Capital Improvement Implementation Schedule
2018-2028 Fiscal Years
Provo River Water Users Association

Revision Date 8/11/2020

Capital Improvements Projects

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
No.	**PLANNING YEARS**	**PROJECT**	**DESCRIPTION**	**SYSTEM PART**	**TYPE OF PROJECT**	**ESTIMATED PROJECT COST - April 2019 Update**	**Cost Escalated to Planned Year of Construction with Eng. Design and CM added**	**Association Portion**	**STATUS**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
									Assessed vs Required Assessment		$96,670	$0	$88,400	$14,400,000	$16,821,000	$776,300	$1,521,000	$1,287,800	$1,521,000	$1,550,000
									Zions Bank Financing ($7M), WIFIA, BOWR, Other Sources			$3,160,400	$3,839,600							
									Proposed CIP Assessment (assessed in previous FY)		$3.50	$3.50	$4.50	$8.52	$11.52	$13.16	$15.21	$15.21	$15.21	$15.50
									Estimated CIP funds required	$0.67	$4.47	$35.10	$43.78	$152.52	$179.73	$5.40	$0.00	$2.33	$0.00	$0.00
									Total Annual Association Portion Project Costs	$67,000	$446,670	$3,510,400	$4,378,000	$15,252,000	$17,973,000	$539,700	$0	$233,200	$0	$0
1	2018-2020	Replacement of Bypass Tube Valve #1	Penstock Plunger Valve Replacement	Deer Creek Power Plant	CIP	$836,820	$902,200	$451,100	Contractor Selected and valves in Procurement	$33,000	$112,400	$305,700								
2	2019	Replace Speed Creek Diversion	Diversion would be upgraded by replacing control gates and raising diversion weir	Upper Provo River	CIP	$91,400	$139,000	$139,000			$139,000									
3	2019	Weber-Provo Diversion Bypass and Metering Project	Reclamation Grant and Weber Organization Funding, two bypass meter stations will be installed.	Weber Provo Canal	CIP	$341,132	$341,132	$69,100	Actual Construction cost to be plit $355,400 n Grant $154,156 /CD $50,311 /RWUA $50,311 PRWUA $100,622		$85,622	$15,000								
4	2019-2020	DCPP Sedimentation Study Engineering	Planning and Coordination preparation for Sedimentation review	Deer Creek	CIP	$30,000	$30,000	$30,000	Contract Cancelled, deferred to be completed under AE2S Contract if needed		$1,248									
5	2020	DCPP Sedimentation Study Boring and Analysis	Geotechnical boring and core analysis of borings - Sedimentation Analysis Contract terminated When Reservoir Draining was removed from consideration	Deer Creek	CIP	$200,000	$200,000	$200,000	Removed from consideration due to not draining the reservoir											
6	2019-2023	Deer Creek Intake Project for Budgetary Planning	This is the Estimated total Maximum Cost as estimated by AE2S and the Association in December 2019.	Deer Creek Dam and Reservoir	CIP		$40,000,000	$40,000,000	Will need long term financing			$2,881,000	$4,378,000	$15,252,000	$17,973,000					
7	2019-2020	South Branch ULDC Repair	Replacement of sections of piping to the South branch of the Utah Lake Distributing Canal. (Total project cost has been adjusted to reflect lower Engineering fee estimate 11/3/19)	Point of the Mountain/Jordan Narrows	CIP	$307,000	$320,000	$320,000	100% Paid by PRA Assessment less CUWCD			$320,000								
8	2020	Replacement of Bypass Tube Valve #2	Penstock Plunger Valve Replacement	Deer Creek Power Plant	CIP	$836,820	$902,200	$451,100	Contractor Selected and valves in Procurement	$34,000	$108,400	$308,700								
9	2021-2022	Jordan River Siphon Replacement Project	Replacement of Jordan River Siphon to extend useful life	Point of the Mountain/Jordan Narrows	CIP	$1,150,000	$1,250,000	$1,250,000	100% Paid by PRA Assessment less CUWCD				$625,000	$625,000						
10	2021-2023	Generator Rewind: award/install	Reclamation Pays 100%	Deer Creek Power Plant	CIP	$2,050,000	$2,050,000		Reclamation Pays 100% of costs							$50,000	$1,000,000	$1,000,000		
11	2024	Access Catwalks in POTM Vault	Installation of catwalks to allow operation and maintenance of isolation gate valves	Provo River Aqueduct	CIP - PRA Capacity Right Holders	$54,000	$65,800	$65,800	100% Paid by PRA Assessment							$65,800				
2	2024	Access Catwalks in POMA Vault	Installation of catwalks to allow operation and maintenance of isolation gate valves	Provo River Aqueduct	CIP -PRA Capacity Right Holders	$27,000	$34,000	$34,000	100% Paid by PRA Assessment							$34,000				
13	2024	Replace Carlisle Diversion	Diversion would be upgraded by replacing control gates	Upper Provo River	CIP	$60,200	$67,800	$67,800								$73,500				
14	2024	Master Plan Update	Review the projects completed and remaining from the 2014 Master Plan update. Prioritize new projects added and incorporate remaining 2014 projects	System wide. Initial cost estimate in 2017 dollars	CIP	$98,700	$121,000	$121,000								$121,000				
15	2024	Flow Measurement Structure at End of Weber-Provo Canal	This project would replace the existing measurement structure and control building at the end of the canal	Weber Provo Spillway and Stilling Basin	CIP	$231,100	$281,200	$281,200								$281,200				
16	2024	Upgrade Outlet Building	Construct new outlet control building, relocate gas supply for generator, relocate solar panels.	Duchesne Diversion	CIP	$52,500	$64,000	$64,000								$ 64,000				
17	2025	Jordan Aqueduct Reach No. 1 Control Valve	This project would install a third control valve on the turnout to the Jordan Aqueduct Reach No. 1	Provo River Aqueduct	CIP - PRA Capacity Right Holders	$388,200	$ 491,200	$491,200	100% Paid by PRA Assessment								$491,200			
18	2026	Reconstruction of Glen Gibbons Check Structure	The Glen Gibbons Check structure was constructed at the wrong elevation which causes water to back up to the flume, potentially limiting flow in the Weber-Provo Canal.	Weber Provo Check Structures	CIP	$177,200	$ 233,200	$233,200										$233,200		
19	2026	Rehabilitate Murdock Diversion Radial Gates	This project would rehabilitate the gate controlling flow into the PRA and the bypass radial gate.	Provo River Aqueduct	CIP - PRA Capacity Right Holders	$84,400	$ 111,100	$0	100% Paid by PRA Assessment									$111,100		
20	2026	American Fork and Dry Creek Blow Offs	This project would examine the ways to increase flow capacity from the blow offs	Provo River Aqueduct	CIP - PRA Capacity Right Holders	$17,700	$ 23,300	$0	100% Paid by PRA Assessment									$23,300		
21	2027	Second POMA Control Valve	This project would install the second POMA control valve when needed	Provo River Aqueduct	CIP - PRA Capacity Right Holders	$659,900	$ 903,200	$903,200	100% Paid by PRA Assessment										$903,200	
22		Deer Creek Dam Guard Gates	This project includes the replacement of the guard gates controlling the flow through the dam	Deer Creek Dam and Reservoir	CIP	$660,000														
23		Weber Provo Canal Concrete Lining/Enclosure	This is a study to examine either lining or piping the canal to prevent seepage. Cost estimate is for concrete lining, if this is the recommendation from the study.	General Weber Provo Canal	CIP	$7,400,000														
25		Solar Power Implementation	Determine financial feasibility of installing solar panels on office/shop	Office/Shop	CIP	$34,000														

Summary of 2019 through 2027			
$263.00	$26,299,970	Surplus	
$90.33	$9,033,000	Assessed	
$423.33	$42,332,970	Needed	

Operations & Maintenance Projects

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
No.	PLANNING YEARS	PROJECT	DESCRIPTION	SYSTEM PART	TYPE OF PROJECT	ESTIMATED PROJECT COST - April 2019 Update	Cost Escalated to Planned Year of Construction with Eng. Design and CM added	Association Portion	STATUS	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
A	2018	Deer Creek Power Plant Outlet Works Intake Study	A study to consider the replacement of the intake tower on the upstream face of the dam and the guard gates supplying the penstocks. This study is the first step of a multi-step process. Eventual total construction cost to be estimated at $5-10 million	Deer Creek Dam and Reservoir	O&M	$ 55,000	$ 60,100	$ 60,000	In Progress	$60,000.00										
B	2018	DCPP Guard Gates Hydraulic Piping Replacement Project	The small diameter piping in the gate chamber which includes lubrication systems, hydraulic systems, and water conduits need to be replaced.	Deer Creek Dam and Reservoir	O&M	$ 164,602	$ 164,602	$ 82,301	Reclamation Pays 50% of costs	$82,300.97										
C	2018	Deer Creek Penstock Tunnel Lighting	Replace lighting and outlets in the penstock tunnel after recoating 2nd penstock	Deer Creek Dam and Reservoir	O&M	$ 35,122	$ 35,122	$ 17,161	Reclamation Pays 50% of costs	$17,161.00										
D	2019	Replace Sump Pumps		Deer Creek Power Plant	O&M	$ 7,000	$ 7,000	$ 3,500	Reclamation Pays 50% of costs		$3,500.00									
E	2021	SCADA Master Plan Update	Examine needed upgrades to system considering changes since the late 1990's	Overall Project	O&M	$ 108,000	$ 116,900	$ 116,900					$116,900.00							
F	2022	Weber Provo Canal Lining/Enclosure Feasibility Study	This is a study to examine either lining or piping the canal to prevent seepage.	General Weber Provo Canal	O&M	$ 81,000	$ 91,200	$ 91,200						$91,200.00						
G	2022	Gate Operators on Spillway	Replacement of operators on the spillway gates	Deer Creek Dam and Reservoir	O&M	$ 88,000	$ 99,000	$ 99,000						$99,000.00						
H	2022	Rehabilitate the Undershot of the Weber Provo Canal by Beaver Creek	The existing undershot has concrete that is failing and could impact the Weber Provo Canal.	Beaver Creek Diversion Structure	O&M	$ 114,000	$ 128,300	$ 128,300						$128,300.00						
I	2022	Study Retaining South Hill near Deer Creek Power Plant	The hillside south of the power plant has potential for landslide. This project will provide a geotechnical study of the hillside.	Deer Creek Power Plant	O&M	$ 32,400	$ 36,500	$ 18,300	Assume Reclamation Pays 50% of costs					$18,300.00						
J	2022	Weber-Provo Canal Drone Survey	Survey W-P Canal for baseline following reestablishing canal prism and future needs for other CIIP projects	General Weber Provo Canal	O&M	$ 37,800	$ 42,600	$ 42,600						$42,600.00						
K	2023	Spillway at Francis Rehabilitation	Inspection and rehabilitation of spillway bottom at the Francis spillway	General Weber Provo Canal	O&M	$ 57,900	$ 67,800	$ 67,800			$67,800.00									
L	2023	Weber Provo Canal Seepage Analysis	Determine amount of loss and possible means to recover that loss	General Weber Provo Canal	O&M	$ 3,000	$ 3,600	$ 3,600							$3,600.00					
M	2024	Bypass Radial Gate Wall Repair	Repair bypass channel walls to allow for full operation of bypass radial gate.	Duchesne Diversion	O&M	$ 99,200	$120,700	$120,700								$120,700.00				
No.	2026	Recoating of Penstock & Siphon Undershots	This project would maintain the integrity of the steel pipe	Provo River Aqueduct	O&M	$ 270,000	$ 355,300	$ 355,300										$355,300.00		
laintenance Projects		Cyber Security Upgrades	Installation of protections for computer and SCADA systems	Overall Project	O&M	$ 50,000														
P		Fiber in Duchesne Tunnel	Fiber connection from outlet to inlet improving communication from PRWUA SCADA system.	Duchesne Diversion	O&M	$ 354,700														
Q		Fiber Along the Canal	Installation of fiber along canal to connect control and monitoring of facilities	General Weber Provo Canal	O&M	$ 1,930,000														
R		DCPP Access Road Improvements	Project would upgrade the road access to the plant	Deer Creek Power Plant	O&M	$ 66,200														
S		HVAC Rehabilitation	Upgrade the HVAC system in the office and shop.	Office/Shop	O&M	$ 100,000														
T		Deer Creek Power Plant Power Generation and Revenue Analysis	This analysis will study the current power generation and will make recommendations for future power plant operation and revenue sharing.	Deer Creek Power Plant	O&M	$ 17,700														
U		Gate Operators on the Weber Provo Diversion	This study would review the condition of the gate operators and make recommendations for rehabilitation if required.	General Weber Provo Canal	O&M	$ 40,500														
V		Review of Deer Creek Land Use	This project would study the possible ways of the shareholders benefiting from the land holdings around the reservoir.	Deer Creek Dam and Reservoir	O&M	$ 22,500									$26,400.00					
W		GIS Input of Dikes and Easements	This project would survey the dikes and easements and input them into the GIS system.	Upper Provo River	O&M	$ 21,100														
X		Weber-Provo Canal Drop Structure	This study would identify potential safety hazards and would make annual operation and maintenance recommendations.	Weber Provo Canal Concrete Drop Structure	O&M	$ 6,500														
Y		Security Review	This project will assess the vulnerability of the project including; identifying critical assets, threat assessment and likelihood of attack, security system effectiveness, and make recommended improvements.	Overall Project	O&M	$ 34,100														
Z		Dike Road Maintenance	Clearing and grading of the top of the dikes	Upper Provo River	O&M	$ 94,000														
AA		Deer Creek Dam Spillway	The spillway has been rehabilitated except the lower plunge pool. This project would inspect the plunge pool and review rehabilitation options	Deer Creek Dam and Reservoir	O&M	$ 6,500														
BB		Fencing Along the Weber Provo Canal	Develop long term program to replace fencing and transfer to adjacent landowners	General Weber Provo Canal	O&M	$ 13,000														
CC		Improve Flow Measurement and Record Keeping	This project will improve flow measurement and the storage of measurement records	Overall Project	O&M	$ 48,600														
DD		Landscape Plan	Implement the landscape plan around the office	Office/Shop	O&M	$ 102,000														

Legend

	Projects where Reclamation pays some portion of the Cost
	Projects where PRA capacity right holders pay 100% of the cost
	Calls attention to Items for specific discussion in an engineering or other committee or that need board discussion
	Completed Projects
	Projects that have been incorporated into a larger or different project or modified in some way

Notes

Column G - Estimated project cost from the 2014 Master Plan Update. These costs do not contain Engineering Design or Construction Management

Column H - Shows total project costs escalated at 4% per year from the 2018 cost update out to the year of proposed construction. For projects **not** involving Reclamation oversite, an estimated factor of 15% has been added to the Construction year cost to cover engineering design and construction management. For projects **involving** Reclamation oversight, an estimated factor of 25% has been added for Engineering design and construction management.