HEC-5 MODELING RESULTS

FOR THE

ALABAMA – COOSA – TALLAPOOSA

(ACT)

RIVER BASIN

T050103A

VS

T050103B

VS

HISTORICAL

May 1, 2003

MODELING DESCRIPTION

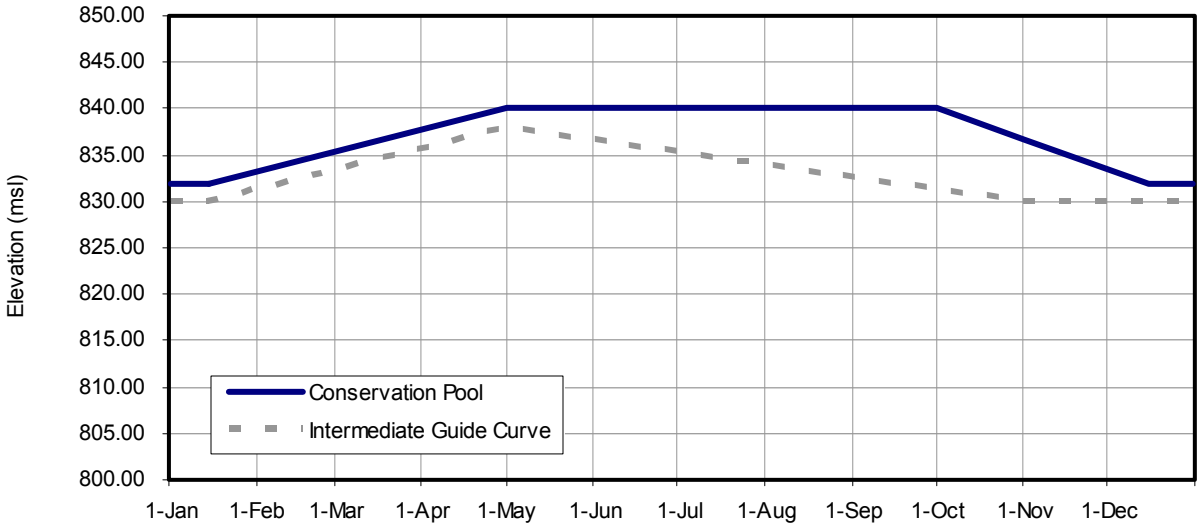
The T050103A.dat and the T050103B.dat HEC-5 models are an interpretation of the draft ACT Allocation Proposal. These models are not intended to represent the ACT Allocation Proposal, itself, but just a couple of examples of the way the ACT Basin could be operated in accordance with the Proposal. However, these models are considered to bracket the extremes from a Corps of Engineers (COE) operational discretion standpoint. Both models contain the Georgia projected 2030 demands.

The T050103A.dat HEC-5 model simulates the most conservative amount of operational discretion, at Allatoona, anticipated under the formula. Carters and Allatoona reservoirs are operated to meet a strict 1500 cfs flow target at Rome, GA. All additional inflows in the upper Coosa are used for re-filling purposes.

The T050103B.dat HEC-5 model simulates the most aggressive amount of operational discretion, at Allatoona, anticipated under the formula. Allatoona's top of conservation was changed to the numbers shown on the next slide. This new curve, named Intermediate Guide Curve, is not intended to replace the proposed Allatoona rule curve; it is for modeling purposes only. This methodology assumes the COE would utilize its full discretion above this curve to meet its authorized purposes, therefore releasing everything above the new curve. When Allatoona's elevation falls below this new curve, Carters and Allatoona reservoirs are operated to meet a strict 1500 cfs flow target at Rome, GA. At this time the inflows in the upper Coosa are used for re-filling purposes.

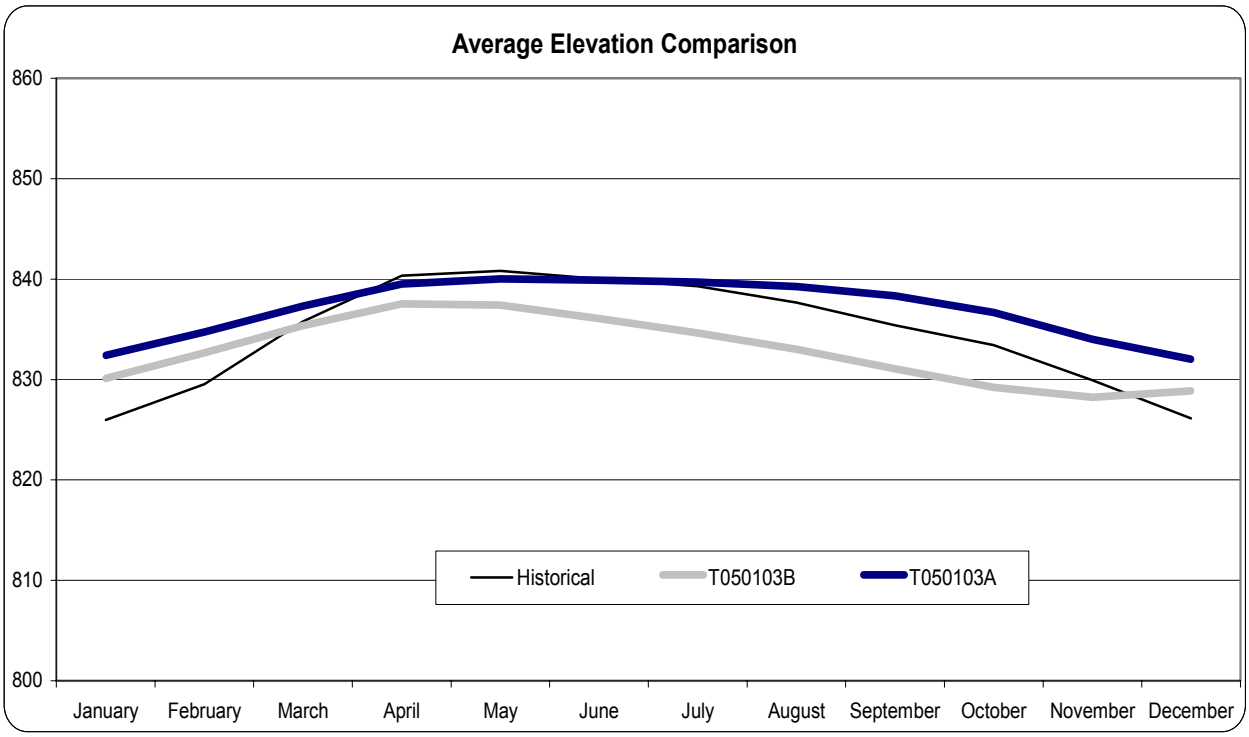
The models were simulated using the 1939 - 1993 period of record. The modeling will be updated when the extended unimpaired flow set is made available by the COE.

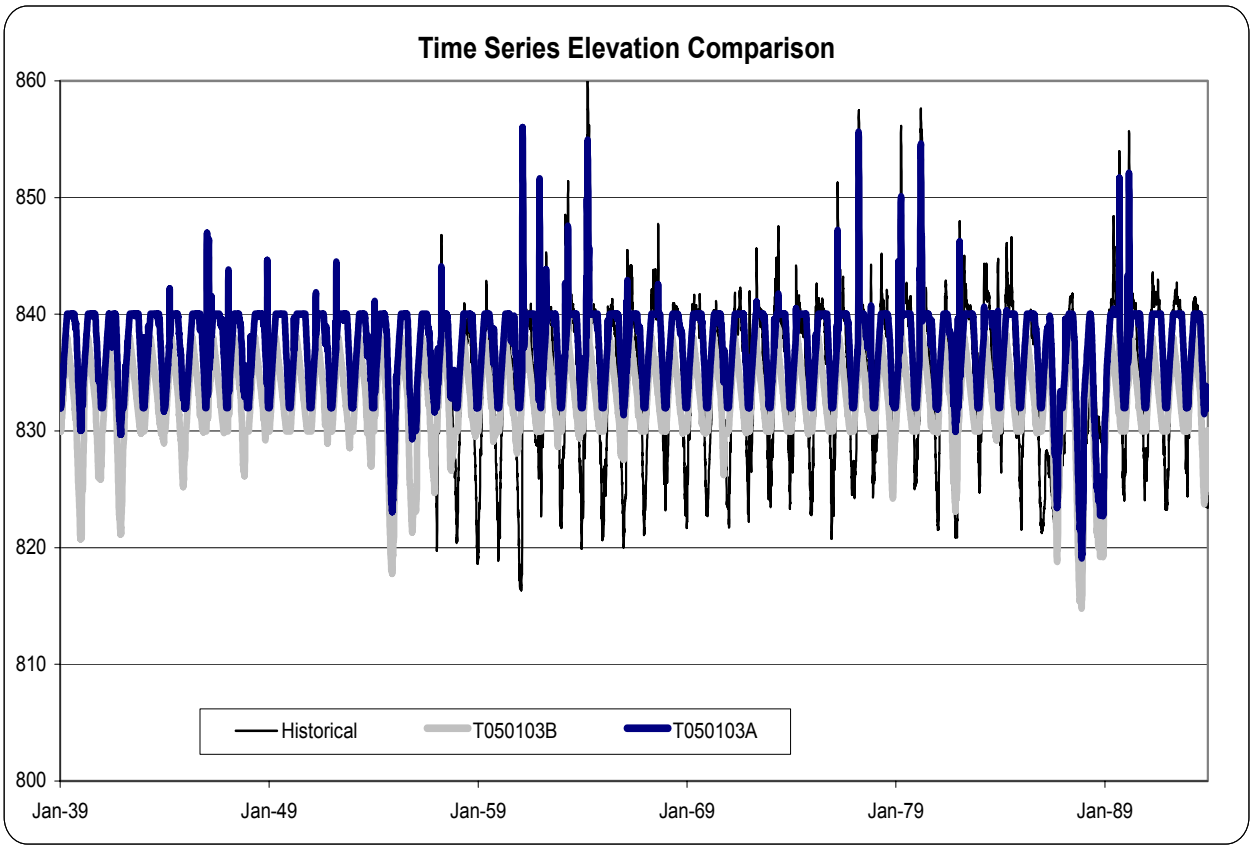
Figure B-1
Allatoona Conservation Storage Level



	1-Jan	15-Jan	1-May	1-Oct	1-Nov	15-Dec	31-Dec
Conservation Pool	832.00	832.00	840.00	840.00	836.70	832.00	832.00
Intermediate Guide Curve	830.00	830.00	838.00	831.35	830.00	830.00	830.00

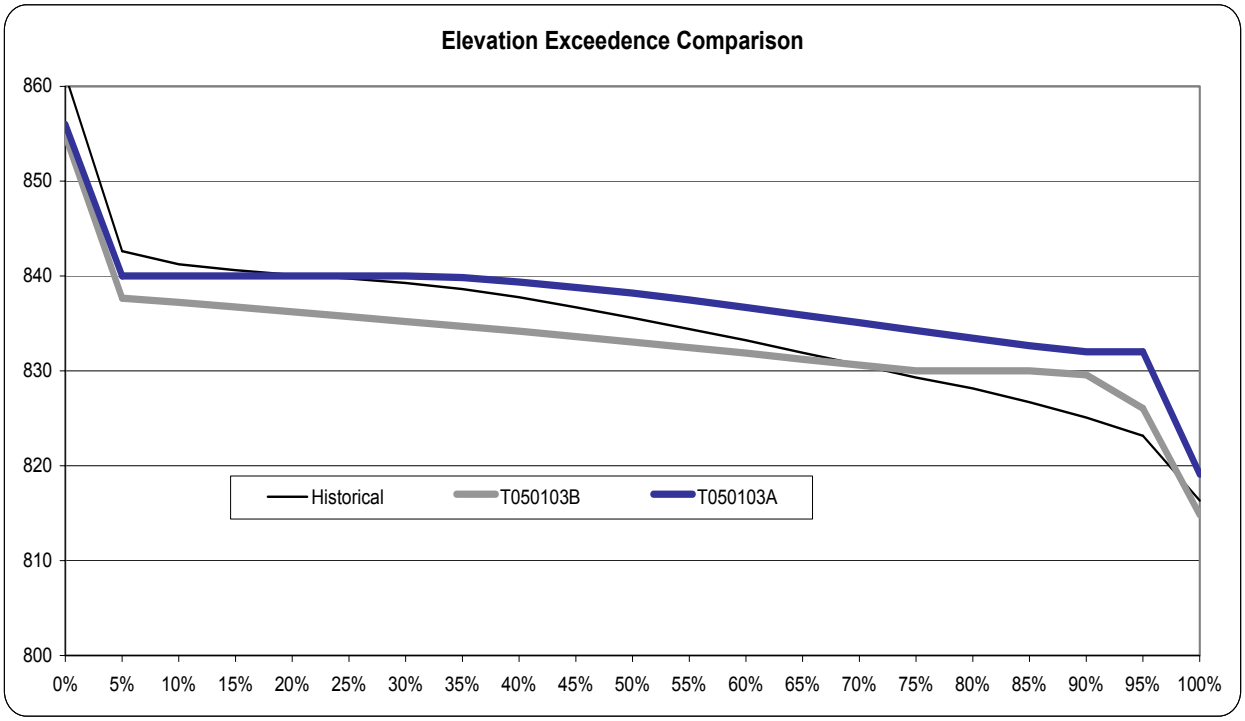
Allatoona Elevation





Note: Historical data based on observed elevations since January 1, 1957

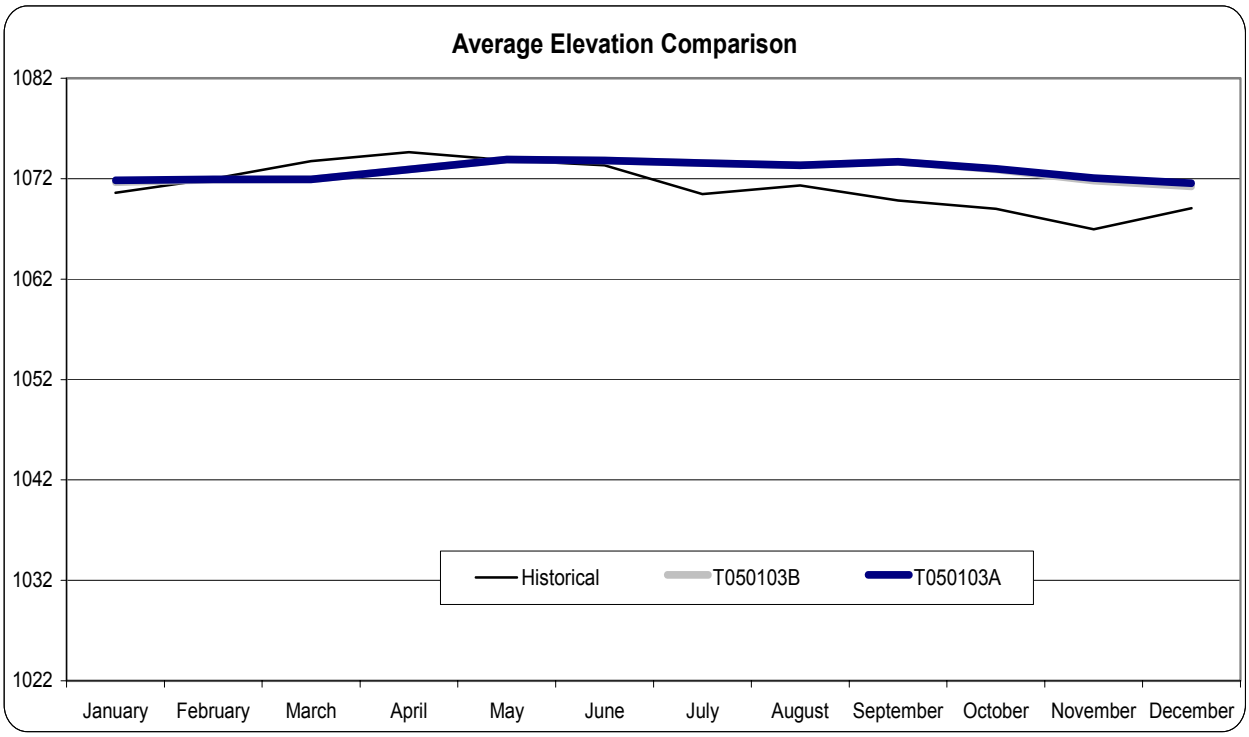
Allatoona Elevation

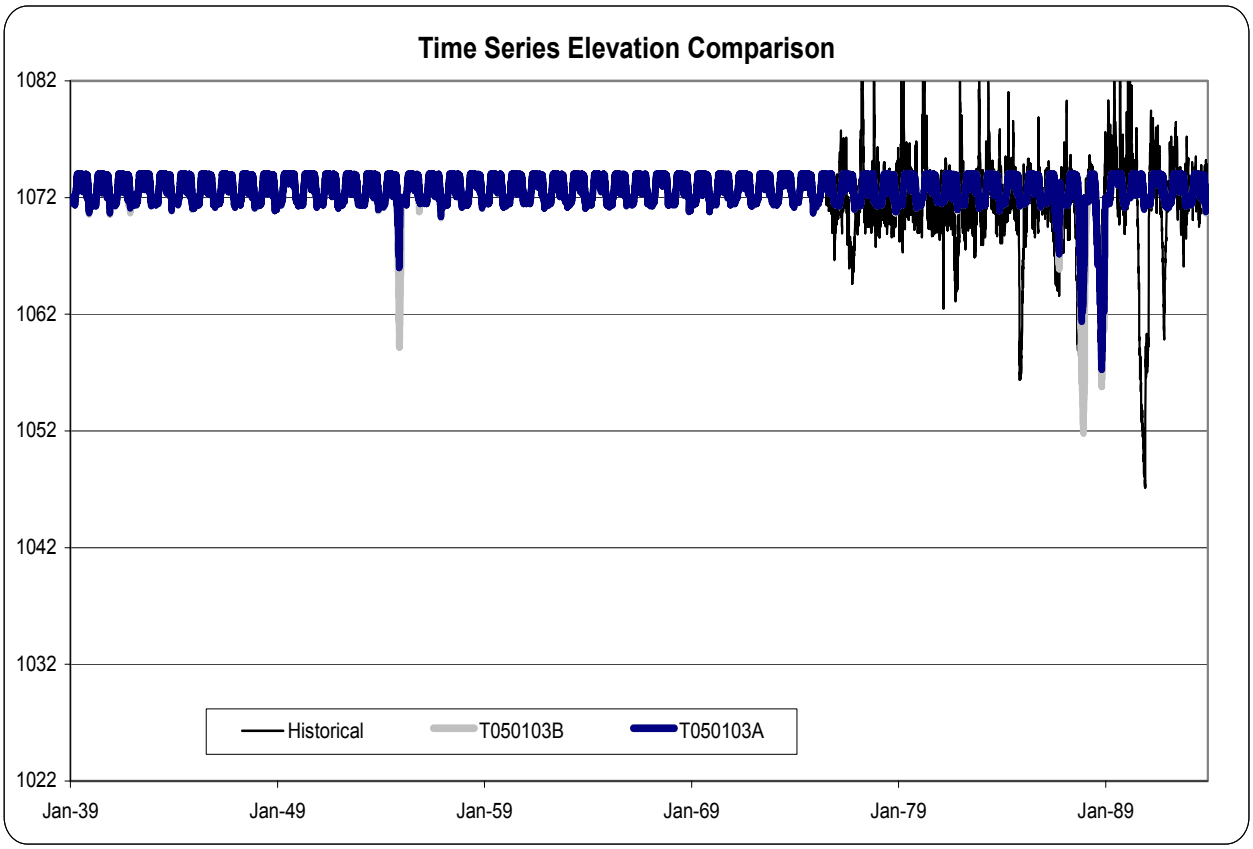


Exceedence	Historical	T050103A	T050103B
0%	861.19	855.99	854.78
5%	842.62	840.00	837.67
10%	841.26	840.00	837.22
15%	840.62	840.00	836.73
20%	840.14	840.00	836.24
25%	839.76	840.00	835.73
30%	839.28	840.00	835.22
35%	838.63	839.83	834.71
40%	837.76	839.37	834.18
45%	836.72	838.80	833.62
50%	835.60	838.22	833.05
55%	834.42	837.49	832.47
60%	833.24	836.69	831.87
65%	831.92	835.89	831.22
70%	830.64	835.08	830.61
75%	829.29	834.26	830.00
80%	828.15	833.46	830.00
85%	826.70	832.65	830.00
90%	825.07	832.00	829.57
95%	823.16	832.00	826.04
100%	816.34	819.11	814.81

Note: Historical data based on observed elevations since January 1, 1957

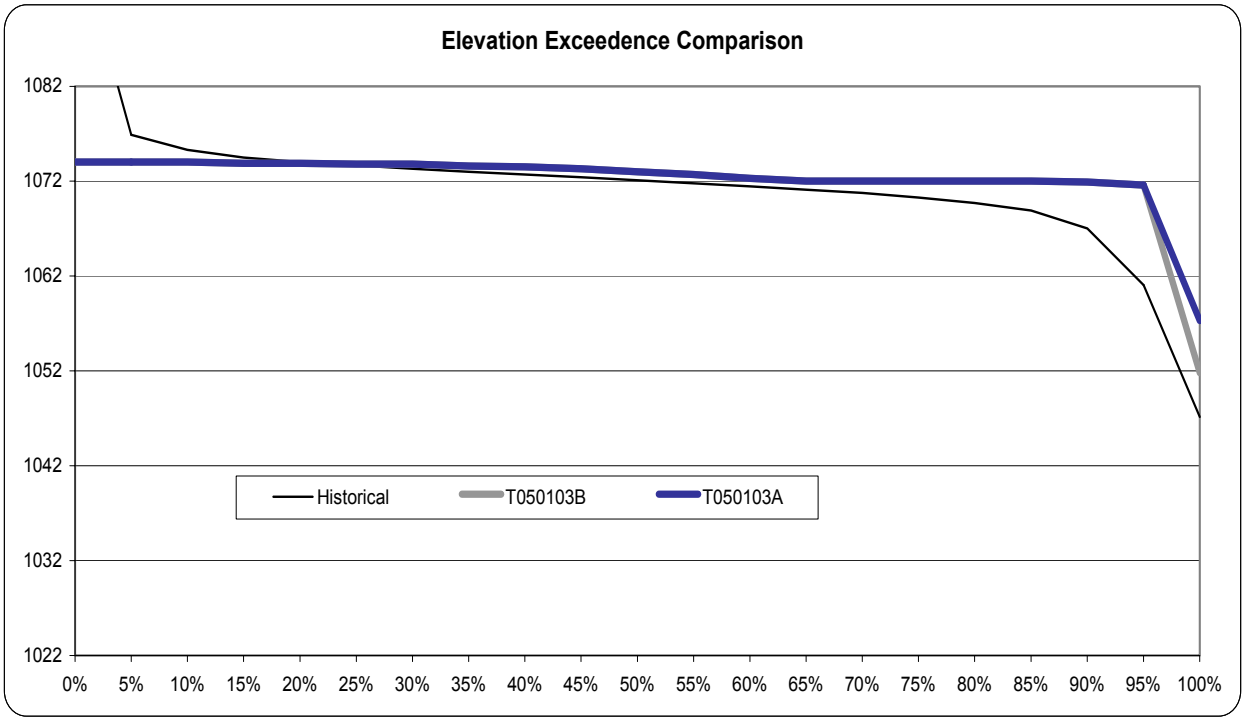
Carters Elevation





Note: Historical data based on observed elevations since July 18, 1975

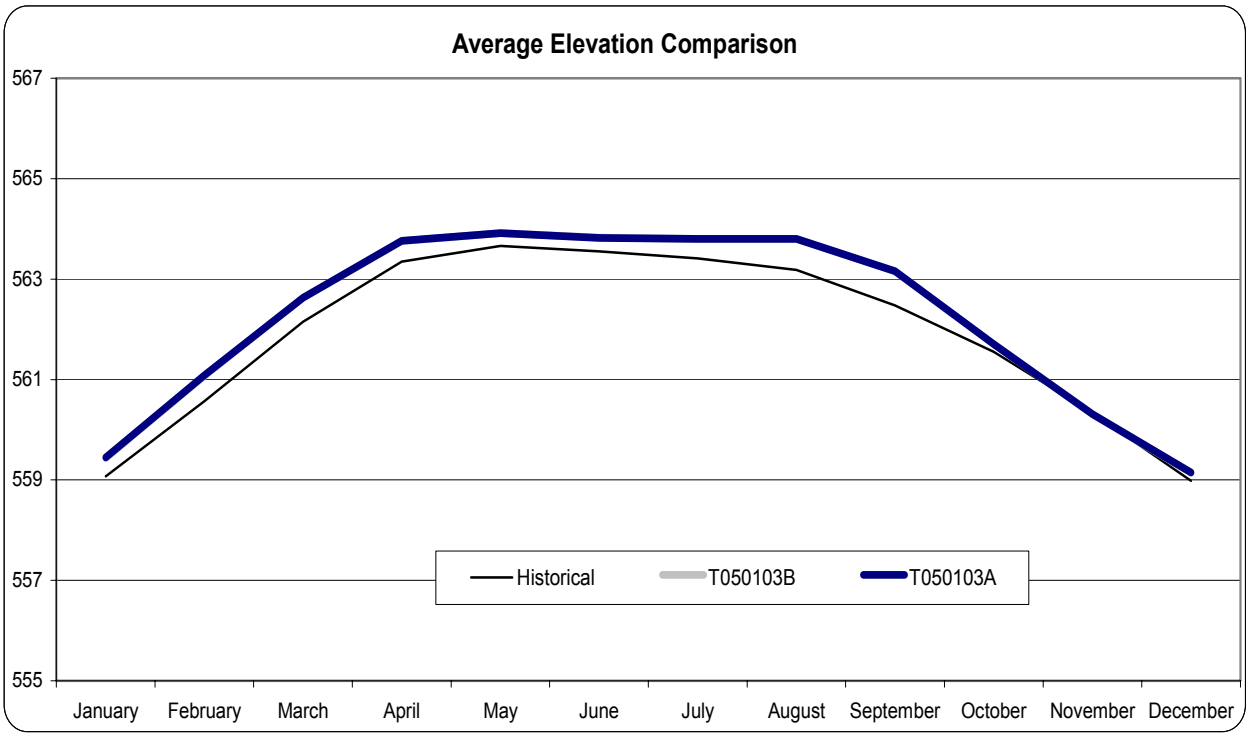
Carters Elevation

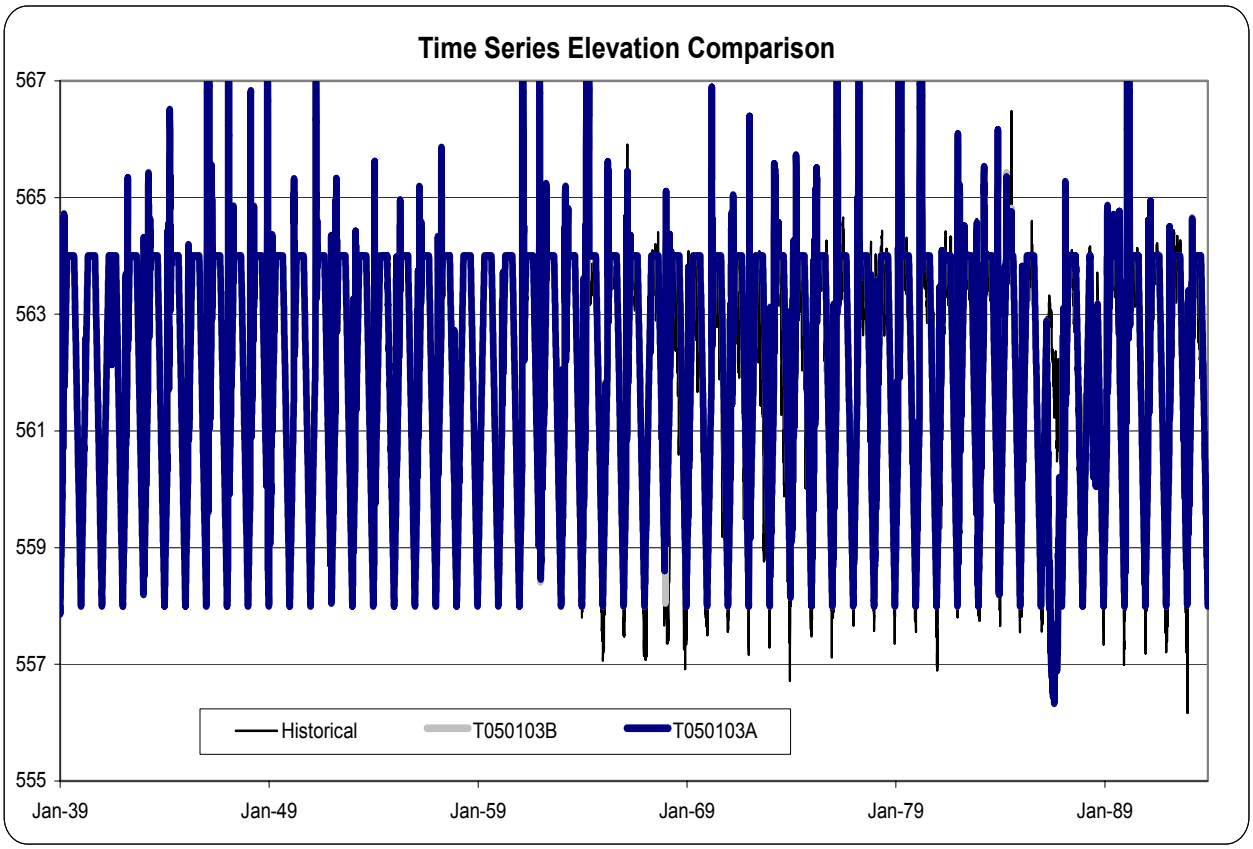


Exceedence	Historical	T050103A	T050103B
0%	1098.34	1074.00	1074.00
5%	1076.90	1074.00	1074.00
10%	1075.30	1074.00	1074.00
15%	1074.50	1073.90	1073.90
20%	1074.00	1073.90	1073.90
25%	1073.65	1073.80	1073.80
30%	1073.30	1073.80	1073.80
35%	1073.00	1073.60	1073.60
40%	1072.70	1073.50	1073.50
45%	1072.40	1073.30	1073.30
50%	1072.10	1073.00	1073.00
55%	1071.78	1072.70	1072.70
60%	1071.45	1072.30	1072.30
65%	1071.10	1072.00	1072.00
70%	1070.75	1072.00	1072.00
75%	1070.26	1072.00	1072.00
80%	1069.70	1072.00	1072.00
85%	1068.90	1072.00	1072.00
90%	1067.01	1071.90	1071.90
95%	1061.06	1071.60	1071.60
100%	1047.15	1057.30	1051.80

Note: Historical data based on observed elevations since July 18, 1975

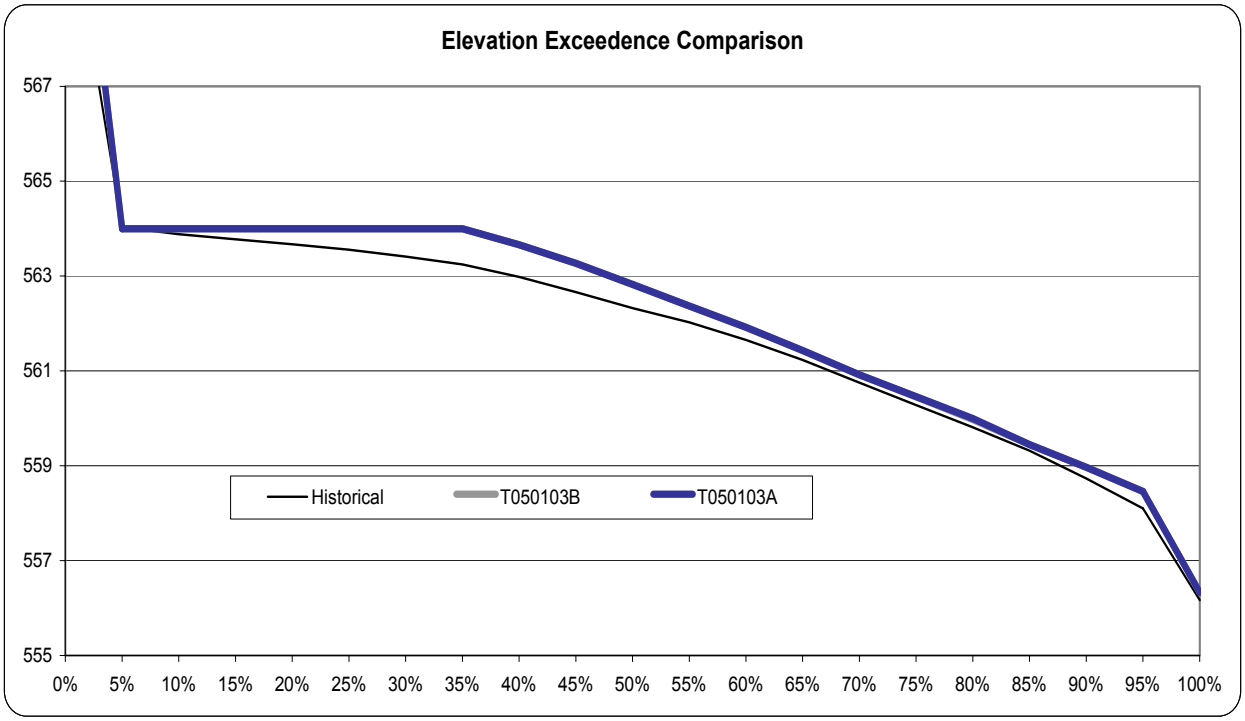
Weiss Elevation





Note: Historical data based on observed elevations since January 1, 1964

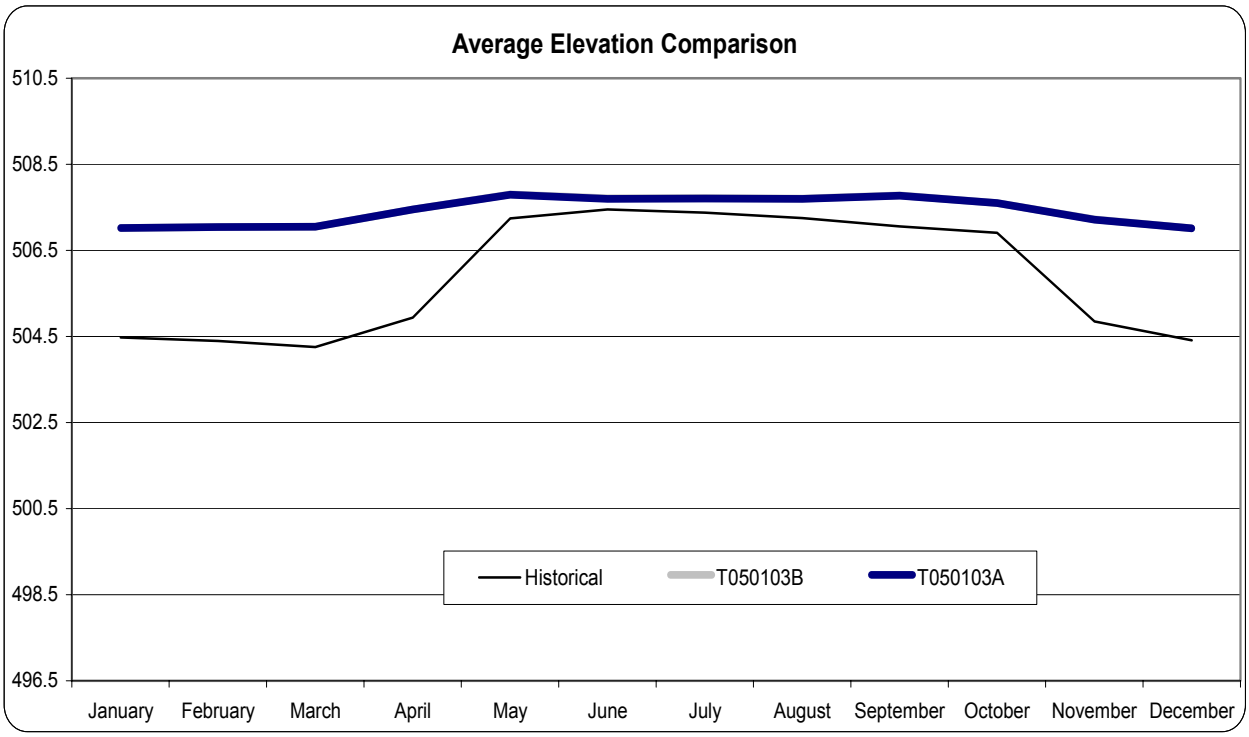
Weiss Elevation

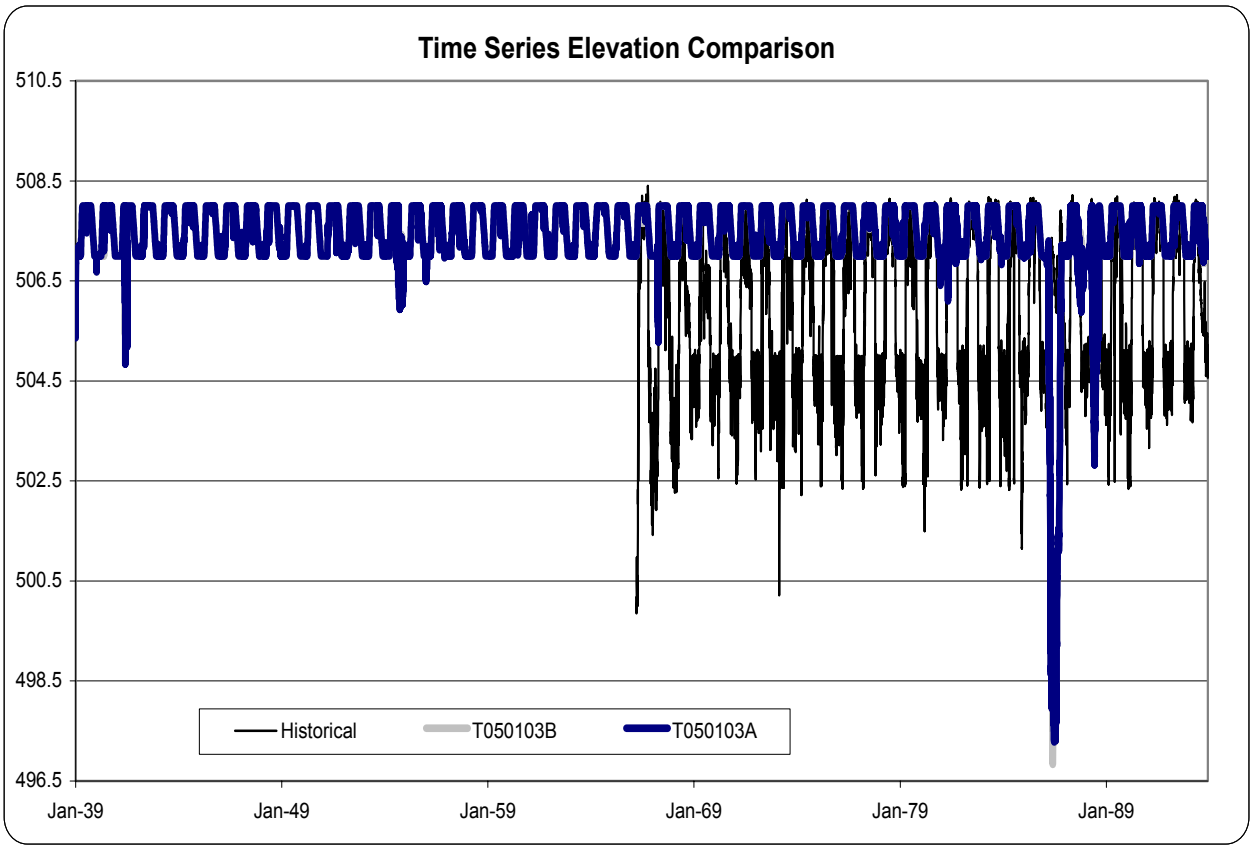


Exceedence	Historical	T050103A	T050103B
0%	571.33	574.00	574.00
5%	564.03	564.00	564.00
10%	563.88	564.00	564.00
15%	563.77	564.00	564.00
20%	563.67	564.00	564.00
25%	563.56	564.00	564.00
30%	563.41	564.00	564.00
35%	563.24	564.00	564.00
40%	562.98	563.66	563.66
45%	562.66	563.27	563.27
50%	562.32	562.82	562.82
55%	562.02	562.37	562.37
60%	561.65	561.92	561.92
65%	561.23	561.43	561.43
70%	560.75	560.92	560.92
75%	560.28	560.46	560.45
80%	559.81	560.00	559.97
85%	559.32	559.45	559.45
90%	558.73	558.97	558.97
95%	558.10	558.46	558.46
100%	556.17	556.33	556.33

Note: Historical data based on observed elevations since January 1, 1964

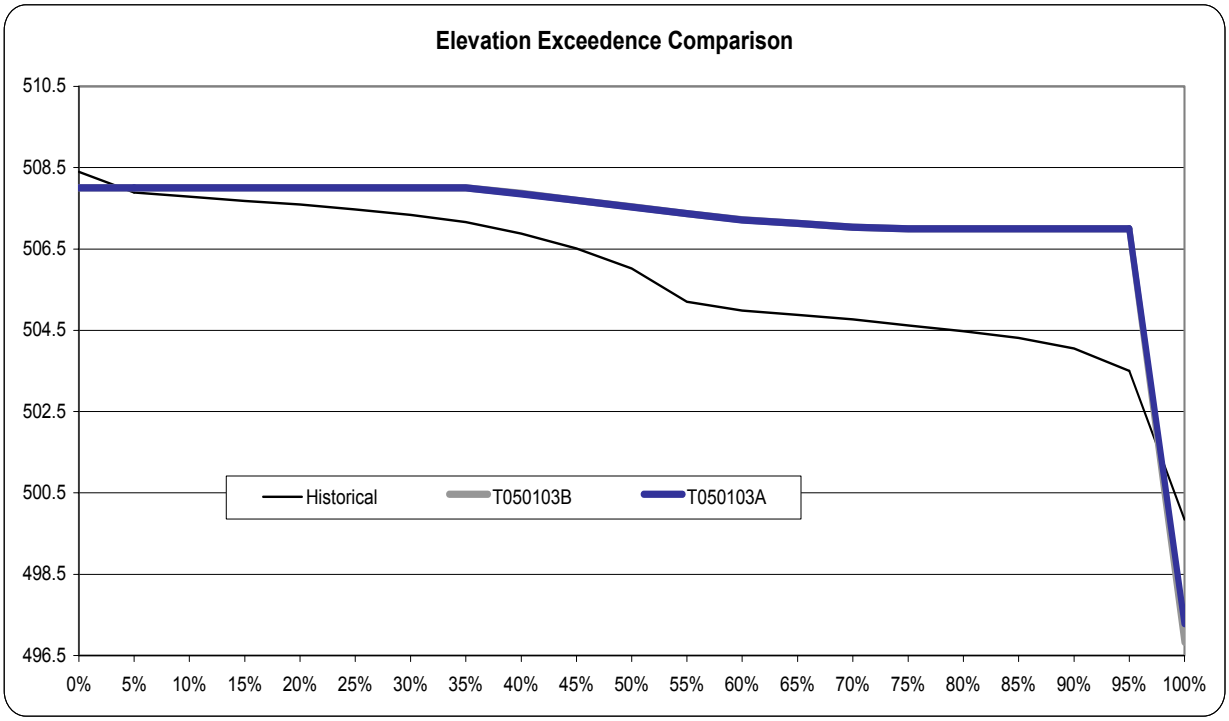
Neely Henry Elevation





Note: Historical data based on observed elevations since April 1, 1966

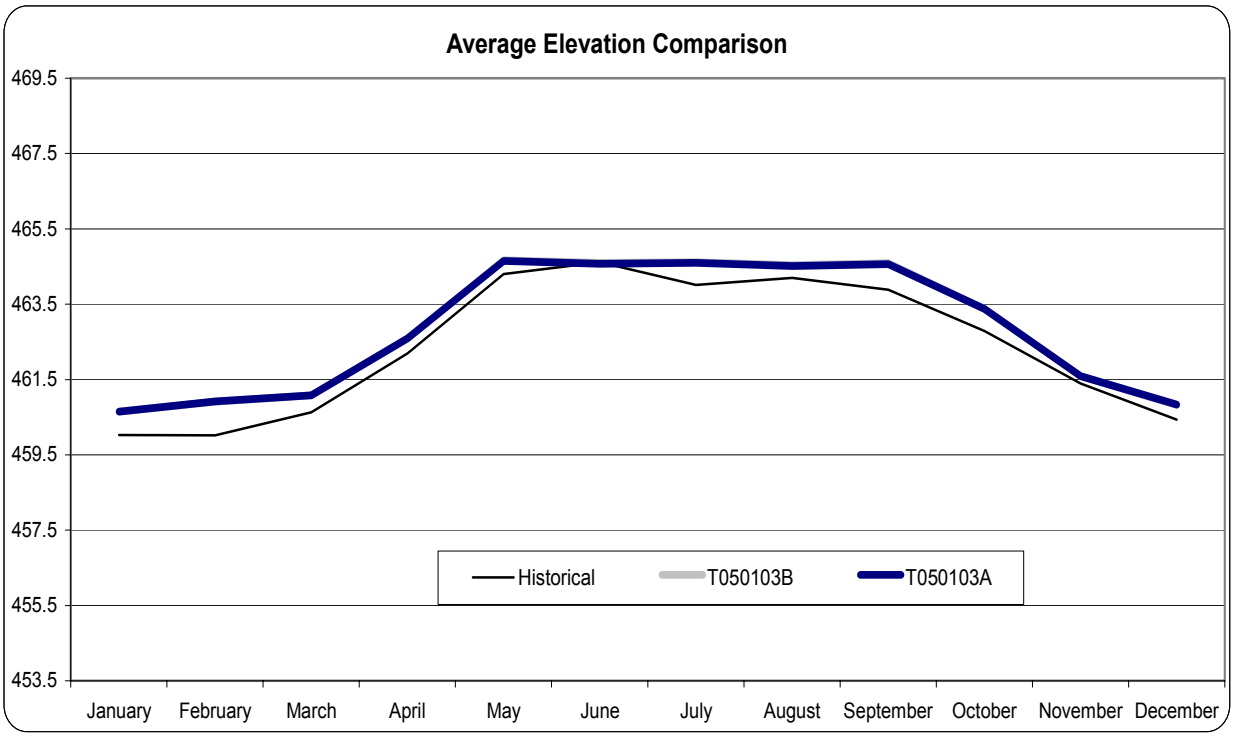
Neely Henry Elevation

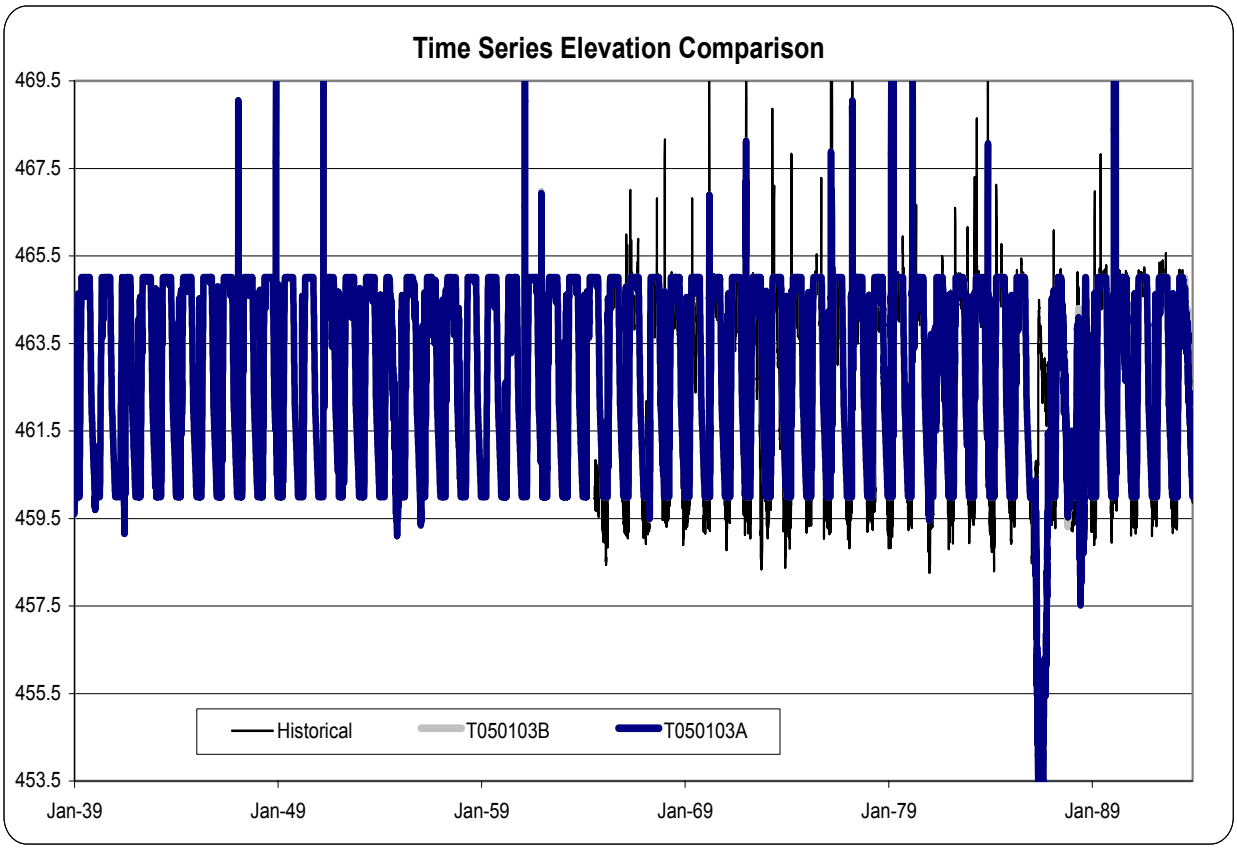


Exceedence	Historical	T050103A	T050103B
0%	508.40	508.00	508.00
5%	507.89	508.00	508.00
10%	507.79	508.00	508.00
15%	507.68	508.00	508.00
20%	507.59	508.00	508.00
25%	507.47	508.00	508.00
30%	507.34	508.00	508.00
35%	507.16	508.00	508.00
40%	506.88	507.85	507.87
45%	506.51	507.70	507.70
50%	506.02	507.53	507.54
55%	505.20	507.37	507.37
60%	504.98	507.21	507.22
65%	504.88	507.13	507.13
70%	504.77	507.03	507.03
75%	504.62	507.00	507.00
80%	504.48	507.00	507.00
85%	504.31	507.00	507.00
90%	504.05	507.00	507.00
95%	503.50	507.00	507.00
100%	499.85	497.28	496.83

Note: Historical data based on observed elevations since April 1, 1966

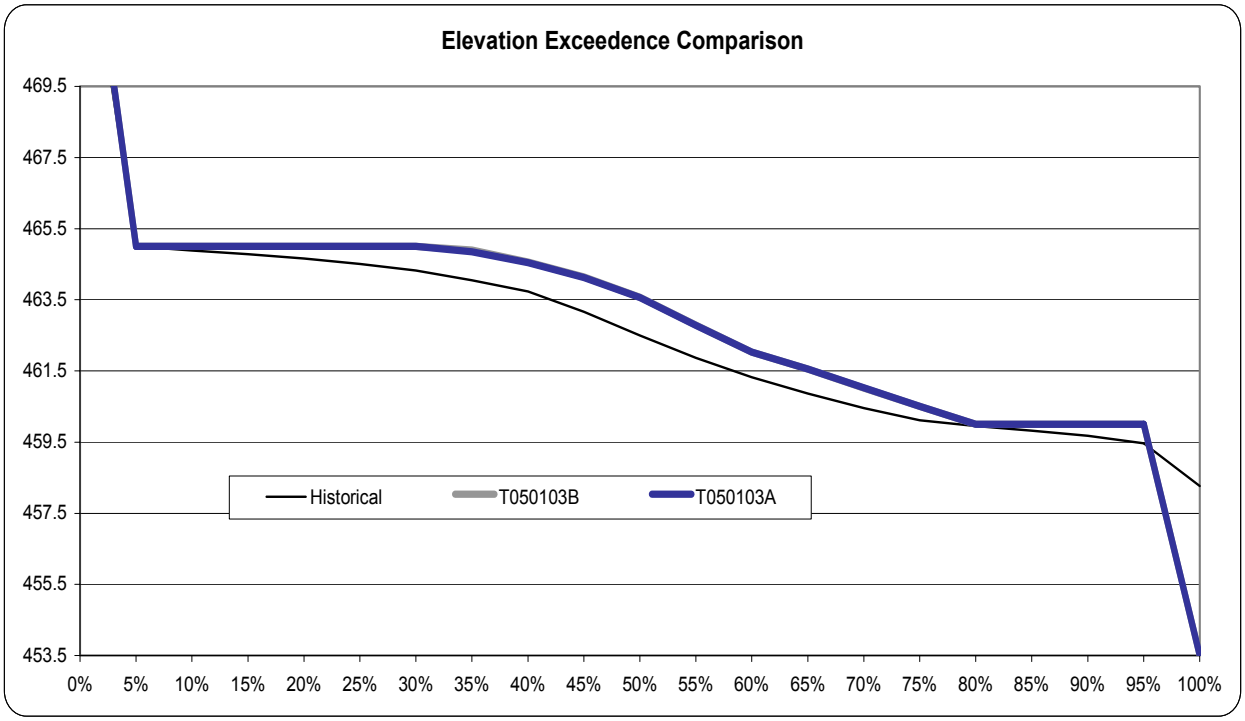
Logan Martin Elevation





Note: Historical data based on observed elevations since August 1, 1964

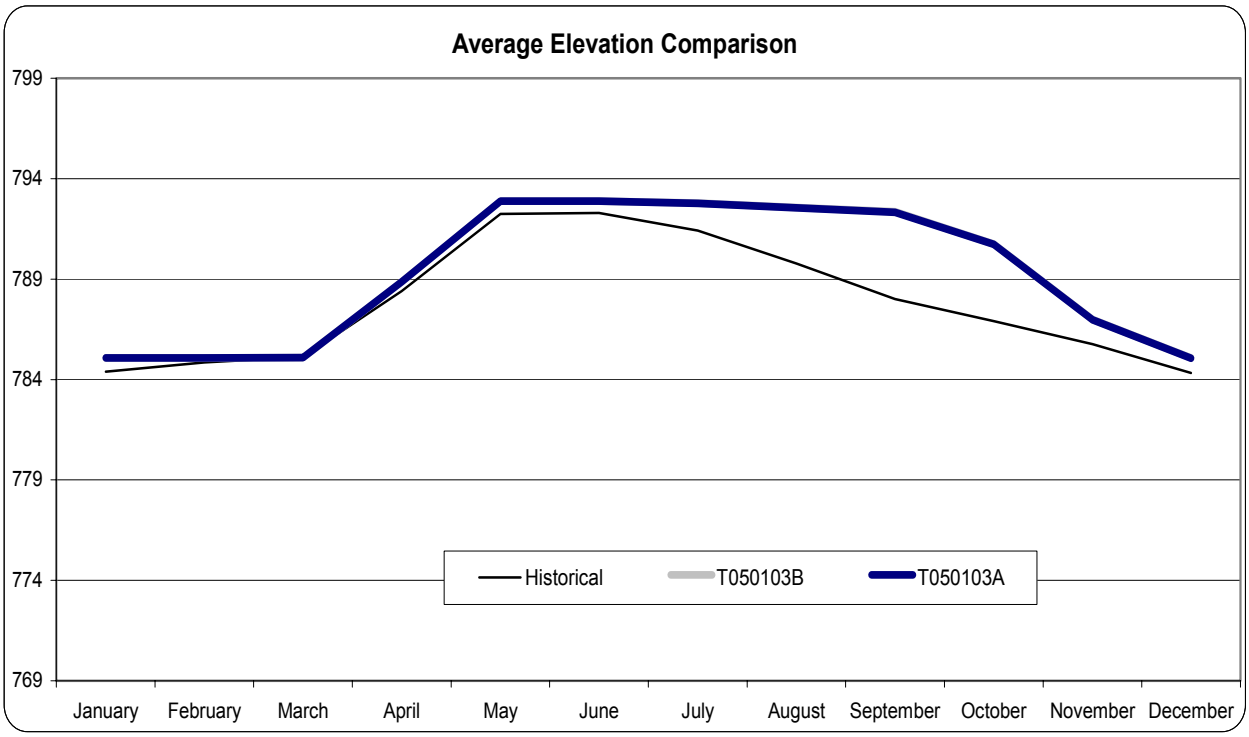
Logan Martin Elevation

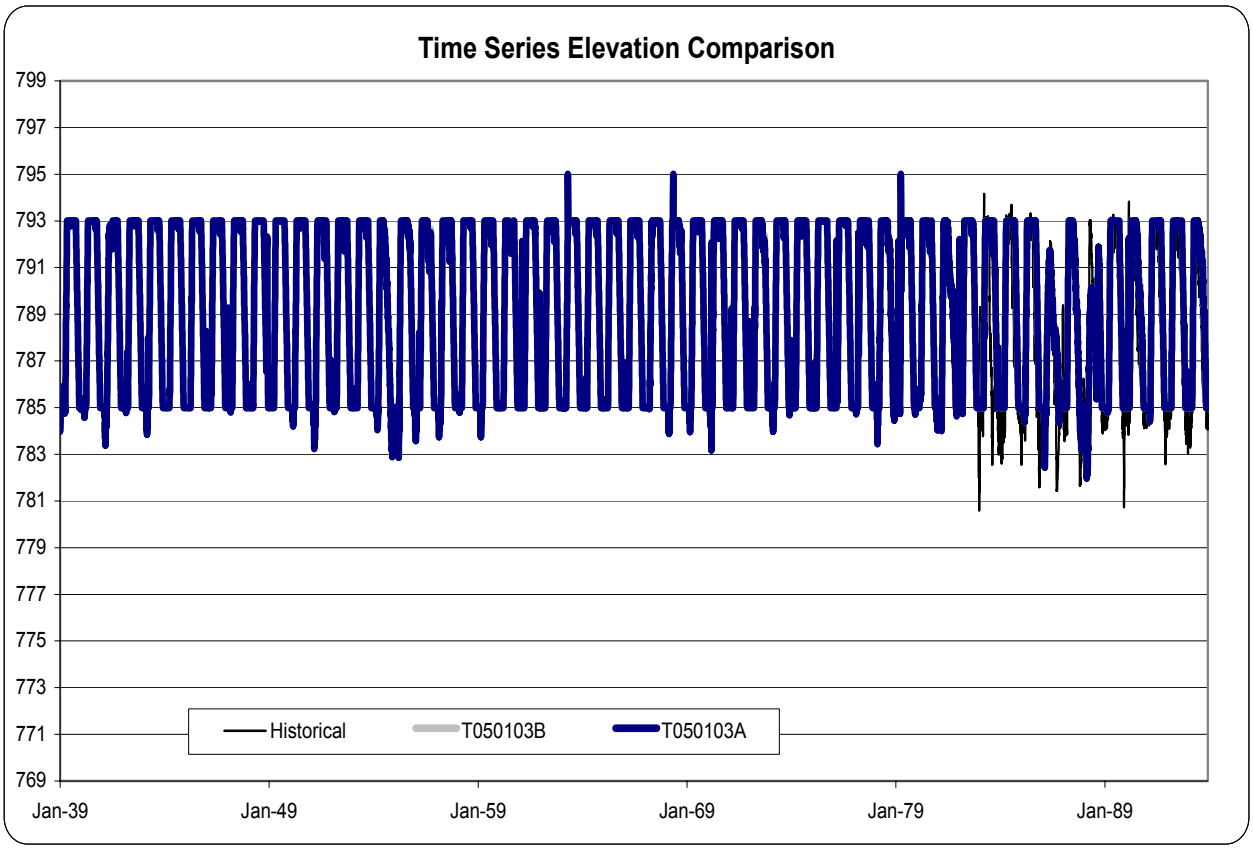


Exceedence	Historical	T050103A	T050103B
0%	475.31	476.50	476.50
5%	465.00	465.00	465.00
10%	464.88	465.00	465.00
15%	464.78	465.00	465.00
20%	464.66	465.00	465.00
25%	464.51	465.00	465.00
30%	464.32	465.00	465.00
35%	464.05	464.85	464.90
40%	463.73	464.54	464.56
45%	463.16	464.12	464.14
50%	462.50	463.56	463.57
55%	461.87	462.78	462.79
60%	461.32	462.03	462.03
65%	460.86	461.55	461.55
70%	460.45	461.02	461.01
75%	460.11	460.50	460.50
80%	459.95	460.00	460.00
85%	459.82	460.00	460.00
90%	459.68	460.00	460.00
95%	459.46	460.00	460.00
100%	458.26	453.50	453.50

Note: Historical data based on observed elevations since August 1, 1964

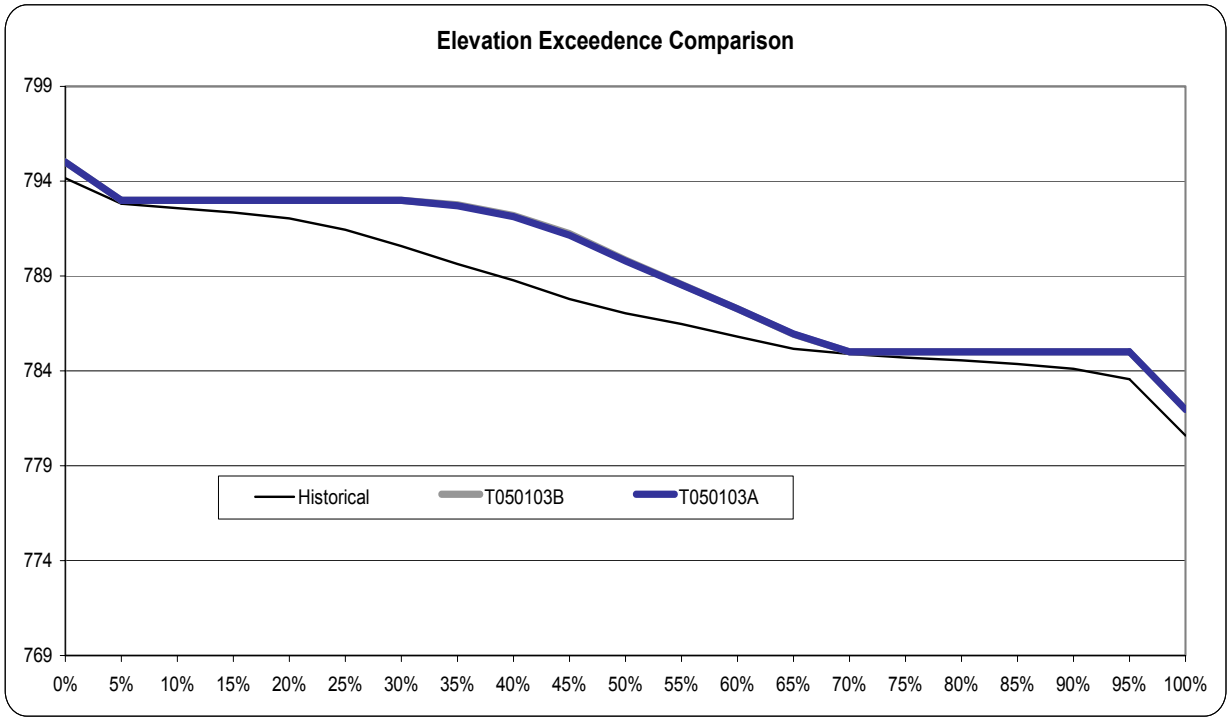
Harris Elevation





Note: Historical data based on observed elevations since January 1, 1983

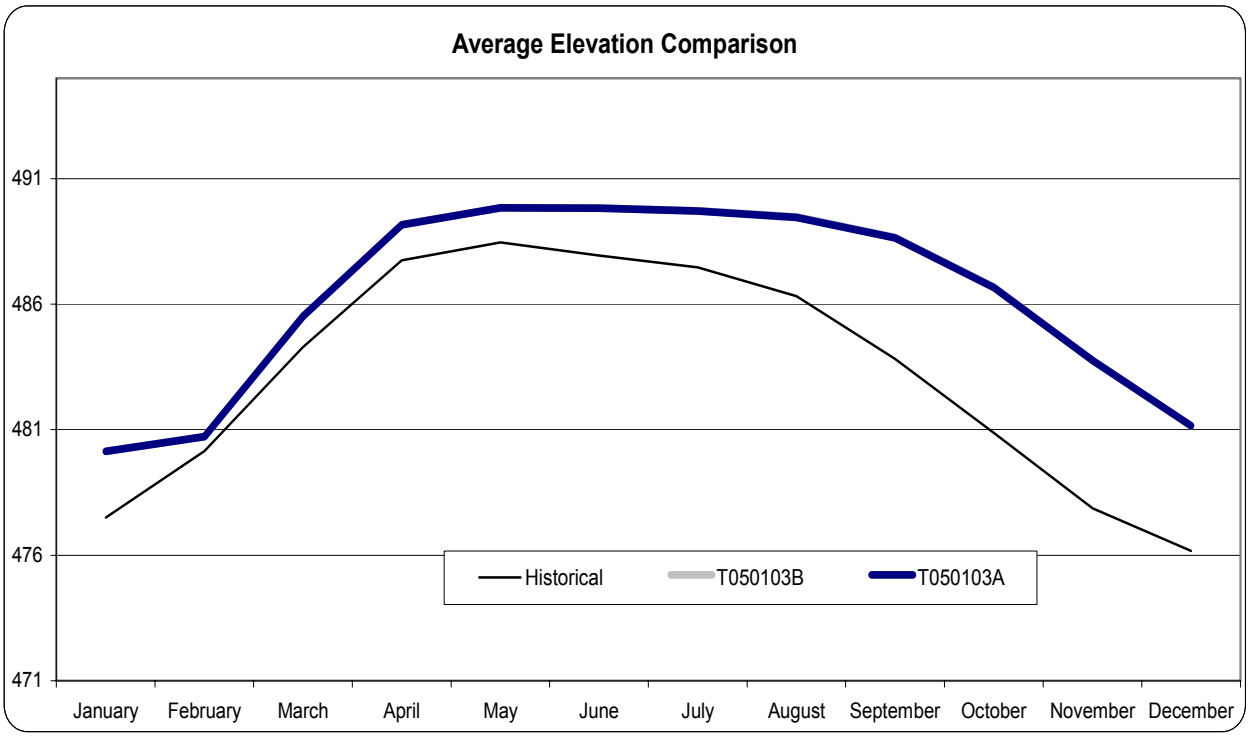
Harris Elevation

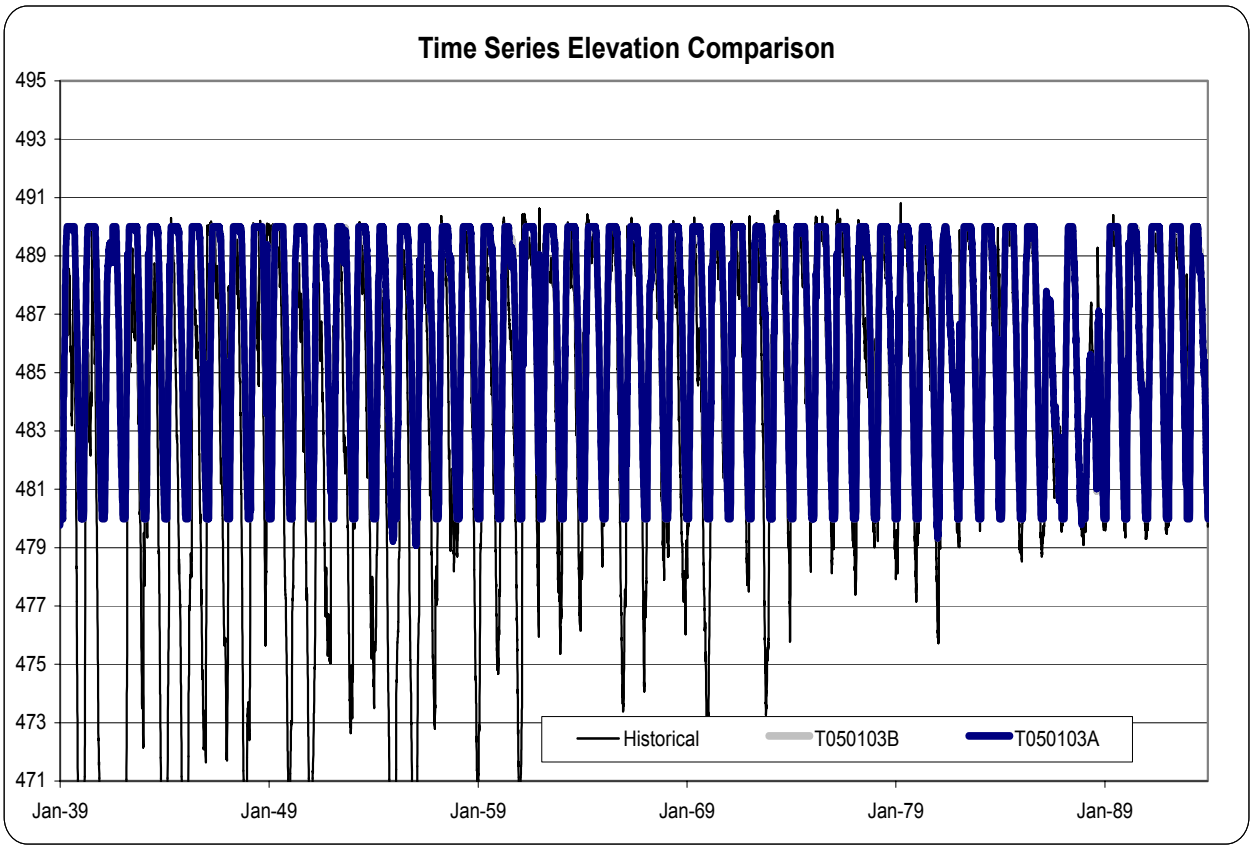


Exceedence	Historical	T050103A	T050103B
0%	794.16	795.00	795.00
5%	792.81	793.00	793.00
10%	792.58	793.00	793.00
15%	792.35	793.00	793.00
20%	792.04	793.00	793.00
25%	791.44	793.00	793.00
30%	790.59	793.00	793.00
35%	789.64	792.71	792.75
40%	788.77	792.14	792.20
45%	787.79	791.15	791.23
50%	787.04	789.80	789.85
55%	786.48	788.54	788.57
60%	785.81	787.27	787.27
65%	785.16	785.95	785.94
70%	784.89	785.00	785.00
75%	784.70	785.00	785.00
80%	784.56	785.00	785.00
85%	784.36	785.00	785.00
90%	784.11	785.00	785.00
95%	783.57	785.00	785.00
100%	780.60	781.97	781.97

Note: Historical data based on observed elevations since January 1, 1983

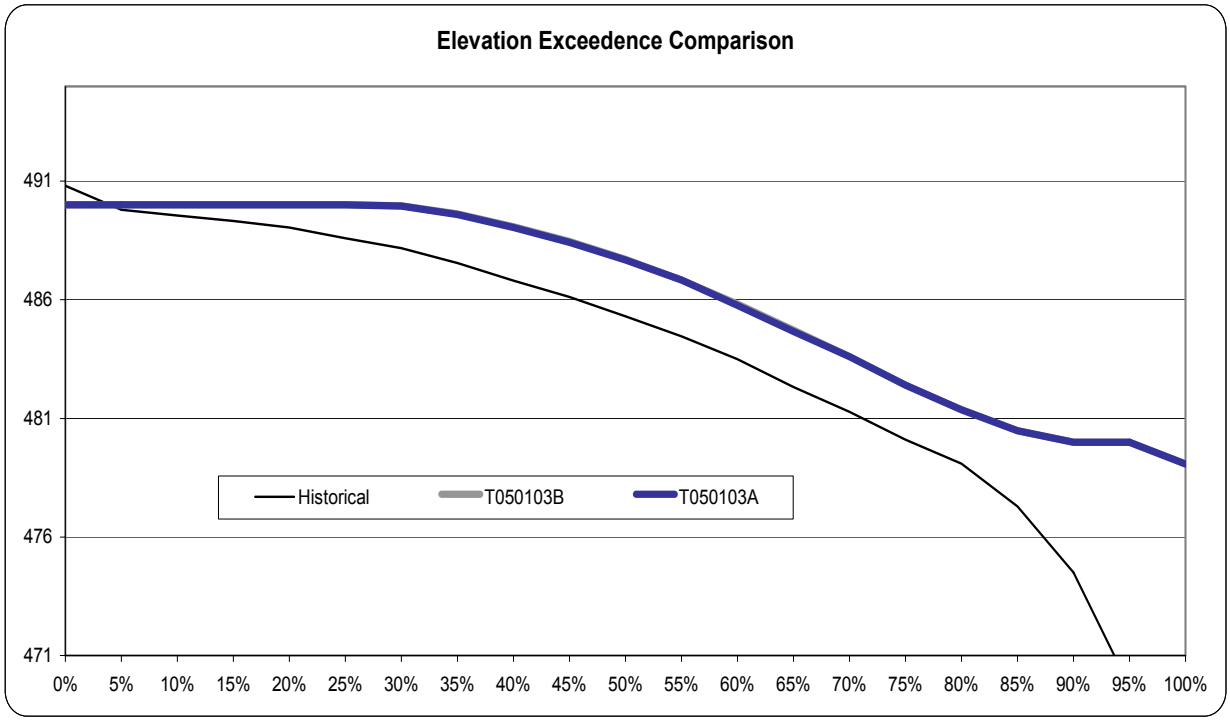
Martin Elevation





Note: Historical data based on observed elevations since April 1, 1939

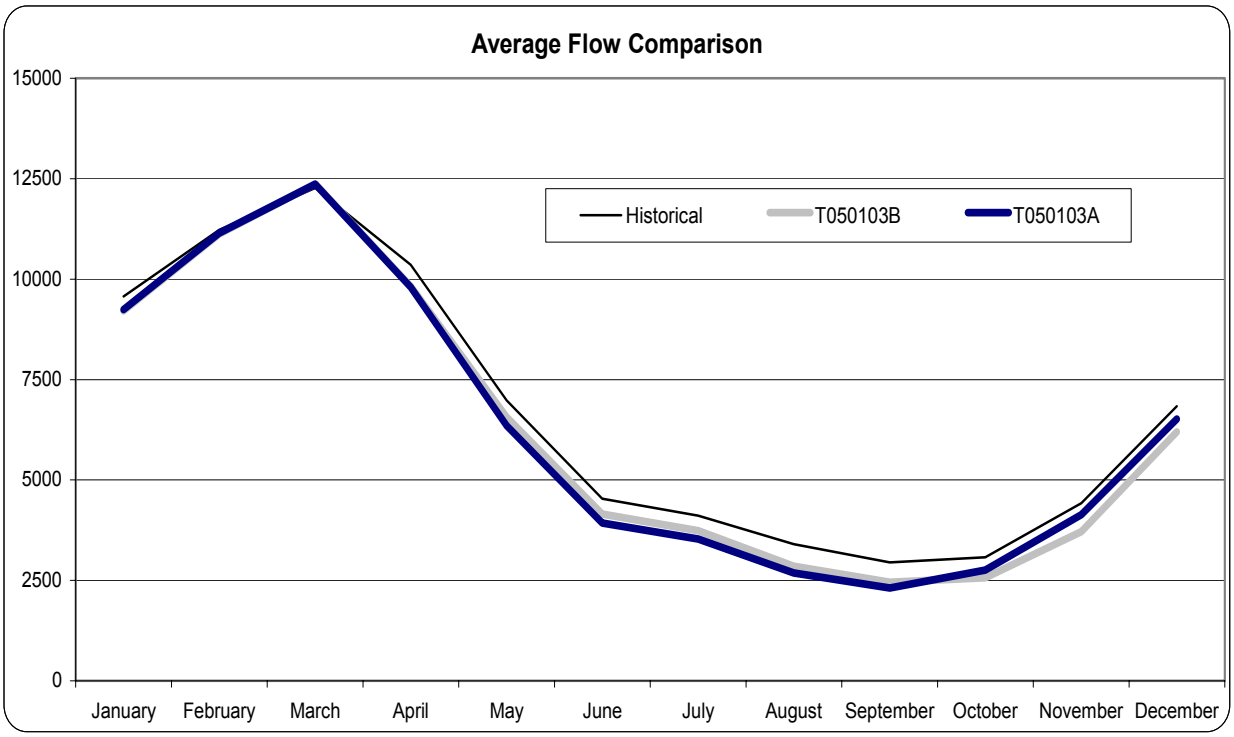
Martin Elevation

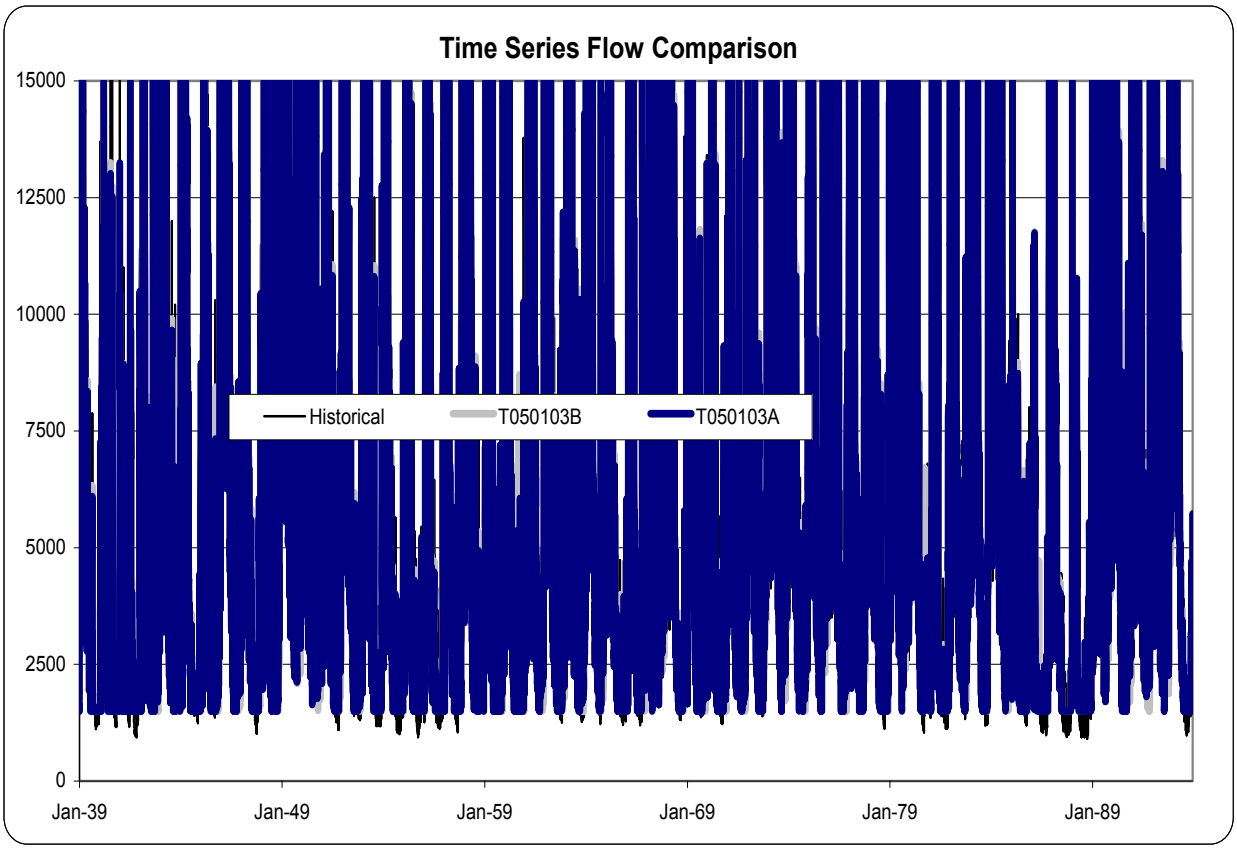


Exceedence	Historical	T050103A	T050103B
0%	490.81	490.00	490.00
5%	489.80	490.00	490.00
10%	489.55	490.00	490.00
15%	489.33	490.00	490.00
20%	489.05	490.00	490.00
25%	488.60	490.00	490.00
30%	488.18	489.95	489.96
35%	487.55	489.59	489.62
40%	486.81	489.04	489.08
45%	486.12	488.42	488.46
50%	485.30	487.68	487.70
55%	484.46	486.83	486.84
60%	483.50	485.76	485.83
65%	482.32	484.66	484.73
70%	481.28	483.60	483.60
75%	480.10	482.40	482.40
80%	479.09	481.37	481.37
85%	477.29	480.48	480.48
90%	474.50	480.00	480.00
95%	469.70	480.00	480.00
100%	439.20	479.08	479.08

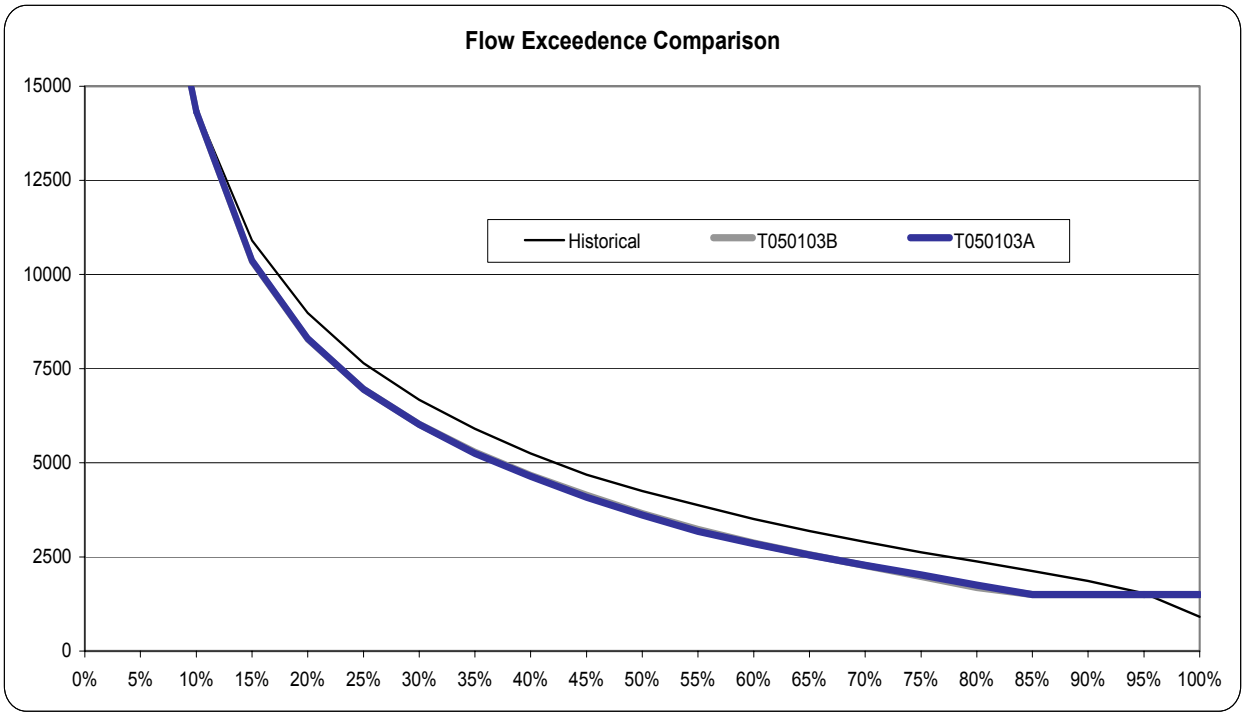
Note: Historical data based on observed elevations since April 1, 1939

Rome Flow


Average Flow Comparison
15000
12500
10000
7500
5000
2500
0
Historical
T050103B
T050103A
January
February
March
April
May
June
July
August
September
October
November
December

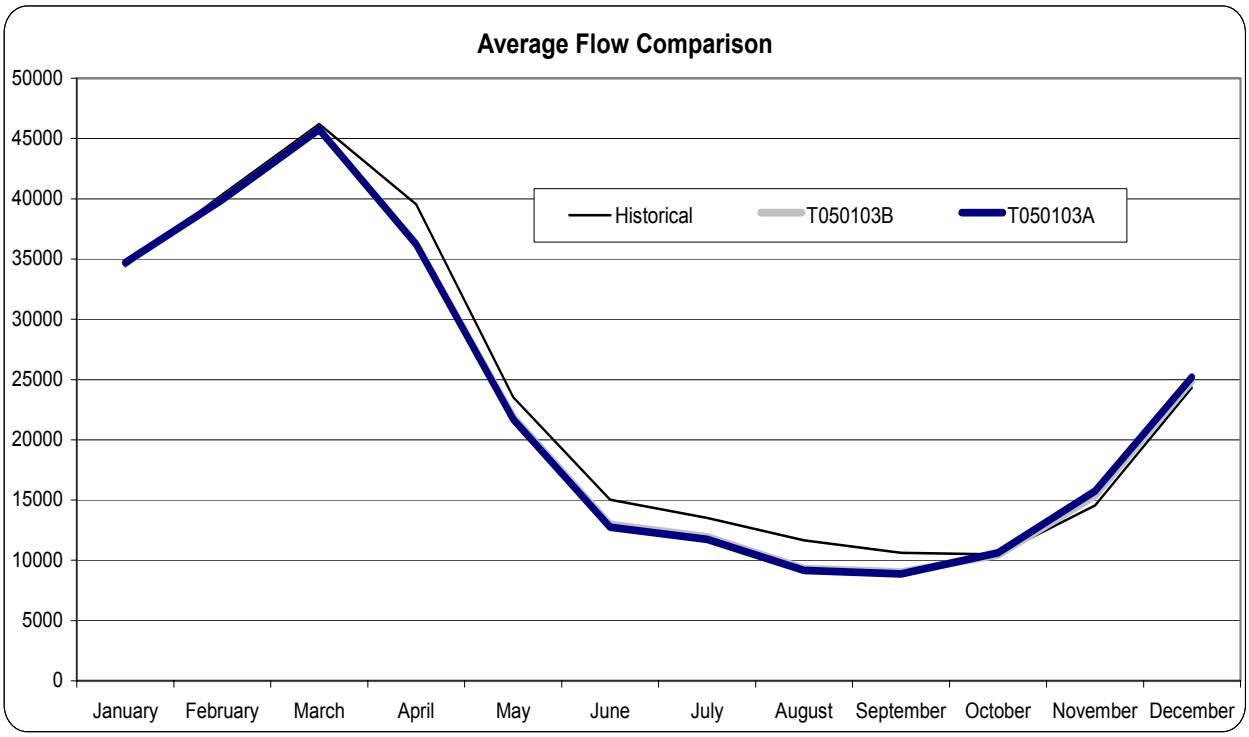

Time Series Flow Comparison
15000
12500
10000
7500
5000
2500
0
Historical
T050103B
T050103A
Jan-39
Jan-49
Jan-59
Jan-69
Jan-79
Jan-89

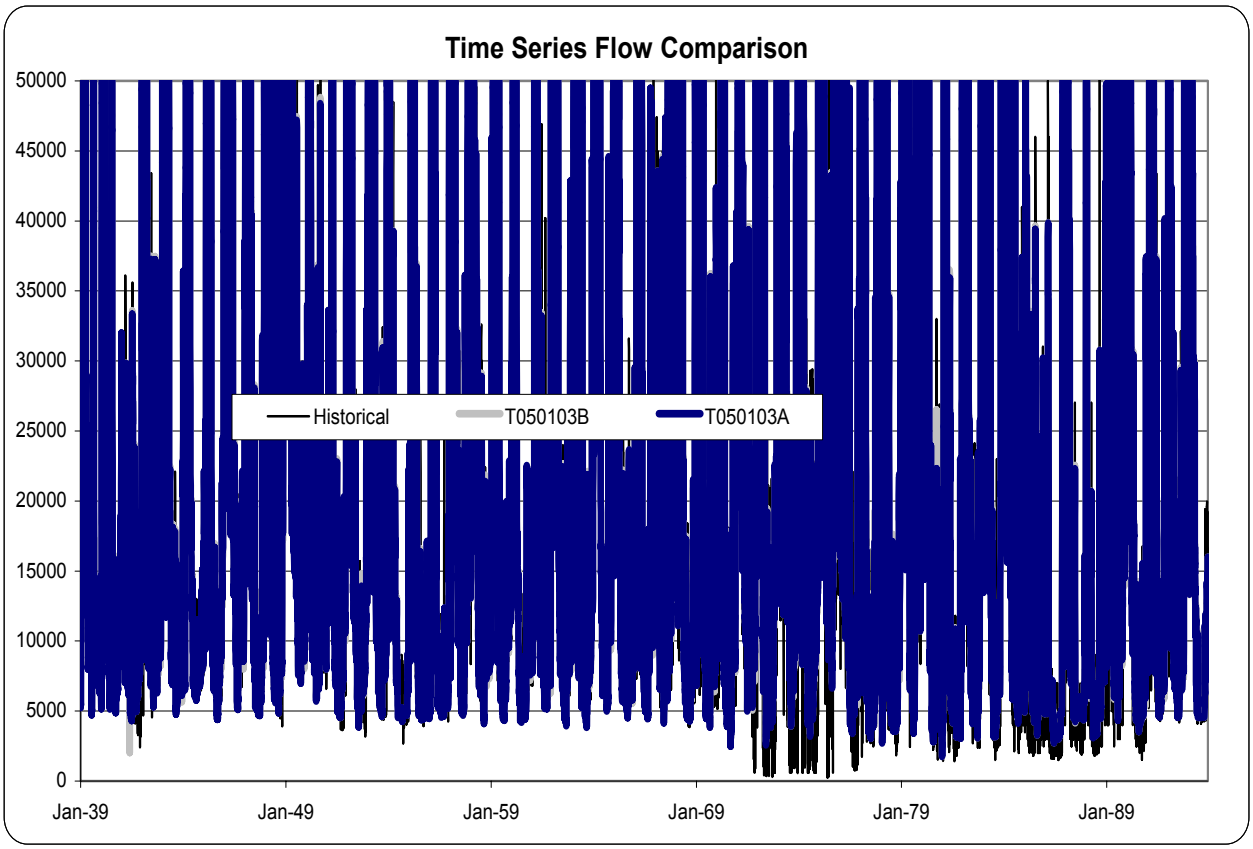
Rome Flow



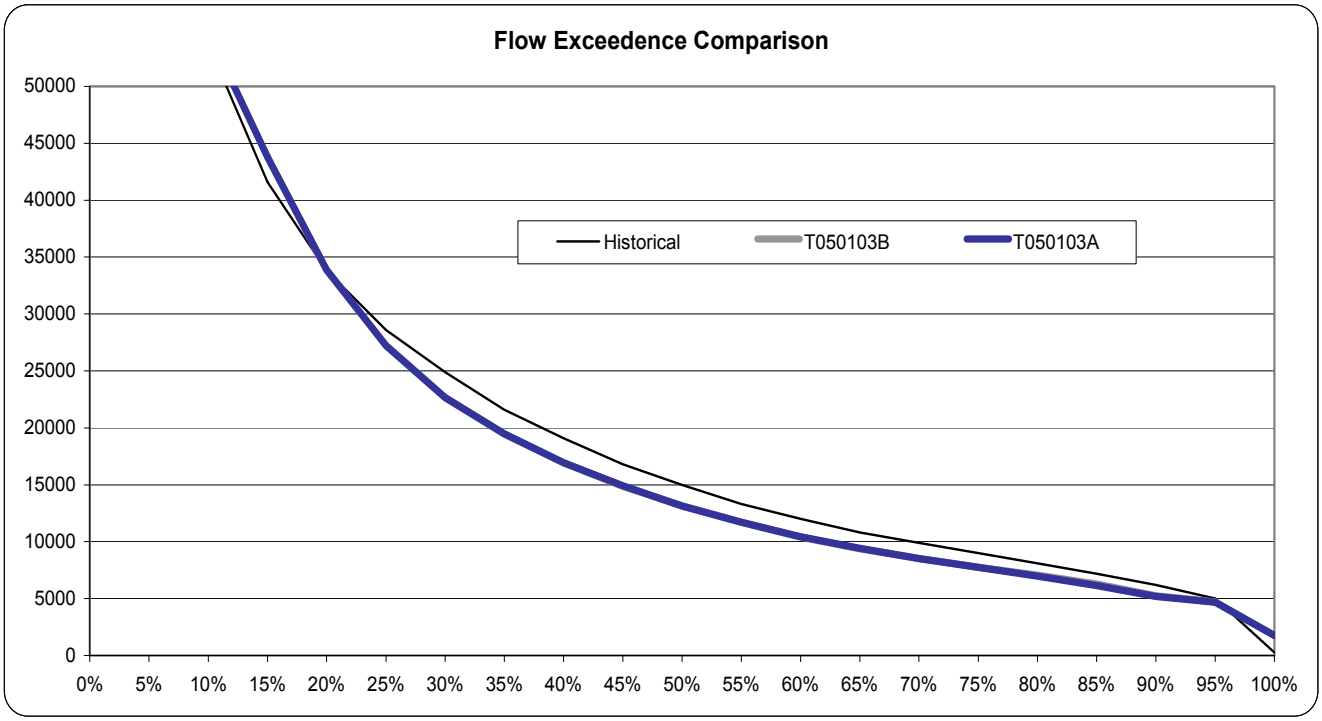
Exceedence	Historical	T050103A	T050103B
0%	67919	65744	65744
5%	21400	21549	21577
10%	14400	14322	14322
15%	10900	10369	10352
20%	8980	8302	8283
25%	7640	6952	6945
30%	6670	6017	6022
35%	5900	5245	5280
40%	5250	4640	4665
45%	4680	4084	4136
50%	4250	3611	3647
55%	3870	3183	3228
60%	3510	2848	2869
65%	3190	2547	2555
70%	2900	2280	2272
75%	2620	2019	1983
80%	2380	1746	1688
85%	2126	1500	1500
90%	1860	1500	1500
95%	1530	1500	1500
100%	907	1500	1500

Montgomery Flow



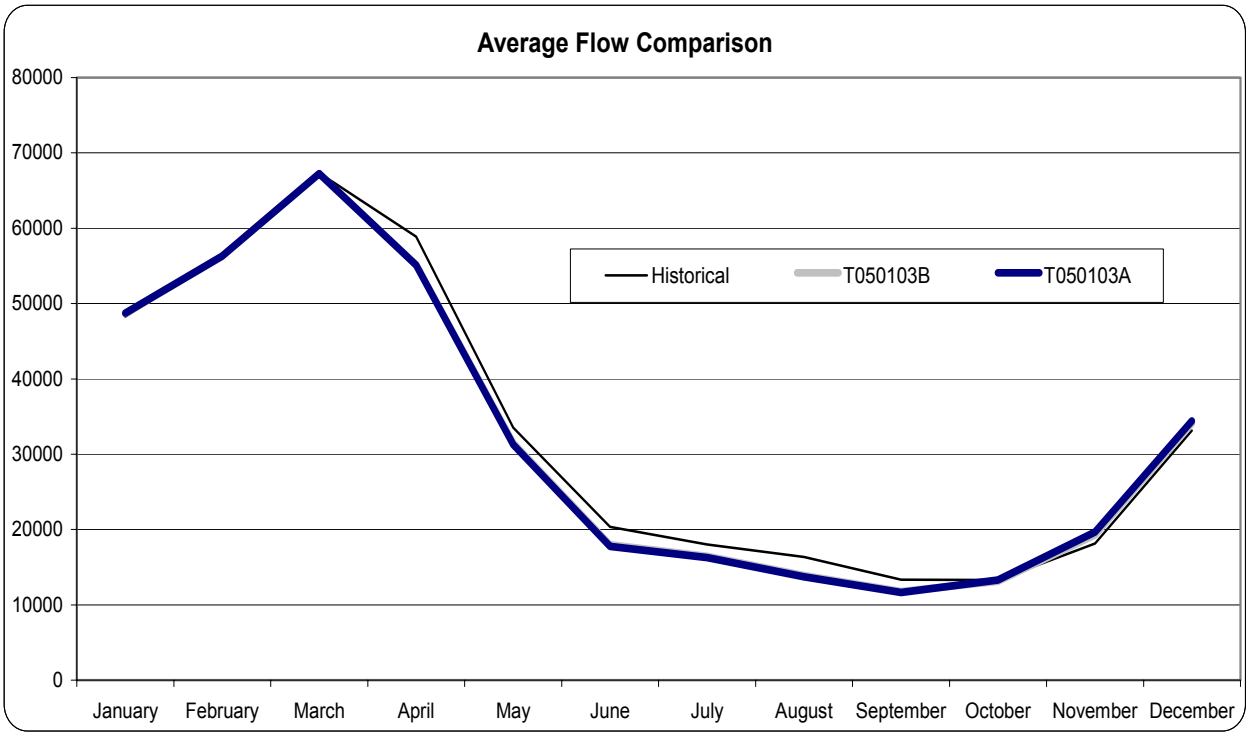


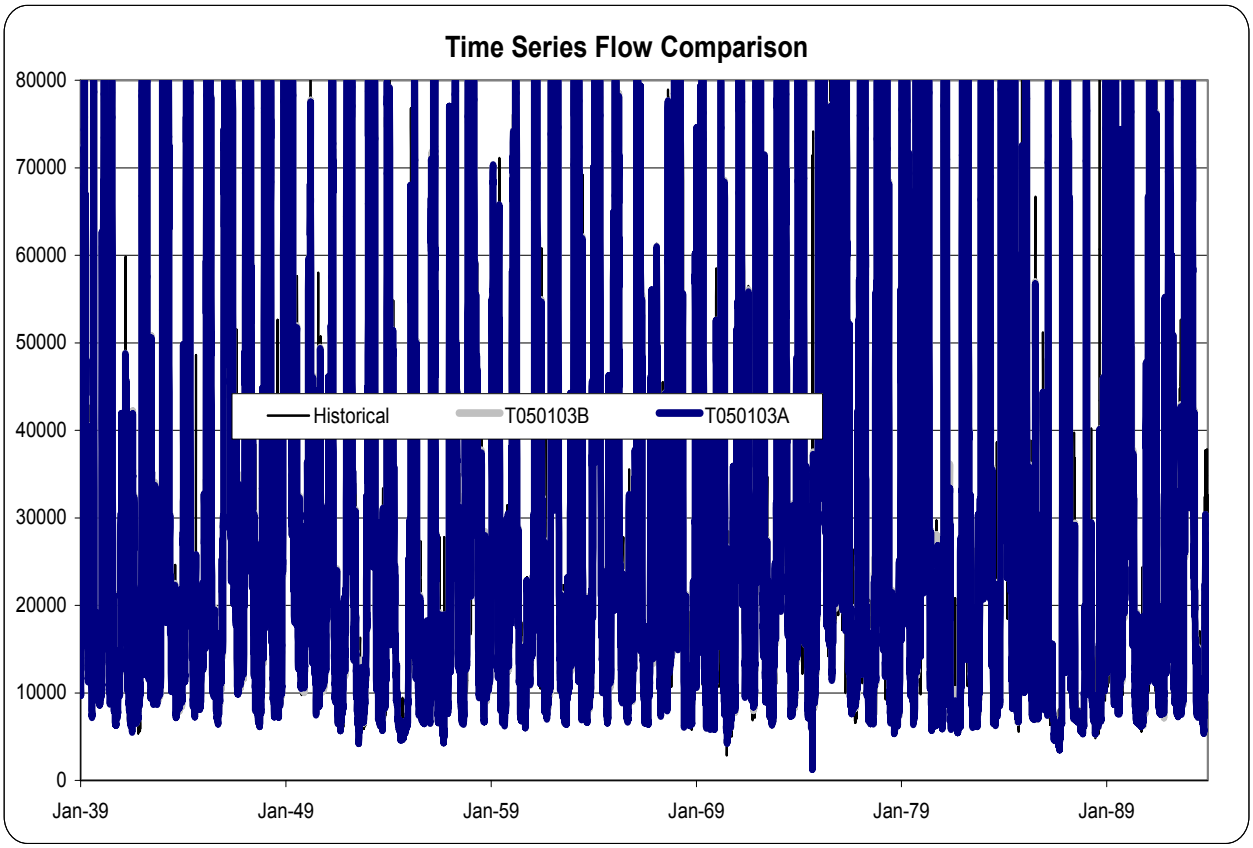
Montgomery Flow



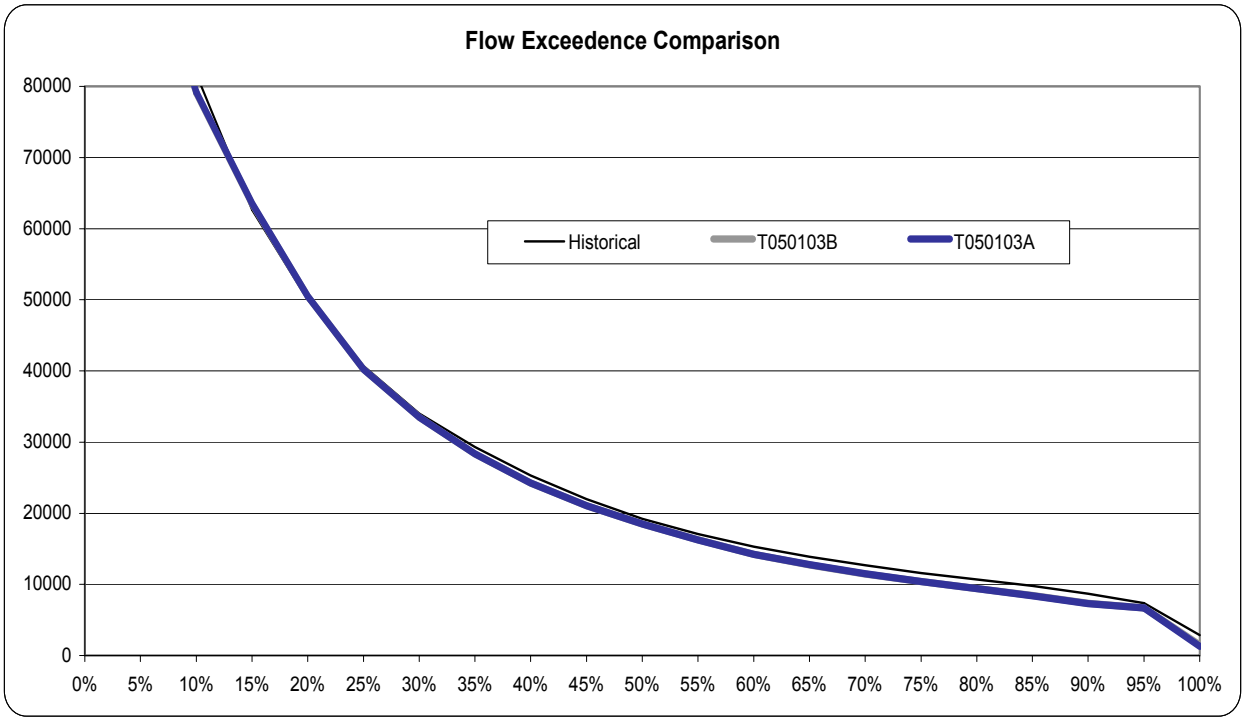
Exceedence	Historical	T050103A	T050103B
0%	275000	246228	246027
5%	72500	72122	72053
10%	53707	54774	54874
15%	41590	43807	43773
20%	33800	33882	33837
25%	28600	27205	27231
30%	24900	22644	22651
35%	21600	19481	19442
40%	19100	16936	16921
45%	16800	14897	14863
50%	15000	13124	13145
55%	13300	11705	11710
60%	12000	10438	10411
65%	10800	9420	9373
70%	9900	8509	8509
75%	9000	7744	7739
80%	8100	6984	7050
85%	7200	6161	6277
90%	6210	5182	5236
95%	5000	4681	4714
100%	255	1756	1756

Claiborne Flow





Claiborne Flow



Exceedence	Historical	T050103A	T050103B
0%	266000	266068	266134
5%	105000	103421	103491
10%	81700	79162	79035
15%	62600	63568	63479
20%	50000	50491	50465
25%	40700	40223	40209
30%	34000	33500	33499
35%	29300	28331	28331
40%	25300	24252	24232
45%	22000	21037	21048
50%	19200	18502	18471
55%	17100	16246	16263
60%	15300	14248	14243
65%	13900	12788	12747
70%	12700	11483	11444
75%	11600	10375	10378
80%	10700	9405	9406
85%	9780	8376	8425
90%	8700	7266	7313
95%	7370	6686	6699
100%	2850	1273	1510