

**Appendix 3.E, Pile Driving Assumptions for the Proposed Action**

Table 3.E-1. Physical Location of Pile Driving

Facility/ Structure	Location	Lat/long	On land (distance to water in ft) or in water	River depth (ft) <sup>1</sup>	River width (ft)	Width of in-river constructio n (ft)	Length of construc- tion along river bank (ft)	Proportio n of river available for passage	Straight line distance to river bend (furthest upstream/downstre am location) (ft)	Distance to concurr ent pile driving sites (ft) <sup>2</sup>
<b>Intake 2</b>										
Intake 2 cofferdam	Sac River (RM 41.1)	38.40541, -121.51452	In water	-14	700	60	2,000	95%	6,500-12,000	2,000
Intake 2 foundation	Sac River (RM 41.1)	38.40541, -121.51452	In cofferdam 40-90 ft from open water	-14	700	NA	1,667	NA	6,500-12,000	2,000
<b>Intake 3</b>										
Intake 3 cofferdam	Sac River (RM 39.4)	38.38209, -121.51991	In water	-25	500	60	1,600	93%	1,500-4,500	1,600
Intake 3 foundation	Sac River (RM 39.4)	38.38209, -121.51991	In cofferdam 40-90 ft from open water	-25	500	NA	1,373	NA	1,500-4,500	1,600
<b>Intake 5</b>										
Intake 5 cofferdam	Sac River (RM 36.8)	38.35057, -121.53302	In water	-14	600	60	2,000	94%	4,500-7,500	2,000
Intake 5 foundation	Sac River (RM 36.8)	38.35057, -121.53302	In cofferdam 40-90 ft from open water	-14	600	NA	1,667	NA	4,500-7,500	2,000
<b>Barge Landings</b>										
Dock piles	IF barge	38.28106, -121.49816	In water	-11	265	50	300	81%	1,400-2,700	300

Facility/ Structure	Location	Lat/long	On land (distance to water in ft) or in water	River depth (ft) <sup>1</sup>	River width (ft)	Width of in-river constructio n (ft)	Length of construc- tion along river bank (ft)	Proportio n of river available for passage	Straight line distance to river bend (furthest upstream/downstre am location) (ft)	Distance to concurren t pile driving sites (ft) <sup>2</sup>
	landing									
Dock piles	Bouldin Is. barge landing	38.08762, -121.54505	In water	-11 to -18	980	50	300	95%	1,800-2,900	300
Dock piles	Venice Is. barge landing	38.06630, -121.54130	In water	-19 to -36	1,030	50	300	95%	2,000-4,700	300
Dock piles	Mandev ille Is. barge landing	38.04264, -121.53177	In water	-5 to - 47	760	50	300	93%	6,500-8,500	300
Dock piles	Bacon Is. barge landing	38.00392, -121.54343	In water	-8 to - 28	340	50	300	85%	1,200-1,800	300
Dock piles	Victoria Is. barge landing	37.91087, -121.56185	In water	-7	433	50	300	88%	2,200-3,200	300
Dock piles	CCPP barge landing	37.85505, -121.56435	In water	-4 to - 10	285	50	300	82%	705-720	300
<b>Clifton Court Forebay</b>										
Embankment cofferdams	CCF	37.83204, -121.57494	In water	-3	10,500 (width of CCF)	25	20,800	NA	NA	Unknown



Table 3.E-2. Pile Driving Details

Structure	Pile Type/Sizes	Total Piles per site	# of concurrent pile drivers per site	Piles per day	Strikes per pile (impact driving only)	Total strikes per day	Sound Attenuation Devices	Expected acoustic dampening in dB
<b>Intake 2</b>								
Intake 2 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 2 foundation	42-inch steel piles	1,120	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Intake 3</b>								
Intake 3 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 3 foundation	42-inch steel piles	850	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Intake 5</b>								
Intake 5 cofferdam	Sheet piles	2,500	4	60	210 <sup>1</sup>	12,600	None	NA
Intake 5 foundation	42-inch steel piles	1,120	4	60	1,500	90,000	Dewatering or bubble curtains, if feasible/practicable	5 dB
<b>Barge Landings</b>								
Dock piles	24-inch steel piles	107	4	60	315 <sup>1</sup>	18,900	None	NA
<b>Clifton Court Forebay</b>								
Embankment cofferdams	Sheet piles (AZ-28-700)	5,125	4	60	210 <sup>1</sup>	12,600	None	NA
Divider wall	Sheet piles (AZ-28-700)	5,169	4	60	210 <sup>1</sup>	12,600	None	NA
NCCF siphon	14-inch concrete or steel piles	2,160	2	30	1,050	31,500	Dewatering or bubble curtains, if feasible/practicable	5 dB



Table 3.E-3. Pile Driving Acoustics.

Structure (one pile driver only)	Distance to 206 dB SPL Injury Threshold (feet)	Distance to Cumulative 187 dB SEL Injury Threshold or Effective Quiet (feet) <sup>1</sup>	Distance to 150 dB RMS Behavioral Threshold (feet)	Number and Timing of Construction Seasons	Timing of Pile Driving	Duration of Pile Driving (days)	Preferred period within that work window <sup>2</sup>
<b>Intake 2</b>							
Intake 2 cofferdam	30	2,814	13,058	Year 8	Jun-Oct	42	Aug-Sep
Intake 2 foundation (no attenuation)	46	3,280	32,800	Year 9	Jun-Oct	19	Aug-Sep
Intake 2 foundation (with attenuation)	20	1,522	15,226	Year 9	Jun-Oct	19	Aug-Sep
<b>Intake 3</b>							
Intake 3 cofferdam	30	2,814	13,058	Year 7	Jun-Oct	42	Aug-Sep
Intake 3 foundation (no attenuation)	46	3,280	32,800	Year 8	Jun-Oct	14	Aug-Sep
Intake 3 foundation (with attenuation)	20	1,522	15,226	Year 8	Jun-Oct	14	Aug-Sep
<b>Intake 5</b>							
Intake 5 cofferdam	30	2,814	13,058	Year 5	Jun-Oct	42	Aug-Sep
Intake 5 foundation (no attenuation)	46	3,280	32,800	Year 6	Jun-Oct	19	Aug-Sep
Intake 5 foundation (with attenuation)	20	1,522	15,226	Year 6	Jun-Oct	19	Aug-Sep
<b>Barge Landings</b>							
Dock piles	46	1,774	9,607	1 (Year 1 or 2)	Aug-Oct	2	Aug-Sep

