

APPENDIX C

StreamStats Results at POIs and Calibration Points, and Calibration Results

From USGS StreamStats for Delaware (USGS SIR 2006-5146)

% Imp Area
 NLCD 2001
 Impervious
 database
 % A soil

HMS ID for Calibration Points	ArchMap FID	Location	From USGS										Flows (cfs) for Various Return Frequency (yr)									
			DRNAREA	BSLDEM10M	FOREST	HOMEDENS	SOILA	IMPNLCD01	STORINHD	PK2	PK5	PK10	PK25	PK50	PK100	PK200	PK500					
Reservoir-Silver Lake	0	DS Silver Lake Dam	6.39	1.56	4.64	0.16	0.00	4.40	1.87	396	667	890	1,230	1,510	1,830	2,190	2,730					
	1	Mobil Home Park	1.53	1.32	6.38	0.16	0.00	1.90	0.02	137	230	308	423	519	627	747	925					
	2	Mobil Home Park	2.71	1.22	5.97	0.41	0.00	7.10	0.00	200	337	451	619	761	920	1,100	1,360					
UserPoint6	3		23.03	2.38	10.96	0.09	0.18	2.00	8.41	1,070	1,780	2,370	3,280	4,040	4,940	5,930	7,440					
UserPoint5	4		15.71	2.22	8.96	0.14	0.04	1.90	6.07	825	1,380	1,840	2,540	3,140	3,830	4,600	5,760					
OutletF	5	At mouth	46.55	2.26	8.93	0.10	0.43	1.70	12.84	1,630	2,730	3,610	4,990	6,160	7,530	9,050	11,400					
J271	6		44.98	2.29	9.20	0.10	0.28	1.70	10.27	1,650	2,760	3,670	5,070	6,260	7,650	9,200	11,600					
	7		0.43	1.07	0.00	0.05	3.46	0.10	64.02	33	55	73	100	121	145	170	207					
UserPoint14	8		7.23	2.04	9.48	0.08	0.00	0.30	3.75	469	788	1,050	1,450	1,780	2,170	2,600	3,250					
	9		14.53	2.14	8.90	0.15	0.00	1.90	3.80	781	1,310	1,740	2,410	2,970	3,630	4,360	5,460					
	10		3.96	1.38	3.42	0.20	0.00	6.80	1.40	272	459	612	842	1,040	1,250	1,500	1,860					
	11		1.21	0.95	0.83	0.14	0.00	0.00	1.12	105	177	237	325	398	479	570	703					
	12		7.11	2.16	13.04	0.07	0.00	0.50	2.65	471	791	1,050	1,450	1,790	2,180	2,610	3,270					
UserPoint7	13		17.94	2.13	10.60	0.10	0.00	2.00	4.25	907	1,520	2,020	2,800	3,450	4,210	5,060	6,350					
	14		20.86	2.32	10.86	0.10	0.07	2.20	5.98	1,010	1,700	2,260	3,130	3,860	4,710	5,660	7,100					
	15		1.56	1.46	9.48	0.07	0.00	0.00	0.48	143	241	321	442	543	656	782	969					
	16	DS Wiggins Mill Pond	4.21	1.72	8.80	0.08	0.00	0.50	1.86	303	510	680	937	1,150	1,400	1,670	2,080					
	17		4.47	1.38	6.23	0.31	0.00	5.00	0.22	296	500	667	918	1,130	1,370	1,630	2,030					
	18		1.44	0.72	6.39	0.40	0.00	5.20	0.00	109	185	247	339	415	500	593	730					
	19		0.82	0.52	7.98	0.20	0.00	2.10	0.04	66	113	151	207	253	303	358	439					
	20	DS Shallcross Lake	5.72	1.65	9.87	0.08	0.00	0.40	2.37	372	626	835	1,150	1,420	1,720	2,060	2,560					
	21		5.93	1.75	9.89	0.08	0.00	0.40	2.67	389	654	872	1,200	1,480	1,800	2,150	2,680					
	22		1.43	2.31	9.51	0.05	0.00	0.30	0.09	154	258	345	474	584	707	846	1,050					
	23*		1.43	2.31	9.51	0.05	0.00	0.30	0.09	154	258	345	474	584	707	846	1,050					
	24		2.73	2.24	5.96	0.05	0.18	0.20	6.10	230	385	513	705	868	1,050	1,260	1,570					
UserPoint13	25		6.39	2.05	7.65	0.25	0.00	3.80	2.19	430	722	962	1,330	1,640	1,990	2,380	2,980					
	26		2.49	1.52	6.95	0.07	0.00	0.00	1.50	201	339	452	622	765	925	1,100	1,370					
UserPoint8	27	DS Noxontown Pond Dam	9.53	2.33	14.48	0.06	0.00	0.50	3.98	594	996	1,330	1,830	2,260	2,750	3,300	4,140					
J252	28	HMS-J252 (Downstream of DS Silver Lake Dam)	7.15	1.65	5.18	0.16	0.00	4.30	2.21	436	734	978	1,350	1,660	2,020	2,420	3,010					

* Same as point 22

POI Map ID	HMS ID	StreamStats Drainage Area (sq. mi.)	HMS Drainage Area (sq. mi.)	Target 100-year	HMS Final Flows 100-year	% Diff btwn Target and HMS 100-year	Target 5-year	HMS Final Flows 5-year	% Diff btwn Target and HMS 5-year
0	DS of Silver Lake Dam at Silver Lake	6.39	6.46	1,830	1,957	6.9%	667	711	6.6%
1	US Confluence of Doves Nest Trib with Doves Nest Main Branch on Doves Nest Trib*	1.53	0.83	627	427	-31.9%	230	160	-30.6%
2	US Confluence of Doves Nest Trib with Doves Nest Main Branch on Doves Nest Main Branch*	2.71	1.16	920	1,045	13.6%	337	409	21.2%
3	US of Appo. River confluence Drawwyer Creek	23.03	23.13	4,940	4,792	-3.0%	1,780	1,671	-6.2%
4	US of Drawwyer Creek confluence Appo. River	15.71	15.78	3,830	3,676	-4.0%	1,380	1,456	5.5%
5	Appo. River confluence Delaware River	46.55	46.16	7,530	7,799	3.6%	2,730	2,845	4.2%
6	US of Appo. River confluence Hangmans Run	44.98	45.47	7,650	7,865	2.8%	2,760	2,866	3.8%
7	Just Upstream of Outlet (flow from W890 only)**	0.43	0.57	145	989	582.1%	55	462	739.3%
8	US Drawwyer Creek confluence Doves Nest Branch	7.23	7.27	2,170	1,930	-11.1%	788	821	4.2%
9	DS of Confluence of Doves Nest Branch and Drawwyer Creek	14.53	14.42	3,630	3,588	-1.2%	1,310	1,418	8.2%
10	Upstream of Silver Lake*	3.96	3.79	1,250	1,737	38.9%	459	692	50.8%
11	Most Upstream Point of Deep Creek Above Silver Lake	1.21	1.25	479	681	42.2%	177	256	44.9%
12	Upstream of Noxontown Pond*	7.11	6.32	2,180	3,905	79.1%	791	1,328	67.8%
13	Approximately 5000 ft DS Noxontown Pond	17.94	17.90	4,210	4,495	6.8%	1,520	1,544	1.5%
14	Deep Creek far DS of Noxontown Pond and Silver Lake	20.86	21.68	4,710	4,710	0.0%	1,700	1,635	-3.8%
15	Upstream of Wiggins Mill Pond (flow from W1150 only)*	1.56	1.71	656	1,918	192.4%	241	760	215.4%
16	Just Downstream of Wiggins Mill Pond	4.21	4.12	1,400	2,543	81.7%	510	830	62.6%
17	Middle of Doves Nest Branch*	4.47	4.28	1,370	1,787	30.5%	500	663	32.5%
18	Upstream Left Branch of Doves Nest Branch*	1.44	1.16	500	1,113	122.5%	185	434	134.7%
19	Upstream Right Branch of Doves Nest Branch	0.82	0.83	303	451	48.9%	113	169	49.1%
20	DS of Shallcross Lake	5.72	5.73	1,720	1,812	5.4%	626	775	23.7%
21	2nd Junction DS of Shallcross Pond*	5.93	6.65	1,800	1,894	5.2%	654	806	23.3%
22	Upstream of Hangmans Run Pond	1.43	1.42	707	1,001	41.6%	258	409	58.4%
23	Upstream of Hangmans Run Pond***	1.43	1.42	707	1,001	41.6%	258	409	58.4%
24	Just Downstream of Hangman's Lake*	2.73	2.38	1,050	1,221	16.3%	385	502	30.4%
25	US Dove Nest Branch confluence Drawwyer Creek	6.39	6.40	1,990	2,095	5.3%	722	772	6.9%
26	Appo River Just Above Wiggins Mill Pond	2.49	2.48	925	2,778	200.3%	339	1,097	223.5%
27	DS of Noxontown Pond	9.53	9.53	2,750	2,529	-8.0%	996	772	-22.4%
28	Downstream of Silver Lake	7.15	7.19	2,020	2,094	3.7%	734	761	3.7%

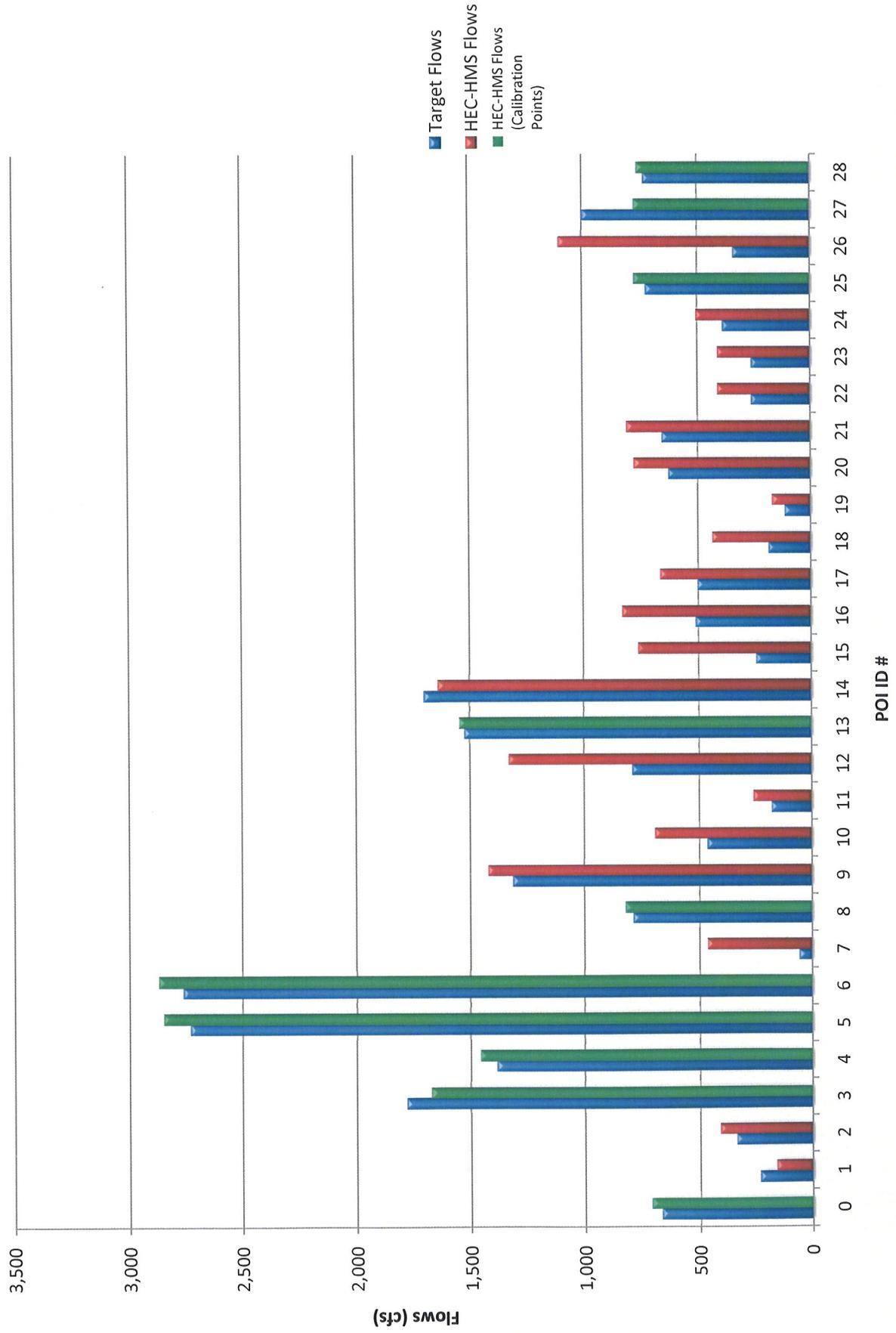
*Due to the way the HMS model was constructed, the HMS point does not correspond exactly to the StreamStats point

**Drainage area is less than 1.0 sq. mi., which is below the range for accurate StreamStats results

***Same point as point 22

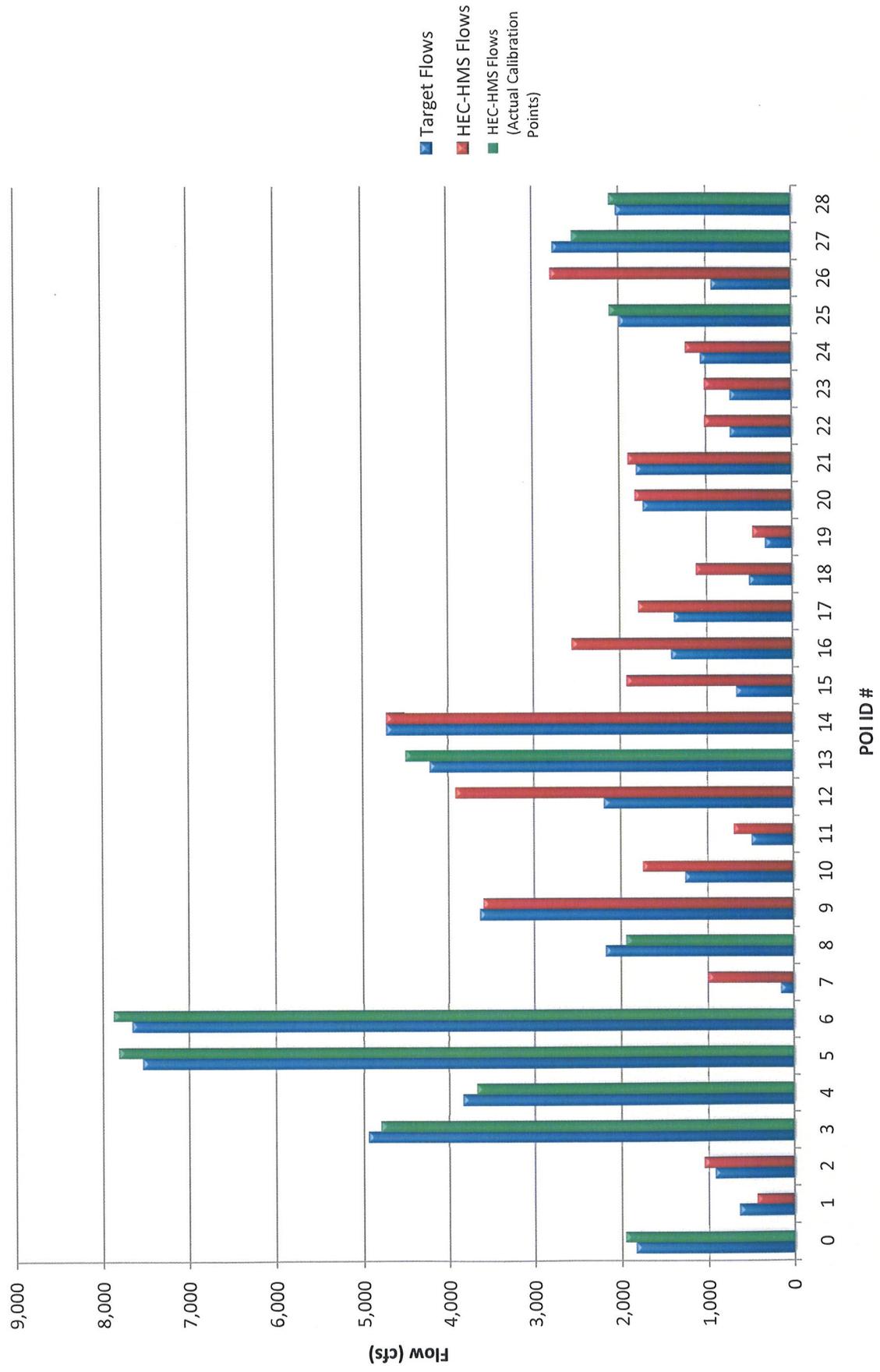
Calibration Points Used in HMS Model

5-year Target Flows from StreamStats POIs vs 5-year HEC-HMS Flows



100-year Target Flows from StreamStats POIs vs 100-year HEC-HMS

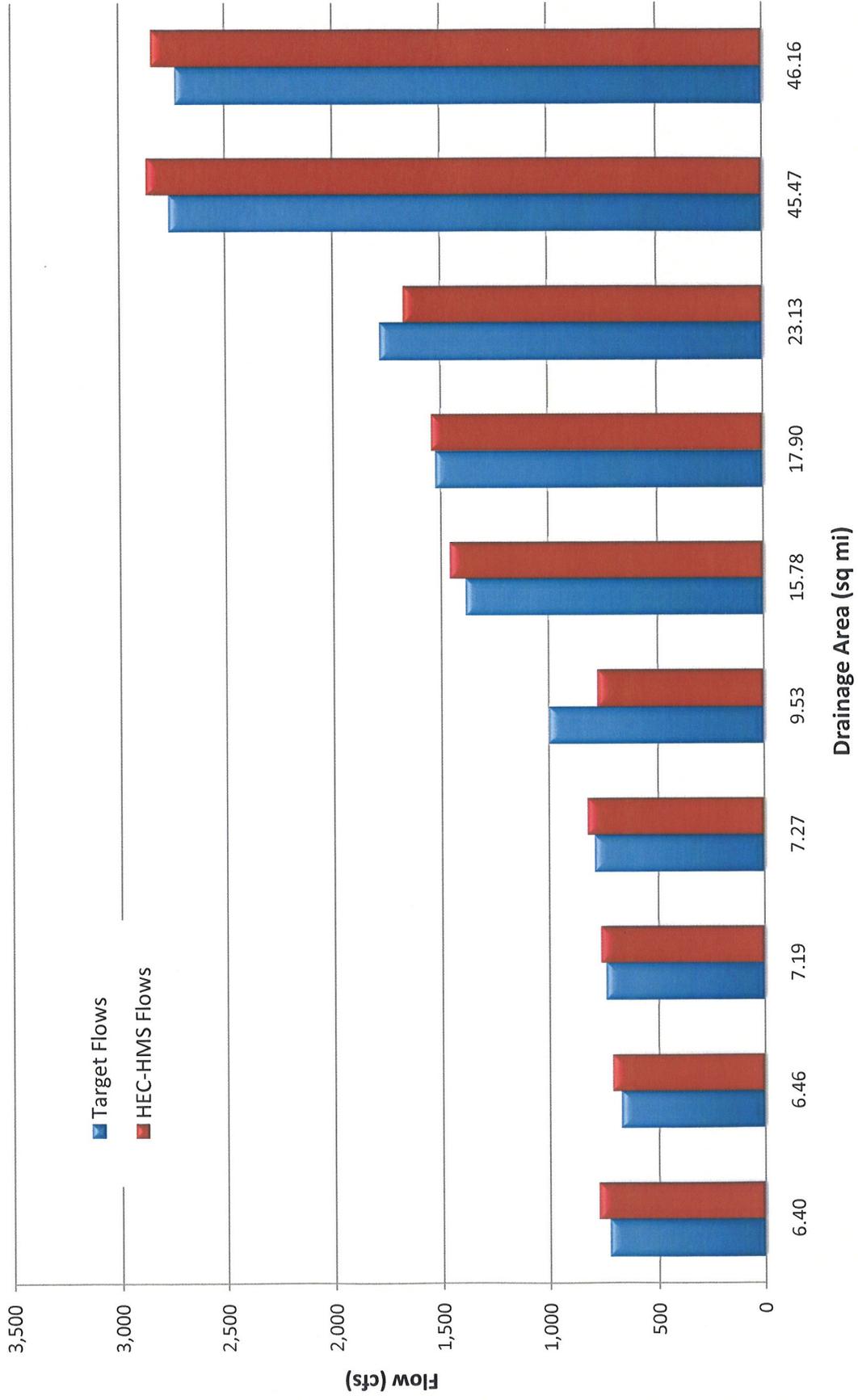
Flows



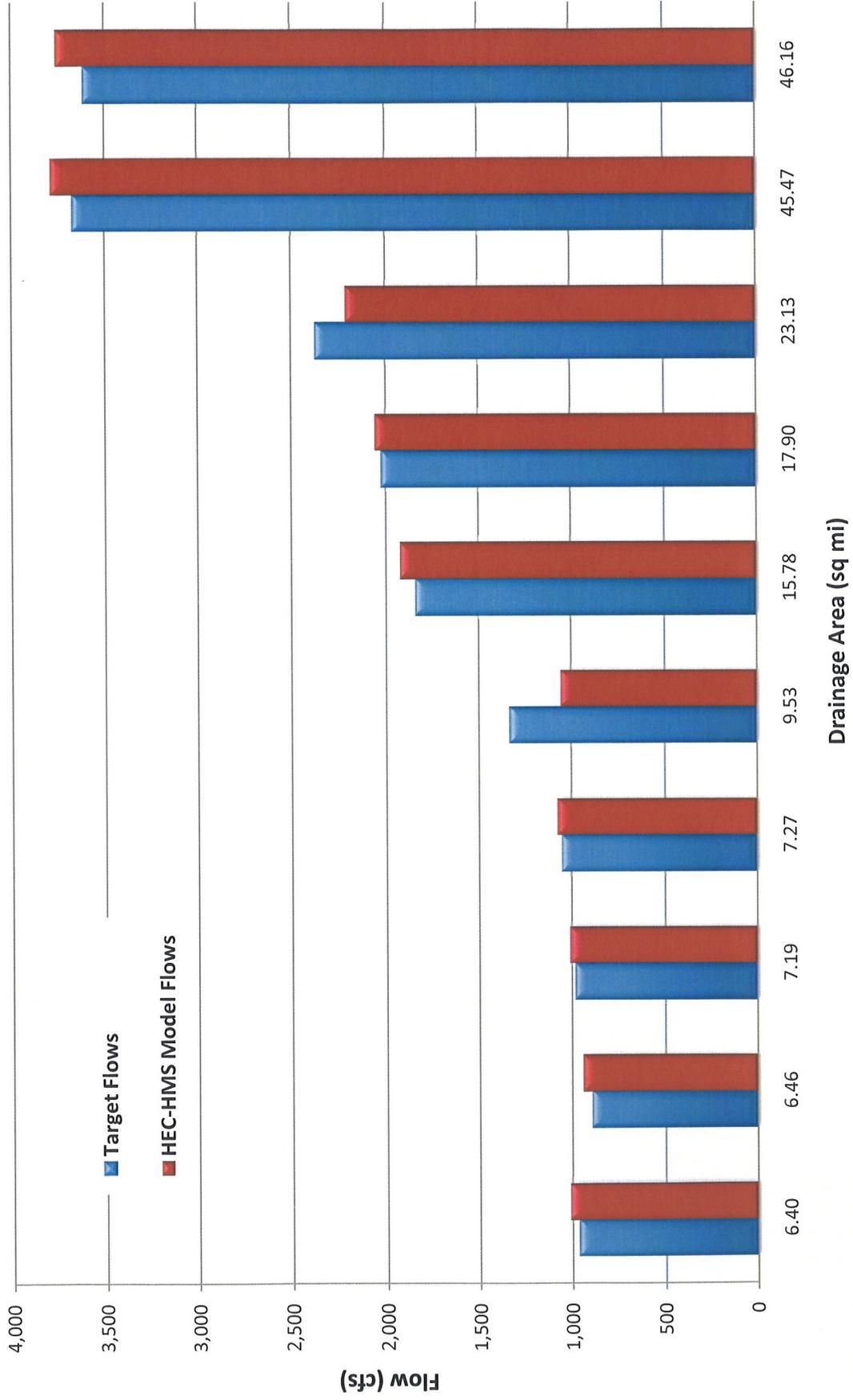
HEC-HMS Calibration ID Labels that Correspond to Each Drainage Area

HEC-HMS Calibration ID	DA (sq mi)
UserPoint13	6.40
Reservoir-Silver Lake	6.46
J252	7.19
UserPoint14	7.27
UserPoint8	9.53
UserPoint5	15.78
UserPoint7	17.90
UserPoint6	23.13
J271	45.47
OutletF	46.16

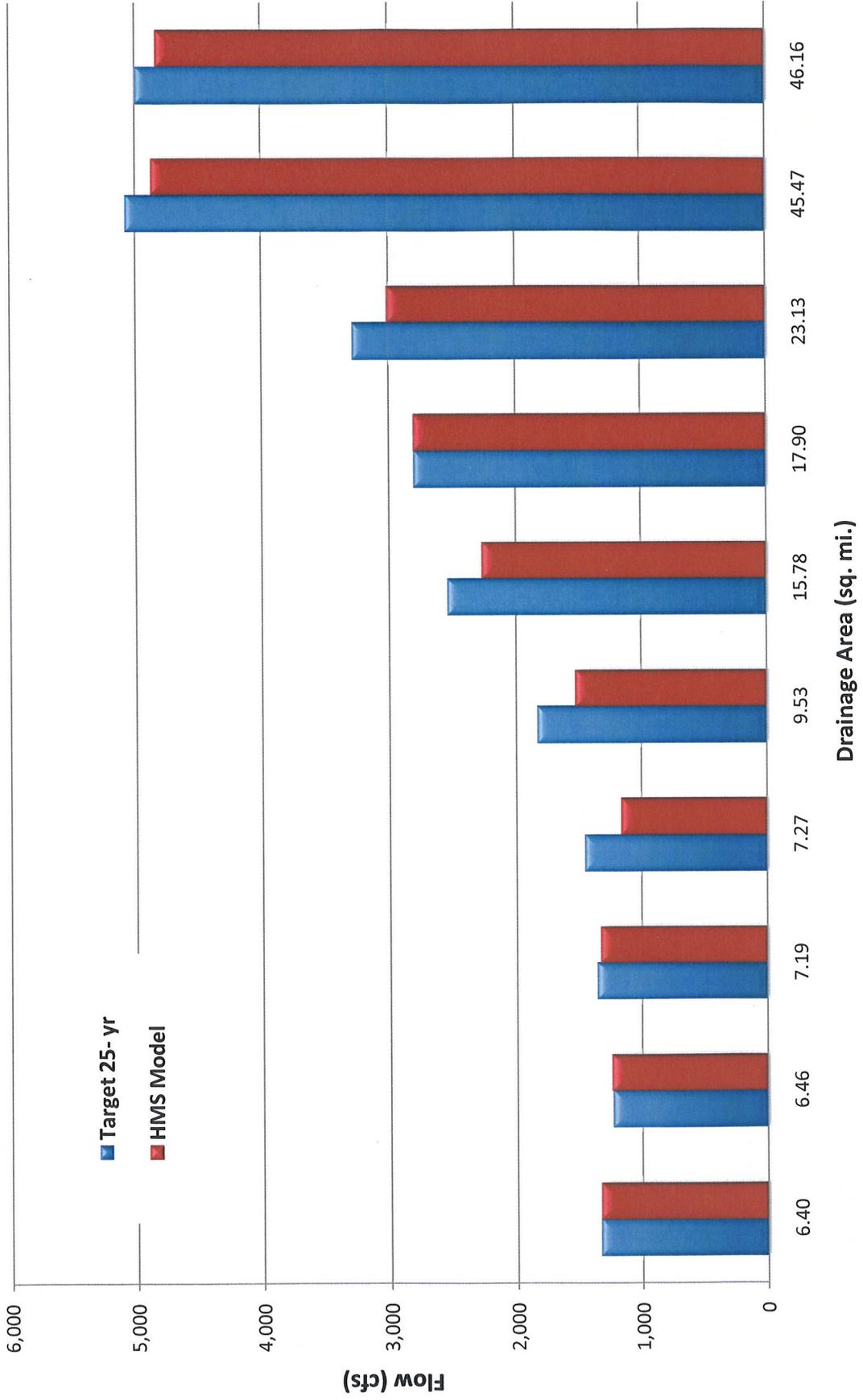
Appoquinimink River 5-year Calibrated HEC-HMS Model versus Target Flow Values



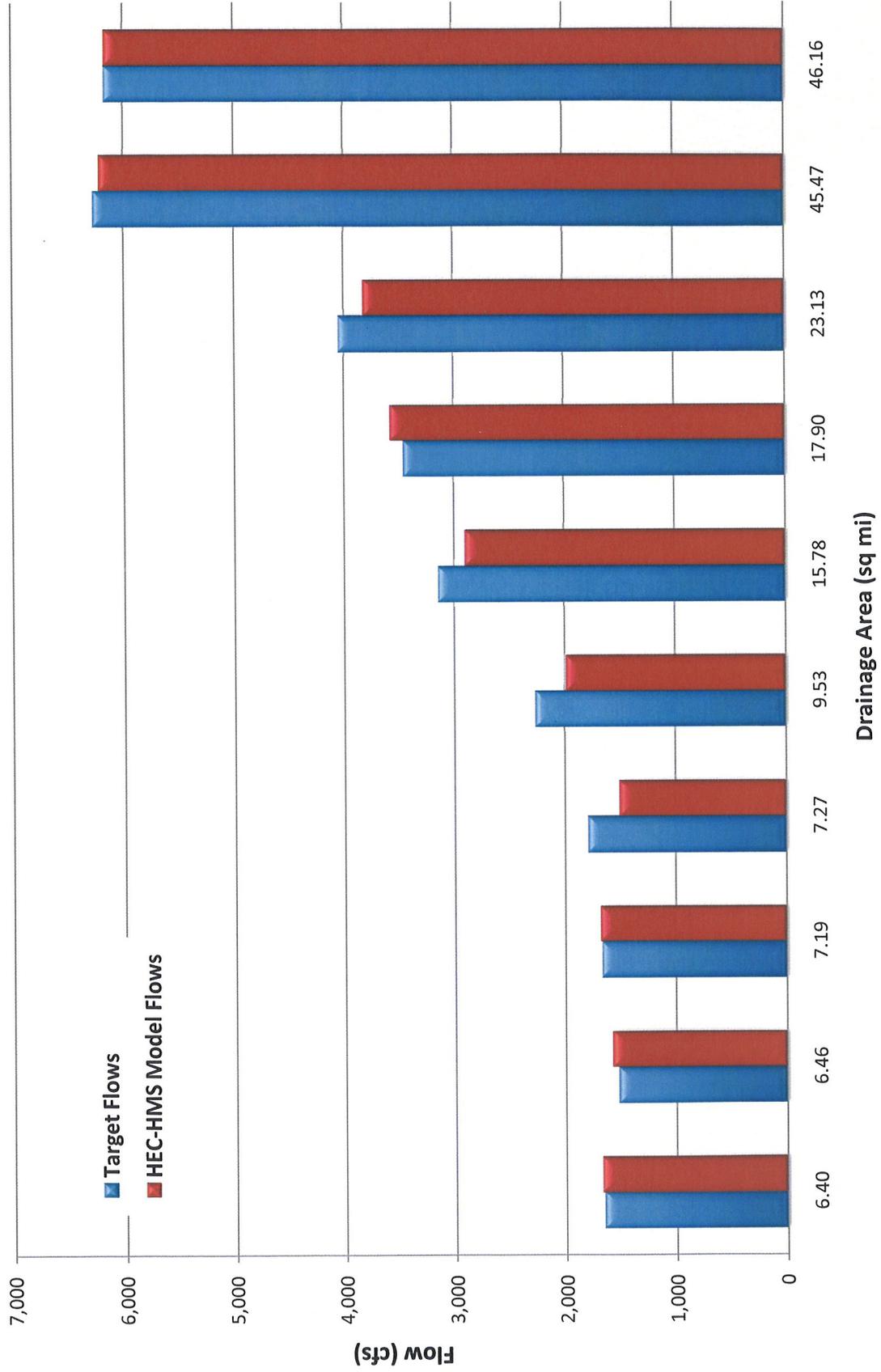
Appoquinimink River 10-Year Calibrated HEC-HMS Model versus Target Flow Values



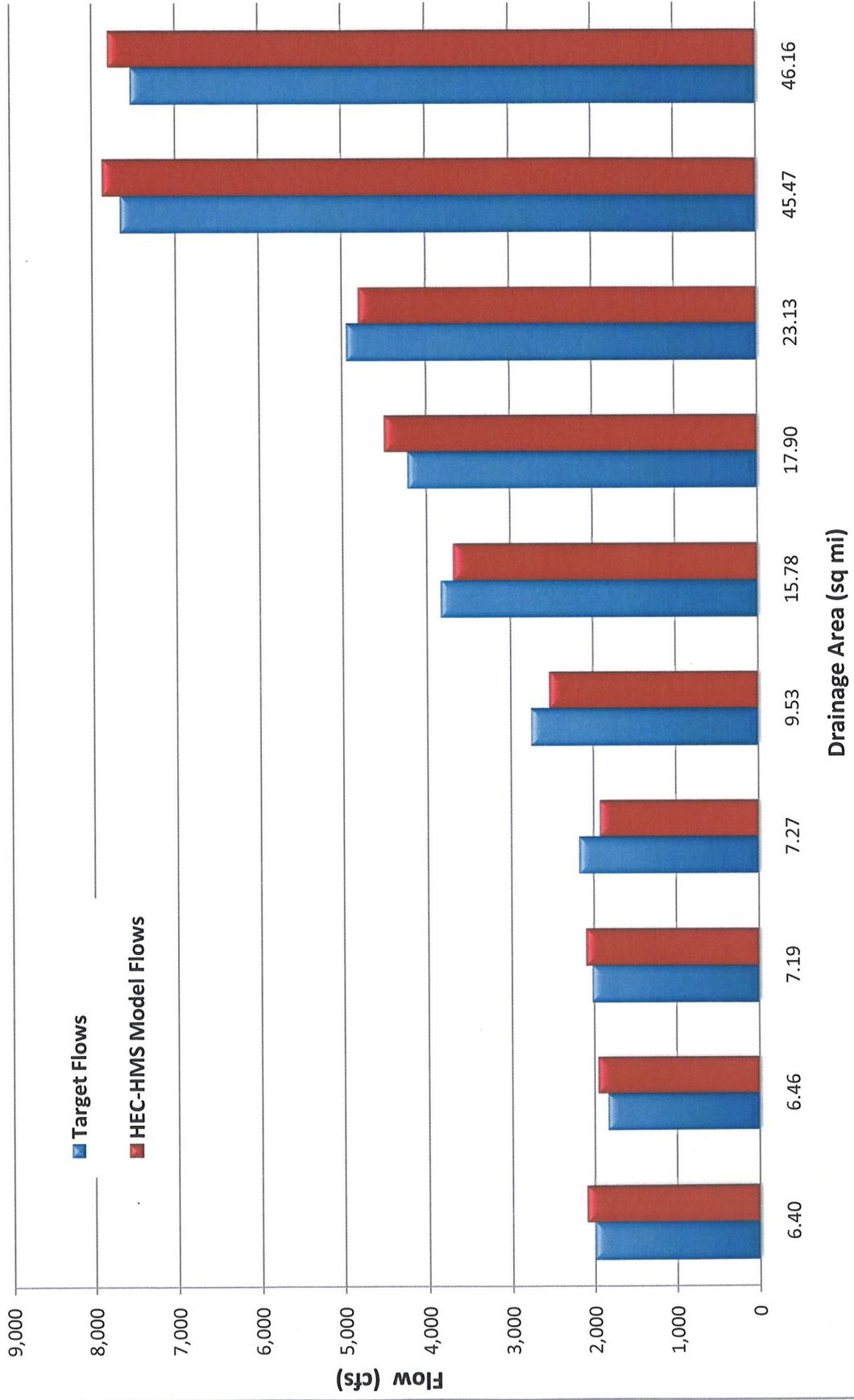
Appoquinimink River 25-Year Calibrated HEC-HMS Model versus Target Flow Values



Appoquinimink River 50-year Calibrated HEC-HMS Model versus Target Flow Values



Appoquinimink River 100-Year Calibrated HEC-HMS Model versus Target Flow Values



Appoquinimink River 500-Year Calibrated HEC-HMS Model versus Target Flow Values

