

Piscataquog Annual Water Use versus Stream Flow – Calendar Year 2006

The Piscataquog Water Management Planning Area includes the three Designated branches of the Piscataquog River. The Piscataquog Designated River segments total 60.6 miles. The beginning of the Middle Branch is at the outlet of Scobie Pond in Francestown. The Middle Branch is 10.6 miles long. The beginning of the South Branch is in Francestown at the outlet of Pleasant Pond. The South Branch is 20.5 miles long. The Middle and South Branches join in New Boston. The beginning of the North Branch is the outlet of Deering Lake Dam. The designated portion of the North Branch is divided into three segments by Lake Horace and Everett Lake. The designated segments of the North Branch are 19.3 miles long. The South and North Branches join in Goffstown to form the main stem. The main stem continues 10.2 miles to its confluence with an undesignated segment of the Merrimack River. The assessment for the Piscataquog evaluates the North separately and then incorporates the result into an assessment of the South Branch and main stem. There were no registered water users in the Middle Branch subwatershed area in 2006 and so the Middle Branch is included as a tributary to the South Branch in its assessment.

Water use was reported by one source in the watershed area of the North Branch within the Piscataquog Water Management Planning Area. The reported source is used for golf course irrigation. Water use was reported by seven sources and three discharges in the watershed area of the South Branch and main stem. There are two sources used at a golf course for irrigation, and two water supply sources. The remaining sources and discharges are at hydropower facilities. The water use by the three hydroelectric facilities, which are located on the main stem below the confluence of the North and South Branches, is not shown in the monthly graphs. Flow into a hydroelectric facility is expected to equal flow out and per Env-Ws 1903.02(d) the General Standard does not apply to hydroelectric facilities between their point of withdrawal and point of return.

The Piscataquog Water Management Planning Area covers 180 square miles and includes two stream flow gages (USGS 01091500 PISCATAQUOG RIVER NEAR GOFFSTOWN, NH and USGS 01090800 PISCATAQUOG RIVER BL EVERETT DAM, NR E WEARE, NH). However, these are partial-record stations maintained for the purposes of flood control operations. Reliability of the discharge information at low flows is variable and daily mean flow values are not published for these stations. Stream flow estimations for the Piscataquog were made instead by using three nearby continuous record gages—

USGS 01094000 SOUHEGAN RIVER AT MERRIMACK, NH with a watershed area of 170 square miles,

USGS 01082000 CONTOOCOOK RIVER AT PETERBOROUGH, NH with a watershed area of 68.1 square miles and

USGS 01085500 CONTOOCOOK R BL HOPKINTON DAM AT W HOPKINTON, NH with a watershed area of 426.0 square miles.

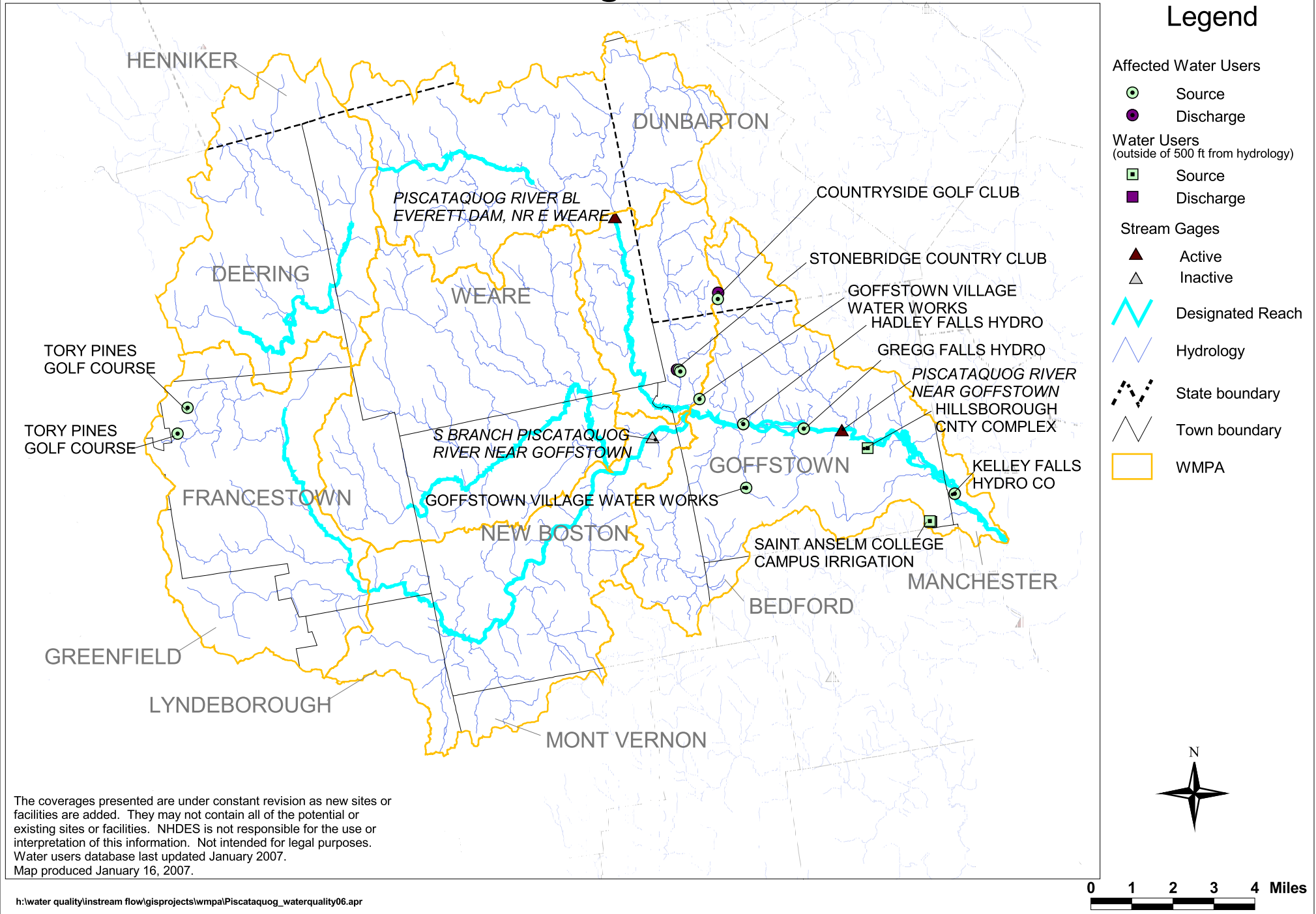
These gages are on rivers in watersheds adjacent to the Piscataquog. For this report the stream flow was transposed areal from the average of the surrogate gages to all impact points on the Designated River. There were no months when the General Standard was exceeded in the North Branch or Middle Branch. The General Standard was exceeded in the South Branch and main stem in July.

North Branch Piscataquog Designated River	River Miles not in Compliance with General Standard (0 at the mouth)	Length of River Miles not in Compliance with General Standard	Maximum value of Aggregate WU /Stream flow	Previously not in Compliance with the General Standard (since 2003)
January	--	--	0.00%	--
February	--	--	0.00%	--
March	--	--	0.00%	--
April	--	--	0.00%	--
May	--	--	0.01%	--
June	--	--	0.02%	--
July	--	--	0.24%	2003
August	--	--	0.49%	2005
September	--	--	0.32%	2005
October	--	--	0.03%	--
November	--	--	0.00%	--
December	--	--	0.00%	--

South Branch and main stem Piscataquog Designated River	River Miles not in Compliance with General Standard (0 at the mouth)	Length of River Miles not in Compliance with General Standard	Maximum value of Aggregate WU /Stream flow	Previously not in Compliance with the General Standard (since 2003)
January	--	--	0.05%	--
February	--	--	0.06%	--
March	--	--	0.13%	--
April	--	--	0.21%	--
May	--	--	0.03%	--
June	--	--	0.07%	--
July	--	--	0.40%	2003, 2004
August	--	--	0.90%	2005
September	9.6 to 1.9	7.7	1.00%	2005
October	--	--	0.31%	--
November	--	--	0.05%	--
December	--	--	0.10%	--

The Piscataquog Designated River drains into the Merrimack River at a location between the Upper and Lower Merrimack River Designated River segments. The results of this assessment are a component of the Lower Merrimack River's assessment.

Piscataquog River Affected Water User Facilities: Source and Discharge Locations



Legend

- Affected Water Users**
 - Source
 - Discharge
- Water Users (outside of 500 ft from hydrology)**
 - Source
 - Discharge
- Stream Gages**
 - ▲ Active
 - △ Inactive
- Designated Reach**
 - ▬ Designated Reach
 - ▬ Hydrology
- Boundaries**
 - - - State boundary
 - Town boundary
 - ▭ WMPA

The coverages presented are under constant revision as new sites or facilities are added. They may not contain all of the potential or existing sites or facilities. NHDES is not responsible for the use or interpretation of this information. Not intended for legal purposes. Water users database last updated January 2007. Map produced January 16, 2007.

2006 North Branch Piscataquog Water Use in CFS															
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start Point North Branch			4.2												
COUNTRYSIDE GOLF CLUB		20304 20304-D01	75.8												
STONEBRIDGE COUNTRY CLUB	STONEBRIDGE COUNTRY CLUB	20721 20721-S02	75.8	0.00	0.00	0.00	0.00434	0.0223	0.0940	0.302	0.249	0.111	0.0431	0.00	0.00
STONEBRIDGE COUNTRY CLUB	STONEBRIDGE COUNTRY CLUB	20721 20721-D01	75.8												
STONEBRIDGE COUNTRY CLUB	STONEBRIDGE COUNTRY CLUB	20721 20721-S01	75.8												
Gorham Brook			75.8												
End Point North Branch			76.2												
Tributaries or endpoints of DR															

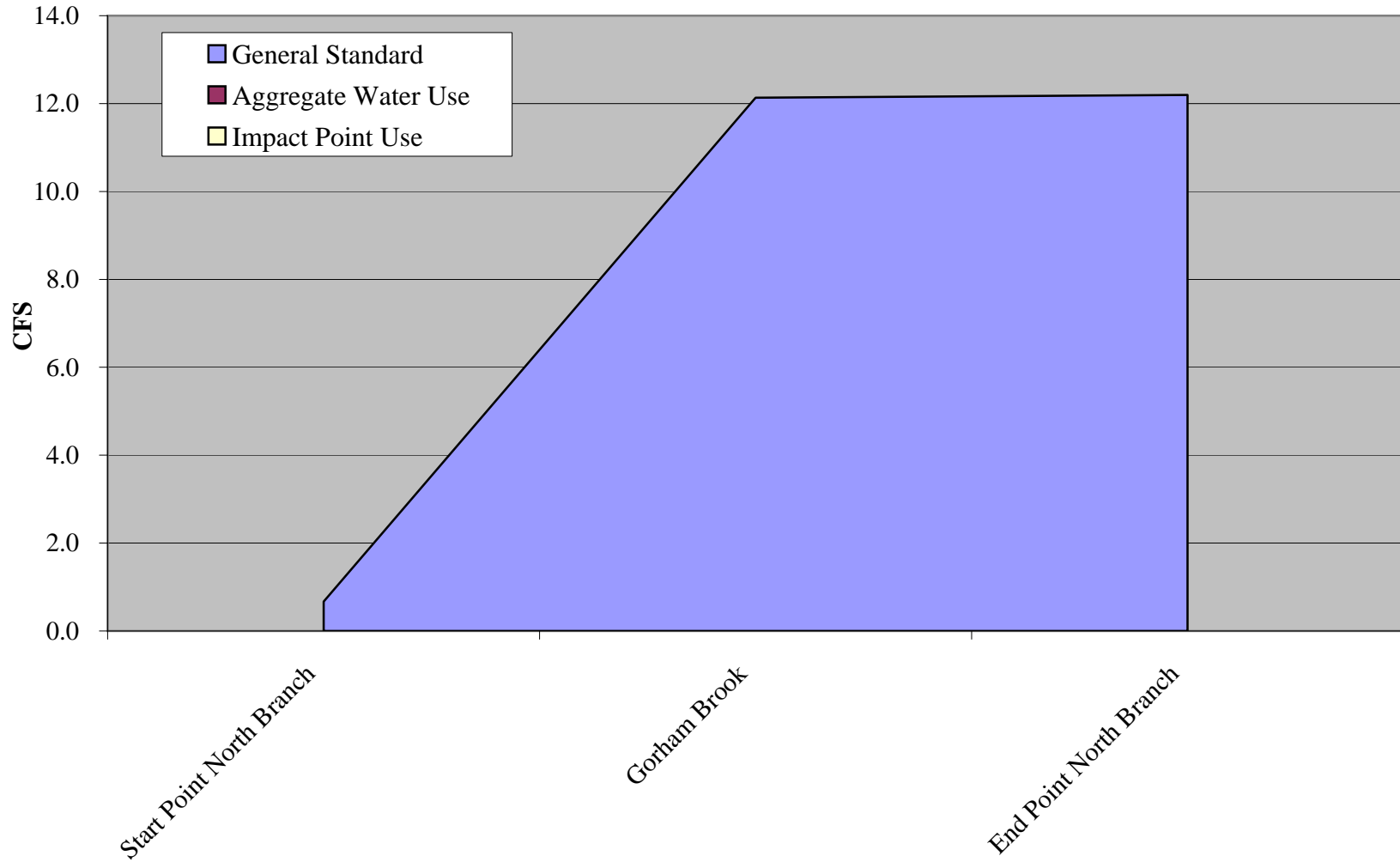
2006 North Branch Piscataquog Aggregate Water Use in CFS															
WU_NAME			DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start Point North Branch			4.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gorham Brook			75.8	0.00	0.00	0.00	0.00434	0.0223	0.0940	0.302	0.249	0.111	0.0431	0.00	0.00
End Point North Branch			76.2	0.00	0.00	0.00	0.00434	0.0223	0.0940	0.302	0.249	0.111	0.0431	0.00	0.00

2006 North Branch Piscataquog Estimated Monthly Stream Flow at Each Impact Point in CFS															
WU_NAME	Average of 01094000, 01082000, 01085500, and 01086000 for Piscataquog surrogate	Calculated monthly mean streamflow in CFSM	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start North Branch			4.19	18	15	6	7	24	21	7	3	2	8	17	9
Gorham Brook			75.84	335	263	115	127	442	380	127	51	34	143	310	157
End point of North Branch			76.2	336	265	115	128	444	382	128	51	35	144	311	158

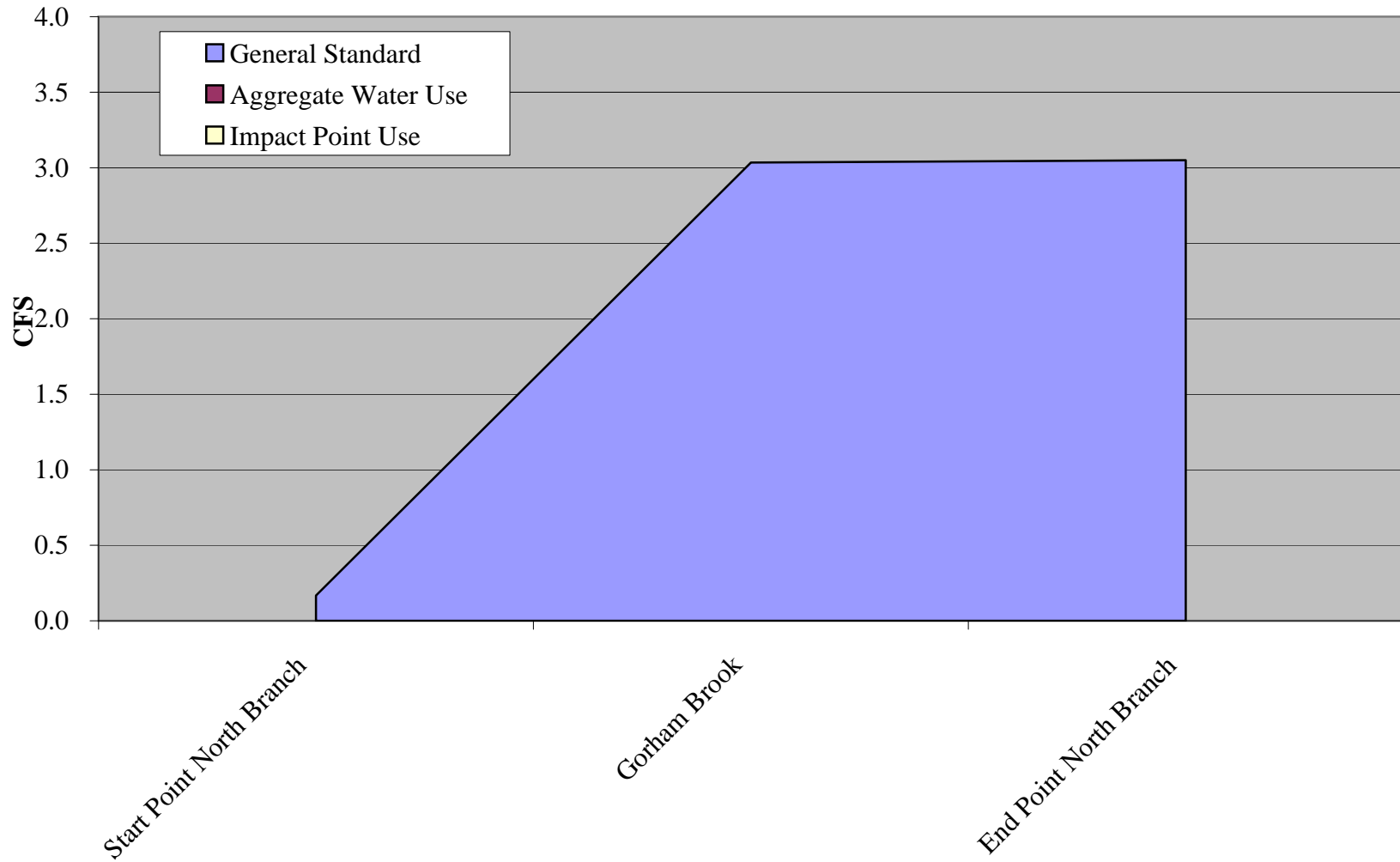
2006 North Branch Piscataquog Estimated Monthly General Standard at Each Impact Point in CFS															
WU_NAME	Average of 01094000, 01082000, 01085500, and 01086000 for Piscataquog surrogate	General Standard in cfsm	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start North Branch			4.19	0.67	0.17	0.17	0.17	0.67	0.67	0.17	0.08	0.02	0.17	0.67	0.17
Gorham Brook			75.84	12	3	3	3	12	12	3	2	0	3	12	3
End point of North Branch			76.2	12	3	3	3	12	12	3	2	0	3	12	3

2006 North Branch Piscataquog Estimated Monthly Margin of the Aggregate Water Use Below the General Standard															
WU_NAME			DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start North Branch			4.19	0.67	0.17	0.17	0.17	0.67	0.67	0.17	0.08	0.02	0.17	0.67	0.17
Gorham Brook			75.84	12.14	3.03	3.03	3.03	12.11	12.04	2.73	1.27	0.17	2.99	12.14	3.03
End point of North Branch			76.2	12.20	3.05	3.05	3.04	12.17	12.10	2.75	1.28	0.17	3.01	12.20	3.05

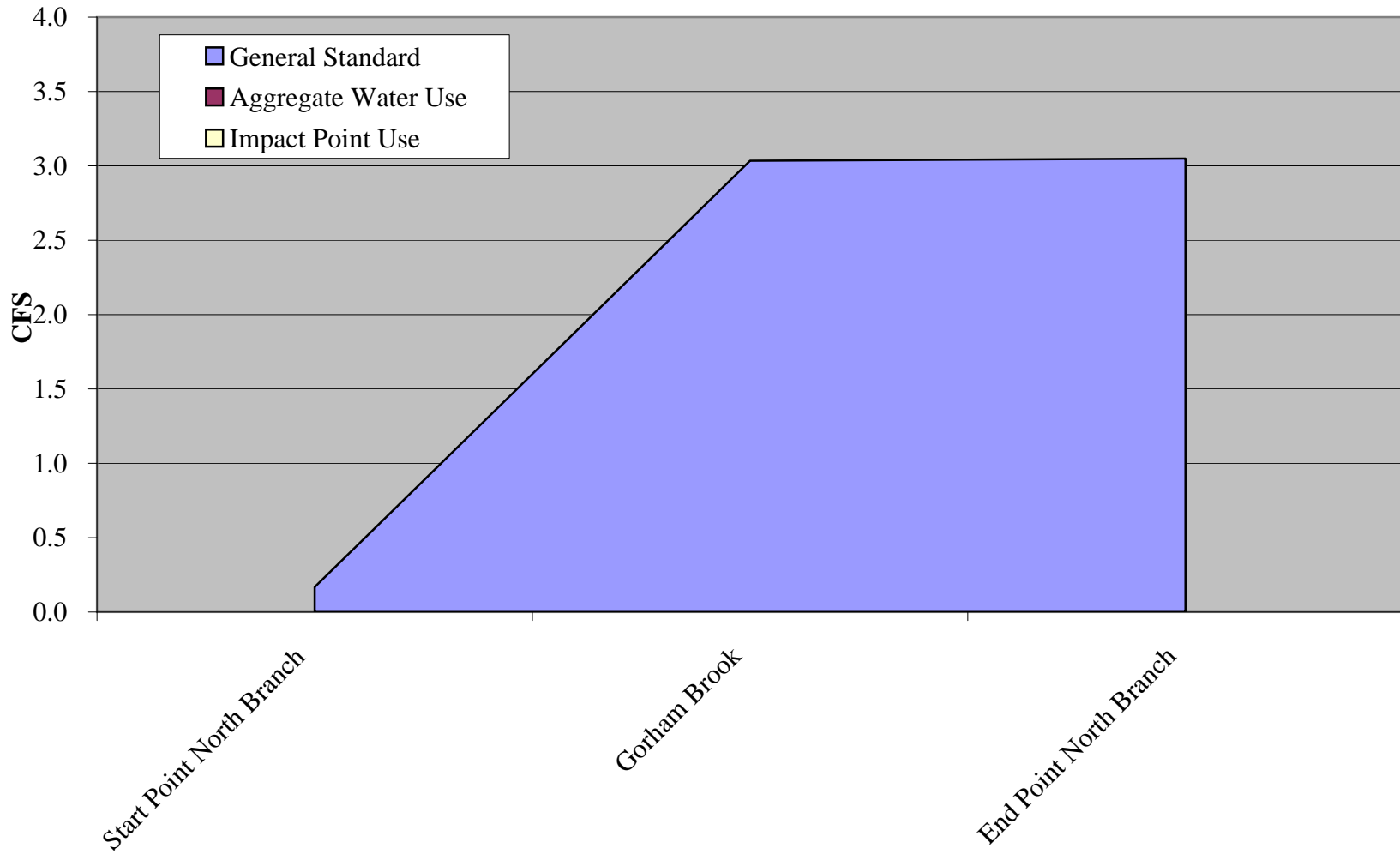
January 2006 North Branch Piscataquog River



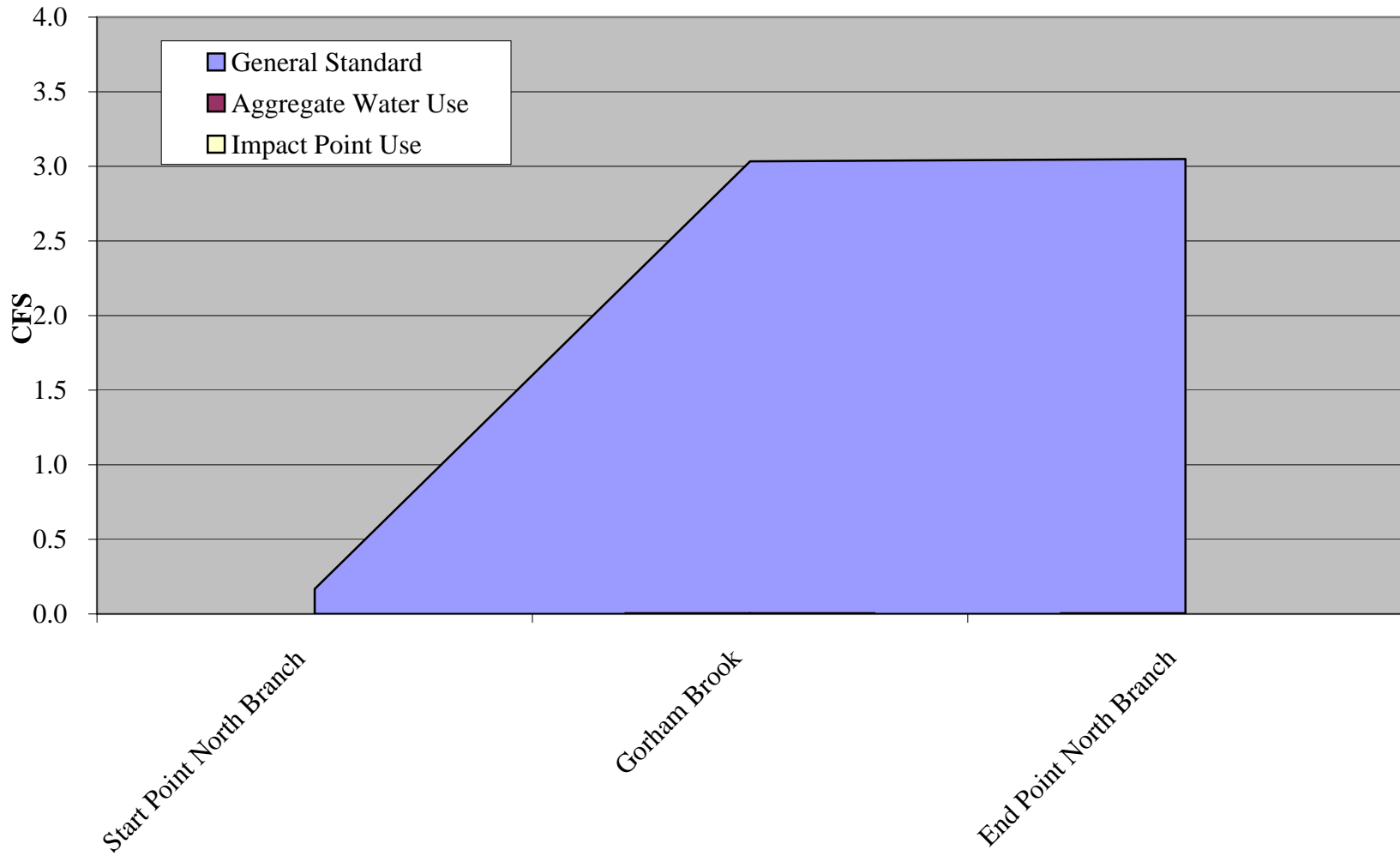
February 2006 North Branch Piscataquog River



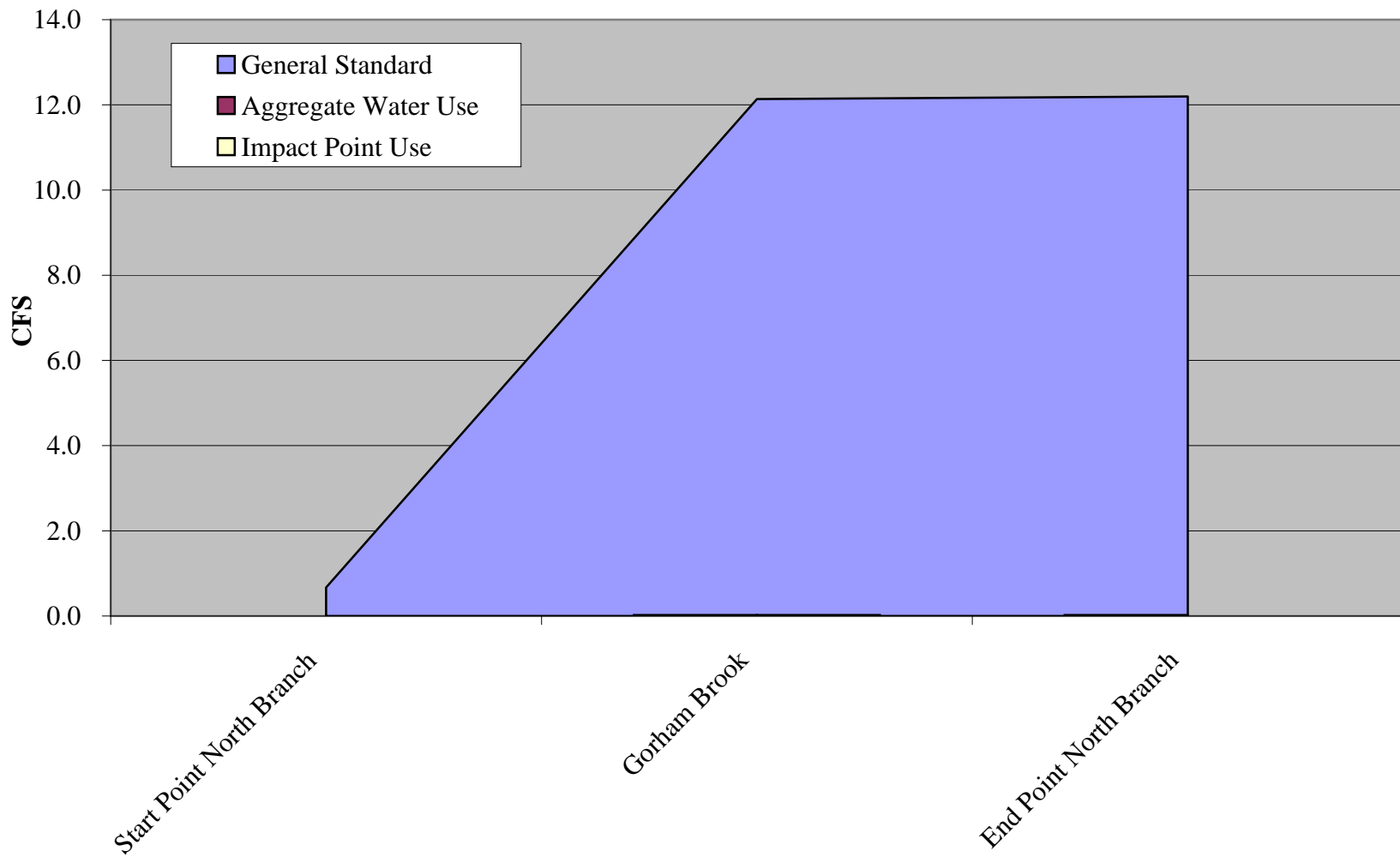
March 2006 North Branch Piscataquog River



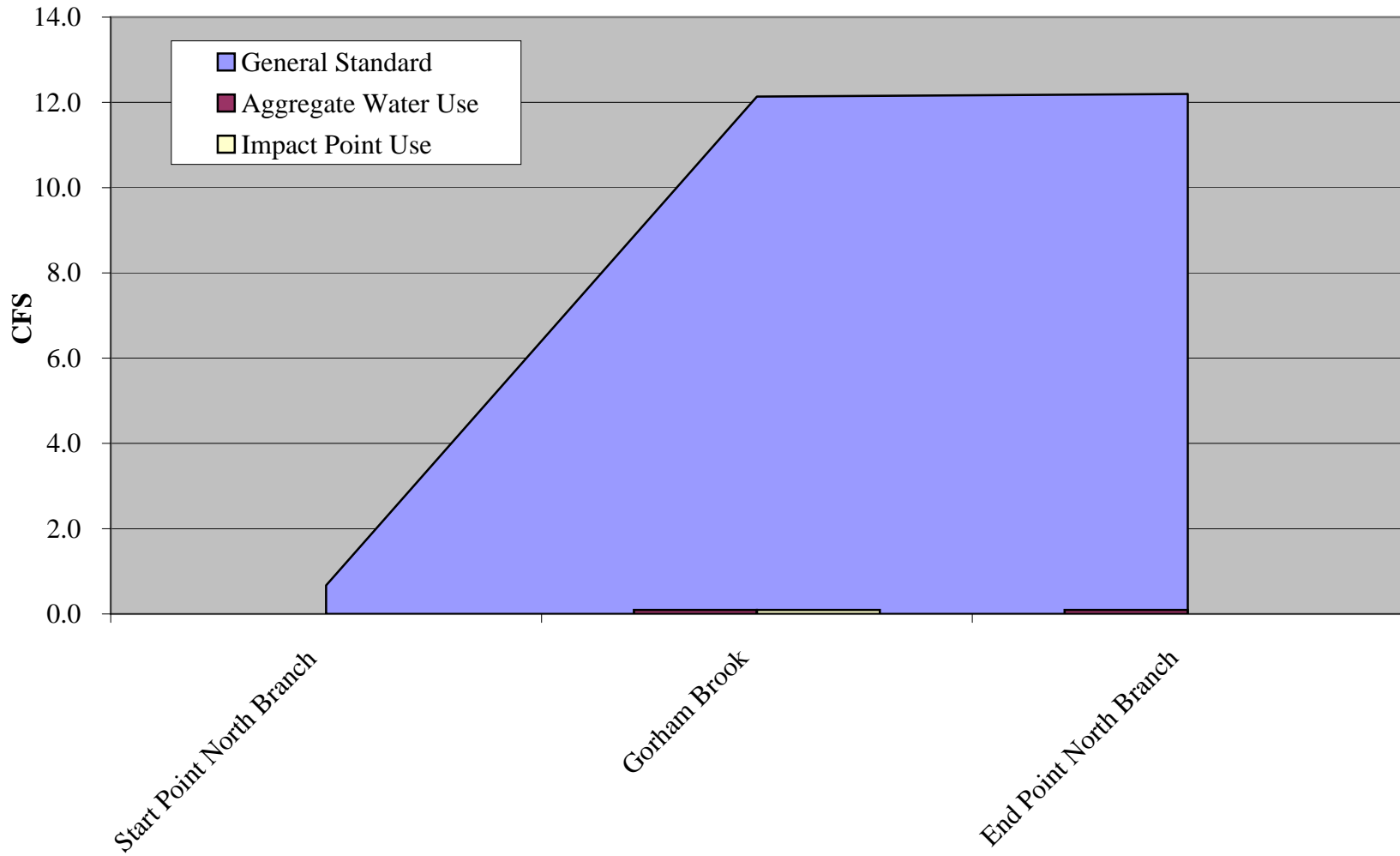
April 2006 North Branch Piscataquog River



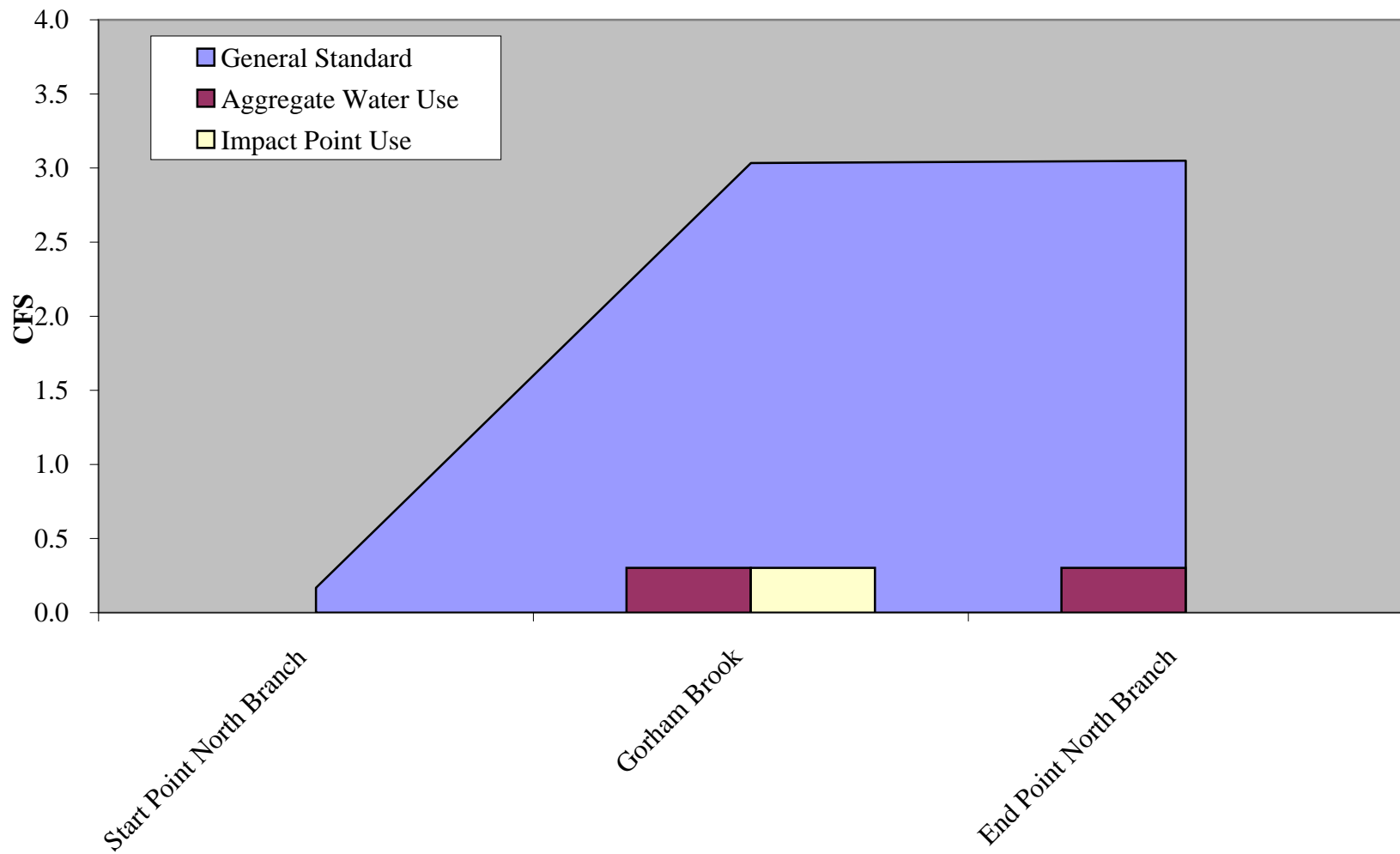
May 2006 North Branch Piscataquog River



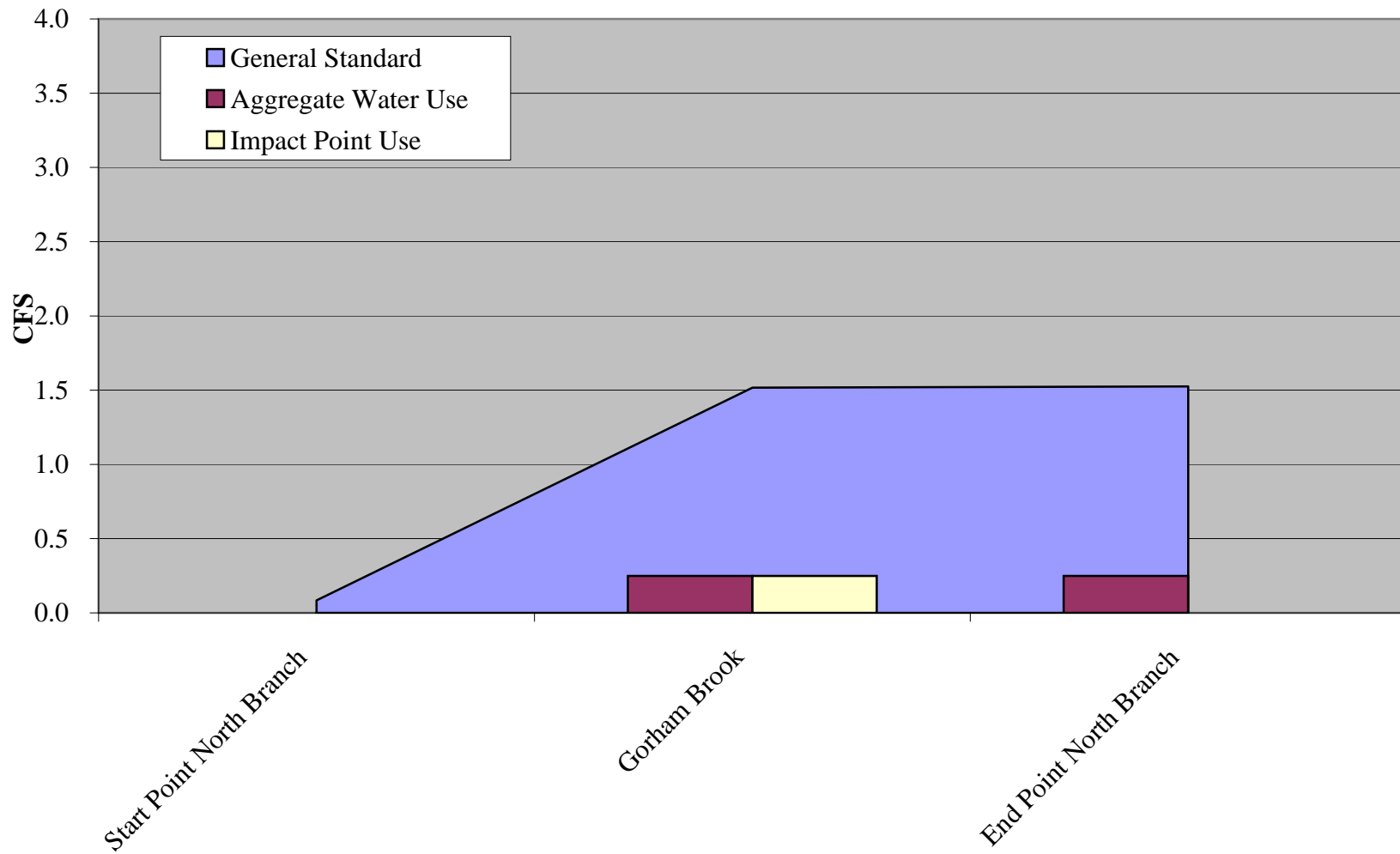
June 2006 North Branch Piscataquog River



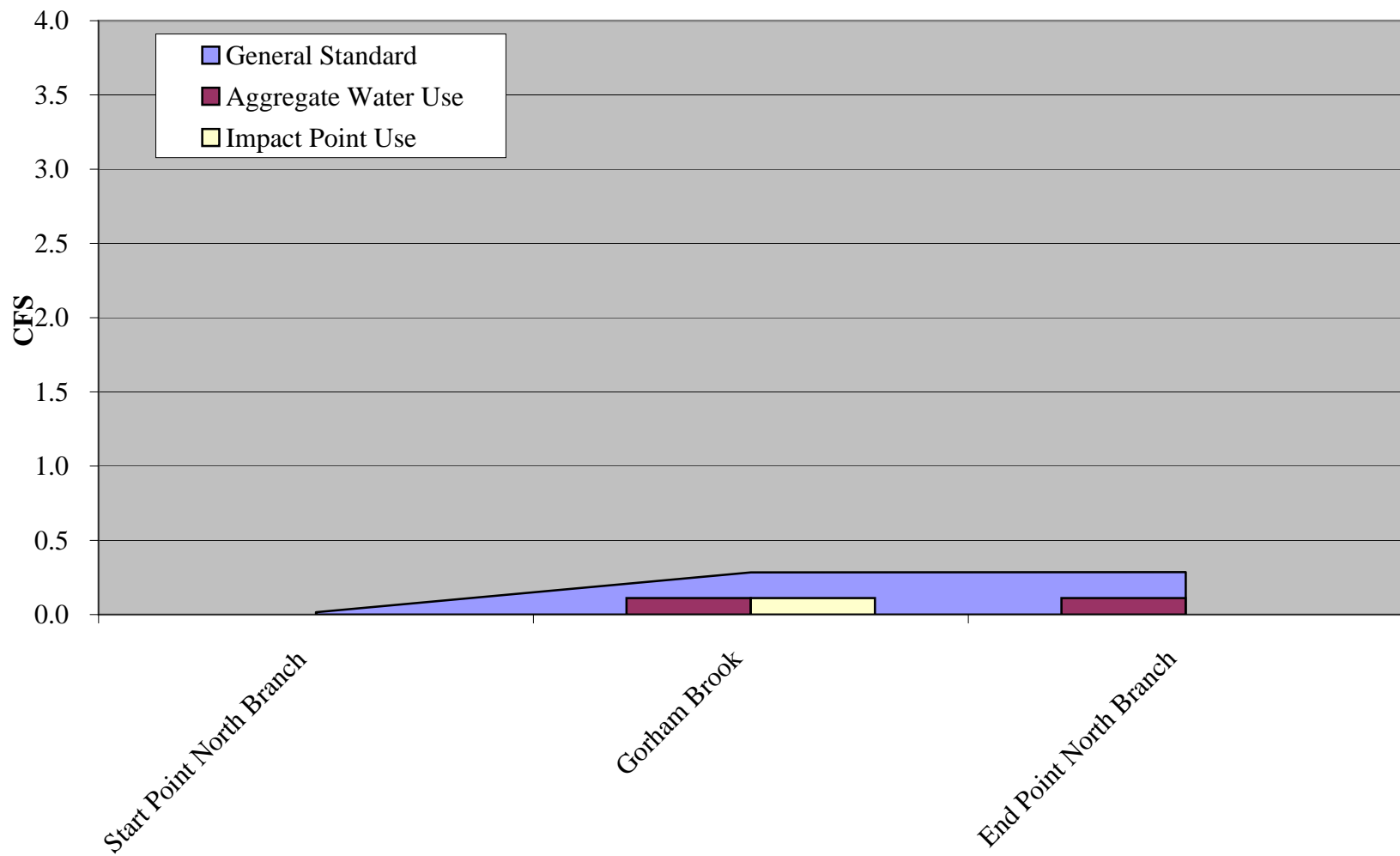
July 2006 North Branch Piscataquog River



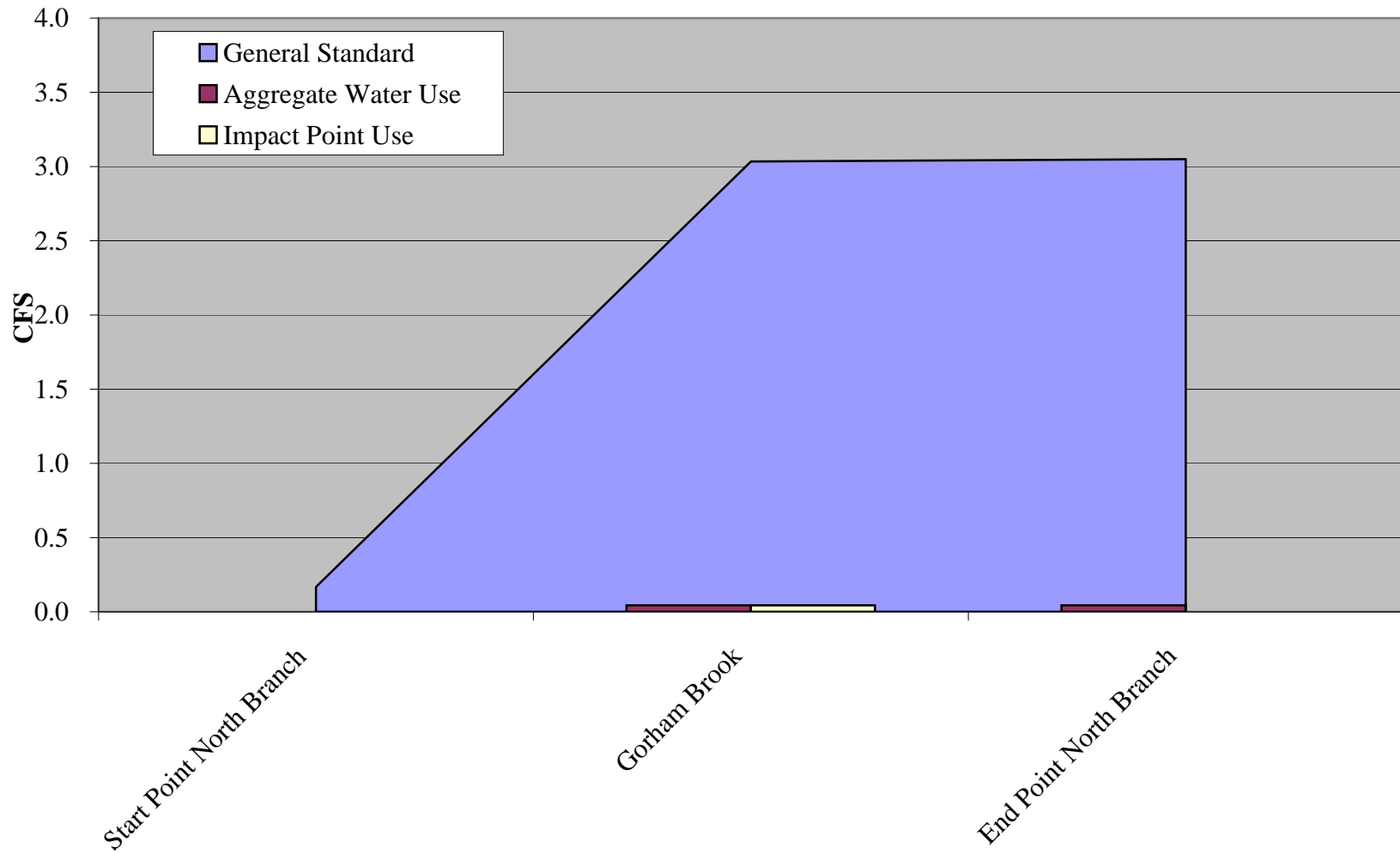
August 2006 North Branch Piscataquog River



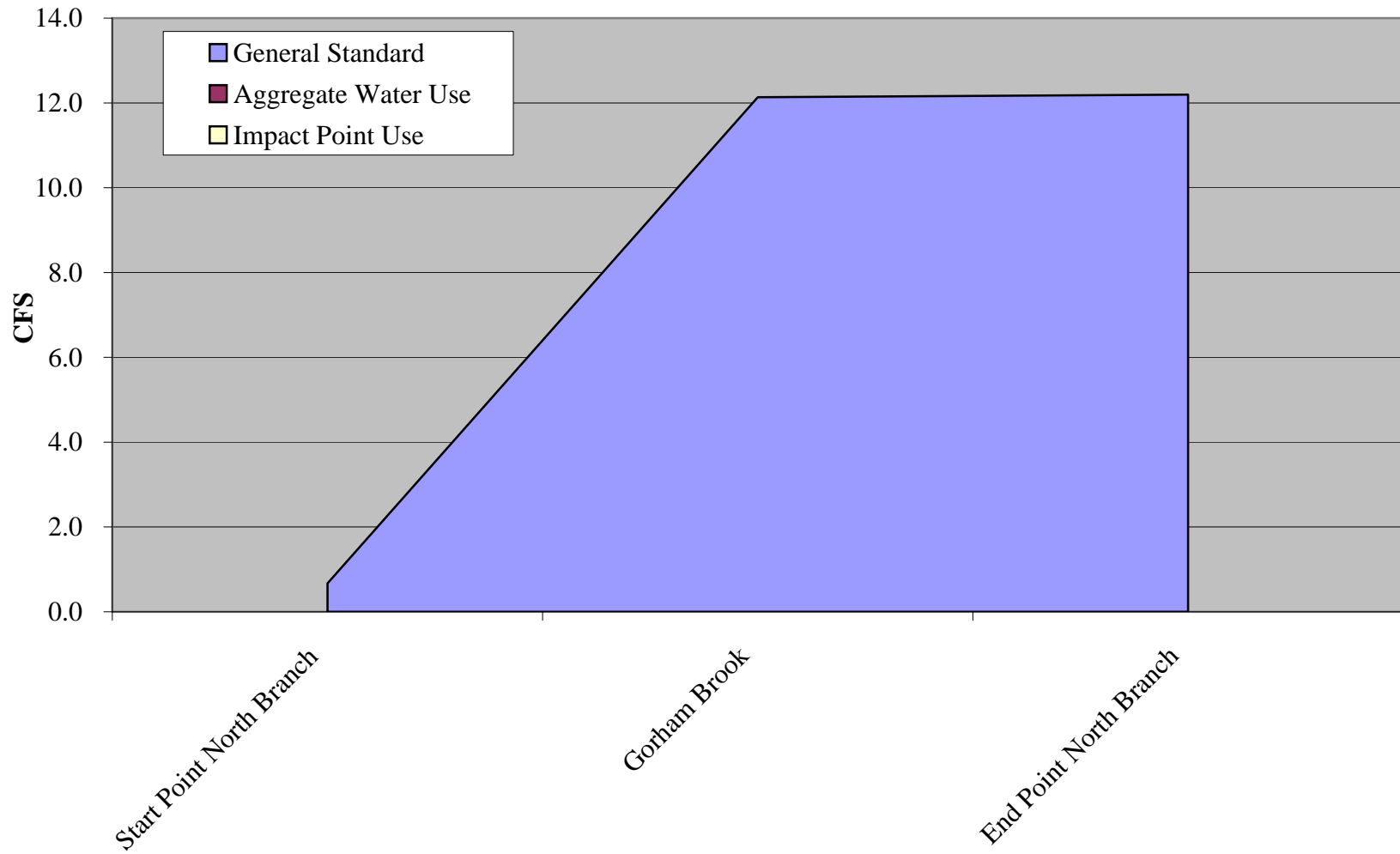
September 2006 North Branch Piscataquog River



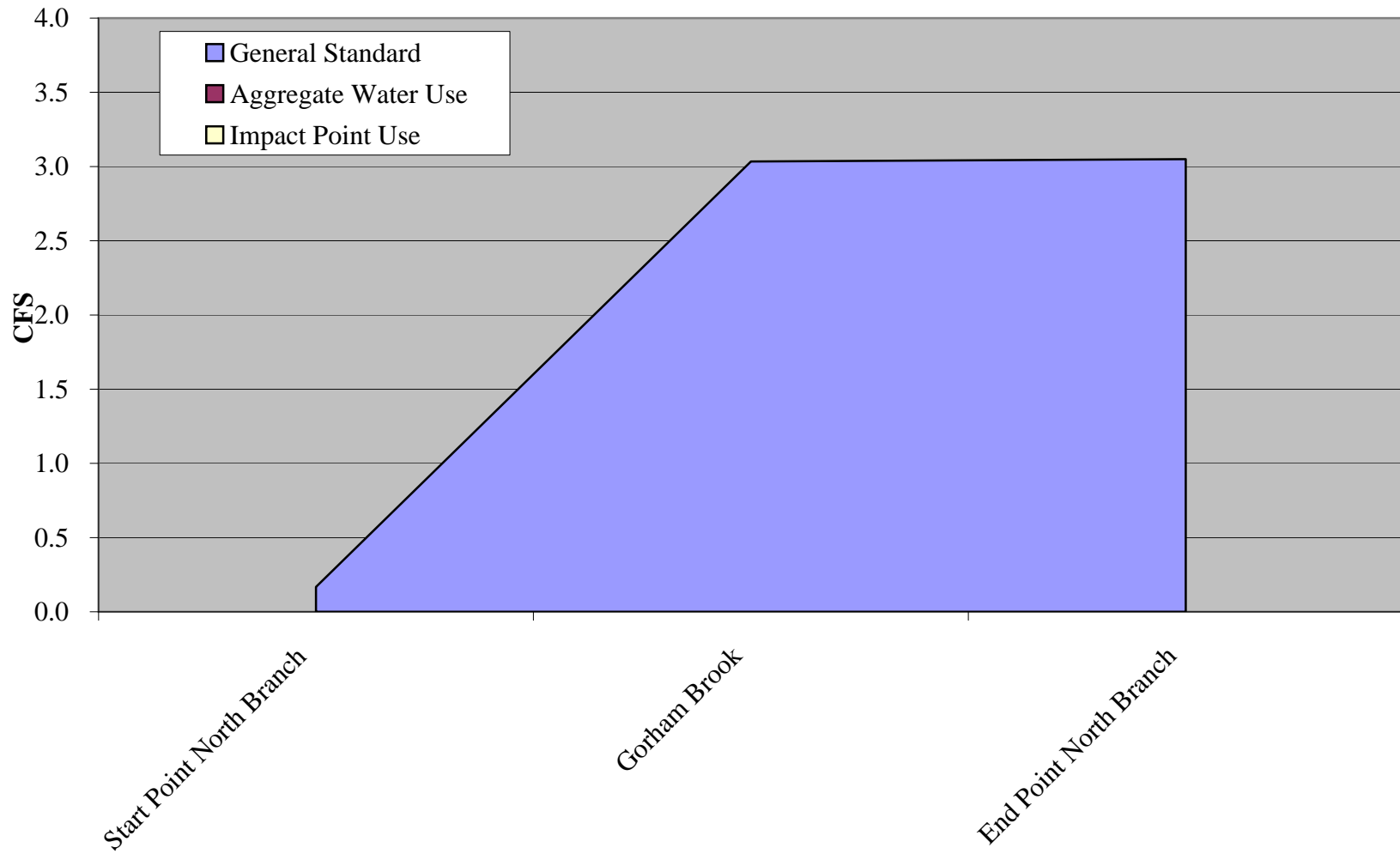
October 2006 North Branch Piscataquog River



November 2006 North Branch Piscataquog River



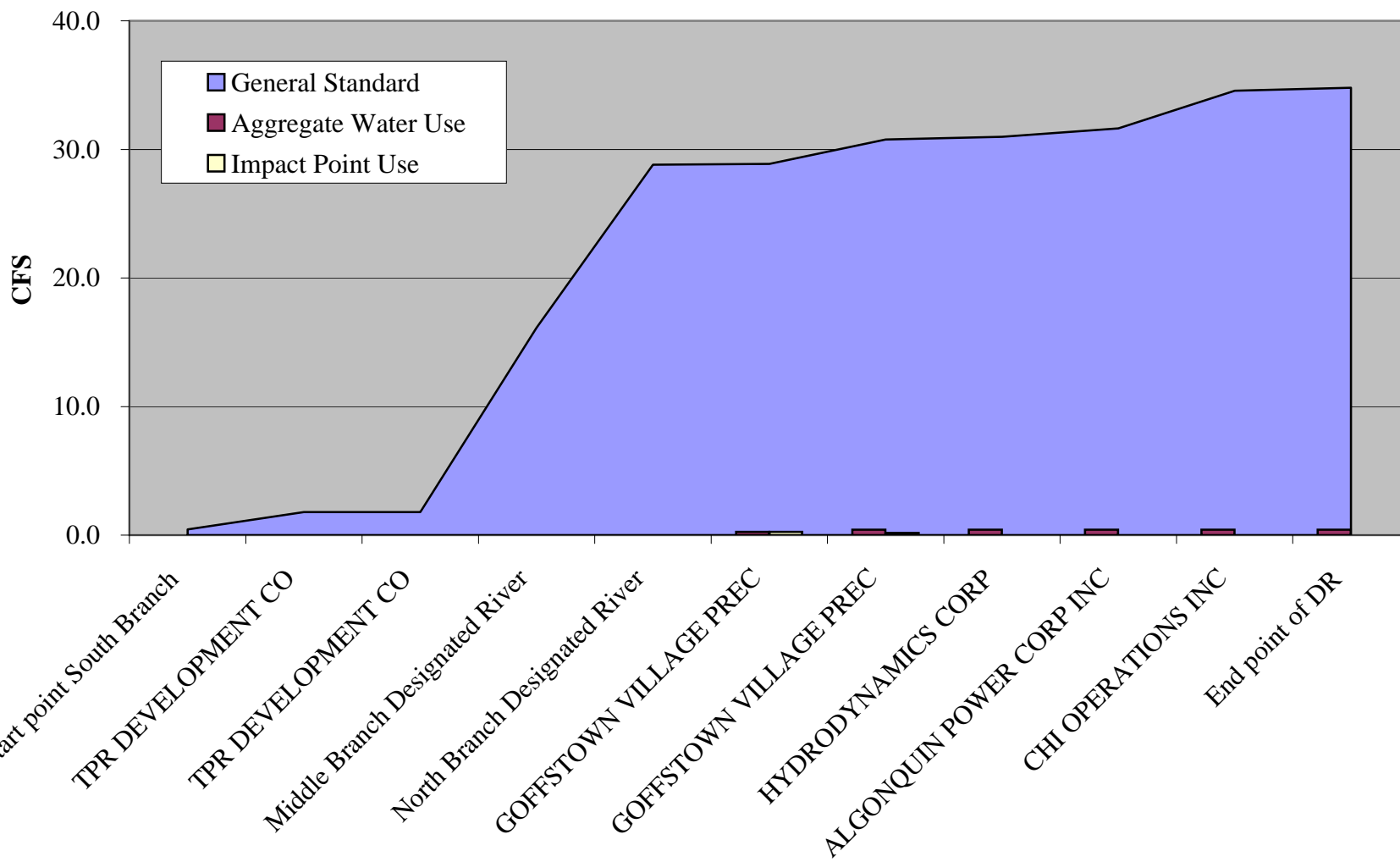
December 2006 North Branch Piscataquog River



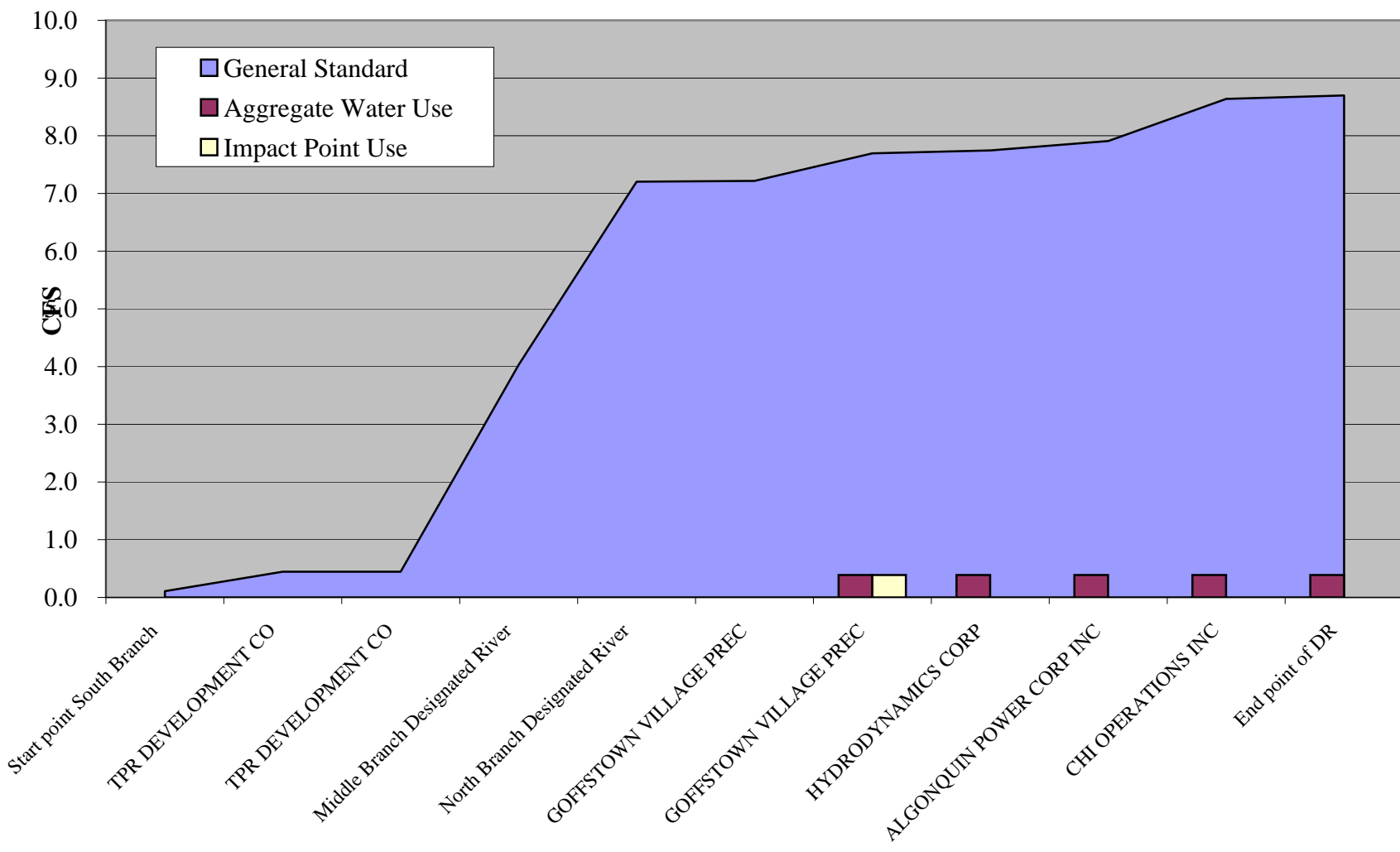
2006 South B Piscataquog Water Use in CFS															
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start point South Branch	Pleasant Pond		2.7												
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S01	11.2	0.0000	0.0000	0.0000	0.0303	0.01	0.01	0.03	0.02	0.03	0.00	0.0000	0.0000
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S02	11.2	0.0000	0.0000	0.0000	0.0087	0.009	0.015	0.046	0.041	0.010	0.00	0.0000	0.0000
End point Middle Branch			41.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Confluence of Middle and South Branches	Confluence Middle and South Branch		100.8												
End of South Branch			103.9												
End of North Branch			76.2	0.000	0.000	0.000	0.004	0.022	0.094	0.302	0.249	0.111	0.043	0.000	0.000
Confluence North and South Br	End Points Seg 1 North Branch and South Bran		180.1												
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S02	180.5	0.25	0.00	0.00	0.00	0.00	0.13	0.69	0.78	0.67	0.65	0.00	0.00
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S01	192.4	0.16	0.39	0.38	0.41	0.00	0.41	0.00	0.00	0.00	0.44	0.39	0.39
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-S01	193.7	92.46	86.27	26.66	56.92	18.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-D01	193.7	(92.46)	(86.27)	(26.66)	(56.92)	(18.30)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-S01	197.7	381.86	377.87	236.15	172.92	507.45	682.39	160.16	129.14	55.80	237.95	537.40	397.19
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-D01	197.7	(381.86)	(377.87)	(236.15)	(172.92)	(507.45)	(682.39)	(160.16)	(129.14)	(55.80)	(237.95)	(537.40)	(397.19)
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-S01	216.0	184.50	178.48	160.15	152.36	138.18	205.15	101.91	30.44	4.65	121.77	201.59	176.30
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-D01	216.0	(184.50)	(178.48)	(160.15)	(152.36)	(138.18)	(205.15)	(101.91)	(30.44)	(4.65)	(121.77)	(201.59)	(176.30)
End point of DR	Confluence Merrimack and Piscataquog		217.5												
2006 South B Piscataquog Aggregate Water Use in CFS															
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start point South Branch	Pleasant Pond		2.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S01	11.2	0.00	0.00	0.00	0.03	0.01	0.01	0.03	0.02	0.03	0.00	0.00	0.00
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S02	11.2	0.00	0.00	0.00	0.04	0.02	0.02	0.08	0.06	0.04	0.00	0.00	0.00
Middle Branch Designated River	Middle Branch Designated River		100.8	0.00	0.00	0.00	0.04	0.02	0.02	0.08	0.06	0.04	0.00	0.00	0.00
North Branch Designated River	North Branch Designated River		180.1	0.00	0.00	0.00	0.04	0.04	0.11	0.38	0.31	0.15	0.05	0.00	0.00
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S02	180.5	0.25	0.00	0.00	0.04	0.04	0.24	1.07	1.09	0.81	0.69	0.00	0.00
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S01	192.4	0.41	0.39	0.38	0.45	0.04	0.65	1.07	1.09	0.81	1.13	0.39	0.39
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-D01	193.7	0.41	0.39	0.38	0.45	0.04	0.65	1.07	1.09	0.81	1.13	0.39	0.39
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-D01	197.7	0.41	0.39	0.38	0.45	0.04	0.65	1.07	1.09	0.81	1.13	0.39	0.39
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-D01	216.0	0.41	0.39	0.38	0.45	0.04	0.65	1.07	1.09	0.81	1.13	0.39	0.39
End point of DR	Confluence Merrimack and Piscataquog		217.5	0.41	0.39	0.38	0.45	0.04	0.65	1.07	1.09	0.81	1.13	0.39	0.39
2006 South Br Piscataquog Estimated Monthly Stream Flow at Each Impact Point in CFS															
	Average of 01094000, 01082000, 01085500, and 01086000 for Piscataquog surrogate	Calculated monthly mean streamflow in CFMS		4.41	3.47	1.51	1.68	5.83	5.01	1.68	0.67	0.45	1.89	4.09	2.07
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Start point South Branch	Pleasant Pond		2.7	12	9.4	4.1	4.5	16	14	4.5	1.8	1.2	5.1	11	5.6
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S01	11.2	49	39	17	19	65	56	19	7.5	5.1	21	46	23
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S02	11.2	49	39	17	19	65	56	19	7.5	5.1	21	46	23
Middle Branch Designated River	Middle Branch Designated River		100.8	445	350	152	169	587	505	169	68	46	191	412	209
North Branch Designated River	North Branch Designated River		180.1	795	626	272	302	1049	902	302	121	82	341	736	374
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S02	180.5	797	627	273	302	1051	904	302	121	82	341	737	374
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S01	192.4	849	668	291	322	1121	964	322	129	87	364	786	399
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-D01	193.7	855	673	293	324	1128	970	325	130	88	366	791	402
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-D01	197.7	873	687	299	331	1152	991	331	133	90	374	808	410
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-D01	216.0	953	750	327	362	1258	1082	362	145	98	408	882	448
End point of DR	Confluence Merrimack and Piscataquog		217.5	960	755	329	364	1267	1090	365	146	99	411	889	451

2006 South Br Piscataquog Estimated Monthly General Standard at Each Impact Point in CFS		Average of 01094000, 01082000, 01085500, and 01086000 for Piscataquog surrogate	General Standard in cfsm													
				0.16	0.04	0.04	0.04	0.16	0.16	0.04	0.020	0.003749	0.04	0.16	0.04	
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Start point South Branch	Pleasant Pond		2.7	0.4	0.1	0.1	0.1	0.4	0.4	0.1	0.1	0.0	0.1	0.4	0.1	
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S01	11.2	1.8	0.4	0.4	0.4	1.8	1.8	0.4	0.2	0.0	0.4	1.8	0.4	
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S02	11.2	1.8	0.4	0.4	0.4	1.8	1.8	0.4	0.2	0.0	0.4	1.8	0.4	
Middle Branch Designated River	Middle Branch Designated River		100.8	16.1	4.0	4.0	4.0	16.1	16.1	4.0	2.0	0.4	4.0	16.1	4.0	
North Branch Designated River	North Branch Designated River		180.1	28.8	7.2	7.2	7.2	28.8	28.8	7.2	3.6	0.7	7.2	28.8	7.2	
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S02	180.5	28.9	7.2	7.2	7.2	28.9	28.9	7.2	3.6	0.7	7.2	28.9	7.2	
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S01	192.4	30.8	7.7	7.7	7.7	30.8	30.8	7.7	3.8	0.7	7.7	30.8	7.7	
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-D01	193.7	31.0	7.7	7.7	7.7	31.0	31.0	7.7	3.9	0.7	7.7	31.0	7.7	
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-D01	197.7	31.6	7.9	7.9	7.9	31.6	31.6	7.9	4.0	0.7	7.9	31.6	7.9	
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-D01	216.0	34.6	8.6	8.6	8.6	34.6	34.6	8.6	4.3	0.8	8.6	34.6	8.6	
End point of DR	Confluence Merrimack and Piscataquog		217.5	34.8	8.7	8.7	8.7	34.8	34.8	8.7	4.3	0.8	8.7	34.8	8.7	
2006 South Br Piscataquog Estimated Monthly Margin of the Aggregate Water Use Below the General Standard																
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Start point South Branch	Pleasant Pond		2.7	0.43	0.11	0.11	0.11	0.43	0.43	0.11	0.05	0.01	0.11	0.43	0.11	
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S01	11.2	1.79	0.45	0.45	0.42	1.78	1.78	0.42	0.20	0.02	0.44	1.79	0.45	
TPR DEVELOPMENT CO	TORY PINES GOLF COURSE	20669 20669-S02	11.2	1.79	0.45	0.45	0.41	1.77	1.77	0.37	0.16	0.01	0.44	1.79	0.45	
Middle Branch Designated River	Middle Branch Designated River		100.8	16.12	4.03	4.03	3.99	16.11	16.10	3.96	1.95	0.34	4.03	16.12	4.03	
North Branch Designated River	North Branch Designated River		180.1	28.82	7.20	7.20	7.16	28.78	28.70	6.83	3.29	0.53	7.16	28.82	7.20	
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S02	180.5	28.62	7.22	7.22	7.18	28.84	28.63	6.15	2.52	(0.14)	6.52	28.87	7.22	
GOFFSTOWN VILLAGE PREC	WATER WORKS	20337 20337-S01	192.4	30.37	7.31	7.32	7.24	30.74	30.13	6.63	2.76	(0.09)	6.56	30.39	7.30	
HYDRODYNAMICS CORP	HADLEY FALLS HYDRO	20607 20607-D01	193.7	30.57	7.36	7.37	7.30	30.95	30.34	6.68	2.79	(0.09)	6.61	30.59	7.35	
ALGONQUIN POWER CORP INC	GREGG FALLS HYDRO	20559 20559-D01	197.7	31.23	7.52	7.53	7.46	31.60	30.99	6.84	2.87	(0.07)	6.78	31.25	7.52	
CHI OPERATIONS INC	KELLEY FALLS HYDRO CO	20464 20464-D01	216.0	34.14	8.25	8.26	8.19	34.51	33.90	7.57	3.23	(0.01)	7.50	34.16	8.24	
End point of DR	Confluence Merrimack and Piscataquog		217.5	34.38	8.31	8.32	8.25	34.76	34.15	7.63	3.26	0.00	7.56	34.40	8.31	

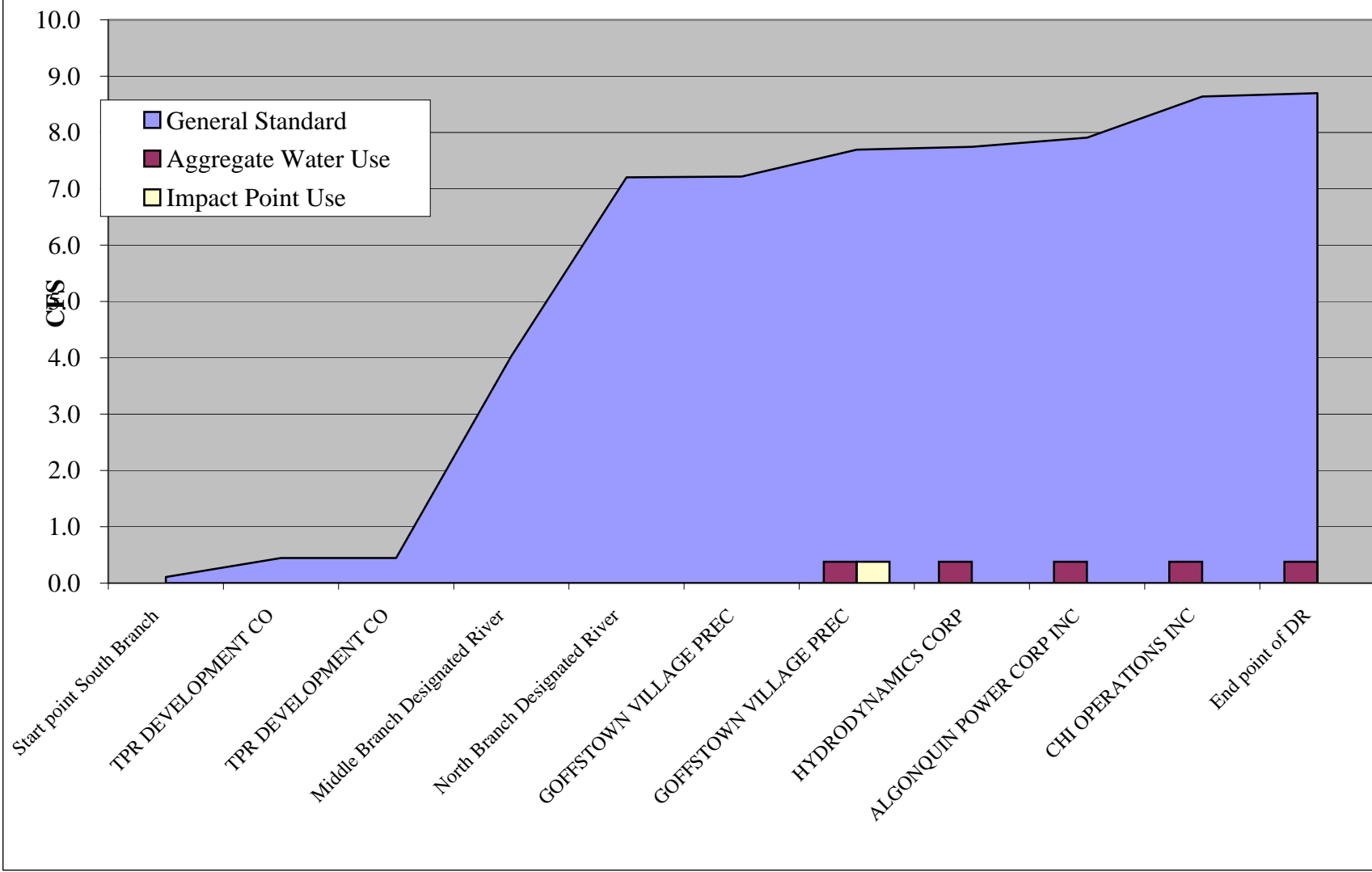
January 2006 South Branch and mainstem Piscataquog



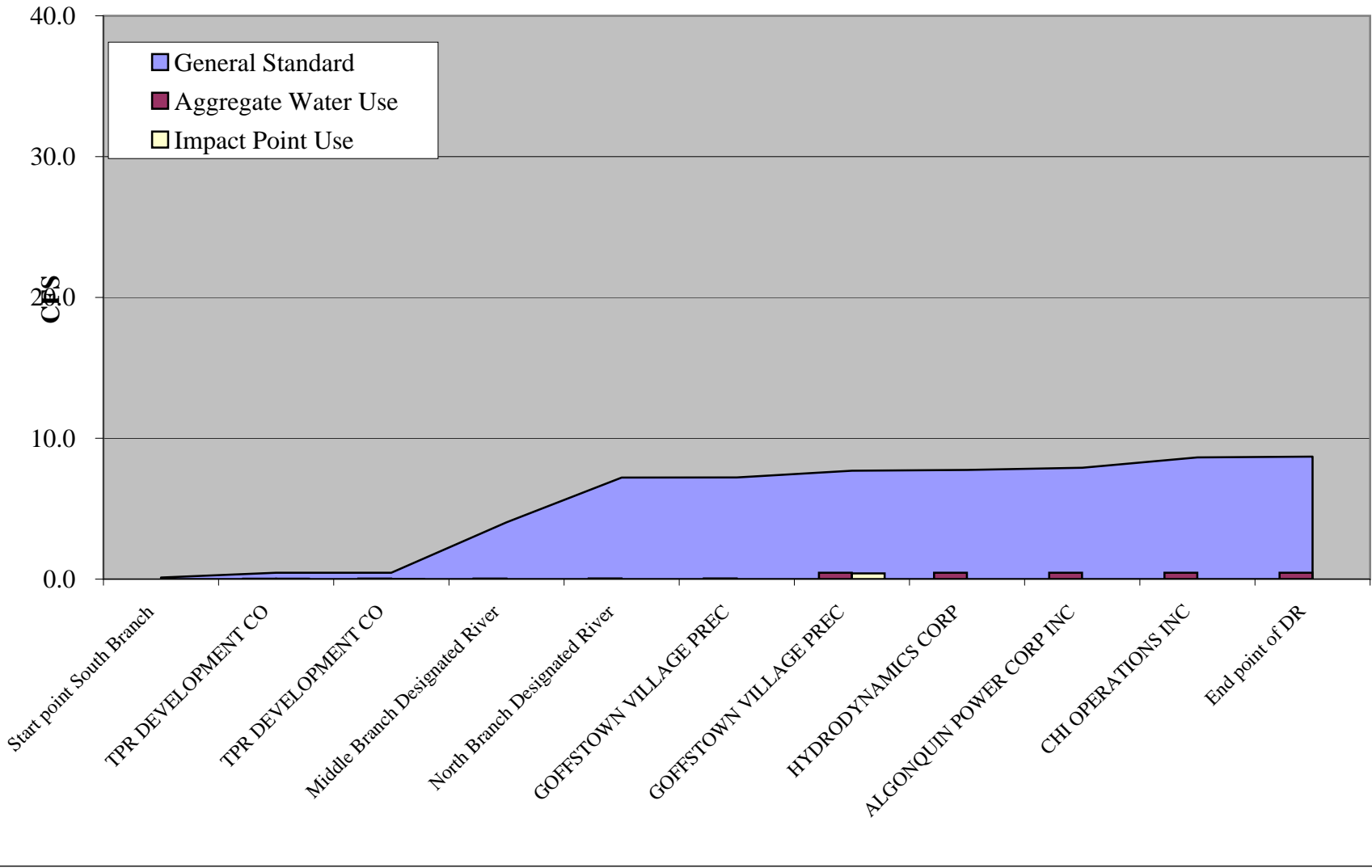
February 2006 South Branch and mainstem Piscataquog



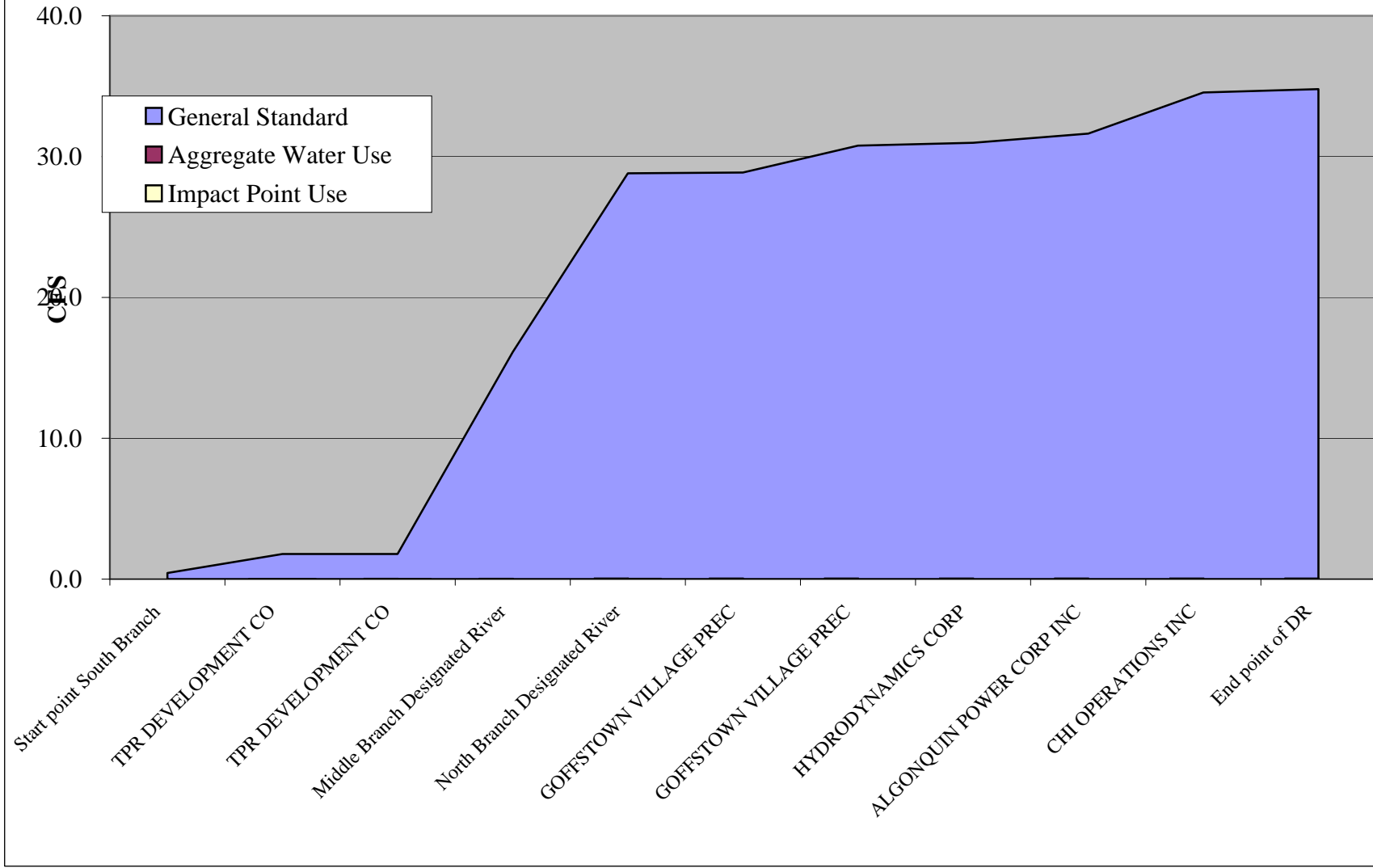
March 2006 South Branch and mainstem Piscataquog



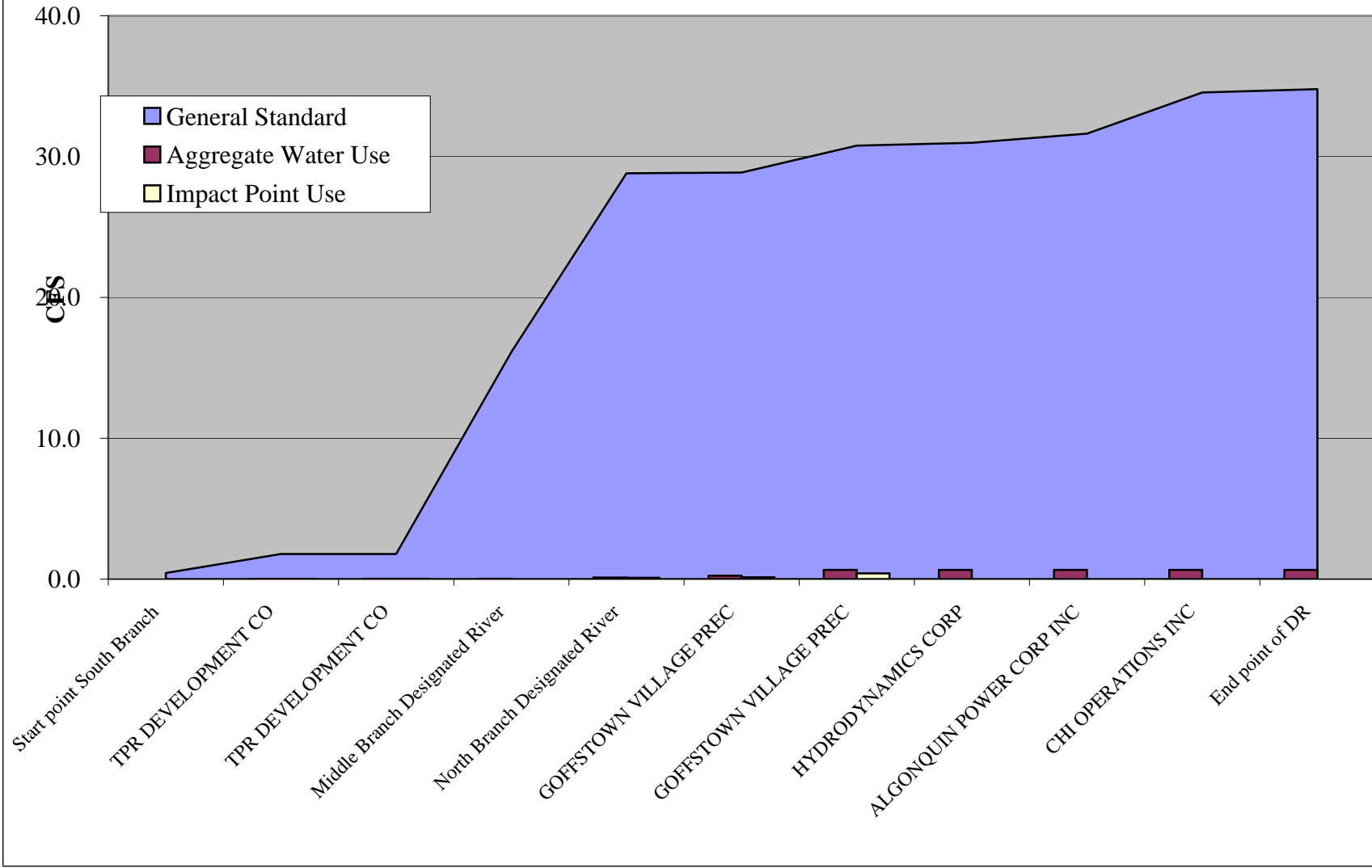
April 2006 South Branch and mainstem Piscataquog



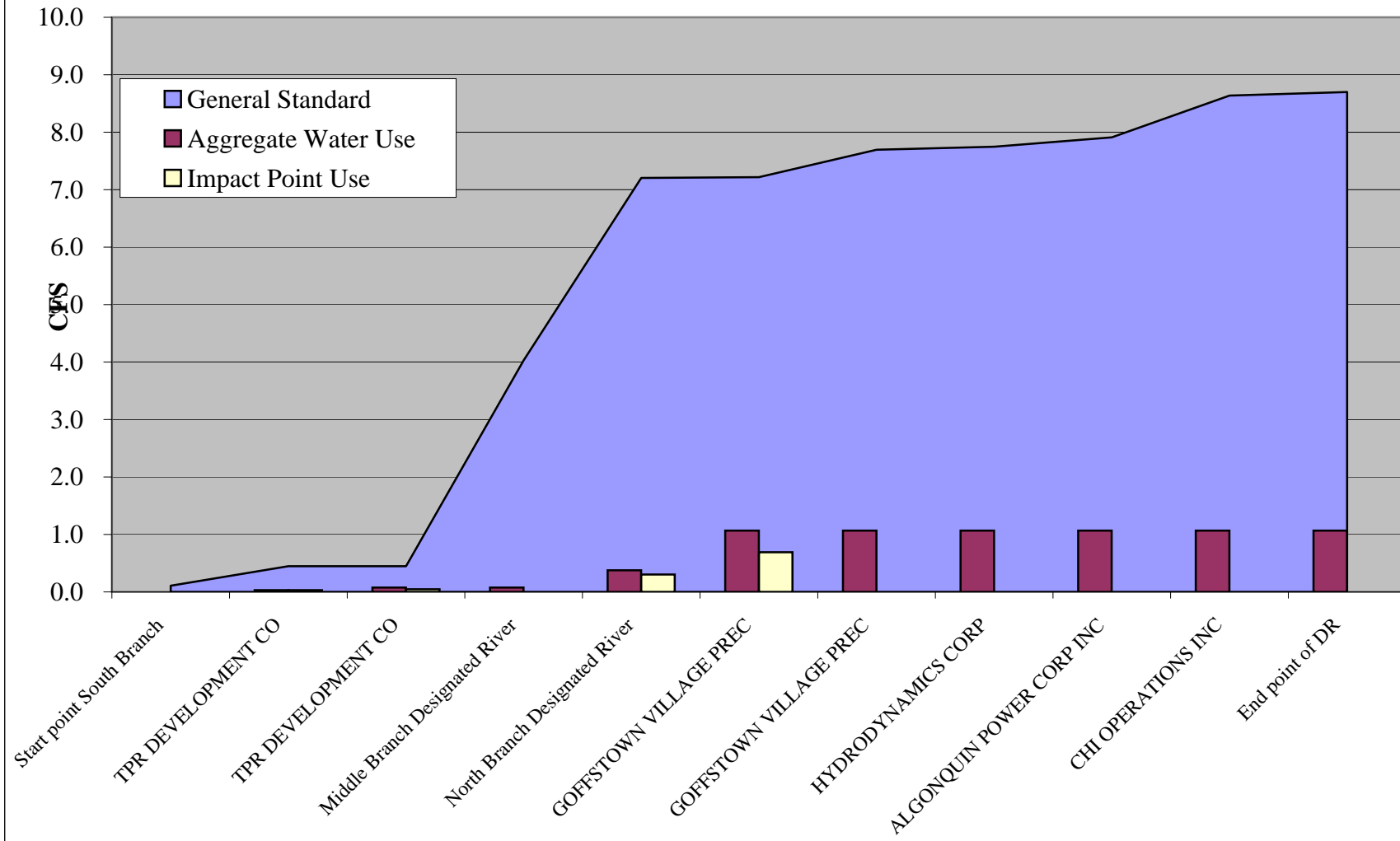
May 2006 South Branch and mainstem Piscataquog



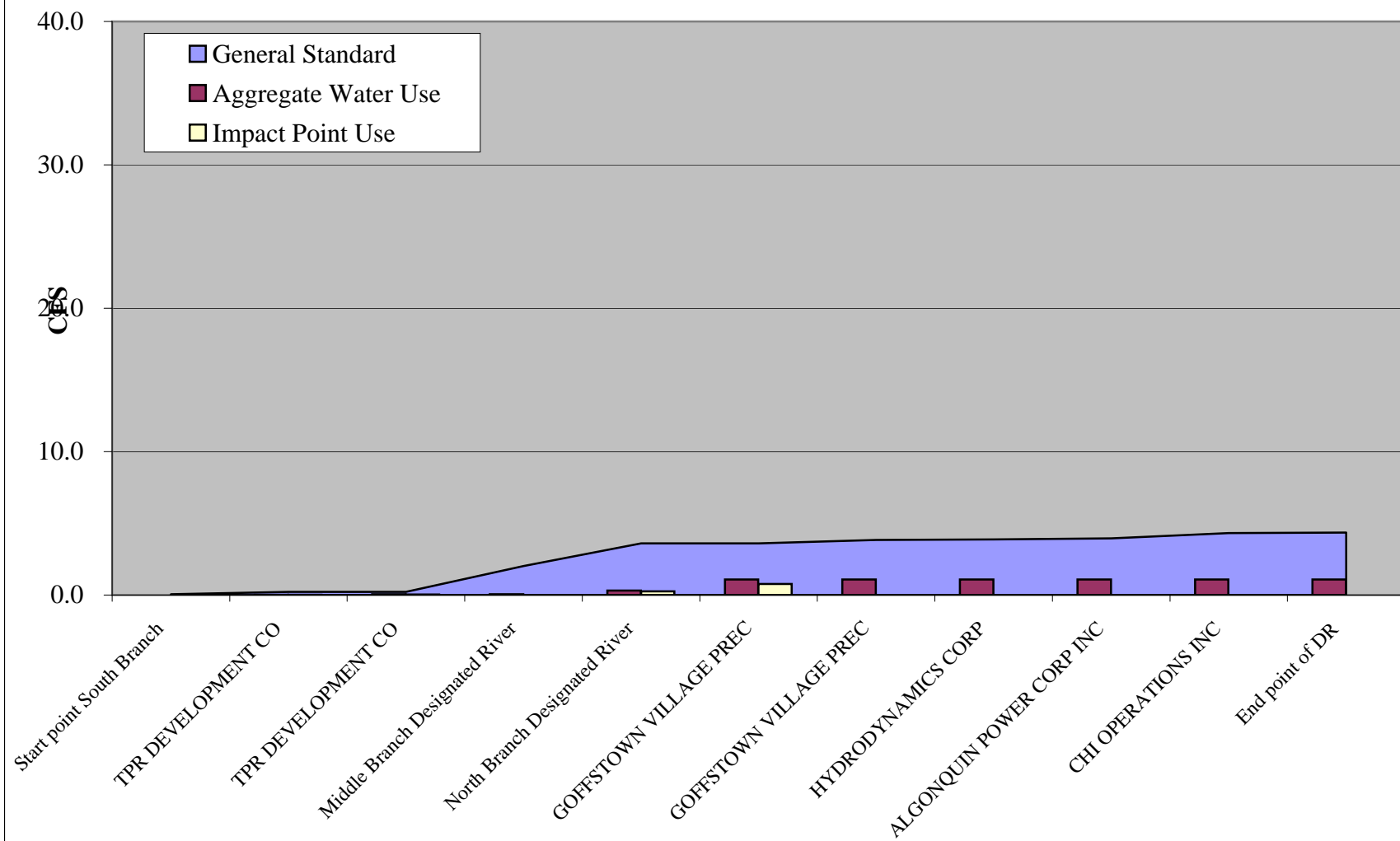
June 2006 South Branch and mainstem Piscataquog



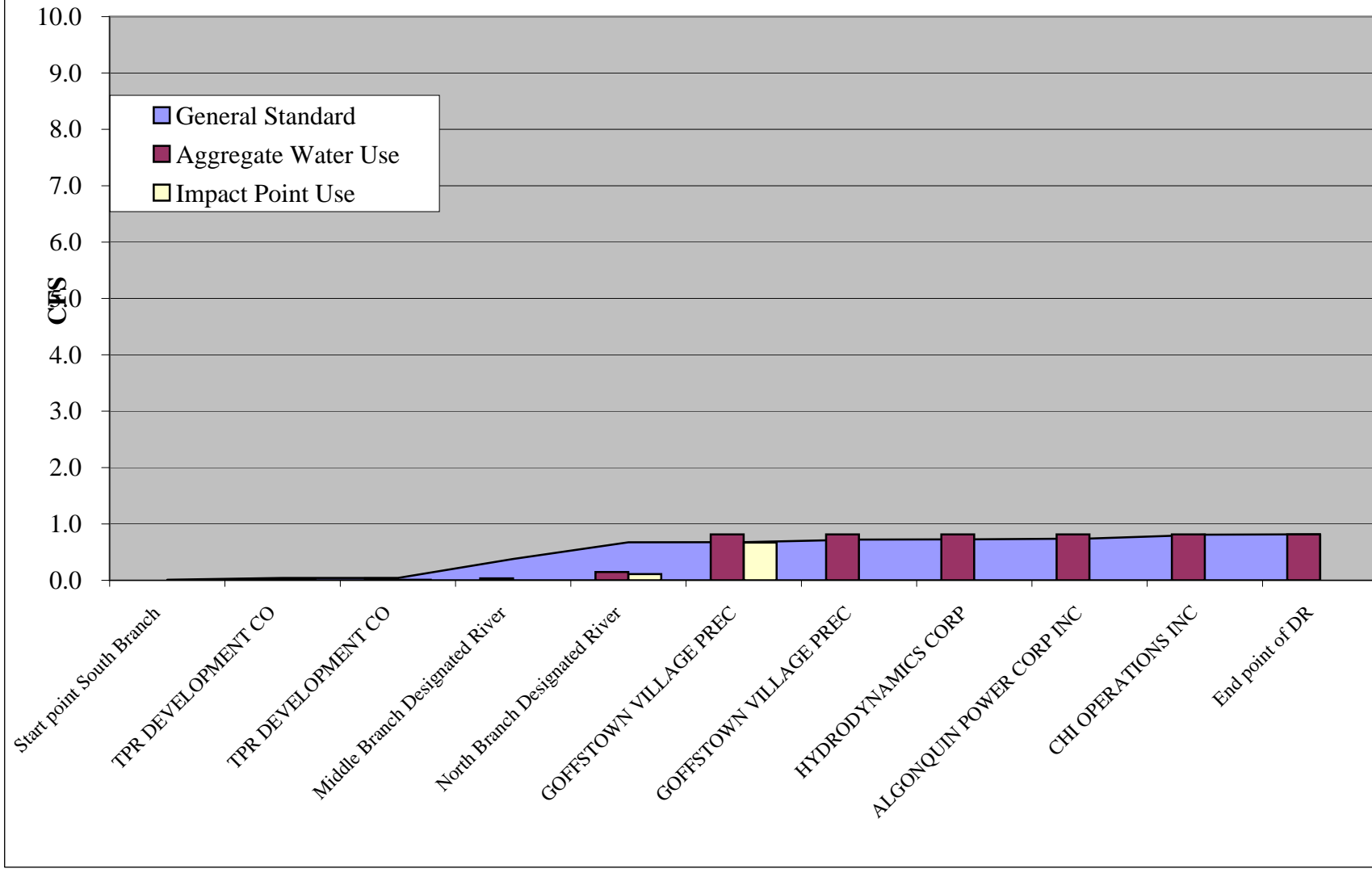
July 2006 South Branch and mainstem Piscataquog



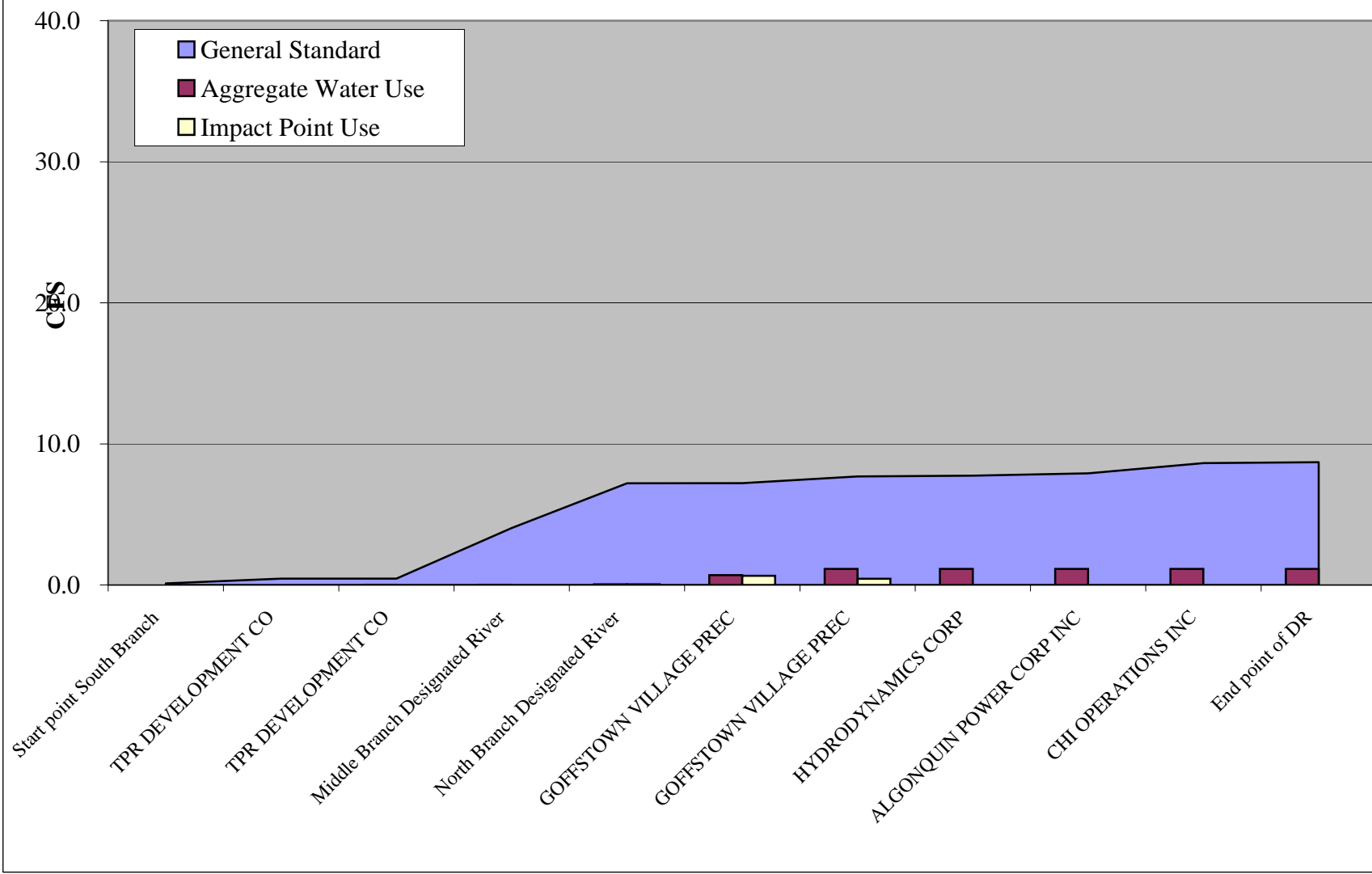
August 2006 South Branch and mainstem Piscataquog



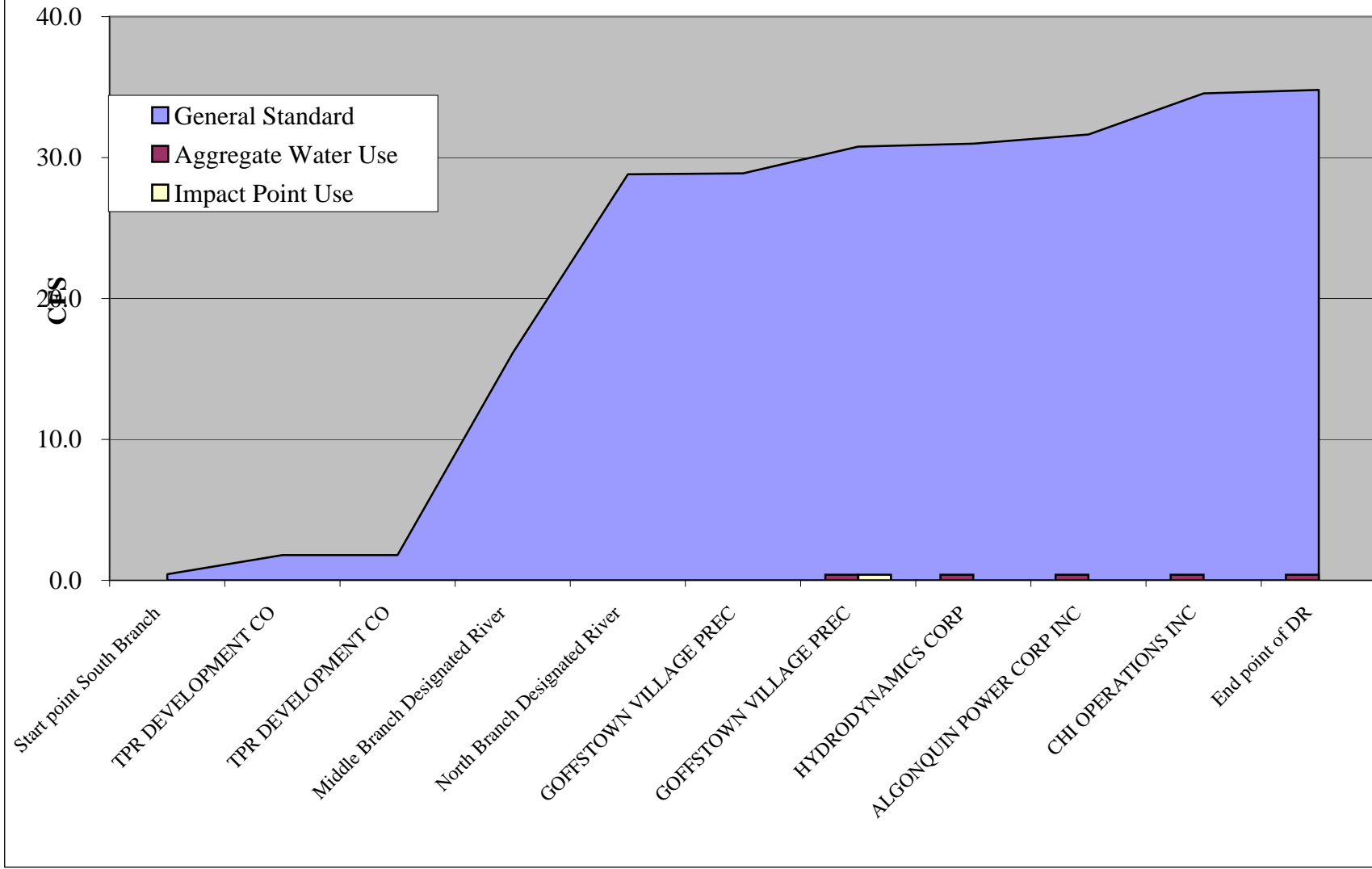
September 2006 South Branch and mainstem Piscataquog



October 2006 South Branch and mainstem Piscataquog



November 2006 South Branch and mainstem Piscataquog



December 2006 South Branch and mainstem Piscataquog

