

Larkin Dam Removal Project - Hydraulic Model Output for Existing vs. Dam-Out Conditions for a Range of Flows

6/26/2025

LOCATION		FLOW			EXISTING CONDITIONS						LARKIN DAM & FISH WEIR REMOVED				
Location	River Station (ft)	Flow Description ¹	Flow (cfs)		Min Ch. El. (ft)	Water Surface El. (ft)	Avg. Ch. Velocity (ft/s)	Ch. Top Width (ft)	Max Ch. Depth (ft)		Min Ch. El. (ft)	Water Surface El. (ft)	Avg. Ch. Velocity (ft/s)	Ch. Top Width (ft)	Max Ch. Depth (ft)
Upstream of USGS Gage Weir	1703	Aug-Oct Median	3	22.0	22.0	24.2	0.2	14.4	2.2	22.0	22.0	24.2	0.2	14.4	2.2
		Aug-Oct Mean	10			24.5	0.4	15.0	2.5			24.5	0.4	15.0	2.5
		Aug-Oct 5% Exc	42			25.1	1.2	19.9	3.1			25.1	1.2	20.0	3.1
		2-yr Flood	227			27.2	2.7	34.7	5.2			27.2	2.7	34.7	5.2
		5-yr Flood	384			28.4	3.3	73.2	6.4			28.4	3.3	73.2	6.4
		10-yr Flood	518			29.4	2.9	90.0	7.4			29.4	2.9	90.0	7.4
Upstream of I-95 Bridge	1529	Aug-Oct Median	3	20.2	20.2	23.5	0.0	85.9	3.3	20.2	20.2	20.8	2.9	3.8	0.6
		Aug-Oct Mean	10			23.6	0.1	86.5	3.4			21.1	3.5	7.5	0.9
		Aug-Oct 5% Exc	42			24.0	0.3	88.3	3.8			21.7	3.9	22.4	1.5
		2-yr Flood	227			25.1	1.0	96.4	4.9			22.5	4.1	80.9	2.3
		5-yr Flood	384			25.6	1.5	101.9	5.4			23.2	3.9	84.0	3.0
		10-yr Flood	518			25.8	1.9	104.8	5.6			23.7	3.9	86.7	3.5
Under I-95 Bridge	1366	Aug-Oct Median	3	16.4 ²	16.4 ²	23.5	0.0	35.1	7.1	16.4 ²	16.4 ²	20.2	0.0	35.1	3.8
		Aug-Oct Mean	10			23.6	0.0	35.1	7.2			20.4	0.1	35.1	4.0
		Aug-Oct 5% Exc	42			24.0	0.2	35.1	7.6			21.1	0.3	35.1	4.7
		2-yr Flood	227			25.1	0.8	35.1	8.7			22.6	1.2	35.1	6.2
		5-yr Flood	384			25.6	1.3	35.1	9.2			23.2	1.8	35.1	6.8
		10-yr Flood	518			25.8	1.7	35.1	9.4			23.7	2.3	35.1	7.3
Upstream of Larkin Dam	160	Aug-Oct Median	3	19.8	19.8	23.5	0.0	140.5	3.8	16.2	16.2	17.3	2.5	2.7	1.1
		Aug-Oct Mean	10			23.6	0.1	156.5	3.9			17.7	3.4	5.8	1.5
		Aug-Oct 5% Exc	42			24.0	0.2	190.8	4.2			18.4	4.8	11.2	2.2
		2-yr Flood	227			25.1	0.7	288.3	5.3			19.9	6.6	25.7	3.6
		5-yr Flood	384			25.5	0.8	297.2	5.7			20.5	7.2	33.6	4.3
		10-yr Flood	518			25.6	1.0	298.6	5.9			20.9	7.5	40.8	4.7
Downstream of Larkin Dam	134	Aug-Oct Median	3	16.2	16.2	18.0	0.3	11.6	1.8	16.2	16.2	16.8	3.0	3.5	0.5
		Aug-Oct Mean	10			18.2	0.8	13.1	1.9			17.1	3.9	5.6	0.9
		Aug-Oct 5% Exc	42			18.6	1.9	67.3	2.4			17.9	5.1	10.4	1.6
		2-yr Flood	227			19.7	3.5	78.2	3.5			19.1	5.7	75.0	2.9
		5-yr Flood	384			20.2	2.6	80.0	4.0			19.5	6.8	77.4	3.3
		10-yr Flood	518			20.6	3.0	81.1	4.4			20.1	3.8	79.6	3.9

1. Median and mean flows during the period of November through March (35 and 38 cfs, respectively) are similar to the August-October 5% exceedance flow included in the table (42 cfs).

2. Measured streambed elevations under the I-95 bridge range from approximately 14' (top of steel struts) at the scour hole to 20'. The thalweg elevation at the upstream face of the bridge is presented in the table to provide conservatively high maximum water depths (excluding the scour hole).