Draft

Attachment 5 Preliminary Construction Schedule and Work Packages

Engineering Summary Appendix

Shasta Lake Water Resources Investigation

Prepared by:

United States Department of the Interior Bureau of Reclamation Mid-Pacific Region



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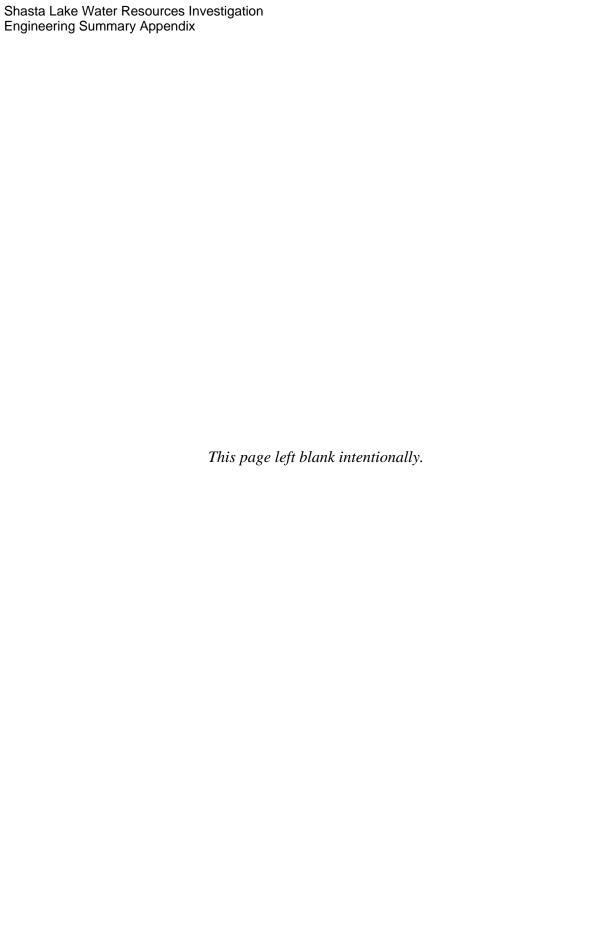
EXHIBIT A Preliminary Construction Schedule for CP4

Abbreviations and Acronyms

UPRR

CP comprehensive plan
CVP Central Valley Project
main dam concrete dam crest
NAVD88 North American Vertical Datum of 1988
SWP State Water Project
TCD Temperature Control Device

Union Pacific Railroad



Preliminary Construction Schedule and Work Packages

Construction Schedule

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Feasibility-level designs and most-probable construction cost estimates for the Shasta Dam and Reservoir enlargement include 3 dam raise alternatives, resulting in five comprehensive plans (CP). At this stage of the Federal planning and National Environmental Policy Act processes, an 18.5-foot raise of Shasta Dam has been identified as the preliminary proposed plan and likely preferred alternative. However, due to uncertainties affecting Central Valley Project (CVP)/State Water Project (SWP) operational constraints, including operations at Shasta Dam and Reservoir, operational parameters have not been specified. Major components, benefits, and effects of the preliminary proposed plan and likely preferred alternative would be similar to the 18.5-foot dam raise comprehensive plans (CP3, CP4, and CP5) described in the Engineering Summary Appendix, but it is recognized that changes may occur to the comprehensive plans with changes in CVP/SWP operational conditions. Based on analysis to-date, CP4 provides the greatest net National Economic Development economic benefits. For this reason, CP4 is used as an example in the following attachment to characterize the feasibility construction schedule of the preliminary proposed plan and likely preferred alternative.

Feasibility-level construction schedule for the work to be performed and the sequencing necessary to build the identified new structures and modify the existing structures has been included in this document for CP4. The construction schedule assumes a majority of the project work packages would be awarded in the spring; however, the actual award dates will be dependent on several factors. The overall project construction duration for major facilities is estimated to range from 4.5 to 5 years for all comprehensive plans, excluding small features such as gravel augmentation, which would extend past the completion of the dam raise. Table 1 shows the estimated construction period for each comprehensive plan. Activities in the construction schedule were assigned calendars that allow the work to be performed in accordance with the calendar details. Most construction activities occur based on a normal five-day work week with major holidays as non-work days, and would be phased, when feasible, to avoid environmental impacts. Submittals and fabrication activities had durations assuming a seven-day week in lieu of "work days" that are used for the majority of activities.

Construction would require typical heavy construction equipment including excavators, backhoes, bulldozers, scrapers, graders, water trucks, front-end

loaders, dump trucks, drill rigs, pump trucks, truck-mounted cranes, pickup trucks, barges, helicopters, and miscellaneous equipment. Daily highway truck trips would be required to bring construction material to the site, and carry construction debris and waste material to a suitable landfill. Estimated daily highway truck trips and annual construction labor force for each comprehensive plan are shown in Table 1.

Table 1. Estimated Construction Period, Truck Trips, and Construction Labor Force for SLWRI Comprehensive Plans

Construction Item	CP1 (6.5-Foot)	CP2 (12.5-Foot)	CP3 (18.5-Foot)	CP4 (18.5-Foot)	CP5 (18.5-Foot)
Construction Period (years)	4.5	5	5	5	5
Construction Labor Force (number/year)	300	300	350	350	360
Daily Truck Trips for Materials (trips/day)	95	118	168	175	177
Daily Truck Trips for Waste (trips/day)	75	56	52	53	54
Total Daily Truck Trips (trips/day)	170	173	220	228	230

Key:

CP = comprehensive plan

SLWRI = Shasta Lake Water Resources Investigation

Work Packages

The construction schedule was based on a logical sequencing of work activities and interdependencies between features, as applicable, and allowing concurrent construction activities for a majority of the features. The construction schedule for each feature was determined based on timing of work, location, and type of construction. The features of the dam raise were divided into individual "work packages" to identify discrete projects that could be constructed and/or contracted independently. Generally, the work packages contain the dam raise with related operational modifications; bridge, road, railroad, and other recreation and utility construction and relocations related to the expanding reservoir perimeter. A summary of possible work package durations and commentary on contract packaging for CP4 is shown in Table 2. Exhibit A outlines the Shasta Dam raise preliminary construction schedule for CP4.

The attached Government construction schedule bar chart (Exhibit A) shows the construction of the features utilizing methods associated with the most probable cost estimate. Overall the construction schedule provides only one scenario of many possible scenarios to complete the project. Duration and sequencing may

and probably will vary as assumptions and constraints evolve and become better defined during the final design and permitting process. Lastly, the construction schedule reflects early starts with only minimal constraints, leading to considerable concurrent work. Consequently, the schedule represents the technical work constraints and does not try to anticipate budget, resource availability, and other stakeholder preferences which could impact the schedule. The schedule provides only a starting point and not the baseline for discussions regarding regional resources, budget restrictions, stakeholder preferences, and contract coordination. As design and permitting progress, relevant assumptions and constraints will increase and become better defined, and it is likely that a longer overall project duration will result.

Clearing Work Package

The clearing work package includes clearing trees and vegetation from the construction areas and reservoir perimeter. Clearing of vegetation is only allowed from September 1 to February 1 of each year, therefore, clearing from the construction areas should begin a year in advance of the award for those work packages. This will allow the construction activities to begin immediately after the contract is awarded and will not impact the start of other construction activities. The clearing of the inundated reservoir area will take approximately ten months to complete and will require several land access points, lake access, and even areas of helicopter operations. Reservoir clearing has been scheduled so that completion of the clearing work will coincide with the completion of the Dam Raise work to minimize sediment stabilization duration and potential objectionable re-growth.

Dam Raise Work Package

The Dam Raise includes the construction or modification of the left wing embankment, right wing dam and access road, spillway, concrete dam crest (main dam), temperature control device (TCD), powerhouse and penstocks, and outlet works. Construction of the core walls and mechanically stabilized earth walls on the left wing dam embankment is the first construction activity scheduled to provide early flood protection for the left abutment. Once completed, the construction of the dam spillway is allowed to begin. The reservoir water surface elevation may need to be drawn down to elevation 1008.17 based on North American Vertical Datum of 1988 (NAVD88) prior to demolition of the existing spillway concrete crest and piers, protecting the construction area and downstream facilities from uncontrolled releases. The schedule assumes that a bulkhead or cofferdam will be installed on the upstream face to allow the reservoir to be maintained at elevation 1028.00 (NAVD88) during construction. The spillway bridge and spillway gates will be taken out of service during the construction. Due to access restrictions, a majority of the work will be staged from barges along the upstream face.

The right side of the concrete dam crest, labeled as "main dam", is shown to be constructed before the left side to allow for the TCD and powerhouse and penstock modifications to start after the right crest has been completed. The

 placement of the main and right wing concrete blocks have been scheduled to occur during the fall, winter, and spring due to concern of the summer heat during placement. Facilitating the main dam construction, the dam crest road and gantry crane will be taken out of service for approximately 30 months. The gantry crane will be operational for the right wing dam after approximately 12 months. Modifications to the penstock will require that each unit is sequentially taken temporarily out of service. Only one unit will be out of service at any one time. Modification to the TCD is allowed from October to June due to water temperature concerns. The penstock and powerhouse modifications have been sequenced to occur at the same time as the TCD work to minimize the time that the powerhouse will be offline. The modification to the outlet works is allowed to begin only after the spillway construction has been completed. Depending on the final contract duration and construction schedule requirements, it would be prudent to anticipate select work for the Dam Raise to require multiple shifts.

Lakeshore Drive Work Package

The Lakeshore Drive work package includes relocation of Lakeshore Drive, construction of two new Union Pacific Railroad (UPRR) bridges, construction of Doney and Charlie Creek Road bridges, construction of Doney Creek and Antlers Dikes, and the UPRR embankments, and relocation of the railroad tracks. Early activities include constructing temporary railroad crossings to permit continual unrestricted access along the railroad alignment during the dike, embankment, and track construction.

The construction of the four bridges can occur concurrently or sequentially, depending on contract work packaging and related available resources. Once the bridges and embankments are completed, the UPRR will require a brief outage to allow the final connection to the new tracks. The existing four bridges will be demolished after completion and relocation of traffic to the new bridges. This demolition will need to occur during the months in which the reservoir elevation is at its lowest level. Careful planning, coordination, and intense multi-shift work will be required to minimize this outage, which is shown as two days.

Pit River Bridge Modifications Work Package

The Pit River Bridge modifications will take approximately 17 months to complete and requires work to be performed without restricting traffic, and as such, requires barge staged access and substantial shoring and falsework. Timing of some of the construction tasks required for this modification should be sequenced when the reservoir elevation is lowered for the spillway modifications.

Bridge Replacement Work Packages

There are three road bridges, Didallas, Fender's Ferry, and McCloud Bridges that are shown to be constructed concurrently. Didallas and McCloud Bridges each include construction of a new bridge and demolition of the existing bridge. Work for Fender's Ferry bridge includes modification to the existing bridge

and, depending on the reservoir levels may require a cofferdam and unwatering for pier construction and work within the reservoir. These bridges are not logically related or tied to each other and are not constrained to begin at a particular time. Nevertheless, as with other aspects of the overall project, it could be beneficial to time their construction with the dam raise or other seasonal reservoir drawdowns.

Recreation Facilities Work Package

The recreation facilities work package includes the work required for relocating the marinas, public boat ramps, campgrounds, and day use areas. Functionally diverse and spread throughout the new shoreline, these recreation facilities are shown to occur concurrently, without inter-related logic and without starting constraints. The overall duration of these features reflects approximately two years, which ultimately will be dependent upon contract packaging and stakeholder preferences. The Bridge Bay Marina work includes the construction of Bridge Bay East and West Dikes. The boat ramps will need to be completed prior to allowing the reservoir filling to begin.

Visitor Center Work Package

The Visitor Center is shown to begin after the Dam Raise has been completed and represents the last critical path work on the construction schedule. This is due to the desire to utilize the existing visitor center parking lots as the contractor staging area for the dam raise work.

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Work Package Summary	Work Scope	Duration	Contract and Work Package Comments
Clearing	Work broken into "construction area" and "reservoir perimeter" clearing. The construction area clearing is shown to occur early in the schedule to allow preliminary clearing at each work site during allowable season September 1 – February 1. This will allow construction work to proceed and not be dependent upon clearing with limited dates. No helicopter access to Bridge bay, Lakeshore east, Pit arm, McCloud arm.	43 months	Construction area clearing seems suitable for a single early contract, or perhaps a few very small contracts split by location. Regarding the larger reservoir perimeter clearing, local and small business participation could be increased by considering several clearing contracts, primarily by location, access points, or clearing methods. A single or few larger clearing contracts may bring larger, better equipped contractors to the table, which could protect schedule risk and could reduce costs through better economies of scale.
Dam Raise	Left wing embankment raise, right wing concrete raise, spillway reconstruction, non-overflow main dam raise, right wing access road, TCD, powerhouse improvements, penstock modifications, outlet works modifications.	49 months	Integration of work, access and staging requirements, contracting and sequencing concerns suggest that a single contract would be preferable if not necessary. Possible exceptions might be the powerhouse improvements. The dam raise would require a well-equipped, diverse, civil contractor with extensive dam and marine experience.
Lakeshore Drive	Lakeshore Drive relocation, UPRR Doney Bridge replacement, UPRR Sacramento 2nd Crossing bridge replacement, UPRR embankment and dikes, track relocation, Charlie Creek vehicle bridge replacement, Doney Creek vehicle bridge replacement, and existing bridge demolition.	33 months	Contracts could reasonably be broken into the vehicle bridge construction - one or both; vehicle bridge demolition - one or both; Lakeshore Drive and vicinity temporary access improvements; UPRR bridge construction - one or both; UPRR bridge demolition - one or both; and finally the UPRR alignment reconstruction. While it may not lead to the most competitive pricing, a single contract, perhaps incorporating a degree of design-build, would probably lessen schedule risk, and may afford better coordination and responsiveness to public needs during construction.
Pit River Bridge Modifications	Waiting until after the spillway work has commenced to begin structural concrete pier water level isolation tubs; while not shown delayed, may be beneficial due to lower and stable reservoir elevation.	17 months	Reasonably a stand-alone contract, utilizing a well-equipped civil contractor with marine experience, RFP would be helpful to evaluate capability, methods and potential safety, cost, and schedule risk.
Didallas Bridge Replacement	Highway bridge construction and existing bridge demolition.	12 months	Reasonably a stand-alone contract, utilizing a well-equipped civil contractor with marine experience. Contractor evaluations should include methods and potential safety, cost, and schedule risk.

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Table 2. Work Breakdown Summary and Contract Package Commentary for CP4 (contd.)

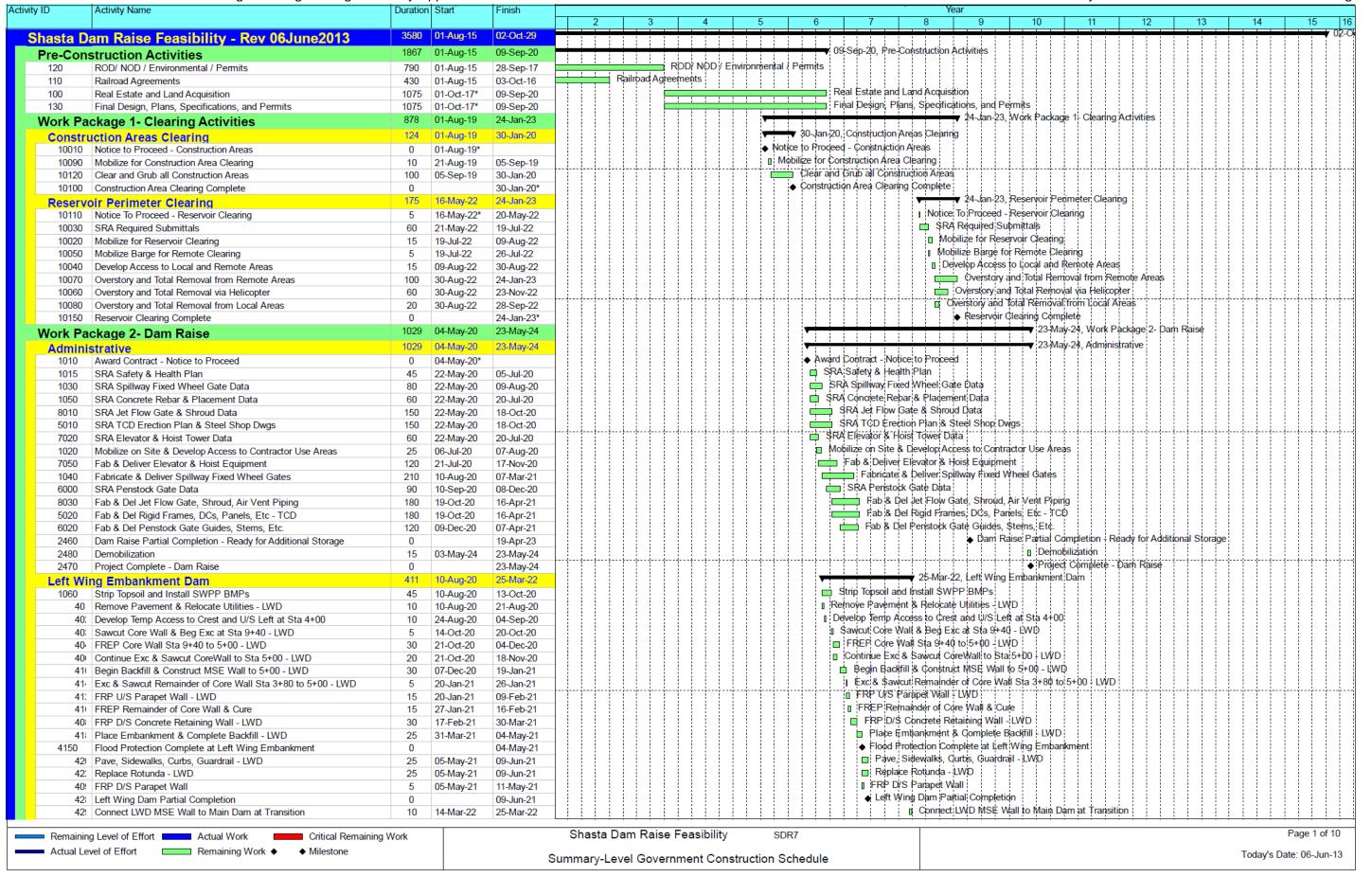
Work Package Summary	Work Scope	Duration	Contract and Work Package Comments
Fenders Ferry Bridge Reconstruction	Bridge pier expansion / extension and in-place bridge reconstruction; schedule contemplates pier construction requiring cofferdam which is more conservative than the position described possible in the Preliminary Draft EIS.	12 months	Reasonably a stand-alone contract, utilizing a well-equipped civil contractor with marine experience, RFP would be helpful to evaluate capability, methods and potential safety, cost, and schedule risk.
McCloud Bridge Replacement	Highway bridge construction and existing bridge demolition.	14 months	Reasonably a stand-alone contract, utilizing a well-equipped civil contractor with marine experience. Contractor evaluation should include methods and potential safety, cost, and schedule risk.
Recreation Facilities	Bridge Bay dikes construction, Marina removal and replacements, public and private boat ramp reconstruction, campground removal and construction, day use area removal and construction. New 10.7 acres of land for marina and boat ramp.	27 months	Local and small business participation could be increased by considering several recreational facility contracts, which could be issued, primarily by location or potentially by improvement type.
Visitor Center	New building and site construction.	14 months	Presumably a single contract utilizing a diverse commercial contractor.
Utilities and Miscellaneous Infrastructure	Scope and schedule to be developed during final design; presumably relocation and establishment of new potable water lines, waste water lines, power transmission and distribution lines, communication lines, wells and pump services, and other perimeter and site utilities.	20 months	Presumably many contracts and potentially administered and performed by the applicable utility. Separate contracts by utility type and location may be more cost effective.
Pit 7 Dam and Powerplant Modifications	Tailwater depression system and mechanical operation improvements.	7 months	PG&E might perform. Or, single contract, experienced in dam and related mechanical facilities.
Gravel Augmentation	Annual deposition of granular material into the river at one to three locations and totaling 5,000 tons to 10,000 tons per year for 10 years; unclear when this requirement starts.	113 months	Presumably many contracts and potentially administered and performed by the applicable utility. Separate contracts by gravel placement method and location may be more cost effective.
Water/Wastewater Treatment Plants	Construct new treatment facility; size/scope not determined.	11 months	Presumably a single contract utilizing an experienced treatment plant contractor.

Table 2. Work Breakdown Summary and Contract Package Commentary for CP4 (contd.)

Work Package Summary	Work Scope	Duration	Contract and Work Package Comments
Silverton and Jones Valley Road Improvements	Various activities to include grading, drainage, surfacing, and finish road realignments; scope and schedule to be developed during final design phase.	11 months	Local and small business participation could be increased by considering a single contract for each road improvement area.
Turntable Bay Road Improvements	Various activities to include grading, drainage, surfacing, and finish road realignments; scope and schedule to be developed during final design.	11 months	Local and small business participation could be increased by considering a single contract for each road improvement area.
Salt Creek Road Improvements	Various activities to include grading, drainage, surfacing, and finish road realignments; scope and schedule to be developed during final design.	11 months	Local and small business participation could be increased by considering a single contract for each road improvement area.
Gilman Drive Improvements	Various activities to include grading, drainage, surfacing, and finish road realignments; scope and schedule to be developed during final design.	11 months	Local and small business participation could be increased by considering a single contract for each road improvement area.

Key:
CP = comprehensive plan
EIS = Environmental Impact Statement
PG&E = Pacific Gas and Electric Company RFP = Request for Proposal TCD = Temperature Control Device UPRR = United Pacific Railroad

EXHIBIT A Preliminary Construction Schedule for CP4



Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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Concrete Dam Spillway		06-Jan-21	19-Apr-23										T	lobilizo D	Drac M	our tool		Construct A										i
1090 Mobilize Barge-Mounted Crane & Construct Access Platforms		06-Jan-21	26-Jan-21	-										Remove C				Jonstruct At	cess Fia	tionns								:
1070 Remove Concrete Dam Parapets		27-Jan-21	28-Jan-21	-														lge - Right a	nd Midd	lo Pav								i
1100 Remove Existing Spillway Bridge - Right and Middle Bays	20	03-May-21*	28-May-21	-										Reinc	VE EXIS	այ շա	IIIWay DIIQ	way Bridge/	Access (ne pays	Contino							í
1110 Spillway Bridge/Access Out of Service	499	03-May-21	19-Apr-23	+										ri Plem	ove Dr	ım Gəte	e Pidht	and Middle	Rave	Jul OI 3	Service							
1120 Remove Drum Gates- Right and Middle Bays	20	01-Jun-21	28-Jun-21	-										Keii				ght and Mic		of Cor								1
1130 Spillway Gates Right and Middle- Out of Service		01-Jun-21	04-May-22	-										n loct				dam and Ur				(DBO) B	tauc 1 2	, '				
1250 Install U/S Bulkhead/ Cofferdam and Unwater to El. 1008 (NAVD88) B	15	29-Jun-21	20-Jul-21	-										- :	: : :	: :	: : :	for PT Anch	: :	: : :	JO (IVAVI	Doop	ays I-S	'				í
1170 Construct Drill Rig Platform for PT Anchors- Pier 1	5	14-Jul-21	20-Jul-21											!!				ors - New Pi			; -							
1150 Setup & Drill for PT Anchors - New Piers 1, 2 & 3	_	21-Jul-21	15-Sep-21	+ $+$ $+$														ier and Cre			مالا			- '				
1140 Demo Spillway Concrete Pier and Crest -Right & Middle	30	21-Jul-21	31-Aug-21	-											ono op			tain Reserve	: -	: : :	: : :	JAVD 8	38)					į
1190 Maintain Reservoir WSE at Elev 1028 (NAVD 88)		21-Jul-21	05-Apr-23	+ $+$ $+$											Constn			in Bays 1,		at Lic	1020 (11	AVLO	,00					
1385 Construct Aeration Slots in Bays 1, 2, & 3		01-Sep-21	03-Nov-21	+ $+$ $+$ $+$										1 7	i i i	i i		nd Anchors	*i i	rc 1 2	2.3							į
1160 FREP Concrete Piers and Anchors New Piers 1, 2 & 3	50	16-Sep-21	24-Nov-21	-											1 1 1			New Crest			~ 3							
1200 FREP Spwy Concrete New Crest Bays 1, 2 & 3	50	14-Oct-21	27-Dec-21	+ $+$ $+$														m at New		2 04 3				- '				į
1230 Construct Access Platform at New Pier 1	5	29-Nov-21	03-Dec-21	-														out & Cure		or 1 2	2.2							
1210 Install PT Anchors, Grout & Cure - New Pier 1, 2 & 3	21	06-Dec-21	05-Jan-22	+ $+$ $+$										- '				Spillway S						'				
1180 Install, Test & Remove Spillway Stoplogs Bays 1, 2 & 3	5	28-Dec-21	04-Jan-22	+ $+$ $+$											7 1 1	* i i	i i i	Gates Bay	i* ~	i "i i	2 X 3							
1220 Install New Spillway Gates Bays 1, 2 & 3	40	06-Jan-22	02-Mar-22		 												1. 1 7	e Girders, E	1 1	!!!	loists D	ave 1	282		ļ 			;-
1240 Install Spwy Bridge Girders, Deck and Gate Hoists- Bays 1, 2 & 3	30	03-Mar-22	13-Apr-22	+ $+$ $+$														ates Bays 1		Jake	Signal De	., so 1, 2	- 14 4					
1260 Test New Spwy Gates Bays 1, 2 & 3	15	14-Apr-22	04-May-22	-														Spillway B			.							í
1300 Mobilize for Left Spillway Bay Work		01-Jun-22*	07-Jun-22	+ $+$ $+$											"			g Spillway I			av.							í
1310 Remove Existing Spillway Bridge at Left Bay	15	08-Jun-22	28-Jun-22	-									1 1		1 "			Gate- Left I		Leit B	ау							í
1320 Remove Drum Gate- Left Bay	10	29-Jun-22	13-Jul-22	+ $+$ $+$												Remo		vay Gate Le		of Son	ico							1
1330 Spillway Gate Left - Out of Service		29-Jun-22	05-Apr-23	-												n Ineta		vay Gate Le Ikhead and				20046						į
1440 Install U/S Bulkhead and Unwater to El. 1008- Bays 4-6	15	14-Jul-22	03-Aug-22	-	1 1 1			111			-							Rig Platfor										1
1350 Construct Drill Rig Platform for PT Anchors - Pier 4	5	28-Jul-22	03-Aug-22	+ $+$ $+$	1 1 1			111							1 1 1			ay Concrete										į
1340 Demo Spillway Concrete Pier and Crest -Left	25	04-Aug-22	08-Sep-22	-									-			1 1	1 1 1	for PT And										i
1360 Setup & Drill for PT Anchors - New Piers 4 & 5	25	04-Aug-22	08-Sep-22		·		-44	444							.	-, ,	* 1 1	rete and Ar							444			<u>+-</u>
1370 FREP Concrete and Anchors New Piers 4 & 5	30	09-Sep-22	20-Oct-22	-														Aeration S										í
1450 Construct Aeration Slots in Bays 4, 5, & 6	60	09-Sep-22	05-Dec-22	-												i i	i i i	i i i	i i	i i i	i i i	0 6						1
1380 FREP Spwy Concrete New Crest Bays 4, 5 & 6	50	30-Sep-22	12-Dec-22	-	1 1 1			1 1 1							1 1 1			wy Concret Anchors, Gr						'				į
1390 Install PT Anchors, Grout & Cure - New Piers 4 & 5		21-Oct-22	09-Nov-22	-												1 1	1 1 1	i i i i	i i	i i i	i i i	i i	_ 4 0 0					i
1400 Install, Test & Remove Spillway Stoplogs New Bays 4, 5 & 6	5	13-Dec-22	19-Dec-22	-														est & Remo New Spillwa				w Days	54, 5α	4 0				į
1410 Install New Spillway Gates Bays 4, 5 & 6		20-Dec-22	15-Feb-23	4 1 1												- -		Spwy Brid				-44 1 14:	ata Da					í
1420 Install Spwy Bridge Girders, Deck and Gate Hoists- Bays 4, 5 & 6	25	16-Feb-23	22-Mar-23	-															- : :		: : :			/S 4, 5 d	. 0			1
1700 Complete Spwy Bridge, Crane Rail and Parapets	20	23-Mar-23	19-Apr-23	_														plete \$pwy				Parape	315					
1430 Test New Spwy Gates Bays 4, 5 & 6	10	23-Mar-23	05-Apr-23	-														New Spwy (way Comple										i
1710 Spillway Complete - Access Open	0		19-Apr-23									<u> </u>				A 22			: :		: : :							
Concrete Main Dam and Right Wing Dam		10-Aug-20	05-Apr-22									-		D				e Main Dar			ig Dami							i
2030 Demo Conc & Remove D/S Parapet & Curb - Rt. Side			30-Mar-21	_								- -						pet & Curb		ie .	.							i
2040 Gantry Crane Out of Service (Blk 49-77)	237	10-Aug-20	19-Jul-21	_									1 1	- Gar				(Blk 49-77)										í
2080 Right Side Dam Crest Road - Out of Service	237	10-Aug-20	19-Jul-21	_														- Out of Se	rvice									
2010 FREP Concrete Blocks 46 to 76- Rt side	180	08-Sep-20	25-May-21	1					-			-		_ : :				6-Rt side		40.70	,							í
2050 FREP Parapets, Inst Crane Rail & Tendons - Blk 46-76	180	06-Oct-20	23-Jun-21										1 1					Rail & Tendo										
2090 Main Dam Crest Road Lt Side - Out of Service		26-May-21	05-Apr-22	4														oad Lt Side						- '				
2430 Demo Conc & Remove D/S Curb & Parapet - Lt. Side		26-May-21	15-Oct-21	_														/S Curb & I			ie .							í
2060 Lift Gantry Crane to New Elev & Roll onto Blk 76	10	24-Jun-21	08-Jul-21	_														v & Roll on			.			- '				í
2070 FREP Conc Block 77, Inst Crane Rails @ RWD	7	09-Jul-21	19-Jul-21	4	ļļi	↓↓.		.ļļ					.لاِا					rane Rails (,				لبلبا	ļļl.		<u>.</u> -
2440 FREP Concrete Blocks 38 to 15 - Lt Side	120	16-Sep-21*	08-Mar-22	_														cks 38 to 1			.			- '				í
2450 FREP Parapets & Tendons - Blk 38-15	120	14-Oct-21	05-Apr-22	_														Tendons - E	як 38-15									í
Elevator Towers	220	29-Sep-20	12-Aug-21									+					tor Towers				.			- '				
7010 Demo Elevator Tower, Blk 46	15	29-Sep-20	20-Oct-20											o Elevato			3							'	1 1 1			i
Elevator Out of Service	55	29-Sep-20	18-Dec-20				1 1							evator Ou														
FREP Elevator Tower Concrete	20	21-Oct-20	18-Nov-20					$\parallel \parallel \parallel$				1 1	1 1	P Eleva							,			- '	+ $+$ $+$			í
Install Car & Hoist & Test - Elevator Tower	20	19-Nov-20	18-Dec-20										■ Ins				Elevator	Tower							$ \cdot $			
7120 Demo Hoist Tower, Blk 38	15	26-May-21	16-Jun-21											Dem		1 1					.			'				í
FREP Hoist Tower Concrete	20	17-Jun-21	15-Jul-21	1										- :	: : :	: :	Concrete	: : :										į
Install Car & Hoist & Test - Hoist Tower	20	16-Jul-21	12-Aug-21	7									-					Hoist Tower	•		.			'				í
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Remaining Level of Effort Actual Work Critical Remaining	Work			Sha	sta Da	ım Rai	se Fe	asibilit	У	S	DR7															F	Page 2	2

Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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	·		n Start	Finish	2 3 4 5 6 7 8 9 10 11 12 13 14
30 F	Place Compacted Road Embankment - RWD	10	20-Jul-21	02-Aug-21	
	Pave and Install Guardrail - RWD	10	03-Aug-21	16-Aug-21	
	ture Control Device		01-Oct-21	02-Jun-22	
	Close Low Level Slide Gates, Open PRG's (Earliest Assumed Start dat	5	01-Oct-21*	07-Oct-21	
	Pin Gates for all Shutter Structures - TCD	2	06-Oct-21	07-Oct-21	
	CD Out of Service	167	06-Oct-21	02-Jun-22	
	Remove Elec, Misc Metal, Hoists & Frames - TCD	25	08-Oct-21	11-Nov-21	
	Remove Trashracks from Shutter Structures - TCD	2	12-Nov-21	15-Nov-21	
	nstall Rigid Frame Dam Connections - TCD	15	16-Nov-21	08-Dec-21	
	Veld Barrier Panels to Existing Trashracks - TCD	20	16-Nov-21	15-Dec-21	+
	nstall Rigid Frame Steel - TCD	32	09-Dec-21	25-Jan-22	
	Extend Gate Guides - TCD	24	26-Jan-22	28-Feb-22	
51i I	nstall Barrier Panels & Side Cladding - TCD	6	01-Mar-22	08-Mar-22	
	nstall Hoist Frames & Hoists - TCD	18	09-Mar-22	01-Apr-22	☐ Install Hoist Frames & Hoists - TCD
	nstall Misc. Metalwork & Elect. Equipment - TCD	31	04-Apr-22	16-May-22	- 1-4-10Min Mattheway 1-4-10Min Min Min Min Min Min Min Min Min Min
	Fouchup Paint - TCD	20	04-Apr-22	29-Apr-22	
52 ₁ A	Attach Hoists to Gates and Test - TCD	12	17-May-22	02-Jun-22	□ Attach Hoists to Gates and Test -TCD
53I T	CD Work Complete	0		02-Jun-22	→ TCD Work Complete
Powerho	use and Penstocks	50	06-Oct-21	16-Dec-21	
	Jnit 1 Outage	10	06-Oct-21	19-Oct-21	
	Remove Penstock Hoists - Unit 1	3	06-Oct-21	08-Oct-21	
	Extend Guide Tracks for Penstock Gate - Unit 1	3	11-Oct-21	13-Oct-21	Externol Guirde Tracks for Penstock Gate - Unit 1
	nst Stem, Reinstall Penstock Gate Hoist -Unit 1	3	14-Oct-21	18-Oct-21	l linst Stem, Revinstall Penistoek Gate Holist -Unit 1
	Test Penstock Gate - Unit 1	1	19-Oct-21	19-Oct-21	──
	Jnit 2 Outage	10	20-Oct-21	02-Nov-21	■ Unit 2 Dutage
	Remove Penstock Hoist - Unit 2	3	20-Oct-21	22-Oct-21	ı Remiove Penstock Hoist Unit 2
61: F	Extend Guide Tracks for Penstock Gate - Unit 2	3	25-Oct-21	27-Oct-21	
	nst Stem, Reinstall Penstock Gate Hoist -Unit 2	3	28-Oct-21	01-Nov-21	
	Fest Penstock Gate - Unit 2	1	02-Nov-21	02-Nov-21	Test Penstock Gate - Unit 2
	Jnit 3 Outage	10	03-Nov-21	16-Nov-21	
	Remove Penstock Hoist - Unit 3	3	03-Nov-21	05-Nov-21	
	Extend Guide Tracks for Penstock Gate - Unit 3	3	08-Nov-21	10-Nov-21	
62! I	nst Stem, Reinstall Penstock Gate Hoist -Unit 3	3	11-Nov-21	15-Nov-21	ı İnst¦ Stjem, Reinstall Penstock Gate Hoist, -Unit 3
	Fest Penstock Gate - Unit 3	1	16-Nov-21	16-Nov-21	1 Test Penstock Gate - Unit 3
63I L	Jnit 4 Outage	10	17-Nov-21	02-Dec-21	Unit 4 Outrage
	Remove Penstock Hoist - Unit 4	3	17-Nov-21	19-Nov-21	
63: E	Extend Guide Tracks for Penstock Gate - Unit 4	3	22-Nov-21	24-Nov-21	ı Extendi Giuide Tracks for Penstock Gate Unit 4
63! I	nst Stem, Reinstall Penstock Gate Hoist -Unit 4	3	29-Nov-21	01-Dec-21	
63 [.] T	Fest Penstock Gate - Unit 4	1	02-Dec-21	02-Dec-21	Test Penstock Gate - Unit 4
64I L	Jnit 5 Outage	10	03-Dec-21	16-Dec-21	■ Unit 5 Outage
64 F	Remove Penstock Hoist - Unit 5	3	03-Dec-21	07-Dec-21	ı Remotve Penistolck Hoist - Unit 5
64; E	Extend Guide Tracks for Penstock Gate - Unit 5	3	08-Dec-21	10-Dec-21	ı Exterid Gluidle Trackis for Plenstock Gate - Unit 5
64! I	nst Stem, Reinstall Penstock Gate Hoist -Unit 5	3	13-Dec-21	15-Dec-21	ı İnşt Şterh, Reinstall Penstock Gate Hoist -Unit 5
	Fest Penstock Gate - Unit 5	1	16-Dec-21	16-Dec-21	
Outlet W	orks	260	20-Apr-23	26-Apr-24	v 26-Apr-24, Outlet; Works
	Set Coaster Gate for 1st OW at El 742	1	20-Apr-23	20-Apr-23	
	Remove Existing Tube Valve OW #1	10	21-Apr-23	04-May-23	
	Demo OW #1 Concrete	10	05-May-23	18-May-23	g Demo OW #1 Concrete
	nstall Jet Flow Gate & Air Shroud - OW #1	20	19-May-23	16-Jun-23	
	FRP Concrete - Outlet Works #1	5	19-Jun-23	23-Jun-23	
	nstall Air Vent Piping & Hyd. Power Unit- OW #1	15	26-Jun-23	17-Jul-23	
	Remove Coaster Gate and Test - OW #1	4	18-Jul-23	21-Jul-23	
	Set Coaster Gate for 2nd OW at El 742	1	24-Jul-23	24-Jul-23	
82: F	Remove Existing Tube Valve OW #2	10	25-Jul-23	07-Aug-23	
	Demo OW #2 Concrete	10	08-Aug-23	21-Aug-23	
	nstall Jet Flow Gate & Air Shroud - OW #2	20	22-Aug-23	19-Sep-23	
	-RP Concrete - Outlet Works #2	5	20-Sep-23	26-Sep-23	FDD:0-1
	nstall Air Vent Piping & Hyd. Power Unit- OW #2	15	27-Sep-23	17-Oct-23	
	Remove Coaster Gate and Test - OW #2	4	18-Oct-23	23-Oct-23	
	Set Coaster Gate for 3rd OW at El 742	1	24-Oct-23	24-Oct-23	\$et Coaster Gate for 3rd OW at El 742
	Remove Existing Tube Valve OW #3	10	25-Oct-23	07-Nov-23	
Remaining I	Level of Effort Actual Work Critical Remaining	Work			Shasta Dam Raise Feasibility SDR7 Pag
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Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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				2	3 4	5 6 7 8 9 10 11 12 13 14 15
83: Demo OW #3 Concrete	10	08-Nov-23	21-Nov-23			□ Defno OW #3 Concrete
83 Install Jet Flow Gate & Air Shroud - OW #3	20	22-Nov-23	21-Dec-23			□ Install Jet Flow Gate & Air Shrould - OW #3
83! FRP Concrete - Outlet Works #3	5	22-Dec-23	29-Dec-23	_		i FRP Concrete - Outlet Works #3
83 Install Air Vent Piping & Hyd. Power Unit- OW #3	15	02-Jan-24	22-Jan-24			jı İnstall Air Vent Piping & Hyd. Power Unit-OW #3
83' Remove Coaster Gate and Test - OW #3	4	23-Jan-24	26-Jan-24			I Remove Coaster Gate and Test - ØW:#3
84 Set Coaster Gate for 4th OW at El 742	1	29-Jan-24	29-Jan-24			
84: Remove Existing Tube Valve OW #4	10	30-Jan-24	12-Feb-24			Remove Existing Tube Valve OW:#4
84: Demo OW #4 Concrete	10	13-Feb-24	26-Feb-24			i i i i i i i i i i i i i i i i i i i
84 Install Jet Flow Gate & Air Shroud - OW #4	20	27-Feb-24	25-Mar-24			ını İnstalli Jet Flow Gațe & Air Shroùd - OW #4
84: FRP Concrete - Outlet Works #4	5	26-Mar-24	01-Apr-24			i FRP Concrete - Outlet Works #4
84 Install Air Vent Piping & Hyd. Power Unit- OW #4	15	02-Apr-24	22-Apr-24			b Install Air Vent Piþing & Hyd. Power Unit- OW #4
84 Remove Coaster Gate and Test - OW #4	4	23-Apr-24	26-Apr-24			Remove Coaster Gate and Test - ΦW #4
ork Package 3 - Lakeshore Drive	742	04-Nov-19	11-Oct-22			▼ 1/1-Qct-22, Work Package 3 Lakeshore Drive
Administrative	742	04-Nov-19	11-Oct-22			
11010 Notice to Proceed - Lakeshore Work Package	0	04-Nov-19*				♦ Notice to Prodeed - Lakeshore Wdrk Package
11300 SRA Required Submittals	60	04-Nov-19	02-Jan-20	7		SRA Required Submittals
13010 Mobilize - Lakeshore Improvements	15	16-Jan-20	07-Feb-20	7		□ Mobilize - Lakeshore Improvements
13300 Demobilize from Lakeshore Drive	15	04-Aug-22	25-Aug-22	7		Demobilize from Lakeshore Drive
11290 Project Complete - Lakeshore	0		11-Oct-22	 - - - - - - - - - 	************	→ Project Compléte Lakeshore
RR Embankments and Doney Creek & Antlers Dikes		07-Feb-20	16-Oct-20			v 16-Oct-20, RR Embankments and Doney Creek & Antlers Dikes
11220 Extend Underpass at RR/Lakeshore Drive South Crossing	35	07-Feb-20	30-Mar-20	7		Extend Underpass at RR/Lakeshore Drive South Crossing
12020 Strip Topsoil & Excavate Shear Key and Ditch - RR, Doney Creek & Ar	30	07-Feb-20	23-Mar-20	\dashv \mid \mid \mid \mid \mid		Strip Topsoil & Excavate Shear Key and Ditch - RR, Doney Creek & Antlers Dikes
11210 Extend Underpass at RR/Lakeshore Drive North Crossing	30	30-Mar-20	11-May-20	\dashv \mid \mid \mid \mid \mid		Extend Uriderpass at RR/Lakeshore Drive North Crossing
12030 Construct Drainage Features & Structures- RR, Doney Creek & Antlers	15	30-Mar-20	20-Apr-20	\dashv \mid \mid \mid \mid \mid		Construct Drainage Features & Structures- RR, Doney Creek & Antlers Dikes
12040 Place and Compact Embankment Zones- RR, Doney Creek & Antiers I	60	11-May-20	05-Aug-20	\dashv \mid \mid \mid \mid \mid		Place and Compact Embarikment Zones- RR, Doney Greek & Antilers Dikes
12050 Construct Retaining Structures	15	05-Aug-20	26-Aug-20	\dashv \mid \mid \mid \mid \mid		Construct Retaining Structures
12060 Place Riprap - RR, Doney Creek & Antlers Dikes	20	26-Aug-20	24-Sep-20	\dashv \mid \mid \mid \mid \mid		Place Riprap - RR, Doney Creek & Antlers Dikes
12070 Replace Topsoil and Seed - RR Dikes, Doney Creek & Antiers Dikes	15	24-Sep-20	16-Oct-20	+ $+$ $+$ $+$ $+$ $+$		Replace Topsoil and Seed - RR Dikes, Doney Creek & Antilers Dikes
	258	24-Sep-20 05-Aug-20	13-Aug-21		+	13-Aug-21, Railroad;Relocation
Railroad Relocation				-		g :Excavate for Subgrade
13040 Excavate for Subgrade	10	05-Aug-20	19-Aug-20	+ $+$ $+$ $+$ $+$ $+$		Place RR Compacted Embankment
13050 Place RR Compacted Embankment	15	19-Aug-20	10-Sep-20	+ $+$ $+$ $+$ $+$ $+$		n Place Sub-ballast:Materials
13060 Place Sub-ballast Materials	15	24-Sep-20	16-Oct-20	\dashv \parallel \parallel \parallel \parallel		
13070 Place Ballast Materials	15	16-Oct-20	06-Nov-20	4		□ Place βallast Materials □ Place RR Concrete Ties and RR Track and Signage
13080 Place RR Concrete Ties and RR Track and Signage	20	06-Nov-20	09-Dec-20	+ $+$ $+$ $+$ $+$ $+$ $+$		Connect: Tracks at RR Bridges to Relocated RR Tracks at Doney Creek and 2nd Xing
13120 Connect Tracks at RR Bridges to Relocated RR Tracks at Doney Creek	5	28-Jun-21	06-Jul-21	+ $+$ $+$ $+$ $+$ $+$		
13670 Railroad Outage Period	3	07-Jul-21	09-Jul-21	\perp		Railroad Outage Reriod
13680 Complete Subballast and Ballast at Connection Pts	2	07-Jul-21	08-Jul-21	4		Complete Subballast and Ballast at Connection Pts Complete RR Track and Connect to Existing Tracks
13690 Complete RR Track and Connect to Existing Tracks	1	09-Jul-21	09-Jul-21			Gomplete RR Track and Connect to Existing Tracks Remove Ex RR Track Ties and Ballast and Restore Railbed
13920 Remove Ex RR Track, Ties and Ballast and Restore Railbed	25	09-Jul-21	13-Aug-21	4		Remove Ex RR Track, Hes and Ballast and Restore Ralloed Re-Route Train onto New Rails - RR Operations Resume
13200 Re-Route Train onto New Rails - RR Operations Resume	0		09-Jul-21	_		
UPRR - Doney Creek Bridge	463	16-Jan-20	15-Nov-21			▼ 15-Nov-21, UPRR - Doney Creek Bridge
13030 Moblize Barge Mounted Crane and Drill Rig	15	16-Jan-20	07-Feb-20	_		□ Mobilize Barge Mounted Crane and Drill Rig
13090 Drill Pier 4 Shaft - Doney UPRR Bridge	5	07-Feb-20	14-Feb-20			ı Drill Pier 4 Shaft: - Doney UPRR Bridge
13150 Excavation for Abutment 1- Doney Creek Bridge	5	07-Feb-20	14-Feb-20			ı Excavation for Abutment 1 Doney Creek Bridge
13100 Drill Piers 1-3 Shafts from Barge - Doney Creek Bridge	45	14-Feb-20	20-Apr-20			Drill Piers 1-3 Shafts from Barge - Doney Creek Bridge
13170 Excavation for Abutment 2- Doney Creek Bridge	5	14-Feb-20	24-Feb-20			Excavation for Abutment 2: Doney Creek Bridge
13110 Construct Pier 4 to Pier Cap - Doney Bridge (dry)	10	20-Apr-20	04-May-20			Construct Pier 4 to Pier Cap - Doney Bridge (dry)
13130 Construct Piers 1-3 to Pier Cap - from Barge	35	04-May-20	23-Jun-20			Construct Piers 1-3 to Pier Cap - from Barge
13180 Drill Shafts for Abutment 1- Doney Creek Bridge	2	23-Jun-20	25-Jun-20			Dfill \$hafts for Abutment 1- Doney Creek Bridge
13280 FREP Peir Caps 1-4 - Doney Creek	25	23-Jun-20	29-Jul-20			☐ FREP Peir Caps 1-4:- Doney Creek
13190 Drill Shafts for Abutment 2- Doney Creek Bridge	2	25-Jun-20	29-Jun-20			i Drill Shafts for Abutment 2- Doney Creek Bridge
13210 Construct Abutment 1 Shaft- Doney Creek Bridge	7	29-Jun-20	09-Jul-20	7		I Construct Abutment 1 Shaft-Doney Creek Bridge
13250 FRP Abut 1 Stem Wall and Wingwalls and Backfill	15	09-Jul-20	30-Jul-20	7		in FRP Abut 1 Stem Wall and Wingwalls and Backfill
13230 Construct Abutment 2 Shaft- Doney Creek Bridge	7	09-Jul-20	20-Jul-20	7		ı Çonştruct Abutment 2 Shaft⊱ Doney Creek Bridge
13270 FRP Abut 2 Stem Wall and Wingwalls and Backfill	15	30-Jul-20	20-Aug-20	7		
13290 Erect Steel Girders, Bracing, and Diaphrams	25	20-Aug-20	25-Sep-20	7		☐: Erect Steel Girders, Bracing, and Diaphrams
13310 FRP Conc Bridge Deck and Deck Rails - Doney Creek	35	25-Sep-20	17-Nov-20	7		☐ FRP Gon¢ Bridge Deck and Deck Rails - Doney Creek
13320 Construct Doney Creek RR Bridge Approaches	20	17-Nov-20	17-Dec-20	7		Construct Donely Creek RR Bridge Approaches
13330 Place RR Ties and RR Track on Doney Creek Bridge	20	17-Dec-20	18-Jan-21	<u> </u>	++	Place RR Tres and RR Track on Doney Creek Bridge
13650 Doney Creek UPRR Bridge Complete	0	200-20	18-Jan-21	7		Donley Creek UPRR Bridge Complete
13900 Demo and Remove RR Bridge Superstructure	60	09-Jul-21	04-Oct-21			Demio and Remove RR Bridge Superstructure
	- 50	55 our 21	0.100.21		<u> </u>	
		1		Charte Dam	- Daries - Essay 11-110-1	P 1
Remaining Level of Effort Actual Work Critical Remaining	Work			Snasta Dam	n Raise Feasibility	SDR7 Page 4



Activity Name	Duration	Start	Finish	Year
				3 4 5 6 7 8 9 10 11 12 13 14
13910 Demo & Remove Conc. Piers - Doney Creek RR		04-Oct-21	15-Nov-21	□ Demo & Remove Conc. Piers - Doney Creek RR
UPRR - 2nd Crossing Bridge		02-Jan-20	22-Dec-21	22-Dec-21, UPRR - 2rld Crossing Bridge
13660 Mobilize to Second Crossing UPRR Bridge		02-Jan-20	16-Jan-20	n Mobilize to Second Crossing UPRR Bridge
13480 Drill Pier 1 and 8 Shaft (dry)- 2nd Crossing	10	16-Jan-20	31-Jan-20	g Drill Pier 1 and 8 Shaft (dry)- 2nd Crossing
13490 Excavation for Abutment 1- 2nd Crossing	5	16-Jan-20	24-Jan-20	I Excavation for Abutment 1-2nd Crossing
13500 Excavation for Abutment 2- 2nd Crossing		24-Jan-20	31-Jan-20	Excavation for Abutment 2-2nd Crossing
13510 Drill Piers 2-7 Shafts from Barge - 2nd Crossing		31-Jan-20	18-May-20	Drill Piers 2-7 Shafts from Barge 2nd Crossing
13520 Construct Piers 1&8 to Pier Cap - 2nd Crossing	30	18-May-20	30-Jun-20	□ Construct Piers 188 to Pier Cap - 2nd Crossing
13530 Construct Piers 2-7 to Pier Cap- 2nd Crossing		30-Jun-20	01-Oct-20	Construct Piers 2-7 to Pier Cap-2nd Crossing
13540 FREP Pier Caps 1-8 - 2nd Crossing		01-Oct-20	23-Nov-20	FREP Pier Caps 1-8 - 2nd Crossing
13550 Drill Shafts for Abutment 1- 2nd Crossing	5	01-Oct-20	08-Oct-20	Drill Shafts for Abutment 1- 2nd Crossing
13590 Construct Abutment 1 Shaft- 2nd Crossing		08-Oct-20	16-Oct-20	g Gonstruct Abultment 1 Shaft- 2rid Grossing
13570 Drill Shafts for Abutment 2- 2nd Crossing	5	08-Oct-20	16-Oct-20) Drill Shafts for Abutment 2- 2nd Crossing
13610 FRP Abut 1 Stem Wall and Wingwalls and BF- 2nd Crossing	10	16-Oct-20	30-Oct-20	D FRP Abut 1 Stem Wall and Wingwalls and BF- 2nd Crossing
13620 Construct Abutment 2 Shaft- 2nd Crossing	5	16-Oct-20	23-Oct-20	Construct Abutment 2 Shaft- 2nd Grossing
13630 FRP Abut 2 Stem Wall and Wingwalls and BF- 2nd Crossing	10	30-Oct-20	16-Nov-20	ing FRP Abut¦2 \$temi Wall¦and Wingwal(sand BF-¦2nd Crossing
13560 Erect Steel Girders, Bracing, and Diaphrams- 2nd Crossing	50	23-Nov-20	05-Feb-21	Erect Steel Girders, Bracing, and Diaphrams- 2nd Crossing
13580 FRP Conc Bridge Deck and Deck Rails- 2nd Crossing	60	05-Feb-21	30-Apr-21	FRP Conc.Bridge Deck and Deck Rails- 2nd Crossing
13600 Construct RR Bridge Approaches- 2nd Crossing	20	30-Apr-21	28-May-21	□ Construct;RR Bridge Approaches-2nd Crossing
13640 Place RR Ties and RR Track- 2nd Crossing		28-May-21	28-Jun-21	☐ Place RR Ties and RR Track-2nd Crossing
13700 Second Crossing UPRR Bridge Complete	0	28-Jun-21	28-Jun-21	Second Crassing UPRR Bridge Complete
13220 Demo Exist. RR Bridge Superstructure - 2nd Xing	60	16-Aug-21*	08-Nov-21	Demo Exist. RR Bridge Superstructure - 2nd Xing
13260 Demo Exist. Conc Piers - 2nd Xing		09-Nov-21	22-Dec-21	Demo Exist: Conc Piers - 2nd Xing
Lakeshore Drive Relocation		16-Oct-20	04-Aug-22	D4-Aug-22, Lakeshore Drive Relocation
			27-Jul-22	7 27-Jul-22, South Lakeshore Dr Relocation Sta 1+00 to 38+80
South Lakeshore Dr Relocation Sta 1+00 to 38+80				Excavate for Road Relocation - \$ Lakeshore Dr
2550 Excavate for Road Relocation - S Lakeshore Dr		16-Oct-20	23-Dec-20	Place Embankment and Complete Grading - \$. Lakeshore Drive
2544 Place Embankment and Complete Grading- S. Lakeshore Drive		23-Dec-20	15-Jan-21	
2545 Install Utilities - S. Lakeshore Drive	20	15-Jan-21	12-Feb-21	□ Install Utilities - \$. Lakeshore Drive
2549 Install Drainage Structures - S. Lakeshore Dr.	20	15-Jan-21	12-Feb-21	□ Install Drainage Structures - S. Lakeshore Dr.
2546 Place Base Course & Pave- S. Lakeshore Drive	15	12-Feb-21	05-Mar-21	□ Place Base Course & Pave-S. Lakeshore Drive
2547 Install Guardrail and Signage and Striping - S. Lakeshore Dr	15	05-Mar-21	26-Mar-21	n Install Guardrail and Signage and Striping - S. Lakeshore Dr
2548 Complete Final Lakeshore Drive Tie-in to Charlie Creek Bridge		11-Jul-22	27-Jul-22	Complete Final Lakeshore Drive Tie-iri to Charlie Creek Bridge
North Lakeshore Dr Relocation Sta 47+00 to 86+00	247	13-Aug-21	04-Aug-22	v → D4-Aug-22; North; Lakeshore Dr. Relocation Sta 47+00 to 86+00
1128 Demo Existing Buildings and Structures	15	13-Aug-21	03-Sep-21	ը Demor Existing Buildings and Structures:
1122 Excavate for Road Relocation	30	03-Sep-21	18-Oct-21	📋 Excávate fór Road Rélocation
1121 Place Embankment & Complete Grading - N. Lakeshore Dr	10	18-Oct-21	01-Nov-21	∎ Place Embankment & Complete Grading - NL Lakeshore Dr
1124 Relocate/Install Utilities - N. Lakeshore Drive	20	01-Nov-21	01-Dec-21	Relocate/Install Utilities - N. Lakeshore Drive
1123 Install Drainage Structures - N. Lakeshore Drive	20	01-Nov-21	01-Dec-21	□ Install Drainage Structures - N. Lakeshore Drive
1125 Place Base Course & Pave N. Lakeshore Drive		01-Dec-21	22-Dec-21	g: Place Base Course & Pave N. Lakeshore Drive
1126 Install Guardrail and Signage and Striping - Lakeshore Dr		22-Dec-21	14-Jan-22	ti Ihstall Guardrail ahd Signage ahd Striping - Lakeshore Dr
1127 Complete Final Lakeshore Drive Tie-ins & Remove Temp RR X-ings		11-Jul-22	04-Aug-22	Complete Final Laketahdra Drive To ite & Damous Torne DD V itera
Charlie Creek Bridge	364	04-May-21	10-Oct-22	→ 10-Qct-22, Charlie Creek Bridge
13335 Mobilize to Charlie Creek Bridge		04-May-21		n Mobilize to Charlie Creek Bridge
•			11-May-21	Develop Abutmeht Access
13340 Develop Abutment Access		11-May-21	18-May-21	Develop Abdument Access
13360 Develop Barge Access	5	18-May-21	25-May-21	Diffill and Construct CISS piles - Piers 2&5 (dry)
13350 Drill and Construct CISS piles - Piers 2&5 (dry)	20	18-May-21	16-Jun-21	g: Mobilize Crane Mounted Barge
13370 Mobilize Crane Mounted Barge		25-May-21	09-Jun-21	□ Construct Cofferdams - Piers 3 & 4
13380 Construct Cofferdams - Piers 3 & 4		09-Jun-21	05-Aug-21	
13400 FRP Footings & Piers 2&5	20	16-Jun-21	15-Jul-21	p FRP Footings & Piers 285
13410 Drill and Construct CISS Piles - Piers 3&4 from Barge		05-Aug-21	17-Sep-21	Dtill and Construct CISS Piles - Piers 3&4 from Blarge
13470 Structural Excavation for Pier Foundation		05-Aug-21	12-Aug-21	Structural Excavation for Pier Foundation
13390 Drive Abutment CL 140 Piles 1&6	15	12-Aug-21	02-Sep-21	Drive Abutment CL 140 Piles 1&6
13420 FRP Abutments 1&6 - Charlie Creek	20	02-Sep-21	01-Oct-21	□ FRP Abutments 1&6 - Charlie Creek
13440 FRP Footings & Piers 3 & 4	20	17-Sep-21	15-Oct-21	□ FRP Fdotings & Piers 3 & 4
13430 Backfill Abutments & Piers - Charlie Creek	15	15-Oct-21	05-Nov-21	. □ Backfill Abjutmjents & Piers - Charlie Creek
13450 Remove Cofferdams - Charlie Creek	15	05-Nov-21	30-Nov-21	□ Remove Cofferdams - Charlie Creek
13460 FRP Concrete Box Girder - Charlie Creek	110	30-Nov-21	05-May-22	FRIP Concrete Box Girder-Charlie Creek
13710 FRP Concrete Barrier - Charlie Creek	20	05-May-22	03-Jun-22	п. FRP Concrete Harrier - Charlie Creek
13720 Final Approach Grading & Bridge/Approach Paving		03-Jun-22	11-Jul-22	i i i i i i i i i i i i i i i i i i i
13730 Install Signage, Striping, Railing, Misc	10	11-Jul-22	25-Jul-22	lnstall \$ignage, Stripling, Railling, Misc
		15-Aug-22*	10-Oct-22	Demo Charfie Creek Bridge
13700 Demo Chame Creek Bridge	10			
13760 Demo Charlie Creek Bridge				
Remaining Level of Effort Actual Work Critical Remainin				Dam Raise Feasibility SDR7

Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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Activity ID	Activity Name	Duration	<u>','</u>	Finish														ear						
. locating to	reality Hallo	Duration	. Otal	THISH		2		3	4	1	5	6			7	8			2	13	1	14	15	16
13740	Charlie Creek Bridge Complete	0		10-Oct-22			1 1	1 1					-		1 1			Charlie Creek Bridge Complete		111			1 1	1
	Creek Bridge	481	17-Nov-20	11-Oct-22									•		++-		-7 1	11-Oct-22, Doney Creek Bridge						
		5	17-Nov-20	24-Nov-20										Mc	obilize	o Doney Cre	ek B	Bridge						
11020	Develop Abutment Access	5	24-Nov-20	03-Dec-20	1								ĺ	De	evelop	Abutment A	cess							
11160	Develop Barge Access	5	03-Dec-20	10-Dec-20	1											Barge Acces								
11040	Drill and Construct CISS Piles at Piers 2 & 5 in the dry	20	03-Dec-20	04-Jan-21	1													Piles at Piers 2 & 5 in the dry						
11030	Mobilize Crane Mounted Barge	5	10-Dec-20	17-Dec-20	<u> </u>	-		1-1	-††	 		1		ı M	/lobilize	Crane Mour	ited E	₿arge	î			1		
11100	Construct Cofferdams Piers 3 & 4	30	17-Dec-20	01-Feb-21	1									ė	Constr	ıct Cofferda	ms P	Piers 3 & 4						
11060	Drive Cl 140 Piles Abut 1 & 6 - Doney Creek	15	04-Jan-21	25-Jan-21	1									<u>i</u> g 1	Drive C	140 Piles /	\but 1	1 & 6 - Doney Creek						
11070	FRP Footings & Piers 2 & 5 - Doney Creek	20	04-Jan-21	01-Feb-21	1									<u> </u>	FRP F	ootings & Pi	ers 2	2 & 5 - Doney Creek						
11080	FRP Abutment 1 & 6 - Doney Creek	20	25-Jan-21	22-Feb-21	1										FRP /	butment 1	k 6 -	- Doney Creek						
11050	Drill and Construct CISS Piles at Piers 3 & 4 from Barge	25	01-Feb-21	08-Mar-21	1			1 1				1			Drill a	nd Construc	t CIS	SS Piles at Piers 3 & 4 from Barge						
11180	FRP Footings & Piers 3 & 4 - Doney Creek	20	08-Mar-21	05-Apr-21	1										FRP	Footings &	Piers	s 3 & 4 - Doney Creek						
11090	Backfill Abutments and Piers - Doney Creek	15	05-Apr-21	26-Apr-21	1										■ Bac	kfill Abutme	nts ar	nd Piers - Doney Creek						
11190	Remove Cofferdams - Doney Creek	15	26-Apr-21	17-May-21	1										■ Re	move Coffer	dams	s - Doney Creek						
11110	FRP Concrete Box Girder - Doney Creek	110	17-May-21	21-Oct-21	1			1 1								RP Con	crete	Box Girder - Doney Creek						
11120	FRP Concrete Barrier - Doney Creek	20	21-Oct-21	18-Nov-21	†ii	<u> </u>	 			;;		111			·ii	FRP Co	ncret	te Barner - Doney Creek	; <u>;</u> <u>;</u>			iii-		
11130	Final Approach Grading and Bridge/Approach Paving	25	19-Nov-21	29-Dec-21	1 : :											Final A	ppro	pach Grading and Bridge/Approach Paving						
11140	Install Signage, Striping, Railing, Misc.	10	29-Dec-21	13-Jan-22	1											l Install	Sign	nage, Striping, Railing, Misc						
11200	Demo Doney Creek Bridge	40	15-Aug-22*	11-Oct-22	1												📫 Ç	Demo Doney Creek Bridge						
11150	Doney Creek Bridge Improvements Complete	0	11-Oct-22	11-Oct-22	1												ı D	Doney Creek Bridge Improvements Complete						
Work Pa	ckage 4 - Pit River Bridge Modification	343	04-May-20	10-Sep-21								_	÷	÷	+ + -	10-Sep-21,	Wor	rk Package 4 - Pit River Bridge Modification						
14840	Notice to Proceed - Pit River Bridge	0	04-May-20*		1							• N	lotice	e to I	Procee	l - Pit River	Bride	ge						
14850	SRA Required Submittals	75	22-May-20	04-Aug-20	1											Submittals								
14450	Mobilize to Pit River Bridge	15	18-Aug-20	09-Sep-20												it River Brid	: :							
14460	Develop Barge Access	10	09-Sep-20	23-Sep-20	1											rge Access	7							
14480	Mobilize Crane Mounted Barge	10	23-Sep-20	07-Oct-20	 							· 				ane Mounte	d Bar	ige	 					
14490	Construct Temp Staging and Access Platform - Pier 3	30	07-Oct-20	20-Nov-20	1									Co	onstruct	Temp Stagi	ng an	nd Access Platform - Pier 3						
14500	Drill and Core Holes thru Pier 3	5	20-Nov-20	01-Dec-20	1											Core Holes t								
14510	Install and Grout Bundled Bars - Pier 3	5	01-Dec-20	08-Dec-20	1								i	i	i i	1 1 1 1	i i	Bars-Pier 3						
14660	Construct Temp Staging and Access Platform - Pier 4	30	08-Dec-20	21-Jan-21	1									<u> </u>	Constru	ct Temp Sta	ging	and Access Platform - Pier 4						
14520	FRP Conc Base of Protective Structure to El 1065 P3	5	08-Dec-20	15-Dec-20	1													ctive Structure to EI 1065 P3						
14530	Cure Conc Base - Pier 3	28	15-Dec-20	12-Jan-21	1											nc Base - P								
14540	FRP Conc Structure (1st Placement) Pier 3	5	12-Jan-21	19-Jan-21	1 ! !									0 1	FRP C	onc Structur	e (1st	t Placement) Pier 3						
14550	Cure Conc (1st Placement) Pier 3	28	19-Jan-21	16-Feb-21	1										Cure (onc (1st Pla	dem	ient) Pier 3						
14670	Drill and Core Holes thru Pier 4	5	21-Jan-21	28-Jan-21	1 ! !									0	Drill an	d Core Hole	s thru	u Pier 4						
14680	Install and Grout Bundled Bars - Pier 4	5	28-Jan-21	04-Feb-21	 							·		};	Install	and Grout B	undle	ed Bars - Pier 4	 					
14690	FRP Conc Base of Protective Structure to El 1065 P4	5	04-Feb-21	11-Feb-21	1 ! !										FRP (onc Base of	Prot	tective Structure to El 1065 P4						
14700	Cure Conc Base - Pier 4	28	11-Feb-21	11-Mar-21	1										Cure	Conc Base	Pier	4						
14560	FRP Conc Structure (2nd Placement) Pier 3	5	16-Feb-21	23-Feb-21	1									1	FRP (onc Structu	re (2r	nd Placement) Pier 3						
14570	Cure Conc 2nd Placement) Pier 3	28	23-Feb-21	23-Mar-21	1										Cure	Conc 2nd P	lacen	ment) Pier 3						
14710	FRP Conc Structure (1st Placement) Pier 4	5	11-Mar-21	18-Mar-21	1 ! !									1	FRP	Conc Struct	ıre (1	1st Placement) Pier 4						
14720	Cure Conc (1st Placement) Pier 4	28	18-Mar-21	15-Apr-21	1								į		un Cun	Conc (1st I	lace	ement) Pier 4						
14580	FRP Conc Structure (3rd Placement) Pier 3	5	23-Mar-21	30-Mar-21	1													(3rd Placement) Pier 3						
14590	Cure Conc (3rd Placement) Pier 3	28	30-Mar-21	27-Apr-21	1													ement) Pier 3						
14730	FRP Conc Structure (2nd Placement) Pier 4	5	15-Apr-21	22-Apr-21	1								1		FRI	Conc Struc	ture	(2nd Placement) Pier 4						
14740	Cure Conc 2nd Placement) Pier 4	28	22-Apr-21	20-May-21	<u> </u>							1						dement) Pier 4	<u> </u>			111		
14600	FRP Conc Structure (4th Placement) Pier 3	5	27-Apr-21	04-May-21	1										ı FR	Conc Stru	cture	(4th Placement) Pier 3						
14610	Cure Conc (4th Placement) Pier 3	28	04-May-21	01-Jun-21	1										■ Cı	ire Conc (4th	ı Plac	cement) Pier 3						
14750	FRP Conc Structure (3rd Placement) Pier 4	5	20-May-21	27-May-21	1									-				e (3rd Placement) Pier 4						
14760	Cure Conc (3rd Placement) Pier 4	28	27-May-21	24-Jun-21	1								i					acement) Pier 4						
14620	FRP Side Walls - Pier 3	5	01-Jun-21	08-Jun-21	1										g Fl	RP Side Wa	ls - P	Pier 3						
14650	Install Sump Pumps, Alarm Systems, and Piping - P3	5	08-Jun-21	15-Jun-21	1										: :		: :	ds, Alarm Systems, and Piping - P3						
14630	Cure Side Walls - Pier 3	28	08-Jun-21	06-Jul-21	1								i	į	1 (ure Side W	alls -	Pier3						
14770	FRP Conc Structure (4th Placement) Pier 4	5	24-Jun-21	01-Jul-21	1										į F	RP Conc St	ructur	re (4th Placement) Pier 4						
14780	Cure Conc (4th Placement) Pier 4	28	01-Jul-21	29-Jul-21	1									į	i i	Cure Conc (4	th P	Placement) Pier 4						
14640	Remove Access Platform and Falsework - Pier 3	5	06-Jul-21	13-Jul-21				1 1				1			j j	Remove Acc	ess P	latform and Falsework - Pier 3	î - 1 - 1 -			111		
14790	FRP Side Walls - Pier4	5	29-Jul-21	05-Aug-21	1											FRP Side V								
14810	Install Sump Pumps, Alarm Systems, and Piping - P4	5	05-Aug-21	12-Aug-21	1										1 1	Install Sum	Pur	mps, Alarm Systems, and Piping - P4						
14800	Cure Side Walls - Pier 4	28	05-Aug-21	02-Sep-21	1											Cure Side	Walls	s-Pier4						
14820	Remove Access Platform and Falsework - Pier 4	5	02-Sep-21	10-Sep-21	1													Platform and Falsework - Pier 4						
11020	The second secon				<u></u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> i</u>	<u> </u>	<u>. i i</u>	i	<u> </u>	<u>, ; ·</u>	<u> </u>	<u> </u>		<u> i</u>		_ i _ i	<u> </u>	<u>i î</u>	
Remainir	ng Level of Effort Actual Work Critical Remaining	Work			Sh	nasta E	am I	Raise	Feasil	bility	SD)R7											Page 6	of 10
Actual Le										•											Τ-	louis D	to: 00	lun 40
	Tomaining Tront • Timestone			5	Summ	ary-Le	vel G	overr	nment	Cons	truction S	chedu	le								100	lay's Da	ie. Ub-c	un-13
			1																					

Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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Mork Pac 14000 1 14010 3 14020 1 14060 6 14200 3 14080 1 14100 1 14120 1 14140 1 14130 1 14150 1 14190 1	Pit River Bridge Modification Complete Rage 5 - Didallas Creek Bridge Notice to Proceed - Didallas Creek SRA Required Submittals Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge Didallas Creek Bridge Improvements Complete	0 289 0 60 10 5 5 20 25 10 80 15	04-May-20 04-May-20* 22-May-20 20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	10-Sep-21 24-Jun-21 20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	2 3 4 5 6 7 8 9 10 11 12 13 14 15 I Prit River Bridge Modification Complete 24 Jun-21, Work Package 5 Didallas Creek Bridge Notice to Proceed - Didallas Creek SRA Required Submittals Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 Red Ref Didallas Creek Bridge
14000 14010 14020 14060 14200 14100 14110 14120 14140 14150 14150 14160	Notice to Proceed - Didallas Creek SRA Required Submittals Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	0 60 10 5 5 20 25 10 80 15 15	04-May-20* 22-May-20 20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	24-Jun-21 20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20	♦ Notice to Proceed - Didallas Creek □ SRA Required Submittals □ Mobilize and Develop Access to Didallas Creek Bridge □ Construct Cofferdam as needed □ Structural Excavation for Pier Foundation □ Drill and Construct Fnd Piles Abut 1 & 2 □ FRP Abutment 1 & 2
14000 14010 14020 14060 14200 14200 14100 14110 14120 14140 14150 14150 14160	Notice to Proceed - Didallas Creek SRA Required Submittals Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	60 10 5 5 20 25 10 80 15 15	22-May-20 20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20	SRA Required Submittals Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abolt 1 & 2
14020 14060 14200 3	Mobilize and Develop Access to Didallas Creek Bridge Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	10 5 5 20 25 10 80 15 15	20-Jul-20 03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20	☐ Mobilize and Develop Access to Didalfas Creek Bridge ☐ Construct Cofferdam as needed ☐ Structural Excavation for Pier Foundation ☐ Drill and Construct Find Piles About 1 & 2 ☐ FRP Aboutment 1 & 2
14060 (14200 (14	Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	5 5 20 25 10 80 15 15	03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20	☐ Construct Cofferdam as needed ☐ Structural Excavation for Pier Foundation ☐ Drill and Construct Fnd Piles About 1 & 2 ☐ FRP Aboutment 1 & 2
14060 (14200 (14	Construct Cofferdam as needed Structural Excavation for Pier Foundation Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	20 25 10 80 15 15	03-Aug-20 10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	10-Aug-20 17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20	i Structural Excavation for Pier Foundation □ Drill and Construct Fnot Piles About 1 & 2 □ FRP Aboutment 1 & 2
14080 1 14100 1 14110 1 14120 1 14140 1 14130 1 14150 1 14190 1	Drill and Construct Fnd Piles Abut 1 & 2 FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	20 25 10 80 15 15	17-Aug-20 15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	15-Sep-20 21-Oct-20 04-Nov-20	□ Drill and Construct Fnot Piles Abut 1 & 2 □ FRP Abutment 1 & 2
14100 1 14110 1 14120 1 14140 1 14130 1 14150 1 14190 1	FRP Abutment 1 & 2 Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	25 10 80 15 15	15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	21-Oct-20 04-Nov-20	□ FRP Abjutment 1 & 2
14110 I 14120 I 14140 I 14130 I 14150 I 14190 I 14160 I	Backfill Abutments FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	10 80 15 15	15-Sep-20 21-Oct-20 04-Nov-20 03-Mar-21	21-Oct-20 04-Nov-20	
14120 1 14140 1 14130 1 14150 1 14190 1 14160 1	FRP Concrete Box Girder FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	80 15 15 5	04-Nov-20 03-Mar-21		i i i i i i i i i i i i i i i i i i i
14140 1 14130 1 14150 1 14190 1 14160 1	FRP Concrete Barrier Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	15 15 5	03-Mar-21	03-Mar-21	
14130 I 14150 I 14190 I 14160 I	Final Grading and Paving of Approach Rd Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	15 5			
14150 I 14190 I 14160 I	Install Signage and Striping and Railing Demo Didallas and Second Creek Bridge	5	03-Mar-21	24-Mar-21	g FRP Concrete Barrier
14190 I 14160 I	Demo Didallas and Second Creek Bridge		30 mar 21	24-Mar-21	nt F(nal Gradir)g and Paying of Applroach Rd
14160 I	•		24-Mar-21	31-Mar-21	i Injstall Signajgejan di Striping jan di Rajiling
	Didallas Creek Bridge Improvements Complete	60	31-Mar-21	24-Jun-21	Demoj Didalijas jand Seconjd Creek Elridge
Nork Pac		0		24-Jun-21	i
	kage 6- Fenders Ferry Bridge	201	08-Feb-21	18-Nov-21	v → → ▼ 18-Nov-21, Work Package β- Frenders Feiny Bridge
	Notice to Proceed - Fender's Ferry Bridge	0	08-Feb-21*		♦ Notice to Proceedt - Fender's Ferny Bridge
	SRA Required Submittals	60	26-Feb-21	26-Apr-21	SRA Réquired Submittals
	Mobilize to Fender's Ferry Bridge	5	26-Apr-21	03-May-21	∥ Molķilize toļ Fender's Ferty Bridge
	Develop Barge and Pier Access	5	03-May-21	10-May-21	Develop Bargle and Pier Access
	Install Road Closure Barricades	5	03-May-21	10-May-21	I Install Road Closure Barricades
	Mobilize Crane Mounted Barge	10	10-May-21	24-May-21	g Mobilize Crane Mounted Barge
	Construct Temp Bridge Deck and Truss Support	40	24-May-21	21-Jul-21	Construct Temip Bridge Deck and Truss Support
	Construct Cofferdam - Pier 3	25	24-May-21	29-Jun-21	□ Constru¢t Cofférdam - Pier 3
	Construct Pier Tower 3 Temporary Support	5	21-Jul-21	28-Jul-21	Construct Pier Tower 3 Temporay Support
	Remove Pier 3 Tower - Lower Portion	5	28-Jul-21	04-Aug-21	Remove Pier 3 Tower - Lower Portion
	Excavate Pier 3 Footing for Modification	10	04-Aug-21	18-Aug-21	□ Excavate Pier 3 Footing for Modification
	FRP Pier 3 Modified Footing	15	18-Aug-21	09-Sep-21	g FRP Pier 3 Modified Fpoting
	FRP Pier 3 Conc Pier Enlargement	20	09-Sep-21	07-Oct-21	FRP Pier 3 Conc Pier Enlargement
	FRP Pier 3 Conc Pier Extension	15	07-Oct-21	28-Oct-21	ng FRP Pier 3 Conc Pier Extension
	Replace Bearing & Grout Tower Base	5	28-Oct-21	04-Nov-21	I Replace Bearing & Grout Tower Base
	Remove Cofferdam	10	04-Nov-21	18-Nov-21	Remove Cofferdam
	Fender's Ferry Bridge Complete	0	01110121	18-Nov-21	
	kage 7- McCloud River Bridge	349	04-May-20	20-Sep-21	v + 1 20-Sép-21, Work Package 7-McCloud River Bridge
	Notice to Proceed - McCloud River Bridge	0	04-May-20*		Notice to Proceed - McCloud River Bridge
	SRA Required Submittals	60	22-May-20	20-Jul-20	□ SRA Required Submittals
	Fab and Deliver Piles	30	20-Jul-20	31-Aug-20	Fab and Deliver:Piles
	Mobilize and Develop Access to McCloud River Bridge	15	20-Jul-20	10-Aug-20	Mobilize and Develop Access to McCloud River Bridge
	Drill and Construct CISS Piles at Piers 2 - 5 (dry)	40	31-Aug-20	28-Oct-20	□ Drill and Construct CISS Piles at Piers 2 - 5 (dry)
	Drill and Construct CL 140 Piles Abut 1 & 6	15	28-Oct-20	19-Nov-20	Drill and Construct CL 140 Piles Abut 1 & 6
	FRP Pile Cap Footings & Piers 2 - 5	35	19-Nov-20	13-Jan-21	FRP Pile Cap Footings & Piers;2-;5
	FRP Abutment 1 & 6	20	19-Nov-20	21-Dec-20	FRP Abutment:1 & 6
	Backfill Abutments and Piers	10	13-Nov-20 13-Jan-21	27-Jan-21	Backfill;Abjutments and Piers
	FRP Concrete Box Girder	100	27-Jan-21	17-Jun-21	FRP Concrete Box: Girder
	Final Grading and Paving of Approach Rd	25	17-Jun-21	23-Jul-21	☐ Final Grading and Paving of Approach Rd
	FRP Concrete Barrier	15	17-Jun-21	09-Jul-21	□ FRP Concrete Barrier
	Install Signage and Striping and Railing	10	23-Jul-21	06-Aug-21	n Install Sighage and Striping and Railing
	Demo McCloud River Bridge	30	06-Aug-21	20-Sep-21	□ Demo McCloud River Bridge
	McCloud Bridge Improvements Complete	0	55 / tug-21	20-Sep-21	◆ McCloud Bridge Improvements Complete
		534	04-May-20	13-Jun-22	13-Jun-22, Work Package 8 - Recreation Facilities
	kage 8 - Recreation Facilities		-		13-Juh-22, Marihas
Marinas			04-May-20	13-Jun-22	
	Notice To Proceed -Marinas	0	04-May-20*	00 / 105	♦ Notice To Proceed -Marinas SRA Required:Submittats
	SRA Required Submittals	60	22-May-20	20-Jul-20	
	Mobilize to Marinas	10	20-Jul-20	03-Aug-20	Mobilize to Marinas
	Develop Access	25	03-Aug-20	08-Sep-20	Develop Access:
	Construct Boat-in Sites	75	03-Aug-20	19-Nov-20	Construct Boat-in Sites
	Demo and Salvage Ex. Facilities and Structures	90	08-Sep-20	20-Jan-21	Demo and Salvage Ex. Facilities and \$tructures
15050	Site Excavation and Initial Grading	150	21-Dec-20	23-Jul-21	\$ite: Excavation and Initial Grading
15080	Construct Restrooms and other Land Structures	180	10-Jun-21	25-Feb-22	Construct Restrooms and other Land Structures
15090	Construct Floating and Non Floating Structures	180	10-Jun-21	25-Feb-22	Construct Floating and Non Floating Structures
Remaining	Level of Effort Actual Work Critical Rema	aining Work			Shasta Dam Raise Feasibility SDR7 Page 7
Actual Leve		and their			mmary Level Government Construction Schodule Today's Date: 06-

Attachment 5 Preliminary Construction Schedule and Work Packages	Shasta Lake Water Resources Investigation Engineering Summary Appendix
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Summary-Level Government Construction Schedule

Actual Level of Effort Remaining Work ♦ Milestone

Today's Date: 06-Jun-13

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Summary-Level Government Construction Schedule

Actual Level of Effort Remaining Work ◆

Today's Date: 06-Jun-13



Shasta Lake Water Resources Investigation Engineering Summary Appendix Attachment 5 Preliminary Construction Schedule and Work Packages inish SRA Required Submittals 25120 SRA Required Submittals 60 31-Oct-22 30-Dec-22 Mobilize and Clear and Grub New Alignments Mobilize and Clear and Grub New Alignments 15 25130 30-Dec-22 23-Jan-23 Excavate for Road Relocations Excavate for Road Relocations 75 23-Jan-23 08-May-23 25140 Install Drainage and Retaining Structures - Road Relocations 25150 Install Drainage and Retaining Structures - Road Relocations 40 10-Apr-23 06-Jun-23 Place Embankment and Complete Grading 25160 Place Embankment and Complete Grading 25 10-Apr-23 15-May-23 Relocate/Install Utilities - Road Relocations 25170 Relocate/Install Utilities - Road Relocations 20 08-May-23 06-Jun-23 ■ Place Base Course & Pave + Road Relocations 25180 Place Base Course & Pave - Road Relocations 25 06-Jun-23 12-Jul-23 (nstall Guardrail and Signage and Striping - Road Relocations) 25190 Install Guardrail and Signage and Striping - Road Relocations 15 12-Jul-23 02-Aug-23 Complete Final Road Connections to Existing 02-Aug-23 25200 Complete Final Road Connections to Existing 15 23-Aug-23 ◆ Project Complete - Road Relocations Project Complete - Road Relocations 23-Aug-23 25210 0 ■ 23-Aug-23, Work Package 15 - Turntable Bay Road Improvements 23-Aug-23 220 11-Oct-22 Work Package 15 - Turntable Bay Road Improvements Notice to Proceed - Road Improvements Notice to Proceed - Road Improvements 0 11-Oct-22 22090 SRA Required Submittals 60 31-Oct-22 22180 SRA Required Submittals 30-Dec-22 Mobilize and Clear and Grub New Alignments 22100 Mobilize and Clear and Grub New Alignments 15 30-Dec-22 23-Jan-23 Excavate for Road Relocations 22110 Excavate for Road Relocations 75 23-Jan-23 08-May-23 Install Drainage and Retaining Structures - Road Relocations 22130 Install Drainage and Retaining Structures - Road Relocations 40 10-Apr-23 06-Jun-23 Place Embankment and Complete Grading 22140 Place Embankment and Complete Grading 25 10-Apr-23 15-May-23 Relocate/Install Utilities - 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