

# **Appendix C**

**2024 Fish Operations Plan Spill**

## **Introduction**

This appendix provides an evaluation of the target spill described in the 2024 Fish Operations Plan ([https://pweb.crohms.org/tmt/documents/fpp/2024/final/FPP24\\_AppE\\_FOP\\_03-22-2024.pdf](https://pweb.crohms.org/tmt/documents/fpp/2024/final/FPP24_AppE_FOP_03-22-2024.pdf)) compared to the actual spill during the 2024 fish spill season from April 1 through August 31. Daily data including FOP spill, actual spill, total river flow, and generation flow are displayed graphically (Figures C-1 through C-8) and in tabular form (Tables C-1 through C-8) for the eight fish passage projects on the lower Snake River and the Lower Columbia River.

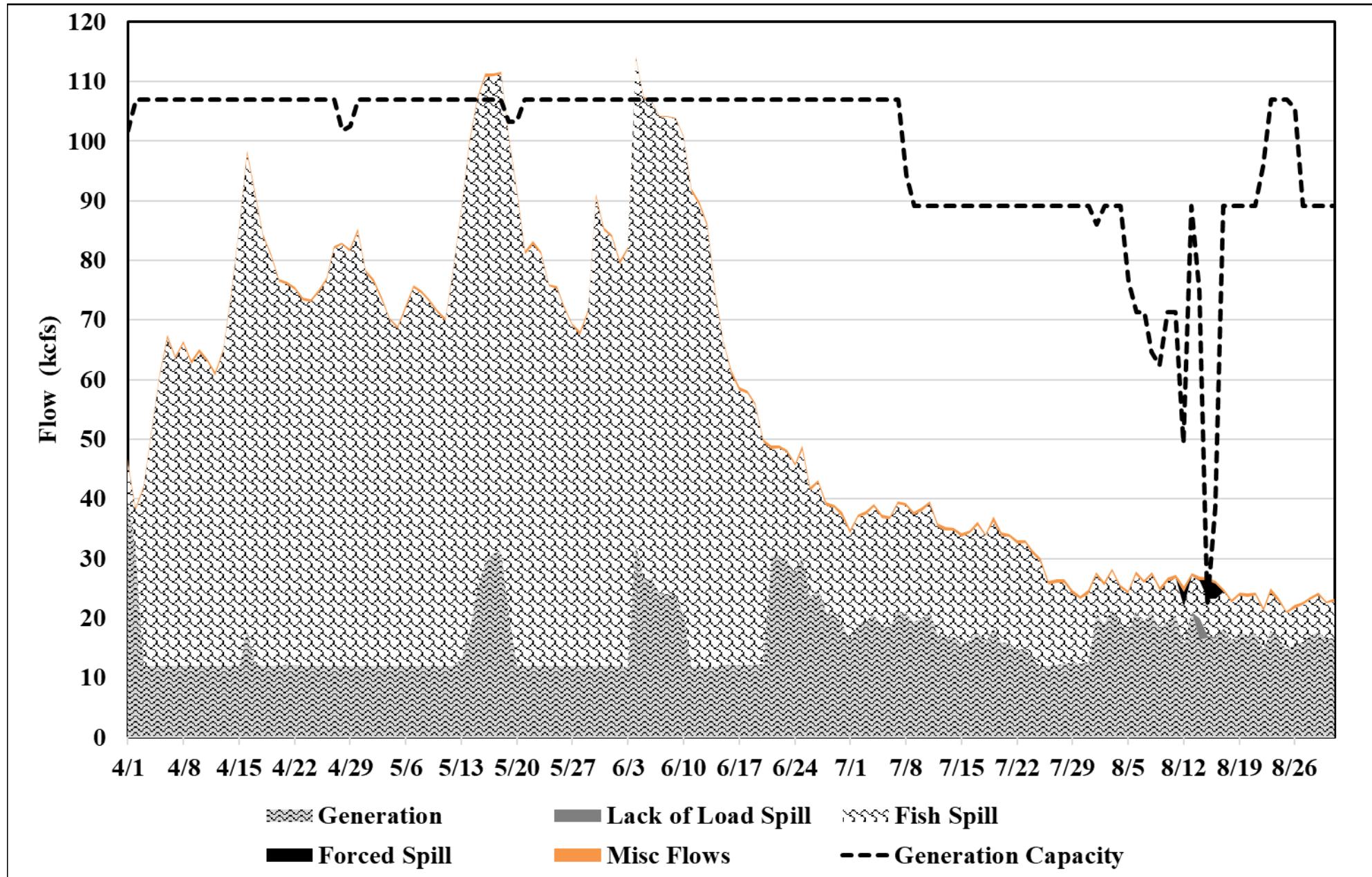


Figure C- 1: Lower Granite daily average project flows

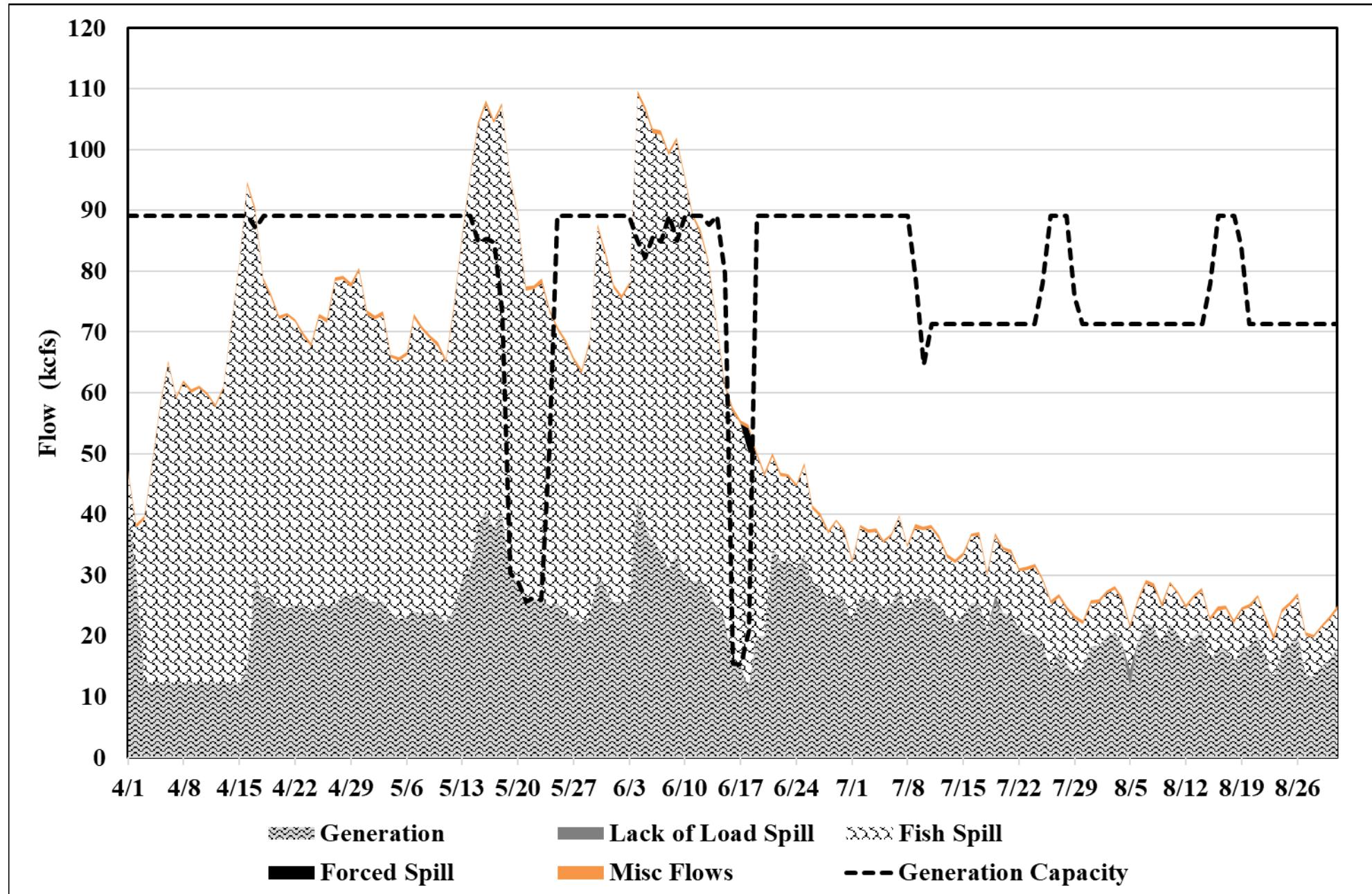


Figure C- 2: Little Goose daily average project flows

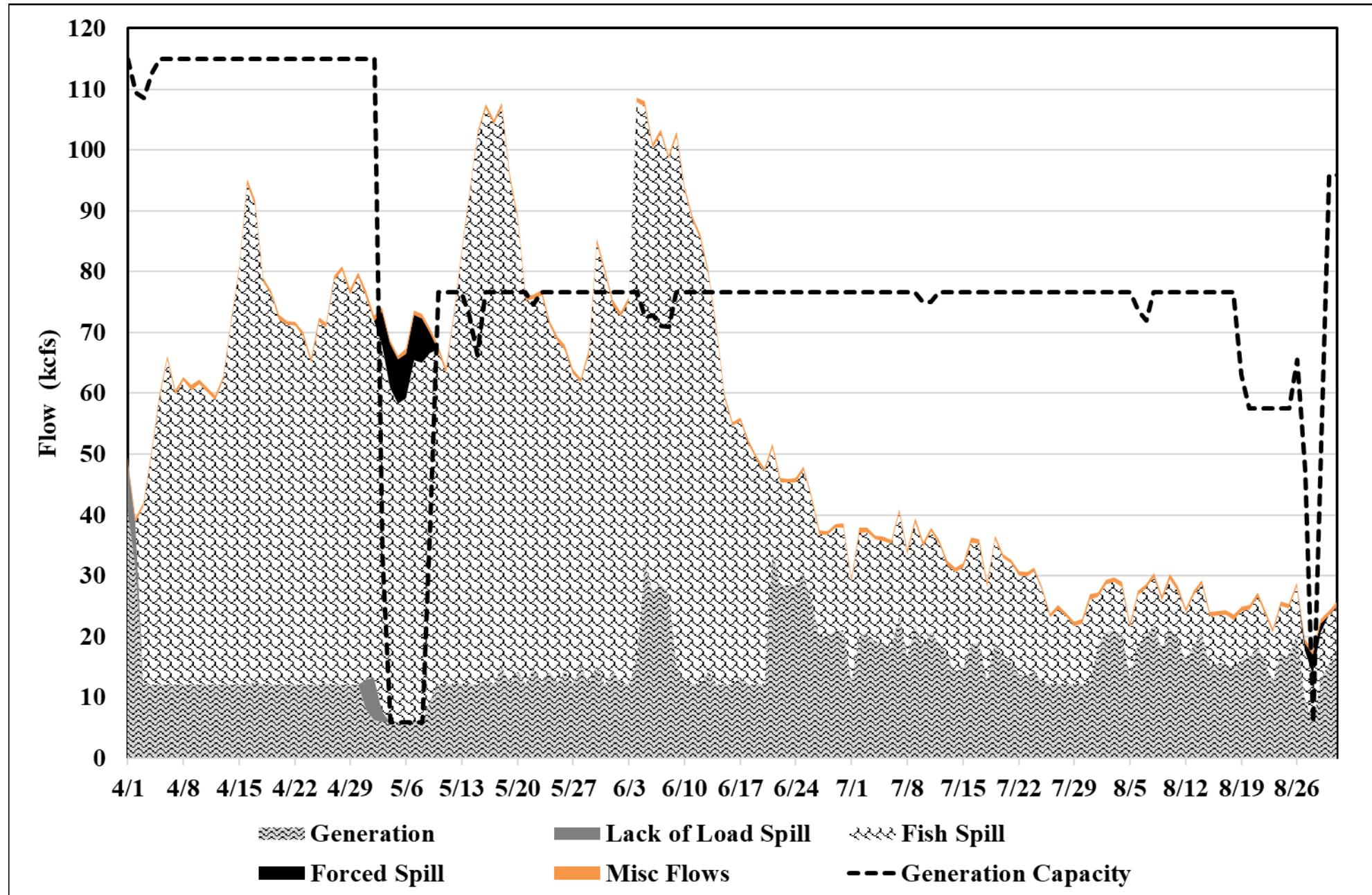


Figure C-3: Lower Monumental daily average project flows

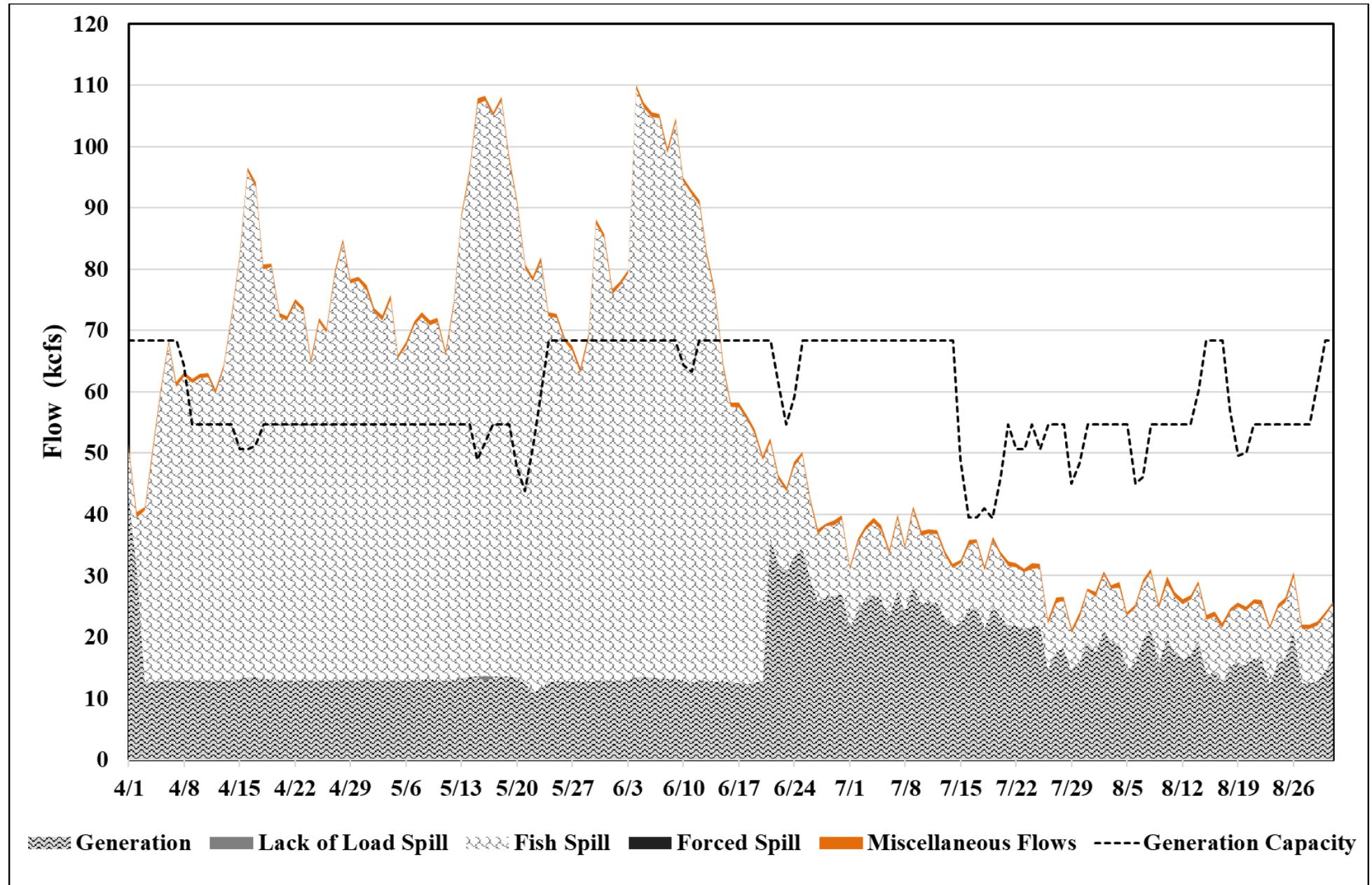


Figure C- 4: Ice Harbor daily average project flows

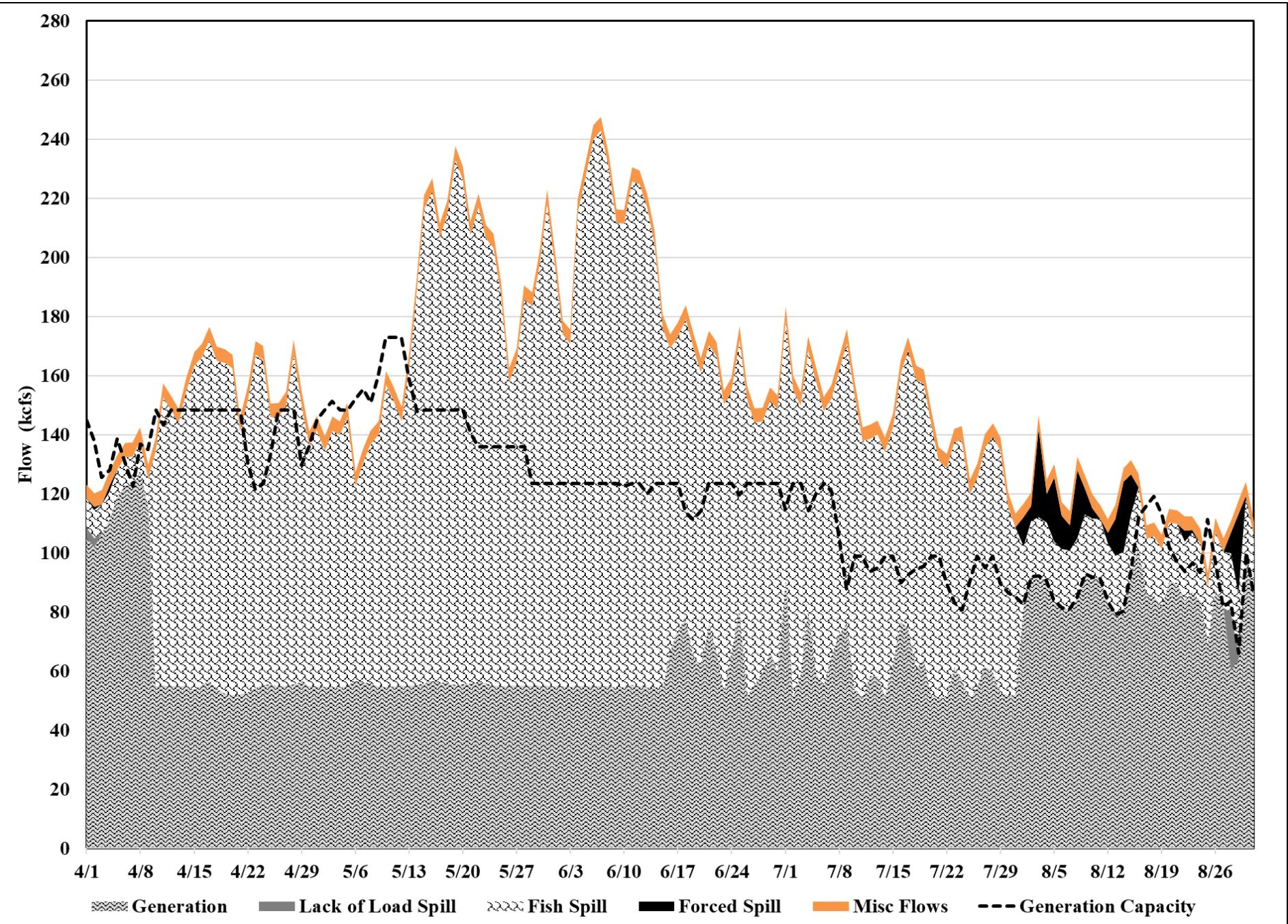


Figure C- 5: McNary daily average project flows

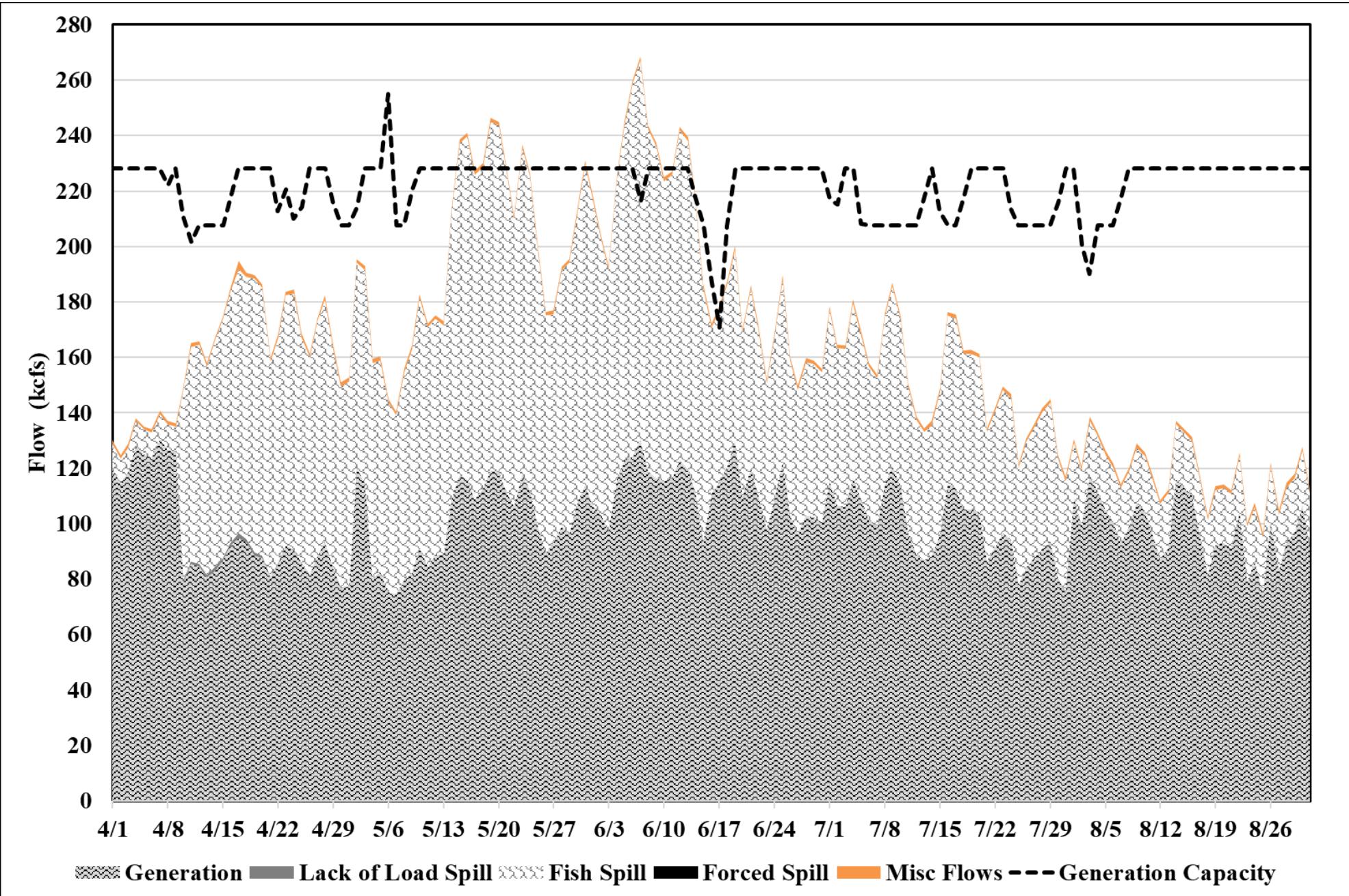


Figure C- 6: John Day daily average project flows

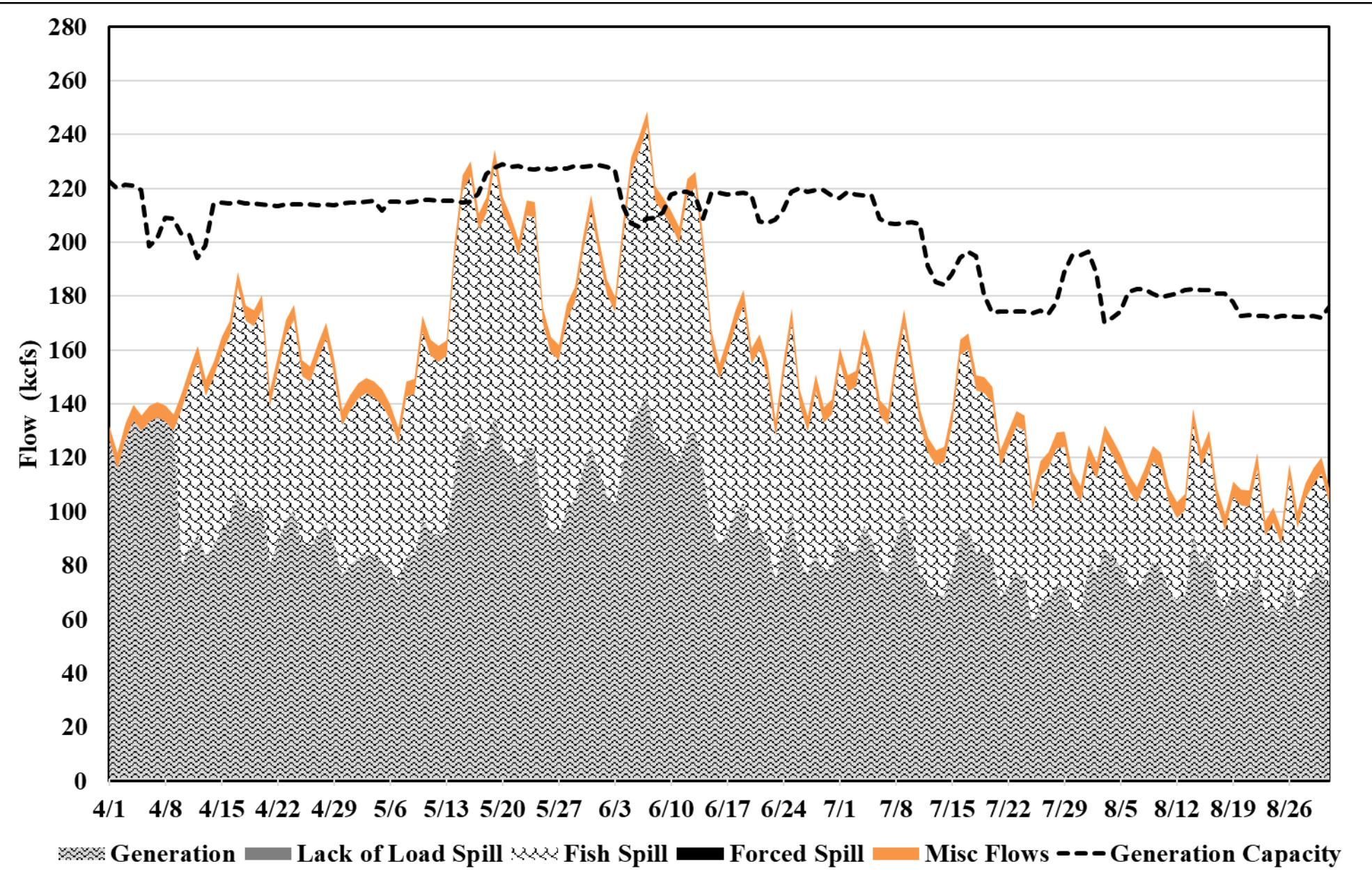


Figure C- 7: The Dalles daily average project flows

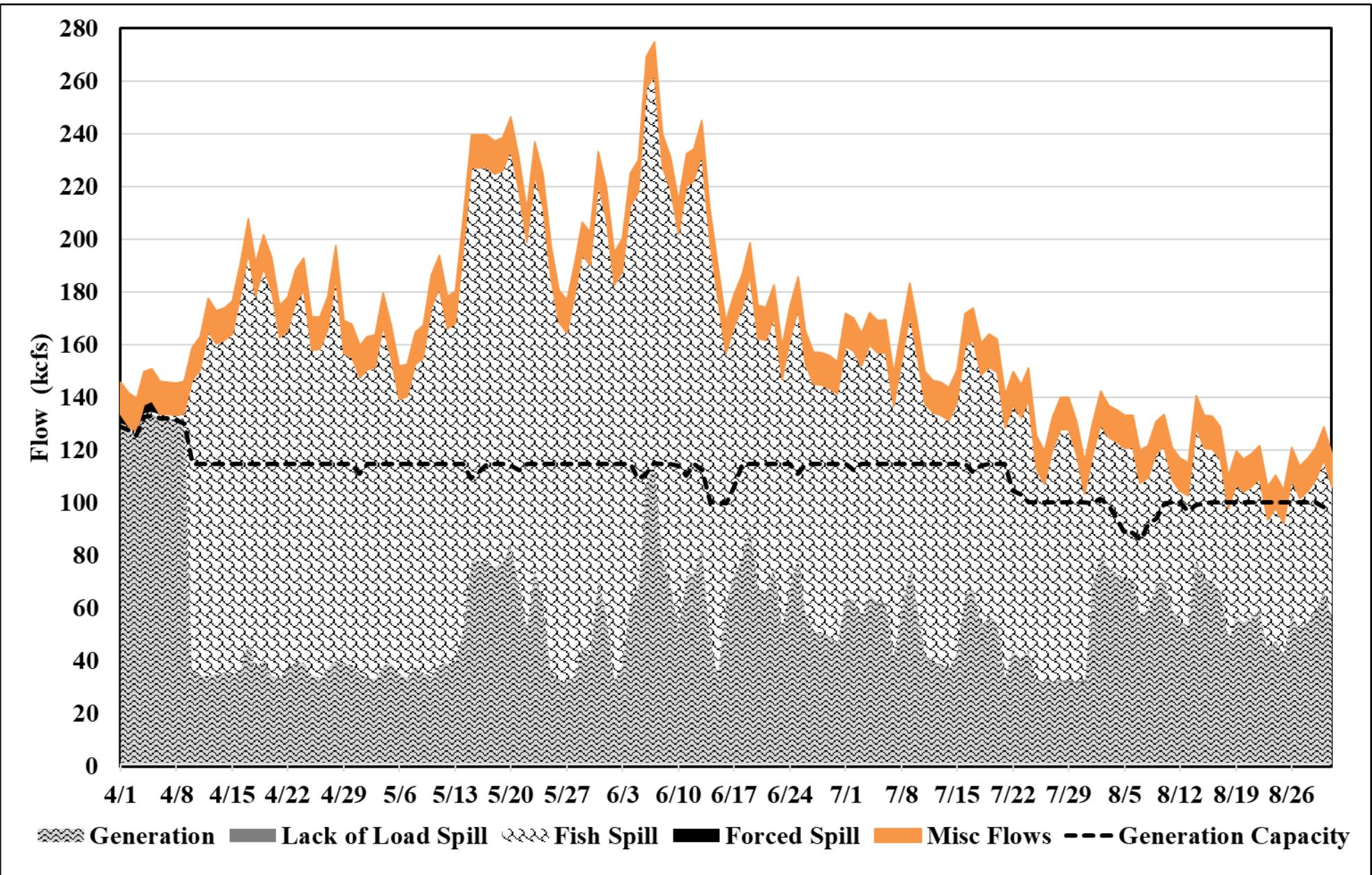


Figure C- 8: Bonneville daily average project flows

**Table C- 1: Lower Granite daily average project flows**

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
04/01/24	47	39	7	0	05/22/24	83	12	71	71	7/12/24	36	17	18	18
04/02/24	39	32	6	0	05/23/24	82	12	69	69	7/13/24	35	17	18	18
04/03/24	42	12	30	30	05/24/24	76	12	64	64	7/14/24	35	17	18	18
04/04/24	52	12	39	39	05/25/24	76	12	63	63	7/15/24	34	16	18	18
04/05/24	61	12	49	49	05/26/24	73	12	60	60	7/16/24	35	16	18	18
04/06/24	68	12	55	55	05/27/24	70	12	57	57	7/17/24	37	18	18	18
04/07/24	64	12	52	52	05/28/24	68	12	56	56	7/18/24	34	16	18	18
04/08/24	67	12	54	54	05/29/24	72	12	59	59	7/19/24	37	18	18	18
04/09/24	63	12	51	51	05/30/24	91	12	79	79	7/20/24	34	16	18	18
04/10/24	65	12	53	53	05/31/24	86	12	73	73	7/21/24	34	16	18	18
04/11/24	64	12	51	51	06/01/24	84	12	72	72	7/22/24	33	15	18	18
04/12/24	61	12	49	49	06/02/24	80	12	68	68	7/23/24	33	15	18	18
04/13/24	65	12	53	53	06/03/24	83	12	71	70	7/24/24	32	13	18	18
04/14/24	75	12	62	62	06/04/24	115	33	82	82	7/25/24	30	12	18	18
04/15/24	86	12	73	73	06/05/24	107	26	81	81	7/26/24	26	12	14	14
04/16/24	99	18	80	80	06/06/24	107	27	81	80	7/27/24	27	12	14	14
04/17/24	92	12	79	79	06/07/24	104	24	80	80	7/28/24	26	13	13	14
04/18/24	84	12	72	72	06/08/24	105	24	80	80	7/29/24	25	13	12	12
04/19/24	81	12	69	69	06/09/24	104	24	81	80	7/30/24	24	12	11	11
04/20/24	77	12	64	64	06/10/24	101	20	81	80	7/31/24	25	12	12	12
04/21/24	76	12	64	64	06/11/24	92	12	80	79	8/1/24	28	21	6	7
04/22/24	76	12	63	63	06/12/24	90	12	78	77	8/2/24	26	19	6	7
04/23/24	74	12	62	61	06/13/24	86	12	73	73	8/3/24	28	22	6	7
04/24/24	74	12	61	61	06/14/24	75	12	62	62	8/4/24	26	19	6	7
04/25/24	75	12	63	63	06/15/24	66	12	54	54	8/5/24	25	18	6	7
04/26/24	77	12	65	65	06/16/24	61	12	49	49	8/6/24	28	21	6	7
04/27/24	82	12	70	70	06/17/24	59	12	46	46	8/7/24	26	20	6	7
04/28/24	83	12	71	71	06/18/24	58	12	46	46	8/8/24	28	21	6	7
04/29/24	82	12	70	70	06/19/24	56	12	43	43	8/9/24	25	18	6	7
04/30/24	86	12	73	73	06/20/24	50	13	36	37	8/10/24	27	20	6	7
05/01/24	78	12	66	66	06/21/24	49	30	18	18	8/11/24	27	21	6	7
05/02/24	77	12	64	64	06/22/24	49	31	18	18	8/12/24	25	16	9	7

05/03/24	74	12	62	61	06/23/24	49	30	19	18	8/13/24	28	21	6	7
05/04/24	70	12	58	58	06/24/24	46	27	18	18	8/14/24	27	16	10	7
05/05/24	69	12	57	57	06/25/24	49	30	18	18	8/15/24	27	17	10	7
05/06/24	72	12	60	60	06/26/24	42	24	18	18	8/16/24	26	17	9	7
05/07/24	76	12	64	63	06/27/24	43	25	18	18	8/17/24	25	18	6	7
05/08/24	75	12	63	63	06/28/24	40	21	18	18	8/18/24	23	16	6	7
05/09/24	74	12	61	61	06/29/24	39	21	18	18	8/19/24	24	18	6	7
05/10/24	72	12	59	59	06/30/24	38	19	18	17	8/20/24	24	17	6	7
05/11/24	70	12	58	58	07/01/24	35	16	18	18	8/21/24	24	17	6	7
05/12/24	79	12	67	67	07/02/24	38	19	18	18	8/22/24	22	15	6	7
05/13/24	89	13	75	76	07/03/24	38	19	18	18	8/23/24	25	18	6	7
05/14/24	100	18	82	82	07/04/24	39	21	18	18	8/24/24	23	17	6	7
05/15/24	108	25	82	82	07/05/24	37	19	18	18	8/25/24	21	15	6	7
05/16/24	111	30	81	81	07/06/24	37	19	18	18	8/26/24	22	16	6	7
05/17/24	112	31	80	80	07/07/24	40	21	18	18	8/27/24	23	16	6	7
05/18/24	112	31	80	80	07/08/24	40	21	18	18	8/28/24	23	17	6	7
05/19/24	101	20	80	80	07/09/24	38	19	18	18	8/29/24	24	18	6	7
05/20/24	92	12	79	79	07/10/24	39	20	18	18	8/30/24	23	16	6	7
05/21/24	82	12	69	69	07/11/24	40	21	18	18	8/31/24	24	17	6	7

Table C- 2: Little Goose daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
04/01/24	47	40	7	7	05/22/24	78	26	51	51	7/12/24	37	25	11	11
04/02/24	38	31	7	7	05/23/24	79	26	52	52	7/13/24	34	23	10	10
04/03/24	40	12	27	27	05/24/24	74	25	48	48	7/14/24	33	22	10	10
04/04/24	49	12	36	36	05/25/24	71	25	45	45	7/15/24	34	23	10	10
04/05/24	59	12	46	46	05/26/24	69	23	45	45	7/16/24	37	25	11	11
04/06/24	65	12	53	53	05/27/24	66	23	42	42	7/17/24	37	25	11	11
04/07/24	60	12	47	47	05/28/24	64	22	41	41	7/18/24	31	21	9	9
04/08/24	62	12	50	50	05/29/24	69	23	45	45	7/19/24	37	25	11	10
04/09/24	61	12	48	48	05/30/24	88	30	57	57	7/20/24	35	24	10	10
04/10/24	61	12	49	49	05/31/24	83	28	55	55	7/21/24	34	23	10	10
04/11/24	60	12	48	48	06/01/24	78	26	52	52	7/22/24	31	21	9	9
04/12/24	58	12	46	46	06/02/24	76	26	50	50	7/23/24	31	20	11	11
04/13/24	61	12	49	49	06/03/24	78	26	52	52	7/24/24	32	20	11	11

04/14/24	72	12	59	59	06/04/24	110	43	66	66	7/25/24	29	18	10	10
04/15/24	82	12	69	69	06/05/24	107	38	69	69	7/26/24	26	15	11	11
04/16/24	95	15	79	79	06/06/24	104	36	68	68	7/27/24	27	17	9	9
04/17/24	91	30	60	60	06/07/24	104	34	69	69	7/28/24	25	15	9	9
04/18/24	79	26	52	52	06/08/24	100	31	68	68	7/29/24	24	14	9	9
04/19/24	76	26	49	49	06/09/24	102	33	68	68	7/30/24	23	15	7	7
04/20/24	73	25	48	48	06/10/24	96	30	66	66	7/31/24	26	18	7	7
04/21/24	73	25	48	48	06/11/24	90	29	60	60	8/1/24	27	18	8	8
04/22/24	72	25	47	47	06/12/24	87	29	57	57	8/2/24	28	20	8	8
04/23/24	70	25	44	44	06/13/24	82	27	54	54	8/3/24	29	21	8	8
04/24/24	68	24	44	44	06/14/24	72	25	46	46	8/4/24	27	19	8	8
04/25/24	73	25	47	47	06/15/24	62	22	39	39	8/5/24	22	11	10	7
04/26/24	72	25	47	47	06/16/24	58	15	42	34	8/6/24	26	19	6	6
04/27/24	79	25	53	53	06/17/24	56	15	40	32	8/7/24	29	22	6	6
04/28/24	79	27	52	52	06/18/24	55	10	44	32	8/8/24	29	22	6	6
04/29/24	78	26	51	51	06/19/24	50	20	30	30	8/9/24	25	18	6	6
04/30/24	81	27	53	53	06/20/24	47	20	26	26	8/10/24	29	22	6	6
05/01/24	74	26	47	47	06/21/24	50	35	15	15	8/11/24	27	20	6	6
05/02/24	73	26	46	46	06/22/24	47	32	14	14	8/12/24	25	18	6	6
05/03/24	74	26	47	47	06/23/24	47	32	14	14	8/13/24	27	20	6	6
05/04/24	66	24	42	42	06/24/24	45	31	13	13	8/14/24	28	21	6	6
05/05/24	66	23	42	42	06/25/24	49	33	14	14	8/15/24	23	16	6	6
05/06/24	67	23	43	43	06/26/24	42	29	12	12	8/16/24	25	18	6	6
05/07/24	73	24	48	48	06/27/24	40	28	12	12	8/17/24	25	18	7	7
05/08/24	71	24	47	47	06/28/24	37	26	11	11	8/18/24	23	16	6	6
05/09/24	70	24	45	45	06/29/24	39	27	12	12	8/19/24	25	18	6	6
05/10/24	68	24	44	44	06/30/24	38	26	11	11	8/20/24	25	18	6	6
05/11/24	66	22	43	43	07/01/24	33	22	10	10	8/21/24	27	20	6	6
05/12/24	75	24	50	50	07/02/24	38	26	11	11	8/22/24	23	16	6	6
05/13/24	86	29	56	56	07/03/24	38	26	11	11	8/23/24	20	13	6	6
05/14/24	96	31	64	64	07/04/24	38	26	11	11	8/24/24	24	17	6	6
05/15/24	104	38	66	66	07/05/24	36	25	11	11	8/25/24	26	19	6	6
05/16/24	109	41	67	67	07/06/24	37	25	11	11	8/26/24	27	20	6	6
05/17/24	106	38	67	67	07/07/24	40	28	12	12	8/27/24	21	14	6	6
05/18/24	108	41	67	67	07/08/24	35	24	11	11	8/28/24	20	13	6	6
05/19/24	96	30	65	65	07/09/24	38	26	11	11	8/29/24	22	15	6	6
05/20/24	90	29	60	60	07/10/24	38	26	11	11	8/30/24	23	16	6	6
05/21/24	78	26	51	51	07/11/24	38	26	11	11	8/31/24	25	18	6	6

**Table C- 3: Lower Monumental daily average project flows**

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
04/01/24	50	41	8	7	05/22/24	77	15	62	63	7/12/24	36	19	17	16
04/02/24	39	31	7	7	05/23/24	78	12	65	64	7/13/24	33	17	15	15
04/03/24	42	12	29	28	05/24/24	73	14	58	59	7/14/24	32	14	17	16
04/04/24	50	12	38	37	05/25/24	70	12	57	56	7/15/24	32	15	17	17
04/05/24	60	12	47	46	05/26/24	69	14	54	55	7/16/24	37	19	17	17
04/06/24	66	12	54	52	05/27/24	65	12	52	51	7/17/24	37	19	17	16
04/07/24	60	12	48	47	05/28/24	63	15	47	49	7/18/24	30	13	16	16
04/08/24	63	12	50	49	05/29/24	68	12	55	54	7/19/24	37	19	17	17
04/09/24	61	12	48	47	05/30/24	86	15	70	72	7/20/24	34	16	17	17
04/10/24	62	12	49	48	05/31/24	82	12	69	68	7/21/24	33	16	17	16
04/11/24	61	12	48	47	06/01/24	76	15	61	62	7/22/24	31	14	17	16
04/12/24	60	12	47	46	06/02/24	74	12	61	60	7/23/24	31	14	17	16
04/13/24	63	12	50	49	06/03/24	77	12	64	63	7/24/24	32	14	17	16
04/14/24	72	12	60	59	06/04/24	109	16	92	92	7/25/24	29	12	16	15
04/15/24	81	12	68	67	06/05/24	108	32	75	77	7/26/24	25	12	12	11
04/16/24	95	12	82	81	06/06/24	102	27	73	73	7/27/24	26	12	13	12
04/17/24	92	12	78	77	06/07/24	104	29	74	74	7/28/24	25	12	12	11
04/18/24	79	12	66	65	06/08/24	100	27	72	71	7/29/24	23	12	10	9
04/19/24	77	12	64	63	06/09/24	104	15	88	90	7/30/24	24	12	11	10
04/20/24	73	12	60	59	06/10/24	95	12	82	81	7/31/24	28	12	15	14
04/21/24	72	12	59	58	06/11/24	90	12	77	76	8/1/24	27	19	8	8
04/22/24	72	12	59	58	06/12/24	87	12	74	73	8/2/24	29	21	8	8
04/23/24	70	12	57	56	06/13/24	81	14	66	67	8/3/24	30	21	8	8
04/24/24	66	12	53	52	06/14/24	72	12	59	58	8/4/24	29	20	8	8
04/25/24	72	12	60	58	06/15/24	61	12	48	47	8/5/24	22	13	8	8
04/26/24	72	12	58	58	06/16/24	56	12	44	43	8/6/24	28	19	8	8
04/27/24	79	12	66	65	06/17/24	57	13	43	43	8/7/24	29	20	8	8
04/28/24	81	12	68	67	06/18/24	53	12	40	39	8/8/24	30	22	8	8
04/29/24	77	12	64	63	06/19/24	51	12	38	37	8/9/24	27	18	8	8
04/30/24	80	12	67	66	06/20/24	49	12	36	35	8/10/24	30	22	8	8
05/01/24	77	8	68	63	06/21/24	52	34	17	17	8/11/24	28	19	8	8

05/02/24	73	6	66	59	06/22/24	46	28	17	17	8/12/24	25	16	8	8
05/03/24	74	6	68	60	06/23/24	46	28	17	17	8/13/24	28	19	8	8
05/04/24	69	6	62	55	06/24/24	46	28	17	17	8/14/24	29	21	8	8
05/05/24	66	6	60	52	06/25/24	48	30	17	17	8/15/24	24	15	8	8
05/06/24	67	6	61	53	06/26/24	43	26	17	17	8/16/24	24	16	8	8
05/07/24	74	6	67	60	06/27/24	38	20	17	17	8/17/24	24	16	8	8
05/08/24	73	6	66	59	06/28/24	38	20	17	17	8/18/24	24	15	8	8
05/09/24	71	9	61	57	06/29/24	39	21	17	17	8/19/24	25	16	8	8
05/10/24	69	12	56	55	06/30/24	39	21	17	17	8/20/24	25	17	8	8
05/11/24	65	12	52	51	07/01/24	31	13	17	16	8/21/24	27	19	8	8
05/12/24	74	12	61	60	07/02/24	38	20	17	17	8/22/24	25	16	8	8
05/13/24	85	12	72	71	07/03/24	38	20	17	17	8/23/24	21	13	8	8
05/14/24	95	12	82	81	07/04/24	37	19	17	17	8/24/24	26	17	8	8
05/15/24	104	12	92	91	07/05/24	37	19	17	17	8/25/24	25	17	8	8
05/16/24	108	13	95	94	07/06/24	36	18	17	17	8/26/24	29	20	8	8
05/17/24	106	12	93	92	07/07/24	41	24	17	17	8/27/24	20	10	9	8
05/18/24	108	15	92	93	07/08/24	34	17	17	17	8/28/24	18	6	11	8
05/19/24	97	12	84	83	07/09/24	40	22	17	17	8/29/24	23	13	9	8
05/20/24	90	14	75	76	07/10/24	36	18	17	16	8/30/24	24	16	8	8
05/21/24	77	12	64	63	07/11/24	38	21	17	16	8/31/24	26	17	8	8

Table C- 4: Ice Harbor daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
04/01/24	52	43	9	9	05/22/24	79	11	67	67	7/12/24	37	26	11	11
04/02/24	41	32	8	8	05/23/24	82	11	70	70	7/13/24	34	23	10	10
04/03/24	43	13	30	30	05/24/24	75	13	61	61	7/14/24	32	22	10	10
04/04/24	52	13	38	38	05/25/24	74	13	61	61	7/15/24	33	22	10	10
4/5/24	62	13	48	48	5/26/24	71	13	57	57	7/16/24	36	25	11	11
4/6/24	70	13	56	56	5/27/24	69	13	56	56	7/17/24	36	25	11	11
4/7/24	63	13	49	49	5/28/24	66	13	52	52	7/18/24	32	22	9	9
4/8/24	65	13	51	51	5/29/24	71	13	58	58	7/19/24	36	25	11	11
4/9/24	64	13	50	50	5/30/24	90	13	76	76	7/20/24	34	23	10	10
4/10/24	64	13	51	51	5/31/24	87	13	74	74	7/21/24	32	22	10	10

4/11/24	65	13	51	51	6/1/24	78	13	65	65	7/22/24	32	22	10	10
4/12/24	62	13	48	48	6/2/24	79	13	66	66	7/23/24	31	21	9	9
4/13/24	66	13	52	52	6/3/24	81	13	68	68	7/24/24	32	22	9	9
4/14/24	75	13	61	61	6/4/24	111	13	97	97	7/25/24	32	22	10	10
4/15/24	83	13	69	69	6/5/24	108	14	94	94	7/26/24	23	15	8	8
4/16/24	98	13	83	83	6/6/24	107	13	92	92	7/27/24	27	18	8	8
4/17/24	95	14	81	81	6/7/24	106	13	92	92	7/28/24	27	18	8	8
4/18/24	82	13	68	68	6/8/24	101	13	87	87	7/29/24	21	14	6	6
4/19/24	82	13	68	68	6/9/24	106	13	92	92	7/30/24	24	16	7	7
4/20/24	74	13	61	61	6/10/24	96	13	83	83	7/31/24	28	19	8	8
4/21/24	74	13	60	60	6/11/24	94	12	81	81	8/1/24	27	18	9	9
4/22/24	77	13	63	63	6/12/24	91	13	77	77	8/2/24	31	21	9	9
4/23/24	75	13	61	61	6/13/24	83	13	69	69	8/3/24	28	19	9	9
4/24/24	67	13	53	53	6/14/24	76	13	63	63	8/4/24	29	19	9	9
4/25/24	73	13	60	60	6/15/24	65	13	51	51	8/5/24	24	14	9	9
4/26/24	72	13	58	58	6/16/24	58	13	45	45	8/6/24	25	16	9	9
4/27/24	81	13	67	67	6/17/24	58	13	45	45	8/7/24	29	20	9	9
4/28/24	86	13	73	73	6/18/24	56	12	43	43	8/8/24	31	21	9	9
4/29/24	80	13	66	66	6/19/24	54	13	41	41	8/9/24	25	16	9	9
4/30/24	80	13	67	67	6/20/24	50	13	36	36	8/10/24	30	20	9	9
5/1/24	79	13	65	65	6/21/24	53	36	16	16	8/11/24	27	18	9	9
5/2/24	75	13	62	62	6/22/24	46	32	14	14	8/12/24	26	16	9	9
5/3/24	74	13	60	60	6/23/24	44	31	13	13	8/13/24	27	17	9	9
5/4/24	77	13	63	63	6/24/24	48	33	14	14	8/14/24	29	20	9	9
5/5/24	68	13	54	54	6/25/24	50	35	15	15	8/15/24	24	14	9	9
5/6/24	70	13	56	56	6/26/24	43	29	13	13	8/16/24	24	14	9	9
5/7/24	73	13	59	59	6/27/24	38	26	11	11	8/17/24	22	12	9	9
5/8/24	74	13	61	61	6/28/24	39	27	12	12	8/18/24	25	15	9	9
5/9/24	73	13	59	59	6/29/24	39	27	12	12	8/19/24	26	16	9	9
5/10/24	73	13	60	60	6/30/24	40	27	12	12	8/20/24	25	15	9	9
5/11/24	68	13	55	55	7/1/24	32	22	9	9	8/21/24	26	17	9	9
5/12/24	76	13	62	62	7/2/24	36	25	11	11	8/22/24	26	16	9	9
5/13/24	90	13	76	76	7/3/24	38	26	11	11	8/23/24	22	12	9	9
5/14/24	97	14	83	83	7/4/24	39	27	12	12	8/24/24	25	16	9	9
5/15/24	109	14	94	94	7/5/24	38	26	11	11	8/25/24	26	17	9	9

5/16/24	109	13	95	94	7/6/24	34	24	10	10	8/26/24	31	21	9	9
5/17/24	106	14	92	92	7/7/24	40	28	12	12	8/27/24	22	12	9	9
5/18/24	109	14	95	95	7/8/24	35	24	10	10	8/28/24	22	12	9	9
5/19/24	100	14	85	85	7/9/24	41	28	12	12	8/29/24	23	13	9	9
5/20/24	92	13	78	78	7/10/24	37	25	11	11	8/30/24	24	15	9	9
5/21/24	81	12	68	68	7/11/24	38	26	11	11	8/31/24	26	16	9	9

Table C- 5: McNary daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
04/01/24	123	105	13	10	05/22/24	222	56	160	160	7/12/24	144	58	81	80
04/02/24	120	102	13	10	05/23/24	211	56	151	151	7/13/24	145	58	82	82
04/03/24	121	107	10	10	05/24/24	208	55	148	148	7/14/24	139	51	83	83
04/04/24	127	111	12	10	05/25/24	192	55	132	132	7/15/24	147	63	80	79
04/05/24	133	119	9	9	05/26/24	162	55	103	103	7/16/24	165	76	84	84
04/06/24	137	123	10	10	05/27/24	169	55	109	109	7/17/24	173	75	94	94
04/07/24	138	123	10	10	05/28/24	190	55	131	131	7/18/24	164	60	99	98
04/08/24	143	128	10	10	05/29/24	188	55	128	128	7/19/24	162	64	93	93
04/09/24	130	115	10	10	05/30/24	202	55	142	142	7/20/24	149	52	93	92
04/10/24	139	55	80	80	05/31/24	223	55	163	163	7/21/24	136	51	80	80
04/11/24	157	55	98	98	06/02/24	201	55	141	141	7/22/24	133	52	77	77
04/12/24	153	55	93	93	06/02/24	179	55	119	119	7/23/24	143	61	77	76
04/13/24	149	55	89	89	06/03/24	175	55	116	116	7/24/24	143	57	81	81
04/14/24	159	55	99	99	06/04/24	220	55	160	160	7/25/24	125	50	70	70
04/15/24	168	54	110	110	06/05/24	232	55	173	173	7/26/24	131	55	71	71
04/16/24	171	55	111	111	06/06/24	245	55	185	185	7/27/24	140	62	74	74
04/17/24	177	57	115	115	06/07/24	248	55	188	188	7/28/24	144	59	80	80
04/18/24	170	54	111	111	06/08/24	234	55	175	175	7/29/24	139	53	82	82
04/19/24	169	52	112	112	06/09/24	216	54	157	157	7/30/24	121	52	64	64
04/20/24	167	52	111	111	06/10/24	216	55	157	157	7/31/24	113	52	57	57
04/21/24	146	52	89	89	06/11/24	230	55	170	170	8/1/24	117	83	30	20
04/22/24	157	53	99	99	06/12/24	229	55	170	170	8/2/24	120	92	24	20
04/23/24	172	54	112	112	06/13/24	222	54	162	162	8/3/24	147	92	50	20
04/24/24	170	55	110	110	06/14/24	209	54	150	150	8/4/24	125	91	29	20
04/25/24	151	55	90	90	06/15/24	181	54	122	122	8/5/24	130	84	41	20
04/26/24	151	55	91	91	06/16/24	174	67	103	103	8/6/24	117	81	31	20

04/27/24	155	55	95	95	06/17/24	178	74	99	99	8/7/24	114	81	29	20
04/28/24	172	55	112	112	06/18/24	184	78	102	102	8/8/24	133	85	43	20
04/29/24	154	57	93	93	06/19/24	175	65	105	105	8/9/24	126	93	29	20
04/30/24	141	55	82	82	06/20/24	166	62	100	100	8/10/24	120	92	23	20
05/01/24	146	55	87	87	06/21/24	175	76	95	95	8/11/24	116	91	20	20
05/02/24	139	55	80	80	06/22/24	172	67	101	101	8/12/24	111	83	24	20
05/03/24	146	55	87	87	06/23/24	155	53	98	98	8/13/24	116	79	32	20
05/04/24	145	54	85	85	06/24/24	160	66	88	88	8/14/24	129	80	44	20
05/05/24	151	55	91	91	06/25/24	177	81	91	91	8/15/24	132	93	34	20
05/06/24	127	57	66	66	06/26/24	157	51	101	101	8/16/24	127	102	20	20
05/07/24	135	56	74	74	06/27/24	149	55	89	89	8/17/24	109	85	20	20
05/08/24	141	56	81	81	06/28/24	149	60	85	85	8/18/24	111	86	20	20
05/09/24	144	55	85	85	06/29/24	156	67	85	85	8/19/24	106	81	20	20
05/10/24	162	55	102	102	06/30/24	154	60	89	89	8/20/24	116	90	21	20
05/11/24	156	55	97	97	07/01/24	183	91	87	87	8/21/24	115	90	20	20
05/12/24	149	55	90	90	07/02/24	160	51	104	104	8/22/24	112	84	24	20
05/13/24	168	55	108	108	07/03/24	155	59	91	91	8/23/24	113	87	21	20
05/14/24	193	55	133	133	07/04/24	173	81	88	88	8/24/24	108	84	20	20
05/15/24	221	56	161	161	07/05/24	163	59	99	99	8/25/24	93	69	19	19
05/16/24	227	57	166	166	07/06/24	153	55	93	93	8/26/24	112	88	19	19
05/17/24	211	56	151	151	07/07/24	157	65	87	87	8/27/24	105	82	19	19
05/18/24	219	56	158	158	07/08/24	167	73	89	89	8/28/24	111	60	47	20
05/19/24	238	55	178	178	07/09/24	176	76	95	95	8/29/24	118	64	49	20
05/20/24	231	56	170	170	07/10/24	158	54	100	100	8/30/24	124	99	21	20
05/21/24	212	56	152	152	07/11/24	143	51	88	87	8/31/24	111	86	20	20

Table C- 6: John Day daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
4/1/24	131	120	10	10	5/22/24	211	106	104	104	7/12/24	139	89	49	49
4/2/24	126	115	10	10	5/23/24	237	118	118	118	7/13/24	134	87	46	46
4/3/24	130	119	10	10	5/24/24	227	112	113	113	7/14/24	137	88	47	47
4/4/24	139	128	10	10	5/25/24	199	98	99	99	7/15/24	149	96	52	52
4/5/24	136	125	10	10	5/26/24	176	89	86	86	7/16/24	176	114	61	61
4/6/24	135	124	10	10	5/27/24	177	93	82	82	7/17/24	176	113	61	61

4/7/24	142	131	10	10	5/28/24	193	99	92	92	7/18/24	163	105	56	56
4/8/24	138	127	10	10	5/29/24	195	96	98	98	7/19/24	163	105	57	57
4/9/24	137	126	10	10	5/30/24	214	108	105	105	7/20/24	161	104	56	56
4/10/24	150	79	70	70	5/31/24	231	114	116	116	7/21/24	135	86	47	47
4/11/24	165	85	78	78	6/1/24	217	106	110	110	7/22/24	142	92	49	49
4/12/24	166	85	80	80	6/2/24	204	103	99	99	7/23/24	150	97	52	52
4/13/24	158	81	76	76	6/3/24	193	97	94	94	7/24/24	147	94	51	51
4/14/24	168	83	83	83	6/4/24	226	116	108	108	7/25/24	121	78	42	42
4/15/24	175	87	87	87	6/5/24	245	123	121	121	7/26/24	131	84	46	46
4/16/24	185	92	92	92	6/6/24	260	124	135	135	7/27/24	136	88	47	47
4/17/24	195	95	97	97	6/7/24	268	130	137	137	7/28/24	142	91	49	49
4/18/24	191	93	96	96	6/8/24	244	119	123	123	7/29/24	145	94	50	50
4/19/24	190	89	100	100	6/9/24	237	116	120	120	7/30/24	125	80	43	43
4/20/24	186	88	97	97	6/10/24	225	116	108	108	7/31/24	117	75	41	41
4/21/24	160	81	78	78	6/11/24	227	116	109	109	8/1/24	131	109	21	21
4/22/24	168	85	82	82	6/12/24	243	123	119	119	8/2/24	121	99	21	21
4/23/24	184	92	90	90	6/13/24	239	120	118	118	8/3/24	139	117	21	21
4/24/24	185	90	93	93	6/14/24	217	111	105	105	8/4/24	134	112	21	21
4/25/24	169	86	81	81	6/15/24	187	93	92	92	8/5/24	127	105	21	21
4/26/24	161	82	78	78	6/16/24	172	111	60	60	8/6/24	122	100	21	21
4/27/24	174	88	85	85	6/17/24	178	115	62	62	8/7/24	115	93	21	21
4/28/24	182	94	87	87	6/18/24	188	121	66	66	8/8/24	121	99	21	21
4/29/24	164	84	79	79	6/19/24	200	130	69	69	8/9/24	130	107	21	21
4/30/24	151	77	73	73	6/20/24	170	110	59	59	8/10/24	126	105	21	21
5/1/24	153	78	74	74	6/21/24	186	120	65	65	8/11/24	118	96	21	21
5/2/24	155	79	74	74	6/22/24	172	110	60	60	8/12/24	109	87	21	21
5/3/24	160	82	77	77	6/23/24	152	98	53	53	8/13/24	113	91	21	21
5/4/24	159	80	78	78	6/24/24	168	109	58	58	8/14/24	138	116	21	21
5/5/24	160	83	76	76	6/25/24	190	123	66	66	8/15/24	135	113	20	20
5/6/24	145	75	69	69	6/26/24	160	103	56	56	8/16/24	132	110	21	21
5/7/24	140	75	64	64	6/27/24	150	96	52	52	8/17/24	117	95	20	20
5/8/24	156	80	75	75	6/28/24	160	103	55	55	8/18/24	103	82	21	21
5/9/24	164	82	81	81	6/29/24	159	102	55	55	8/19/24	114	92	21	21
5/10/24	183	91	90	90	6/30/24	156	101	54	54	8/20/24	115	93	20	20

5/11/24	172	84	86	86	7/1/24	179	115	62	62	8/21/24	113	91	21	21
5/12/24	175	89	85	85	7/2/24	165	107	57	57	8/22/24	126	105	21	21
5/13/24	173	89	83	83	7/3/24	164	106	57	57	8/23/24	101	79	21	21
5/14/24	213	108	103	103	7/4/24	181	116	64	64	8/24/24	108	86	21	21
5/15/24	238	117	120	120	7/5/24	169	109	59	59	8/25/24	97	75	21	21
5/16/24	241	116	124	124	7/6/24	158	102	56	56	8/26/24	123	101	21	21
5/17/24	227	109	117	117	7/7/24	154	99	54	54	8/27/24	105	83	21	21
5/18/24	230	113	116	116	7/8/24	176	114	61	61	8/28/24	115	93	21	21
5/19/24	246	119	126	126	7/9/24	187	121	65	65	8/29/24	119	97	20	20
5/20/24	245	119	125	125	7/10/24	175	114	60	60	8/30/24	128	107	20	20
5/21/24	228	111	116	116	7/11/24	151	97	53	53	8/31/23	112	91	20	20

Table C- 7: The Dalles daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS
4/1/24	132	127	0	0	5/22/24	201	115	80	80	7/12/24	128	71	51	51
4/2/24	122	116	0	0	5/23/24	216	124	87	86	7/13/24	123	69	49	49
4/3/24	133	127	0	0	5/24/24	215	124	86	86	7/14/24	124	69	49	50
4/4/24	140	134	0	0	5/25/24	176	100	71	70	7/15/24	138	78	55	55
4/5/24	136	130	0	0	5/26/24	165	93	66	66	7/16/24	164	93	65	66
4/6/24	139	133	0	0	5/27/24	162	92	64	65	7/17/24	166	94	66	67
4/7/24	141	135	0	0	5/28/24	177	101	71	71	7/18/24	151	85	60	60
4/8/24	139	134	0	0	5/29/24	184	104	73	73	7/19/24	150	85	59	60
4/9/24	136	130	0	0	5/30/24	202	116	81	81	7/20/24	146	82	59	59
4/10/24	144	81	58	58	5/31/24	218	125	88	87	7/21/24	123	68	49	49
4/11/24	153	86	61	61	6/1/24	201	115	80	80	7/22/24	130	73	52	52
4/12/24	162	91	65	65	6/2/24	186	106	74	74	7/23/24	138	78	54	55
4/13/24	149	84	59	60	6/3/24	180	102	72	72	7/24/24	136	75	55	55
4/14/24	156	88	62	62	6/4/24	208	119	83	83	7/25/24	107	58	42	43
4/15/24	165	93	66	66	6/5/24	232	134	92	93	7/26/24	119	66	47	48
4/16/24	171	97	68	68	6/6/24	239	138	95	96	7/27/24	122	68	49	49
4/17/24	190	108	76	76	6/7/24	249	143	100	100	7/28/24	129	72	52	52
4/18/24	177	100	71	71	6/8/24	221	127	89	88	7/29/24	130	73	51	52
4/19/24	175	99	70	70	6/9/24	217	124	87	87	7/30/24	115	63	46	46
4/20/24	181	103	72	72	6/10/24	212	122	85	85	7/31/24	110	60	43	44

4/21/24	145	81	58	58	6/11/24	206	118	82	82	8/1/24	125	82	37	37
4/22/24	158	89	63	63	6/12/24	224	129	89	89	8/2/24	118	77	35	35
4/23/24	172	97	69	69	6/13/24	226	130	90	90	8/3/24	132	87	40	40
4/24/24	177	100	71	71	6/14/24	201	115	81	81	8/4/24	127	83	38	38
4/25/24	156	88	63	63	6/15/24	168	95	67	67	8/5/24	121	79	36	36
4/26/24	154	87	62	62	6/16/24	155	87	62	62	8/6/24	114	74	34	34
4/27/24	163	92	65	65	6/17/24	164	93	66	66	8/7/24	109	71	33	33
4/28/24	170	96	68	68	6/18/24	175	100	69	70	8/8/24	116	76	35	35
4/29/24	157	88	63	63	6/19/24	183	104	73	73	8/9/24	125	81	38	37
4/30/24	138	77	55	55	6/20/24	161	91	64	64	8/10/24	122	80	37	37
5/1/24	144	80	58	58	6/21/24	166	94	66	66	8/11/24	109	70	33	33
5/2/24	148	83	59	59	6/22/24	156	88	62	62	8/12/24	104	67	31	31
5/3/24	150	84	60	60	6/23/24	134	75	53	53	8/13/24	107	69	32	32
5/4/24	148	83	59	59	6/24/24	157	88	63	63	8/14/24	138	91	41	41
5/5/24	145	82	58	58	6/25/24	176	100	70	70	8/15/24	123	80	37	37
5/6/24	140	78	56	56	6/26/24	146	81	59	58	8/16/24	130	85	39	39
5/7/24	131	73	52	52	6/27/24	136	77	53	54	8/17/24	109	70	33	33
5/8/24	148	83	59	59	6/28/24	151	85	60	60	8/18/24	99	64	29	30
5/9/24	149	84	60	60	6/29/24	139	78	56	56	8/19/24	111	72	33	33
5/10/24	173	98	69	69	6/30/24	142	79	57	57	8/20/24	108	70	32	32
5/11/24	164	93	66	66	7/1/24	161	91	64	64	8/21/24	108	70	32	32
5/12/24	162	91	65	65	7/2/24	151	85	60	60	8/22/24	122	80	36	37
5/13/24	164	93	66	66	7/3/24	152	86	61	61	8/23/24	97	62	29	29
5/14/24	200	114	80	80	7/4/24	168	95	67	67	8/24/24	102	65	31	31
5/15/24	225	130	89	90	7/5/24	159	90	63	63	8/25/24	93	60	28	28
5/16/24	231	133	91	92	7/6/24	141	79	56	57	8/26/24	118	77	35	35
5/17/24	211	121	84	84	7/7/24	138	77	55	55	8/27/24	100	64	30	30
5/18/24	217	125	86	87	7/8/24	159	90	63	64	8/28/24	111	72	33	33
5/19/24	235	135	93	94	7/9/24	175	100	70	70	8/29/24	116	76	35	35
5/20/24	217	124	87	87	7/10/24	158	89	63	63	8/30/24	120	79	36	36
5/21/24	210	120	84	84	7/11/24	138	77	55	55	8/31/24	109	70	33	33

Table C- 8: Bonneville daily average project flows

Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS	Date	Outflow KCFS	Generation Flow KCFS	Actual Spill KCFS	FOP Spill KCFS

04/01/24	146	129	5	1	05/22/24	211	53	146	146	07/12/24	147	39	95	95
04/02/24	142	128	1	1	05/23/24	237	75	149	149	07/13/24	146	39	95	95
04/03/24	140	126	2	1	05/24/24	225	62	150	150	07/14/24	144	37	94	95
04/04/24	150	133	5	1	05/25/24	198	35	150	150	07/15/24	150	43	95	95
04/05/24	151	133	5	1	05/26/24	181	32	136	136	07/16/24	172	65	95	95
04/06/24	146	132	2	2	05/27/24	177	33	132	132	07/17/24	174	67	95	95
04/07/24	146	132	2	2	05/28/24	192	34	145	145	07/18/24	161	53	95	95
04/08/24	146	132	2	2	05/29/24	207	46	148	148	07/19/24	164	57	95	95
04/09/24	146	132	2	2	05/30/24	203	41	149	149	07/20/24	162	54	95	95
04/10/24	159	36	110	116	05/31/24	233	71	150	150	07/21/24	141	34	95	95
04/11/24	163	34	116	120	06/01/24	220	58	150	150	07/22/24	150	45	93	93
04/12/24	178	34	131	134	06/02/24	195	33	150	150	07/23/24	145	40	92	92
04/13/24	173	35	125	130	06/03/24	200	38	150	150	07/24/24	151	44	95	95
04/14/24	174	36	126	131	06/04/24	225	63	149	150	07/25/24	125	32	81	82
04/15/24	177	35	129	133	06/05/24	230	68	150	150	07/26/24	120	32	75	76
04/16/24	191	36	142	147	06/06/24	270	108	150	150	07/27/24	133	32	88	89
04/17/24	208	48	148	150	06/07/24	275	114	148	150	07/28/24	140	32	95	95
04/18/24	191	37	141	147	06/08/24	240	79	149	150	07/29/24	140	32	96	95
04/19/24	202	41	149	150	06/09/24	231	69	150	150	07/30/24	131	32	86	87
04/20/24	193	34	147	147	06/10/24	214	51	151	150	07/31/24	116	32	72	71
04/21/24	175	33	129	132	06/11/24	233	72	148	150	08/1/24	131	68	50	50
04/22/24	178	37	128	134	06/12/24	234	73	149	150	08/2/24	142	81	49	50
04/23/24	188	39	137	144	06/13/24	245	83	150	150	08/3/24	137	76	49	50
04/24/24	193	40	141	150	06/14/24	212	50	150	150	08/4/24	135	73	50	50
04/25/24	170	35	123	127	06/15/24	190	34	144	144	08/5/24	133	71	50	50
04/26/24	171	34	125	127	06/16/24	169	61	96	95	08/6/24	133	71	50	50
04/27/24	178	37	129	134	06/17/24	179	72	95	95	08/7/24	120	58	50	50
04/28/24	198	40	145	149	06/18/24	186	79	95	95	08/8/24	122	60	50	50
04/29/24	169	39	118	126	06/19/24	199	91	95	95	08/9/24	131	69	50	50
04/30/24	168	39	117	124	06/20/24	175	67	95	95	08/10/24	134	72	50	50
05/01/24	160	35	112	112	06/21/24	174	67	95	95	08/11/24	121	59	50	50
05/02/24	163	34	117	117	06/22/24	183	75	95	95	08/12/24	117	55	50	50
05/03/24	164	33	118	118	06/23/24	159	52	95	95	08/13/24	115	53	50	50
05/04/24	180	38	129	129	06/24/24	175	69	94	95	08/14/24	141	79	50	50
05/05/24	167	39	116	116	06/25/24	186	80	94	95	08/15/24	133	71	50	50
05/06/24	152	35	104	104	06/26/24	165	59	94	95	08/16/24	133	71	50	50
05/07/24	153	34	107	107	06/27/24	157	51	94	95	08/17/24	129	66	50	50
05/08/24	165	38	114	114	06/28/24	157	51	94	95	08/18/24	110	48	50	50
05/09/24	167	36	119	119	06/29/24	156	49	94	95	08/19/24	120	57	50	50

<b>05/10/24</b>	187	34	140	140	<b>06/30/24</b>	154	47	95	95	<b>08/20/24</b>	117	54	50	50
<b>05/11/24</b>	194	39	143	143	<b>07/01/24</b>	172	65	95	95	<b>08/21/24</b>	119	57	50	50
<b>05/12/24</b>	178	39	127	127	<b>07/02/24</b>	170	63	95	95	<b>08/22/24</b>	122	59	50	50
<b>05/13/24</b>	180	40	128	128	<b>07/03/24</b>	164	57	95	95	<b>08/23/24</b>	106	43	51	50
<b>05/14/24</b>	209	53	144	144	<b>07/04/24</b>	172	65	95	95	<b>08/24/24</b>	110	48	50	50
<b>05/15/24</b>	240	78	149	149	<b>07/05/24</b>	169	61	96	95	<b>08/25/24</b>	105	42	50	50
<b>05/16/24</b>	240	78	149	149	<b>07/06/24</b>	169	62	95	95	<b>08/26/24</b>	121	59	50	50
<b>05/17/24</b>	240	78	150	150	<b>07/07/24</b>	149	42	95	95	<b>08/27/24</b>	114	51	50	50
<b>05/18/24</b>	237	76	149	149	<b>07/08/24</b>	166	59	95	95	<b>08/28/24</b>	117	54	50	50
<b>05/19/24</b>	239	77	149	149	<b>07/09/24</b>	184	76	95	95	<b>08/29/24</b>	121	58	50	50
<b>05/20/24</b>	246	84	150	150	<b>07/10/24</b>	169	61	96	95	<b>08/30/24</b>	129	66	50	50
<b>05/21/24</b>	231	69	150	150	<b>07/11/24</b>	150	42	96	95	<b>08/31/24</b>	119	56	50	50