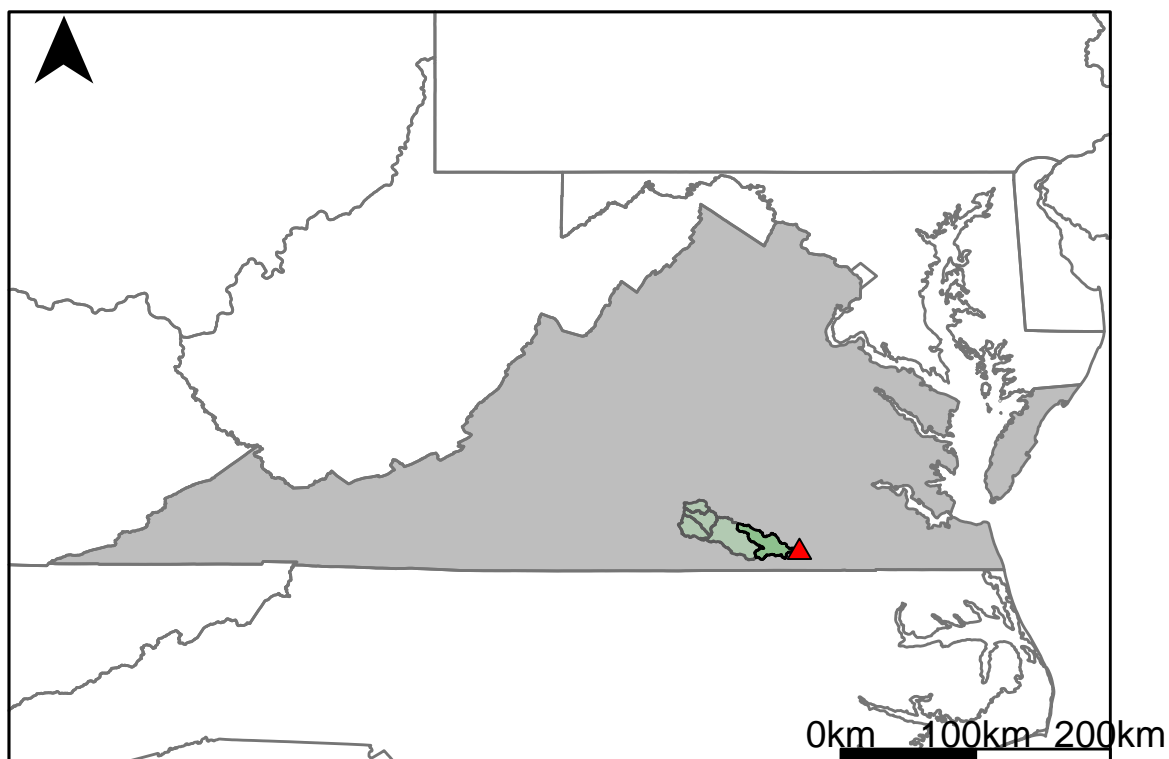


## 02052000 vs. MN4\_8260\_8400



This river segment follows part of the flow of the Meherrin River. The gage is located in Emporia City, VA (Lat 36°41'24", Long 77°32'27") approximately 0.3 miles north of Emporia, VA. Drainage area is 744 sq. miles. This gage started taking data in 1951 and is still taking data. The flow in this area is regulated by the Virginia Electric Power Company's dam that is 0.8 miles upstream. The average daily discharge error between the model and gage data for the 20 year timespan was 3.3%, with 45.4% of its rolling three month time spans above 20% error.

**Table 1: Monthly Low Flows**

	USGS Gage	Model	Pct. Error
Jan. Low Flow	61	58.7	3.77
Feb. Low Flow	151	144	4.64
Mar. Low Flow	166	183	-10.2
Apr. Low Flow	298	313	-5.03
May Low Flow	397	535	-34.8
Jun. Low Flow	413	403	2.42
Jul. Low Flow	348	303	12.9
Aug. Low Flow	176	171	2.84
Sep. Low Flow	112	116	-3.57
Oct. Low Flow	60	76.3	-27.2
Nov. Low Flow	52	58.3	-12.1
Dec. Low Flow	58	66.9	-15.3

**Table 2: Monthly Average Flows**

	USGS Gage	Model	Pct. Error
Overall Mean Flow	727	703	3.3
Jan. Mean Flow	1010	941	6.83
Feb. Mean Flow	1130	1170	-3.54
Mar. Mean Flow	1430	1470	-2.8
Apr. Mean Flow	1120	1070	4.46
May Mean Flow	701	605	13.7
Jun. Mean Flow	451	396	12.2
Jul. Mean Flow	306	253	17.3
Aug. Mean Flow	364	362	0.55
Sep. Mean Flow	647	667	-3.09
Oct. Mean Flow	299	362	-21.1
Nov. Mean Flow	599	525	12.4
Dec. Mean Flow	702	649	7.55

**Table 3: Monthly High Flows**

	USGS Gage	Model	Pct. Error
Jan. High Flow	637	386	39.4
Feb. High Flow	1710	1010	40.9
Mar. High Flow	2910	1170	59.8
Apr. High Flow	4550	2640	42
May High Flow	4230	2470	41.6
Jun. High Flow	5020	3570	28.9
Jul. High Flow	4200	3040	27.6
Aug. High Flow	1940	1020	47.4
Sep. High Flow	782	384	50.9
Oct. High Flow	1040	347	66.6
Nov. High Flow	1180	762	35.4
Dec. High Flow	470	383	18.5

**Table 4: Period Low Flows**

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	3.6	7.36	-104
Med. 1 Day Min	21	39.6	-88.6
Min. 3 Day Min	4.29	7.51	-75.1
Med. 3 Day Min	28.7	42.4	-47.7
Min. 7 Day Min	6.36	8.29	-30.3
Med. 7 Day Min	40.9	48	-17.4
Min. 30 Day Min	13.5	12.7	5.93
Med. 30 Day Min	81	63.8	21.2
Min. 90 Day Min	25	34.3	-37.2
Med. 90 Day Min	162	122	24.7
7Q10	15.1	15.6	-3.31
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	165	703	-326
Mean Baseflow	260	329	-26.5

**Table 5: Period High Flows**

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	18000	29700	-65
Med. 1 Day Max	8320	7780	6.49
Max. 3 Day Max	16800	18900	-12.5
Med. 3 Day Max	6910	6510	5.79
Max. 7 Day Max	10700	12500	-16.8
Med. 7 Day Max	4080	4560	-11.8
Max. 30 Day Max	4370	4250	2.75
Med. 30 Day Max	1870	1900	-1.6
Max. 90 Day Max	2990	2920	2.34
Med. 90 Day Max	1410	1390	1.42

**Table 6: Non-Exceedance Flows**

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	16.5	21.6	-30.9
5% Non-Exceedance	48	44.4	7.5
50% Non-Exceedance	334	347	-3.89
95% Non-Exceedance	2820	2470	12.4
99% Non-Exceedance	6700	5790	13.6
Sept. 10% Non-Exceedance	39.9	40.4	-1.25

**Fig. 1: Hydrograph**

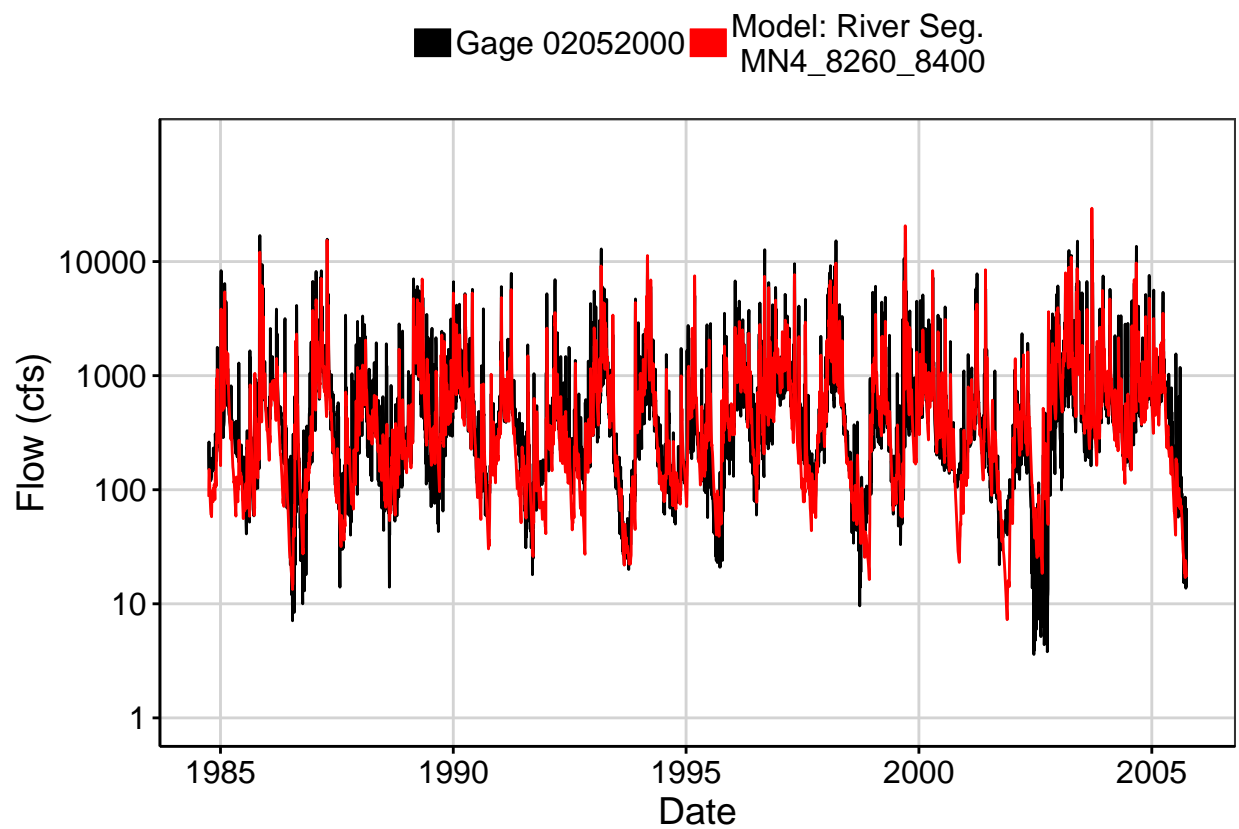


Fig. 2: Zoomed Hydrograph

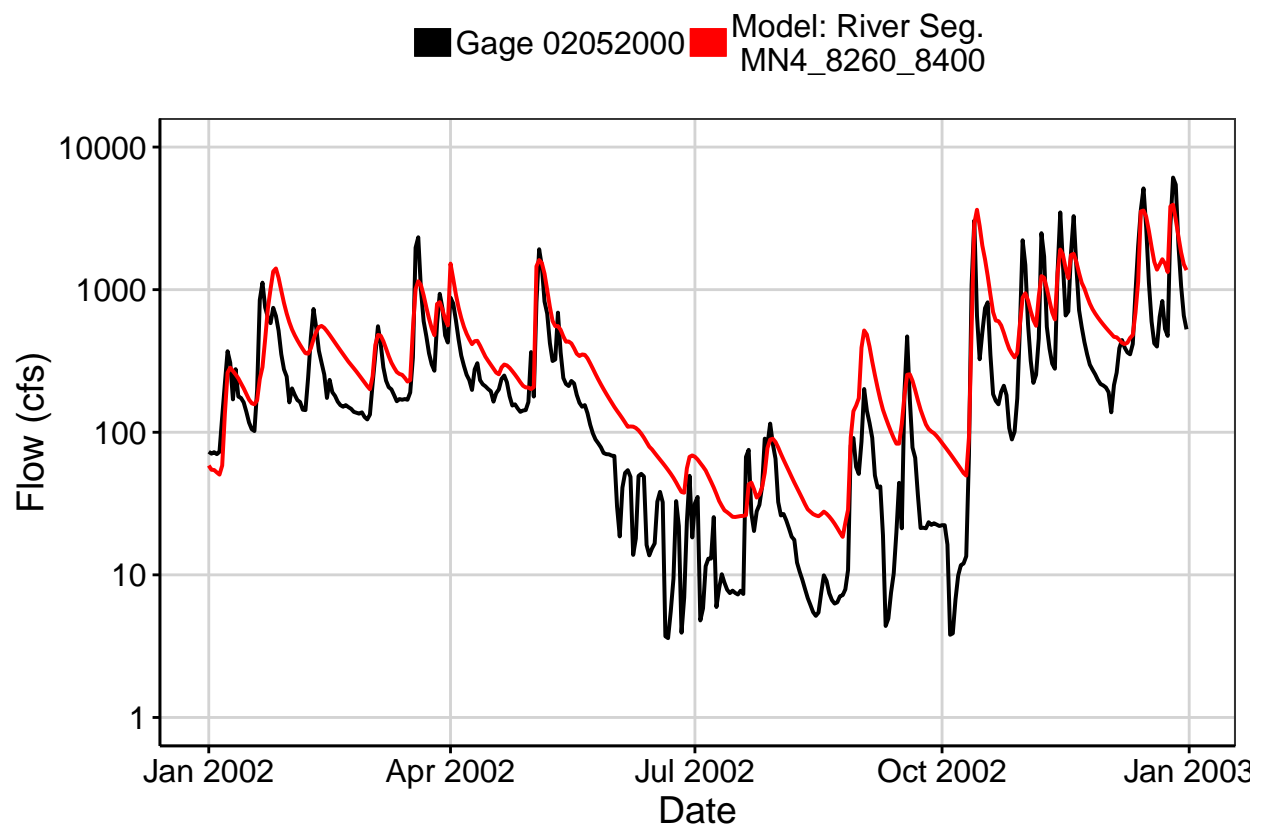


Fig. 3: Flow Exceedance

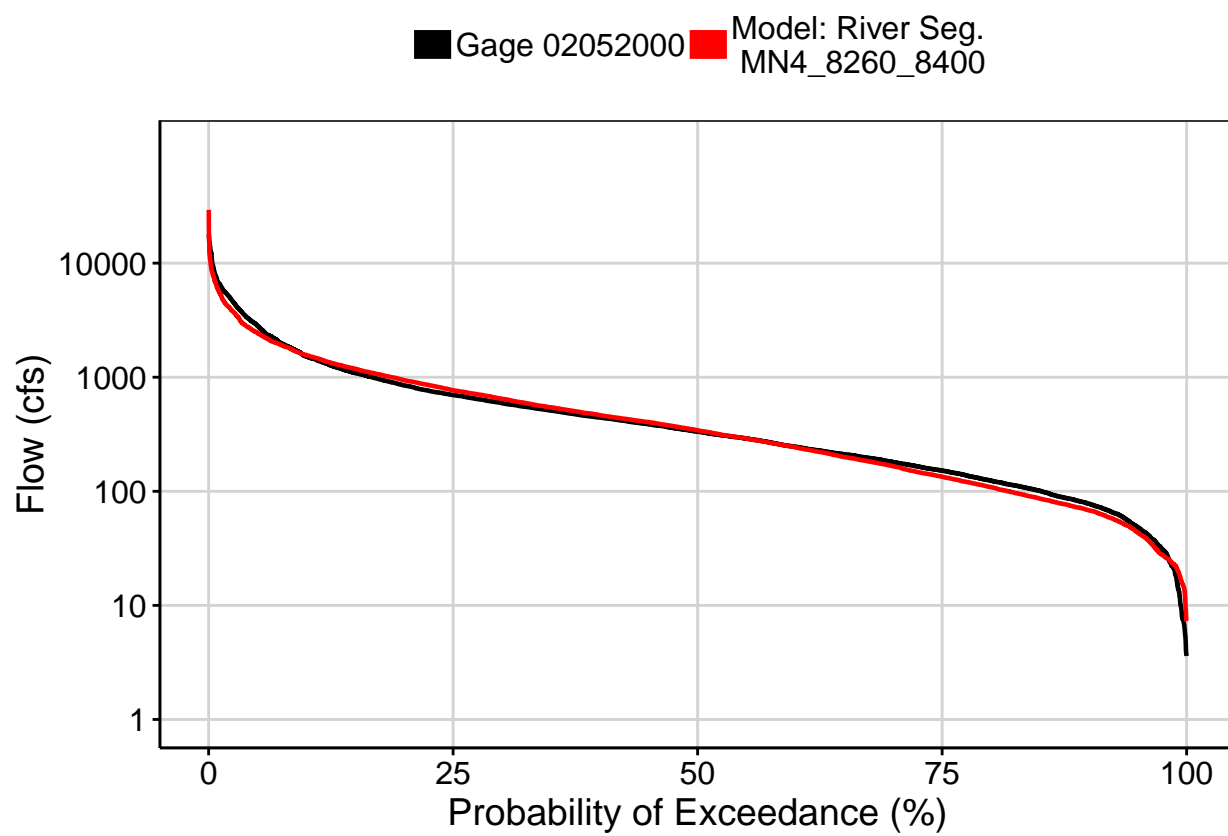


Fig. 4: Baseflow

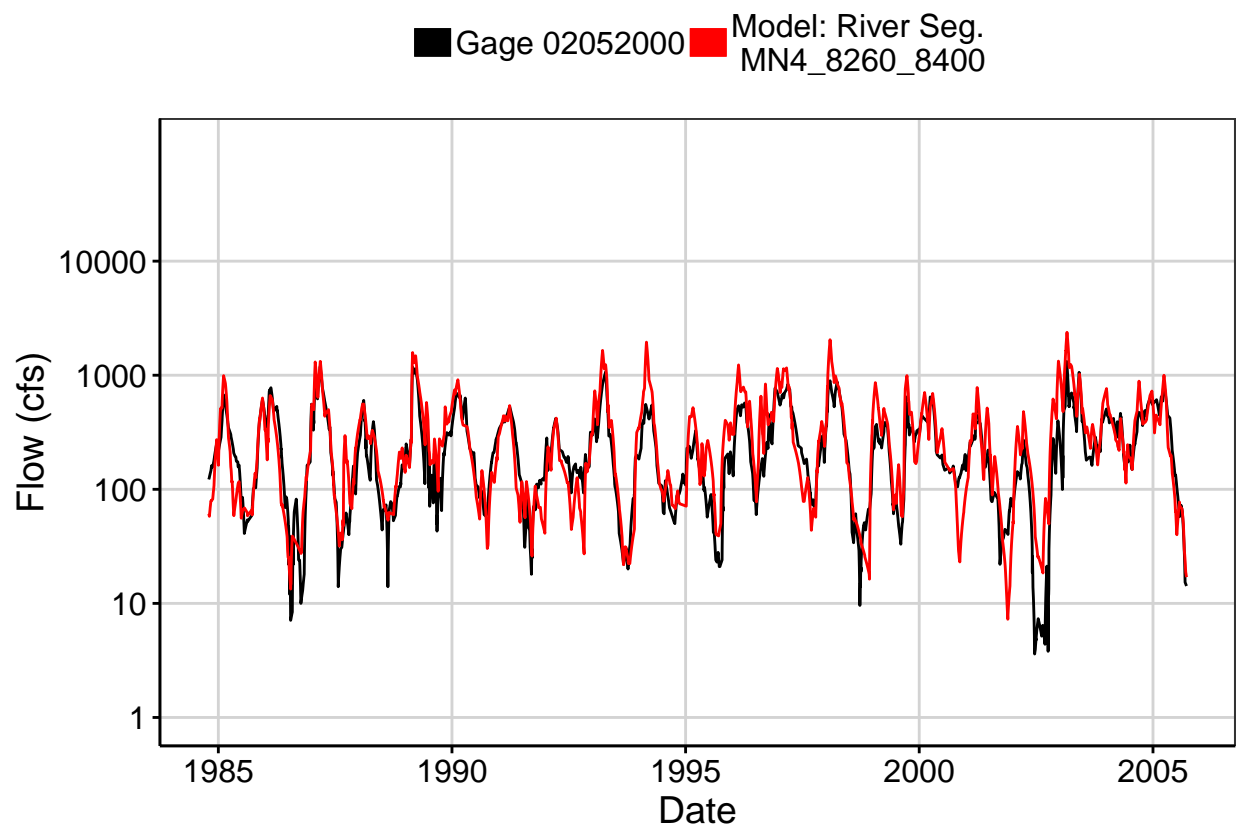


Fig. 5: Combined Baseflow

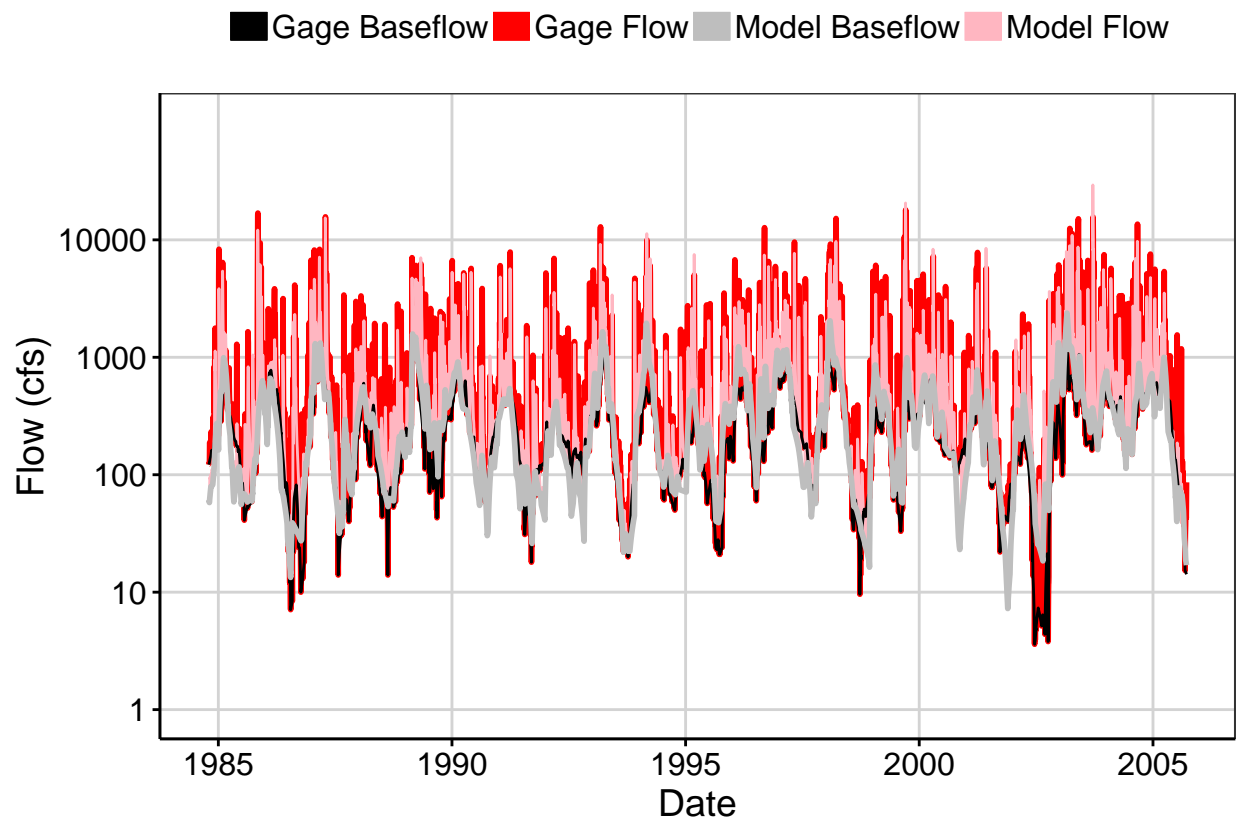




Fig. 6: Largest Error Segment

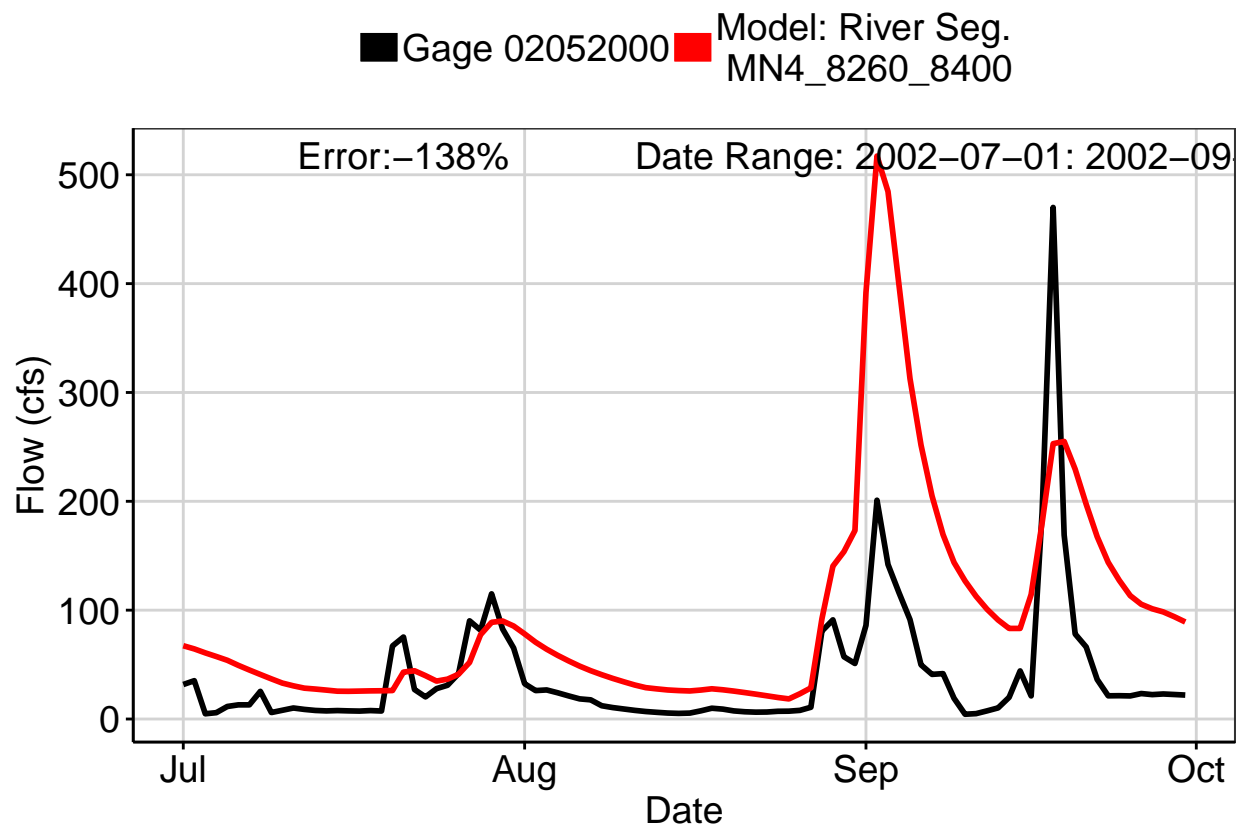


Fig. 7: Second Largest Error Segment

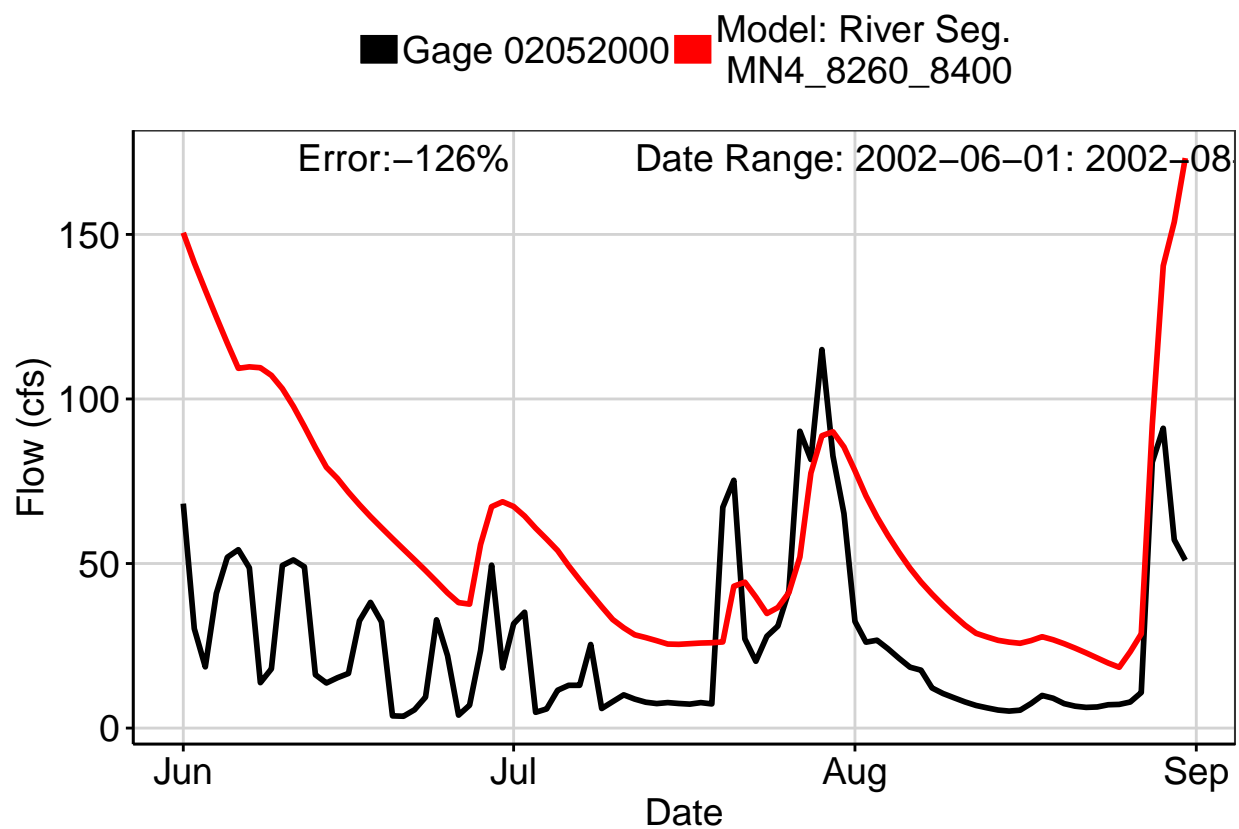


Fig. 8: Third Largest Error Segment

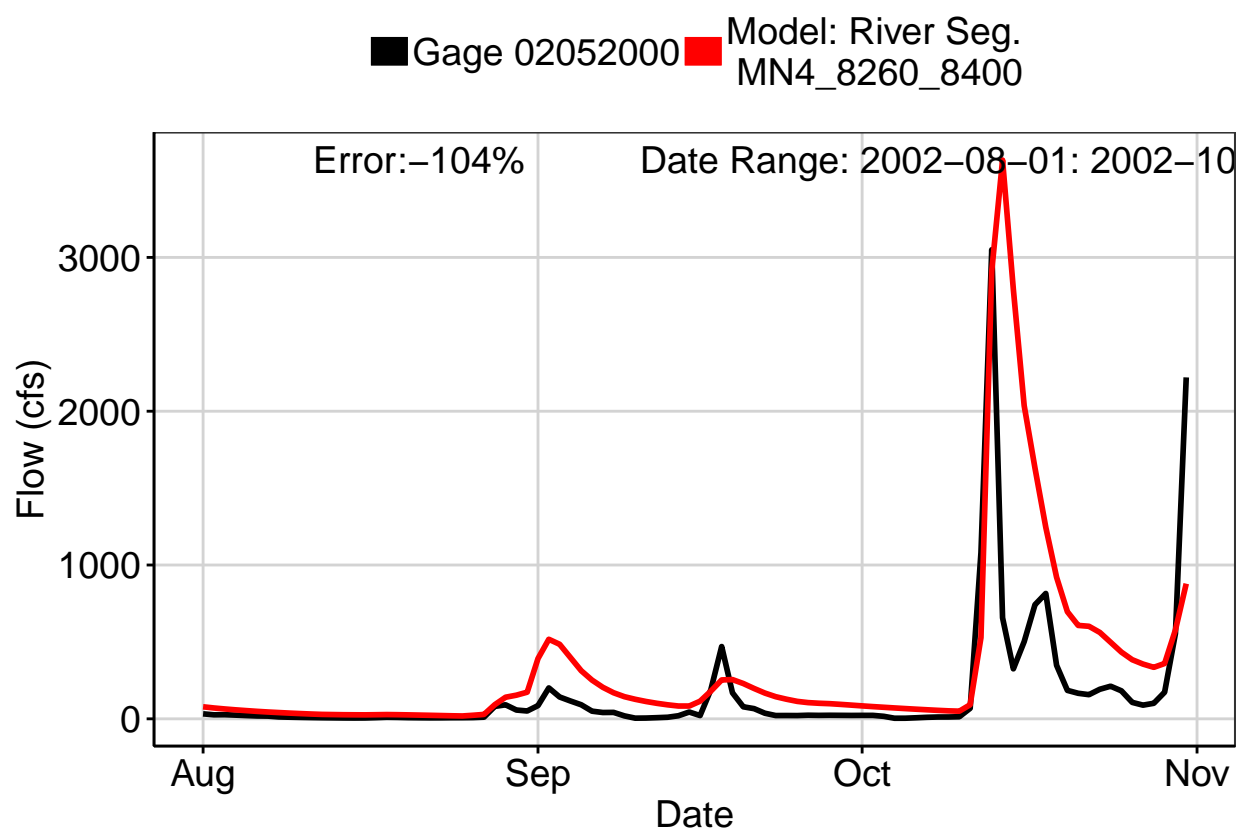


Fig. 9: Residuals Plot

