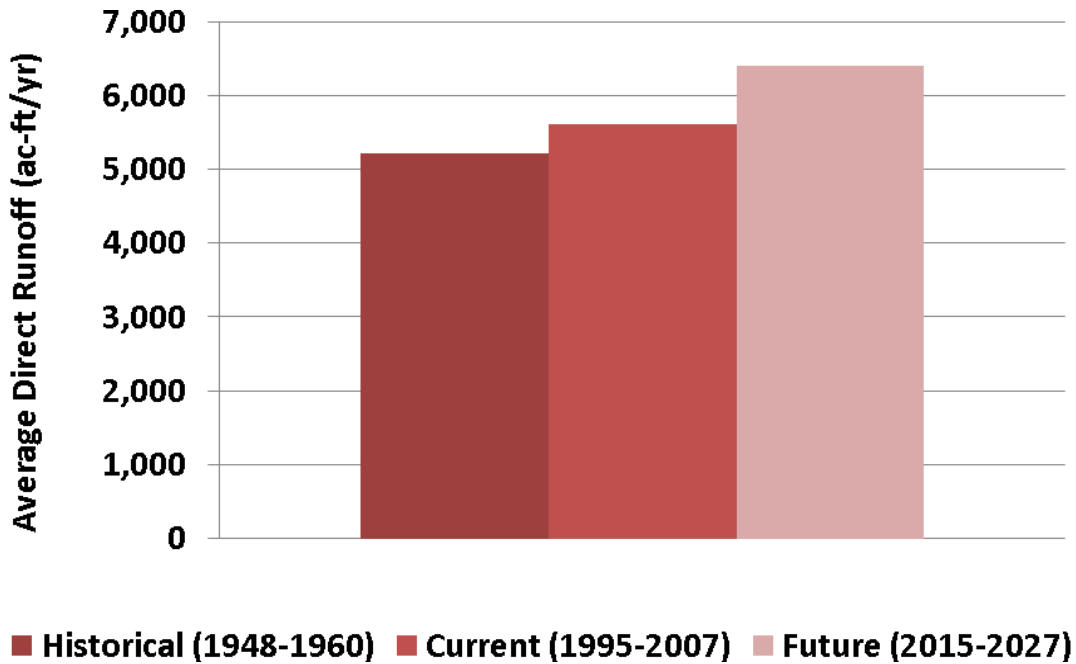


Figure 4-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay

Table 4-37 Change in Direct Runoff from Historic to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	15,334	15,944	610
2	2,558	3,161	603
3	3,775	4,237	462
4	5,427	5,601	175
5	2,488	2,823	335
6	2,361	2,707	346
7	6,539	6,515	-25
8	4,101	4,418	317
9	10,669	10,743	74
10	3,037	3,626	590
11	8,907	9,669	762
12	2,038	2,349	311
13	602	1,086	484
Average	5,218	5,606	388



Table 4-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1995-2007	Future Direct Runoff (ac-ft) 2015-2027	Direct Runoff Change (ac-ft) (future-current)
1	15,944	17,172	1,228
2	3,161	4,198	1,037
3	4,237	4,988	751
4	5,601	6,153	552
5	2,823	3,669	846
6	2,707	3,168	461
7	6,515	6,873	358
8	4,418	5,146	728
9	10,743	11,303	560
10	3,626	4,685	1,059
11	9,669	11,032	1,363
12	2,349	3,082	733
13	1,086	1,762	675
Average	5,606	6,402	796

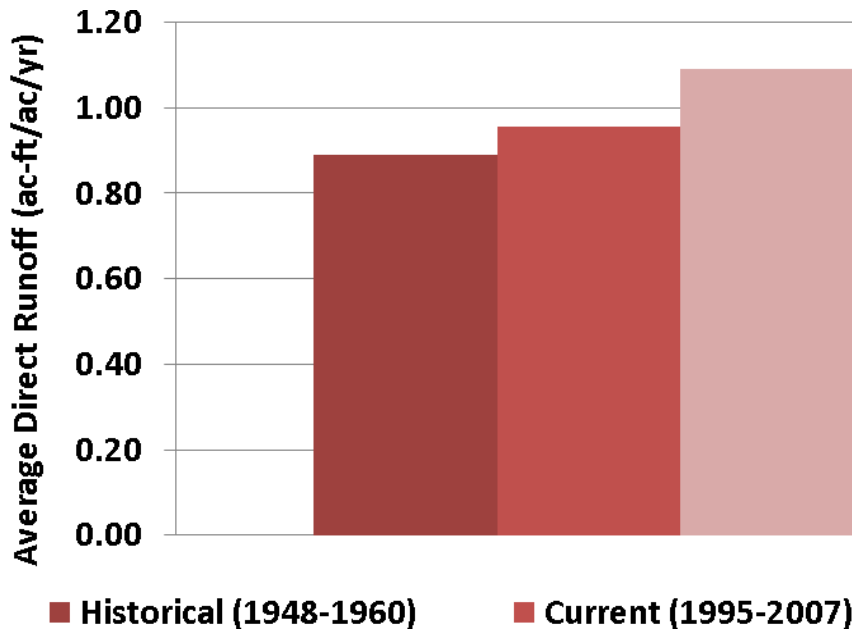


Figure 4-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay



5.0 GOTTFRIED CREEK BASIN

5.1 CURRENT CONDITIONS

Table 5-1 Monthly Rainfall for Gottfried Creek Basin (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.59	2.56	1.33	2.94	0.44	24.44	16.23	8.50	8.25	10.19	0.89	1.27	80.63
1996	1949	2016	3.34	1.04	3.69	2.30	5.23	3.85	3.59	4.73	5.00	6.67	0.57	0.92	40.93
1997	1950	2017	1.81	0.36	1.51	5.52	1.40	3.33	3.32	3.44	10.45	2.21	3.71	5.78	42.86
1998	1951	2018	6.40	4.93	4.54	0.21	1.83	2.58	7.46	5.25	8.16	1.16	4.13	0.50	47.15
1999	1952	2019	2.21	0.06	1.72	0.35	0.77	6.34	5.72	6.31	8.69	2.21	0.63	1.75	36.75
2000	1953	2020	1.25	0.44	1.07	1.79	0.54	4.87	4.24	6.60	5.55	0.36	0.61	0.49	27.81
2001	1954	2021	0.17	0.01	7.78	0.42	0.42	6.47	12.78	5.52	10.92	1.90	0.22	0.34	46.96
2002	1955	2022	0.61	4.77	0.23	1.65	3.12	7.50	2.95	11.75	3.33	0.86	5.71	4.67	47.17
2003	1956	2023	0.05	0.77	2.32	3.30	3.71	16.85	4.47	12.83	11.84	0.64	0.64	3.46	60.90
2004	1957	2024	1.81	4.10	0.88	3.42	1.12	5.47	7.48	8.10	5.42	3.17	1.88	3.14	46.00
2005	1958	2025	1.49	2.86	4.57	2.16	5.51	17.32	9.37	5.69	4.31	10.30	3.17	0.28	67.03
2006	1959	2026	0.44	2.93	0.17	0.04	1.85	5.61	11.35	6.88	5.30	1.12	0.49	2.64	38.81
2007	1960	2027	1.58	1.47	0.29	2.27	0.72	4.62	4.76	4.14	5.04	3.84	0.64	1.04	30.39
Average			1.90	2.02	2.32	2.03	2.05	8.40	7.21	6.90	7.10	3.43	1.79	2.02	47.18



Table 5-2 Current Total Volume for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	643.0	410.9	317.0	273.8	171.9	8,541.3	5,479.3	2,501.3	2,966.7	3,383.9	638.0	420.5	25,747.6
1996	718.1	332.1	499.9	382.0	988.9	352.0	389.5	519.0	606.4	1,625.3	371.7	305.4	7,090.4
1997	415.4	167.9	291.2	643.7	150.3	285.5	232.0	235.2	2,297.4	443.3	704.8	1,442.3	7,308.9
1998	2,627.9	1,677.7	1,597.7	352.4	356.7	311.3	1,062.9	650.6	1,520.8	591.2	1,228.0	287.0	12,264.0
1999	337.1	166.0	208.2	128.3	112.9	334.2	754.2	638.5	1,803.0	736.4	361.1	440.6	6,020.6
2000	322.5	173.4	173.9	213.9	117.8	191.6	203.8	1,219.2	852.6	296.0	228.9	191.9	4,185.3
2001	152.9	119.2	1,303.7	152.9	127.4	616.6	3,074.9	1,774.4	3,048.4	663.5	377.7	284.2	11,695.7
2002	228.0	1,013.6	182.6	211.2	367.4	622.6	305.2	2,101.5	893.5	418.2	2,000.1	933.8	9,277.7
2003	400.7	278.6	354.3	781.1	644.3	4,821.9	951.9	3,690.5	4,677.4	581.2	363.0	740.4	18,285.2
2004	355.8	903.6	289.7	601.4	182.3	428.2	687.1	1,603.4	1,291.0	1,201.7	531.1	791.8	8,867.3
2005	420.4	744.1	1,122.1	245.0	936.0	4,211.1	2,910.7	1,006.0	886.3	3,251.9	999.8	434.9	17,168.4
2006	311.1	576.7	207.5	163.0	170.7	374.6	1,740.0	1,262.6	1,085.5	545.8	324.0	510.3	7,271.8
2007	271.7	191.1	144.0	249.8	108.2	218.4	244.6	206.9	362.7	411.9	205.7	196.2	2,811.1
Average	554.2	519.6	514.8	338.3	341.1	1,639.2	1,387.4	1,339.2	1,714.7	1,088.5	641.1	536.9	10,614.9



Table 5-3 Current Direct Runoff for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	348.4	140.6	45.9	71.1	2.3	8,109.7	4,700.3	1,598.3	2,049.3	2,404.7	21.9	28.6	19,521.0
1996	311.9	34.8	251.5	176.7	796.8	170.1	201.1	326.2	371.8	1,108.4	7.2	23.8	3,780.3
1997	192.5	2.2	139.4	514.9	22.7	179.8	118.1	115.0	2,122.7	182.0	469.3	1,004.6	5,063.2
1998	2,029.2	1,011.1	1,067.6	2.1	79.1	95.3	792.1	315.1	995.2	41.4	858.2	5.4	7,291.8
1999	117.5	0.0	56.8	4.9	4.6	238.8	546.2	382.5	1,352.5	169.0	15.6	170.1	3,058.6
2000	106.3	5.0	24.7	89.3	8.6	98.6	102.0	1,037.2	543.5	7.5	10.9	7.5	2,041.1
2001	0.1	0.0	1,187.7	11.1	5.1	510.3	2,630.1	1,058.4	2,327.9	77.2	7.7	1.3	7,816.9
2002	5.6	839.7	6.4	72.2	247.7	488.5	83.2	1,802.2	231.6	10.7	1,695.6	507.4	5,990.9
2003	0.0	13.6	118.2	588.4	471.2	4,394.6	264.7	2,824.5	3,857.2	15.4	7.4	454.9	13,010.1
2004	132.2	707.6	54.3	415.1	23.2	293.8	468.7	1,071.7	653.2	748.1	215.4	535.9	5,319.1
2005	188.5	573.3	915.7	57.2	748.7	3,606.6	2,028.0	353.4	311.1	2,621.7	386.1	0.3	11,790.5
2006	1.7	339.6	1.9	0.0	29.4	253.6	1,399.0	682.6	462.5	88.0	9.0	258.9	3,526.0
2007	66.6	29.9	2.8	137.1	10.8	136.1	163.0	99.0	232.5	203.1	11.6	44.6	1,137.2
Average	269.3	284.4	297.9	164.6	188.5	1,428.9	1,038.2	897.4	1,193.2	590.5	285.8	234.1	6,872.8

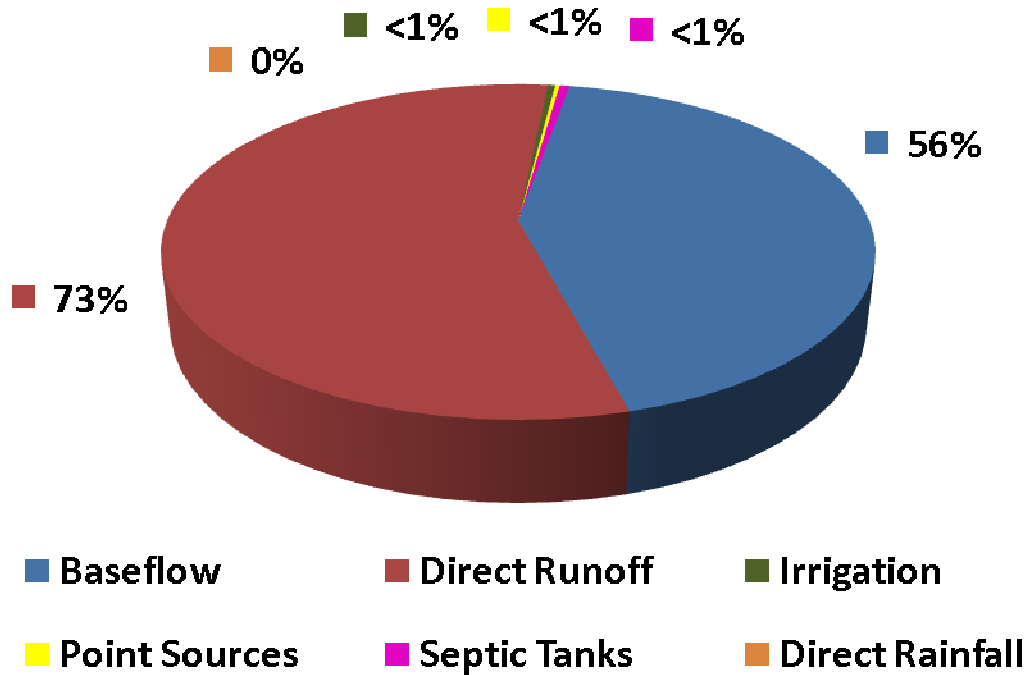


Figure 5-1 Gottfried Creek Basin Current Total Volume Water Budget

Table 5-4 Summary of Annual Current Total Volume Inputs for Gottfried Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	6,049.3	19,521.0	78.4	47.3	51.6	0.0
1996	3,132.2	3,780.3	78.4	47.3	52.2	0.0
1997	2,067.3	5,063.2	78.4	47.3	52.7	0.0
1998	4,793.8	7,291.8	78.4	47.3	52.7	0.0
1999	2,815.2	3,058.6	78.4	15.6	52.7	0.0
2000	1,968.6	2,041.1	78.4	44.4	52.8	0.0
2001	3,715.1	7,816.9	78.4	32.4	52.8	0.0
2002	3,122.9	5,990.9	78.4	32.5	53.0	0.0
2003	5,115.5	13,010.1	79.3	27.3	53.1	0.0
2004	3,414.9	5,319.1	80.2	0.0	53.1	0.0
2005	5,244.5	11,790.5	80.2	0.0	53.2	0.0
2006	3,612.5	3,526.0	80.2	0.0	53.2	0.0
2007	1,540.6	1,137.2	80.2	0.0	53.2	0.0
Average	5,581.1	7,963.9	38.7	26.3	52.8	0.0

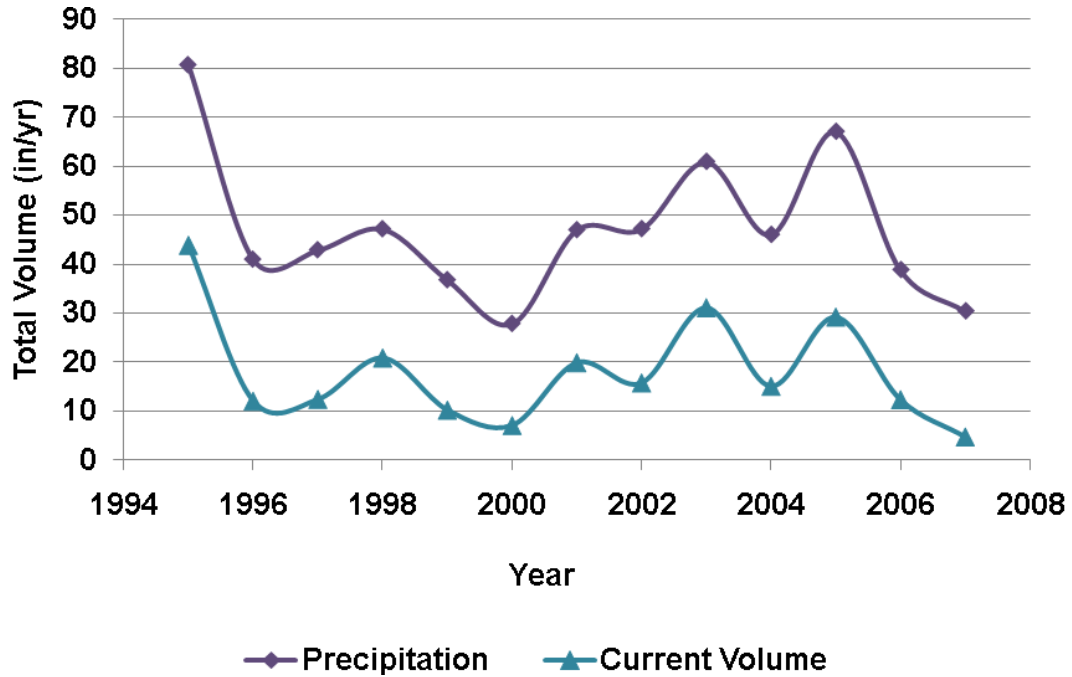


Figure 5-2 Annual Variability of Precipitation and Total Volume for Gottfried Creek Basin

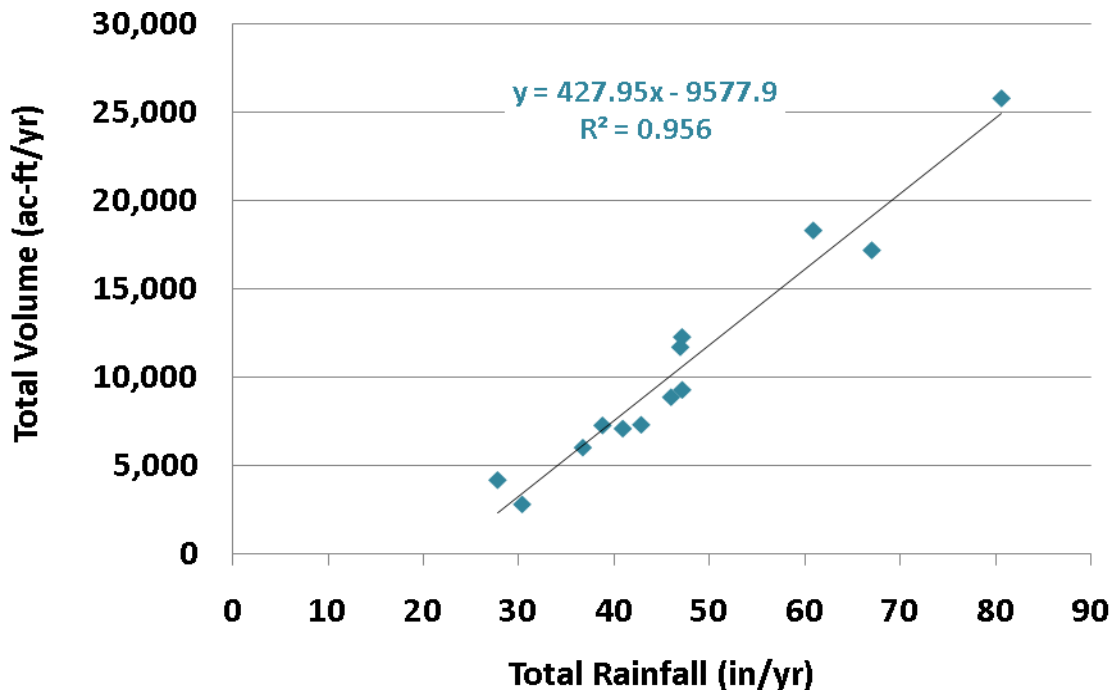


Figure 5-3 Correlation of Annual Total Volume to Rainfall for Gottfried Creek Basin



Table 5-5 Annual Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	43.90	80.63	0.54
1996	12.09	40.93	0.30
1997	12.46	42.86	0.29
1998	20.91	47.15	0.44
1999	10.27	36.75	0.28
2000	7.14	27.81	0.26
2001	19.94	46.96	0.42
2002	15.82	47.17	0.34
2003	31.18	60.90	0.51
2004	15.12	46.00	0.33
2005	29.27	67.03	0.44
2006	12.40	38.81	0.32
2007	4.79	30.39	0.16
Average	18.10	47.18	0.36

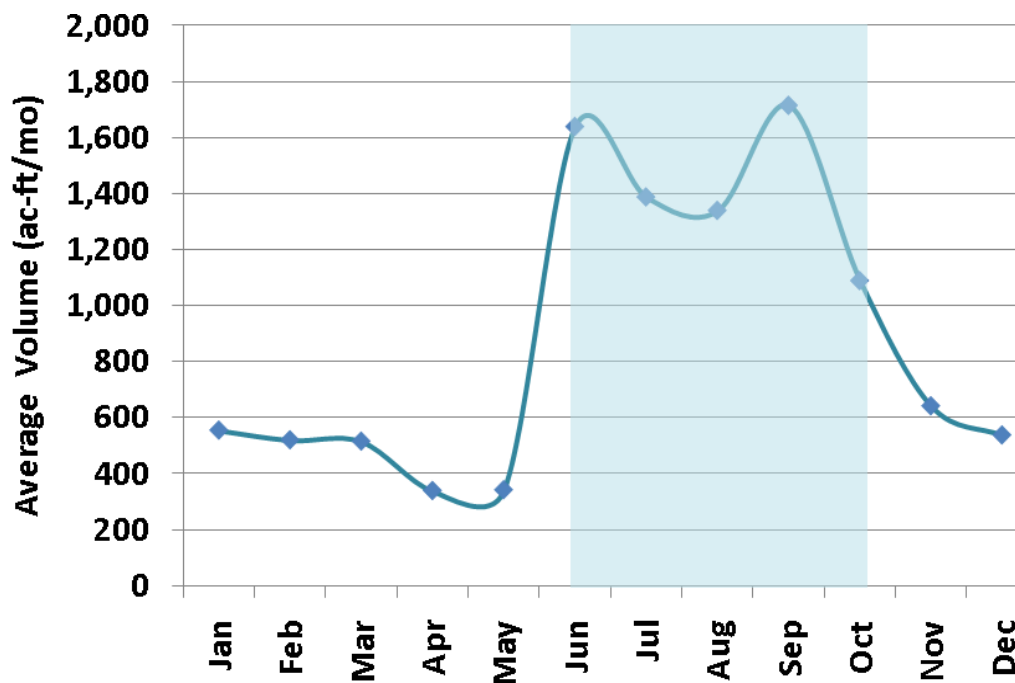


Figure 5-4 Variability of Average Monthly Total Volume in Gottfried Creek Basin



Table 5-6 Average Monthly Rainfall to Total Volume Coefficients for Gottfried Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.94	1.90	0.50
Feb	0.89	2.02	0.44
Mar	0.88	2.32	0.38
Apr	0.58	2.03	0.28
May	0.58	2.05	0.28
Jun	2.79	8.40	0.33
Jul	2.37	7.21	0.33
Aug	2.28	6.90	0.33
Sep	2.92	7.10	0.41
Oct	1.86	3.43	0.54
Nov	1.09	1.79	0.61
Dec	0.92	2.02	0.45

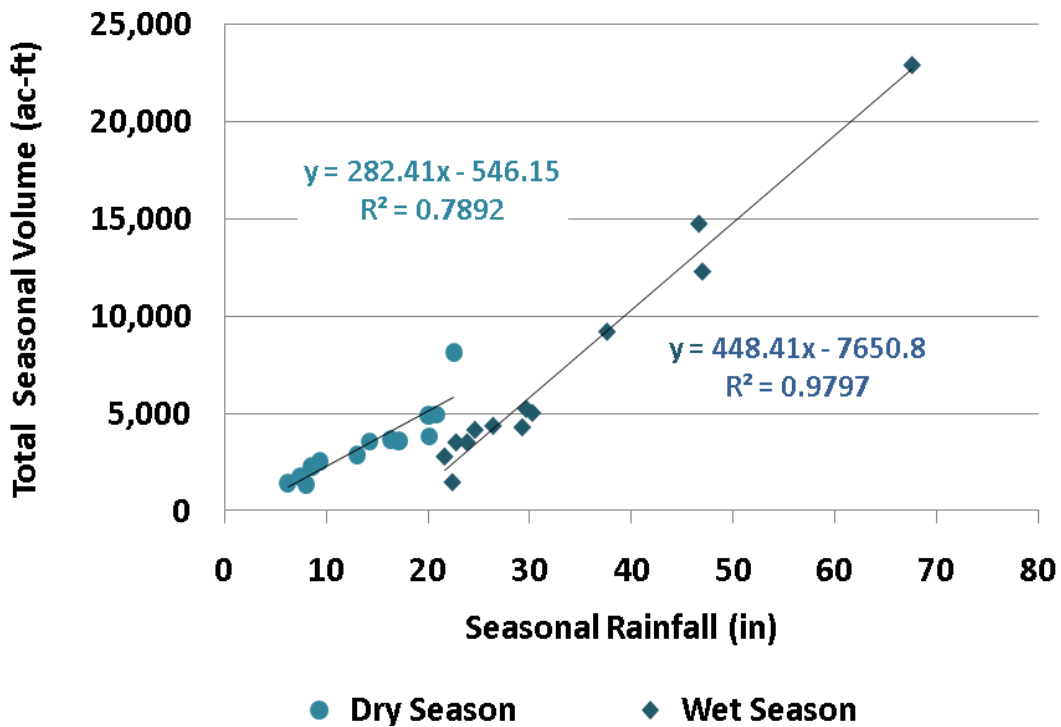


Figure 5-5 Correlation of Seasonal Total Volume to Rainfall for Gottfried Creek Basin



Table 5-7 Wet Season Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	39.00	67.61	0.58
1996	5.95	23.84	0.25
1997	5.96	22.75	0.26
1998	7.05	24.61	0.29
1999	7.27	29.27	0.25
2000	4.71	21.62	0.22
2001	15.65	37.60	0.42
2002	7.40	26.40	0.28
2003	25.10	46.64	0.54
2004	8.89	29.65	0.30
2005	20.91	46.99	0.45
2006	8.54	30.26	0.28
2007	2.46	22.39	0.11
Average	12.22	33.05	0.32

Table 5-8 Dry Season Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	4.90	13.02	0.38
1996	6.13	17.09	0.36
1997	6.51	20.11	0.32
1998	13.86	22.54	0.61
1999	2.99	7.48	0.40
2000	2.42	6.19	0.39
2001	4.29	9.36	0.46
2002	8.42	20.77	0.41
2003	6.07	14.25	0.43
2004	6.23	16.35	0.38
2005	8.36	20.05	0.42
2006	3.86	8.55	0.45
2007	2.33	8.00	0.29
Average	5.88	14.14	0.41

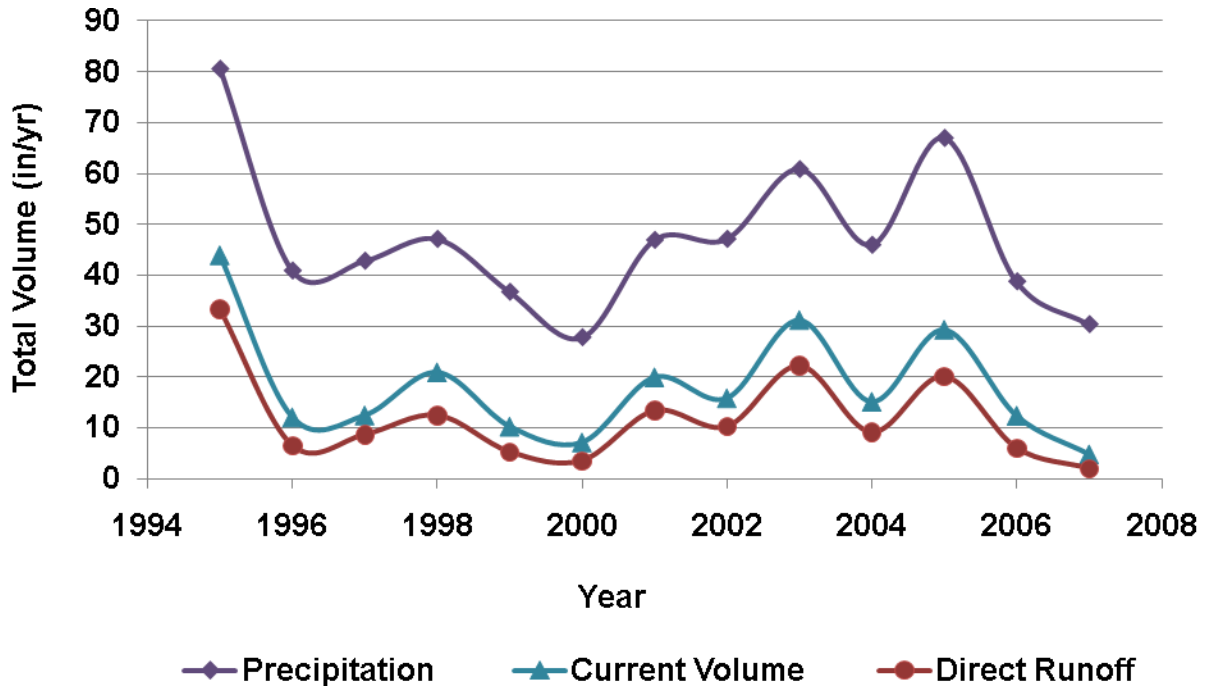


Figure 5-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Gottfried Creek Basin

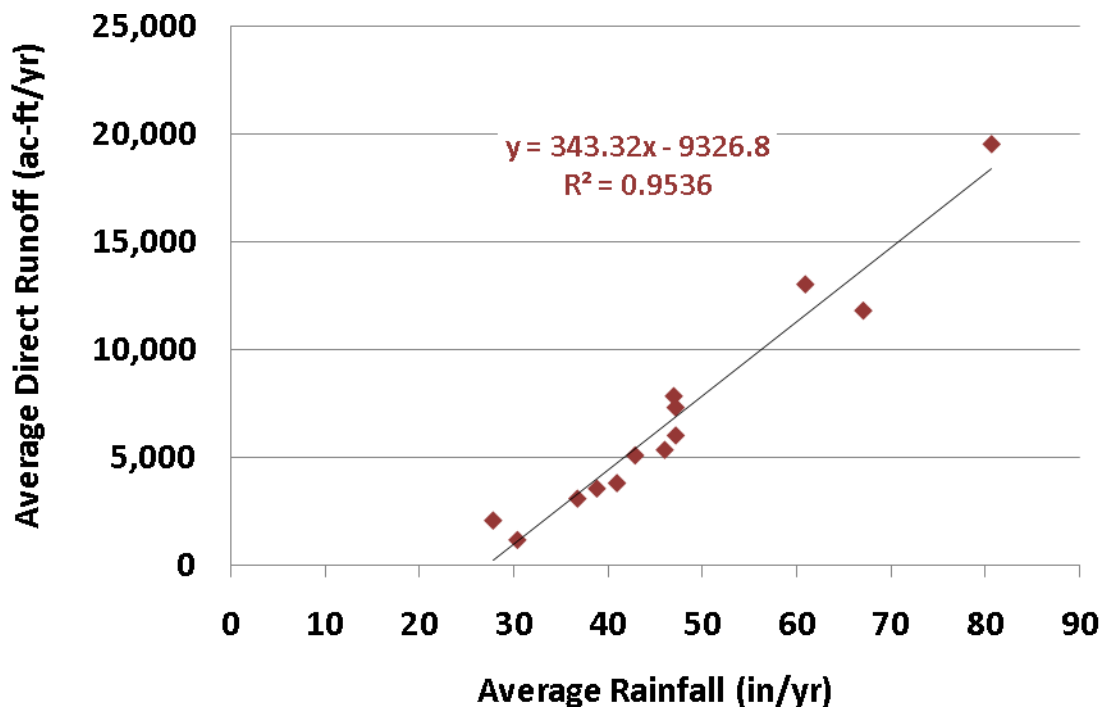


Figure 5-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 5-9 Annual Direct Runoff to Rainfall Coefficients for Gottfried Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	33.28	80.63	0.41
1996	6.45	40.93	0.16
1997	8.63	42.86	0.20
1998	12.43	47.15	0.26
1999	5.21	36.75	0.14
2000	3.48	27.81	0.13
2001	13.33	46.96	0.28
2002	10.21	47.17	0.22
2003	22.18	60.90	0.36
2004	9.07	46.00	0.20
2005	20.10	67.03	0.30
2006	6.01	38.81	0.15
2007	1.94	30.39	0.06
Average	11.72	47.18	0.22

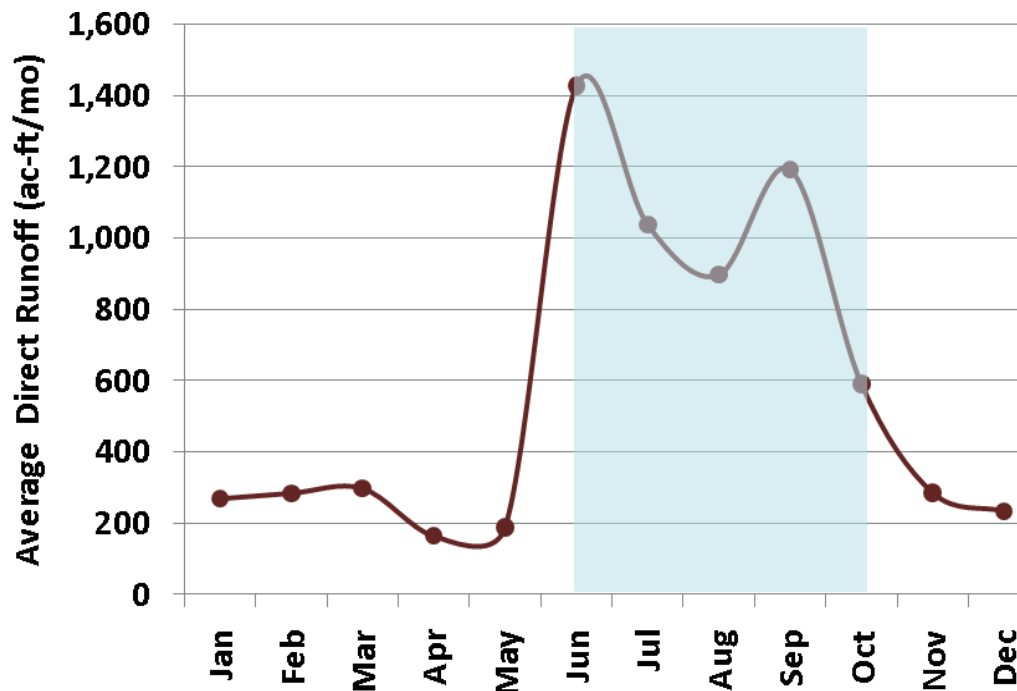


Figure 5-8 Variability of Average Monthly Direct Runoff to Gottfried Creek Basin



Table 5-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.46	1.90	0.24
Feb	0.48	2.02	0.24
Mar	0.51	2.32	0.22
Apr	0.28	2.03	0.14
May	0.32	2.05	0.16
Jun	2.44	8.40	0.29
Jul	1.77	7.21	0.25
Aug	1.53	6.90	0.22
Sep	2.03	7.10	0.29
Oct	1.01	3.43	0.29
Nov	0.49	1.79	0.27
Dec	0.40	2.02	0.20

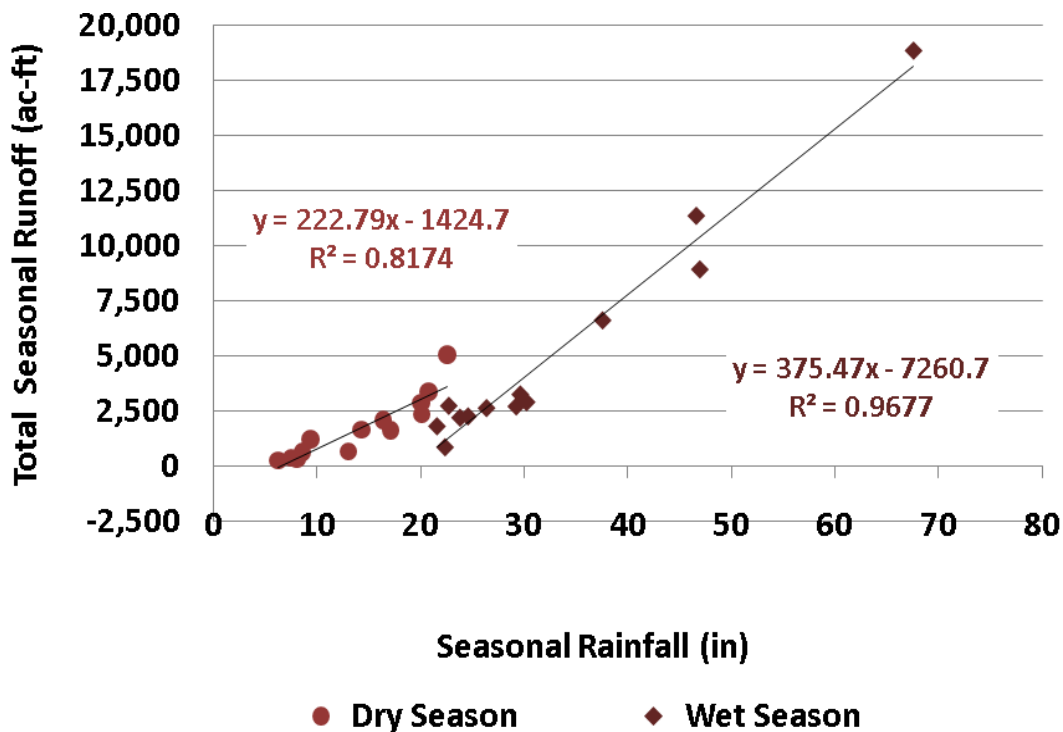


Figure 5-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 5-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	32.16	67.61	0.48
1996	3.71	23.84	0.16
1997	4.63	22.75	0.20
1998	3.82	24.61	0.16
1999	4.58	29.27	0.16
2000	3.05	21.62	0.14
2001	11.26	37.60	0.30
2002	4.46	26.40	0.17
2003	19.36	46.64	0.42
2004	5.52	29.65	0.19
2005	15.21	46.99	0.32
2006	4.92	30.26	0.16
2007	1.42	22.39	0.06
Average	8.78	33.05	0.22

Table 5-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	1.12	13.02	0.09
1996	2.73	17.09	0.16
1997	4.00	20.11	0.20
1998	8.61	22.54	0.38
1999	0.63	7.48	0.08
2000	0.43	6.19	0.07
2001	2.07	9.36	0.22
2002	5.75	20.77	0.28
2003	2.82	14.25	0.20
2004	3.55	16.35	0.22
2005	4.89	20.05	0.24
2006	1.09	8.55	0.13
2007	0.52	8.00	0.06
Average	2.94	14.14	0.18



5.2 HISTORICAL CONDITIONS

Table 5-13 Historical Total Volume for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	500.6	244.7	180.6	151.4	125.3	8,295.6	5,127.7	2,067.8	2,500.4	2,829.9	384.3	260.1	22,668.2
1949	555.9	225.1	341.1	276.5	847.8	241.5	220.9	329.8	367.7	1,254.3	220.5	195.2	5,076.4
1950	308.9	129.2	210.4	481.6	101.0	237.6	159.5	143.2	2,027.8	281.1	559.0	1,313.5	5,952.9
1951	2,342.0	1,496.2	1,268.1	235.2	251.0	223.9	1,032.5	547.7	1,305.4	348.1	1,006.6	207.2	10,263.8
1952	260.2	138.0	150.0	112.9	102.3	237.6	741.5	508.0	1,548.9	475.7	233.5	328.4	4,837.0
1953	252.0	140.1	133.8	151.7	99.8	111.8	119.2	1,018.4	707.2	198.4	166.3	146.6	3,245.3
1954	127.0	100.7	1,102.3	131.9	111.6	560.7	3,096.6	1,486.1	2,706.5	377.7	242.7	212.9	10,256.6
1955	182.3	925.5	146.6	148.7	269.7	642.2	187.9	1,902.1	593.1	255.7	1,790.9	854.0	7,898.7
1956	305.4	220.0	279.4	720.7	581.6	4,906.0	640.2	3,250.6	4,220.4	316.1	226.0	591.0	16,257.3
1957	253.4	710.3	198.1	543.8	135.1	290.6	592.2	1,353.9	1,003.2	891.2	392.0	718.1	7,082.0
1958	298.9	632.9	929.4	126.3	616.0	3,912.0	2,414.6	553.7	436.8	2,859.6	734.6	285.9	13,800.7
1959	237.7	479.8	172.2	144.6	131.9	274.0	1,682.0	964.1	768.7	308.0	206.5	401.8	5,771.2
1960	206.1	129.3	110.9	161.4	84.7	105.6	113.3	91.3	198.8	209.7	102.5	101.5	1,615.0
Average	448.5	428.6	401.8	260.5	266.0	1,541.5	1,240.6	1,093.6	1,414.2	815.8	482.0	432.0	8,825.0



Table 5-14 Historical Direct Runoff for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	305.97	75.55	9.57	11.75	0.04	7,985.45	4,671.61	1,575.89	1,989.37	2,285.42	9.45	2.90	18,922.96
1949	293.87	11.30	148.40	117.92	705.39	120.17	111.90	233.19	271.01	988.62	0.18	1.13	3,003.08
1950	142.98	0.02	85.29	375.16	0.92	152.53	82.94	72.48	1,926.96	114.43	415.25	1,031.94	4,400.92
1951	1,937.10	1,060.08	934.36	0.06	43.33	51.37	814.29	304.31	981.59	14.04	767.25	0.06	6,907.83
1952	83.35	0.00	16.57	0.06	0.05	150.23	582.94	333.39	1,265.03	128.19	0.81	123.15	2,683.77
1953	78.01	0.00	3.27	41.60	0.30	27.19	41.95	900.24	512.52	0.46	2.61	0.19	1,608.35
1954	0.00	0.00	1,001.45	7.91	0.66	464.45	2,763.43	1,053.75	2,299.46	39.77	1.27	0.00	7,632.17
1955	0.01	781.31	5.89	30.81	163.02	538.71	39.41	1,722.28	191.56	0.48	1,576.36	543.54	5,593.38
1956	0.00	0.17	70.44	547.15	424.44	4,607.73	236.80	2,774.96	3,778.08	3.79	0.10	389.48	12,833.14
1957	86.06	567.92	20.57	396.70	3.18	179.12	459.90	1,026.59	640.08	631.00	182.29	532.05	4,725.47
1958	132.71	503.89	793.66	6.11	506.42	3,557.02	1,953.52	244.31	175.25	2,529.53	351.36	0.67	10,754.45
1959	0.00	296.94	0.03	0.00	1.66	163.67	1,445.99	610.17	458.38	53.04	1.15	219.58	3,250.62
1960	51.49	12.06	0.05	67.93	0.23	34.15	48.75	33.11	136.80	115.74	1.72	13.80	515.83
Average	239.35	254.56	237.66	123.32	142.28	1,387.06	1,019.50	837.28	1,125.08	531.12	254.60	219.88	6,371.69

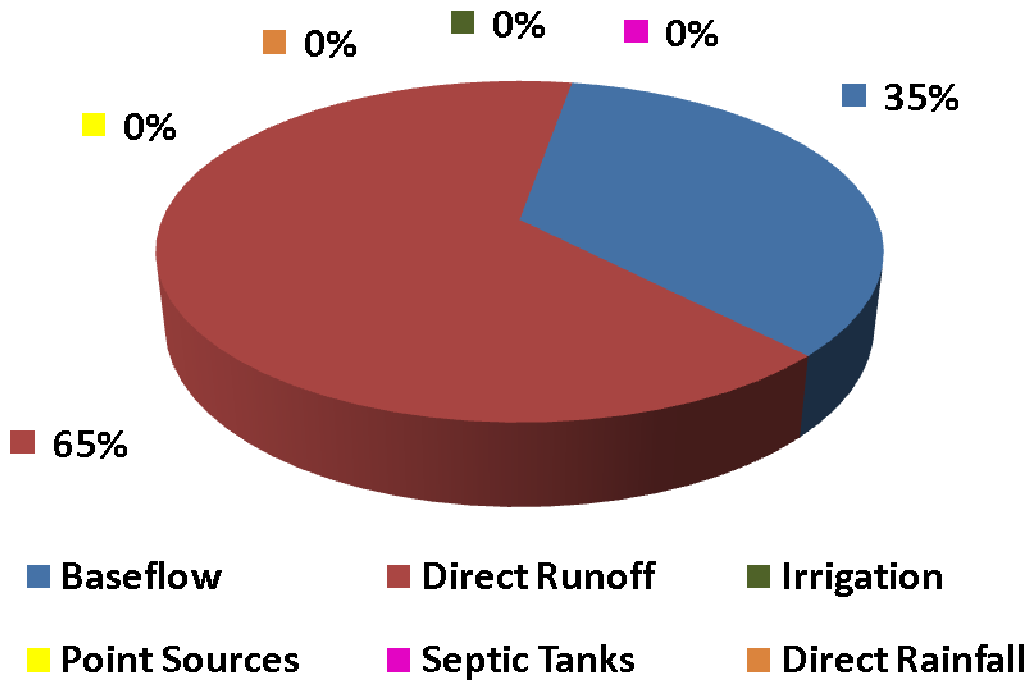


Figure 5-10 Gottfried Creek Basin Historical Total Volume Water Budget

	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	3,745.3	18,923.0	0.0	0.0	0.0	0.0
1949	2,073.3	3,003.1	0.0	0.0	0.0	0.0
1950	1,552.0	4,400.9	0.0	0.0	0.0	0.0
1951	3,356.0	6,907.8	0.0	0.0	0.0	0.0
1952	2,153.2	2,683.8	0.0	0.0	0.0	0.0
1953	1,637.0	1,608.4	0.0	0.0	0.0	0.0
1954	2,624.5	7,632.2	0.0	0.0	0.0	0.0
1955	2,305.3	5,593.4	0.0	0.0	0.0	0.0
1956	3,424.1	12,833.1	0.0	0.0	0.0	0.0
1957	2,356.5	4,725.5	0.0	0.0	0.0	0.0
1958	3,046.2	10,754.5	0.0	0.0	0.0	0.0
1959	2,520.6	3,250.6	0.0	0.0	0.0	0.0
1960	1,099.2	515.8	0.0	0.0	0.0	0.0
Average	2,453.3	6,371.7	0.0	0.0	0.0	0.0

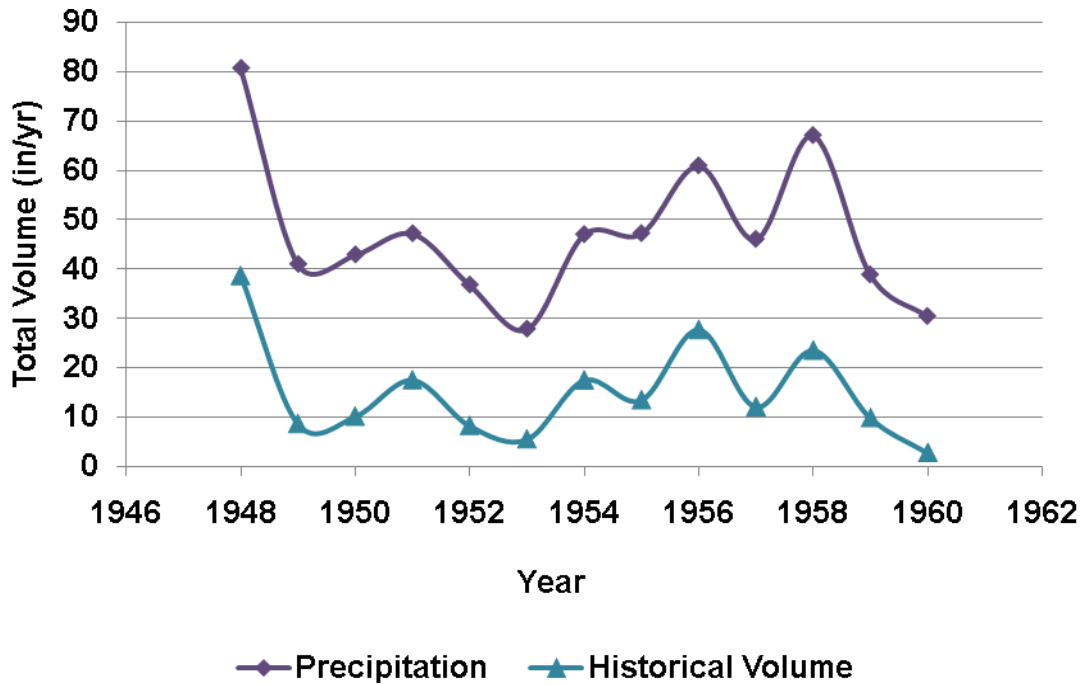


Figure 5-11 Annual Historical Variability of Precipitation and Total Volume for Gottfried Creek Basin

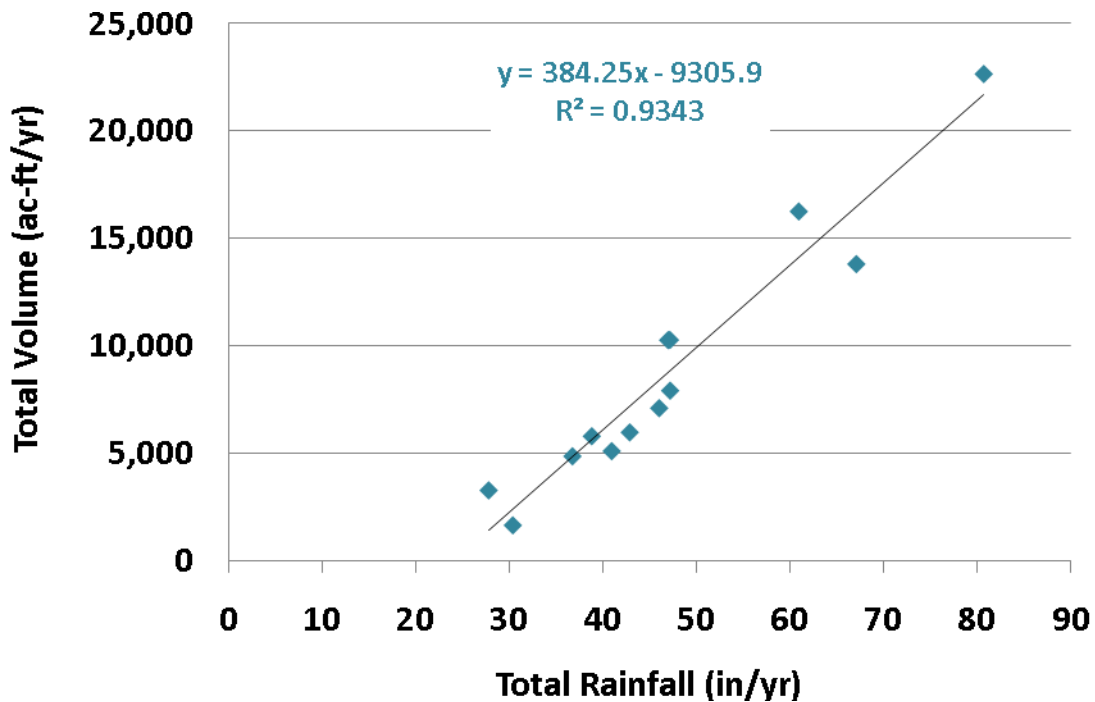


Figure 5-12 Correlation of Annual Total Volume to Rainfall for Gottfried Creek Basin



Table 5-16 Annual Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	38.65	80.63	0.48
1949	8.66	40.93	0.21
1950	10.15	42.86	0.24
1951	17.50	47.15	0.37
1952	8.25	36.75	0.22
1953	5.53	27.81	0.20
1954	17.49	46.96	0.37
1955	13.47	47.17	0.29
1956	27.72	60.90	0.46
1957	12.07	46.00	0.26
1958	23.53	67.03	0.35
1959	9.84	38.81	0.25
1960	2.75	30.39	0.09
Average	15.05	47.18	0.29

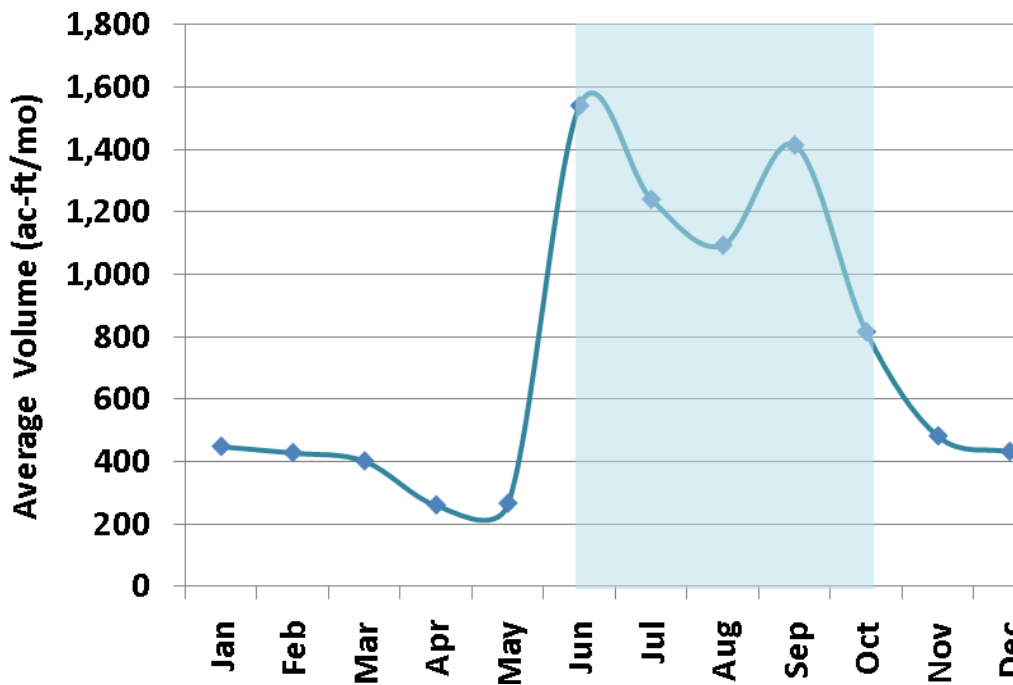


Figure 5-13 Variability of Average Monthly Total Volume in Gottfried Creek Basin



Table 5-17 Average Monthly Rainfall to Total Volume Coefficients for Gottfried Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.76	1.90	0.40
Feb	0.73	2.02	0.36
Mar	0.69	2.32	0.30
Apr	0.44	2.03	0.22
May	0.45	2.05	0.22
Jun	2.63	8.40	0.31
Jul	2.12	7.21	0.29
Aug	1.86	6.90	0.27
Sep	2.41	7.10	0.34
Oct	1.39	3.43	0.41
Nov	0.82	1.79	0.46
Dec	0.74	2.02	0.36

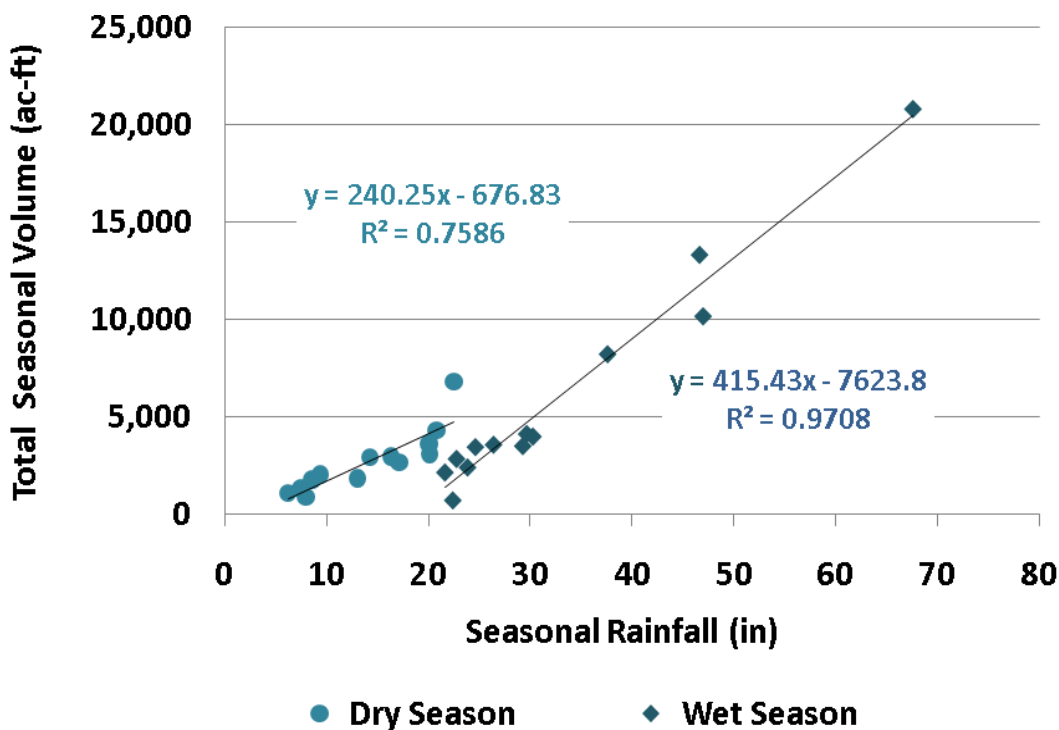


Figure 5-14 Correlation of Seasonal Total Volume to Rainfall for Gottfried Creek Basin



Table 5-18 Wet season Total Volume to Rainfall Coefficients for Gottfried Creek Basin

	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	35.50	67.61	0.53
1949	4.12	23.84	0.17
1950	4.86	22.75	0.21
1951	5.90	24.61	0.24
1952	5.99	29.27	0.20
1953	3.67	21.62	0.17
1954	14.03	37.60	0.37
1955	6.11	26.40	0.23
1956	22.73	46.64	0.49
1957	7.04	29.65	0.24
1958	17.35	46.99	0.37
1959	6.81	30.26	0.23
1960	1.23	22.39	0.05
Average	10.41	33.05	0.27

Table 5-19 Dry season Total Volume to Rainfall Coefficients for Gottfried Creek Basin

	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	3.15	13.02	0.24
1949	4.54	17.09	0.27
1950	5.29	20.11	0.26
1951	11.60	22.54	0.51
1952	2.26	7.48	0.30
1953	1.86	6.19	0.30
1954	3.46	9.36	0.37
1955	7.36	20.77	0.35
1956	4.99	14.25	0.35
1957	5.03	16.35	0.31
1958	6.18	20.05	0.31
1959	3.03	8.55	0.35
1960	1.53	8.00	0.19
Average	4.64	14.14	0.32

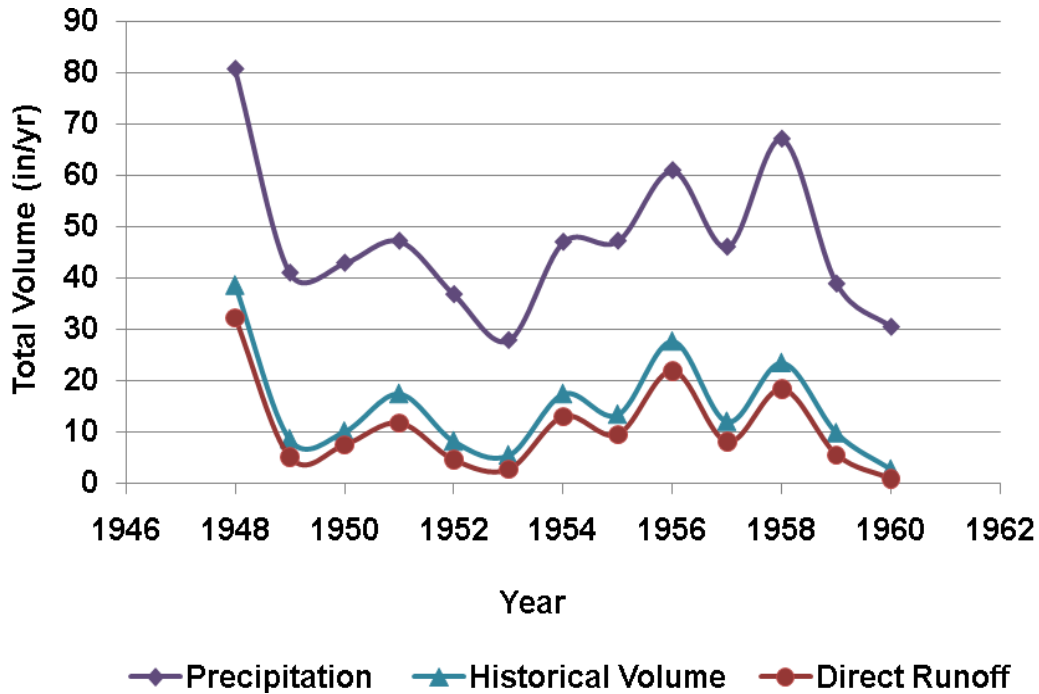


Figure 5-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Gottfried Creek Basin

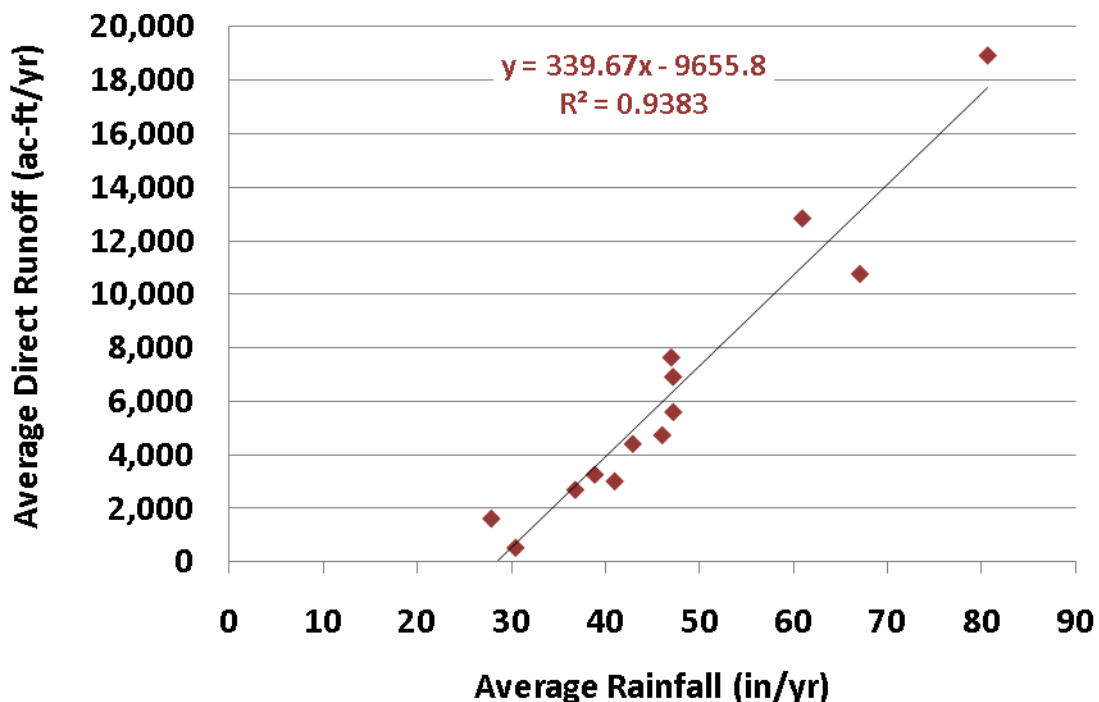


Figure 5-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 5-20 Annual Direct Runoff to Rainfall Coefficients for Gottfried Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	32.26	80.63	0.40
1949	5.12	40.93	0.13
1950	7.50	42.86	0.18
1951	11.78	47.15	0.25
1952	4.58	36.75	0.12
1953	2.74	27.81	0.10
1954	13.01	46.96	0.28
1955	9.54	47.17	0.20
1956	21.88	60.90	0.36
1957	8.06	46.00	0.18
1958	18.34	67.03	0.27
1959	5.54	38.81	0.14
1960	0.88	30.39	0.03
Average	10.86	47.18	0.20

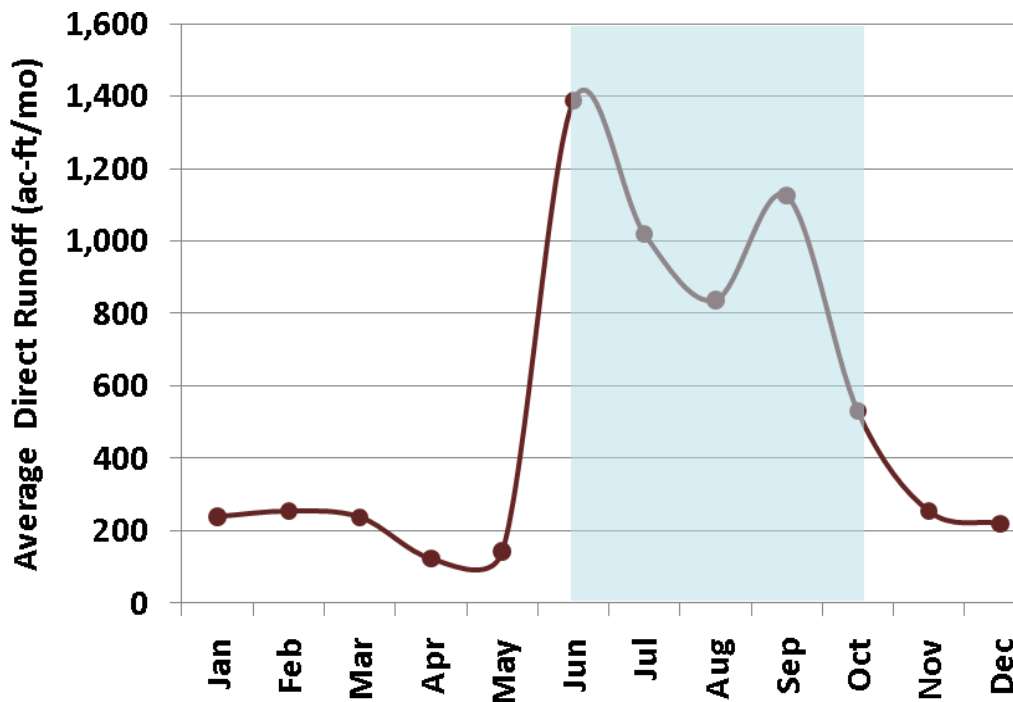


Figure 5-17 Variability of Average Monthly Direct Runoff to Gottfried Creek Basin



Table 5-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.41	1.90	0.21
Feb	0.43	2.02	0.21
Mar	0.41	2.32	0.17
Apr	0.21	2.03	0.10
May	0.24	2.05	0.12
Jun	2.36	8.40	0.28
Jul	1.74	7.21	0.24
Aug	1.43	6.90	0.21
Sep	1.92	7.10	0.27
Oct	0.91	3.43	0.26
Nov	0.43	1.79	0.24
Dec	0.37	2.02	0.19

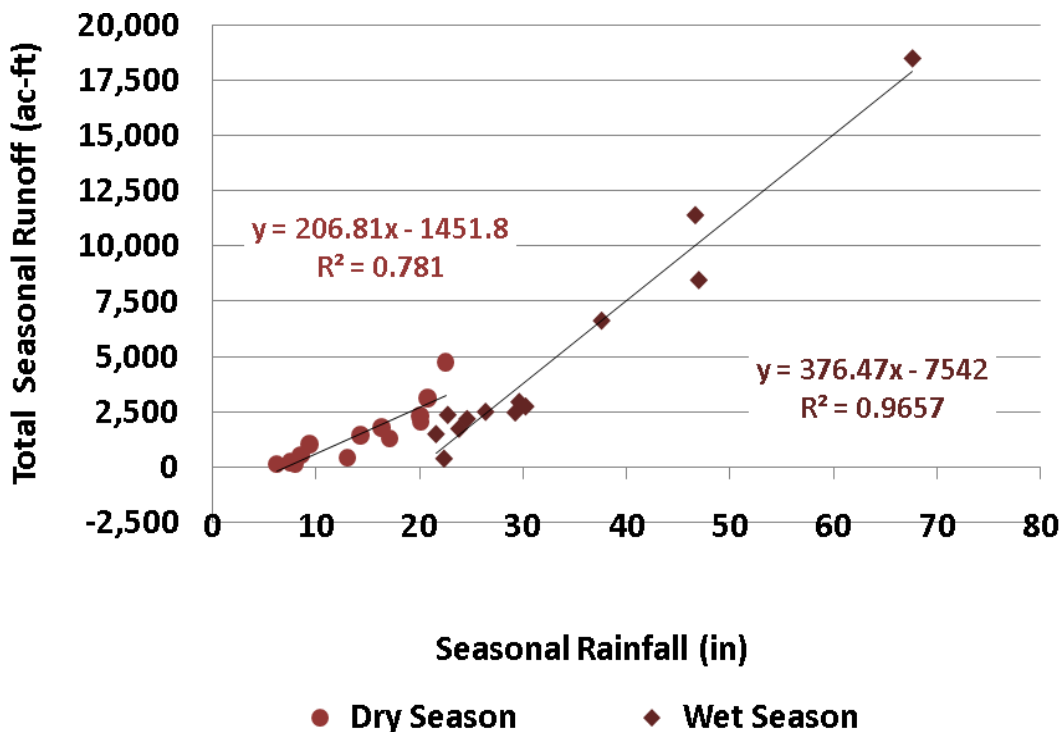


Figure 5-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 5-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	31.56	67.61	0.47
1949	2.94	23.84	0.12
1950	4.01	22.75	0.18
1951	3.69	24.61	0.15
1952	4.19	29.27	0.14
1953	2.53	21.62	0.12
1954	11.29	37.60	0.30
1955	4.25	26.40	0.16
1956	19.44	46.64	0.42
1957	5.01	29.65	0.17
1958	14.42	46.99	0.31
1959	4.66	30.26	0.15
1960	0.63	22.39	0.03
Average	8.35	33.05	0.21

Table 5-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.71	13.02	0.05
1949	2.18	17.09	0.13
1950	3.50	20.11	0.17
1951	8.09	22.54	0.36
1952	0.38	7.48	0.05
1953	0.21	6.19	0.03
1954	1.72	9.36	0.18
1955	5.29	20.77	0.25
1956	2.44	14.25	0.17
1957	3.05	16.35	0.19
1958	3.91	20.05	0.20
1959	0.89	8.55	0.10
1960	0.25	8.00	0.03
Average	2.51	14.14	0.15



5.3 FUTURE CONDITIONS

Table 5-24 Future Total Volume for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	912.3	621.2	472.4	401.6	203.5	8,873.3	6,540.5	3,573.7	4,067.8	4,504.4	1,103.9	698.7	31,973.1
2016	1,065.1	483.4	685.8	422.3	1,151.6	546.4	642.3	863.6	1,019.6	2,285.6	609.8	444.3	10,219.7
2017	479.6	194.9	302.3	638.5	170.3	340.5	276.1	294.2	2,694.0	646.3	946.8	1,782.5	8,765.9
2018	2,876.6	2,015.0	2,162.5	583.9	515.2	427.0	1,255.1	934.4	2,098.2	1,059.9	1,652.6	413.0	15,993.5
2019	467.1	188.1	250.5	131.7	118.4	467.7	856.6	942.1	2,410.4	1,182.7	591.1	625.3	8,231.6
2020	373.1	200.8	198.0	239.5	120.5	294.9	268.4	1,354.9	1,219.1	424.5	296.4	231.6	5,221.7
2021	162.3	117.5	1,603.7	117.1	90.3	637.9	3,032.2	2,222.0	3,982.7	1,232.2	612.9	406.5	14,217.5
2022	298.7	976.3	202.0	263.6	487.2	751.6	356.8	2,475.1	1,425.5	718.5	2,356.5	1,240.4	11,552.1
2023	523.7	336.1	389.6	688.3	582.1	4,997.4	1,582.1	5,071.3	5,560.1	1,088.4	619.4	1,010.1	22,448.6
2024	495.5	1,140.4	353.6	622.3	194.3	522.0	934.0	2,133.1	1,992.0	1,735.5	824.9	1,036.7	11,984.4
2025	561.8	784.6	1,389.7	376.7	1,275.7	5,120.5	3,942.0	1,868.8	1,623.2	4,153.4	1,527.5	694.4	23,318.4
2026	419.1	757.9	227.5	161.9	200.9	441.3	1,972.1	1,820.0	1,813.7	994.4	536.2	628.4	9,973.3
2027	378.2	251.0	163.5	336.2	120.4	339.9	361.1	290.5	523.2	624.7	307.7	261.2	3,957.6
Average	693.3	620.6	646.2	383.4	402.3	1,827.7	1,693.8	1,834.1	2,340.7	1,588.5	922.0	728.7	13,681.3



Table 5-25 Future Direct Runoff for Gottfried Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	492.3	229.2	88.6	142.2	7.4	8,269.1	5,087.0	1,798.2	2,334.4	2,661.4	36.6	61.9	21,208.4
2016	440.0	74.8	387.6	202.4	931.4	290.6	328.7	513.7	562.4	1,377.3	20.0	44.5	5,173.4
2017	197.7	5.0	141.1	510.5	51.3	247.7	177.3	187.1	2,481.7	294.5	612.1	1,139.6	6,045.6
2018	1,948.0	893.6	1,255.4	3.5	101.5	132.7	944.2	484.1	1,193.7	82.4	1,049.5	13.7	8,102.3
2019	189.7	0.0	93.2	12.0	20.1	385.6	664.5	603.5	1,666.1	203.1	32.5	241.8	4,112.1
2020	102.5	10.6	42.9	118.1	20.9	214.9	182.3	1,164.4	776.5	12.8	20.5	19.0	2,685.6
2021	0.6	0.0	1,497.9	20.5	12.9	574.0	2,545.1	981.7	2,598.6	130.5	10.1	3.8	8,375.8
2022	15.1	773.9	10.1	123.7	374.6	630.6	146.0	2,059.9	283.3	25.3	1,912.4	658.9	7,013.8
2023	0.0	27.5	145.3	508.2	433.3	4,396.7	336.8	3,359.5	3,996.2	34.4	16.4	587.6	13,841.8
2024	202.9	908.4	91.9	433.6	46.9	406.2	695.2	1,242.4	773.7	892.7	305.7	670.1	6,669.7
2025	267.3	584.1	1,107.4	119.7	1,027.1	4,096.3	2,207.0	557.6	475.7	2,995.2	509.9	0.4	13,947.7
2026	3.7	470.4	3.7	0.0	69.2	334.7	1,575.2	904.6	636.4	144.0	14.4	253.3	4,409.6
2027	104.9	57.8	6.7	220.1	26.5	265.0	289.9	192.3	367.6	322.3	28.3	64.2	1,945.6
Average	305.0	310.4	374.7	185.8	240.2	1,557.2	1,167.6	1,080.7	1,395.9	705.8	351.4	289.1	7,963.9

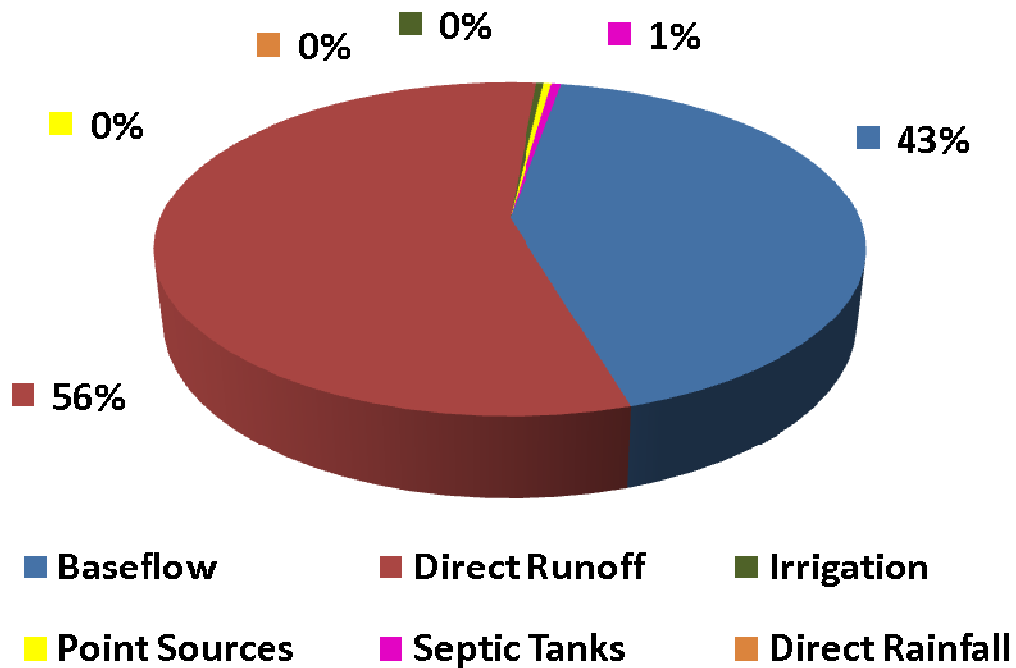


Figure 5-19 Gottfried Creek Basin Future Total Volume Water Budget

Table 5-26 Summary of Annual Future Total Volume Inputs for Gottfried Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	10,600.0	21,208.4	38.7	73.2	52.8	0.0
2016	4,881.5	5,173.4	38.7	73.2	52.8	0.0
2017	2,555.7	6,045.6	38.7	73.2	52.8	0.0
2018	7,726.5	8,102.3	38.7	73.2	52.8	0.0
2019	3,954.4	4,112.1	38.7	73.5	52.8	0.0
2020	2,375.8	2,685.6	38.7	68.7	52.8	0.0
2021	5,700.0	8,375.8	38.7	50.2	52.8	0.0
2022	4,396.5	7,013.8	38.7	50.3	52.8	0.0
2023	8,469.2	13,841.8	38.7	46.0	52.8	0.0
2024	5,223.2	6,669.7	38.7	0.0	52.8	0.0
2025	9,279.2	13,947.7	38.7	0.0	52.8	0.0
2026	5,472.3	4,409.6	38.7	0.0	52.8	0.0
2027	1,920.5	1,945.6	38.7	0.0	52.8	0.0
Average	5,581.1	7,963.9	38.7	44.7	52.8	0.0

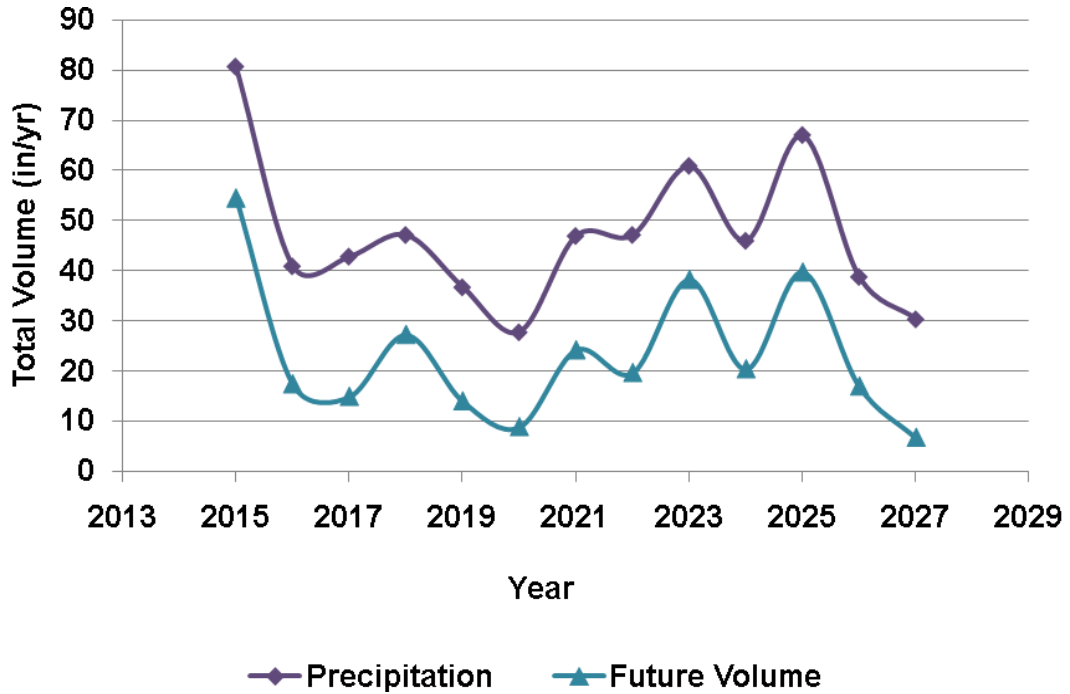


Figure 5-20 Annual Variability of Precipitation and Total Volume for Gottfried Creek Basin

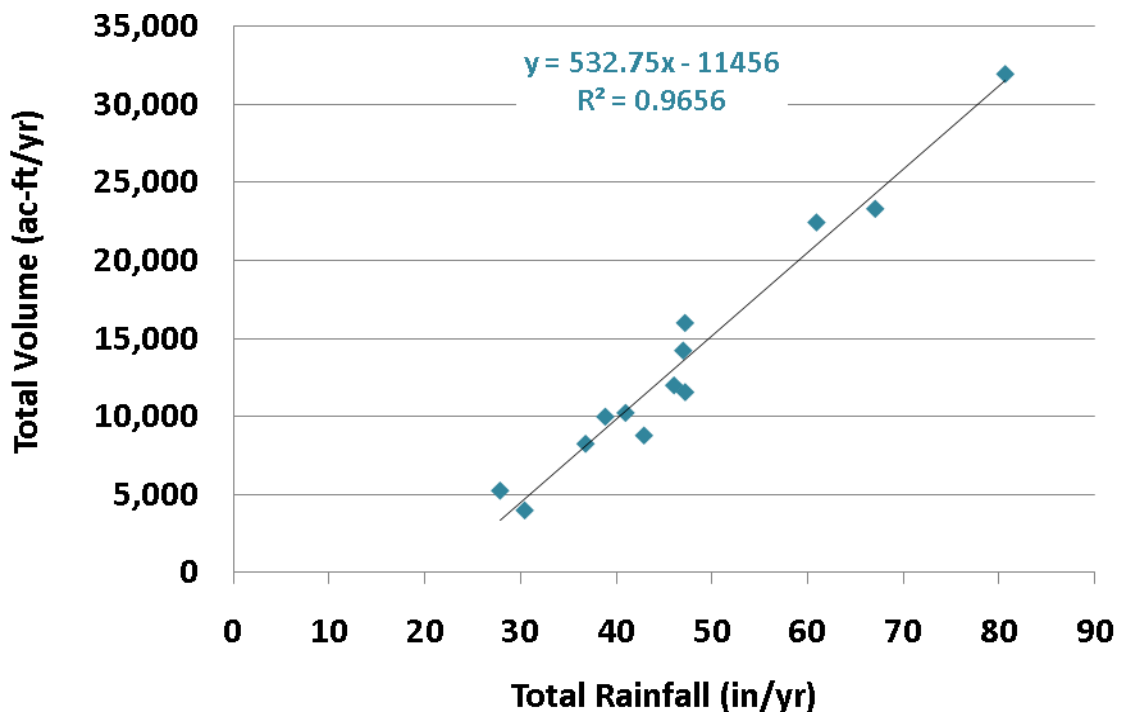


Figure 5-21 Correlation of Annual Total Volume to Rainfall for Gottfried Creek Basin



Table 5-27 Annual Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	54.51	80.63	0.68
2016	17.42	40.93	0.43
2017	14.95	42.86	0.35
2018	27.27	47.15	0.58
2019	14.03	36.75	0.38
2020	8.90	27.81	0.32
2021	24.24	46.96	0.52
2022	19.70	47.17	0.42
2023	38.27	60.90	0.63
2024	20.43	46.00	0.44
2025	39.76	67.03	0.59
2026	17.00	38.81	0.44
2027	6.75	30.39	0.22
Average	23.33	47.18	0.46

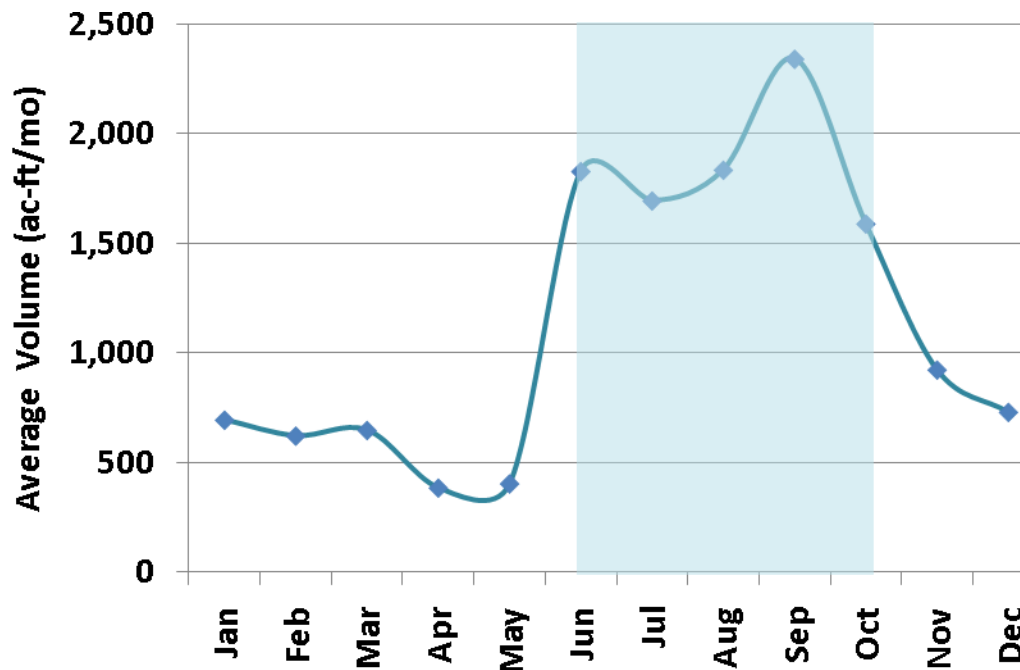


Figure 5-22 Variability of Average Monthly Total Volume in Gottfried Creek Basin



Table 5-28 Average Monthly Rainfall to Total Volume Coefficients for Gottfried Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.18	1.90	0.62
Feb	1.06	2.02	0.52
Mar	1.10	2.32	0.48
Apr	0.65	2.03	0.32
May	0.69	2.05	0.33
Jun	3.12	8.40	0.37
Jul	2.89	7.21	0.40
Aug	3.13	6.90	0.45
Sep	3.99	7.10	0.56
Oct	2.71	3.43	0.79
Nov	1.57	1.79	0.88
Dec	1.24	2.02	0.61

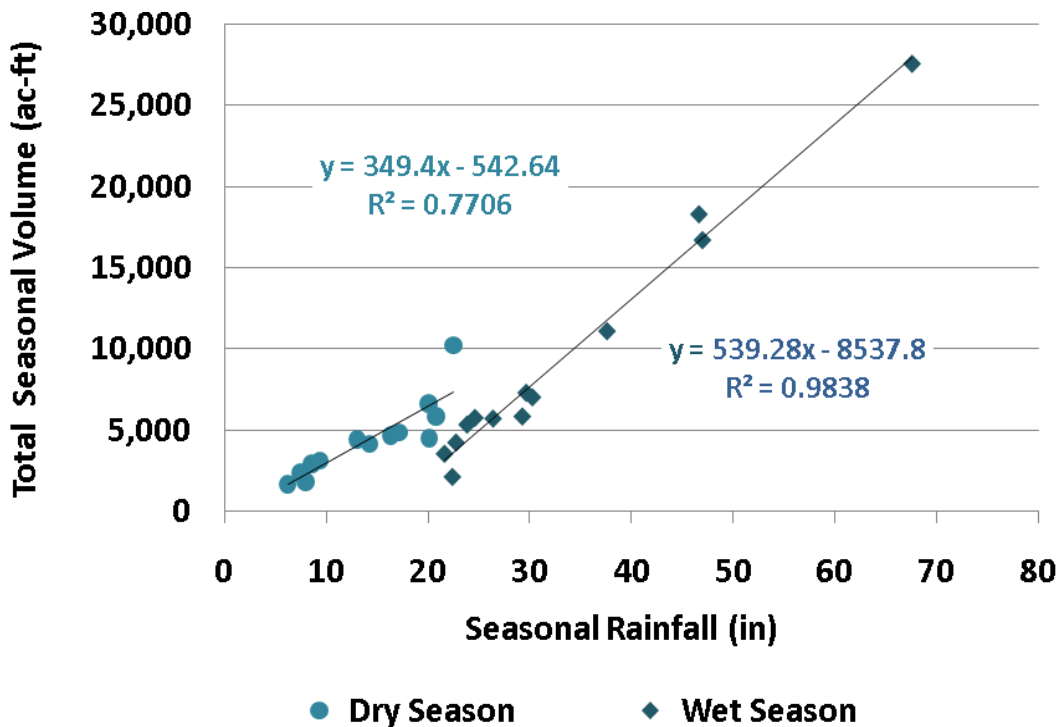


Figure 5-23 Correlation of Seasonal Total Volume to Rainfall for Gottfried Creek Basin



Table 5-29 Wet Season Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	46.99	67.61	0.70
2016	9.13	23.84	0.38
2017	7.25	22.75	0.32
2018	9.85	24.61	0.40
2019	9.99	29.27	0.34
2020	6.07	21.62	0.28
2021	18.94	37.60	0.50
2022	9.77	26.40	0.37
2023	31.20	46.64	0.67
2024	12.47	29.65	0.42
2025	28.49	46.99	0.61
2026	12.01	30.26	0.40
2027	3.65	22.39	0.16
Average	15.83	33.05	0.43

Table 5-30 Dry Season Total Volume to Rainfall Coefficients for Gottfried Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	7.53	13.02	0.58
2016	8.29	17.09	0.48
2017	7.70	20.11	0.38
2018	17.42	22.54	0.77
2019	4.04	7.48	0.54
2020	2.83	6.19	0.46
2021	5.30	9.36	0.57
2022	9.93	20.77	0.48
2023	7.07	14.25	0.50
2024	7.96	16.35	0.49
2025	11.27	20.05	0.56
2026	5.00	8.55	0.58
2027	3.10	8.00	0.39
Average	7.50	14.14	0.52

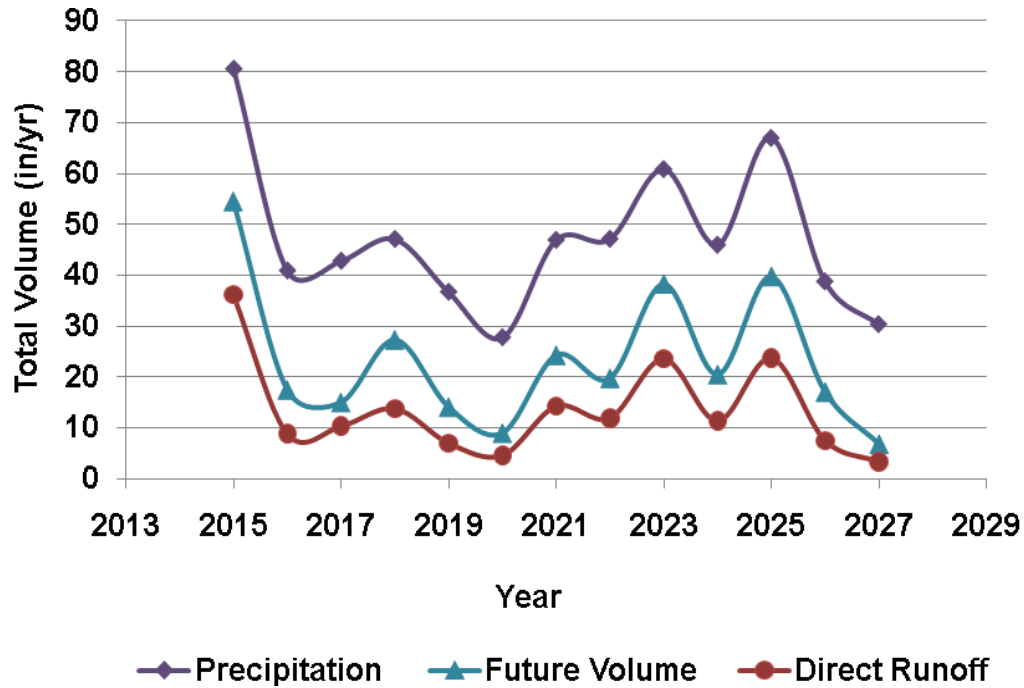


Figure 5-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Gottfried Creek Basin

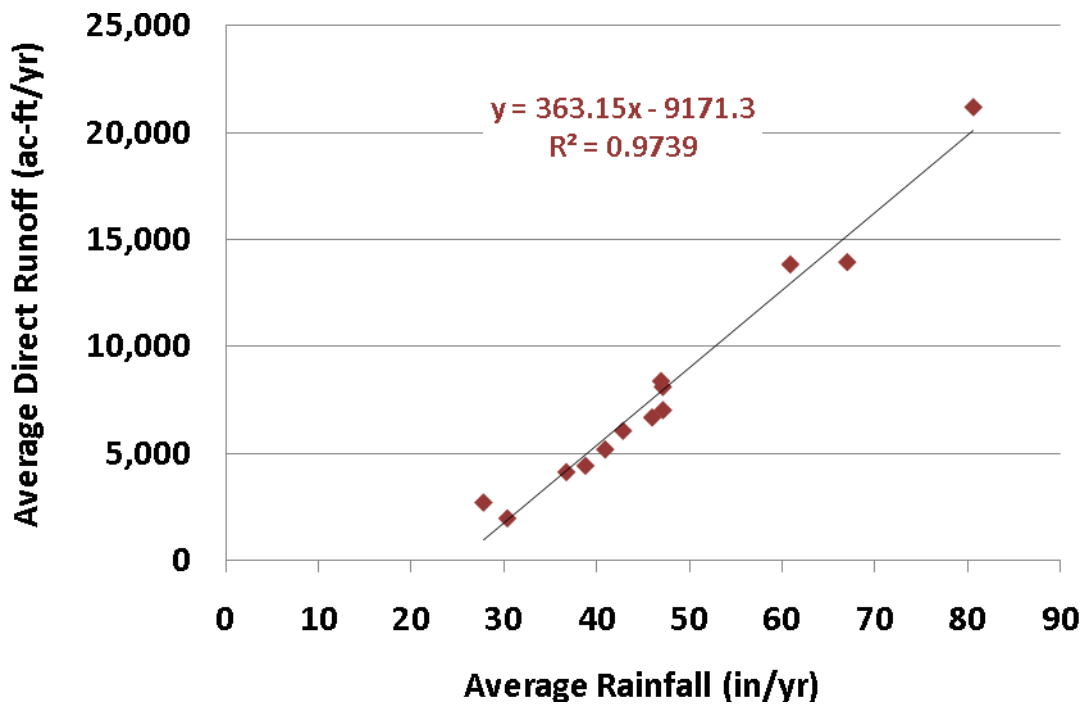


Figure 5-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 5-31 Annual Direct Runoff to Rainfall Coefficients for Gottfried Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	36.16	80.63	0.45
2016	8.82	40.93	0.22
2017	10.31	42.86	0.24
2018	13.81	47.15	0.29
2019	7.01	36.75	0.19
2020	4.58	27.81	0.16
2021	14.28	46.96	0.30
2022	11.96	47.17	0.25
2023	23.60	60.90	0.39
2024	11.37	46.00	0.25
2025	23.78	67.03	0.35
2026	7.52	38.81	0.19
2027	3.32	30.39	0.11
Average	13.58	47.18	0.26

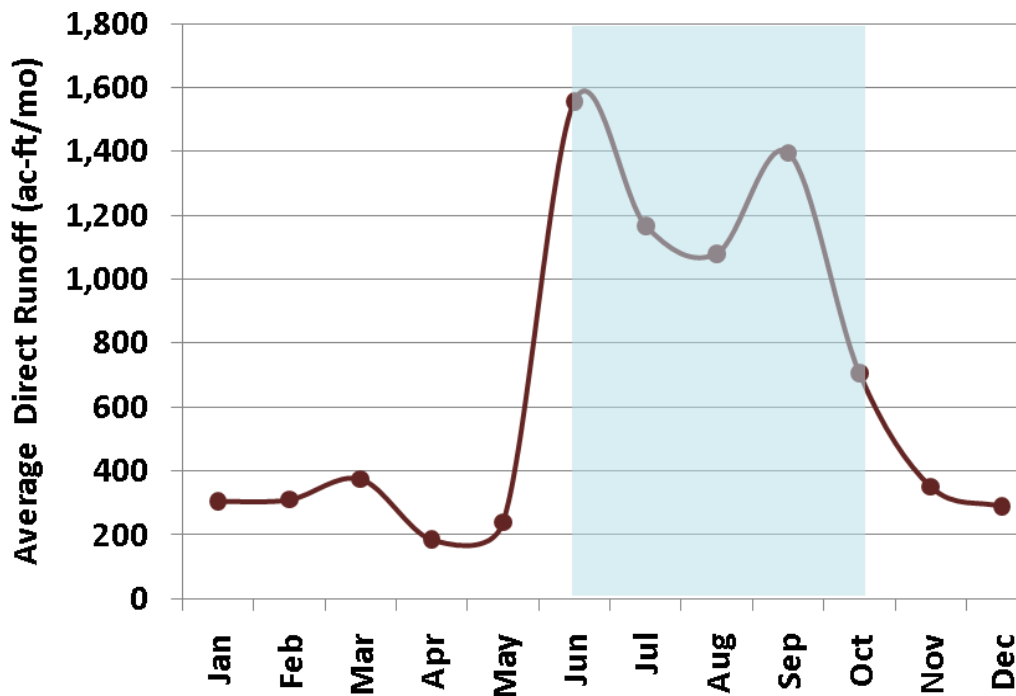


Figure 5-26 Variability of Average Monthly Direct Runoff to Gottfried Creek Basin



Table 5-32 Average Monthly Rainfall to Direct Runoff Coefficients for Gottfried Creek Basin			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.52	1.90	0.27
Feb	0.53	2.02	0.26
Mar	0.64	2.32	0.28
Apr	0.32	2.03	0.16
May	0.41	2.05	0.20
Jun	2.66	8.40	0.32
Jul	1.99	7.21	0.28
Aug	1.84	6.90	0.27
Sep	2.38	7.10	0.34
Oct	1.20	3.43	0.35
Nov	0.60	1.79	0.33
Dec	0.49	2.02	0.24

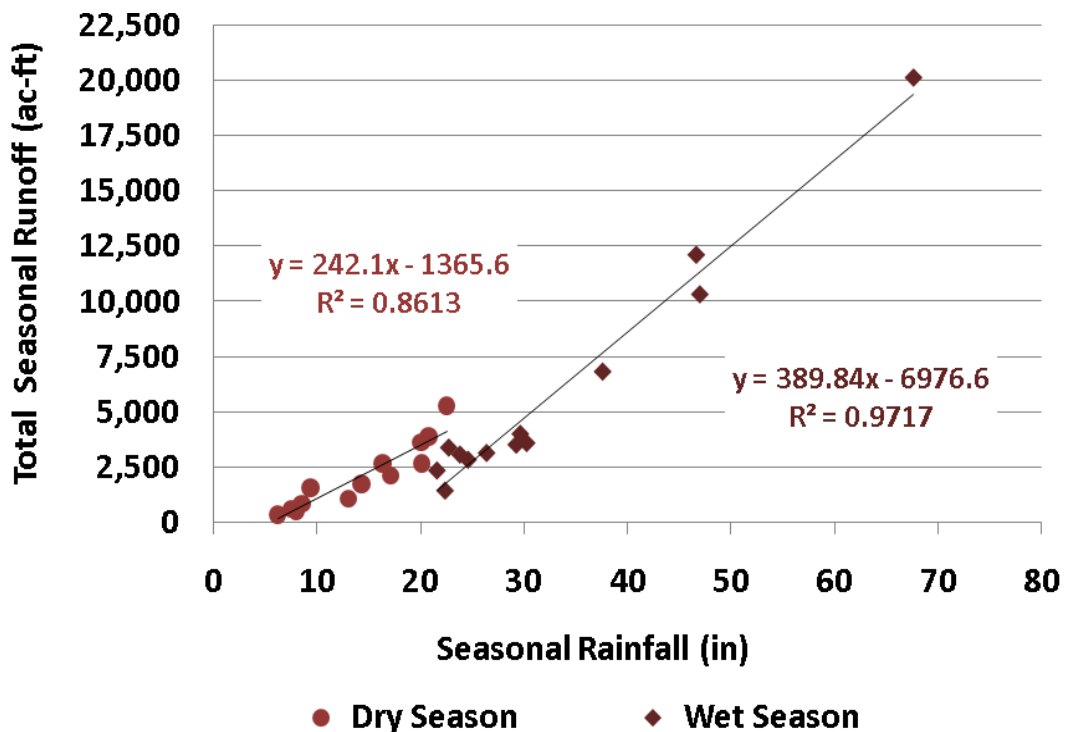


Figure 5-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 5-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	34.36	67.61	0.51
2016	5.24	23.84	0.22
2017	5.78	22.75	0.25
2018	4.84	24.61	0.20
2019	6.01	29.27	0.21
2020	4.01	21.62	0.19
2021	11.64	37.60	0.31
2022	5.36	26.40	0.20
2023	20.67	46.64	0.44
2024	6.84	29.65	0.23
2025	17.62	46.99	0.37
2026	6.13	30.26	0.20
2027	2.45	22.39	0.11
Average	10.07	33.05	0.26

Table 5-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	1.80	13.02	0.14
2016	3.58	17.09	0.21
2017	4.53	20.11	0.23
2018	8.98	22.54	0.40
2019	1.00	7.48	0.13
2020	0.57	6.19	0.09
2021	2.64	9.36	0.28
2022	6.60	20.77	0.32
2023	2.93	14.25	0.21
2024	4.53	16.35	0.28
2025	6.17	20.05	0.31
2026	1.39	8.55	0.16
2027	0.87	8.00	0.11
Average	3.51	14.14	0.22



5.4 WATER BUDGET CHANGES

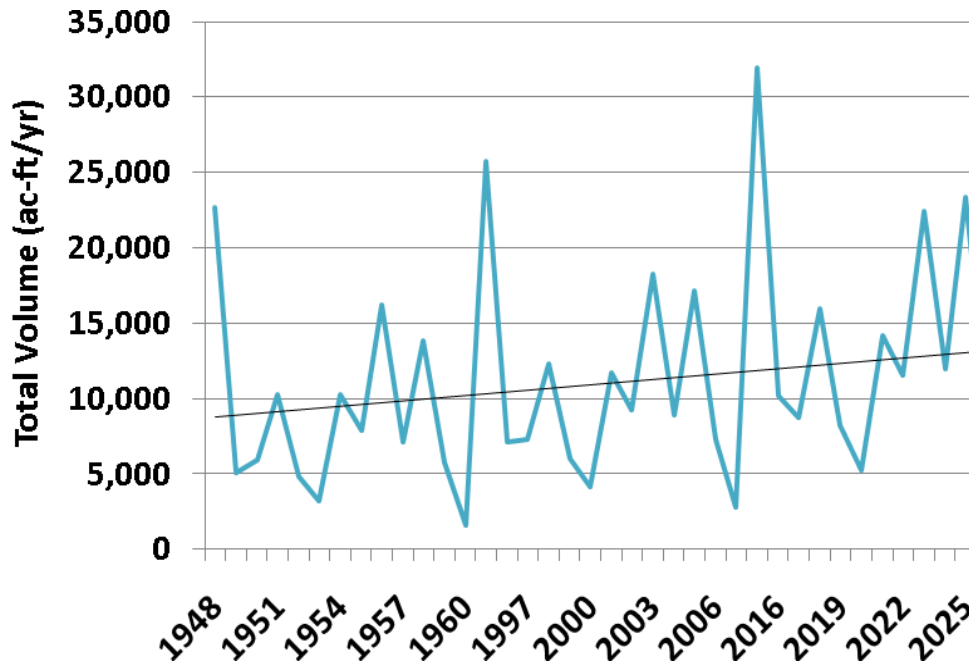


Figure 5-28 Trend in Total Volume from Historical through Future Time Series

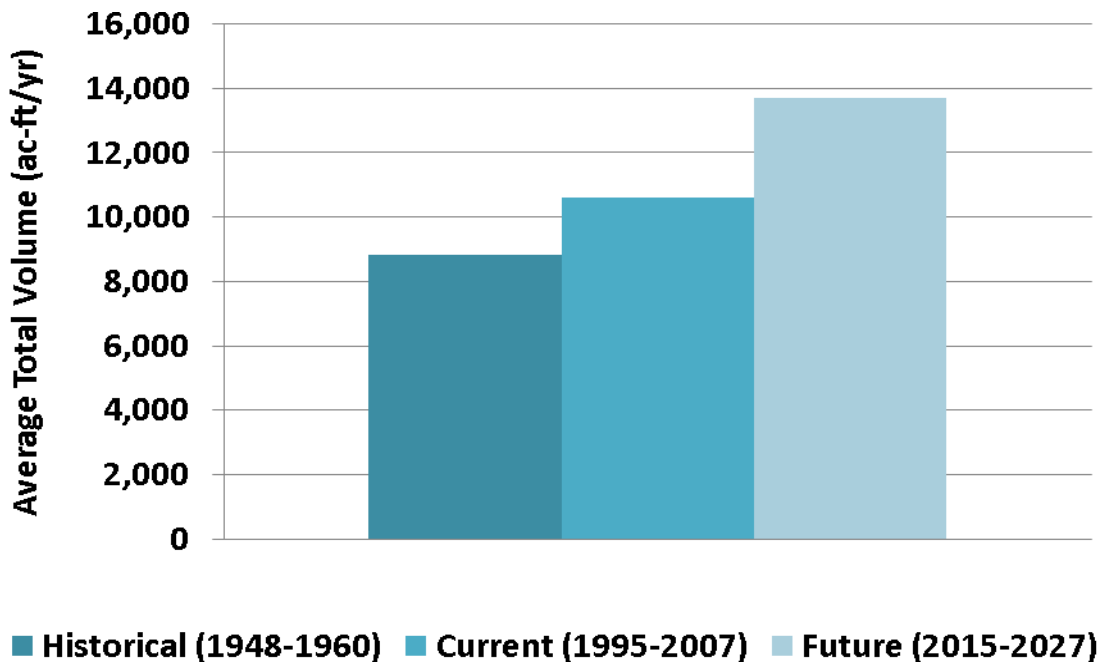


Figure 5-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay



Table 5-35 Change in Total Volume from Historical to Current Conditions

Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	22,668	25,748	3,079
2	5,076	7,090	2,014
3	5,953	7,309	1,356
4	10,264	12,264	2,000
5	4,837	6,021	1,184
6	3,245	4,185	940
7	10,257	11,696	1,439
8	7,899	9,278	1,379
9	16,257	18,285	2,028
10	7,082	8,867	1,785
11	13,801	17,168	3,368
12	5,771	7,272	1,501
13	1,615	2,811	1,196
Average	8,825	10,615	1,790

Table 5-36 Change in Total Volume from Current to Future Conditions

Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	25,748	31,973	6,226
2	7,090	10,220	3,129
3	7,309	8,766	1,457
4	12,264	15,994	3,729
5	6,021	8,232	2,211
6	4,185	5,222	1,036
7	11,696	14,217	2,522
8	9,278	11,552	2,274
9	18,285	22,449	4,163
10	8,867	11,984	3,117
11	17,168	23,318	6,150
12	7,272	9,973	2,702
13	2,811	3,958	1,146
Average	10,615	13,681	3,066

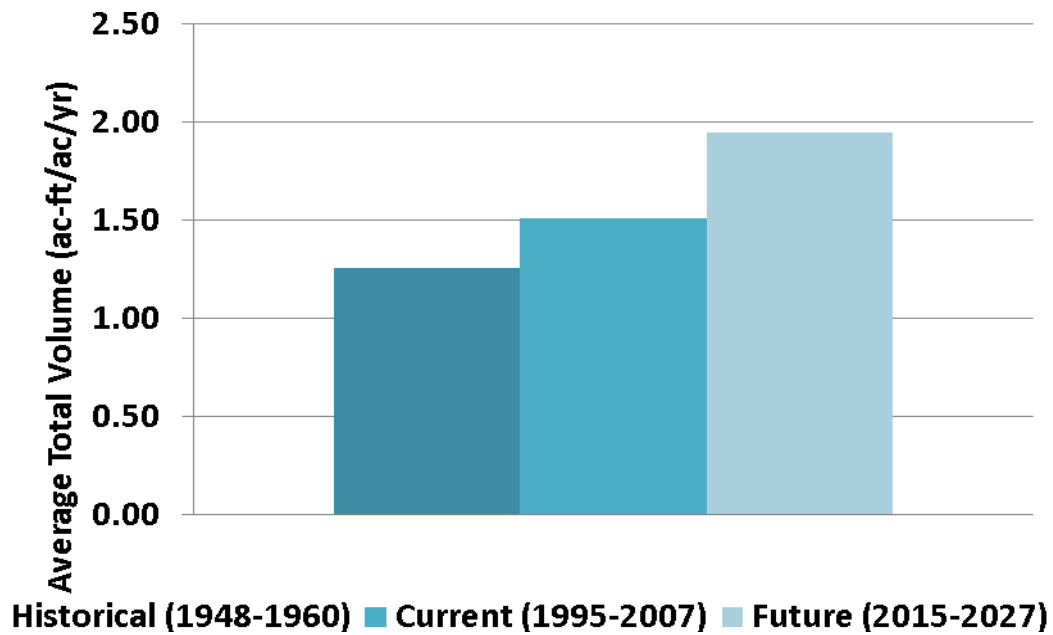


Figure 5-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay

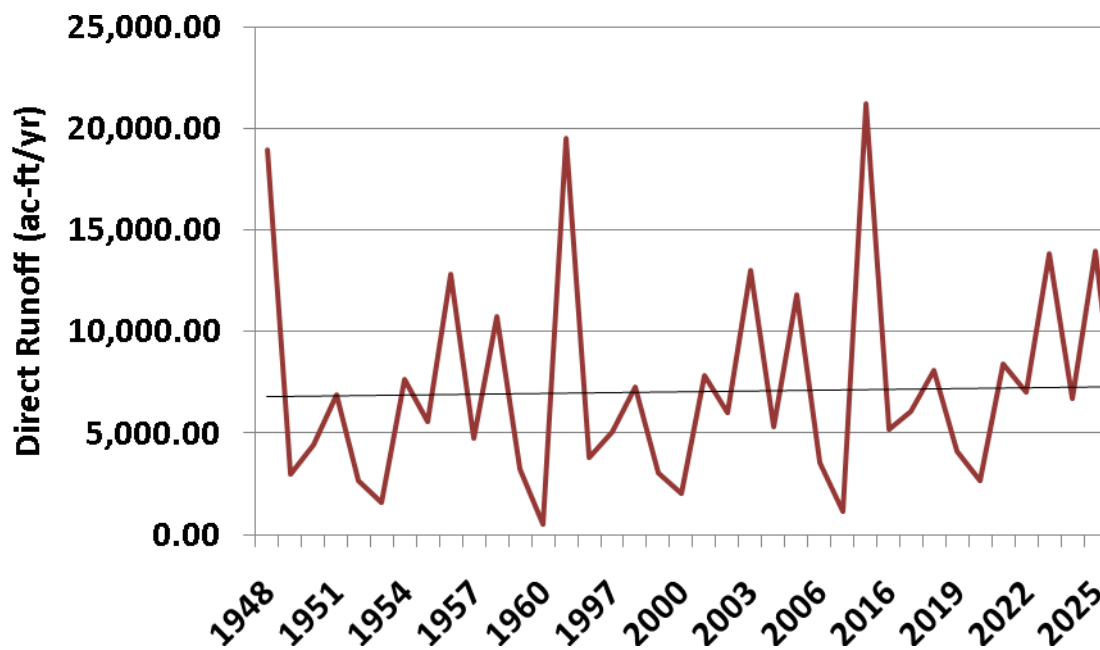


Figure 5-31 Trend in Direct Runoff from Historical through Future Time Series

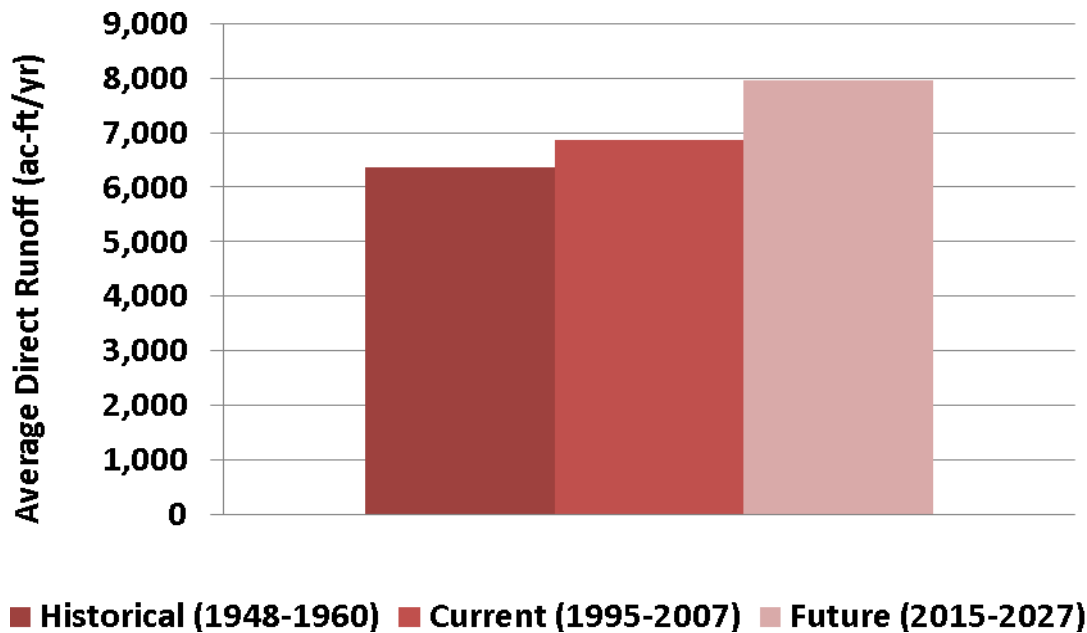


Figure 5-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay

Table 5-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	18,923	19,521	598
2	3,003	3,780	777
3	4,401	5,063	662
4	6,908	7,292	384
5	2,684	3,059	375
6	1,608	2,041	433
7	7,632	7,817	185
8	5,593	5,991	398
9	12,833	13,010	177
10	4,725	5,319	594
11	10,754	11,790	1,036
12	3,251	3,526	275
13	516	1,137	621
Average	6,372	6,873	501



Table 5-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1948-1960	Future Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (future-historical)
1	19,521	21,208	1,687
2	3,780	5,173	1,393
3	5,063	6,046	982
4	7,292	8,102	811
5	3,059	4,112	1,053
6	2,041	2,686	645
7	7,817	8,376	559
8	5,991	7,014	1,023
9	13,010	13,842	832
10	5,319	6,670	1,351
11	11,790	13,948	2,157
12	3,526	4,410	884
13	1,137	1,946	808
Average	6,873	7,964	1,091

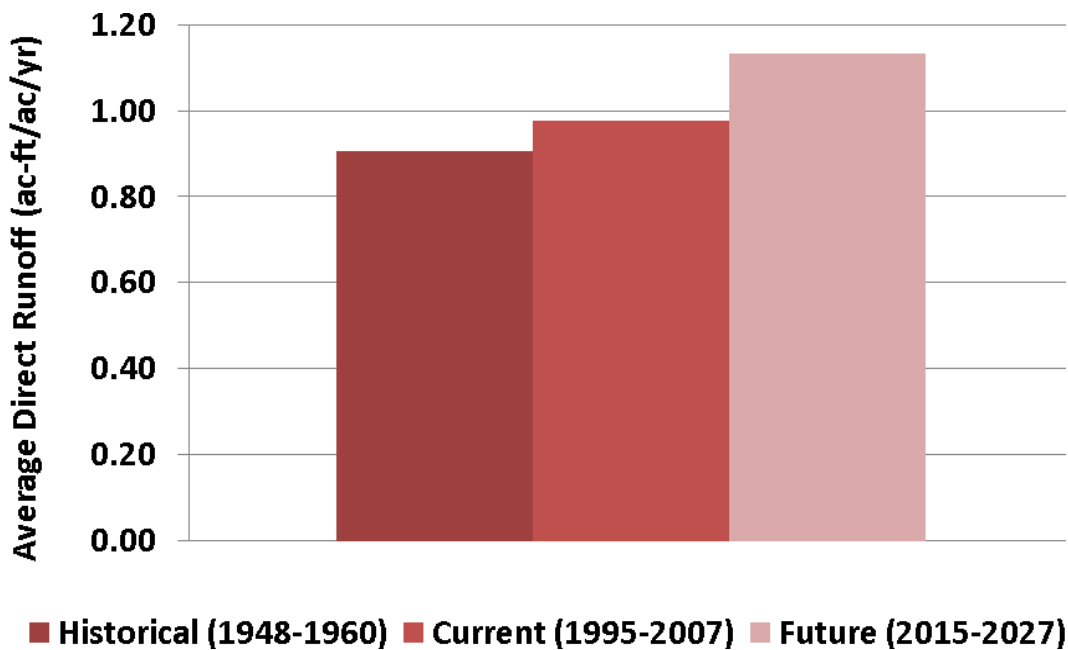


Figure 5-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay



6.0 AINGER CREEK BASIN

6.1 CURRENT CONDITIONS

Table 6-1 Monthly Rainfall for Ainger Creek Basin (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	3.55	2.85	1.39	3.08	0.84	25.74	16.87	10.19	7.76	10.66	0.85	1.12	84.92
1996	1949	2016	3.47	0.85	4.13	2.39	5.70	5.21	4.03	5.57	6.04	7.33	0.43	0.95	46.10
1997	1950	2017	1.93	0.46	1.43	5.54	1.72	3.73	5.47	4.35	11.20	1.85	3.91	5.72	47.31
1998	1951	2018	6.05	5.04	4.81	0.27	1.84	3.10	8.49	5.57	8.02	0.97	4.14	0.36	48.67
1999	1952	2019	2.23	0.04	1.48	0.43	2.03	6.12	5.00	7.05	7.61	2.05	0.62	1.57	36.24
2000	1953	2020	1.22	0.36	1.06	1.46	0.46	5.41	5.93	7.41	5.69	0.67	0.60	0.51	30.78
2001	1954	2021	0.12	0.00	7.18	0.56	0.67	6.41	12.67	5.47	11.07	2.04	0.34	0.42	46.98
2002	1955	2022	0.59	4.83	0.21	2.36	2.92	9.79	3.84	12.64	3.87	0.86	5.41	4.11	51.44
2003	1956	2023	0.04	0.74	2.32	2.96	4.10	19.63	5.22	12.93	11.61	0.41	0.51	3.37	63.83
2004	1957	2024	1.91	4.18	0.97	3.21	1.33	6.28	9.43	9.79	4.91	3.48	1.85	3.34	50.68
2005	1958	2025	1.17	2.70	4.38	2.35	5.81	17.63	10.60	6.80	4.75	9.32	3.07	0.30	68.88
2006	1959	2026	0.67	3.13	0.26	0.04	1.61	6.25	14.18	8.57	5.04	1.09	0.68	2.85	44.37
2007	1960	2027	1.63	1.27	0.35	2.03	0.71	4.79	5.22	4.19	4.83	3.76	0.42	0.71	29.91
Average			1.89	2.04	2.31	2.05	2.29	9.24	8.23	7.73	7.11	3.42	1.76	1.95	50.01



Table 6-2 Current Total Volume for Ainger Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	392.9	325.1	202.3	163.9	124.5	7,428.2	4,460.2	2,254.6	2,001.2	2,838.6	399.5	258.6	20,849.6
1996	485.2	196.2	369.2	249.7	756.3	458.4	327.7	452.7	752.2	1,603.1	250.9	204.6	6,106.3
1997	311.3	121.0	190.5	434.1	92.4	228.6	308.0	262.1	2,086.6	299.0	541.4	1,085.5	5,960.4
1998	1,912.8	1,325.0	1,114.8	231.6	229.6	225.8	1,007.4	557.8	1,076.6	358.8	809.3	181.5	9,031.1
1999	197.6	110.9	116.2	87.3	91.8	209.2	526.6	450.5	1,002.7	416.3	224.8	258.0	3,691.7
2000	208.9	114.6	107.0	114.4	78.1	138.1	320.0	815.8	751.9	242.2	179.1	153.4	3,223.7
2001	126.7	98.1	801.2	104.5	92.9	452.3	2,355.9	1,331.1	2,221.5	437.7	240.0	192.5	8,454.5
2002	158.0	742.1	115.2	185.0	220.4	963.1	293.4	1,964.7	707.0	284.3	1,421.8	576.7	7,631.8
2003	250.1	181.7	216.2	491.2	532.6	4,943.3	791.5	2,884.6	3,319.7	364.1	235.3	459.7	14,670.0
2004	254.4	642.0	183.5	383.2	116.7	383.4	836.7	1,571.9	958.8	947.8	311.8	661.7	7,251.9
2005	196.8	448.8	718.2	127.5	680.6	3,316.9	2,253.5	851.2	615.6	2,063.7	614.7	260.4	12,148.0
2006	196.8	402.7	134.3	108.8	104.1	270.9	2,196.3	1,473.5	789.0	336.4	207.7	316.1	6,536.4
2007	182.2	113.1	94.5	119.6	70.5	112.8	119.9	123.5	154.3	238.0	105.6	88.6	1,522.8
Average	374.9	370.9	335.6	215.5	245.4	1,471.6	1,215.2	1,153.4	1,264.4	802.3	426.3	361.3	8,236.8



Table 6-3 Current Direct Runoff for Ainger Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	203.4	147.2	21.8	24.3	3.7	7,157.0	3,975.1	1,675.8	1,398.2	2,202.1	8.8	5.9	16,823.4
1996	240.0	6.8	205.9	118.1	634.6	330.8	176.9	301.3	537.9	1,209.0	1.6	4.5	3,767.5
1997	150.2	0.8	77.9	340.8	7.8	158.0	238.1	143.3	1,888.6	65.3	358.0	762.7	4,191.6
1998	1,503.4	888.6	772.9	0.6	38.9	74.3	808.8	302.7	715.3	15.3	579.8	0.4	5,701.1
1999	51.0	0.0	12.4	1.3	15.1	143.5	395.5	284.0	726.4	70.2	3.9	77.1	1,780.4
2000	62.6	0.5	3.5	28.6	1.9	72.6	234.3	624.5	481.4	7.6	1.6	2.1	1,521.2
2001	0.0	0.0	706.5	3.1	4.0	376.9	2,057.1	871.5	1,767.4	67.6	2.0	0.4	5,856.5
2002	1.4	622.2	2.8	93.3	139.1	865.5	84.2	1,681.1	233.3	6.4	1,219.1	309.4	5,257.8
2003	0.0	3.3	52.2	357.4	414.8	4,642.2	328.8	2,320.0	2,816.7	1.3	1.5	268.6	11,206.9
2004	105.6	520.1	37.8	264.9	13.0	296.6	626.5	1,130.1	495.1	662.4	107.7	493.6	4,753.4
2005	58.0	347.2	602.4	22.5	582.6	2,902.8	1,689.7	407.8	246.2	1,696.4	236.5	0.1	8,792.2
2006	0.9	254.1	0.9	0.0	8.0	190.3	1,887.7	977.0	355.8	50.9	2.7	146.1	3,874.5
2007	44.7	10.3	0.9	43.0	2.8	56.2	67.7	67.7	84.2	114.8	0.8	4.9	498.2
Average	186.2	215.5	192.2	99.8	143.6	1,328.2	967.0	829.8	903.6	474.6	194.1	159.7	5,694.2

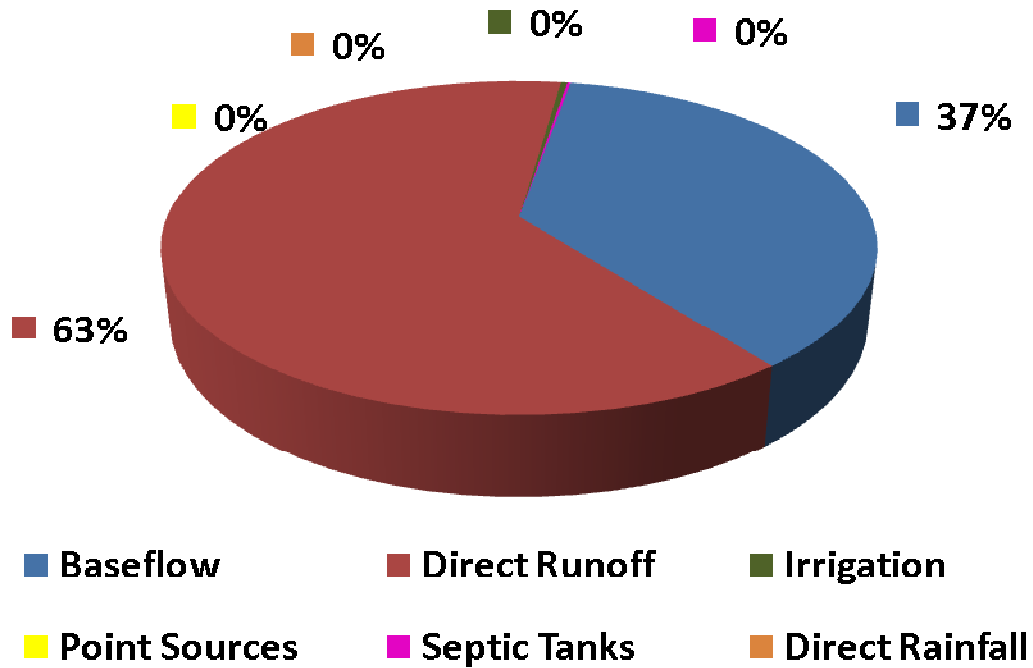


Figure 6-1 Ainger Creek Basin Current Total Volume Water Budget

Table 6-4 Summary of Annual Current Total Volume Inputs for Ainger Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	3,999.7	16,823.4	17.8	0.0	8.6	0.0
1996	2,312.3	3,767.5	17.8	0.0	8.7	0.0
1997	1,742.1	4,191.6	17.8	0.0	8.8	0.0
1998	3,303.3	5,701.1	17.8	0.0	8.9	0.0
1999	1,884.7	1,780.4	17.8	0.0	8.9	0.0
2000	1,675.8	1,521.2	17.8	0.0	8.9	0.0
2001	2,571.2	5,856.5	17.8	0.0	9.0	0.0
2002	2,347.0	5,257.8	17.8	0.0	9.1	0.0
2003	3,434.6	11,206.9	19.1	0.0	9.3	0.0
2004	2,470.0	4,753.4	19.1	0.0	9.3	0.0
2005	3,327.2	8,792.2	19.1	0.0	9.5	0.0
2006	2,633.3	3,874.5	19.1	0.0	9.5	0.0
2007	995.9	498.2	19.1	0.0	9.5	0.0
Average	2,515.2	5,694.2	18.3	0.0	9.1	0.0

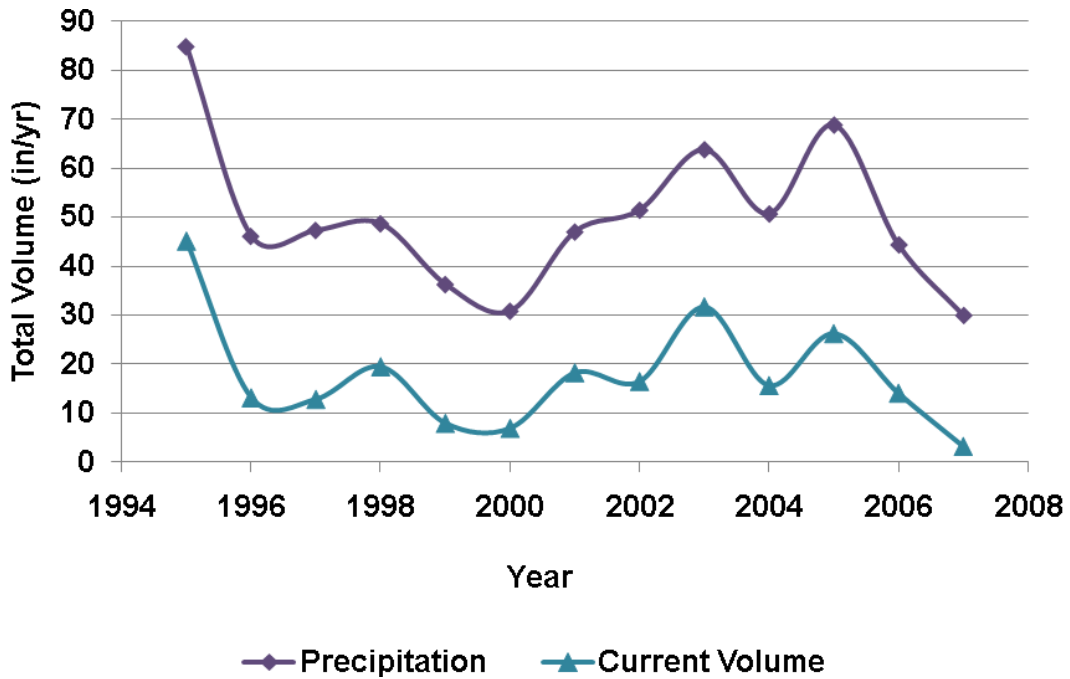


Figure 6-2 Annual Variability of Precipitation and Total Volume for Ainger Creek Basin

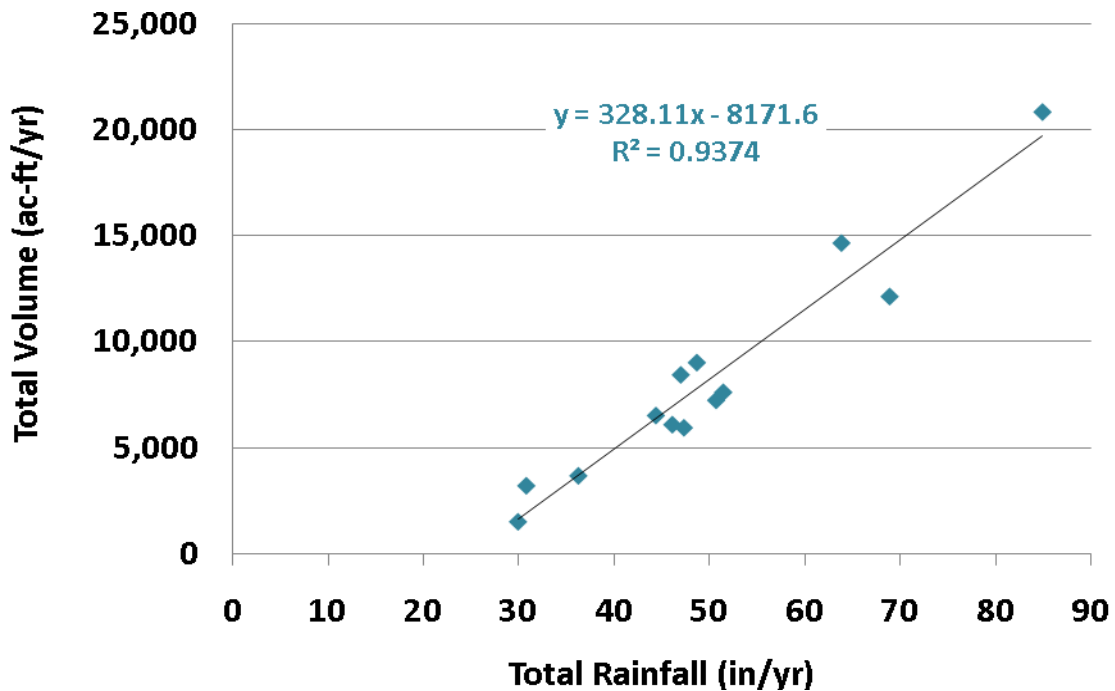


Figure 6-3 Correlation of Annual Total Volume to Rainfall for Ainger Creek Basin



Table 6-5 Annual Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	45.00	84.92	0.53
1996	13.18	46.10	0.29
1997	12.87	47.31	0.27
1998	19.49	48.67	0.40
1999	7.97	36.24	0.22
2000	6.96	30.78	0.23
2001	18.25	46.98	0.39
2002	16.47	51.44	0.32
2003	31.66	63.83	0.50
2004	15.65	50.68	0.31
2005	26.22	68.88	0.38
2006	14.11	44.37	0.32
2007	3.29	29.91	0.11
Average	17.78	50.01	0.33

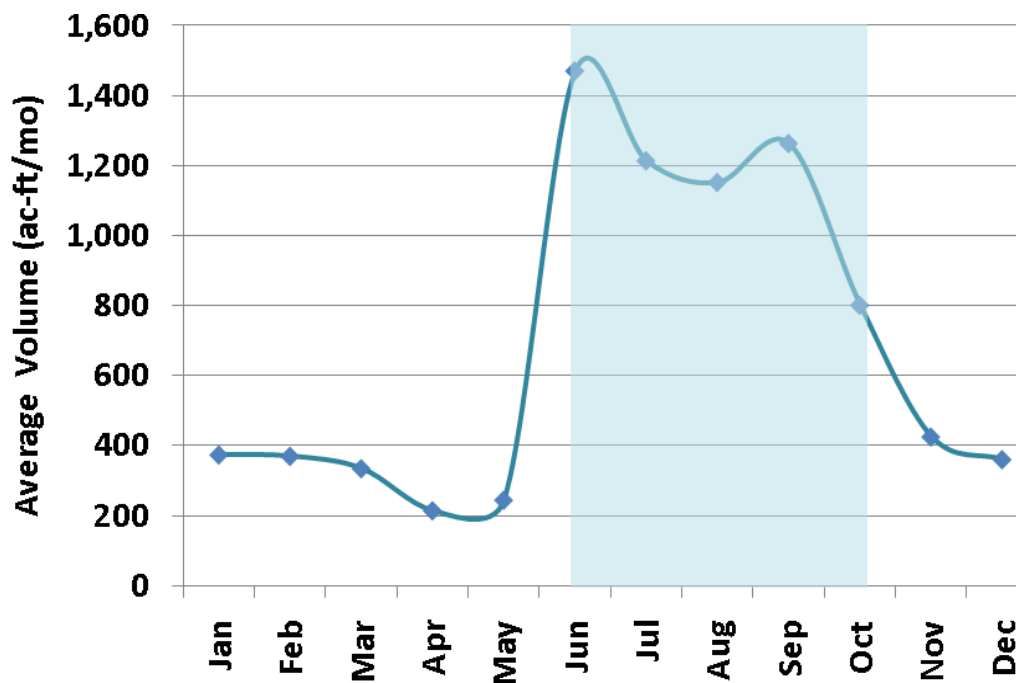


Figure 6-4 Variability of Average Monthly Total Volume in Ainger Creek Basin



Table 6-6 Average Monthly Rainfall to Total Volume Coefficients for Ainger Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.81	1.89	0.43
Feb	0.80	2.04	0.39
Mar	0.72	2.31	0.31
Apr	0.47	2.05	0.23
May	0.53	2.29	0.23
Jun	3.18	9.24	0.34
Jul	2.62	8.23	0.32
Aug	2.49	7.73	0.32
Sep	2.73	7.11	0.38
Oct	1.73	3.42	0.51
Nov	0.92	1.76	0.52
Dec	0.78	1.95	0.40

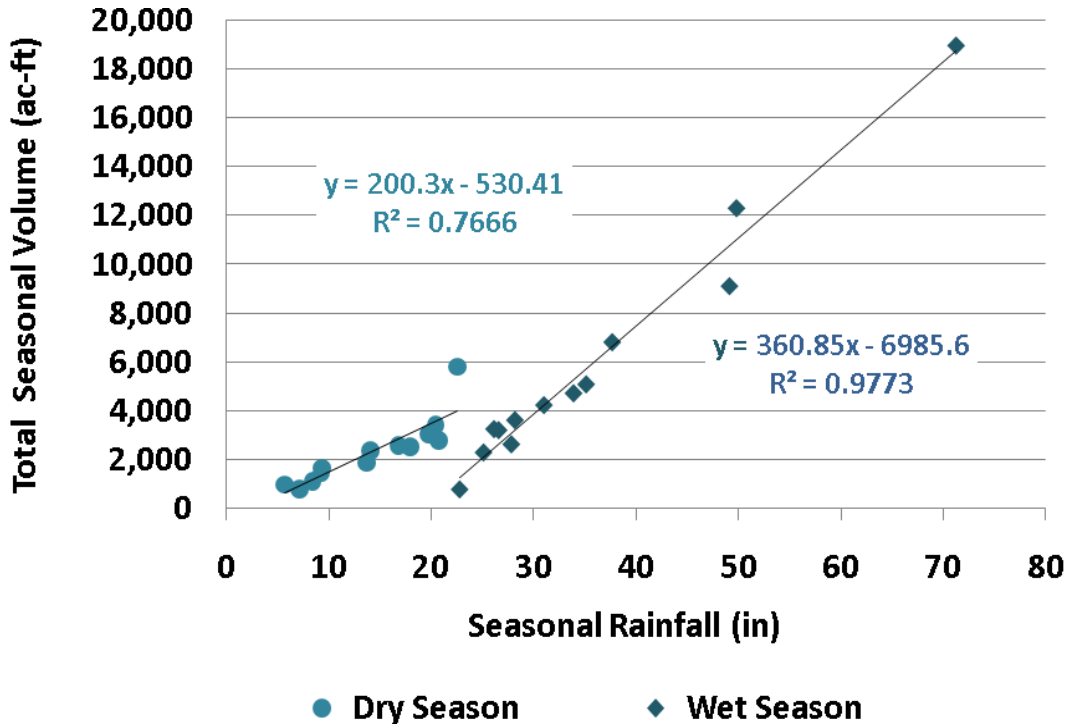


Figure 6-5 Correlation of Seasonal Total Volume to Rainfall for Ainger Creek Basin



Table 6-7 Wet Season Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	40.97	71.22	0.58
1996	7.76	28.19	0.28
1997	6.87	26.59	0.26
1998	6.96	26.14	0.27
1999	5.62	27.82	0.20
2000	4.90	25.12	0.19
2001	14.67	37.67	0.39
2002	9.09	31.01	0.29
2003	26.56	49.80	0.53
2004	10.14	33.90	0.30
2005	19.64	49.11	0.40
2006	10.93	35.13	0.31
2007	1.62	22.79	0.07
Average	12.75	35.73	0.31

Table 6-8 Dry Season Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	4.03	13.70	0.29
1996	5.42	17.91	0.30
1997	5.99	20.72	0.29
1998	12.53	22.52	0.56
1999	2.35	8.42	0.28
2000	2.06	5.66	0.36
2001	3.57	9.31	0.38
2002	7.38	20.43	0.36
2003	5.11	14.04	0.36
2004	5.51	16.79	0.33
2005	6.58	19.78	0.33
2006	3.17	9.24	0.34
2007	1.67	7.13	0.23
Average	5.03	14.28	0.34

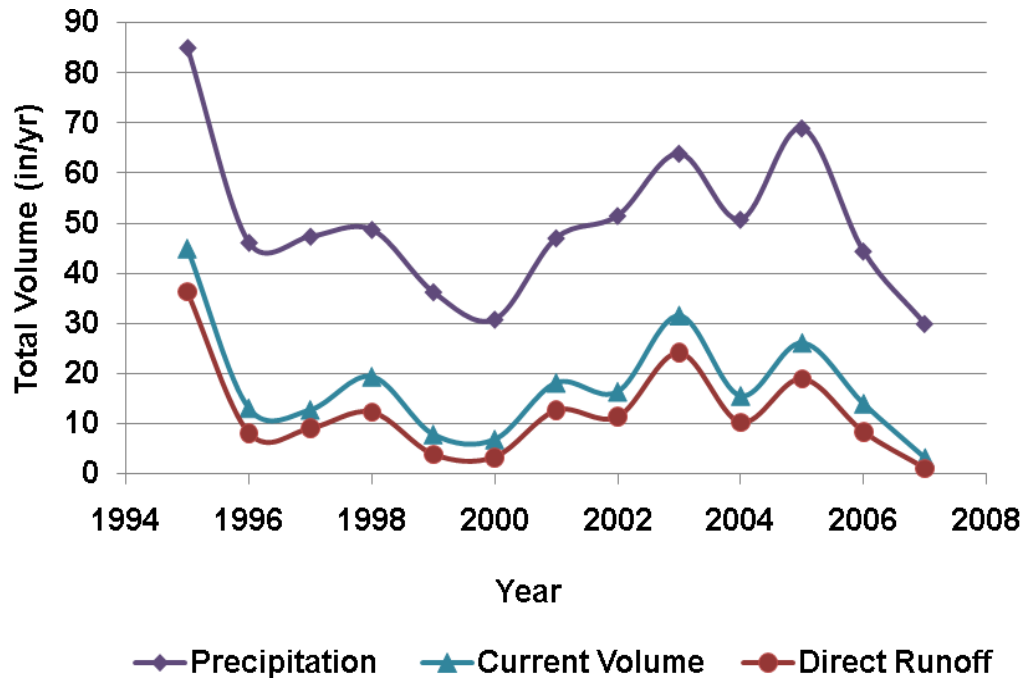


Figure 6-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Ainger Creek Basin

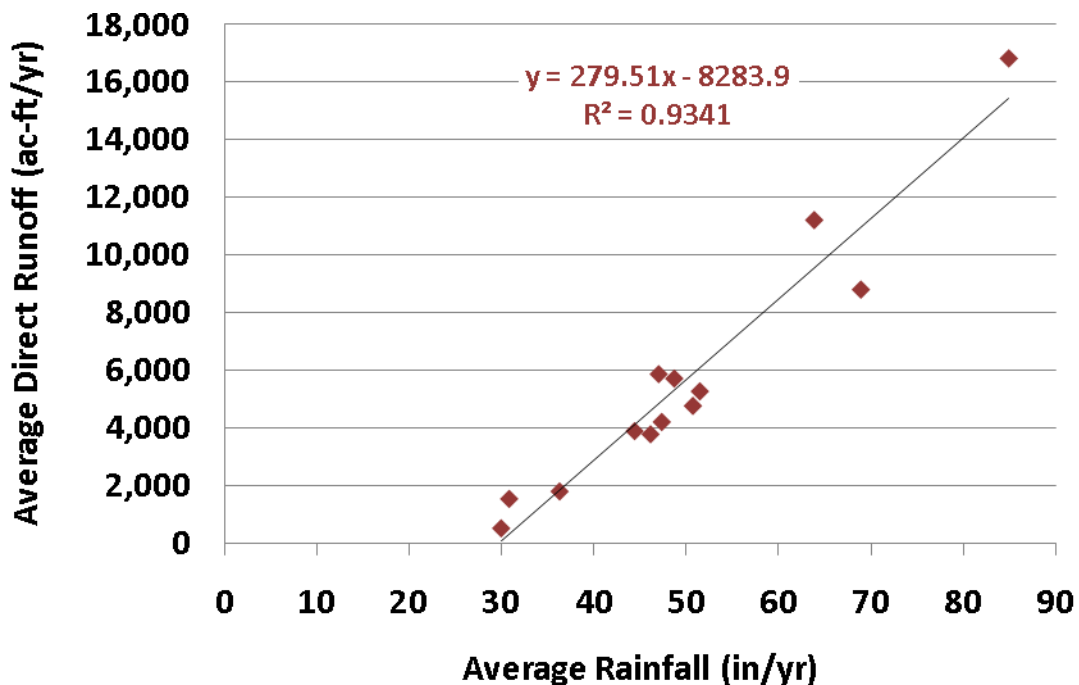


Figure 6-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 6-9 Annual Direct Runoff to Rainfall Coefficients for Ainger Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	36.31	84.92	0.43
1996	8.13	46.10	0.18
1997	9.05	47.31	0.19
1998	12.31	48.67	0.25
1999	3.84	36.24	0.11
2000	3.28	30.78	0.11
2001	12.64	46.98	0.27
2002	11.35	51.44	0.22
2003	24.19	63.83	0.38
2004	10.26	50.68	0.20
2005	18.98	68.88	0.28
2006	8.36	44.37	0.19
2007	1.08	29.91	0.04
Average	12.29	50.01	0.22

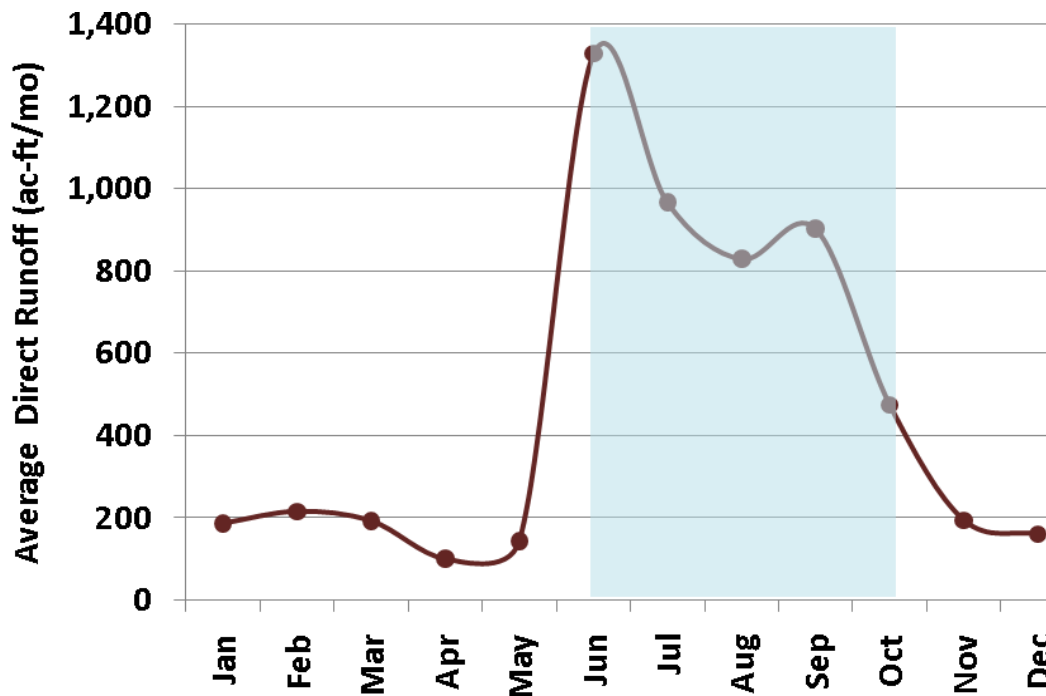


Figure 6-8 Variability of Average Monthly Direct Runoff to Ainger Creek Basin



Table 6-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.40	1.89	0.21
Feb	0.47	2.04	0.23
Mar	0.41	2.31	0.18
Apr	0.22	2.05	0.10
May	0.31	2.29	0.14
Jun	2.87	9.24	0.31
Jul	2.09	8.23	0.25
Aug	1.79	7.73	0.23
Sep	1.95	7.11	0.27
Oct	1.02	3.42	0.30
Nov	0.42	1.76	0.24
Dec	0.34	1.95	0.18

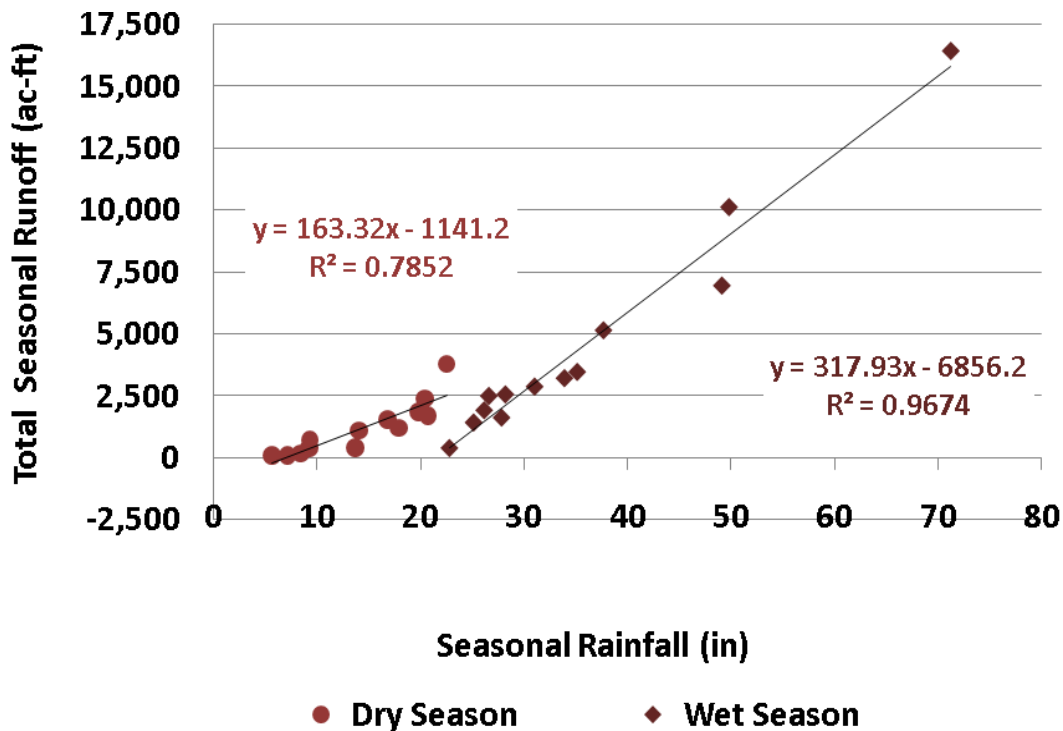


Figure 6-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 6-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	35.42	71.22	0.50
1996	5.52	28.19	0.20
1997	5.38	26.59	0.20
1998	4.14	26.14	0.16
1999	3.50	27.82	0.13
2000	3.07	25.12	0.12
2001	11.10	37.67	0.29
2002	6.20	31.01	0.20
2003	21.82	49.80	0.44
2004	6.93	33.90	0.20
2005	14.99	49.11	0.31
2006	7.47	35.13	0.21
2007	0.84	22.79	0.04
Average	9.72	35.73	0.23

Table 6-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	0.90	13.70	0.07
1996	2.62	17.91	0.15
1997	3.67	20.72	0.18
1998	8.17	22.52	0.36
1999	0.35	8.42	0.04
2000	0.22	5.66	0.04
2001	1.55	9.31	0.17
2002	5.15	20.43	0.25
2003	2.37	14.04	0.17
2004	3.33	16.79	0.20
2005	3.99	19.78	0.20
2006	0.89	9.24	0.10
2007	0.23	7.13	0.03
Average	2.57	14.28	0.15



6.2 HISTORICAL CONDITIONS

Table 6-13 Historical Total Volume for Ainger Creek Basin (ac-ft/mo)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	340.8	295.3	152.7	126.1	105.6	7,629.6	4,493.0	2,176.6	1,867.8	2,731.3	271.3	179.7	20,370.0
1949	468.8	155.3	345.5	227.7	778.0	456.4	272.5	431.2	762.8	1,555.6	172.6	152.6	5,779.0
1950	279.6	101.8	173.4	414.0	80.6	264.9	317.1	276.5	2,142.9	225.6	537.9	1,125.5	5,939.9
1951	1,841.8	1,303.7	970.3	167.4	180.0	193.9	1,069.4	576.5	1,059.4	230.8	742.8	142.1	8,478.0
1952	175.0	96.1	98.6	79.9	84.9	218.8	591.4	459.2	1,011.5	321.0	162.7	217.3	3,516.4
1953	180.9	99.5	93.2	102.0	71.8	125.8	322.0	805.4	772.7	181.4	144.5	129.3	3,028.7
1954	112.1	89.0	829.8	99.6	91.0	500.1	2,578.6	1,247.7	2,198.1	307.2	173.7	152.7	8,379.5
1955	131.5	752.6	105.4	182.0	218.8	1,177.9	254.1	2,046.7	549.6	195.6	1,352.2	623.7	7,590.1
1956	204.5	154.8	192.9	491.0	532.2	5,278.9	652.9	2,853.1	3,178.2	223.9	157.5	409.6	14,329.3
1957	215.0	582.9	154.7	409.8	101.6	420.2	931.0	1,604.6	859.6	813.2	240.3	683.4	7,016.4
1958	157.9	432.6	672.9	89.7	667.5	3,541.1	2,103.2	736.8	452.2	2,021.5	513.0	185.7	11,574.0
1959	155.4	372.6	114.9	97.3	88.9	275.0	2,398.7	1,389.7	659.3	223.5	146.8	271.5	6,193.8
1960	169.6	95.0	81.1	106.7	62.9	91.1	94.8	119.7	132.7	182.8	71.6	63.7	1,271.8
Average	341.0	348.6	306.6	199.5	235.7	1,551.8	1,236.8	1,132.6	1,203.6	708.7	360.5	333.6	7,959.0



Table 6-14 Historical Direct Runoff for Ainger Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	196.80	160.84	12.16	10.71	1.61	7,415.82	4,177.12	1,818.68	1,479.54	2,324.22	8.15	0.34	17,605.99
1949	281.89	1.20	205.29	111.79	674.20	357.54	162.51	321.49	615.60	1,290.52	0.03	0.19	4,022.25
1950	149.06	0.00	74.45	329.90	2.09	197.56	252.47	174.64	1,984.68	48.48	399.05	885.62	4,498.02
1951	1,541.99	1,000.33	734.51	0.00	31.12	69.39	903.08	380.86	816.72	6.81	579.09	0.00	6,063.91
1952	52.72	0.00	4.89	0.01	11.86	155.24	477.03	328.24	818.75	85.19	0.38	73.36	2,007.67
1953	58.00	0.00	0.07	22.96	0.02	63.08	242.54	645.40	572.76	3.45	0.01	0.06	1,608.37
1954	0.00	0.00	741.47	0.48	1.92	423.37	2,334.81	945.58	1,909.51	63.90	0.06	0.00	6,421.10
1955	0.00	648.43	4.40	96.48	140.72	1,089.54	80.03	1,835.95	231.99	5.90	1,198.39	410.41	5,742.22
1956	0.00	0.04	44.73	367.19	420.47	5,055.40	360.40	2,506.45	2,867.28	0.08	0.00	268.14	11,890.18
1957	96.68	481.79	27.21	303.90	6.11	338.74	757.07	1,301.76	565.82	629.40	92.99	551.66	5,153.14
1958	44.94	346.05	582.14	9.08	594.39	3,273.18	1,762.21	473.21	239.21	1,796.84	255.93	0.07	9,377.26
1959	0.00	251.78	0.15	0.00	0.42	199.33	2,162.44	1,057.90	393.58	40.63	0.17	140.56	4,246.96
1960	58.62	10.14	0.01	37.78	0.05	37.43	46.00	74.46	84.48	104.11	0.00	0.79	453.87
Average	190.82	223.12	187.04	99.25	145.00	1,436.59	1,055.21	912.66	967.69	492.27	194.94	179.32	6,083.92

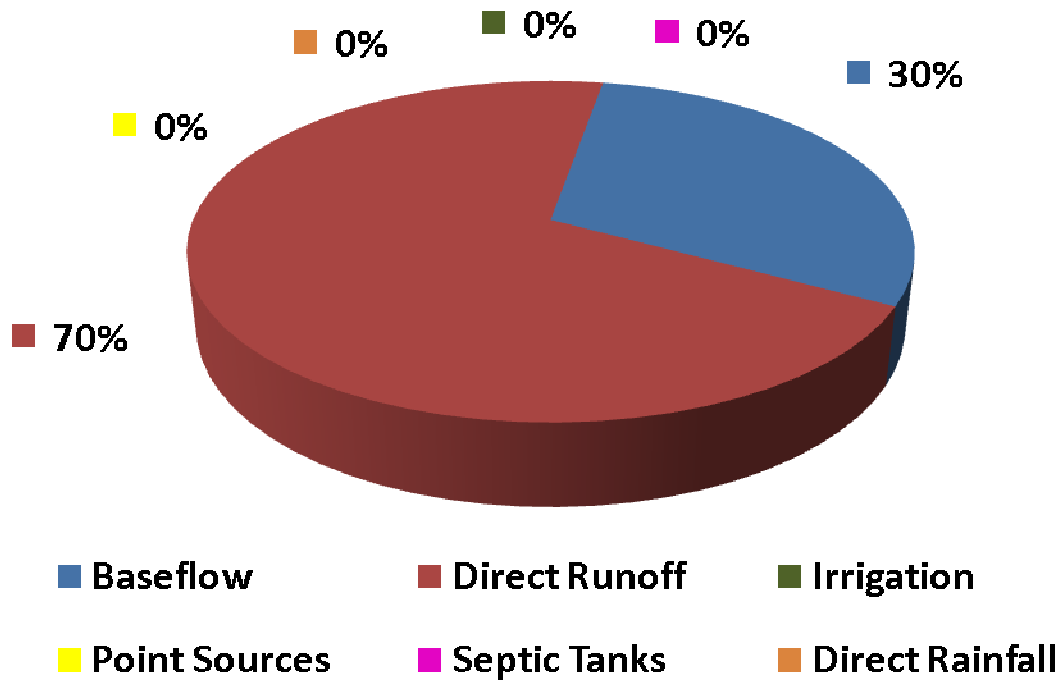


Figure 6-10 Ainger Creek Basin Historical Total Volume Water Budget

Table 6-15 Summary of Annual Historical Total Volume Inputs for Ainger Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	2,764.0	17,606.0	0.0	0.0	0.0	0.0
1949	1,756.8	4,022.3	0.0	0.0	0.0	0.0
1950	1,441.9	4,498.0	0.0	0.0	0.0	0.0
1951	2,414.1	6,063.9	0.0	0.0	0.0	0.0
1952	1,508.8	2,007.7	0.0	0.0	0.0	0.0
1953	1,420.3	1,608.4	0.0	0.0	0.0	0.0
1954	1,958.4	6,421.1	0.0	0.0	0.0	0.0
1955	1,847.9	5,742.2	0.0	0.0	0.0	0.0
1956	2,439.1	11,890.2	0.0	0.0	0.0	0.0
1957	1,863.2	5,153.1	0.0	0.0	0.0	0.0
1958	2,196.8	9,377.3	0.0	0.0	0.0	0.0
1959	1,946.8	4,247.0	0.0	0.0	0.0	0.0
1960	817.9	453.9	0.0	0.0	0.0	0.0
Average	1,875.1	6,083.9	0.0	0.0	0.0	0.0

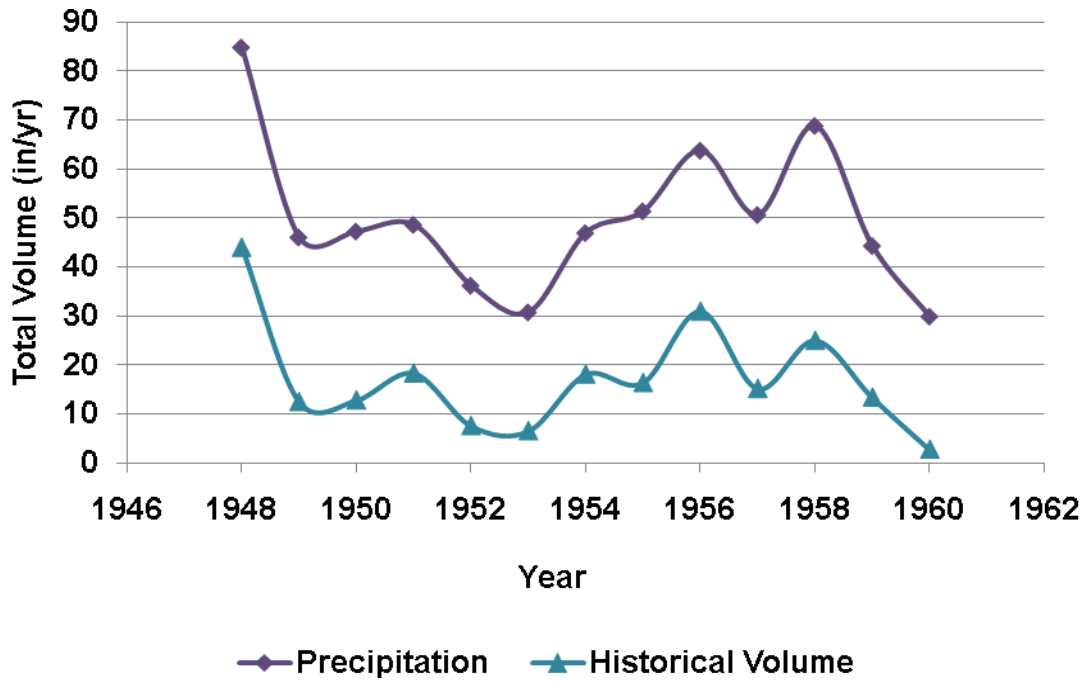


Figure 6-11 Annual Historical Variability of Precipitation and Total Volume for Ainger Creek Basin

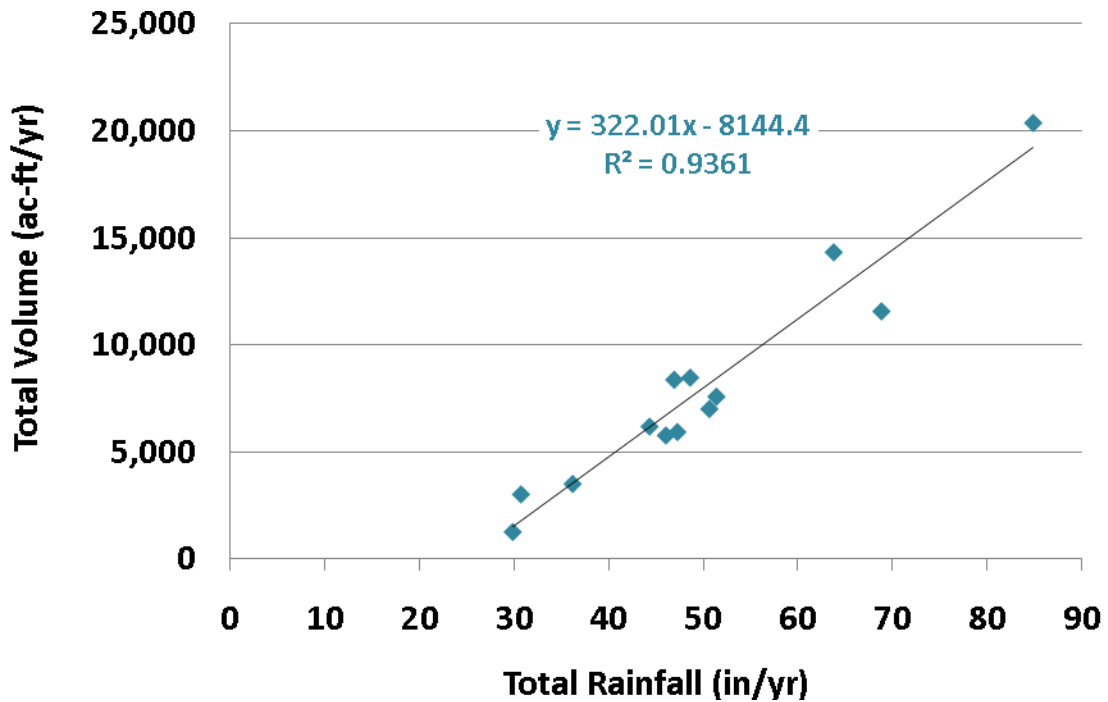


Figure 6-12 Correlation of Annual Total Volume to Rainfall for Ainger Creek Basin



Table 6-16 Annual Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	43.97	84.92	0.52
1949	12.47	46.10	0.27
1950	12.82	47.31	0.27
1951	18.30	48.67	0.38
1952	7.59	36.24	0.21
1953	6.54	30.78	0.21
1954	18.09	46.98	0.38
1955	16.38	51.44	0.32
1956	30.93	63.83	0.48
1957	15.14	50.68	0.30
1958	24.98	68.88	0.36
1959	13.37	44.37	0.30
1960	2.75	29.91	0.09
Average	17.18	50.01	0.32

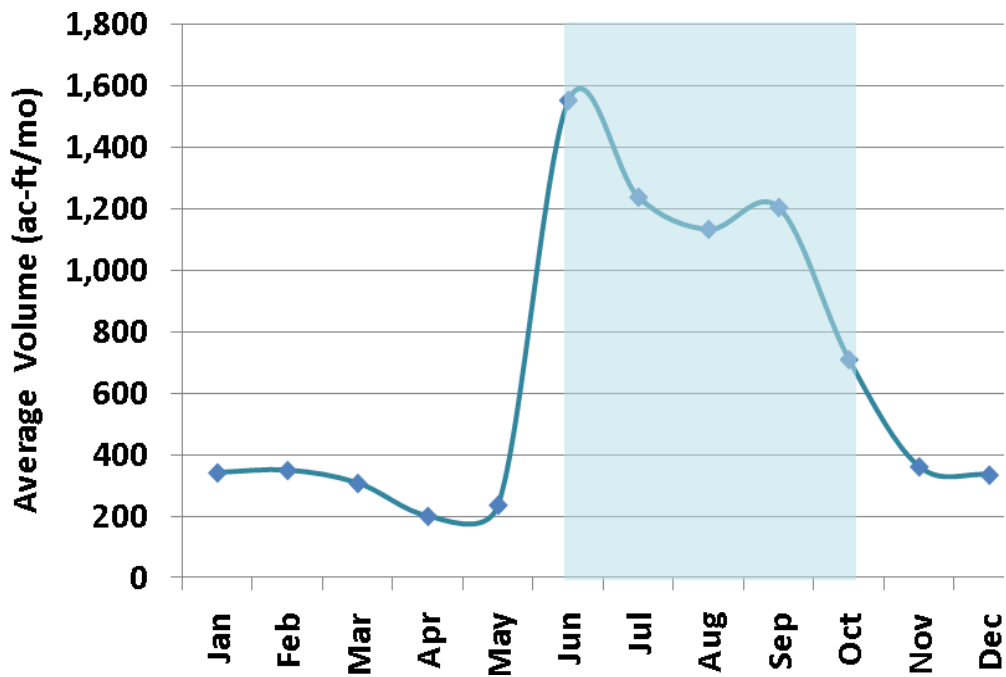


Figure 6-13 Variability of Average Monthly Total Volume in Ainger Creek Basin



Table 6-17 Average Monthly Rainfall to Total Volume Coefficients for Ainger Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.74	1.89	0.39
Feb	0.75	2.04	0.37
Mar	0.66	2.31	0.29
Apr	0.43	2.05	0.21
May	0.51	2.29	0.22
Jun	3.35	9.24	0.36
Jul	2.67	8.23	0.32
Aug	2.44	7.73	0.32
Sep	2.60	7.11	0.37
Oct	1.53	3.42	0.45
Nov	0.78	1.76	0.44
Dec	0.72	1.95	0.37

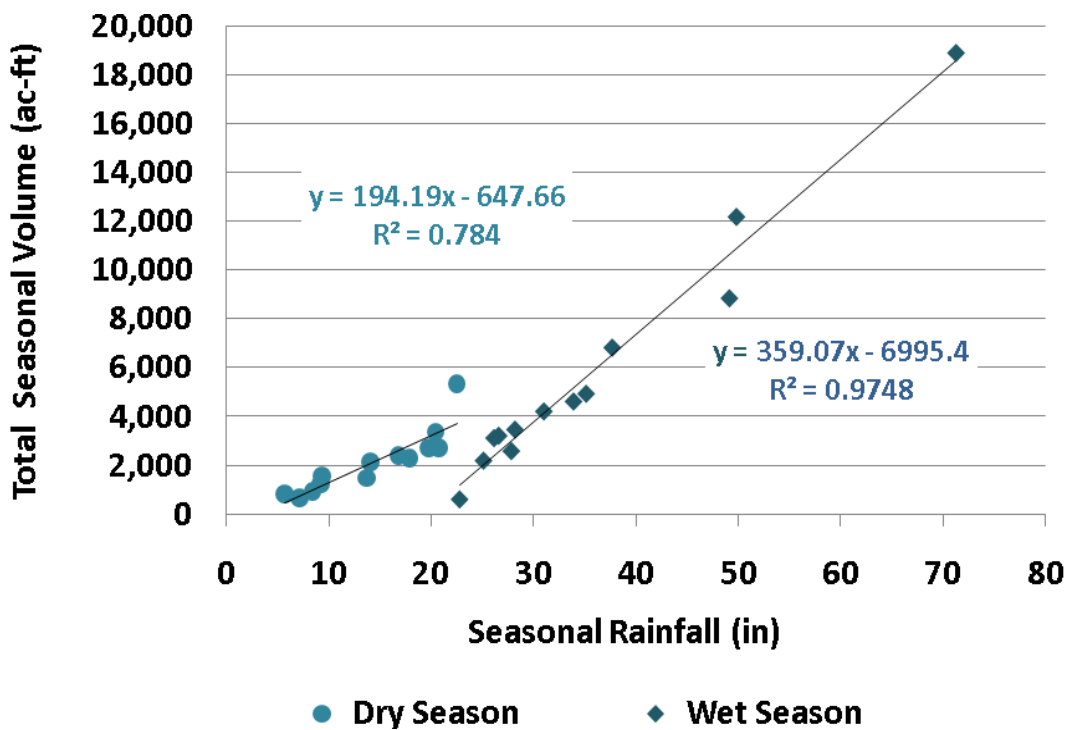


Figure 6-14 Correlation of Seasonal Total Volume to Rainfall for Ainger Creek Basin



Table 6-18 Wet Season Total Volume to Rainfall Coefficients for Ainger Creek Basin

	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	40.79	71.22	0.57
1996	7.51	28.19	0.27
1997	6.97	26.59	0.26
1998	6.76	26.14	0.26
1999	5.62	27.82	0.20
2000	4.76	25.12	0.19
2001	14.75	37.67	0.39
2002	9.12	31.01	0.29
2003	26.31	49.80	0.53
2004	9.99	33.90	0.29
2005	19.11	49.11	0.39
2006	10.68	35.13	0.30
2007	1.34	22.79	0.06
Average	12.59	35.73	0.31

Table 6-19 Dry Season Total Volume to Rainfall Coefficients for Ainger Creek Basin

	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	3.18	13.70	0.23
1996	4.97	17.91	0.28
1997	5.86	20.72	0.28
1998	11.54	22.52	0.51
1999	1.97	8.42	0.23
2000	1.77	5.66	0.31
2001	3.34	9.31	0.36
2002	7.27	20.43	0.36
2003	4.62	14.04	0.33
2004	5.15	16.79	0.31
2005	5.87	19.78	0.30
2006	2.69	9.24	0.29
2007	1.40	7.13	0.20
Average	4.59	14.28	0.31

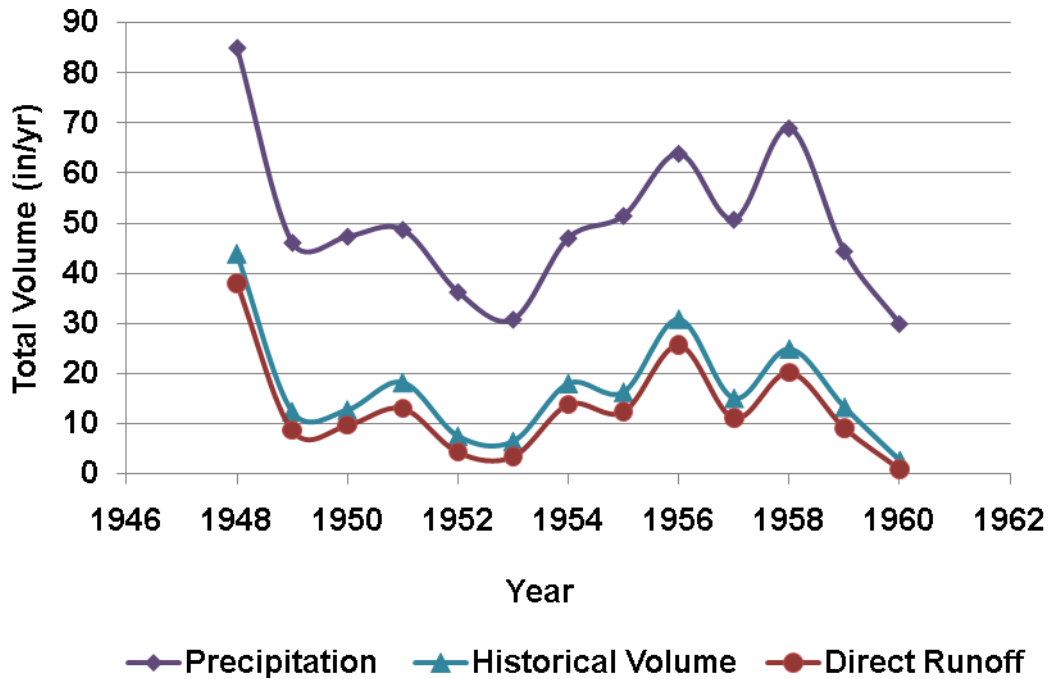


Figure 6-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Ainger Creek Basin

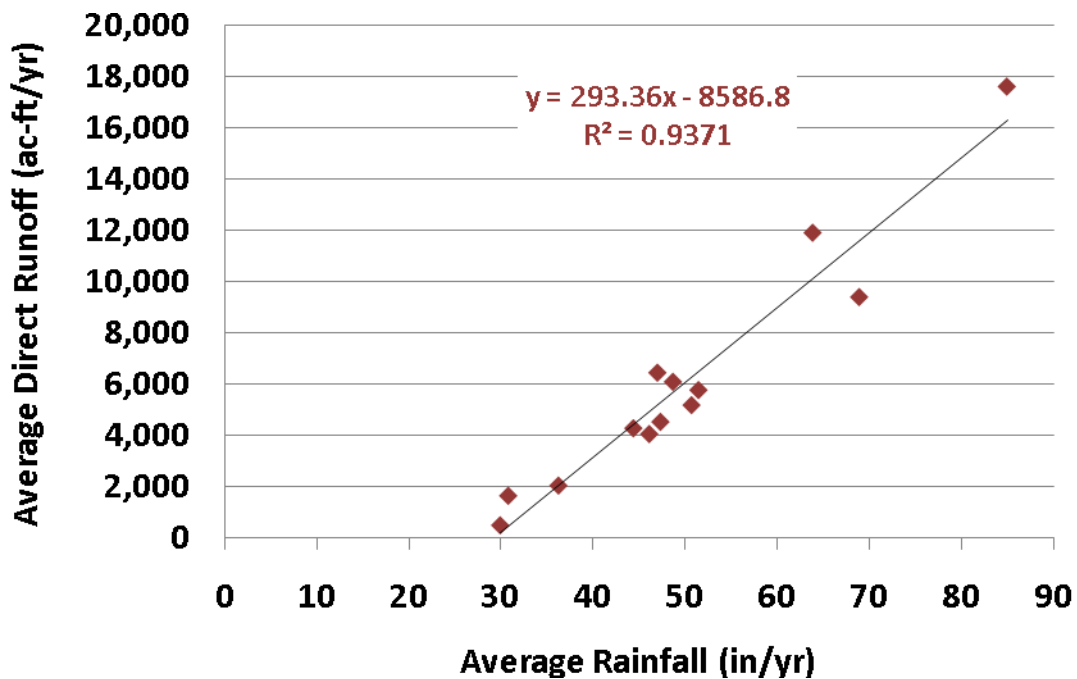


Figure 6-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 6-20 Annual Direct Runoff to Rainfall Coefficients for Ainger Creek Basin

	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	38.00	84.92	0.45
1949	8.68	46.10	0.19
1950	9.71	47.31	0.21
1951	13.09	48.67	0.27
1952	4.33	36.24	0.12
1953	3.47	30.78	0.11
1954	13.86	46.98	0.30
1955	12.39	51.44	0.24
1956	25.66	63.83	0.40
1957	11.12	50.68	0.22
1958	20.24	68.88	0.29
1959	9.17	44.37	0.21
1960	0.98	29.91	0.03
Average	13.13	50.01	0.23

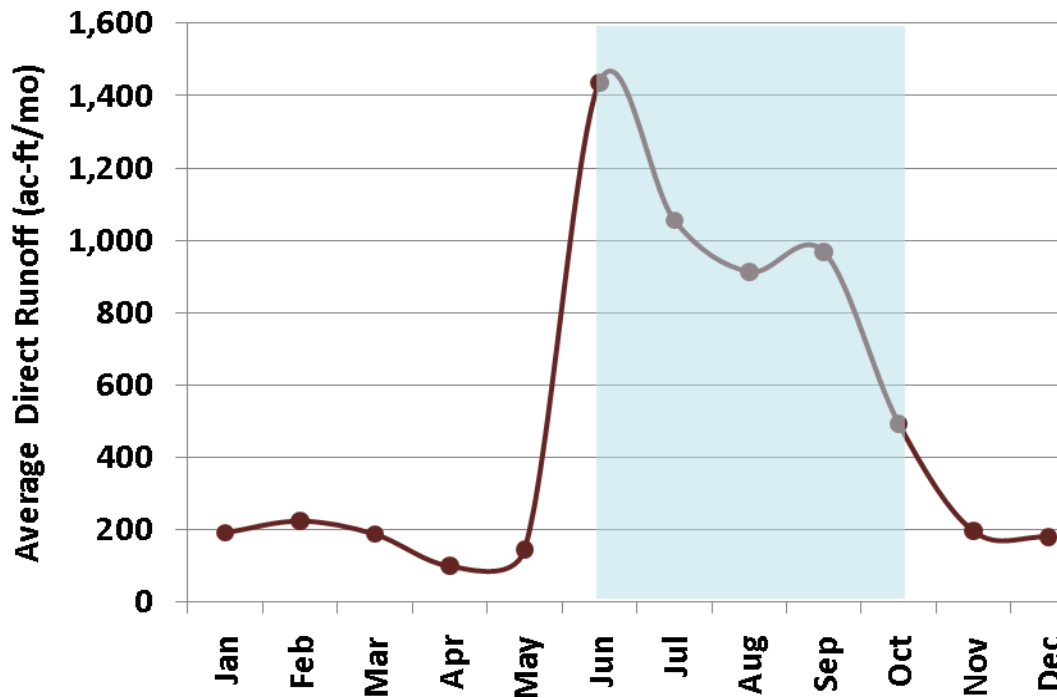


Figure 6-17 Variability of Average Monthly Direct Runoff to Ainger Creek Basin



Table 6-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.41	1.89	0.22
Feb	0.48	2.04	0.24
Mar	0.40	2.31	0.17
Apr	0.21	2.05	0.10
May	0.31	2.29	0.14
Jun	3.10	9.24	0.34
Jul	2.28	8.23	0.28
Aug	1.97	7.73	0.25
Sep	2.09	7.11	0.29
Oct	1.06	3.42	0.31
Nov	0.42	1.76	0.24
Dec	0.39	1.95	0.20

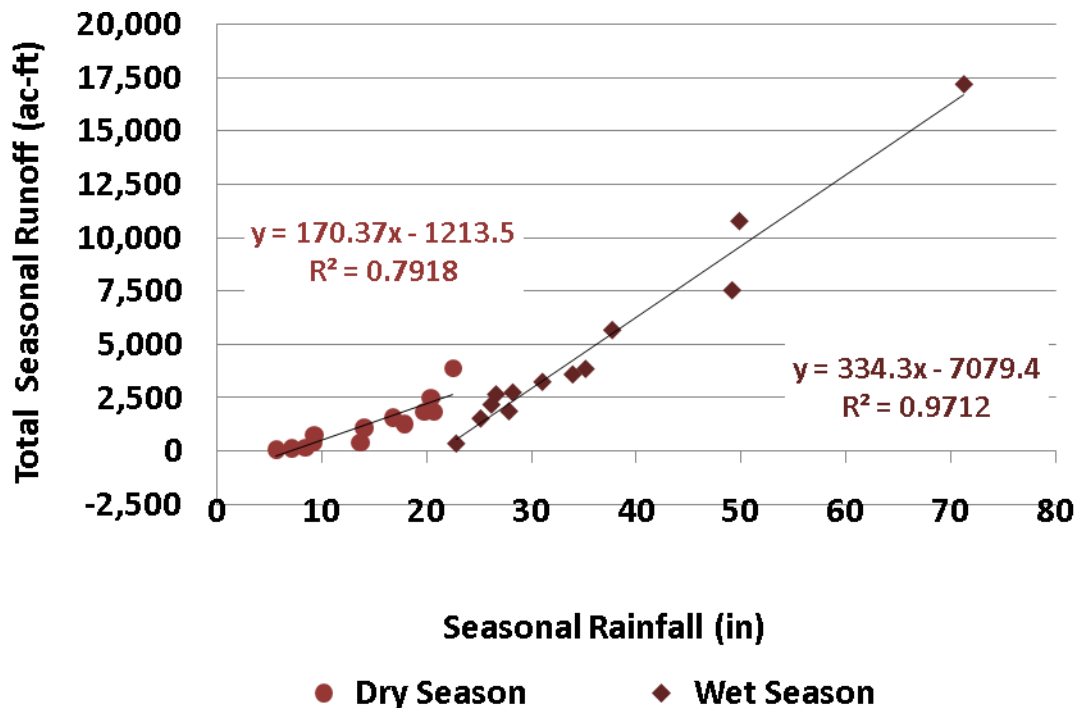


Figure 6-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 6-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	37.16	71.22	0.52
1949	5.93	28.19	0.21
1950	5.74	26.59	0.22
1951	4.70	26.14	0.18
1952	4.02	27.82	0.14
1953	3.30	25.12	0.13
1954	12.25	37.67	0.33
1955	7.00	31.01	0.23
1956	23.29	49.80	0.47
1957	7.75	33.90	0.23
1958	16.28	49.11	0.33
1959	8.32	35.13	0.24
1960	0.75	22.79	0.03
Average	10.50	35.73	0.25

Table 6-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.84	13.70	0.06
1949	2.75	17.91	0.15
1950	3.97	20.72	0.19
1951	8.39	22.52	0.37
1952	0.31	8.42	0.04
1953	0.18	5.66	0.03
1954	1.61	9.31	0.17
1955	5.39	20.43	0.26
1956	2.38	14.04	0.17
1957	3.37	16.79	0.20
1958	3.96	19.78	0.20
1959	0.85	9.24	0.09
1960	0.23	7.13	0.03
Average	2.63	14.28	0.15



6.3 FUTURE CONDITIONS

Table 6-24 Future Total Volume for Ainger Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	705.5	597.3	388.0	309.6	172.0	7,947.2	5,425.8	3,418.6	2,977.8	3,825.7	855.2	524.2	27,146.9
2016	805.0	309.4	559.1	296.5	927.6	741.6	654.3	883.8	1,268.2	2,307.2	557.0	393.3	9,703.1
2017	393.8	171.2	213.0	438.6	129.2	288.3	404.2	416.4	2,663.1	597.6	862.7	1,461.5	8,039.5
2018	2,177.3	1,658.7	1,671.6	463.1	387.0	358.3	1,195.4	886.1	1,756.5	836.0	1,214.4	300.1	12,904.5
2019	320.2	132.5	154.9	92.3	133.7	314.2	603.5	756.1	1,580.2	843.3	429.1	406.7	5,766.9
2020	255.4	135.5	129.0	138.6	77.4	241.8	414.7	1,147.2	1,253.0	482.7	297.0	226.4	4,798.7
2021	159.6	112.4	1,082.9	93.2	80.5	465.0	2,423.1	1,769.1	3,124.6	995.9	467.8	304.7	11,078.8
2022	218.6	693.1	136.7	275.4	330.8	1,155.3	442.5	2,545.0	1,376.8	658.5	1,793.0	857.0	10,482.7
2023	342.7	221.0	241.3	411.5	453.4	5,017.0	1,509.2	4,328.6	4,113.2	887.6	506.4	714.2	18,746.1
2024	391.3	873.7	228.3	376.0	130.0	480.2	1,287.3	2,302.1	1,730.4	1,507.9	602.2	915.4	10,824.9
2025	321.5	480.6	982.8	282.6	1,091.2	4,317.7	3,451.5	1,841.5	1,446.2	2,939.8	1,128.2	513.7	18,797.4
2026	313.6	629.6	190.4	132.8	145.2	370.7	2,494.7	2,191.9	1,565.7	787.7	429.4	509.7	9,761.5
2027	289.7	169.8	117.7	189.6	82.0	230.6	240.7	210.2	310.3	481.7	204.5	157.0	2,683.8
Average	514.9	475.8	468.9	269.2	318.5	1,686.7	1,580.5	1,745.9	1,935.9	1,319.3	719.0	560.3	11,595.0



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Table 6-25 Future Direct Runoff for Ainger Creek Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	341.0	253.0	66.7	100.9	17.6	7,523.2	4,323.4	1,995.1	1,595.5	2,354.6	22.4	28.4	18,621.6
2016	368.4	31.0	358.9	148.3	769.2	498.7	324.2	525.4	760.8	1,421.6	7.4	25.3	5,239.4
2017	140.0	5.1	72.6	332.3	41.3	221.2	338.8	256.9	2,330.3	148.0	510.5	888.0	5,285.1
2018	1,438.2	774.2	957.0	4.2	61.2	128.3	936.8	455.7	955.3	41.8	758.8	3.4	6,514.9
2019	117.2	0.0	44.6	9.3	64.8	258.6	469.5	505.4	1,003.7	116.8	21.4	129.5	2,740.7
2020	62.5	3.6	21.7	57.0	10.0	188.5	340.0	856.8	704.8	26.7	8.3	12.3	2,292.1
2021	0.0	0.0	984.1	15.8	18.0	415.2	2,057.2	814.4	2,038.5	132.5	8.9	3.4	6,487.9
2022	9.8	549.2	5.7	180.7	254.5	1,064.9	179.4	1,936.9	296.1	21.7	1,416.0	448.3	6,363.2
2023	0.0	17.5	79.9	295.5	361.4	4,487.2	408.6	2,912.3	2,862.0	6.8	5.5	365.4	11,802.2
2024	154.8	710.0	78.0	264.0	40.8	411.9	965.9	1,274.2	603.7	812.4	185.0	626.8	6,127.5
2025	109.3	340.2	779.4	96.0	907.6	3,396.4	2,075.2	661.9	433.2	2,034.7	349.0	1.3	11,184.1
2026	7.9	392.6	5.6	0.0	37.4	287.2	2,021.7	1,100.2	490.3	99.9	15.8	218.2	4,676.8
2027	87.1	32.5	6.0	107.5	15.5	178.8	196.2	149.7	199.1	236.9	5.4	17.2	1,231.8
Average	218.2	239.1	266.2	124.0	199.9	1,466.2	1,125.9	1,034.2	1,098.0	573.4	255.0	212.9	6,812.9

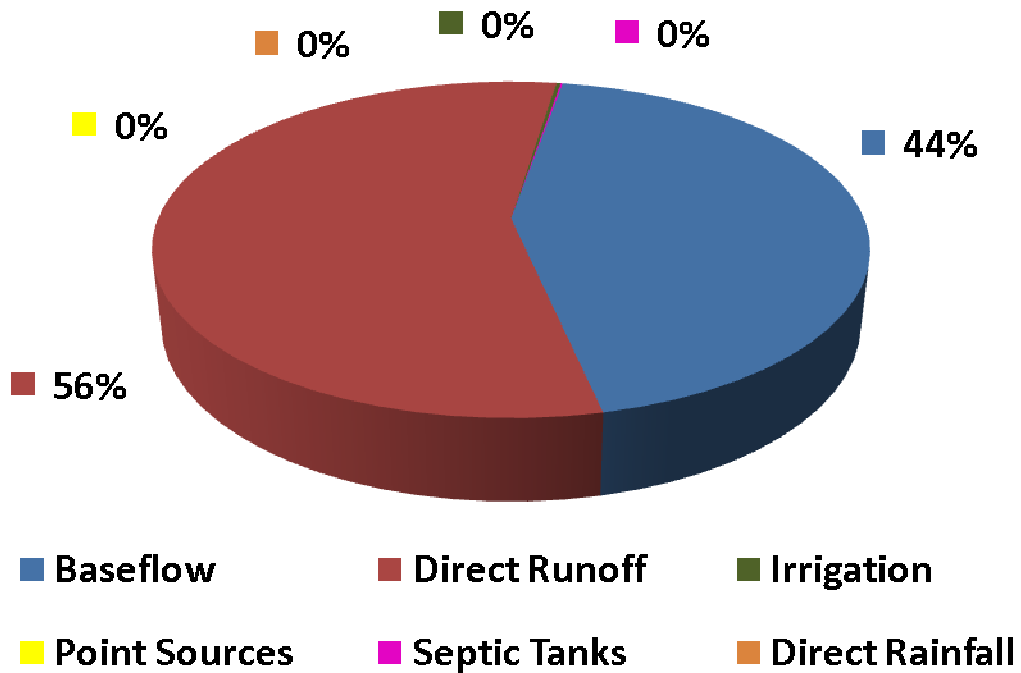


Figure 6-19 Ainger Creek Basin Future Total Volume Water Budget

Table 6-26 Summary of Annual Future Total Volume Inputs for Ainger Creek Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	8,498.0	18,621.6	18.9	0.0	8.4	0.0
2016	4,436.4	5,239.4	18.9	0.0	8.4	0.0
2017	2,727.1	5,285.1	18.9	0.0	8.4	0.0
2018	6,362.4	6,514.9	18.9	0.0	8.4	0.0
2019	2,998.9	2,740.7	18.9	0.0	8.4	0.0
2020	2,479.3	2,292.1	18.9	0.0	8.4	0.0
2021	4,563.6	6,487.9	18.9	0.0	8.4	0.0
2022	4,092.2	6,363.2	18.9	0.0	8.4	0.0
2023	6,916.6	11,802.2	18.9	0.0	8.4	0.0
2024	4,670.2	6,127.5	18.9	0.0	8.4	0.0
2025	7,586.0	11,184.1	18.9	0.0	8.4	0.0
2026	5,057.4	4,676.8	18.9	0.0	8.4	0.0
2027	1,424.6	1,231.8	18.9	0.0	8.4	0.0
Average	4,754.8	6,812.9	18.9	0.0	8.4	0.0

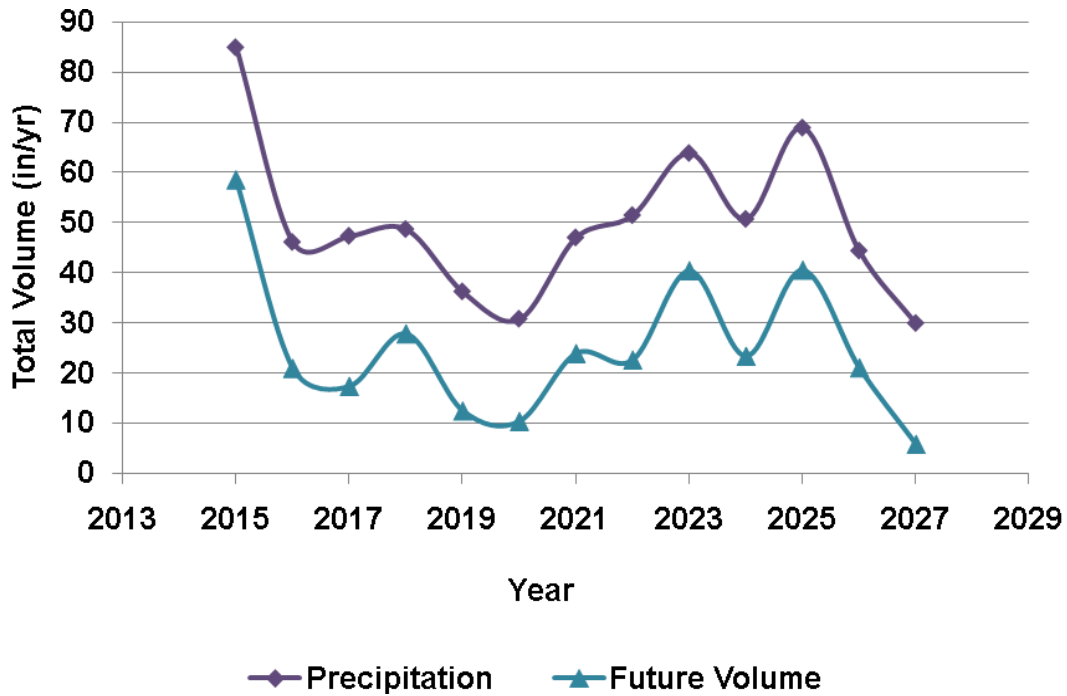


Figure 6-20 Annual Variability of Precipitation and Total Volume for Ainger Creek Basin

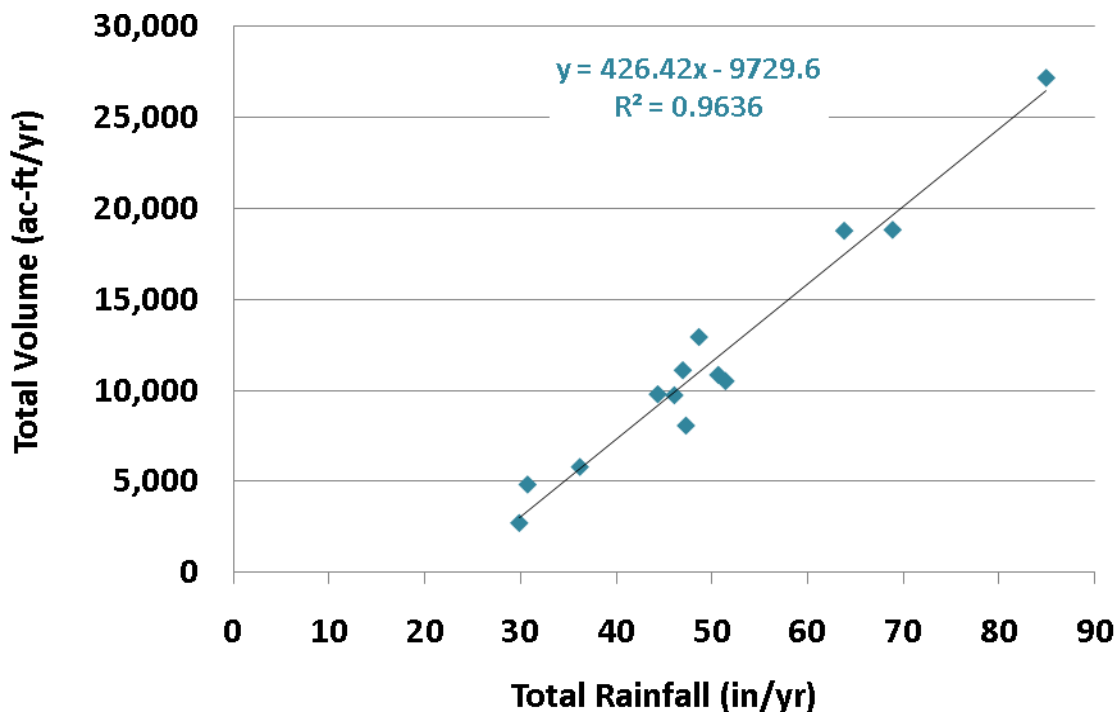


Figure 6-21 Correlation of Annual Total Volume to Rainfall for Ainger Creek Basin



Table 6-27 Annual Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	58.60	84.92	0.69
2016	20.94	46.10	0.45
2017	17.35	47.31	0.37
2018	27.85	48.67	0.57
2019	12.45	36.24	0.34
2020	10.36	30.78	0.34
2021	23.91	46.98	0.51
2022	22.63	51.44	0.44
2023	40.46	63.83	0.63
2024	23.37	50.68	0.46
2025	40.57	68.88	0.59
2026	21.07	44.37	0.47
2027	5.79	29.91	0.19
Average	25.03	50.01	0.47

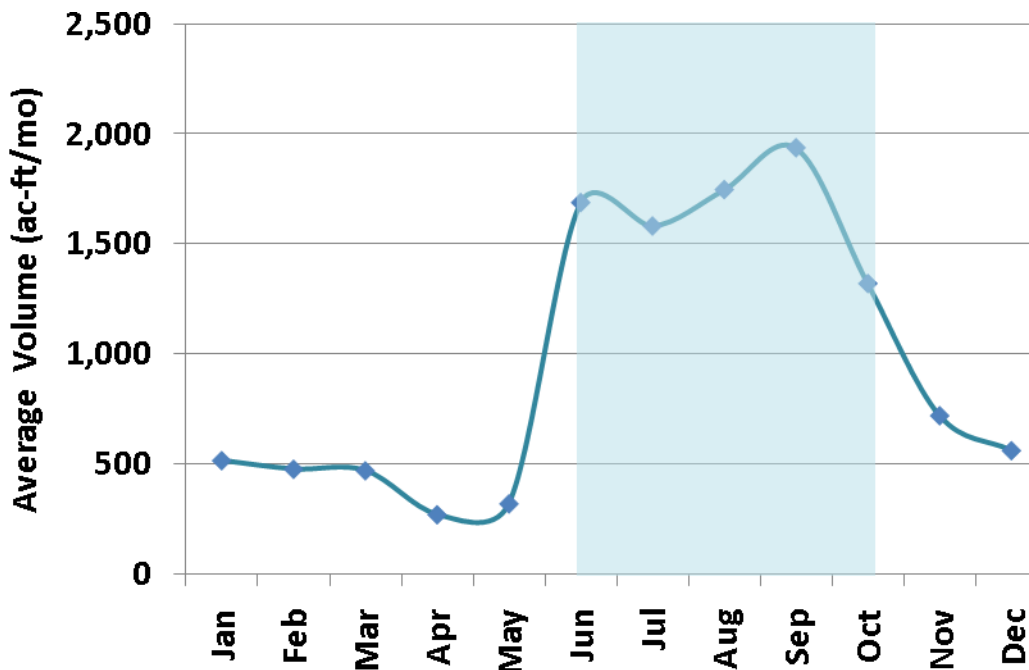


Figure 6-22 Variability of Average Monthly Total Volume in Ainger Creek Basin



Table 6-28 Average Monthly Rainfall to Total Volume Coefficients for Ainger Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.11	1.89	0.59
Feb	1.03	2.04	0.50
Mar	1.01	2.31	0.44
Apr	0.58	2.05	0.28
May	0.69	2.29	0.30
Jun	3.64	9.24	0.39
Jul	3.41	8.23	0.41
Aug	3.77	7.73	0.49
Sep	4.18	7.11	0.59
Oct	2.85	3.42	0.83
Nov	1.55	1.76	0.88
Dec	1.21	1.95	0.62

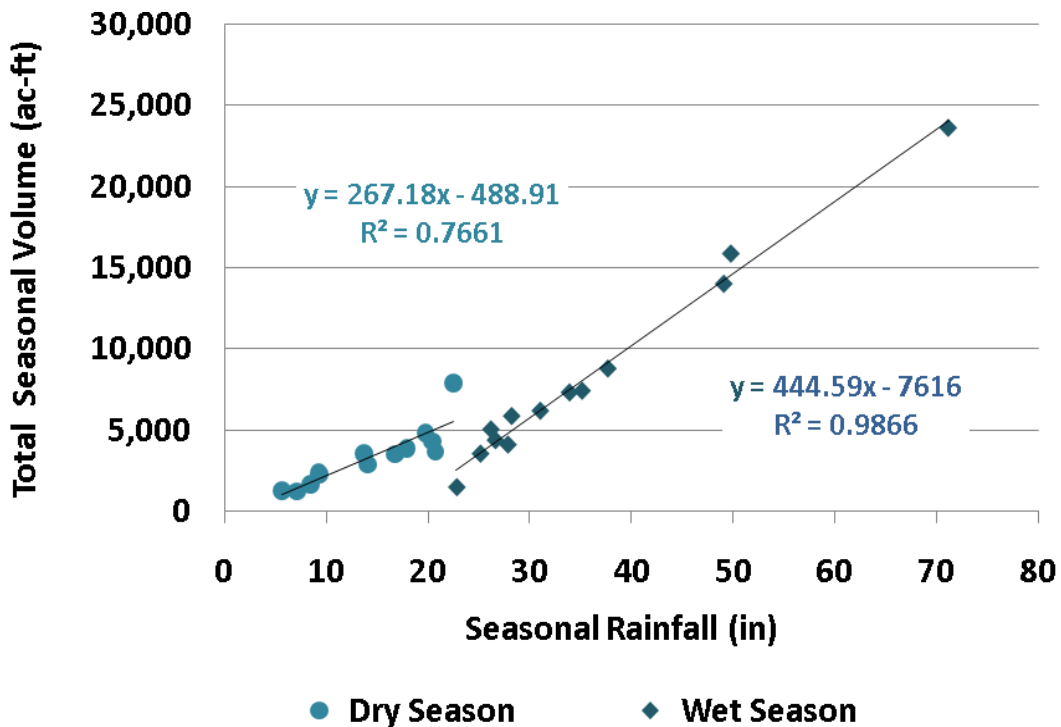


Figure 6-23 Correlation of Seasonal Total Volume to Rainfall for Ainger Creek Basin



Table 6-29 Wet Season Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	50.93	71.22	0.72
2016	12.64	28.19	0.45
2017	9.43	26.59	0.35
2018	10.86	26.14	0.42
2019	8.84	27.82	0.32
2020	7.64	25.12	0.30
2021	18.95	37.67	0.50
2022	13.34	31.01	0.43
2023	34.22	49.80	0.69
2024	15.77	33.90	0.47
2025	30.21	49.11	0.62
2026	16.00	35.13	0.46
2027	3.18	22.79	0.14
Average	17.85	35.73	0.45

Table 6-30 Dry Season Total Volume to Rainfall Coefficients for Ainger Creek Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	7.67	13.70	0.56
2016	8.31	17.91	0.46
2017	7.92	20.72	0.38
2018	16.99	22.52	0.75
2019	3.60	8.42	0.43
2020	2.72	5.66	0.48
2021	4.97	9.31	0.53
2022	9.29	20.43	0.45
2023	6.24	14.04	0.44
2024	7.59	16.79	0.45
2025	10.36	19.78	0.52
2026	5.07	9.24	0.55
2027	2.61	7.13	0.37
Average	7.18	14.28	0.49

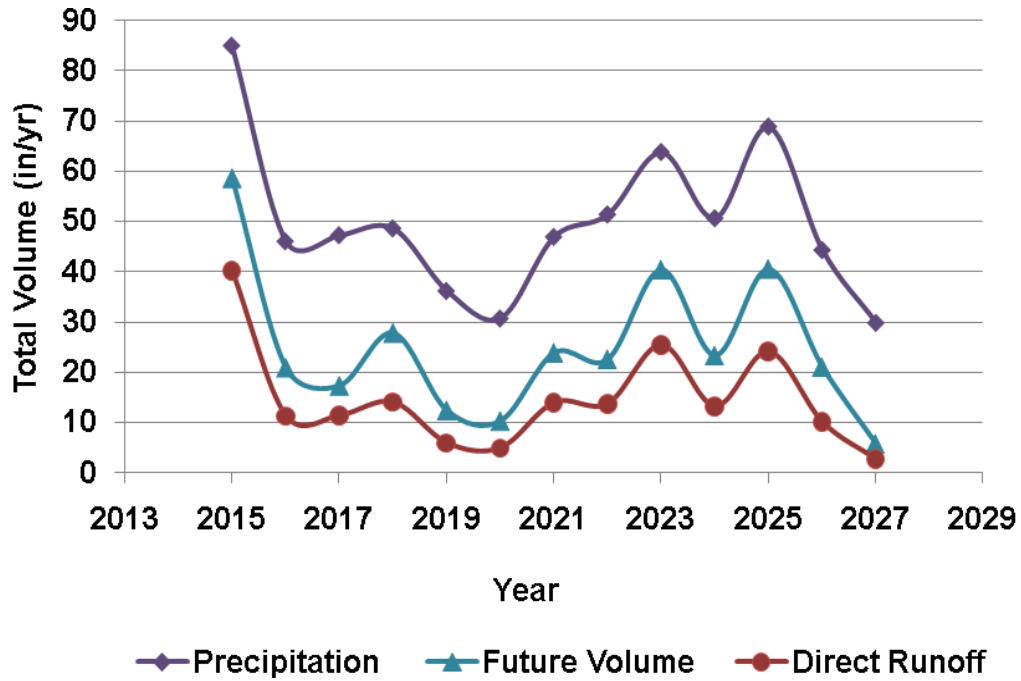


Figure 6-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Ainger Creek Basin

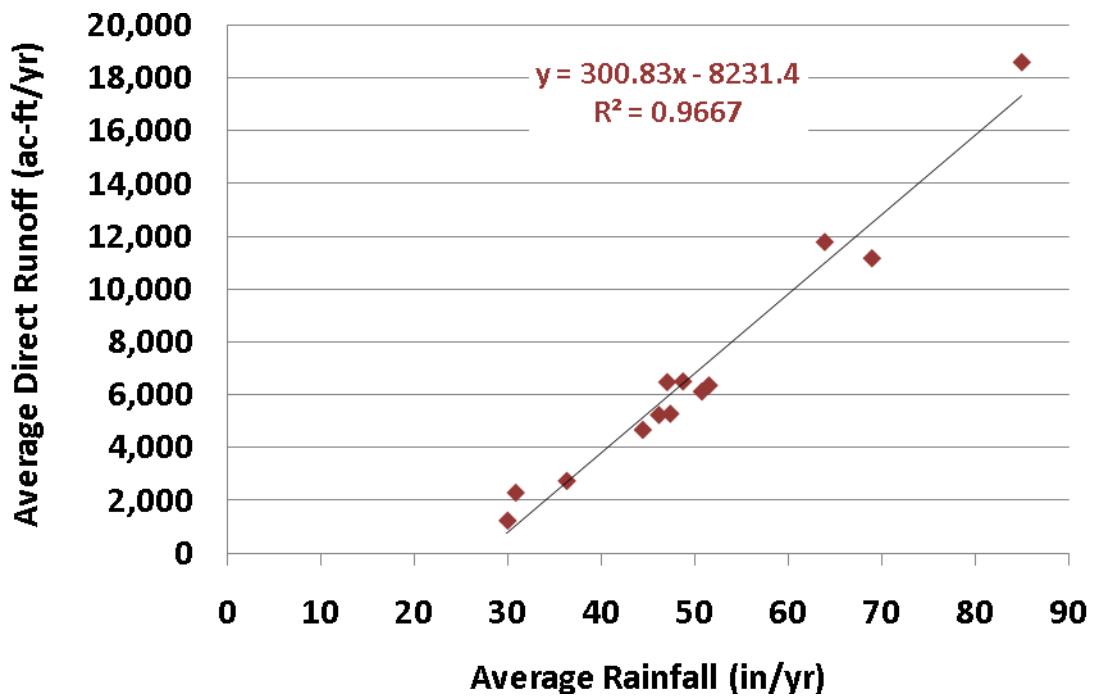


Figure 6-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 6-31 Annual Direct Runoff to Rainfall Coefficients for Ainger Creek Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	40.19	84.92	0.47
2016	11.31	46.10	0.25
2017	11.41	47.31	0.24
2018	14.06	48.67	0.29
2019	5.92	36.24	0.16
2020	4.95	30.78	0.16
2021	14.00	46.98	0.30
2022	13.73	51.44	0.27
2023	25.47	63.83	0.40
2024	13.23	50.68	0.26
2025	24.14	68.88	0.35
2026	10.09	44.37	0.23
2027	2.66	29.91	0.09
Average	14.71	50.01	0.27

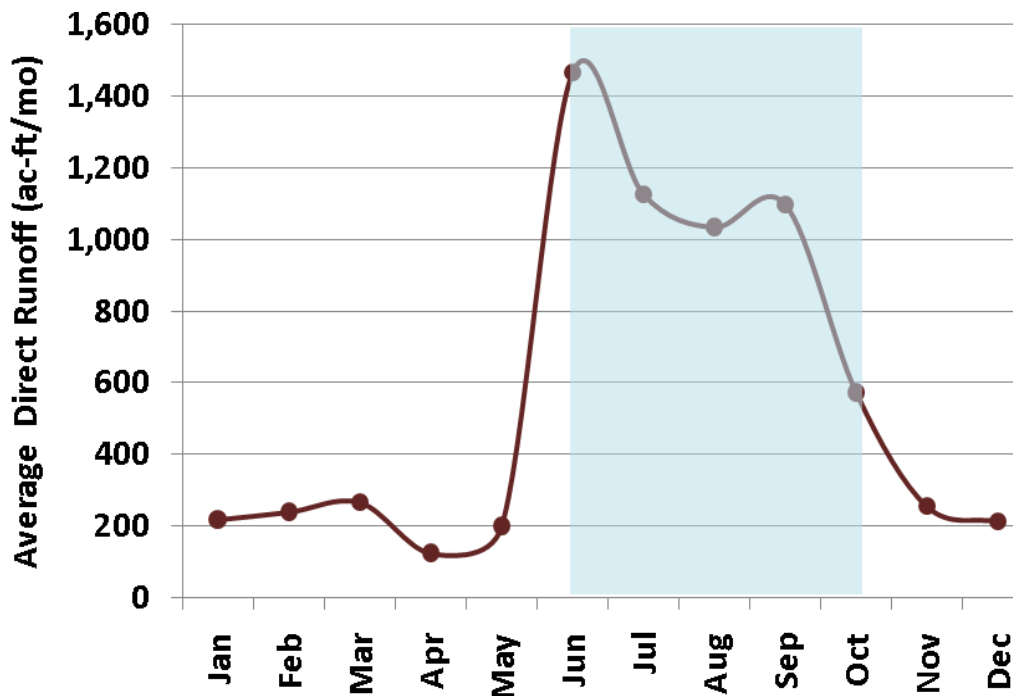


Figure 6-26 Variability of Average Monthly Direct Runoff to Ainger Creek Basin



Table 6-32 Average Monthly Rainfall to Direct Runoff Coefficients for Ainger Creek Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	0.47	1.89	0.25
Feb	0.52	2.04	0.25
Mar	0.57	2.31	0.25
Apr	0.27	2.05	0.13
May	0.43	2.29	0.19
Jun	3.16	9.24	0.34
Jul	2.43	8.23	0.30
Aug	2.23	7.73	0.29
Sep	2.37	7.11	0.33
Oct	1.24	3.42	0.36
Nov	0.55	1.76	0.31
Dec	0.46	1.95	0.24

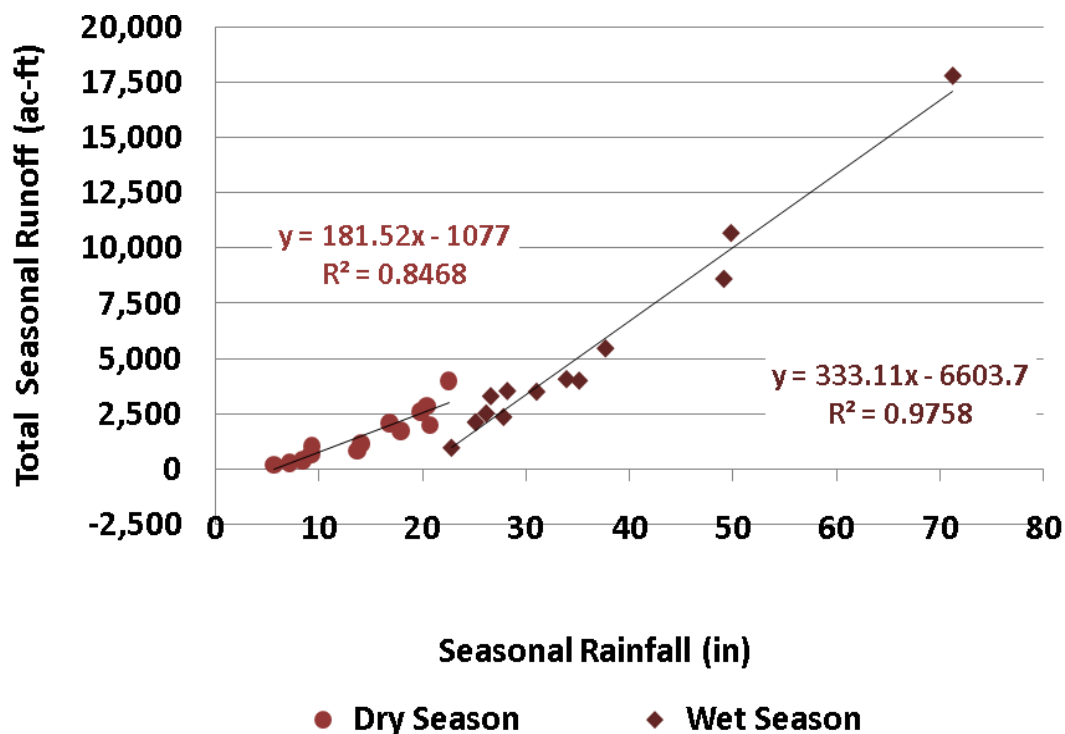


Figure 6-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 6-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	38.40	71.22	0.54
2016	7.62	28.19	0.27
2017	7.11	26.59	0.27
2018	5.43	26.14	0.21
2019	5.08	27.82	0.18
2020	4.57	25.12	0.18
2021	11.78	37.67	0.31
2022	7.55	31.01	0.24
2023	23.05	49.80	0.46
2024	8.78	33.90	0.26
2025	18.57	49.11	0.38
2026	8.63	35.13	0.25
2027	2.07	22.79	0.09
Average	11.43	35.73	0.28

Table 6-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	1.79	13.70	0.13
2016	3.69	17.91	0.21
2017	4.30	20.72	0.21
2018	8.63	22.52	0.38
2019	0.83	8.42	0.10
2020	0.38	5.66	0.07
2021	2.22	9.31	0.24
2022	6.18	20.43	0.30
2023	2.43	14.04	0.17
2024	4.45	16.79	0.26
2025	5.57	19.78	0.28
2026	1.46	9.24	0.16
2027	0.58	7.13	0.08
Average	3.27	14.28	0.20



6.4 WATER BUDGET CHANGES

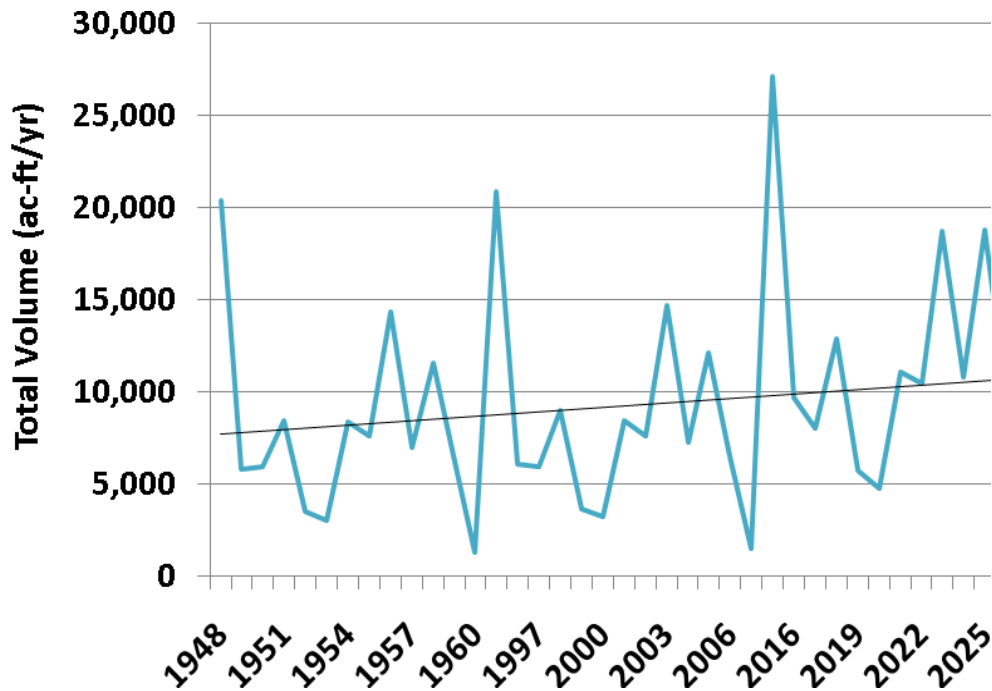


Figure 6-28 Trend in Total Volume from Historical through Future Time Series

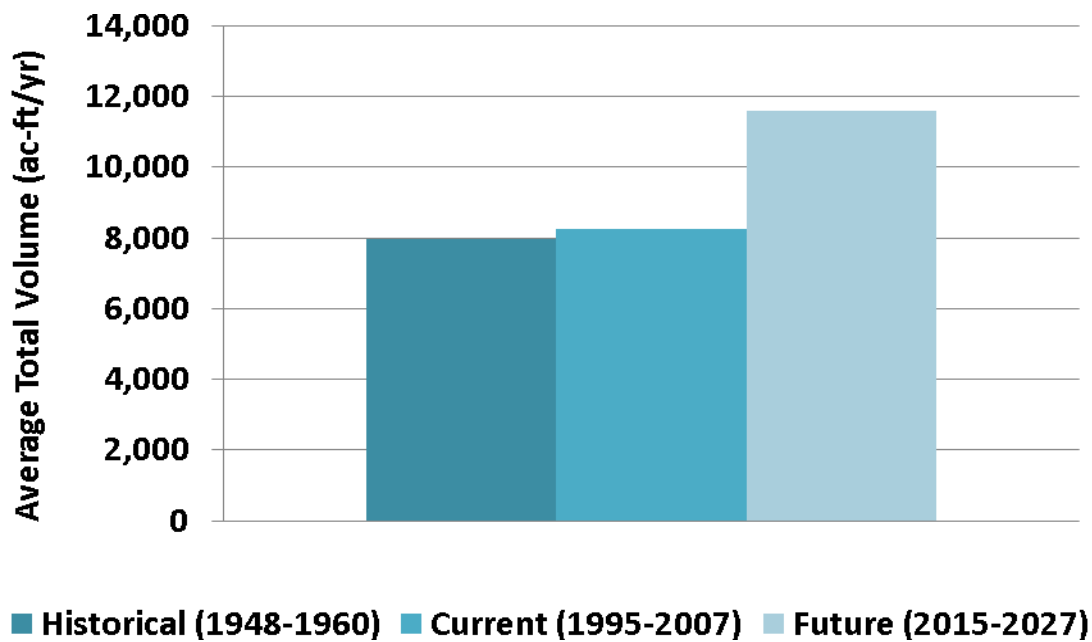


Figure 6-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay



Table 6-35 Change in Total Volume from Historical to Current Conditions

Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	20,370	20,850	480
2	5,779	6,106	327
3	5,940	5,960	20
4	8,478	9,031	553
5	3,516	3,692	175
6	3,029	3,224	195
7	8,380	8,455	75
8	7,590	7,632	42
9	14,329	14,670	341
10	7,016	7,252	236
11	11,574	12,148	574
12	6,194	6,536	343
13	1,272	1,523	251
Average	7,959	8,237	278

Table 6-36 Change in Total Volume from Current to Future Conditions

Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	20,850	27,147	6,297
2	6,106	9,703	3,597
3	5,960	8,039	2,079
4	9,031	12,905	3,873
5	3,692	5,767	2,075
6	3,224	4,799	1,575
7	8,455	11,079	2,624
8	7,632	10,483	2,851
9	14,670	18,746	4,076
10	7,252	10,825	3,573
11	12,148	18,797	6,649
12	6,536	9,762	3,225
13	1,523	2,684	1,161
Average	8,237	11,595	3,358

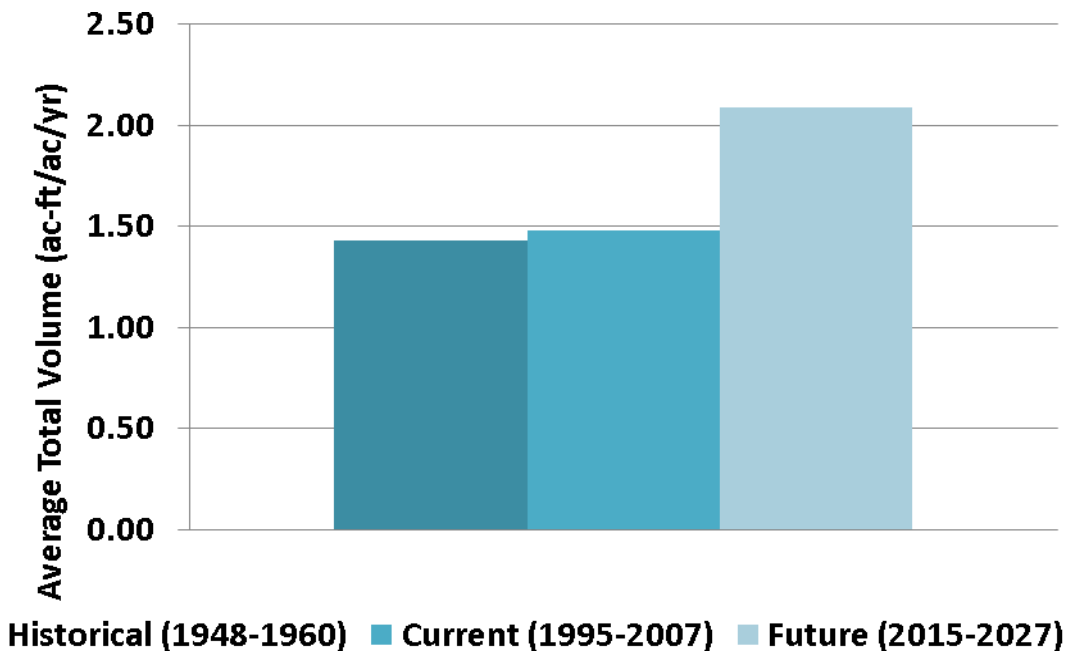


Figure 6-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay

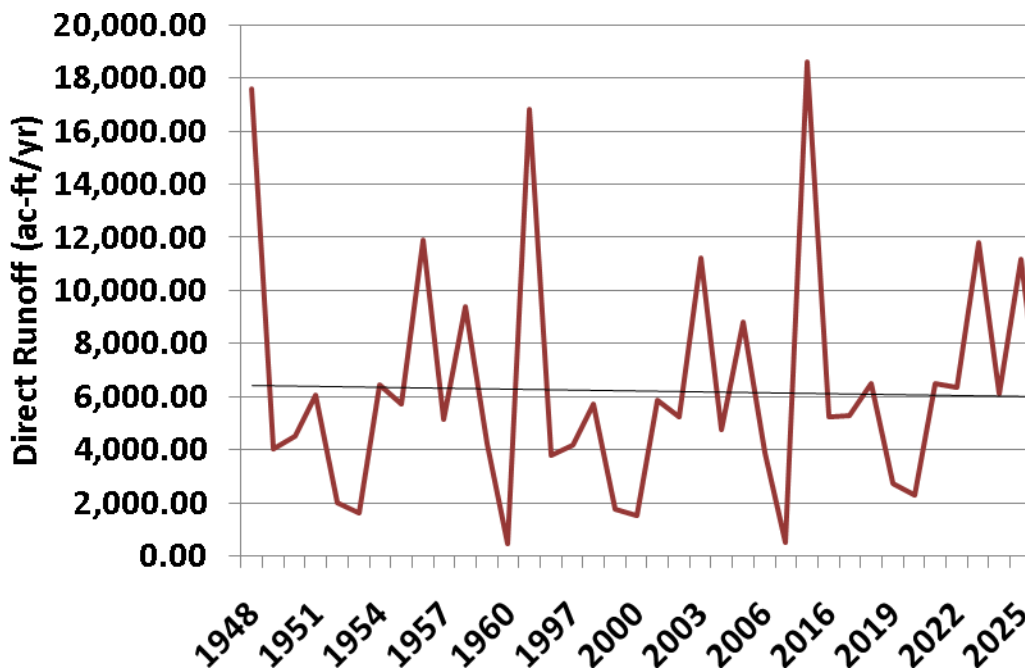


Figure 6-31 Trend in Direct Runoff from Historical through Future Time Series

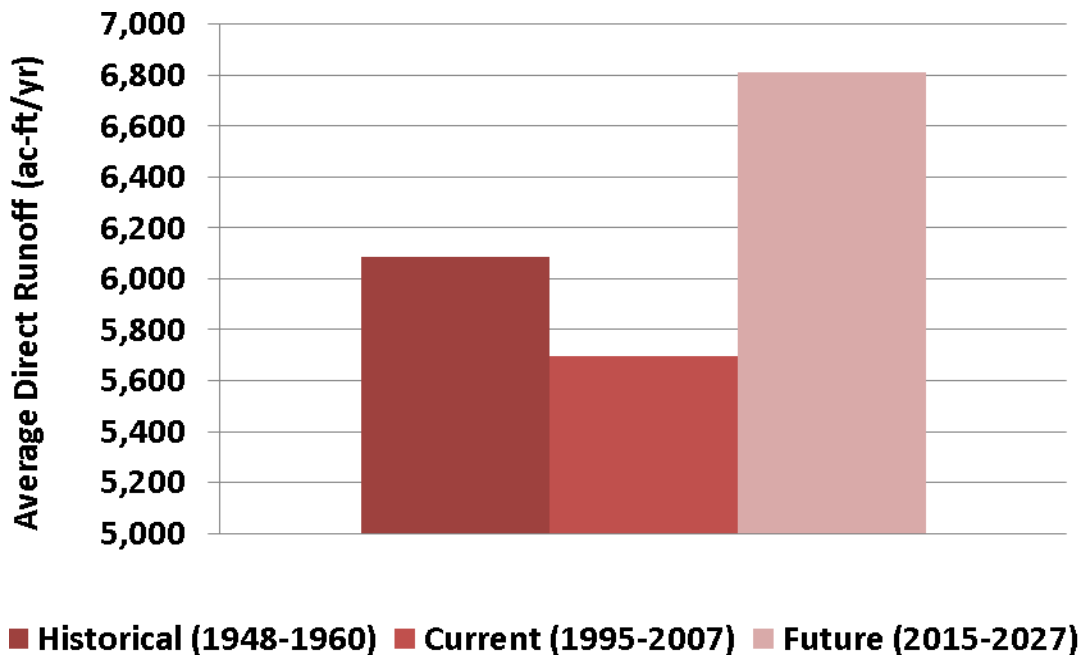


Figure 6-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay

Table 6-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	17,606	16,823	-783
2	4,022	3,767	-255
3	4,498	4,192	-306
4	6,064	5,701	-363
5	2,008	1,780	-227
6	1,608	1,521	-87
7	6,421	5,856	-565
8	5,742	5,258	-484
9	11,890	11,207	-683
10	5,153	4,753	-400
11	9,377	8,792	-585
12	4,247	3,875	-372
13	454	498	44
Average	6,084	5,694	-390



Table 6-38 Change in Direct Runoff from Current to Future Conditions			
Year	Current Direct Runoff (ac-ft) 1995-2007	Future Direct Runoff (ac-ft) 2015-2027	Direct Runoff Change (ac-ft) (future-current)
1	16,823	18,622	1,798
2	3,767	5,239	1,472
3	4,192	5,285	1,093
4	5,701	6,515	814
5	1,780	2,741	960
6	1,521	2,292	771
7	5,856	6,488	631
8	5,258	6,363	1,105
9	11,207	11,802	595
10	4,753	6,127	1,374
11	8,792	11,184	2,392
12	3,875	4,677	802
13	498	1,232	734
Average	5,694	6,813	1,119

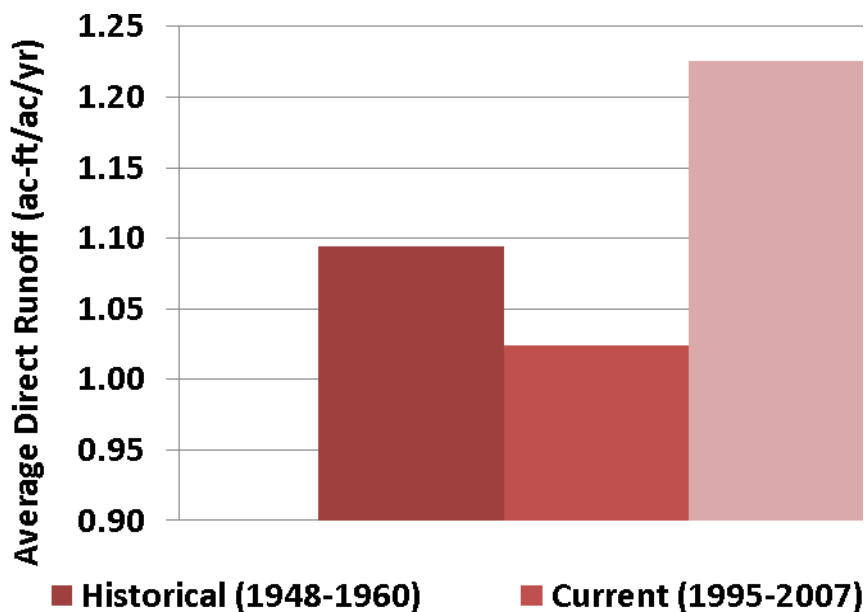


Figure 6-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay



7.0 LEMON BAY COASTAL BASIN

7.1 CURRENT CONDITIONS

Table 7-1 Monthly Rainfall for Lemon Bay Coastal Basin (inches)															
Current Year	Historical Equivalent Year	Future Equivalent Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	1948	2015	6.42	4.76	2.56	6.00	0.48	44.05	32.01	14.08	19.45	21.18	1.91	2.80	155.69
1996	1949	2016	6.79	1.93	8.34	3.95	8.58	6.35	6.45	13.23	8.87	13.79	0.55	1.91	80.77
1997	1950	2017	3.55	0.54	2.55	11.25	2.53	4.85	5.19	5.90	14.00	4.49	7.88	12.03	74.76
1998	1951	2018	11.77	10.36	8.76	0.42	3.69	4.30	12.24	9.18	15.95	1.65	7.83	0.98	87.13
1999	1952	2019	4.47	0.13	3.46	0.67	0.84	12.24	8.26	14.69	17.74	5.35	1.26	3.42	72.54
2000	1953	2020	2.09	1.10	1.53	3.98	1.07	8.21	8.21	13.55	11.10	0.33	1.67	1.11	53.94
2001	1954	2021	0.33	0.02	14.17	0.63	0.44	11.56	24.65	11.77	20.18	3.36	0.59	0.57	88.27
2002	1955	2022	1.14	8.80	0.54	2.40	4.62	11.68	6.23	20.64	6.97	1.68	10.03	9.06	83.78
2003	1956	2023	0.11	1.85	3.88	6.12	7.93	30.29	6.87	20.65	23.40	1.05	1.08	7.21	110.45
2004	1957	2024	3.09	7.63	1.73	6.86	2.06	10.28	12.99	12.22	9.50	6.40	3.74	5.87	82.37
2005	1958	2025	3.67	5.93	8.74	4.21	10.22	32.46	16.54	10.48	7.55	18.55	7.05	0.53	125.92
2006	1959	2026	0.83	5.33	0.47	0.15	3.20	8.97	18.53	14.01	10.74	2.22	1.01	5.45	70.91
2007	1960	2027	2.87	3.13	0.55	4.79	1.43	9.14	8.64	8.21	9.76	8.99	1.47	2.17	61.15
Average			3.63	3.96	4.41	3.96	3.62	14.95	12.83	12.97	13.48	6.85	3.54	4.09	88.28



Table 7-2 Current Total Volume for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	932.1	684.6	418.9	736.1	131.3	7,432.5	5,755.3	2,683.0	3,831.7	3,938.3	681.3	590.9	27,816.0
1996	1,116.6	386.2	1,095.2	570.3	1,208.8	747.0	793.5	1,743.2	1,191.2	2,289.0	300.4	392.9	11,834.4
1997	546.6	149.2	371.5	1,393.8	319.5	551.5	567.8	652.6	1,805.8	530.6	1,058.6	1,796.3	9,743.8
1998	2,180.1	1,876.2	1,756.7	303.8	589.3	598.7	1,596.2	1,142.3	2,212.4	525.1	1,385.2	251.5	14,417.5
1999	608.9	98.9	443.3	128.7	126.1	1,335.2	938.7	1,802.6	2,744.8	1,048.8	397.1	607.2	10,280.2
2000	368.1	212.9	248.0	504.9	161.1	852.8	887.7	1,908.0	1,560.8	204.5	286.0	202.3	7,397.2
2001	106.7	62.4	1,965.8	121.4	83.6	1,287.2	3,540.4	2,163.7	3,449.4	806.8	321.4	238.0	14,146.7
2002	251.2	1,239.3	147.2	331.8	569.5	1,339.8	720.5	2,557.9	1,123.6	426.9	1,799.3	1,321.1	11,828.1
2003	237.5	337.6	538.4	877.5	1,045.7	4,653.6	1,141.8	3,473.4	4,570.8	544.1	377.4	1,133.9	18,931.6
2004	492.2	1,154.7	317.6	877.5	275.5	1,152.1	1,508.3	1,744.5	1,444.4	1,225.5	644.0	944.5	11,780.8
2005	646.6	960.7	1,380.2	556.3	1,410.8	4,953.8	3,109.5	1,659.8	1,337.2	3,306.6	1,262.8	350.2	20,934.7
2006	266.5	775.0	145.6	97.8	395.8	1,013.0	2,216.7	1,998.0	1,686.5	582.9	325.0	818.5	10,321.1
2007	442.9	419.4	128.1	602.1	204.5	1,034.5	971.8	946.3	1,096.3	1,116.8	272.4	329.4	7,564.6
Average	630.5	642.8	689.0	546.3	501.7	2,073.2	1,826.8	1,882.7	2,158.1	1,272.8	700.8	690.5	13,615.1



Table 7-3 Current Direct Runoff for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1995	135.8	52.3	29.5	52.4	0.3	2,774.5	2,137.2	603.2	1,305.8	1,127.6	13.4	31.0	8,262.9
1996	175.5	25.6	151.8	53.2	284.4	60.2	94.2	349.5	139.0	587.3	2.0	24.1	1,946.9
1997	68.6	1.4	34.9	244.1	17.5	44.9	55.1	47.5	451.6	75.3	257.4	461.9	1,760.1
1998	622.7	405.9	512.9	0.8	35.7	52.7	232.2	122.1	376.3	12.2	407.5	5.4	2,786.2
1999	71.7	0.0	33.0	4.0	6.0	138.0	103.3	332.6	676.3	110.7	12.0	93.8	1,581.5
2000	30.8	6.0	8.4	57.9	9.0	79.1	83.1	591.6	337.6	1.1	12.1	9.7	1,226.2
2001	0.8	0.0	529.9	3.6	0.6	153.9	953.2	492.7	982.6	32.5	4.8	1.0	3,155.5
2002	4.6	271.9	3.0	23.1	79.0	103.4	78.4	541.1	129.2	16.6	623.6	223.2	2,097.0
2003	0.0	13.2	35.4	204.2	197.9	1,442.6	80.9	934.1	1,666.9	6.7	4.1	258.6	4,844.5
2004	37.0	317.5	30.4	144.7	16.1	118.0	193.1	306.0	176.6	326.0	124.5	234.9	2,024.6
2005	159.1	289.7	408.0	42.0	296.1	1,421.9	788.1	153.4	151.2	1,082.6	213.7	0.2	5,005.9
2006	2.4	131.7	2.8	0.2	20.1	92.1	348.5	390.1	202.7	57.0	5.8	114.5	1,367.8
2007	32.5	33.5	2.1	90.5	9.2	88.7	79.1	64.4	91.3	142.9	19.7	20.5	674.5
Average	103.2	119.1	137.1	70.8	74.8	505.4	402.0	379.1	514.4	275.2	130.8	113.8	2,825.7

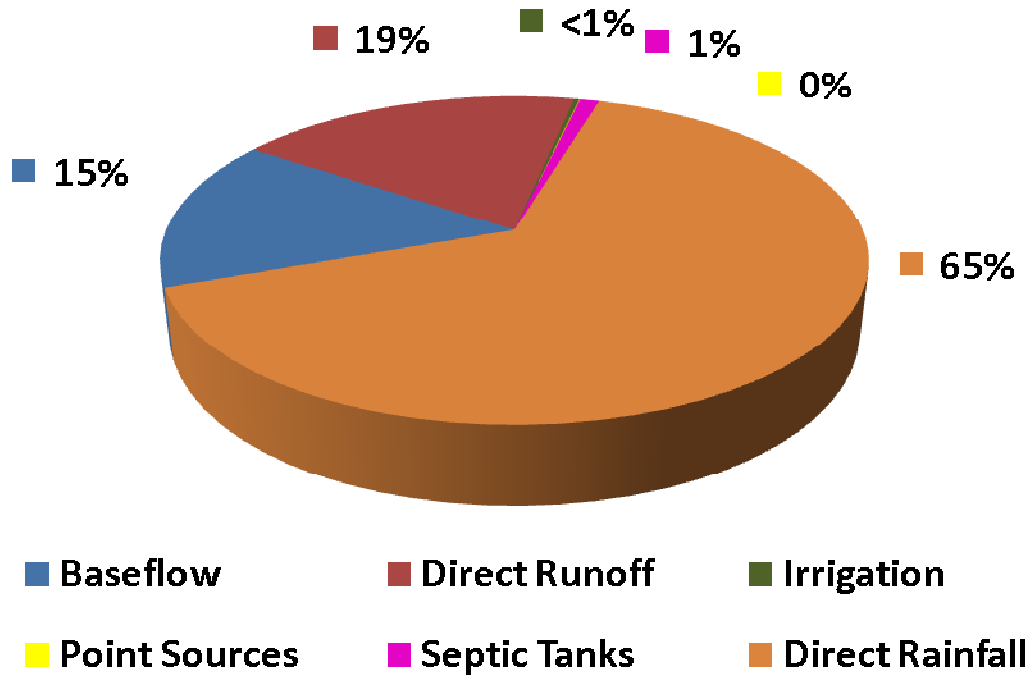


Figure 7-1 Lemon Bay Coastal Basin Current Total Volume Water Budget

Table 7-4 Summary of Annual Current Total Volume Inputs for Lemon Bay Coastal Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1995	4,277.7	8,262.9	34.2	0.7	117.2	620.0
1996	1,933.9	1,946.9	34.5	0.7	118.2	652.9
1997	772.6	1,760.1	34.5	0.7	119.6	346.3
1998	2,939.7	2,786.2	34.5	0.7	120.6	1,193.8
1999	1,647.8	1,581.5	34.5	4.8	122.3	417.5
2000	1,012.6	1,226.2	34.5	4.6	124.1	198.8
2001	2,312.5	3,155.5	34.5	4.0	126.0	27.8
2002	1,530.4	2,097.0	34.5	3.5	127.6	110.9
2003	3,327.9	4,844.5	35.0	3.5	129.5	10.9
2004	1,633.3	2,024.6	35.0	4.1	130.6	311.0
2005	3,442.7	5,005.9	35.0	4.9	131.0	353.7
2006	1,949.7	1,367.8	35.0	5.8	131.0	70.5
2007	715.8	674.5	35.0	0.0	131.0	286.1
Average	2,115.1	2,825.7	34.6	2.9	125.3	353.9

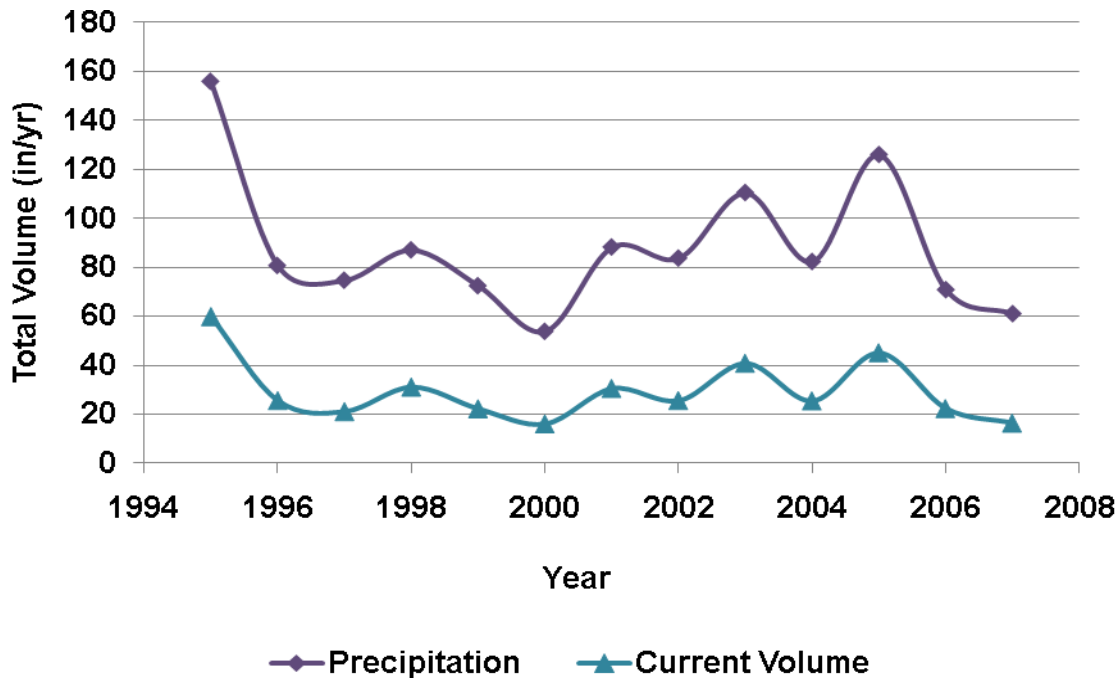


Figure 7-2 Annual Variability of Precipitation and Total Volume for Lemon Bay Coastal Basin

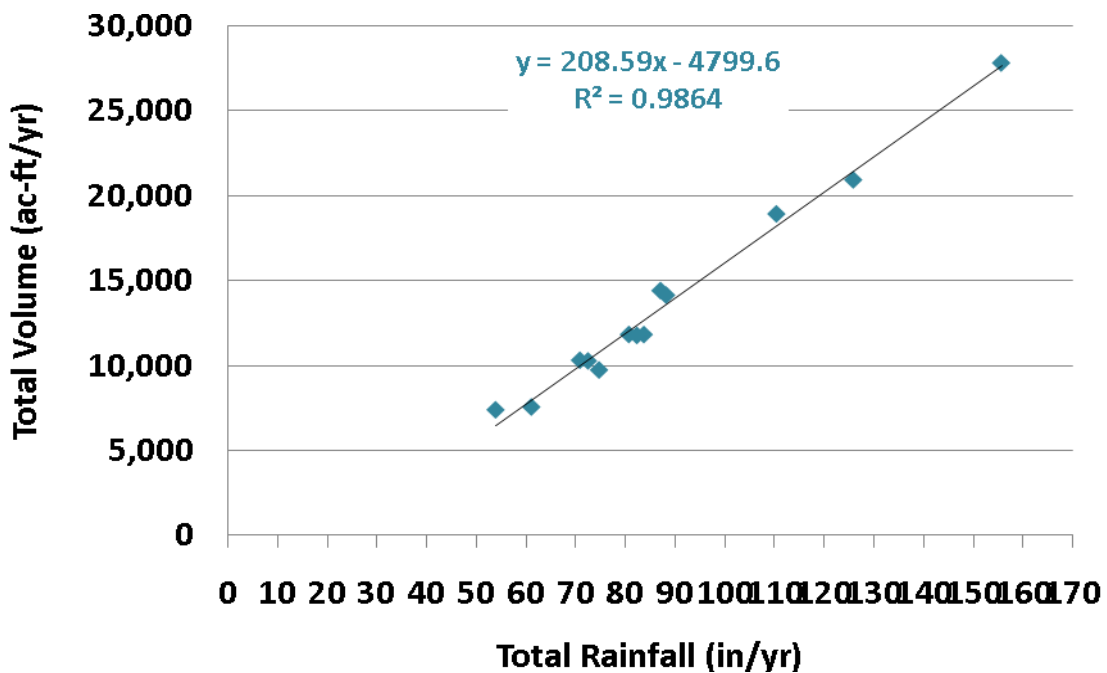


Figure 7-3 Correlation of Annual Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-5 Annual Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1995	59.88	155.69	0.38
1996	25.48	80.77	0.32
1997	20.98	74.76	0.28
1998	31.04	87.13	0.36
1999	22.13	72.54	0.31
2000	15.92	53.94	0.30
2001	30.45	88.27	0.35
2002	25.46	83.78	0.30
2003	40.75	110.45	0.37
2004	25.36	82.37	0.31
2005	45.07	125.92	0.36
2006	22.22	70.91	0.31
2007	16.28	61.15	0.27
Average	29.31	88.28	0.32

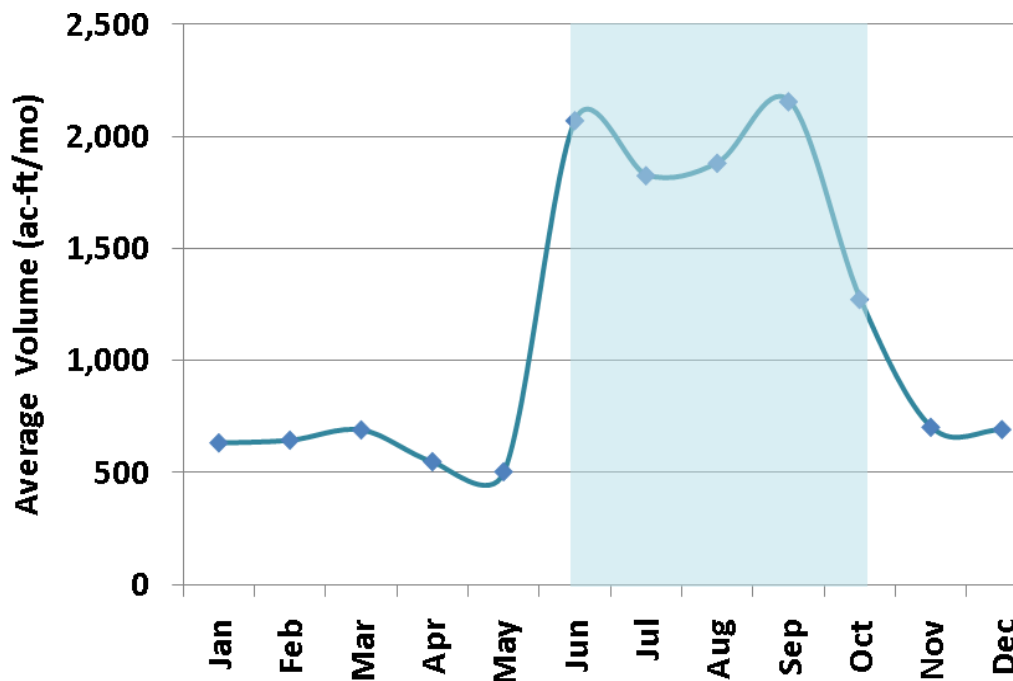


Figure 7-4 Variability of Average Monthly Total Volume in Lemon Bay Coastal Basin



Table 7-6 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Coastal Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.36	3.63	0.37
Feb	1.38	3.96	0.35
Mar	1.48	4.41	0.34
Apr	1.18	3.96	0.30
May	1.08	3.62	0.30
Jun	4.46	14.95	0.30
Jul	3.93	12.83	0.31
Aug	4.05	12.97	0.31
Sep	4.65	13.48	0.34
Oct	2.74	6.85	0.40
Nov	1.51	3.54	0.43
Dec	1.49	4.09	0.36

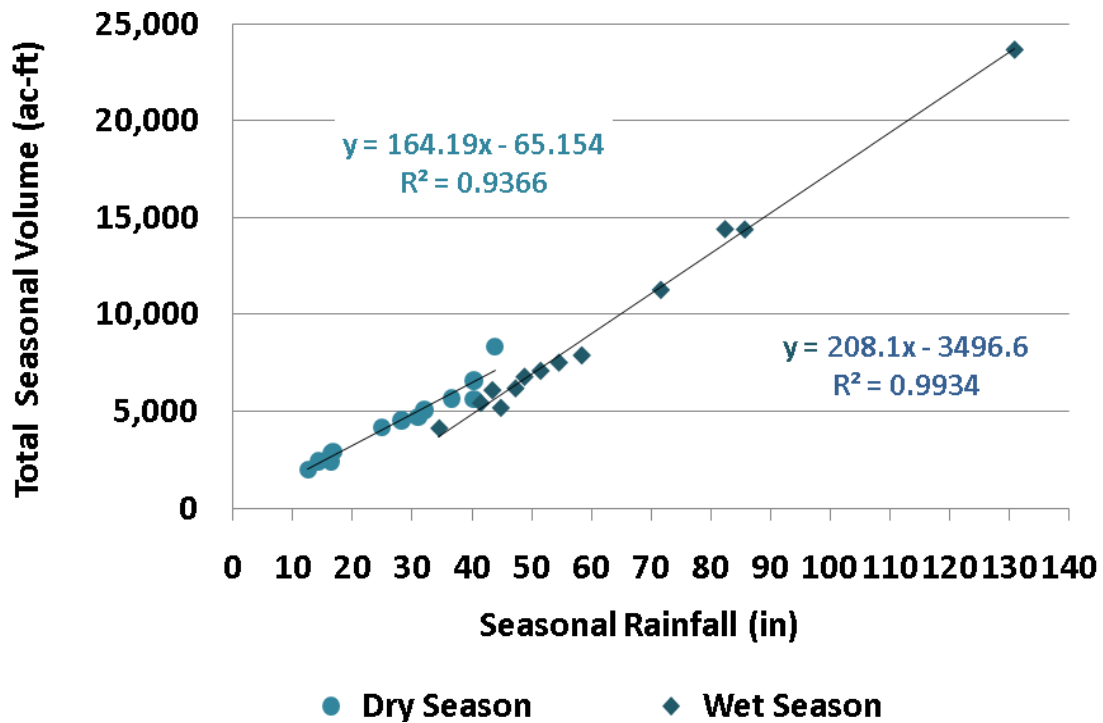


Figure 7-5 Correlation of Seasonal Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-7 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1995	50.89	130.76	0.39
1996	14.56	48.69	0.30
1997	8.84	34.43	0.26
1998	13.08	43.31	0.30
1999	16.94	58.27	0.29
2000	11.65	41.39	0.28
2001	24.21	71.52	0.34
2002	13.28	47.19	0.28
2003	30.96	82.27	0.38
2004	15.23	51.38	0.30
2005	30.93	85.58	0.36
2006	16.14	54.46	0.30
2007	11.12	44.74	0.25
Average	19.83	61.08	0.31

Table 7-8 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1995	8.99	24.93	0.36
1996	10.92	32.07	0.34
1997	12.13	40.33	0.30
1998	17.96	43.82	0.41
1999	5.19	14.26	0.36
2000	4.27	12.55	0.34
2001	6.24	16.74	0.37
2002	12.18	36.59	0.33
2003	9.79	28.17	0.35
2004	10.13	30.99	0.33
2005	14.14	40.34	0.35
2006	6.08	16.45	0.37
2007	5.16	16.41	0.31
Average	9.48	27.20	0.35

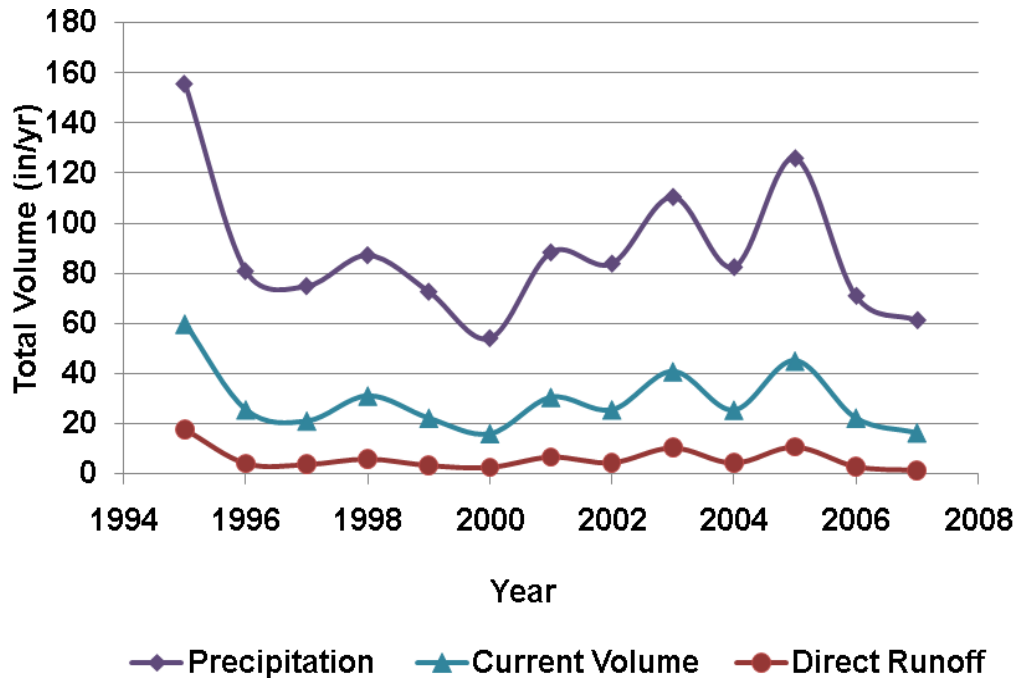


Figure 7-6 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Lemon Bay Coastal Basin

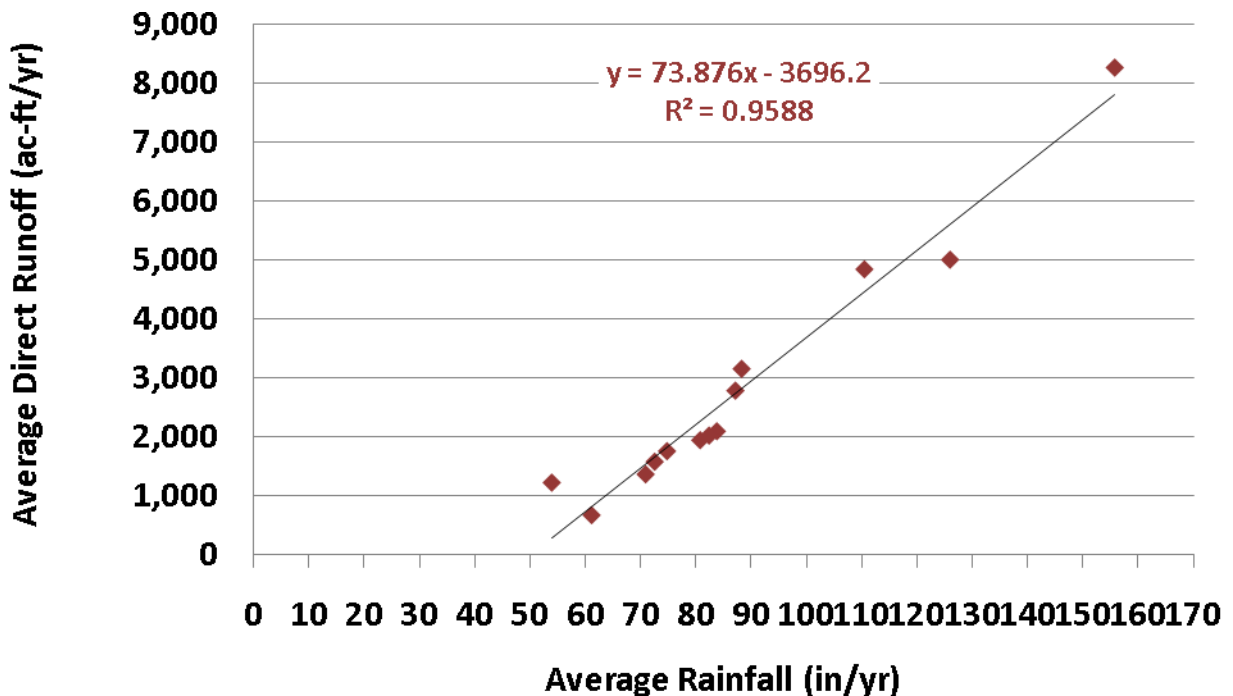


Figure 7-7 Correlation of Average Annual Direct Runoff to Rainfall



Table 7-9 Annual Direct Runoff to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1995	17.79	155.69	0.11
1996	4.19	80.77	0.05
1997	3.79	74.76	0.05
1998	6.00	87.13	0.07
1999	3.40	72.54	0.05
2000	2.64	53.94	0.05
2001	6.79	88.27	0.08
2002	4.51	83.78	0.05
2003	10.43	110.45	0.09
2004	4.36	82.37	0.05
2005	10.78	125.92	0.09
2006	2.94	70.91	0.04
2007	1.45	61.15	0.02
Average	6.08	88.28	0.06

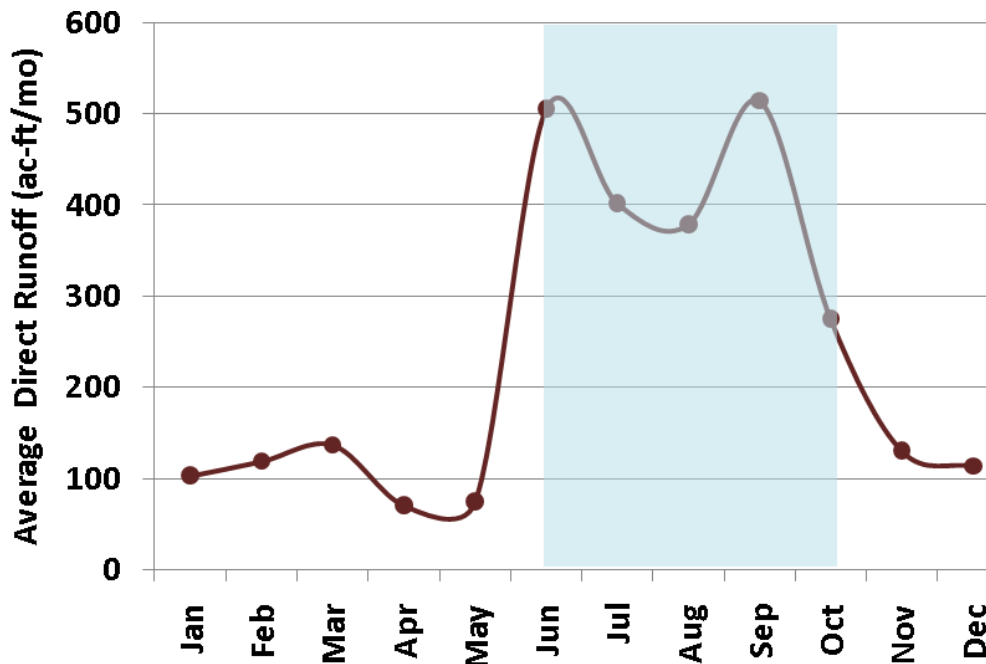


Figure 7-8 Variability of Average Monthly Direct Runoff to Lemon Bay Coastal Basin



Table 7-10 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.22	3.63	0.06
Feb	0.26	3.96	0.06
Mar	0.30	4.41	0.07
Apr	0.15	3.96	0.04
May	0.16	3.62	0.04
Jun	1.09	14.95	0.07
Jul	0.87	12.83	0.07
Aug	0.82	12.97	0.06
Sep	1.11	13.48	0.08
Oct	0.59	6.85	0.09
Nov	0.28	3.54	0.08
Dec	0.24	4.09	0.06

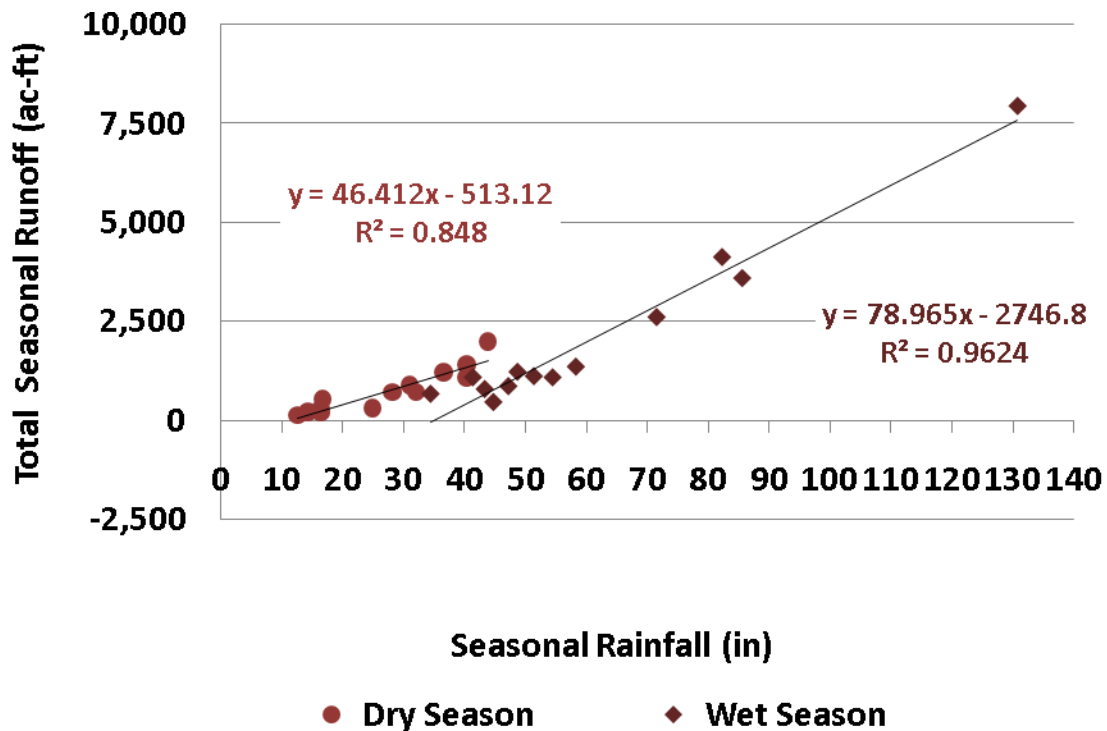


Figure 7-9 Correlation of Seasonal Direct Runoff to Rainfall



Table 7-11 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1995	17.11	130.76	0.13
1996	2.65	48.69	0.05
1997	1.45	34.43	0.04
1998	1.71	43.31	0.04
1999	2.93	58.27	0.05
2000	2.35	41.39	0.06
2001	5.63	71.52	0.08
2002	1.87	47.19	0.04
2003	8.89	82.27	0.11
2004	2.41	51.38	0.05
2005	7.74	85.58	0.09
2006	2.35	54.46	0.04
2007	1.00	44.74	0.02
Average	4.47	61.08	0.06

Table 7-12 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1995	0.68	24.93	0.03
1996	1.54	32.07	0.05
1997	2.34	40.33	0.06
1998	4.29	43.82	0.10
1999	0.47	14.26	0.03
2000	0.29	12.55	0.02
2001	1.16	16.74	0.07
2002	2.64	36.59	0.07
2003	1.54	28.17	0.05
2004	1.95	30.99	0.06
2005	3.03	40.34	0.08
2006	0.60	16.45	0.04
2007	0.45	16.41	0.03
Average	1.61	27.20	0.05



7.2 HISTORICAL CONDITIONS

Table 7-13 Historical Total Volume for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	808.0	578.4	320.9	644.1	102.6	7,175.5	5,314.0	2,166.5	3,211.9	3,304.0	400.5	412.0	24,438.3
1949	928.0	289.3	982.5	507.6	1,157.1	678.9	700.7	1,552.7	1,008.0	1,943.7	168.2	296.4	10,213.0
1950	481.7	119.8	335.2	1,340.3	292.7	509.1	523.4	608.7	1,627.9	465.7	984.2	1,626.3	8,915.0
1951	1,943.9	1,659.0	1,421.8	173.5	488.8	531.5	1,540.9	1,040.2	1,996.6	315.5	1,184.7	185.2	12,481.5
1952	543.4	78.3	404.9	117.7	116.0	1,254.2	921.1	1,657.5	2,436.1	770.7	255.5	493.5	9,049.1
1953	314.8	183.0	225.2	473.2	146.9	793.5	832.8	1,789.2	1,380.7	135.0	236.8	168.3	6,679.3
1954	88.8	50.3	1,805.2	115.6	81.1	1,253.6	3,489.7	1,872.7	3,020.3	525.5	189.4	166.1	12,658.3
1955	205.3	1,229.6	127.2	301.1	510.2	1,293.7	688.0	2,411.2	884.6	293.1	1,649.0	1,195.8	10,788.9
1956	155.9	288.1	494.0	881.2	1,049.2	4,557.2	861.3	2,953.9	4,019.1	264.7	229.6	1,015.3	16,769.4
1957	411.2	1,009.7	262.0	812.4	256.2	1,063.4	1,418.0	1,525.8	1,229.2	981.9	509.8	853.1	10,332.6
1958	536.9	871.7	1,213.4	466.3	1,198.0	4,516.6	2,547.6	1,254.2	988.0	2,932.4	978.6	188.5	17,692.1
1959	184.5	679.5	117.2	83.0	367.1	943.7	2,128.7	1,793.4	1,349.7	364.8	216.1	738.3	8,966.0
1960	396.5	375.5	110.3	540.0	189.3	955.4	900.8	888.7	1,006.0	986.5	189.1	265.1	6,803.2
Average	538.4	570.2	601.5	496.6	458.1	1,963.6	1,682.1	1,655.0	1,858.3	1,021.8	553.2	584.9	11,983.6



Table 7-14 Historical Direct Runoff for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	87.20	15.62	2.26	3.16	0.00	2,601.73	2,039.40	539.72	1,132.53	982.12	3.93	4.69	7,412.35
1949	131.26	4.60	82.29	25.92	254.21	7.88	19.43	238.59	62.60	462.95	0.01	4.96	1,294.69
1950	50.79	0.00	18.30	204.25	0.31	8.77	15.67	8.97	281.52	23.64	215.40	399.41	1,227.05
1951	566.41	442.79	391.75	0.00	15.84	35.70	208.63	58.01	304.36	0.84	316.56	0.01	2,340.90
1952	41.50	0.00	6.75	0.04	0.09	59.92	89.75	236.36	532.64	80.69	0.35	53.76	1,101.85
1953	19.49	0.01	0.38	35.27	0.18	23.54	31.47	499.40	236.76	0.01	2.88	1.66	851.05
1954	0.00	0.00	377.75	1.44	0.00	121.70	966.61	508.39	899.37	11.19	0.05	0.00	2,886.50
1955	0.00	287.22	1.31	2.65	25.67	62.17	54.07	427.97	87.95	5.39	540.77	192.47	1,687.66
1956	0.00	0.12	8.89	215.12	201.36	1,435.11	37.15	816.44	1,527.71	0.07	0.00	228.15	4,470.13
1957	7.21	208.13	8.18	98.36	7.32	35.47	124.30	203.33	138.45	232.19	80.21	199.73	1,342.88
1958	102.17	237.83	302.66	10.63	133.89	1,227.92	682.41	59.01	73.53	958.08	144.49	0.21	3,932.83
1959	0.01	79.83	0.00	0.00	0.22	28.56	281.81	296.29	129.65	26.03	0.19	99.39	941.97
1960	25.34	14.60	0.01	38.10	0.10	14.32	11.99	14.38	19.35	74.26	5.99	2.08	220.51
Average	79.34	99.29	92.35	48.84	49.17	435.60	350.98	300.53	417.42	219.80	100.83	91.27	2,285.41

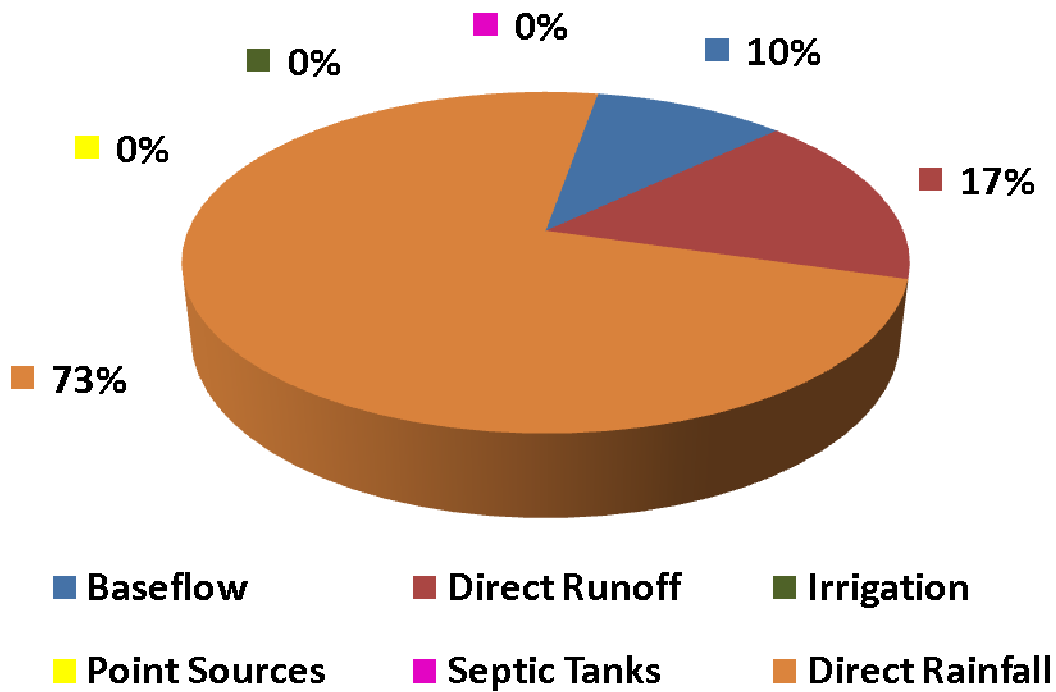


Figure 7-10 Lemon Bay Coastal Basin Historical Total Volume Water Budget

Table 7-15 Summary of Annual Historical Total Volume Inputs for Lemon Bay Coastal Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
1948	1,902.6	7,412.3	0.0	0.0	0.0	15,123.4
1949	1,118.2	1,294.7	0.0	0.0	0.0	7,800.2
1950	631.6	1,227.0	0.0	0.0	0.0	7,056.3
1951	1,604.8	2,340.9	0.0	0.0	0.0	8,535.8
1952	1,057.9	1,101.8	0.0	0.0	0.0	6,889.3
1953	833.0	851.1	0.0	0.0	0.0	4,995.2
1954	1,257.5	2,886.5	0.0	0.0	0.0	8,514.2
1955	1,066.1	1,687.7	0.0	0.0	0.0	8,035.1
1956	1,708.1	4,470.1	0.0	0.0	0.0	10,591.2
1957	1,036.6	1,342.9	0.0	0.0	0.0	7,953.2
1958	1,444.0	3,932.8	0.0	0.0	0.0	12,315.3
1959	1,192.3	942.0	0.0	0.0	0.0	6,831.8
1960	574.4	220.5	0.0	0.0	0.0	6,008.3
Average	1,186.7	2,285.4	0.0	0.0	0.0	8,511.5

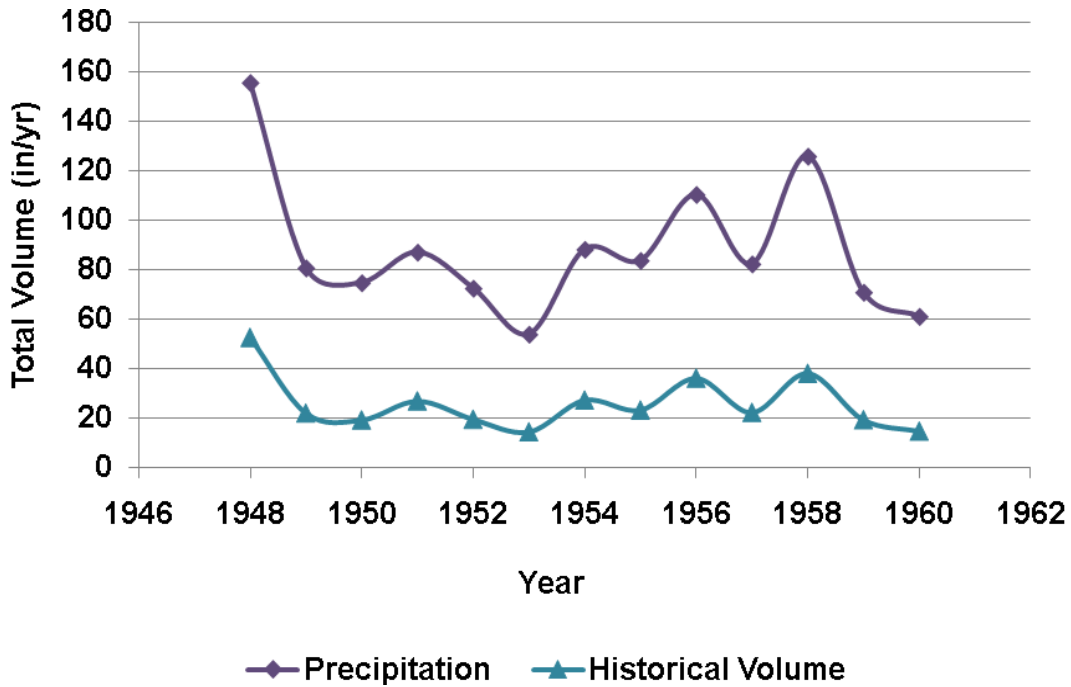


Figure 7-11 Annual Historical Variability of Precipitation and Total Volume for Lemon Bay Coastal Basin

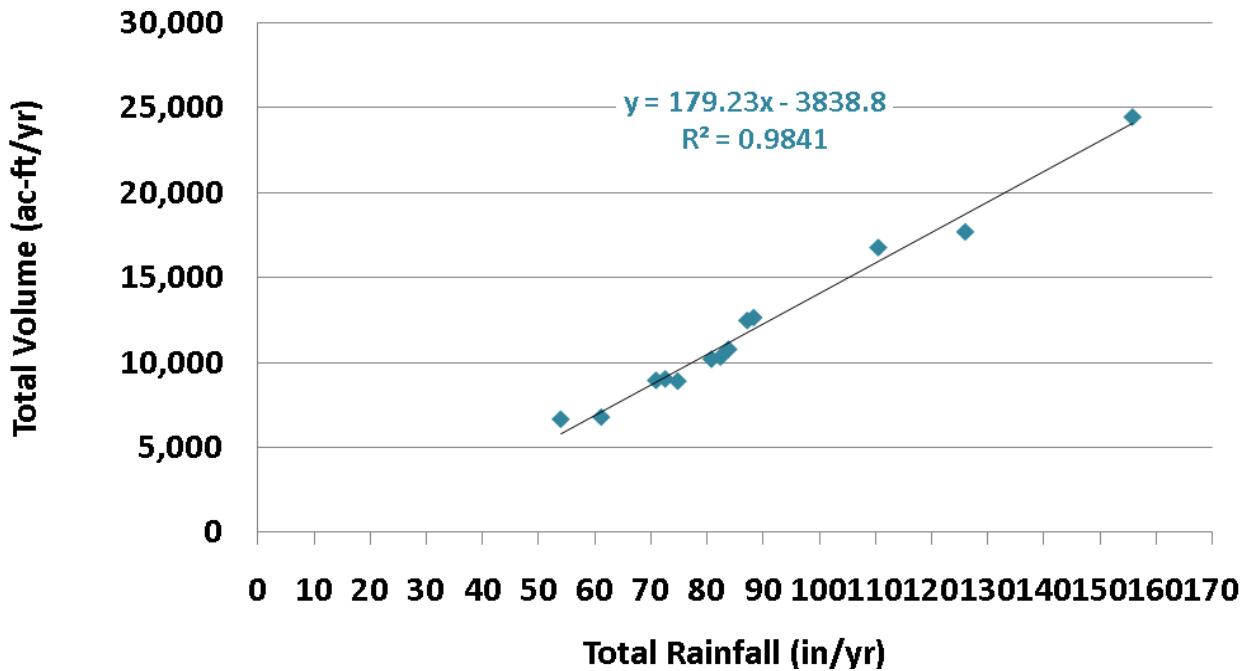


Figure 7-12 Correlation of Annual Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-16 Annual Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
1948	52.61	155.69	0.34
1949	21.99	80.77	0.27
1950	19.19	74.76	0.26
1951	26.87	87.13	0.31
1952	19.48	72.54	0.27
1953	14.38	53.94	0.27
1954	27.25	88.27	0.31
1955	23.23	83.78	0.28
1956	36.10	110.45	0.33
1957	22.24	82.37	0.27
1958	38.09	125.92	0.30
1959	19.30	70.91	0.27
1960	14.65	61.15	0.24
Average	25.80	88.28	0.29

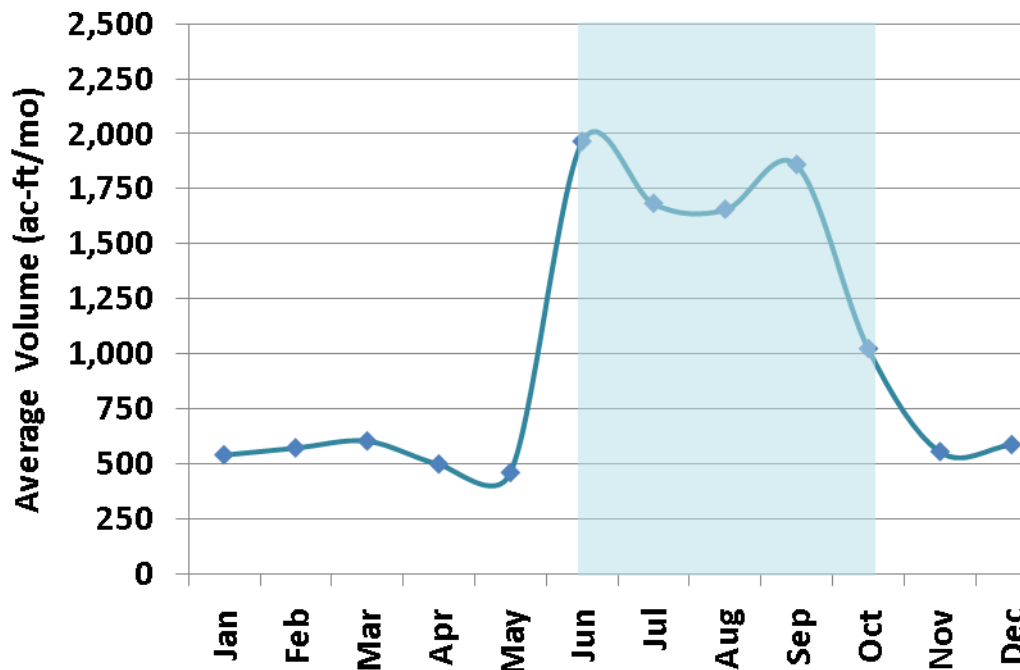


Figure 7-13 Variability of Average Monthly Total Volume in Lemon Bay Coastal Basin



Table 7-17 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Coastal Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.16	3.63	0.32
Feb	1.23	3.96	0.31
Mar	1.29	4.41	0.29
Apr	1.07	3.96	0.27
May	0.99	3.62	0.27
Jun	4.23	14.95	0.28
Jul	3.62	12.83	0.28
Aug	3.56	12.97	0.27
Sep	4.00	13.48	0.30
Oct	2.20	6.85	0.32
Nov	1.19	3.54	0.34
Dec	1.26	4.09	0.31

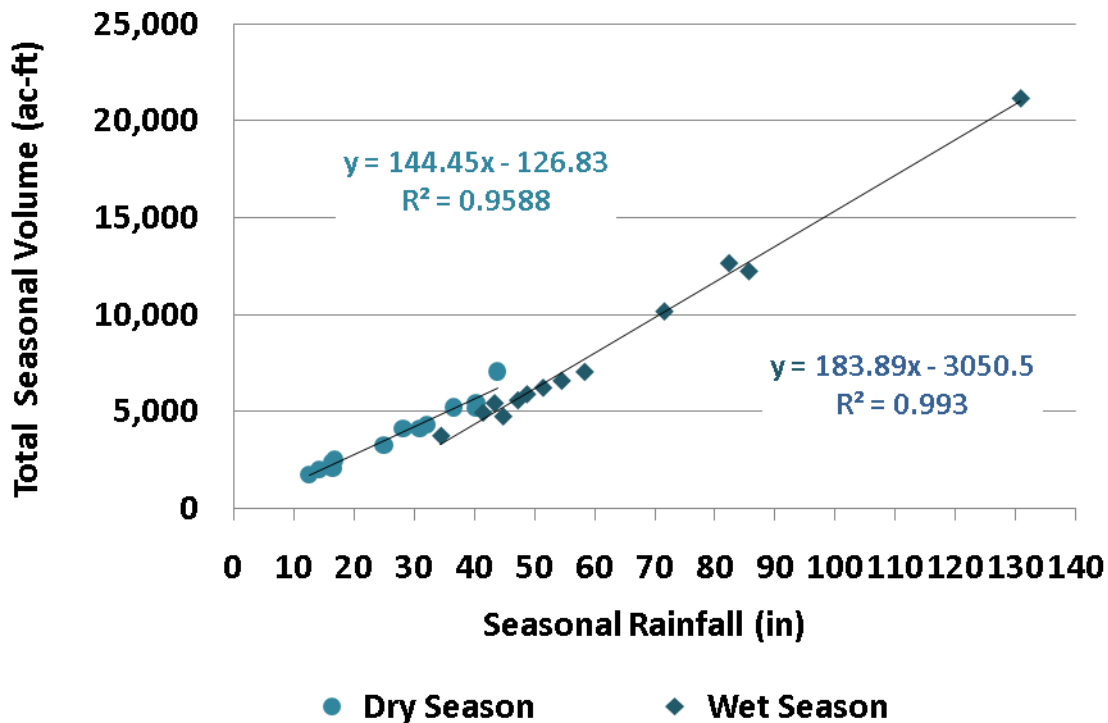


Figure 7-14 Correlation of Seasonal Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-18 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
1948	45.58	130.76	0.35
1949	12.67	48.69	0.26
1950	8.04	34.43	0.23
1951	11.68	43.31	0.27
1952	15.15	58.27	0.26
1953	10.62	41.39	0.26
1954	21.88	71.52	0.31
1955	11.99	47.19	0.25
1956	27.25	82.27	0.33
1957	13.39	51.38	0.26
1958	26.35	85.58	0.31
1959	14.17	54.46	0.26
1960	10.20	44.74	0.23
Average	17.61	61.08	0.28

Table 7-19 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
1948	7.03	24.93	0.28
1949	9.32	32.07	0.29
1950	11.15	40.33	0.28
1951	15.19	43.82	0.35
1952	4.33	14.26	0.30
1953	3.76	12.55	0.30
1954	5.37	16.74	0.32
1955	11.23	36.59	0.31
1956	8.85	28.17	0.31
1957	8.86	30.99	0.29
1958	11.74	40.34	0.29
1959	5.14	16.45	0.31
1960	4.45	16.41	0.27
Average	8.19	27.20	0.30

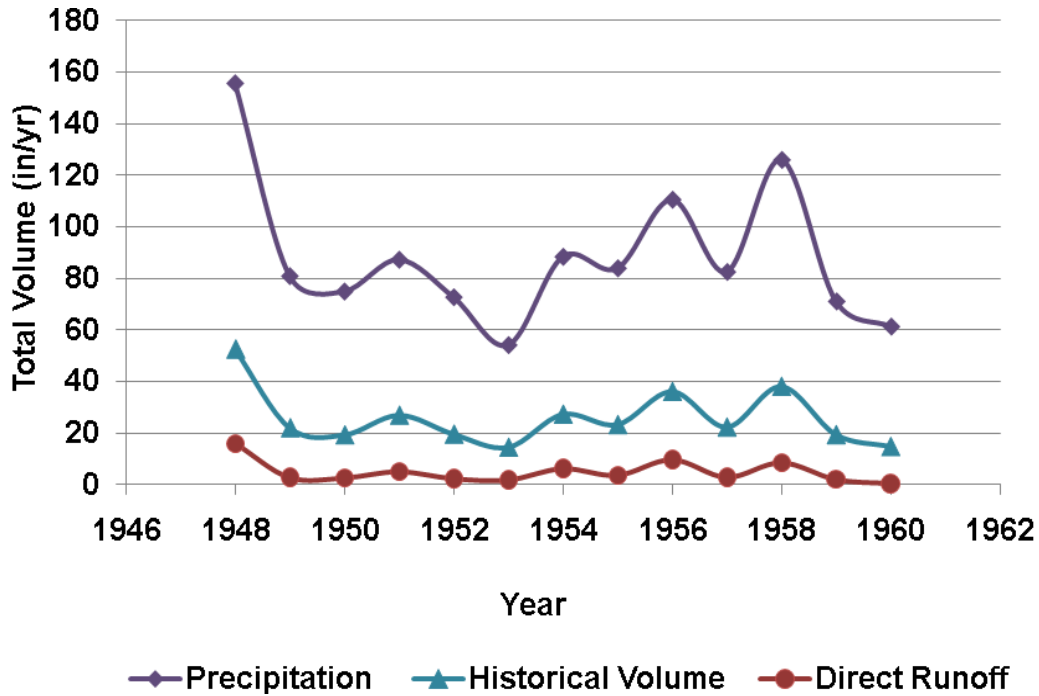


Figure 7-15 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Lemon Bay Coastal

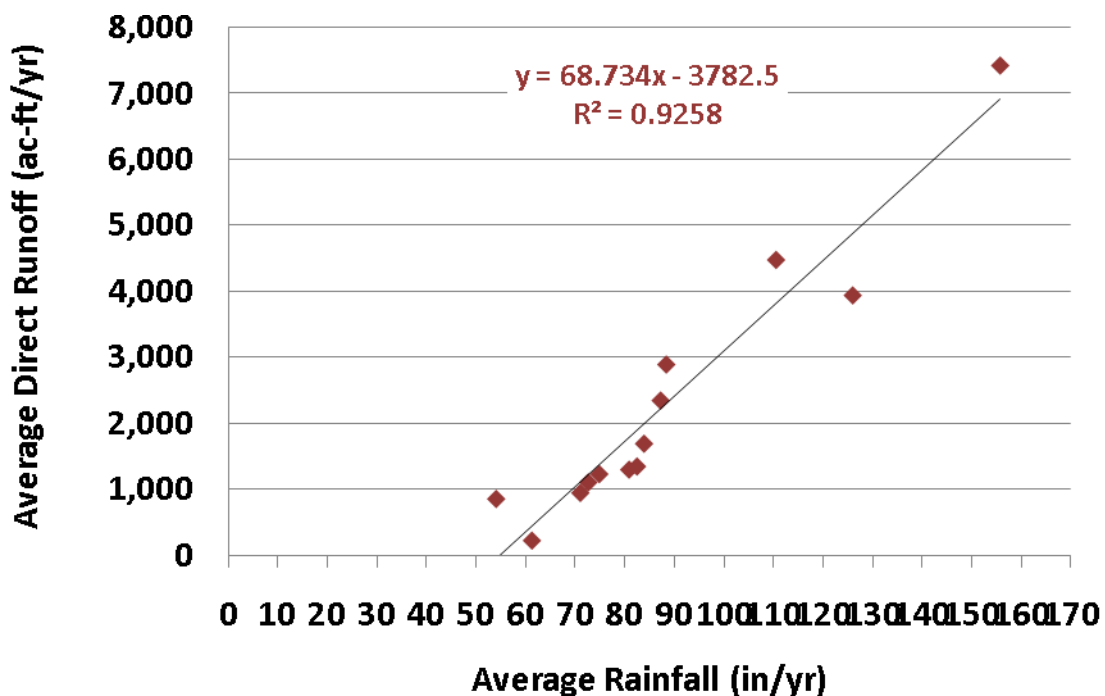


Figure 7-16 Correlation of Average Annual Direct Runoff to Rainfall



Table 7-20 Annual Direct Runoff Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
1948	15.96	155.69	0.10
1949	2.79	80.77	0.03
1950	2.64	74.76	0.04
1951	5.04	87.13	0.06
1952	2.37	72.54	0.03
1953	1.83	53.94	0.03
1954	6.21	88.27	0.07
1955	3.63	83.78	0.04
1956	9.62	110.45	0.09
1957	2.89	82.37	0.04
1958	8.47	125.92	0.07
1959	2.03	70.91	0.03
1960	0.47	61.15	0.01
Average	4.92	88.28	0.05

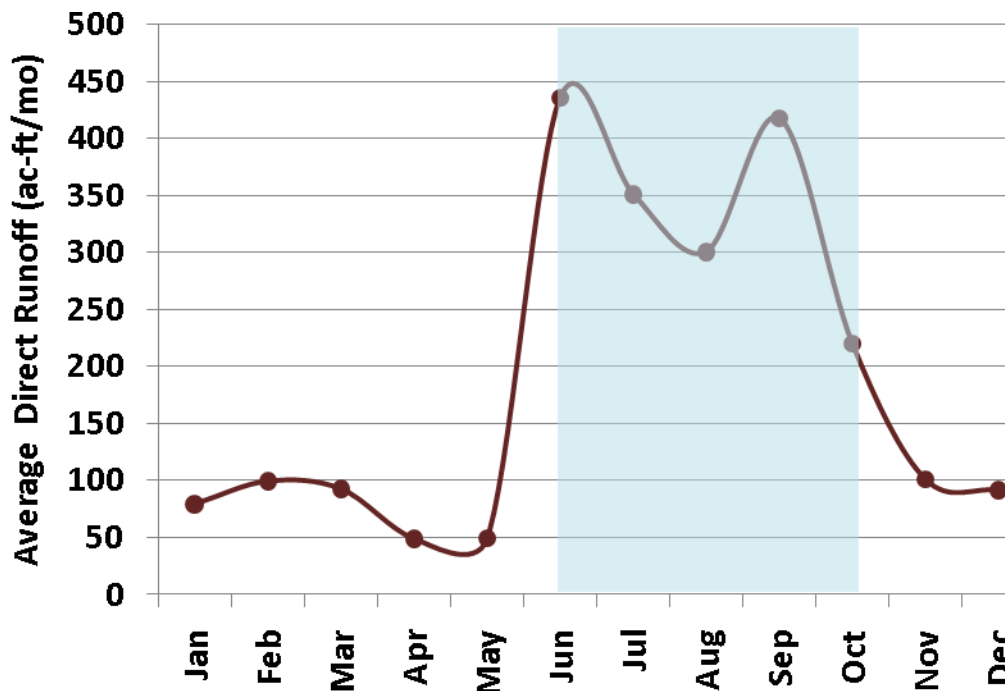


Figure 7-17 Variability of Average Monthly Direct Runoff to Lemon Bay Coastal Basin



Table 7-21 Average Monthly Rainfall to Direct Runoff Coefficients			
	Average Direct Runoff (in)	Average Rainfall (in)	Average Direct Runoff / Average Rainfall
Jan	0.17	3.63	0.05
Feb	0.21	3.96	0.05
Mar	0.20	4.41	0.05
Apr	0.11	3.96	0.03
May	0.11	3.62	0.03
Jun	0.94	14.95	0.06
Jul	0.76	12.83	0.06
Aug	0.65	12.97	0.05
Sep	0.90	13.48	0.07
Oct	0.47	6.85	0.07
Nov	0.22	3.54	0.06
Dec	0.20	4.09	0.05

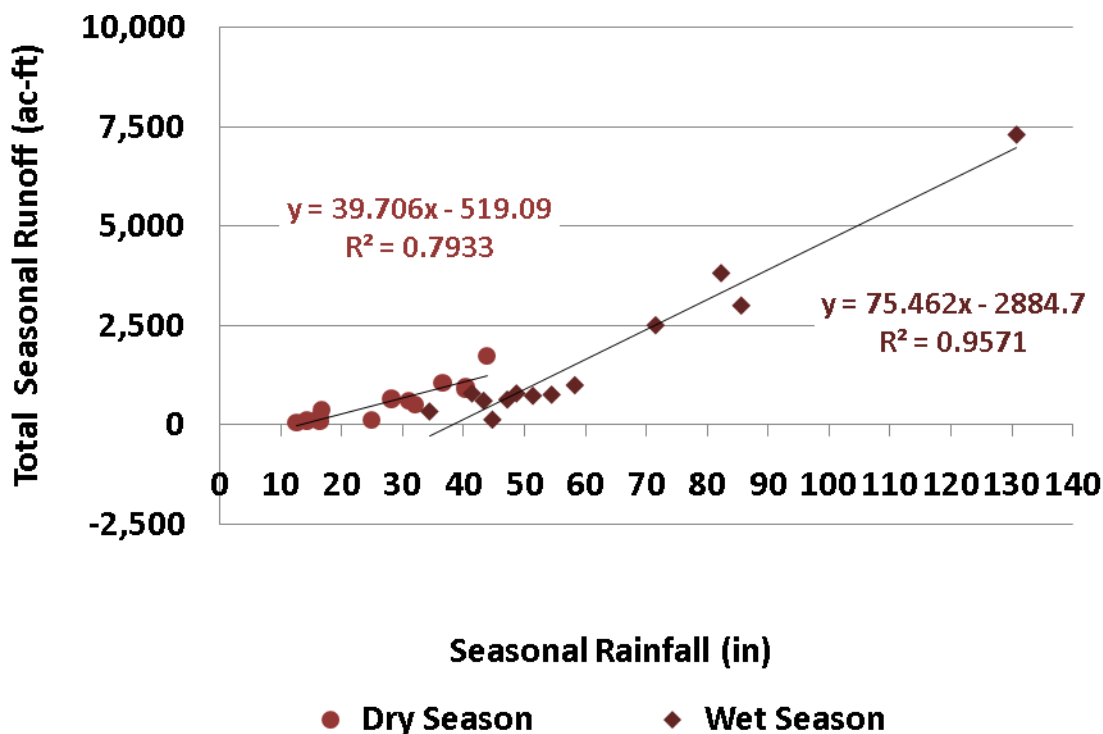


Figure 7-18 Correlation of Seasonal Direct Runoff to Rainfall



Table 7-22 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
1948	15.71	130.76	0.12
1949	1.70	48.69	0.03
1950	0.73	34.43	0.02
1951	1.31	43.31	0.03
1952	2.15	58.27	0.04
1953	1.70	41.39	0.04
1954	5.40	71.52	0.08
1955	1.37	47.19	0.03
1956	8.22	82.27	0.10
1957	1.58	51.38	0.03
1958	6.46	85.58	0.08
1959	1.64	54.46	0.03
1960	0.29	44.74	0.01
Average	3.71	61.08	0.05

Table 7-23 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
1948	0.25	24.93	0.01
1949	1.08	32.07	0.03
1950	1.91	40.33	0.05
1951	3.73	43.82	0.09
1952	0.22	14.26	0.02
1953	0.13	12.55	0.01
1954	0.82	16.74	0.05
1955	2.26	36.59	0.06
1956	1.41	28.17	0.05
1957	1.31	30.99	0.04
1958	2.01	40.34	0.05
1959	0.39	16.45	0.02
1960	0.19	16.41	0.01
Average	1.21	27.20	0.04



7.3 FUTURE CONDITIONS

Table 7-24 Future Total Volume for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	964.0	708.6	440.3	755.8	136.6	7,505.2	5,873.1	2,800.1	3,989.0	4,099.8	740.4	627.0	28,640.0
2016	1,164.8	405.6	1,122.2	580.8	1,216.4	760.4	815.0	1,802.1	1,233.5	2,375.4	327.9	410.9	12,215.1
2017	554.7	153.1	374.9	1,395.9	322.7	558.0	576.8	660.2	1,840.3	540.9	1,069.4	1,849.6	9,896.6
2018	2,227.9	1,924.4	1,825.7	331.6	609.4	610.3	1,612.1	1,162.8	2,266.4	562.8	1,426.8	262.9	14,823.2
2019	620.4	100.5	448.4	128.7	126.2	1,354.7	947.6	1,848.2	2,825.1	1,114.7	427.3	630.0	10,571.7
2020	376.8	216.8	249.5	506.9	161.4	862.8	896.0	1,935.9	1,605.7	217.1	293.7	206.7	7,529.3
2021	107.4	62.0	2,002.6	119.6	81.0	1,299.9	3,577.7	2,224.2	3,558.8	865.5	347.1	251.2	14,496.9
2022	258.8	1,234.8	148.3	334.3	579.3	1,351.5	723.2	2,610.1	1,174.3	451.7	1,831.7	1,360.1	12,058.0
2023	251.0	343.5	543.0	867.8	1,037.5	4,697.3	1,200.9	3,606.1	4,699.8	605.3	408.5	1,165.7	19,426.3
2024	505.6	1,183.3	326.4	887.2	277.0	1,167.0	1,534.9	1,797.7	1,500.4	1,276.5	673.3	970.2	12,099.3
2025	667.0	973.8	1,413.7	574.2	1,455.9	5,082.8	3,243.2	1,749.4	1,409.7	3,388.6	1,326.0	383.6	21,667.8
2026	281.3	794.8	148.0	97.2	398.5	1,024.7	2,249.1	2,056.6	1,770.4	630.9	346.9	832.6	10,631.0
2027	453.0	427.1	128.3	613.5	204.4	1,049.0	983.4	955.8	1,112.9	1,143.1	284.3	337.9	7,692.8
Average	648.6	656.0	705.5	553.4	508.2	2,101.8	1,864.1	1,939.2	2,229.7	1,328.6	731.0	714.5	13,980.6



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Table 7-25 Future Direct Runoff for Lemon Bay Coastal Basin (ac-ft/mo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2015	151.4	60.9	35.1	63.1	0.4	2,832.3	2,183.5	623.5	1,367.0	1,183.6	15.6	36.1	8,552.5
2016	193.3	30.4	171.9	58.0	289.5	72.1	113.3	389.8	157.0	625.7	2.4	27.2	2,130.6
2017	68.9	1.7	36.5	245.7	21.1	52.3	65.3	56.5	487.4	86.0	264.6	496.1	1,882.1
2018	635.7	401.5	536.4	0.8	39.3	54.8	244.0	139.2	406.8	14.9	429.9	6.7	2,909.9
2019	79.0	0.0	38.0	4.8	7.5	158.9	115.3	370.3	720.9	122.2	14.3	102.5	1,733.9
2020	32.8	7.3	9.5	60.6	10.8	91.1	93.3	616.9	368.1	1.3	14.0	11.3	1,317.1
2021	0.8	0.0	567.7	4.2	0.8	169.3	985.0	491.6	1,021.1	37.4	5.2	1.2	3,284.4
2022	5.6	264.8	3.6	26.5	90.5	117.1	83.4	590.5	143.3	19.7	645.4	246.0	2,236.4
2023	0.0	15.3	40.1	197.1	193.6	1,473.3	93.6	981.8	1,707.1	8.2	5.1	274.0	4,989.3
2024	43.0	341.7	35.2	153.8	19.0	135.1	219.2	335.2	194.9	344.3	135.9	250.8	2,208.1
2025	171.1	298.1	430.6	50.0	333.5	1,501.7	823.9	176.5	168.0	1,114.8	233.8	0.2	5,302.3
2026	3.1	145.8	3.7	0.3	24.5	106.0	380.2	425.3	228.3	64.3	7.3	117.6	1,506.5
2027	37.2	39.7	2.6	103.5	11.3	105.6	93.3	76.4	108.0	160.3	22.0	24.0	783.9
Average	109.4	123.6	147.0	74.5	80.1	528.5	422.6	405.7	544.5	291.0	138.1	122.6	2,987.5

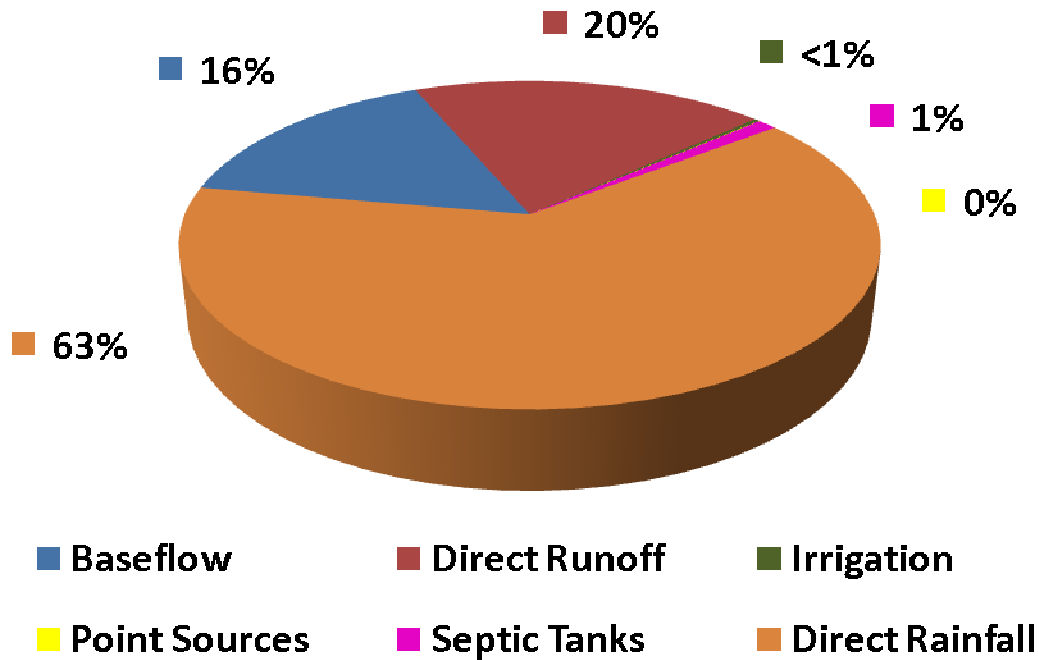


Figure 7-19 Lemon Bay Coastal Basin Current Total Volume Water Budget

Table 7-26 Summary of Annual Future Total Volume Inputs for Lemon Bay Coastal Basin (ac-ft/yr)						
	Baseflow	Direct Runoff	Irrigation	Point Sources	Septic Tanks	Direct Rainfall
2015	4,798.4	8,552.5	34.5	1.0	130.2	15,123.4
2016	2,118.7	2,130.6	34.5	1.0	130.2	7,800.2
2017	792.5	1,882.1	34.5	1.0	130.2	7,056.3
2018	3,205.3	2,909.9	34.5	7.5	130.2	8,535.8
2019	1,776.9	1,733.9	34.5	7.0	130.2	6,889.3
2020	1,046.7	1,317.1	34.5	5.7	130.2	4,995.2
2021	2,527.7	3,284.4	34.5	6.0	130.2	8,514.2
2022	1,616.3	2,236.4	34.5	5.6	130.2	8,035.1
2023	3,674.9	4,989.3	34.5	6.2	130.2	10,591.2
2024	1,766.7	2,208.1	34.5	6.6	130.2	7,953.2
2025	3,878.7	5,302.3	34.5	6.9	130.2	12,315.3
2026	2,124.6	1,506.5	34.5	3.6	130.2	6,831.8
2027	736.0	783.9	34.5	0.0	130.2	6,008.3
Average	2,312.6	2,987.5	34.5	4.5	130.2	8,511.5

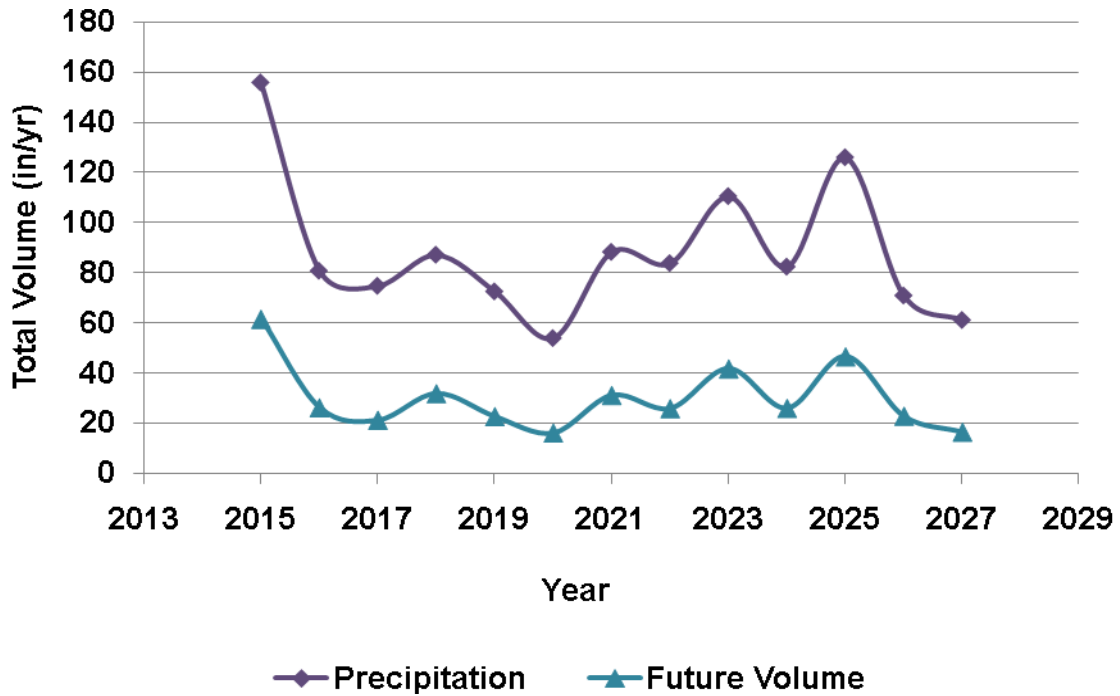


Figure 7-20 Annual Variability of Precipitation and Total Volume for Lemon Bay Coastal Basin

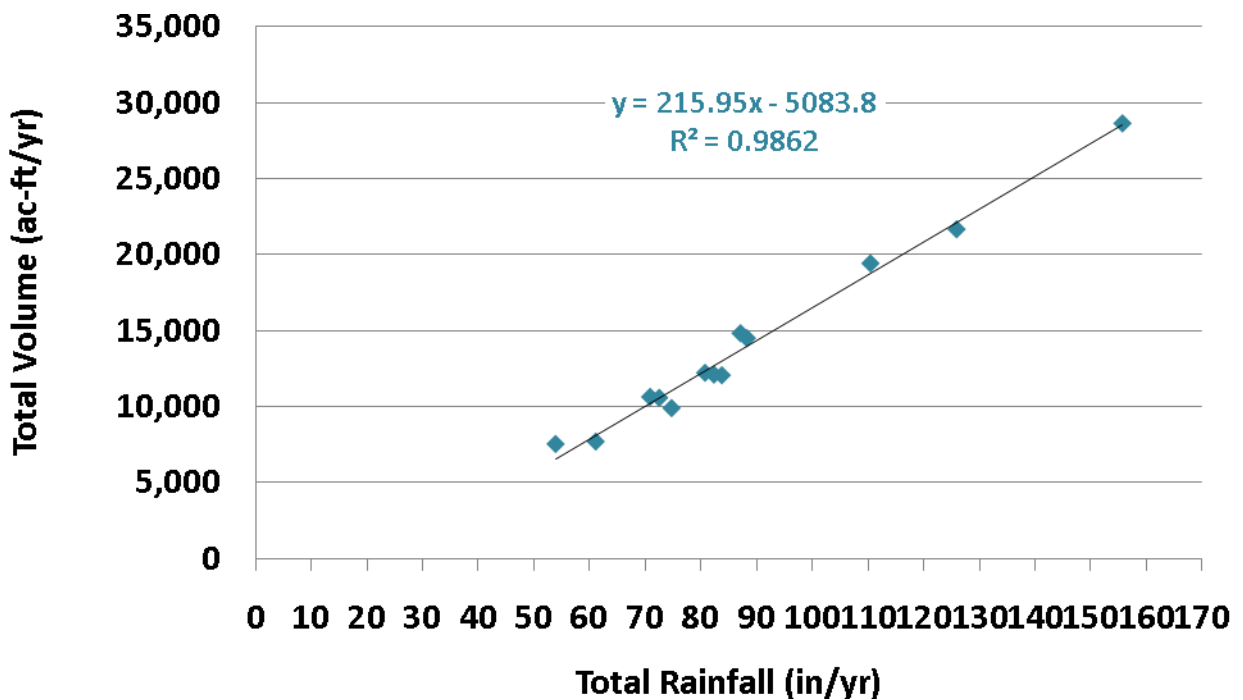


Figure 7-21 Correlation of Annual Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-27 Annual Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/yr)	Rainfall (in/yr)	Total Volume / Rainfall
2015	61.65	155.69	0.40
2016	26.30	80.77	0.33
2017	21.30	74.76	0.28
2018	31.91	87.13	0.37
2019	22.76	72.54	0.31
2020	16.21	53.94	0.30
2021	31.21	88.27	0.35
2022	25.96	83.78	0.31
2023	41.82	110.45	0.38
2024	26.05	82.37	0.32
2025	46.65	125.92	0.37
2026	22.89	70.91	0.32
2027	16.56	61.15	0.27
Average	30.10	88.28	0.33

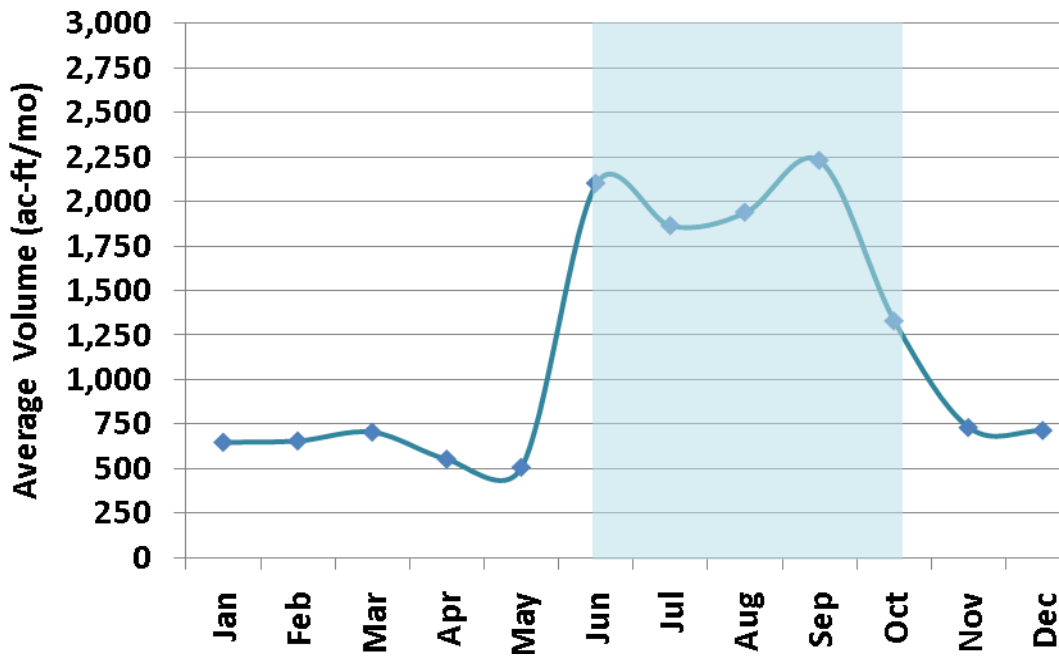


Figure 7-22 Variability of Average Monthly Total Volume in Lemon Bay Coastal Basin



Table 7-28 Average Monthly Rainfall to Total Volume Coefficients for Lemon Bay Coastal Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.40	3.63	0.39
Feb	1.41	3.96	0.36
Mar	1.52	4.41	0.34
Apr	1.19	3.96	0.30
May	1.09	3.62	0.30
Jun	4.52	14.95	0.30
Jul	4.01	12.83	0.31
Aug	4.17	12.97	0.32
Sep	4.80	13.48	0.36
Oct	2.86	6.85	0.42
Nov	1.57	3.54	0.44
Dec	1.54	4.09	0.38

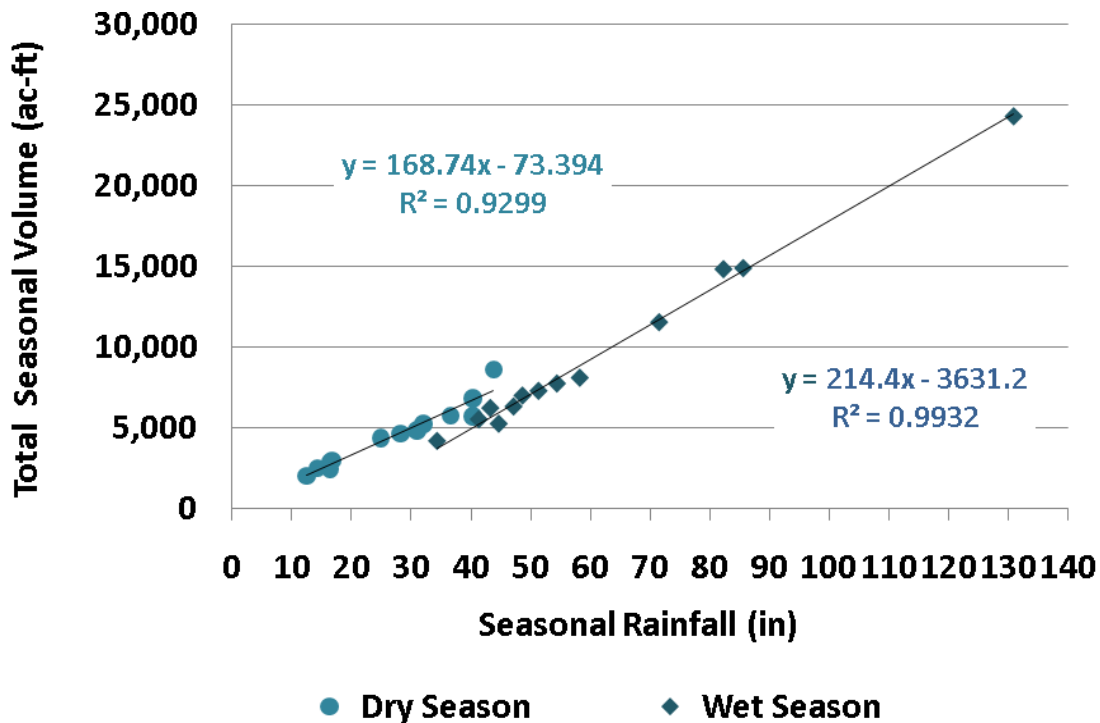


Figure 7-23 Correlation of Seasonal Total Volume to Rainfall for Lemon Bay Coastal Basin



Table 7-29 Wet Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/wet season)	Rainfall (in/wet season)	Total Volume / Rainfall
2015	52.24	130.76	0.40
2016	15.04	48.69	0.31
2017	8.99	34.43	0.26
2018	13.38	43.31	0.31
2019	17.42	58.27	0.30
2020	11.88	41.39	0.29
2021	24.81	71.52	0.35
2022	13.59	47.19	0.29
2023	31.88	82.27	0.39
2024	15.66	51.38	0.30
2025	32.02	85.58	0.37
2026	16.64	54.46	0.31
2027	11.29	44.74	0.25
Average	20.37	61.08	0.32

Table 7-30 Dry Season Total Volume to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Total Volume (in/dry season)	Rainfall (in/dry season)	Total Volume / Rainfall
2015	9.41	24.93	0.38
2016	11.26	32.07	0.35
2017	12.31	40.33	0.31
2018	18.53	43.82	0.42
2019	5.34	14.26	0.37
2020	4.33	12.55	0.35
2021	6.40	16.74	0.38
2022	12.37	36.59	0.34
2023	9.94	28.17	0.35
2024	10.38	30.99	0.33
2025	14.63	40.34	0.36
2026	6.24	16.45	0.38
2027	5.27	16.41	0.32
Average	9.72	27.20	0.36

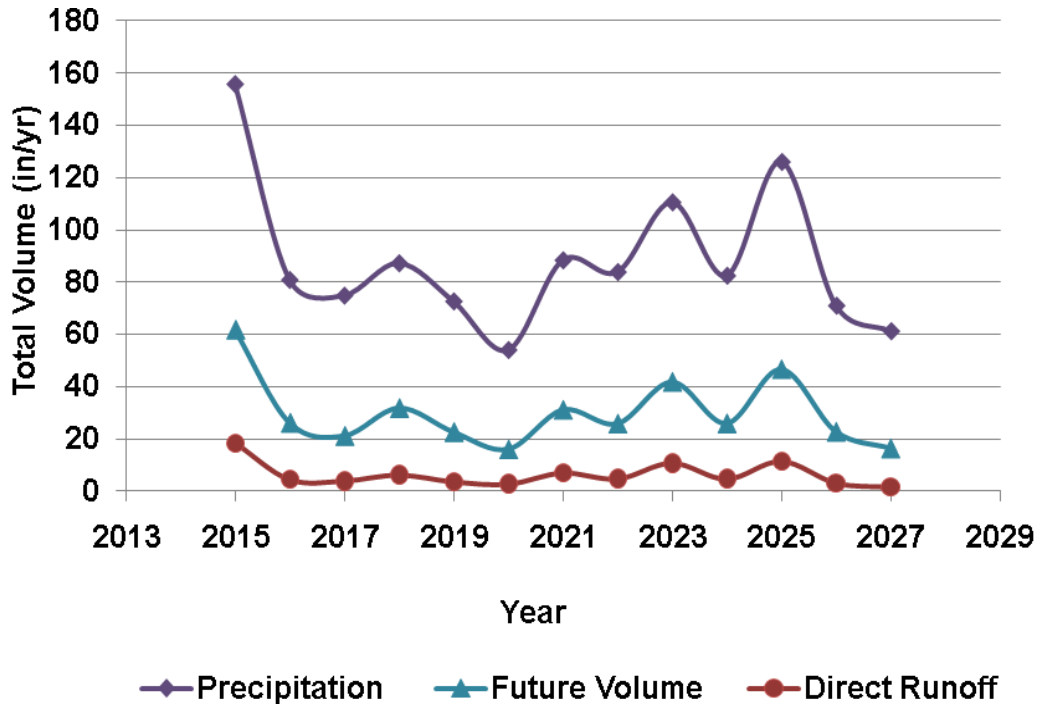


Figure 7-24 Annual Variability of Total Volume, Direct Runoff, and Rainfall for Lemon Bay Coastal Basin

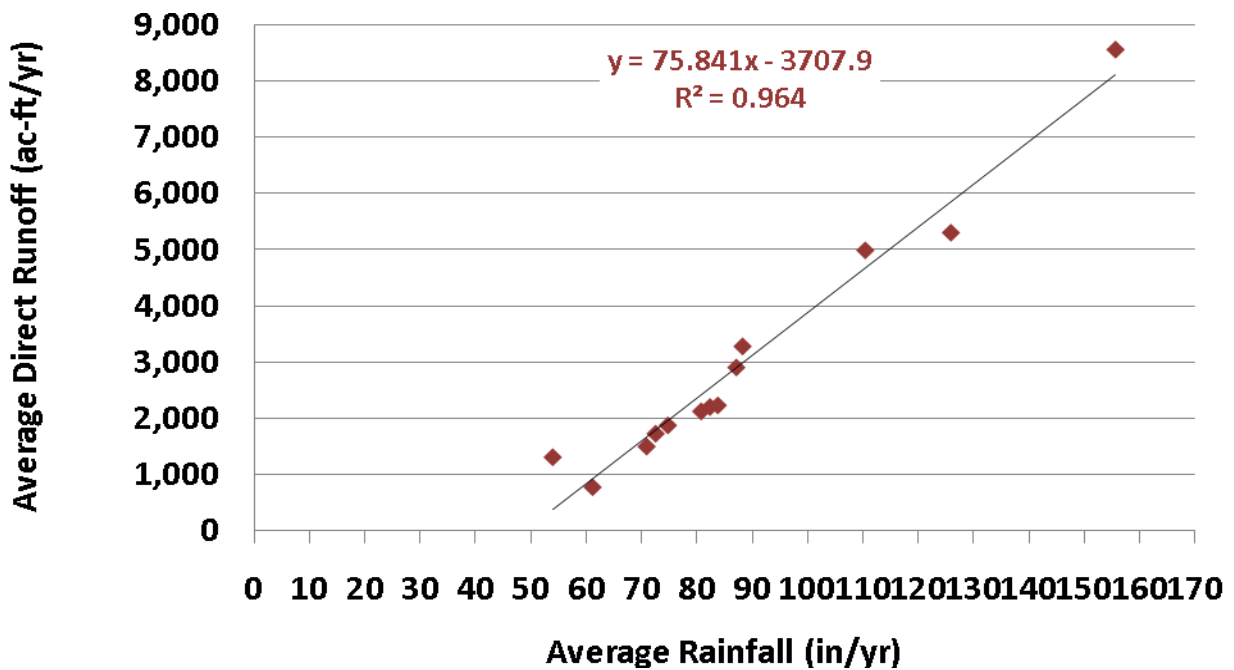


Figure 7-25 Correlation of Average Annual Direct Runoff to Rainfall



Table 7-31 Annual Direct Runoff to Rainfall Coefficients for Lemon Bay Coastal Basin			
	Direct Runoff (in/yr)	Rainfall (in/yr)	Direct Runoff / Rainfall
2015	18.41	155.69	0.12
2016	4.59	80.77	0.06
2017	4.05	74.76	0.05
2018	6.26	87.13	0.07
2019	3.73	72.54	0.05
2020	2.84	53.94	0.05
2021	7.07	88.27	0.08
2022	4.81	83.78	0.06
2023	10.74	110.45	0.10
2024	4.75	82.37	0.06
2025	11.41	125.92	0.09
2026	3.24	70.91	0.05
2027	1.69	61.15	0.03
Average	6.43	88.28	0.07

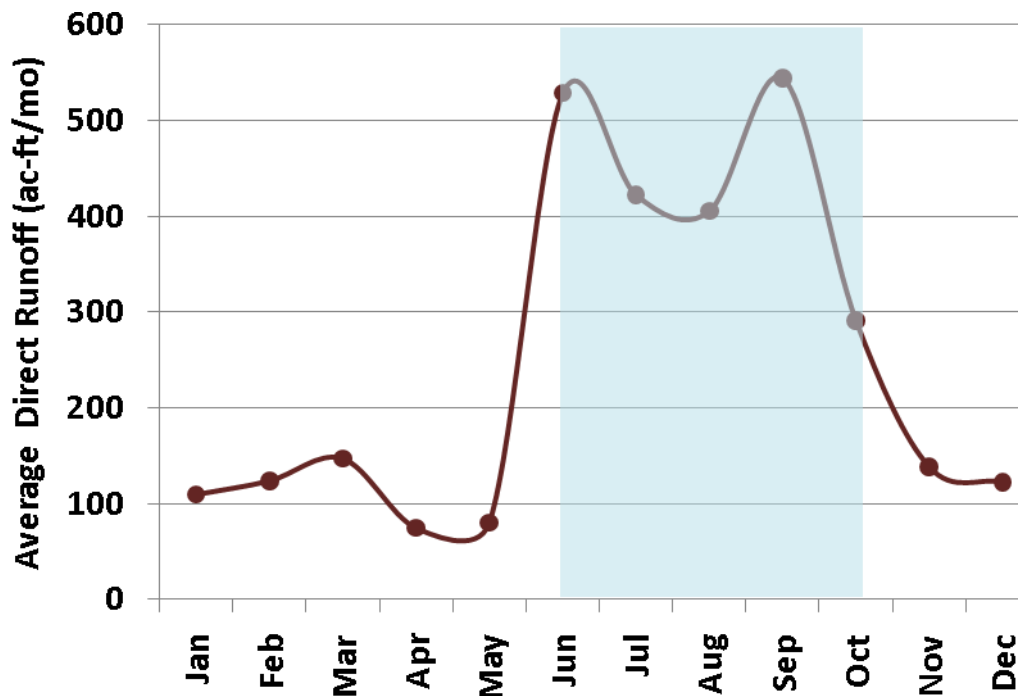


Figure 7-26 Variability of Average Monthly Direct Runoff to Lemon Bay Coastal Basin



Table 7-32 Average Monthly Rainfall to Direct Runoff Coefficients for Lemon Bay Coastal Basin			
	Average Total Volume (in)	Average Rainfall (in)	Average Total Volume / Average Rainfall
Jan	1.40	3.63	0.39
Feb	1.41	3.96	0.36
Mar	1.52	4.41	0.34
Apr	1.19	3.96	0.30
May	1.09	3.62	0.30
Jun	4.52	14.95	0.30
Jul	4.01	12.83	0.31
Aug	4.17	12.97	0.32
Sep	4.80	13.48	0.36
Oct	2.86	6.85	0.42
Nov	1.57	3.54	0.44
Dec	1.54	4.09	0.38

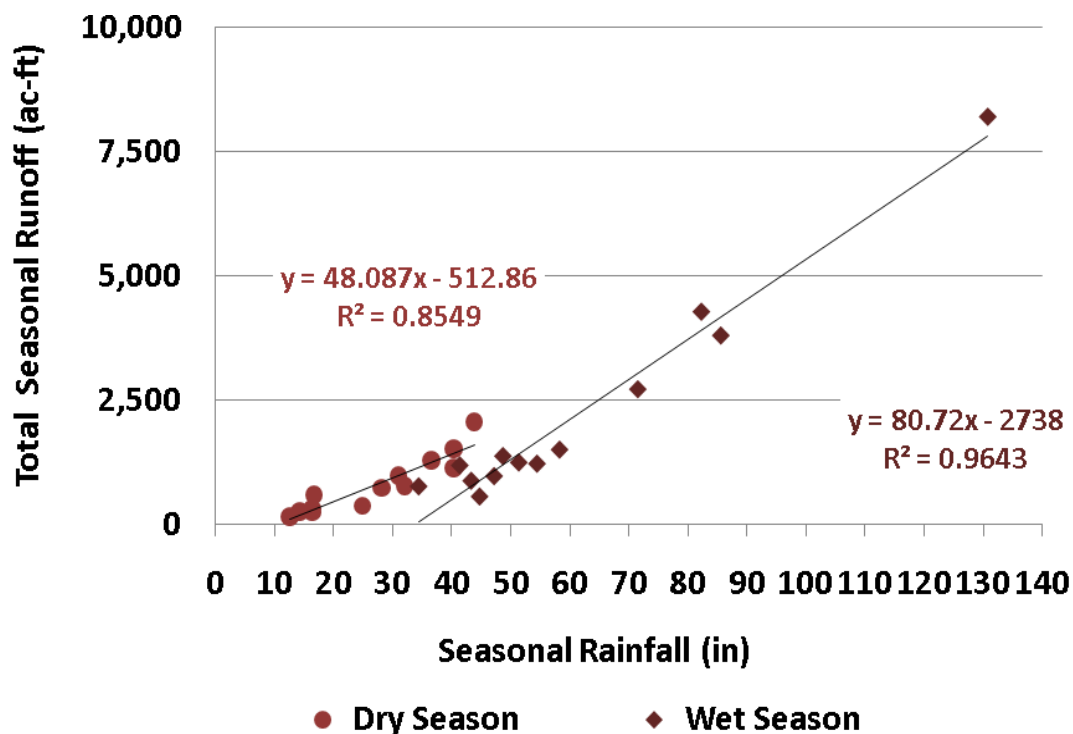


Figure 7-27 Correlation of Seasonal Direct Runoff to Rainfall



Table 7-33 Wet Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/wet season)	Rainfall (in/wet season)	Direct Runoff / Rainfall
2015	17.63	130.76	0.13
2016	2.92	48.69	0.06
2017	1.61	34.43	0.05
2018	1.85	43.31	0.04
2019	3.20	58.27	0.05
2020	2.52	41.39	0.06
2021	5.82	71.52	0.08
2022	2.05	47.19	0.04
2023	9.18	82.27	0.11
2024	2.65	51.38	0.05
2025	8.15	85.58	0.10
2026	2.59	54.46	0.05
2027	1.17	44.74	0.03
Average	4.72	61.08	0.07

Table 7-34 Dry Season Direct Runoff to Rainfall Coefficients			
	Direct Runoff (in/dry season)	Rainfall (in/dry season)	Direct Runoff / Rainfall
2015	0.78	24.93	0.03
2016	1.66	32.07	0.05
2017	2.44	40.33	0.06
2018	4.41	43.82	0.10
2019	0.53	14.26	0.04
2020	0.32	12.55	0.03
2021	1.25	16.74	0.07
2022	2.76	36.59	0.08
2023	1.56	28.17	0.06
2024	2.11	30.99	0.07
2025	3.27	40.34	0.08
2026	0.65	16.45	0.04
2027	0.52	16.41	0.03
Average	1.71	27.20	0.06



7.4 WATER BUDGET CHANGES

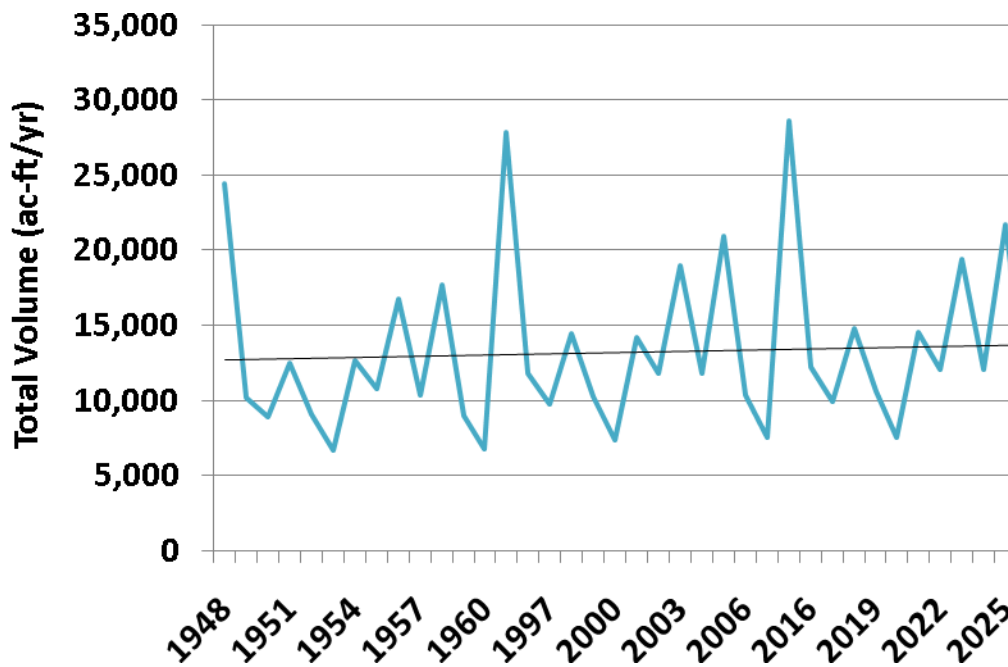


Figure 7-28 Trend in Total Volume from Historical through Future Time Series

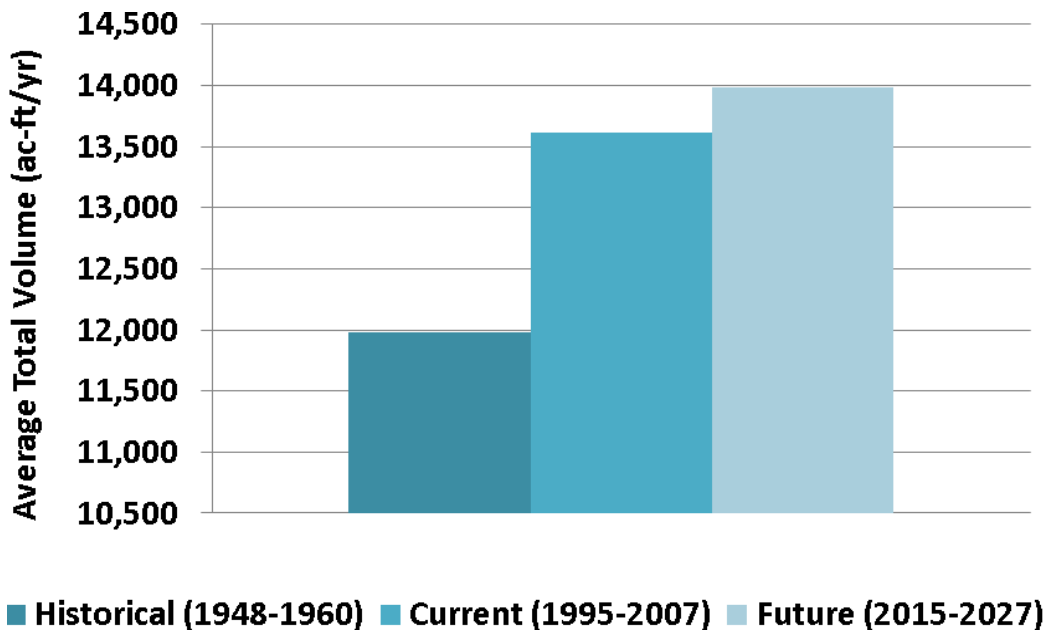


Figure 7-29 Historical, Current, and Future Average Annual Total Volume to Lemon Bay Coastal Basin



Table 7-35 Change in Total Volume from Historical to Current Conditions

Year	Historical Volume (ac-ft) 1948-1960	Current Volume (ac-ft) 1995-2007	Volume Change (ac-ft) (current-historical)
1	24,438	27,816	3,378
2	10,213	11,834	1,621
3	8,915	9,744	829
4	12,482	14,417	1,936
5	9,049	10,280	1,231
6	6,679	7,397	718
7	12,658	14,147	1,488
8	10,789	11,828	1,039
9	16,769	18,932	2,162
10	10,333	11,781	1,448
11	17,692	20,935	3,243
12	8,966	10,321	1,355
13	6,803	7,565	761
Average	11,984	13,615	1,632

Table 7-36 Change in Total Volume from Current to Future Conditions

Year	Current Volume (ac-ft) 1995-2007	Future Volume (ac-ft) 2015-2027	Volume Change (ac-ft) (future-current)
1	27,816	28,640	824
2	11,834	12,215	381
3	9,744	9,897	153
4	14,417	14,823	406
5	10,280	10,572	291
6	7,397	7,529	132
7	14,147	14,497	350
8	11,828	12,058	230
9	18,932	19,426	495
10	11,781	12,099	318
11	20,935	21,668	733
12	10,321	10,631	310
13	7,565	7,693	128
Average	13,615	13,981	365

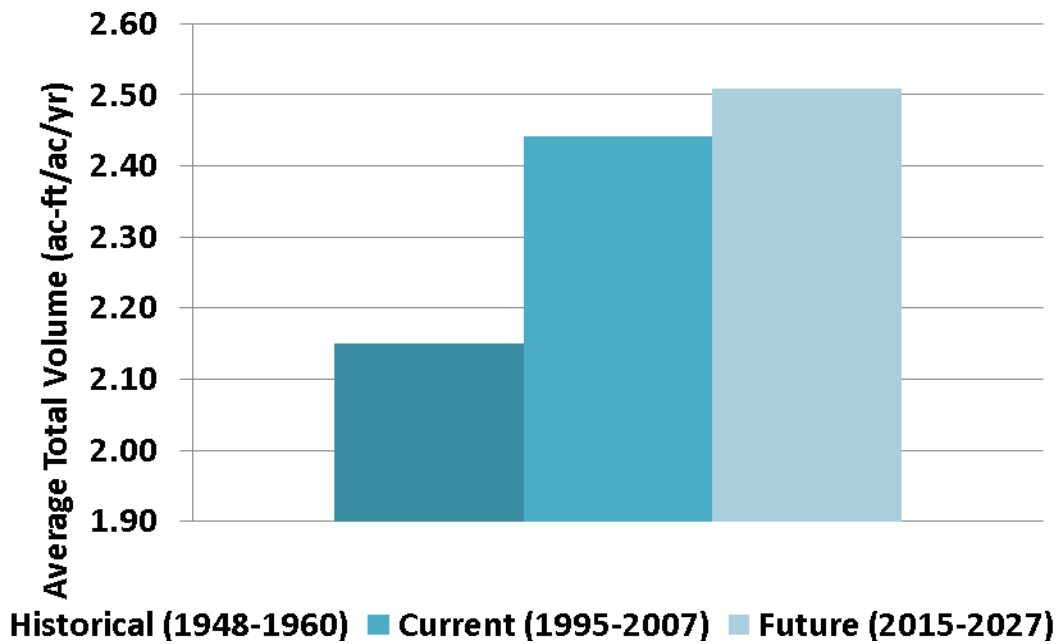


Figure 7-30 Normalized Historical, Current, and Future Average Annual Total Volume to Lemon Bay Coastal Basin

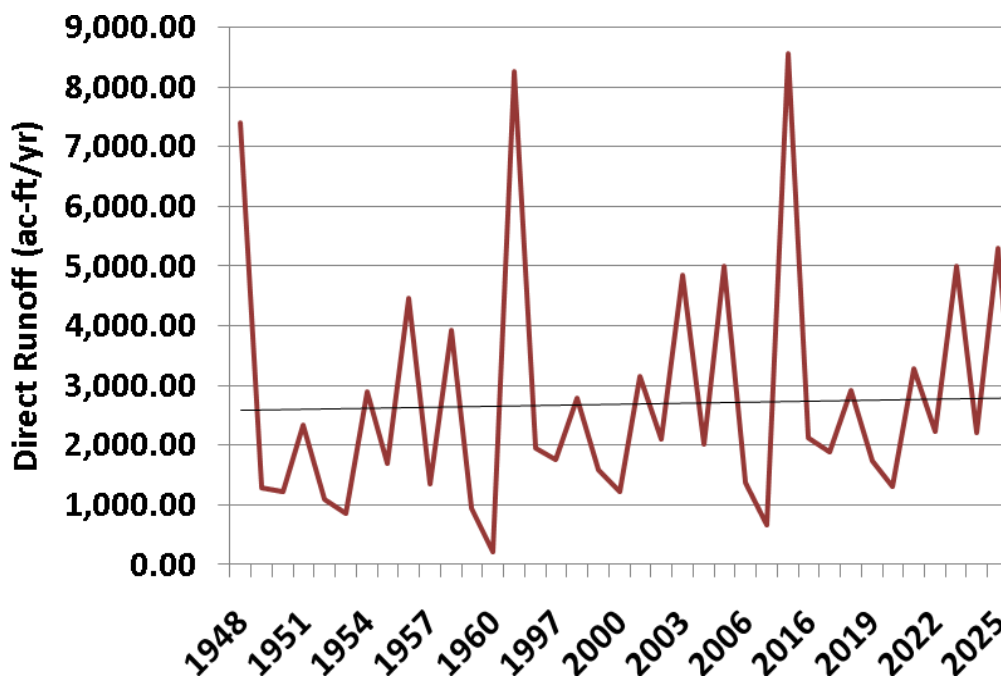


Figure 7-31 Trend in Direct Runoff from Historical through Future Time Series

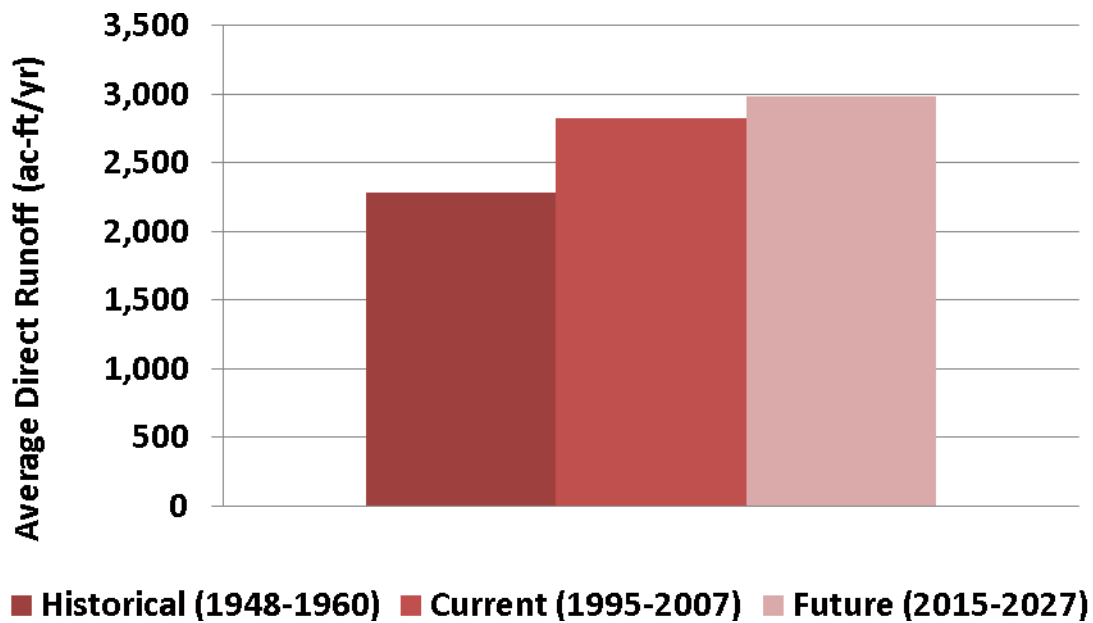


Figure 7-32 Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay Coastal Basin

Table 7-37 Change in Direct Runoff from Historical to Current Conditions			
Year	Historical Direct Runoff (ac-ft) 1948-1960	Current Direct Runoff (ac-ft) 1995-2007	Direct Runoff Change (ac-ft) (current-historical)
1	7,412	8,263	851
2	1,295	1,947	652
3	1,227	1,760	533
4	2,341	2,786	445
5	1,102	1,581	480
6	851	1,226	375
7	2,886	3,156	269
8	1,688	2,097	409
9	4,470	4,845	374
10	1,343	2,025	682
11	3,933	5,006	1,073
12	942	1,368	426
13	221	675	454
Average	2,285	2,826	540

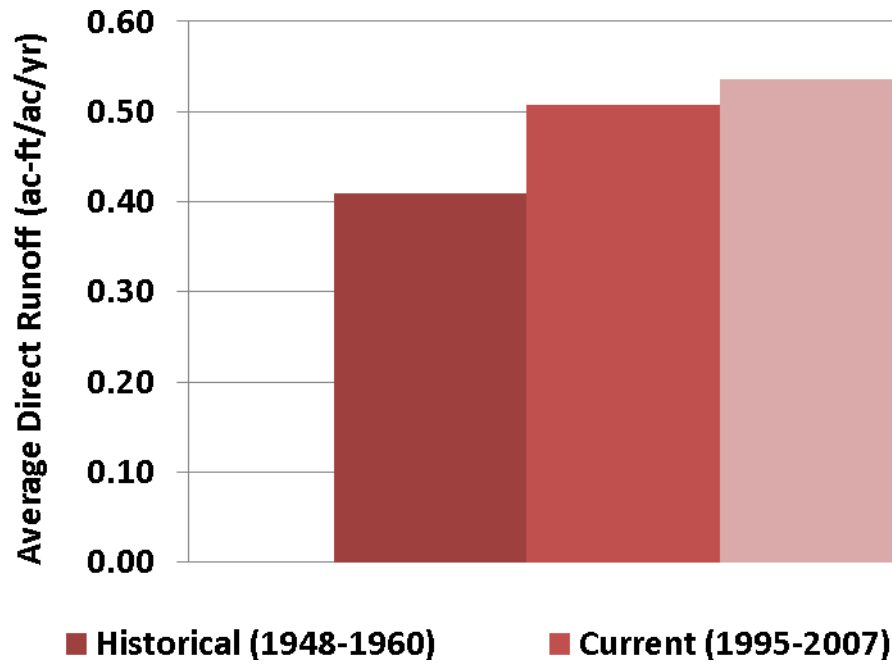
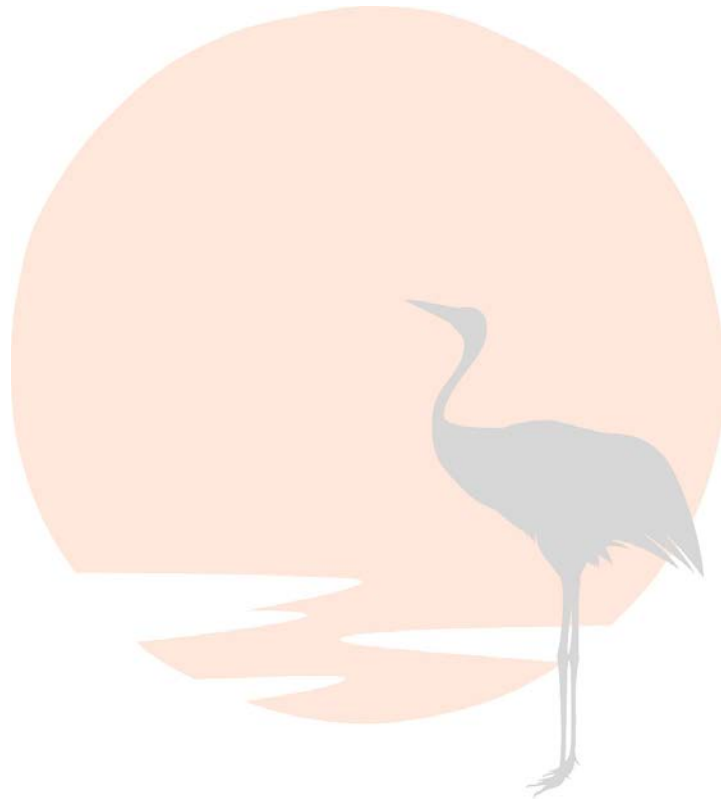


Figure 7-33 Normalized Historical, Current, and Future Average Annual Direct Runoff to Lemon Bay Coastal Basin

Appendix F

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