

Isinglass Annual Water Use versus Stream Flow – Calendar Year 2006

Water use was reported by four sources and no returns in the Isinglass Water Management Planning Area. DES identified two registered withdrawal sources that are unmetered and do not report withdrawals. DES was able to generate an estimated water use for one of the sources. Only two of the four quantified sources met the definition of an Affected Water User. The rules require a user to have a source or withdrawal within 500 feet of a tributary to the Designated River. Three sources, two at Nippo Lake Golf Club (a groundwater and a surface water source for irrigation that reported water use between April and October 2006) and one at Paradise Estates (water supply), were not included in this assessment because they did not meet the definition of an Affected Water User. Water use in 2006 by these three unassessed sources represented between 0 and 8.5 % of the reported water use in the watershed.

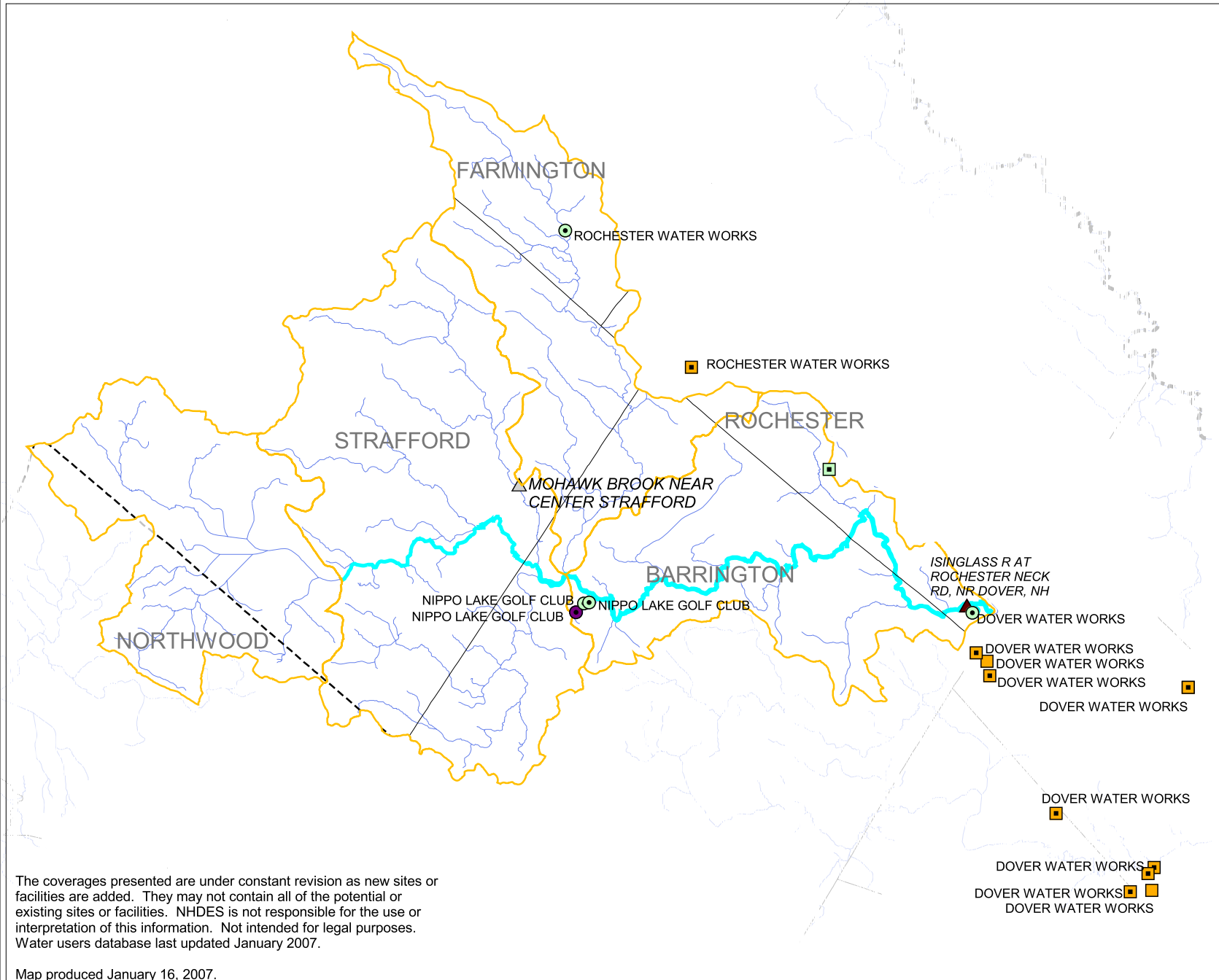
Unassessed Water Users (Source > 500 feet from perennial stream)	Unassessed Annual Water Use (gallons)
Nippo Lake Golf Club	11,674,000
Paradise Estates	0

The Water Management Planning Area has no hydropower facilities. Assessed water use was entirely for two public water supply sources for the cities of Rochester and Dover. Rochester diverts water from the Berry River tributary into a reservoir outside of the Water Management Planning Area. Rochester also diverts water from Berry River to Round Pond and then from Round Pond to Rochester Reservoir. The diversion from Round Pond is unquantified. Dover withdraws water from the Isinglass River from a location near the end of the Designated River.

The beginning of the Isinglass Designated River is the outflow of Bow Lake Dam in Strafford. The Designated section of the river flows 6.7 miles to where it is joined by the Berry River and another 12.2 miles to where it enters the Cocheco River for a total Designated length of 17.9 miles. The Isinglass Water Management Planning Area covers 74 square miles and includes a streamflow gage (USGS 01072870 ISINGLASS R AT ROCHESTER NECK RD, NR DOVER, NH.) measuring 73.6 square miles of the watershed. For this report the average monthly streamflow was transposed areal to all impact points on the Designated River. The 2006 Isinglass River assessment resulted in twelve months not in compliance with the General Standard from the confluence with Berry River to the end of the Designated River (Mile 11.2 to 0.0). It must be noted however that this conclusion is drawn from the Department's estimated water use for Rochester. Rochester diverts water from behind a dam on Berry River. Water is diverted behind this dam to a two-foot pipe that feeds by gravity drainage to Rochester Reservoir. The water use estimate for Rochester's withdrawal from Berry River is based on the expected drainage from the watershed area of the diversion dam which is 8.7 square miles.

Isinglass 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 (2003 to present)
January	11.2 to 0.0	11.2	11.8%	2003, 2004, 2005
February	11.2 to 0.0	11.2	15.4%	2003, 2004, 2005
March	11.2 to 0.0	11.2	14.9%	2003, 2004, 2005
April	11.2 to 0.0	11.2	14.6%	2003, 2004, 2005
May	11.2 to 0.0	11.2	5.6%	2003, 2004, 2005
June	11.2 to 0.0	11.2	12.0%	2003, 2004, 2005
July	11.2 to 0.0	11.2	14.6%	2003, 2004, 2005
August	11.2 to 0.0	11.2	12.1%	2003, 2004, 2005
September	11.2 to 0.0	11.2	10.2%	2003, 2004, 2005
October	11.2 to 0.0	11.2	14.8%	2003, 2004, 2005
November	11.2 to 0.0	11.2	8.8%	2003, 2004, 2005
December	11.2 to 0.0	11.2	14.9%	2003, 2004, 2005

Isinglass River Affected Water User Facilities: Source and Discharge Locations



Legend

Affected Water Users

- Source
- Discharge

Affected Water Users (outside WMPA)

- Source
- Discharge

Water Users (outside 500 ft of hydrology)

- Source
- Discharge

Stream Gages

- ▲ Active
- ▲ Inactive

— Designated Reach

— Hydrology

— 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.

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0 1 2 Miles

2006 Isinglass 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 DR	Bow Lake		14.26												
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S03	57.29	31.57	27.41	10.45	13.70	31.57	31.57	13.81	2.47	1.51	21.89	31.57	22.86
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S02	57.29												
DOVER WATER DEPARTMENT	WATER WORKS	20006 20006-S09	73.71	2.37	2.73	3.23	2.66	1.64	0.00	0.00	0.00	0.00	0.00	1.66	1.78
End Point DR	Confluence Isinglass and Cocheco		73.84												

2006 Isinglass 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 DR	Bow Lake		14.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S03	57.29	32	27	10	14	32	32	14	2.5	1.5	22	32	23
DOVER WATER DEPARTMENT	WATER WORKS	20006 20006-S09	73.71	34	30	14	16	33	32	14	2.5	1.5	22	33	25
End Point DR	Confluence Isinglass and Cocheco		73.84	34	30	14	16	33	32	14	2.5	1.5	22	33	25

2006 Isinglass Estimated Monthly Stream Flow at Each Impact Point in CFS															
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			Calculated monthly mean streamflow in CFSM	4.04	3.04	1.20	1.57	8.46	3.96	1.59	0.28	0.17	2.52	5.44	2.63
Start DR	Bow Lake		14.26	58	43	17	22	121	56	23	4	2	36	78	37
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S03	57.29	232	174	69	90	485	227	91	16	10	144	311	151
DOVER WATER DEPARTMENT	WATER WORKS	20006 20006-S09	73.71	298	224	89	116	624	292	117	21	13	185	401	194
End Point DR	Confluence Isinglass and Cocheco		73.84	299	225	89	116	625	292	117	21	13	186	401	194

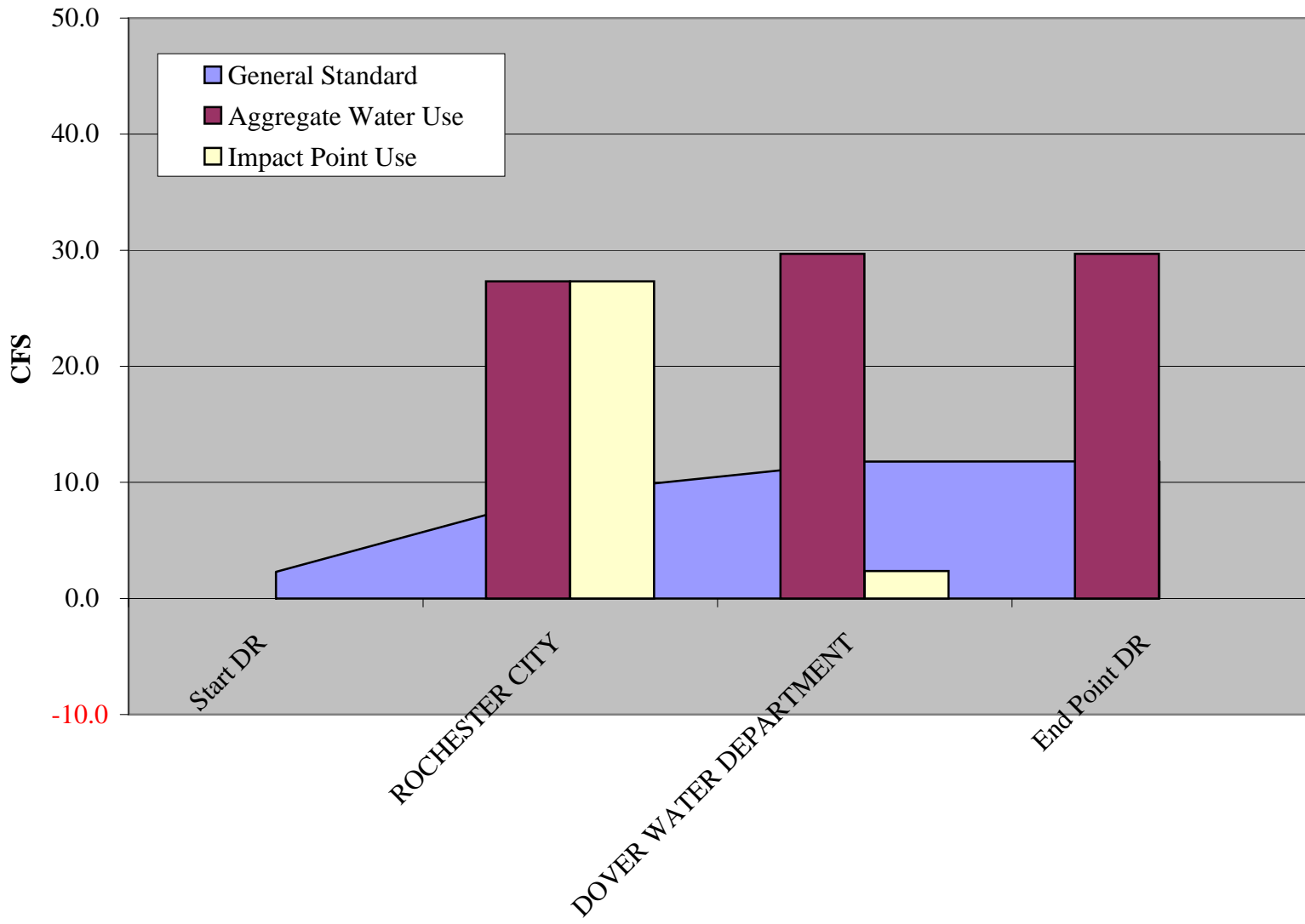
2006 Isinglass Estimated Monthly General Standard at Each Impact Point in CFS															
WU_NAME	FACILITY	WUSD_ID	DA on DR (SQ MILE)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			General Standard in cfsm	0.16	0.04	0.04	0.04	0.16	0.04	0.04	0.0017	0.0017	0.04	0.16	0.04
Start DR	Bow Lake		14.26	2.3	0.57	0.57	0.6	2.28	0.57	0.57	0.024	0.02	0.57	2.28	0.57
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S03	57.29	9.2	2.3	2.3	2.3	9.2	2.3	2.3	0.10	0.10	2.3	9.2	2.3
DOVER WATER DEPARTMENT	WATER WORKS	20006 20006-S09	73.71	12	2.9	2.9	2.9	12	2.9	2.9	0.13	0.13	2.9	12	2.9
End Point DR	Confluence Isinglass and Cocheco		73.84	12	3.0	3.0	3.0	12	3.0	3.0	0.13	0.13	3.0	12	3.0

2006 Isinglass Estimated Monthly Margin of the Aggregate Water Use Below the General Standard 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 DR	Bow Lake		14.26	2.28	0.57	0.57	0.6	2.3	0.57	0.57	0.02	0.02	0.6	2.3	0.57
ROCHESTER CITY	ROCHESTER WATER WORKS	20011 20011-S03	57.29	(22)	(25)	(8)	(11)	(22)	(29)	(12)	(2.4)	(1.4)	(20)	(22)	(21)
DOVER WATER DEPARTMENT	WATER WORKS	20006 20006-S09	73.71	(22)	(27)	(11)	(13)	(21)	(29)	(11)	(2.3)	(1.4)	(19)	(21)	(22)
End Point DR	Confluence Isinglass and Cocheco		73.84	(22)	(27)	(11)	(13)	(21)	(29)	(11)	(2.3)	(1.4)	(19)	(21)	(22)

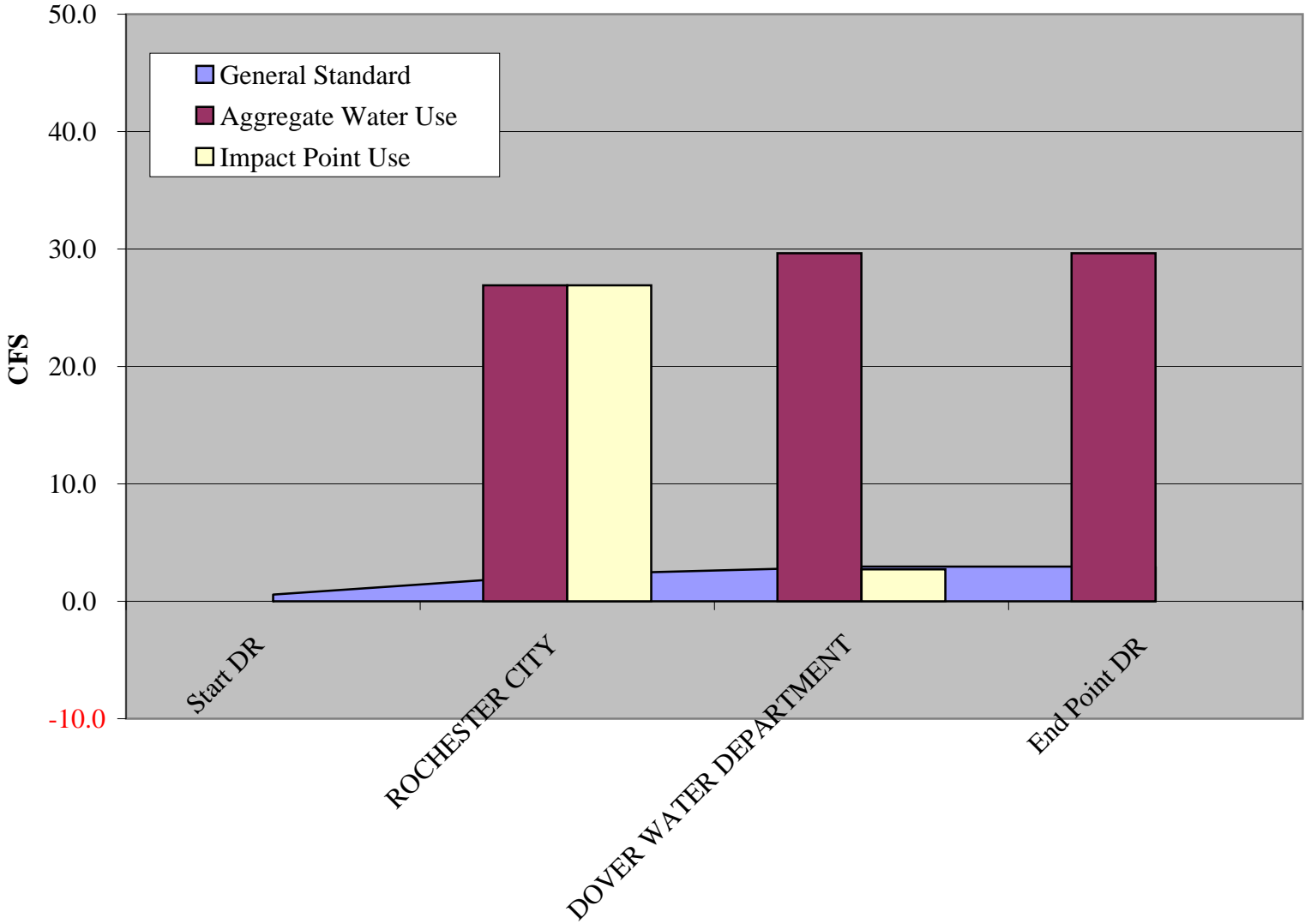
Key

- Tributaries
- Monthly streamflow calculations
- General Standard
- Water use exceeds the General Standard

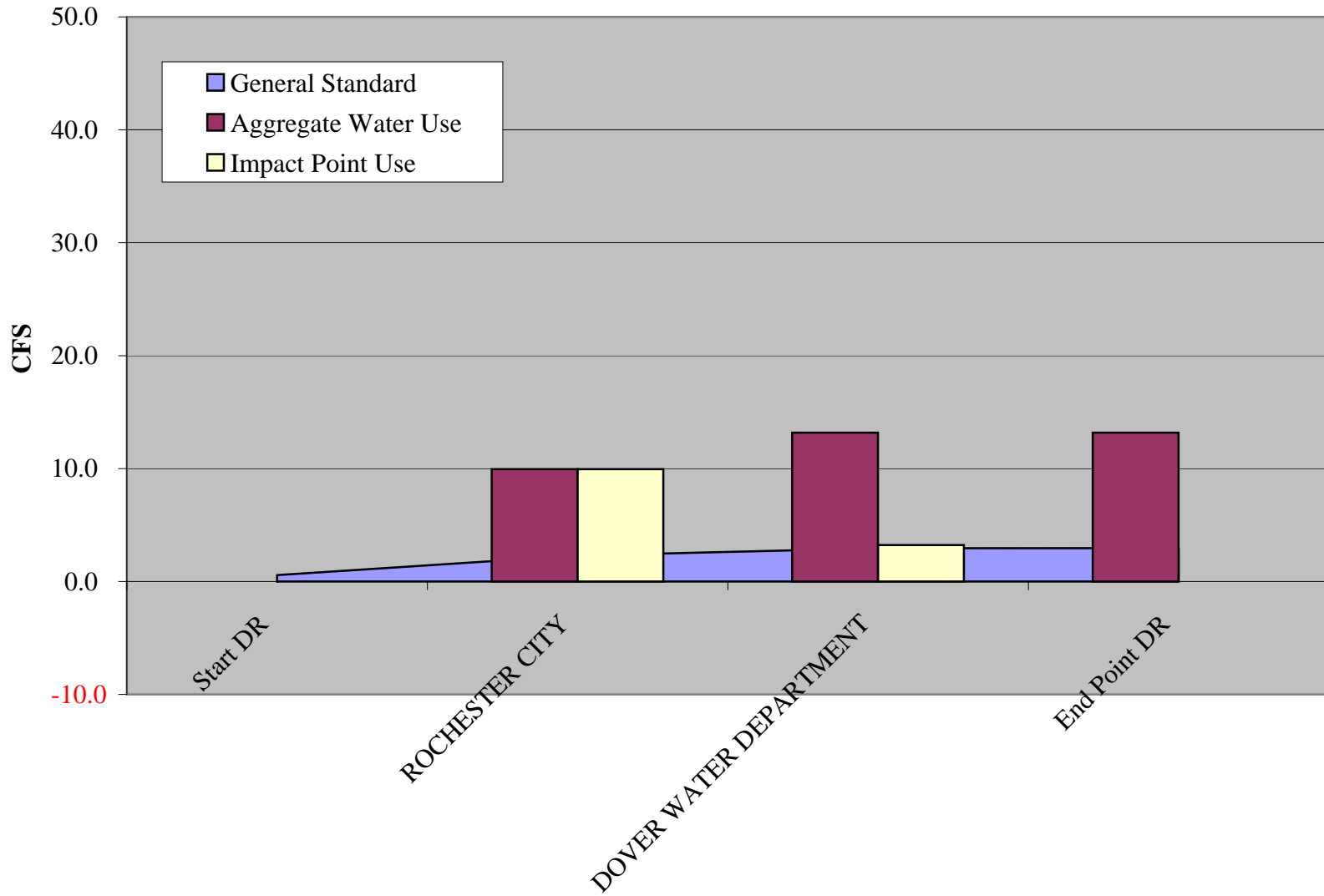
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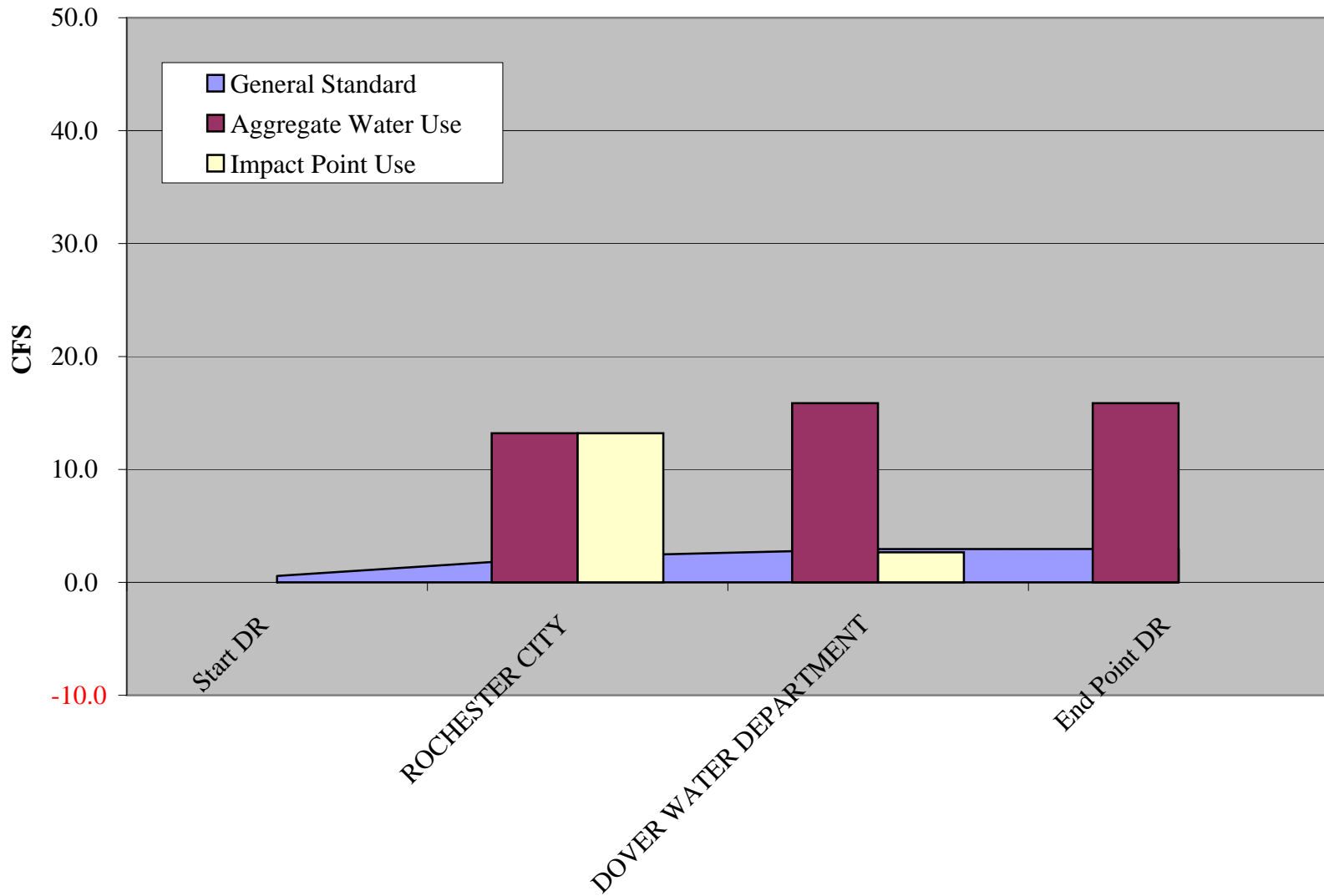
February 2006 Isinglass



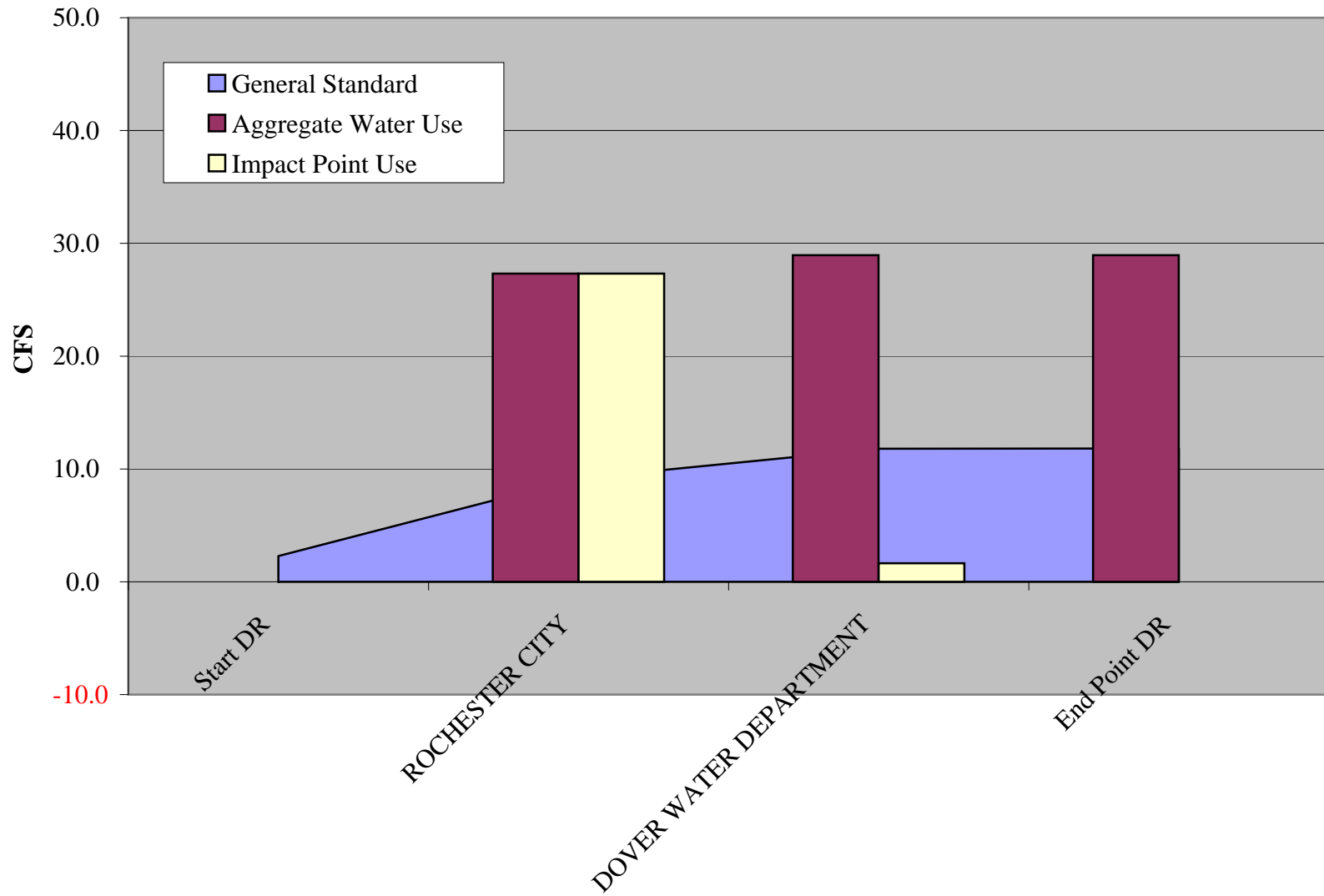
March 2006 Isinglass



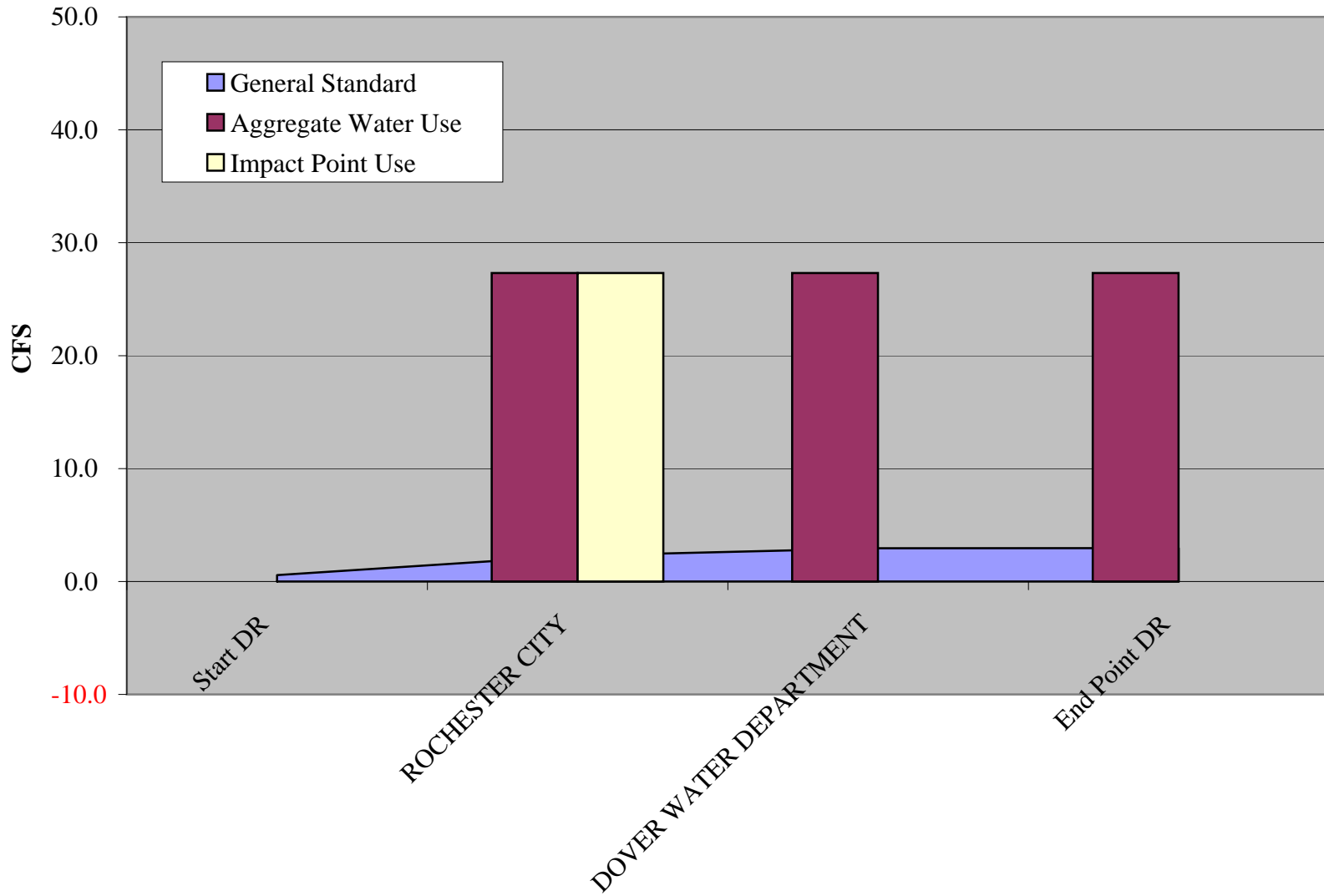
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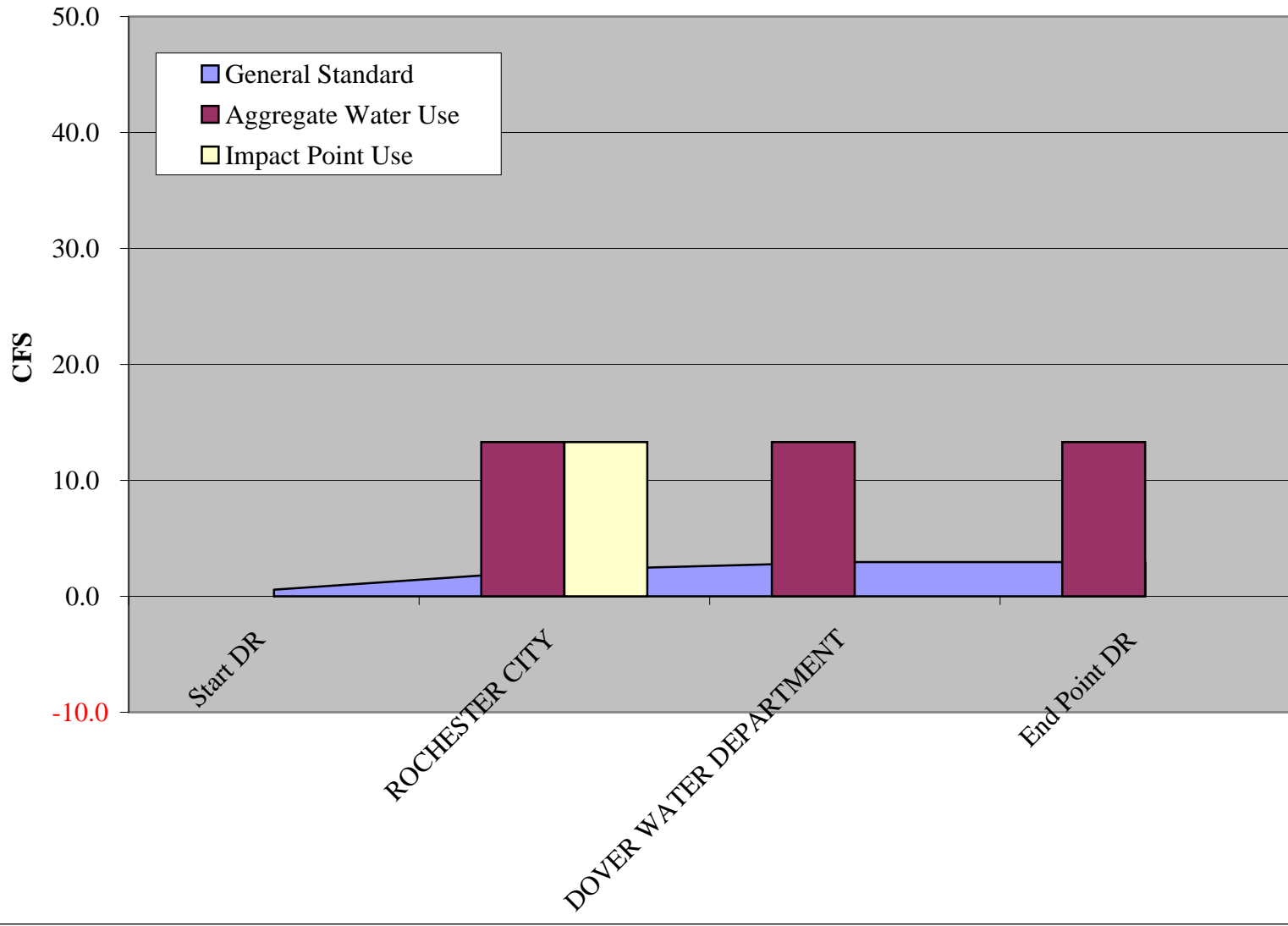
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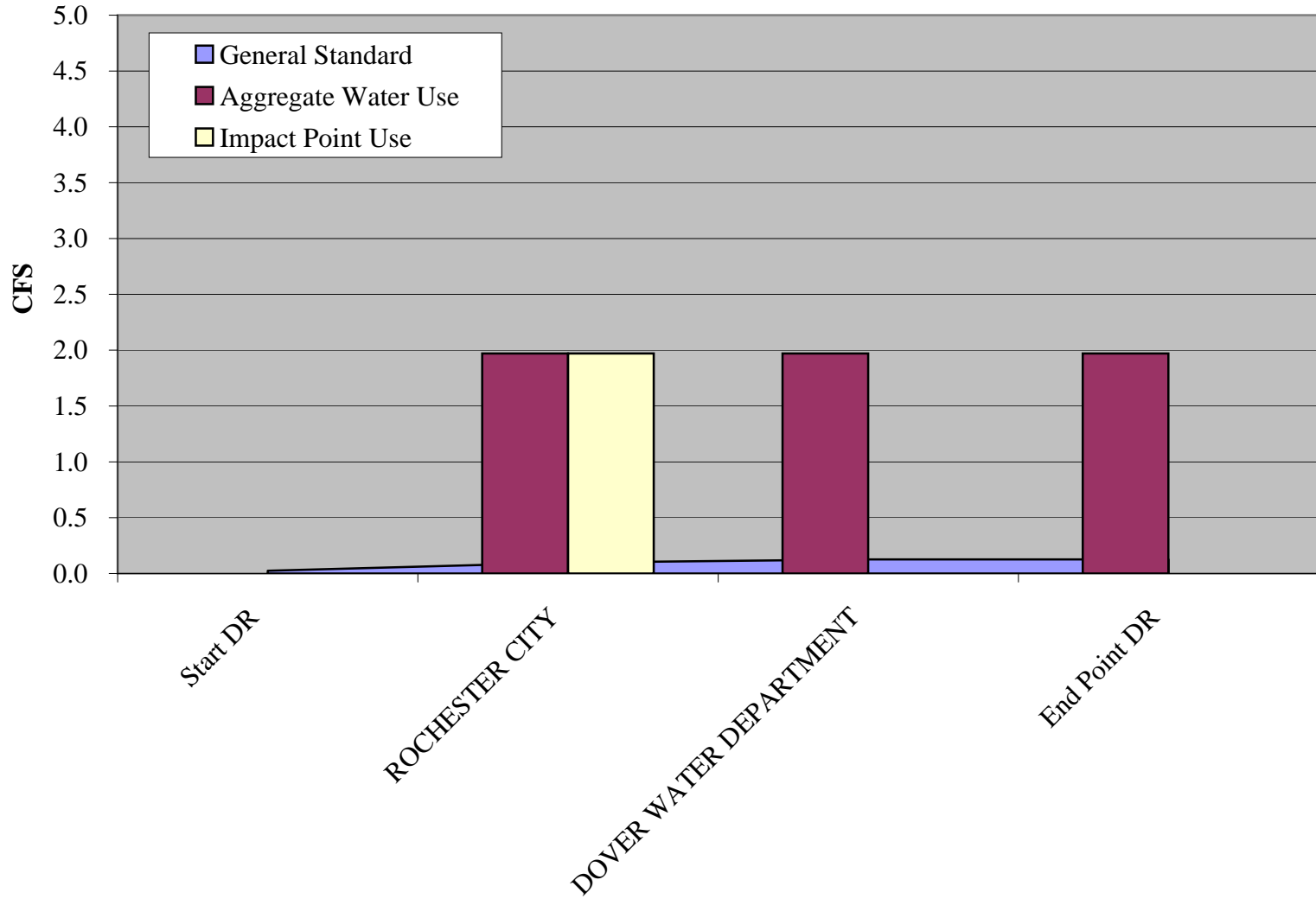
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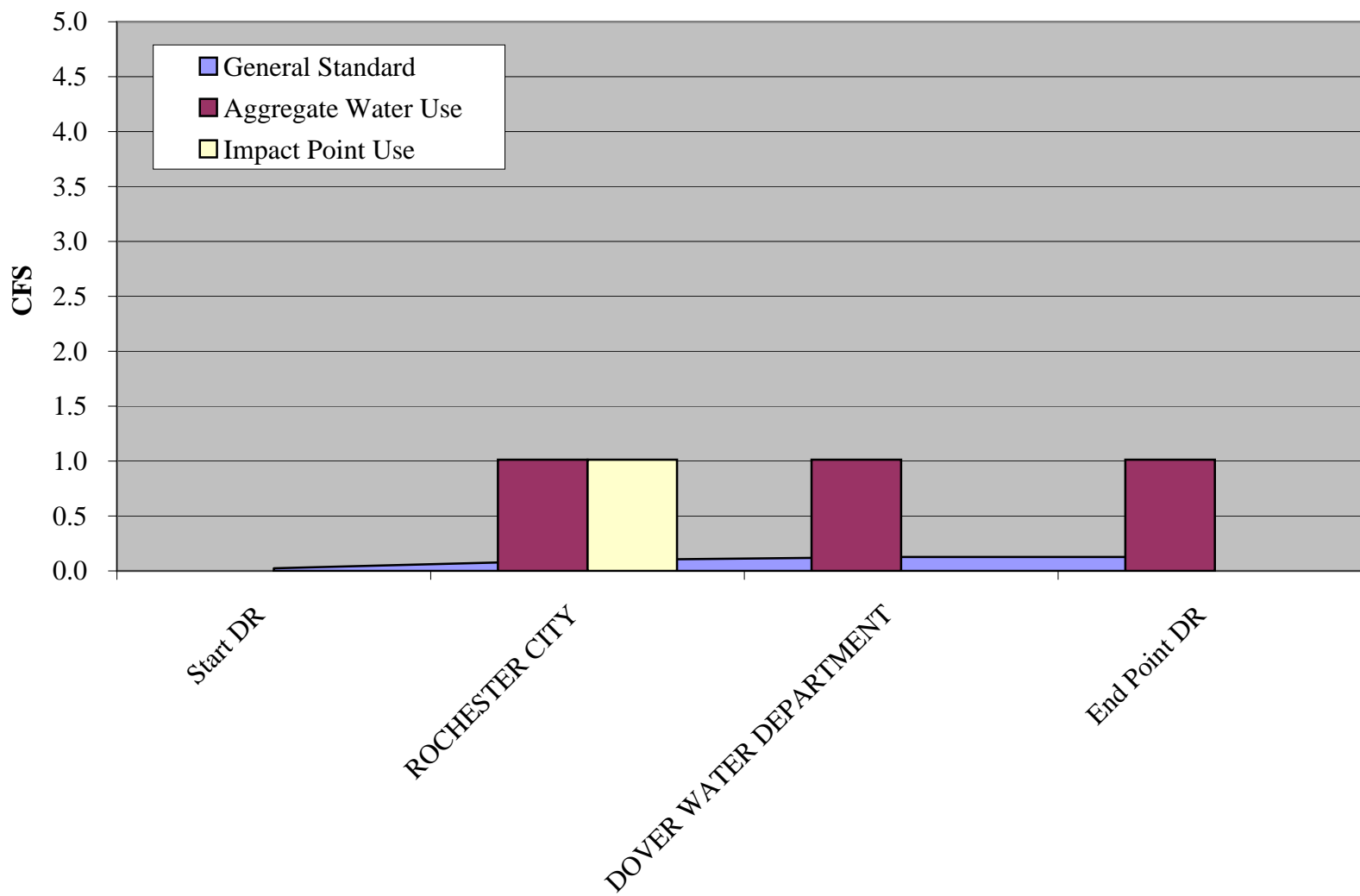
July 2006 Isinglass



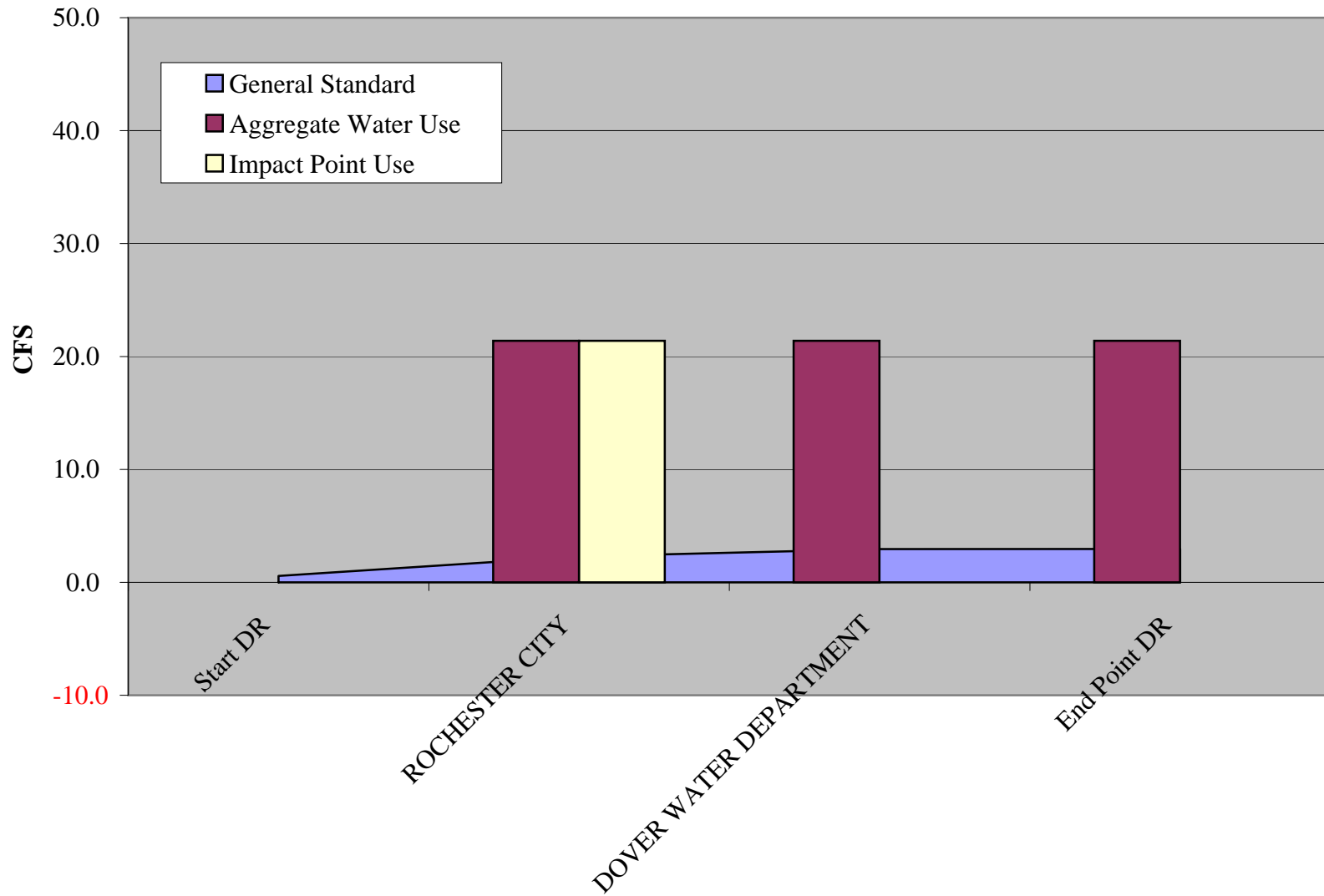
August 2006 Isinglass



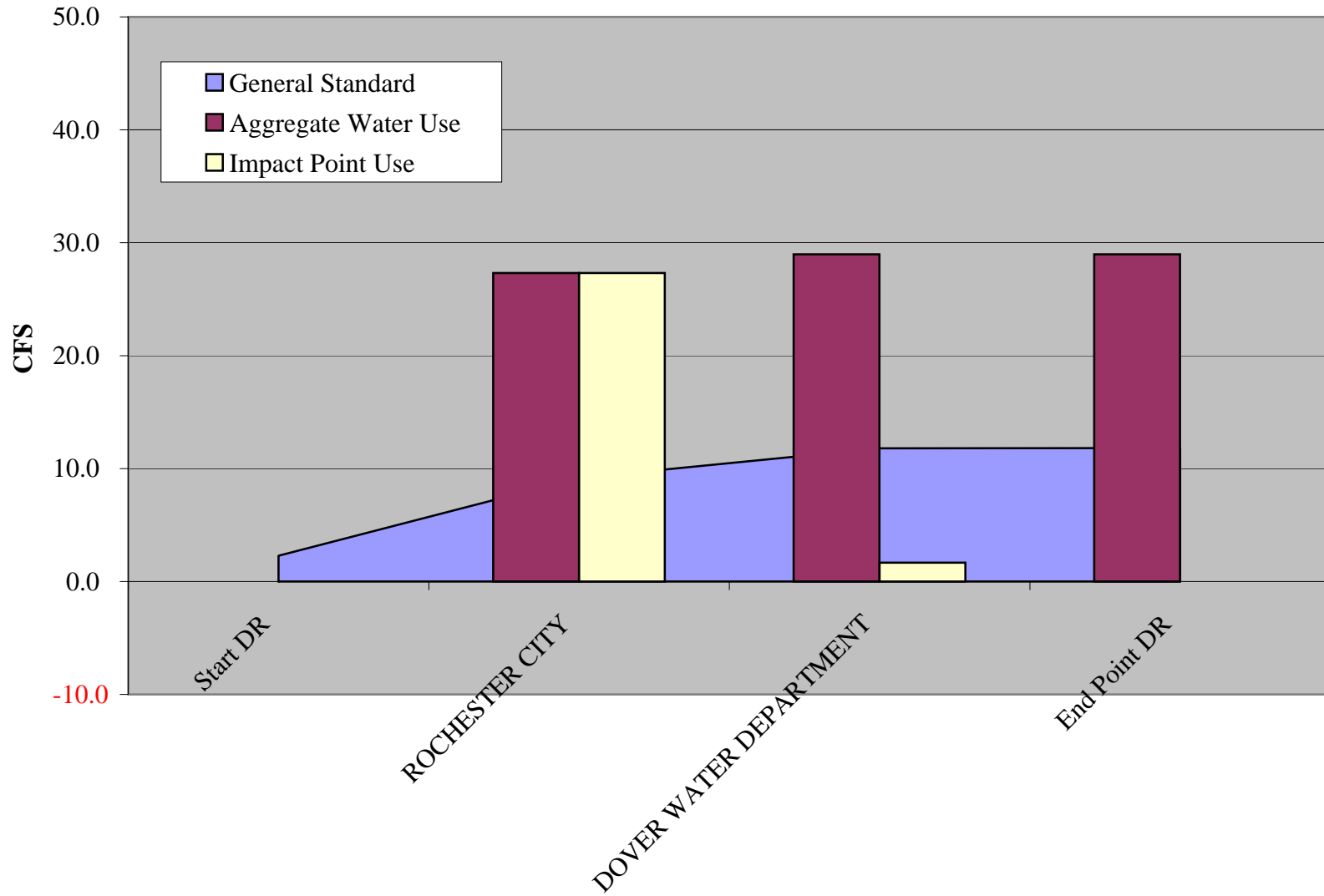
September 2006 Isinglass



October 2006 Isinglass



November 2006 Isinglass



December 2006 Isinglass

