CAPITAL IMPROVEMENT PROGRAM

2020 UPDATE

FY20-21 to FY29-30

SVCW
Silicon Valley Clean Water
One Drop at a Time

January 2020

Silicon Valley Clean Water

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ACKNOWLEDGEMENTS

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The Capital Improvement Program (CIP)

Silicon Valley Clean Water (SVCW) has prepared this CIP 2020 Update as an ongoing update to the Program. Previous versions of the CIP were prepared in 2008 (original CIP), April 2011 (2011 Update), July 2012 (2012 Update), November 2013 (2013 Update), June 2015 (2015 Update), October 2017 (2017 Update), and October 2018 (2018 Update). The 2020 Update provides continued and current information on projects that allow for adequate planning and funding of the capital facilities. Public agencies develop and maintain a Capital Improvement Program (CIP) to ensure those capital facilities necessary for the operation, maintenance, and expansion of the wastewater conveyance, treatment and disposal systems are provided. A CIP allows an agency to make informed decisions about the rates it collects from its service area customers to ensure the rates are adequate to offset the expenditures. This CIP includes projects related to the Wastewater Treatment Plant (the Plant, WWTP), and the Conveyance System which includes remote pump stations, transmission sewer pipelines (Influent Force Main, Belmont FM, tunnel and gravity sewer) and effluent outfall. Future treatment for Nutrients, as will be required by the Regional Water Quality Control Board, are included in the CIP. Recycled water treatment and distribution facilities owned by the City of Redwood City are not included in this CIP. Stage 2 Expansion projects also are not included in this CIP.

The wastewater treatment plant has been well operated since its startup in 1980. SVCW has enjoyed the benefits of a well-designed, Federal/State/Local funded facility with good reliability. Forty years after the original operational startup, major electrical, mechanical and instrumentation components have reached the end of their useful lives. In addition, both concrete structures and the miscellaneous metal components of the facilities are in need of rehabilitation to ensure a continued useful life into SVCW's future.

Reliable and efficient operation and maintenance of the Plant and Conveyance System infrastructure are required for ensuring the continued health and protection of the public and the environment and for meeting the effluent quality and discharge requirements set forth in SVCW's NPDES permit (NPDES Permit No. CA0038369). Other regulatory permit requirements are also placed upon SVCW, including air quality, odor control, safety, and record-keeping. The various regulatory permits under which SVCW operates require expenditure of capital to ensure that fines are not levied against SVCW for violations and to meet possible future, restrictive changes to the permits. It is also necessary to upgrade the facilities to improve operations in an effort to reduce costs as well as improving the facility's operational reliability. Finally, it is necessary to expend capital funds to match the capacity needs of the service area.

The operational integrity of the existing facilities as well as facility improvements needed to address future regulatory changes, wet weather treatment capacity increases, and safety were evaluated and integrated into the original 2008 CIP 10-Year plan. Each project was developed by defining the project scope, estimating the necessary budget required to complete the defined project, setting a year to implement the project and allocating expenditures to a specific funding source. Since the inception of the CIP in 2008, 128 projects have been completed for an approximate dollar amount of $200 million.

The timeframe of this CIP 2020 Update covers the fiscal years beginning in 2020-2021 and extends to fiscal year 2029-2030. Projects that have been completed in the time period previous to this update have

been removed from the program. While previous updates retained completed projects as part of a historical record of the program, this 2020 Update includes a snapshot of expenditures over the next 10 years to Fiscal Year 2029-30.

An agency's CIP requires ongoing refinement, with defined projects and their scopes and budgets reviewed at least once a year. In this respect, this document is a "living document"; it will continue to be reviewed, refined, and updated as needed.

SVCW Capital Facilities

Silicon Valley Clean Water (SVCW) is a Joint Powers Authority comprised of the City of Belmont, City of Redwood City, City of San Carlos, and West Bay Sanitary District (member agencies). SVCW owns and operates a wastewater treatment plant, including support facilities necessary for the operation and maintenance of the treatment plant, wastewater conveyance system force mains, five wastewater conveyance pump stations, and an effluent outfall into the San Francisco Bay. Land upon which the pump stations are located are owned by the individual member agencies. SVCW also leases and utilizes the Flow Equalization Facilities (FEF) owned by the West Bay Sanitary District and located in Menlo Park.

Wastewater Conveyance System: Force Mains and Pump Stations

Approximately eight miles of force main pipe is owned, operated and maintained by SVCW. The pipe varies in diameter from 33-inch to 63-inch (previously identified as 54-inch). Four pump stations pump raw wastewater to the SVCW force main and one booster station pumps peak wet weather flows from West Bay Sanitary District and City of Redwood City when necessary. SVCW owns, operates and maintains the pump stations and is reimbursed by the individual member agencies for costs expended on the operation and maintenance related to the member agency's service areas. The five pump stations are:

Belmont Pump Station
Menlo Park Pump Station
Redwood City Pump Station
San Carlos Pump Station
San Carlos Booster Station

All elements of the SVCW Wastewater Conveyance System described above require rehabilitation or replacement. During Years 2013 to 2016, conveyance system program analyses were performed to develop a proposed project to meet the goals set forth by SVCW. A systematic and rigorous analysis was performed and alternatives were scored based on success factors, risk analysis, and costs. Resultant proposed project(s) were identified and include the following elements:

- 48-inch Force Main from Redwood City Pump Station to the north end of Inner Bair Island (substantially complete as of December 2015)
- Gravity pipeline from the north edge of Inner Bair Island to the treatment plant
- Receiving Lift Station at the treatment plant site
- Rehabilitated Pump Station at the Menlo Park Pump Station location and a replacement pump station at the Redwood City Pump Station location.
- A gravity sewer from the Belmont Pump Station to the gravity pipeline at a location near the San Carlos pump station location
- Headworks facility at the treatment plant site
- Civil site improvements at the treatment plant site
- Connector pipe between the Headworks and the primary treatment process

Five projects (Receiving Lift Station, Headworks, Stormwater management, Site Civil, and Connector Pipe) have been consolidated into a single project known as "Front of Plant" project. In November and December 2017, respectively, SVCW entered into Progressive Design-Build agreements with two joint venture entities for design and construction of the Gravity Pipeline and Front of Plant facilities. The pump stations and the Belmont gravity sewer have also been consolidated into a single project, "Pump Station Improvements" and also uses the Progressive Design Build project delivery method. The design build firm was selected in February 2019.

Wastewater Treatment Plant

SVCW's Wastewater Treatment Plant is located in the Redwood Shores area of Redwood City. The Plant processes all wastewater delivered to the Plant from the member agencies' service areas via the conveyance system. The Plant is comprised of liquid and solids treatment processes.

Liquid Processing

The wastewater from the pump stations is conveyed in the 63-inch diameter (AKA 54-inch) force main to the influent lift station, then is delivered directly to the Plant's primary sedimentation tanks (PSTs). The PSTs provide the first step of treatment to the raw sewage. The PST process is followed by biological treatment that consists of roughing with fixed film reactors (FFR) and aeration polishing in the aeration basins (AB). The water in the aeration basins is then directed to the secondary sedimentation tanks (SST) for separation of solids from the liquid. The SST process generates relatively clear effluent that flows to the dual media filters (DMF). Filtration followed by disinfection with sodium hypochloride concludes the treatment of the liquid stream in the Plant. Disinfected and dechlorinated tertiary effluent is then pumped to the bay via a 66-inch diameter outfall. During summer months, the filtered water is sent to the City of Redwood City Recycled Water Storage and Distribution facilities at the northwest side of the treatment plant.

Solids Processing

The Plant processes a solids stream that is predominantly made up of a primary sludge and waste activated sludge. Primary sludge consists of settled solids and primary scum (a slurry with floated oil/grease/scum) withdrawn from the primary clarifiers. The waste activated sludge (WAS) is derived from the aeration basins. In addition to the primary sludge, the primary scum and the WAS, the anaerobic digesters also receive grease and oily wastewater delivered to the grease receiving station at the Plant. With mixing and heating, the anaerobic digesters stabilize the sludge and produce sufficient digester gas to fire co-generation engines that generate electricity to power much of the electrical demand within the Plant.

The digested solids are withdrawn and transferred to Rotary Presses to reduce its volume. The two Rotary Presses were installed in 2016 as replacement for a centrifuge that was installed at the inception of the treatment facilities. The centrifuge was beyond its useful life, had no redundancy, and high levels of maintenance were required. Dewatered biosolids are then transferred to either solar drying beds or to BioForce Tech facilities for further drying readying for ultimate disposal. The sludge in the drying beds

is dried to 50%-75% solids and is loaded onto trucks for disposal off-site. Offsite disposal is contracted with a biosolids handling company and is disposed in accordance with government regulations. Biosolids directed to BFT are further dried, undergo pyrolysis, and the "biochar" is then sold to end users as fertilizer. In summary, the primary function of the solids handling facilities is to stabilize the organic solids, reclaim the heat value of the organic solids for power generation and reduce the sludge volume to minimize the cost of disposal.

Plant Site Characteristics

The treatment processes selected for the Plant are typical for a tertiary treatment plant. However, the arrangement of the facilities in the Plant makes it unique. The treatment process tanks were built primarily on the same level; however, the lighter structures were built on top of the process concrete tanks making the facility a "double deck" plant.

The ground immediately beneath the Plant is predominantly young bay mud which is highly liquid and inadequate for supporting heavy loads. This required the installation of deep reinforced concrete piles to support the process tank structures. The administration building and laboratory were placed on top of the PST, while the FFR were placed on top of the chlorine contact tanks (CCT). Placing the lighter facilities on top of the heavier liquid bearing concrete tanks reduces the overall construction costs but creates unique maintenance issues. The PST and the CCT are completely covered; access to the tanks for maintenance and servicing the mechanisms installed inside the tanks is through hatches.

Outfall

Approximately 1.25 miles of 66-inch diameter pipe carries treated effluent from the Plant for discharge to the San Francisco Bay. The outfall is reinforced concrete pipe equipped with a multiport diffuser and extends approximately 6700 feet offshore in the main shipping channel of the San Francisco Bay for a deep-water discharge. An on-shore portion of the effluent pipeline was replaced in 2005 and the remainder of the on-shore pipeline was replaced in 2015/2016; the replacement pipe is 63-inch diameter HDPE pipe material.

Location and Process Codes

SVCW has undertaken implementation of a new Enterprise Resource Planning program which changes the financial, asset and work management, and human resources functions of the agency. To this end, a new system to track capital assets is currently being adopted. There are location and process codes established to enable tracking to occur. The location and process codes are shown in the list below.

Location Codes of SVCW

00	General
01	West Bay S.D.
02	Redwood City
04	San Carlos
05	Belmont
06	Booster Pump Station
10	33-inch FM
11	48-inch FM
12	54-inch FM
13	Belmont Force Main
15	Gravity Pipeline
20	Flow Equalization
30	Front of Plant
50	Wastewater Treatment Plant
51	Admin/Control Building
52	Laboratory Building
53	Maintenance Building
54	Warehouse
55	1404 Radio Road
56	1406 Radio Road
65	Fair Oaks
66	Harbor Sanitary Muni. District
67	Redwood Shores
68	Port of Redwood City
72	Outfall

Process Codes of SVCW

00	General
05	Pretreatment
06	Influent
10	Conveyance Pumping
15	Flow Equalization
20	Conveyance Pipelines
25	Drop Connection
27	Energy Management
35	Odor Control
42	Fine Screening
45	Lift Pumping
47	Storm Water
50	Primary Sedimentation
52	F.F.R.
54	Nutrient Removal
55	Aeration
56	Secondary Clarifiers
60	Filtration
62	Disinfection
64	Dechlorination
70	Recycled Water DSP
71	Sludge Thickening
72	Sludge Digestion
74	Sludge Dewatering
75	Sludge Drying
78	Sludge Disposal
81	FOG and Organic Waste
90	Effluent
92	Recycled Water (non-DSP)
95	Pollution Prevention

Master Capital Projects List

Organization of Master Capital Projects List

From the original 2008 CIP through the 2013 Update, projects contained within the CIP were categorized into sixteen Programs. The Programs and associated number of projects within each for the original and updates through 2013 are listed below. The 2015 Update changed the Programs organization and added a new program, Nutrient Removal. This was added in response to regulatory input from the Regional Water Quality Control Board. The following table demonstrates the Program listings and how they were adjusted starting in 2015.

Programs listing post-2015 CIP Update

Previous CIP & Updates	2015 CIP Update	
Program Name	Program Status	Post-2015 Update Program Name
Force Main Conveyance System	Merge w/Pump Stations	Conveyance System
Pump Stations	Merge w/Force Main	Conveyance System
Plant Process	Keep as is	Plant Process
Process Chemicals	Merge w/Plant Process	Plant Process
Odor and Corrosion Control	Keep as is	Corrosion and Odor Control
Protective Coatings & Sealants	Merge w/Corrosion and Odor Control	Corrosion and Odor Control
Solids Handling	Keep as is	Solids Handling
Plant Energy System	Merge w/Automation	Energy and Automation
Automation: Instrumentation and SCADA	Merge w/Energy System	Energy and Automation
General Plant Facilities	Keep as is	General Plant Facilities
Security	Merge w/General Plant Facilities	General Plant Facilities
Miscellaneous	Rename	CIP Support
	Add New Program	Nutrient Removal
~~Buildings~~	Delete Program	
~~Deferred Maintenance~~	Delete Program	
~~Vehicles~~	Delete Program	
~~Software, IT, Laboratory Equipment~~	Delete Program	

For this 2020 Update, as the focus of the Programs has moved from repair, replacement, and automation to a preventative and predictive maintenance approach, Program listings have been further refined. There are now Six Programs in the CIP.

- Conveyance System
- Structural
- Mechanical, Electrical, & Instrumentation
- Site Civil
- Process Efficiency and Regulatory
- CIP Support

Each Program is assigned a Program Manager from the SVCW Engineering Division. The Program Manager is responsible for the overall Program, ensuring that resources are available for implementation of the individual projects, and that the needs of SVCW in terms of prioritizing projects are met.

Under the original CIP, four master plans were prepared (Conveyance System; force main and pump stations, Energy System, Biosolids, and Corrosion/Odor Control). The results of the master plans facilitated completion of the 2011 CIP Update. Completion of subsequent updates was facilitated by needs identified during the course of construction in the treatment plant and further work on the conveyance system program. As construction has progressed on many large and far-reaching projects, facilities either related to the specific construction or ancillary to the construction have been identified as needing replacement. Additionally, a Capacity Study was completed that identified four new projects that need to be completed for SVCW to reliably treat its projected wet weather flows. These changes were reflected in the 2013 Update.

Since the 2013 Update, the primary change to projects identified is reflected in the conveyance system programs; pipelines and pump stations. Beginning in 2013, as planning and community outreach began for the conveyance system program elements and as tunnel-construction methods in the bay area developed, the projects identified for the conveyance system changed. The 2015 Update reflected the latest information for the conveyance system programs. Additionally, the regulatory climate is shifting to require treatment plants to remove nutrients (nitrogen and phosphorous). Scientific studies are ongoing for the impact to the bay from treatment facility contributions but it is considered a given that nutrient removal will be required in future NPDES permits. A project to address nutrient removal requirements was also a factor contributing to the large allocated budget increase in the 2015 Update. Also in the 2015 Update, inflationary impacts were added to all relative projects; a task that had not been done since the original 2008 CIP which used 2007 dollar values.

The 2018 Update included updated budgets resulting from inflationary factors (escalated from 2017 dollars and brought to mid-point of construction). This Update also included a reduction in the Nutrient

Removal Program costs, as new information continues to be garnered from the Regional Water Quality Control Board and its efforts in concert with Bay Area Clean Water Agencies to more fully define issues with nutrients in the San Francisco Bay.

The 2020 Update represents a change in approach to capital project planning. Now that the majority of the processes and equipment have been upgraded over the last, almost twelve years, the focus of the CIP is on maintaining the assets. Some of the projects that were initiated in 2008 have already shown signs of age and failure. In particular, concrete coatings and instrumentation equipment have expected lives of approximately 10 years. This 2020 Update removes completed projects from the master list of projects, providing a view forward of the work that is envisioned to be completed over the next 10 years.

Along with the projects that have been identified as part of this 10-year CIP update, there are two additional capital projects that SVCW is anticipating to be required at or beyond 2030; replacement or rehabilitation of the 33" Force Main in the Conveyance System The current cost estimate for this project is projected at $39 million. Also, if the regulations regarding nutrient discharge into San Francisco Bay continue to tighten after 2030, SVCW is tracking a cost of $30 million to comply with new regulations. These two projects are not included in the 10-year master list of projects.

The following pages include a list of completed projects and the master list of 2020 CIP Update projects is included.

Completed CIP Projects

(As of January 2020)

Project Number	*Project Name*	*Project Number*	*Project Name*
6001	48-inch Force Main Reliability Improvement	9075	IMS System Equipment Replacement
6002	Conveyance System Master Plan (CSMP)	9076	Digester Mix Pump Rehabilitation
6005	Influent Force Main - Rehabilitation or Parallel	9077	Engine Generator #4 Complete Rebuild
6006	Conveyance System CEQA	9094	Thickener Overflow Line Butterfly Valve Replacement
6010	Force Main Conveyance System Program - General Support	9095	Digester #2 Cover Repair
6012	Effluent Pipeline and Outfall Reliability Improvement	9098	Shipping and Receiving Trailer
7010	Pump Stations Preliminary Design and CEQA	9099	Solids Handling Building HVAC Air Scrubber-Implementation
7013	Pump Stations Secondary Communications	9101	Fresh Water Lagoon Cleaning
8001	Central Data Acquisition Unit PLC System Upgrade	9102	Storm Drain System Improvements and Maintenance Wash Rack
8002	Auto-reset of Effluent Pumps	9104	Septage Receiving Area Odor Control
8003	Disinfection Area SCADA	9106	Laboratory Information Management System (LIMS)
8004	Install SCADA Servers	9108	Scum Flowmeter
8005	Install MCC PLC	9114	Historian Software
8006	Turbine #1A-4B Air Flow Monitor	9119	RAS Discharge Line 36" Butterfly Valve Replacement
8007	Primary Sedimentation Control System	9124	Biosolids Master Plan
8008	Aeration Basins #1-4 Motorized Effluent Gate Controls	9125	Plant Service Road Resurfacing-Phase 1
8009	Aeration Basins #1-4 Mudvalve Operation	9127	PEC & PST 1 & 2 Protective Coatings
8010	WAS Flow Controls	9132	Storage and Purchasing Warehouse
8011	RAS Pump #1-6 Speed Adjust	9144	Solids Handling Program - General Support
8012	Secondary Clarifier Inner / Outer Gates Motorized Controls	9145	Plant Energy System Program - General Support
8013	WAS Pump #1-4 Speed Adjust	9150	Odor & Corrosion Control Program - General Support
8014	Primary Sludge Piping System Valve Automation	9152	Small Capital Equipment Replacement
8015	CCT Weir Sluice Gate Operator	9153	High Pressure Pump Safety Cutout Switch Replacement

Project Number	*Project Name*	*Project Number*	*Project Name*
8017	Activated Sludge Process Automation (Aeration and Secondary Clarifiers).	9154	Cogeneration Engine Replacement
8018	Gravity Thickener Process Automation	9155	Natural Gas to Plant
8019	Aeration Basin Gate Actuators	9156	Administation and Plant Control Building Replacement
8020	Aeration Basin #1-4 Inlet Gate Controls	9157	Solids Handling Building Roof Replacement
8021	Anaerobic Digestion Process Automation	9163	Demolition of Abandoned Equipment in Solids Handling Building
8022	SCADA Process Graphics on Information Management System	9164	Dewatering and Solids Handling Improvements - Phase I
8024	Thickening Pump #1-6 Remote on / off / speed controls	9165	Seismic Upgrade of Digester Mix Room and Boiler Room Piping
8026	Septic System (Grease Receiving) Auto Controls and Level Measurement	9167	Boiler Replacement
8027	Drying Bed Feed Flow Measurement	9172	Thickening Improvements - Phase II
8030	Automation: Instrumentation & SCADA Program - General Support	9178	Levee Repair behind Warehouse
8032	Final Effluent Pumping Control System (FEP) Upgrade	9179	Pretreatment Program Sample Room
8033	Dechlorination Control System Upgrade	9180	Maintenance Shop Reconfiguration
8034	Tertiary Filter Feed Pump Control System Upgrade	9182	Property Acquisition
8035	Chorination Control System Upgrade	9183	Stage 1 Screening at Plant Influent
8036	Automation System Integration - SRF Funded	9191	Cathodic Protection at WWTP
8037	Automation System Integration - Bond Funded	9193	T1 and T2 Replacement
8038	Process Return Flow Meter and Sampler Installation	9194	T3 Replacement
9005	Primary Scum Grinders	9195	Wetside Power
9006	Purchase Integrated Tool Vehicle	9198	Hot Water Piping Improvements - Phase I
9007	Industrial Roll-up Doors for Warehouse	9199	Hot Water Piping Improvements - Phase II
9008	Centrifuge Motor Drive Replacement	9201	Dimminutor procurement and installation
9010	Real-time Wind Direction Information	9202	DMF Valve Replacement
9011	Portable Trash Pump	9203	Central Chillers Replacement
9012	Digester #3 Rehabilitation and Upgrade	9204	MPPS Concrete Repair
9013	Waste Gas Burner Rehabilitation	9205	1406 Radio Road Property Improvements
9015	Hypochlorite Dosing System Rehabilitation Automation	9207	Maintenance Building Roof Replacement

Project Number	*Project Name*	*Project Number*	*Project Name*
9016	High Pressure Air Piping and Instrument Air	9208	Solids Handling Building Demolition and Improvements - Phase II
9018	Recycled Water For In-Plant Use	9211	Secondary Clarifier 6" Water Line Replacement
9019	Bisulfite Injector System Improvements	9213	Area Lighting
9021	Grease Receiving Station Reliability Improvements and Odor Control	9214	Alternate Bisulfite Injection Point
9022	Existing Freight Elevator Modernization	9216	3W System Improvements
9023	Odor & Corrosion Control Master Plan	9222	Dual Media Filters 6A and 6B
9028	Laboratory Building Roof Rehabilitation	9226	DMF Platforms
9029	Solids Handling Building Control Room HVAC/Scrubber	9227	Sodium Bisulfite Tank Alarms & Controls
9030	Secondary Clarifier Collector Drive Rehabilitation	9228	Diesel Pump Upgrade
9032	Wireless Network Access Expansion	9801	12 kV Primary Switchgear Replacement
9035	Effluent Pipe Access Hatch	9802	Motor Control Center P-1,2,3, &4 Replacement
9036	Primary Sludge Piping Rehabilitation	9803	Electrical System Redundancy
9038	Moyno Progressive Cavity Pump Replacement	9804	Standby Power Upgrade
9040	Digester #2 Cleaning	9805	Cogeneration System Connection to Primary Switchgear
9067	Dewatering Process Control System Upgrade	9806	Wetside Redundant Power Improvements

Detail CIP Projects Listing

2020 Update Project #	Launch Date	2020 Update Project Name	Project Description	Type	Status as of Nov 2019	2018 CIP Budget	Spent as of 11/1/19	2020 CIP Budget	Budget Increase (Decrease)	2019 Budget Remaining
Conveyance System										
6003	2008	Influent Force Main Emergency Repair	As-needed repairs if leaks in the influent force main occur.	Conveyance	Constr	2,751,562	2,882,920	2,882,920	131,358	-
6008	2011	Tunnel and Gravity Pipeline	Installation of gravity pipeline, using tunneling construction methods for conveying wastewater to the plant.	Conveyance	Constr	253,253,517	102,362,966	259,228,131	5,974,614	156,865,165
6017	2020	Inspection of 33" Force Main	Inspection of 1,830 total feet of pipe to determine condition of pipe for future conveyance system planning/ timing of project no. 6015		Planning	-		500,000	500,000	500,000
7012	2015	Pump Stations Processor Upgrade & T-1 Transition for Primary Com	Install new PLC processors for existing Pump Station Controls	Conveyance	Constr	97,163	901	901	(96,262)	(0)
9500	2020	RESCU Administrative Activities	Holds programmatic management costs including Owners' Representative consulting fees (Kennedy Jenks) and Owner-Controlled Insurance Program (OCIP) costs. Budget dollars drawn from #6004 Flow Diversion Structure.	Conveyance	Admin	-	986,014	13,503,048	13,503,048	12,517,034
9501	2017	Pump Stations Improvements	Rehabilitate Menlo Park Pump Station, Replace Redwood City Pump Station, convert Belmont Conveyance to a gravity sewer in order to convey 2040 flows to the new tunnel constructed under the Gravity Pipeline Project.	Conveyance	Design	103,928,901	13,611,086	119,677,613	15,748,712	106,066,527
9502	2017	Front-of-the-Plant	Construct a Receiving Lift Station, Headworks and connecting piping as part of the RESCU Program.	Conveyance	Constr	137,805,284	56,865,200	161,953,930	24,148,646	105,088,730
Structural Rehabilitation										
9014	2008	Process Tanks Concrete and Steel Protective Coatings Replacement	Apply coatings to process tanks and steel approximately every ten years.	WWTP	Constr	5,624,786	3,977,302	5,624,786	-	1,647,484
9071	2008	Plant Gallery Floor and Wall Crack Sealing	Seal gallery floors to prevent infiltration of GW. Unplug in-slab drain pipes.	WWTP	Project On Hold	628,476	188,942	628,476	-	439,534
9084	2008	Seismic Upgrade - DMF 42" Effluent Piping	Install lateral bracing on the DMF 42" effluent piping. (Seismic Improvement Program No. P14).	WWTP	Project Not Started	223,141	12,259	12,259	(210,882)	0
9096	2008	Plant Architectural Painting	Plant-wide painting including pumps, piping, equipment and structures. Painting necessary to prevent corrosion & for longevity of Plant's assets.	WWTP	Constr	1,975,283	388,692	1,975,283	-	1,586,591
9097	2008	Plant Deck Re-coating	Add painted walkway under the Plant Control building.	WWTP	Planning	239,624	2,685	239,624	-	236,939
9107	2008	CCT Concrete and Steel Protective Coating Replacement	Recoat walls and Ceiling of CCT	WWTP	Constr	6,508,246	1,956,075	5,608,246	(900,000)	3,652,171
9113	2008	Evaluation of Plant Underslab Piping	TV or otherwise investigate various piping embedded in concrete throughout the Plant	WWTP	Project On Hold	497,481	-	697,481	200,000	697,481
9120	2008	RAS Pump Suction Pipe Replacement	Slip-line the in-slab pipe. The high content of solids in sludge piping wears the pipe out over time; the RAS piping is thin due to the continued abrasion of the sludge transported through it.	WWTP	Planning	408,454	101,632	3,268,454	2,860,000	3,166,823
9128	2008	PST 3 & 4 Protective Coatings	Complete with 9080 - PST Collector System Replacement	WWTP	Constr	2,952,878	3,329,420	3,329,420	376,542	-
9171	2011	Interior Coating of Horizontal Influent 24" Mix Pipes for Digester 3	The Horizontal 24" Mix Pipe Lines were inspected in 2009 and minimial reduction in pipe thickness was noted and the pipes were placed back into service. It was noted that the coating was peeling off in places so this project will inspect the pipes next time the digesters are taken down for maintenance and replace interior coating and corroded piping as needed. DIgester 2 piping replaced under CIP #9095. D1 piping to be included with CIP #9215, DIgester 1 Rehabilitation. D3 piping remains to be replaced.	WWTP	Project Not Started	133,803	-	133,803	-	133,803
9215	2013	Digester #1 Rehabilitation	Repair of coatings and structural elements in Digester #1. Project includes replacement of the two mix nozzles, two wall penetrations and the upper and lower vertical mix pipe manifold as previously included in CIP #9170. Also include interior coating of 24-inch horizontal mix piping as previously included in CIP #9171.	WWTP	Design	2,464,872	390,320	-	(2,464,872)	(390,320)
9241	2020	Primary Effluent Channel Recoating	Recoat Primary Effluent Channel, replace PST effluent launders, replace hatches on primary deck		Design	-	-	3,402,000	3,402,000	3,402,000
9244	2020	Digester 3 Cleaning and Rehab	Clean, inspect and rehabilitate Digester 3. Previous rehab completed August 2021		Project Not Started	-	-	2,015,875	2,015,875	2,015,875
9245	2020	Digester 2 Cleaning and Rehab	Clean, inspect and rehabilitate Digester 2. Previous rehab completed April 2023		Project Not Started	-	-	2,138,641	2,138,641	2,138,641
9252	2020	Repair of Final Effluent Pump Suction Piping	Inspect and repair Final Effluent Pump Suction Piping between CCT Wet Pits A and B and the Pumps.		Project Not Started			429,000	429,000	429,000
9253	2020	Repair of Underslab Piping	Risk-based budget to provide repair services for leaking pipes.		Project Not Started			2,160,000	2,160,000	2,160,000
Mechanical, Electrical, and Instrumentation Rehabilitation										
8023	2008	SCADA/Auto Response to Plant Alarm Conditions	Planning and programming effort to maintain reliability while reducing labor demand. Requires Automation Program and Communications Upgrade to be completed.	WWTP	Constr	756,927	226,449	226,449	(530,478)	-
8025	2008	No. 3 Water Control System	Provide VFD control of 3 water pumps as well as instrumentation and piping to assure reliable supply.	WWTP	Constr	260,081	46,557	1,260,081	1,000,000	1,213,523
9017	2008	Plant #1 Water System Pipe Repair and Supply Upgrade	Rehabilitate potable water system: replace air gap tank , hydropneumatic tank, and pumps.	WWTP	Design	532,287	522,841	1,032,287	500,000	509,446
9033	2008	Plant Electrical System Panel Replacement	Complete replacement and addition of additional panels and subpanels	WWTP	Design	5,787,500	4,236,500	4,300,000	(1,487,500)	63,500
9034	2008	Electrical Conductor and Small Panel Replacement	Multiple year project to replace old and corroded electrical cabling, lighting panels, and other electrical equipment throughout the Plant.	WWTP	Constr	3,163,054	308,844	2,963,054	(200,000)	2,654,210
9041	2008	Underground Fuel Tank Replacement	Underground Storage Tank regulations require removal of this tank. Remove 15,000 gallon underground fuel (diesel) tank and replace with a tank that meets regulatory requirements when necessary. Electrical costs include conduit and wiring for new underground tank leak detection equipment necessitated by moving the tank.	WWTP	Project Not Started	612,819	4,127	929,500	316,681	925,373
9080	2008	Primary Sedimentation Tanks Collector System Replacement	Replace or rebuild collector drive system, including chains and filghts; one tank every 2 years.	WWTP	Constr	4,480,314	4,345,401	4,480,314	-	134,912
9105	2008	Document Management System	Phase 2 of the IMMS; use for CIP information management.	WWTP	Planning	2,565,746	2,176,101	2,565,746	-	389,645
9118	2008	SCADA Integration with Integrated Business Management System	Information Management System and SCADA to be tied together for asset management and maintenance scheduling.	WWTP	Constr	2,585,333	2,026,758	2,026,758	(558,575)	-
9168	2011	Thickening Improvements - Phase I	Replace thinkener technology with Rotary Drum Thickeners, installed in the Solids Handling Building.	WWTP	Constr	1,850,217	3,531,095	3,761,095	1,910,878	230,000
9196	2012	Electronic O&M Manuals	Develop Electronic O&M manuals to replace existing paper manuals. Extent of e-manuals will be determined to coincide with full plant automation requirements.	WWTP	Project Not Started	1,187,870	-	1,187,870	-	1,187,870
9206	2012	Site Waste Piping and Pump Replacement	Replace discharge piping and header and add one new pump due to significant number of leaks in the system.	WWTP	Constr	124,891	9,172	-	(124,891)	(9,172)
9223	2013	Final Effluent Pump Replacement	Increase the capacity of the final effluent pumps to be able to discharge 80 mgd.	WWTP	Planning	2,836,241	97,693	2,836,241	-	2,738,548
9225	2015	DCP2 Processor Upgrade	DCP2 Control Logix Upgrade (Dual Chassis) for central data collection and Critical Alert Alarm (CAA) system monitoring and management. The current system is beyond it's useful life and has no redundancy.	WWTP	Project Not Started	123,301	867	867	(122,434)	-
9242	2020	Fixed Film Reactor Rehabilitation	Remove and replace media, perform structural improvements, improve inlet piping.		Project Not Started	-	-	25,740,000	25,740,000	25,740,000
9246	2020	Activated Sludge Process Rehabilitation	Evaluate instrumentation and mechanical and electrical equipment associated with the Activated Sludge Process. Replace and Rehabilitate as needed.		Project Not Started	-	-	2,565,854	2,565,854	2,565,854
9247	2020	SHB Electrical Rehabilitation	Evaluate Electrical and Standby Power systems in SHB. Replace and Rehabilitate as needed.		Project Not Started	-	-	4,374,381	4,374,381	4,374,381
9248	2020	Cogeneration Engine System Rehabilitation	Evaluate cogeneration system, including engines, generators, gas conditioning system, instrumentation. Replace and Rehabilitate as needed.		Project Not Started	-	-	5,898,046	5,898,046	5,898,046
9249	2020	Fine Screening Process Rehabilitation	Evaluate instrumentation and mechanical and electrical equipment associated with the Fine Screening Process. Replace and Rehabilitate as needed.		Project Not Started	-	-	1,416,729	1,416,729	1,416,729
9250	2020	Wet Side Power Rehabilitation	Evaluate Electrical and Standby Power systems on "wet side" of plant. Replace and Rehabilitate as needed.		Project Not Started	-	-	2,552,287	2,552,287	2,552,287
9251	2020	Laboratory HVAC Rehabilitation	Replace Air Handling Unit, Motor Control Centers, supply and exhaust fans, and control system for laboratory HVAC system, which is over 25 years old		Project Not Started	-	-	2,300,000	2,300,000	2,300,000
9503	2017	WWTP Improvements Phase II	Construct rotary presses for sludge dewatering, replace blowers for Activated Sludge Process, replace Backwash Pumps.	WWTP	Constr	12,410,274	7,599,903	12,810,274	400,000	5,210,371
9808	2017	In-Plant Power (12kV) Rehabilitation	Repair of 12 kV settling between Control Building and Solids Handling Building.	WWTP	Constr	2,424,124	2,670,833	2,670,833	246,709	-
Site Civil Rehabilitation										
9103	2008	Landscape Impoundment Improvements	Project is slated to provide improvements to the impoundment. Work in addition to what was originally intended may be done for future Plant process needs.	WWTP	Planning	270,525	94,234	270,525	-	176,291
9131	2008	Plant Service Road Resurfacing-Phase 2	Plant site grading and paving.	WWTP	Constr	1,188,996	328,723	1,188,996	-	860,273
9177	2011	Implement Security Plan Enhancements	Implement inhancements outlined in Security Document; conjoin with capital improvements as they are being implemented.	WWTP	Constr	1,249,833	526,952	526,952	(722,881)	-
9237	2017	Radio Road Habitat Grading Project	Change grading and provide piping to the area behind the dog park to make a suitable habitat for birds	Conveyance	Planning	3,823,448	-	3,823,448	-	3,823,448
Process Efficiency and Regulatory Mandates										
9188	2012	DMF Underdrain Access Hatches	There is no access point to the DMF underdrains. This project will provide such access.	WWTP	Constr	133,662	2,307	133,662	-	131,355
9192	2012	Drying Beds Northern Expansion	Expands the drying bed to the north with a new 3-acre bed.	WWTP	Project On Hold	32,825	155,017	155,017	122,192	-
9229	2015	Food Waste: Receiving Station and Digester Improvements	Plan, Design and Construct Receiving Station for Accepting Food Waste from SBWMA. Project would include new receiving station and interconnection to Digesters, gas storage system, and rehabilitation of Digester 1, and a project to utilze exess methane produced from the process.	WWTP	Design	16,276,738	1,245,987	20,404,629	4,127,891	19,158,642
9231	2015	BioforceTech Dryer System	Work with BioforceTech for half-scale biosolids drying Facility. SVCW to provide suitable site and utilities; Bioforce Tech to construct and operate. Budget added for agreement with BFT for purchasing the equipment.	WWTP	Constr	1,610,621	2,121,195	3,950,621	2,340,000	1,829,426

2020 Update Project #	Launch Date	2020 Update Project Name	Project Description	Type	Status as of Nov 2019	2018 CIP Budget	Spent as of 11/1/19	2020 CIP Budget	Budget Increase (Decrease)	2019 Budget Remaining
9232	2015	Long Term Strategic Recycled Water Planning	SVCW would begin collaboration with outside stakeholders for long-term planning of recycled water expansion as a drought proof water supply, explore IPR/DPR treatment requirements etc. Budget is for staff time to attend meetings and begin long-term planning, plus work with consultants on conceptual studies. No construction dollars are included. Large scale expansion of recycled water treatment may offset dollars spend on future nutrient removal compliance	WWTP	Planning	44,205	217,809	217,809	173,604	-
9235	2015	Digester Gas Storage	Construct storage for digester gas gas equalization in support of optimizing the cogeneration engine operation/electricity output. Gas production expected to rise with introduction of co-digestion materials (food waste and FOG). Project Buget has been transferred to project 9229.	WWTP	Project Not Started	1,663,018	-	-	(1,663,018)	-
9236	2018	CEC SAF-MBR	Build a pilot facility using CEC grant monies and in-kind services using a new treatment process developed at Stanford University. The process is called Staged Anaerobic Fluidized-Bed Membrane Bioreactor (SAF-MBR). This process could facilitate nutrient removal, recycled water production and, possibly, replace SVCW's secondary treatment processes.	WWTP	Constr	540,076	1,005,417	540,076	-	(465,341)
9240	2020	Standby Generators Feed Relocation and Electrical Panel Upgrades	Relocate feeders for standby generators 4 and 5 to connect to 12kV switchgear and provide power to all plant processes. Replace aging panels.		Design	-	-	3,575,000	3,575,000	3,575,000
9243	2020	PST Thickening Project	Replace Primary Sludge Pumps and add VFDs to support thickening in the PSTs once the Headworks is complete. Change discharge piping to deliver directly into the digesters.		Project Not Started	-	-	2,343,899	2,343,899	2,343,899
9254	2020	Waste Gas Burner Replacement	Replace "candlestick" type waste gas burner with new technology if required by BAAQMD		Project Not Started			2,000,000	2,000,000	2,000,000
9400	2015	Nutrient Removal	Perform studies to determine the plant's ability to perform nutrient removal using existing infrastructure.	Nutrient Removal	Planning	652,116	748,817	948,817	296,701	200,000
9401		Side Stream Treatment	Treatment of sidestreams for nutrient removal.	Nutrient Removal	Planning	10,510,000	22,609	10,510,000	-	10,487,391
9807	2017	12 kV Primary Switchgear	Install a new 12 kV feed to the plant that will serve the new loads from Receiving Lift Station. This new new switchgear will also be tied to existing cogen system to allow export/import of power to PG&E after Rule 21 modifications. New solar and energy storage will be also tied to this new switchgear.	WWTP	Constr	11,338,583	9,687,086	11,338,583	-	1,651,497
9810	2017	Energy Storage	Install 1MW/2MWh energy storage system that uses Lithium-Ion battery.	WWTP	Constr	2,210,085	1,101,582	2,210,085	-	1,108,504
9811	2017	Solar PV System	Install solar photovoltaics to harness solar energy in conjunction with energy storage. The solar panels will augment the energy portfolio of SVCW energy systems.	WWTP	Project Not Started	8,602,758	3,400	3,400	(8,599,358)	(0)
CIP Support										
9078	2008	10-Yr CIP Program Annual Updates	Update the 10-Year CIP and costs annually or as needed to ensure that projects are scheduled and funds are available each year	WWTP	Admin	153,092	45,495	153,092	-	107,597
9130	2008	Capital Improvement Engineering	Funds staff required to coordinate and implement the Capital Improvement Program.	WWTP	Admin	-	162,937	162,937	162,937	-
9158	2011	CIP Financial Assistance	State Water Resources Control Board SRF construction loan assistance. Funding received for Admin Building and WWTP Improvements and planning loan for Conveyance System. Future applications will be submitted for Conveyance System and Future Treatment Plant projects. Budget includes ongoing compliance with loan requirements.	WWTP	Admin	510,307	(62,095)	510,307	-	572,402
9159	2011	OCIP Funding	Repository for funding the OCIP and payment to Aon for management of the program for first five years. New OCIP program being evaluated in 2015.	WWTP	Merged	-	129,527	129,527	129,527	-
						622,005,338	232,396,555	742,405,940	120,400,602	510,009,385

Appendix A
Developing the CIP

Appendix A
Developing the CIP and CIP Updates

The original effort of preparing a comprehensive CIP 10-Year Plan resulted in a significant list of capital projects requiring implementation to ensure that SVCW's facility assets are managed and maintained in good working condition. A capital project is defined as an improvement or replacement of an existing asset with a value equal to or higher than $20,000 and a life expectancy beyond five years. Expansion projects (Stage 2) are not included in this CIP. Each project is identified by Location Code, is assigned a CIP Project number and placed into a Program.

Sources of CIP Update Projects

The original list of 131 projects in the 2008 CIP resulted from combining several outstanding lists of identified improvements that had been compiled over years of operation and maintenance of the facilities. The majority of projects were derived from lists kept by the Operations, Maintenance, Technical Services departments, and the Manager.

For preparing the Updates, Program Managers were requested to prepare revised lists of projects that they could identify after having been involved in the CIP for multiple years. Some of the revisions resulted from master planning efforts from which new facility needs were identified while some of the revisions resulted from projects being combined or merged to take advantage of potential efficiencies. The majority of projects arose from needs being identified during construction projects. Finally, some projects were deleted entirely if they were found unnecessary for accomplishing the overall goal of ensuring longevity for the SVCW facilities.

Criteria Used for Identifying Projects

The following criteria were established early in the CIP development process to assist in identifying needed improvements. The same criteria are maintained for the CIP Updates.

Regulatory Compliance/Process Reliability. This is a mandatory requirement based upon SVCW's various permits, federal, state and local regulations, laws, and codes. It includes providing and maintaining process reliability to ensure that regulatory compliance is achieved.

End of Useful Life/Catastrophic Failure Avoidance. This represents those pieces of equipment, structures, and other facilities that have reached the end of their useful life and, if not replaced or rehabilitated, will experience an unavoidable failure. This category also includes equipment that has become obsolete and is no longer supported by the original manufacturers. In the 2020 update, this criteria has changed, as SVCW has taken on a philosophy of preventative maintenance to avoid the expense and unpredictable nature of running equipment to the end of its useful life. The criteria is now called **Preventative Maintenance**

Safety. The identified project includes a repair, replacement, modification or expansion aspect that relates to public or worker safety.

Efficiency and Functional Improvement. Efficiency refers to specific equipment, facilities and work methods that represents a means to reduce operating cost. A functional improvement will increase the efficiency and effectiveness of how a particular facility or work method is maintained and/or operated.

Plant Appearance. Projects that will enhance, improve, and modify the appearance of the treatment plant; onsite buildings and facilities are included in this category. The importance of Plant appearance rests on public perception of the plant and SVCW as a whole. "Public" includes recipients of tours (children and adults), Commission members and other elected officials, regulatory personnel on site visits, and others.

CIP Cost Estimating Methodology

A key element to the CIP planning process is determining costs for each of the identified projects and allocating the costs to specific funding sources. Information on funding sources is included in Appendix B.

For the CIP Updates, Program Managers prepared update cost estimates for each of the projects within a particular Program. The cost estimates include construction costs and soft costs as described below.

CIP budgets for individual projects are comprised of five elements or "phases" of the capital project. The five phases are: Planning, Design, Construction, Construction Management, and Project Management. Some projects may include all phases; others, such as studies, may include only one phase.

For the most part, the cost element that is independently estimated is the Construction phase budget. The other cost elements are percentages of the Construction phase (except in special cases such as study-only projects). These phases are termed "soft costs". In addition to the soft costs and in recognition that the cost estimating for this level of project planning is inherently rough, a "Confidence Level" factor may be applied to the final Construction + Soft Costs estimates.

The methodology for estimating the Construction phase cost is described below. The percentages used to derive the other phases of the capital project and the confidence level factor follow.

Construction Phase Budget

The construction cost estimating procedure utilized the following guidelines:

- Estimate construction costs in 2007 dollars for the original projects, 2010 dollars for the projects added in the 2011 Update, 2011 dollars for the projects added in the 2012 Update, 2012 dollars for the projects added in the 2013 update.
- Bring all construction costs for new projects identified for the 2015 Update to 2015 dollars and for the 2017 Update to October 2017 dollars.
- Estimate mid-points of construction and escalate costs to that point for the 2018 Update; this represents the base costs.
- Projects to be implemented in future years have costs represented as base costs values; i.e., future costs are not escalated except in the case of the conveyance system program.
- Construction cost estimates and the contingency factor used are based on the level of confidence that the program manager has in its estimate.
- Construction cost estimates includes costs for bonds, insurance, mobilization/ demobilization, overhead, and profit. The program managers will use their best judgment as to what these amounts should be, based on the type and size of project and industry standard.
- The program manager will take into account if any testing, start-up, training, etc. will be required by the construction contractor and add in costs for these items.

Soft Costs Derivation

Soft costs derivation is based upon industry standards for typical design-bid-build projects. For other project delivery methods, the individual project soft costs were adjusted according to today's knowledge about a project. In addition, for projects involving instrumentation (SCADA or other types of software and hardware programming), soft cost percentages will be higher than for typical construction projects.

There are instances where SVCW program managers and/or the consultant preparing the cost estimates are aware that the percentages shown will not be sufficient to cover the necessary tasks or are an over-estimate of individual task costs. An example where the typical percentages would not be sufficient is: a project that involves permitting tasks or CEQA review will have higher percentages; alternatively, a project that can be implemented with in-house forces may have lower percentages assigned. Percentages indicated below are for "typical" projects.

Soft Costs for Design-Bid-Build Project Delivery Methods

Planning – 5% of Construction Cost

Design – 10% of Construction Cost

Construction Management – 18% of Construction Cost
where: Construction Management/Inspection = 10%
Design Services During Construction = 3%
Testing/Surveying/etc = 5%

Project Management – 5% of Construction Cost

Construction Change Orders – 5%

Total Soft Cost Percentage = 43%

Soft Costs for Instrumentation Projects

For Instrumentation projects, the percentage allocation should be:

Planning – 20%

Design – 25%; includes Programming

Construction Management – 40%

where: Construction Management/Inspection = 10%
Design Services During Construction = 20%
Testing, etc = 10%

Project Management – 5%

Construction Change Orders – 5%

Total Soft Cost Percentage = 95%

Staff Time and Confidence Level Factor

In the original 2008 CIP preparation, a percentage of 5% and 10% for staff time related to typical projects and instrumentation projects, respectively, was added to each project. During the course of preparation and ultimate adoption by the Commission, staff time was deleted from each project and, instead, a project listed as "Capital Improvement Engineering" was added. This project remained in the CIP Updates until the 2017 Update. Instead, staff time dedicated to CIP development is allocated to the individual projects which project managers are working. While the budgets for each project were not

increased to account for staff time, staff is working diligently to keep their work hours as efficient as possible. There may come a need to reinstate this Capital Improvement Engineering project back into future CIP Updates.

Also in the original CIP preparation, each project had a 30% confidence factor applied to the sum of the Construction phase costs + Soft Costs. Again, during the course of preparation and Commission review and adoption, these confidence factors were removed for the majority of projects. This remains true for the CIP Updates; i.e., projects do not include a 30% confidence level factor.

Appendix B
Funding Requirements

Appendix B
Funding Requirements

Financial Structure and Management

SVCW has no taxing power and therefore receives nearly all of its funding, other than interest earnings and other miscellaneous revenues, according to rules established through a Joint Powers Agreement between Member Agencies. Combined, Member Agencies pay all expenditures associated with operations, capital repairs, capital reserves, debt service, and debt reserves. Capital and Reserve allocation factors, according to the JPA, are as follows:

City of Belmont	9.45%
City of Redwood City	48.57%
City of San Carlos	15.145
West Bay Sanitary District	26.84%

Each year, the SVCW Commission adopts a budget for the following year. The budget establishes the funding requirements for each of the Members. Funding occurs in twelve monthly installments. After the close of the fiscal year, the annual payments made by each Member are reconciled against the actual expenditures allocated to each Member according to the JPA. Any difference is applied toward fund reserves held by the Authority on behalf of each Member.

Financial Planning

Member Agency sewer rates provide the underlying repayment security for all SVCW financing. SVCW prepares a Long Range Financial Plan annually and presents it to the Commission in January, to incorporate revised CIP figures and/or funding strategies. The plan describes how each agency should consider SVCW operating and capital funding expenditures when setting sewer rates. The 2020 Long Range Financial Plan was accepted at the January 2020 Commission Meeting in conjunction with this CIP Update.

Appendix C
CEQA Documentation

Appendix C
CEQA Documentation

California Environmental Quality Act Compliance

SVCW will act as Lead Agency for the projects in the 2020 CIP Update. The California Environmental Quality Act (CEQA) requires that SVCW adequately assess the environmental impacts of its capital projects. Some projects in the CIP will require an Initial Study to comply with CEQA, some will require further project definition to analyze for necessary CEQA action, while some projects will fall under statutorial or categorical exemption from further CEQA analysis. The Commission will consider approval of CIP projects after preparation and certification of the appropriate CEQA documentation.

For certain projects, SVCW may act as a Responsible Agency and would rely on other agencies to prepare the primary environmental documentation. These projects require Environmental Impact Reports (EIRs) or Negative Declarations, which were previously approved by other agencies.

CEQA Exemptions

The CIP itself is exempt from CEQA as a planning study (CEQA Guideline Section 15262). Some projects included in this CIP are likewise exempt under CEQA. The CEQA certifications for these projects are considered approved when the Commission adopts the 2020 Update.

The following summary lists the applicable exemptions for SVCW's CIP projects:

Statutory Exemption:
- CEQA Guideline 15262 – Feasibility and Planning Studies
- CEQA Guideline 15269 – Emergency Project

Categorical Exemption:
- CEQA Guideline 15301 –Existing Facilities (repair, operation, maintenance; negligible or no expansion of an existing use)
- CEQA Guideline 15302 – Replacement or Reconstruction of Existing Facilities
- CEQA Guideline 15303 – New Construction or Conversion of Small Structures
- CEQA Guideline 15306 – Information Collection
- CEQA Guideline 15322 – Educational or Training Programs Involving No Physical Changes
- CEQA Guideline 15329 – Cogeneration Projects at Existing Facilities
- CEQA Guideline 15330 – Minor Actions to Prevent, Minimize, Stabilize, Mitigate, or Eliminate the Release or Threat of Release of Hazardous Waste or Hazardous Substances
- CEQA Guideline 15378 – Activity is not defined as a project per guidelines.

CEQA Compliance Status

The CEQA compliance status was reviewed for all projects listed in the CIP. Each project was reviewed for the type of CEQA documentation that is required. Types of CEQA compliance are indicated in the table below.

Types of CEQA Compliance

Further Project Definition Required	In some cases, the project is not yet sufficiently defined to allow a determination to be made on the appropriate level of environmental documentation. A preliminary review of these projects will be made when the project is more clearly defined.
Exemption	A preliminary review of the project has concluded that the project designated in the table as exempt has been granted an exemption by statute or by categories established in the State CEQA Guidelines. Adoption of the CIP Budget constitutes Commission approval of the projects that are listed in the table as exempt under CEQA. Certain CIP projects noted as "Not a Project Under CEQA" are also exempt from further CEQA review.
Initial Study/ EIR/Negative Declaration	Initial Study of the project will be undertaken to determine if the project may have a significant effect on the environment. Depending on the results of the study, either a Negative Declaration or EIR will be prepared. Commission approval of the project will follow approval of the Negative Declaration or EIR.
Previous CEQA Document Approved	For these projects, CEQA compliance has already been achieved through documents previously prepared and approved. If CEQA documents were prepared by other agencies, SVCW may need to make specific findings and, subsequently, file additional documentation at the time the project receives Commission approval.

The CEQA compliance status of the various projects in the CIP is indicated in the following tables. For each project listed in the table, the type of CEQA documentation that has been completed or is anticipated to be required is indicated. The table is organized by CIP Project number. In some cases, Notices of Exemptions (NOE) are filed with the State Clearinghouse. SVCW is not required to file NOEs with the State but in some cases does so to be in compliance with State and/or Federal funding requirements or other reasons such as requests from sureties or contractors.

This analysis and approval complies with CEQA Guidelines issued by the State of California.

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
6003	Influent Force Main Emergency Repair	2008	SE	Emergency Project	15269			
6008	Tunnel and Gravity Pipeline	2015				IS Required; CEQA Required	Included in EIR for Conveyance System	EIR approved April 13, 2017
6017	Inspection of 33" Force Main	2020	CE	Not a project under CEQA	15378			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
7012	Pump Stations Processor Upgrade & T-1 Transition for Primary Communications	2015	CE	Repair of Existing Facilities	15301			
8023	SCADA/Auto Response to Plant Alarm Conditions	2014	CE	Not a project under CEQA	15378			
8025	No. 3 Water Control System	2011	CE	Replacement or Reconstruction of Existing Facilities	15302			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9014	Process Tanks Concrete and Steel Protective Coatings Replacement	2009	CE	Replacement or Reconstruction of Existing Facilities	15302			
9017	Plant #1 Water System Pipe Repair and Supply Upgrade	2008	CE	Repair of Existing Facilities	15301			
9033	Future Plant Electrical System Panel Replacement	2014	CE	Replacement or Reconstruction of Existing Facilities	15302			NOE filed April 27, 2010

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9034	Electrical Conductor Replacement - MCC Room to Wetside/Dryside Loads	2014	CE	Replacement or Reconstruction of Existing Facilities	15302			NOE filed April 27, 2010
9041	Underground Fuel Tank Replacement	2008	CE	Replacement or Reconstruction of Existing Facilities	15302			
9071	Plant Gallery Floor Sealing	2008	CE	Repair of Existing Facilities	15301			
9078	10-Yr CIP Program Annual Updates	2008	CE	Not a project under CEQA	15378			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9080	Primary Sedimentation Tanks Collector System Maintenance	2008	CE	Replacement or Reconstruction of Existing Facilities	15302			
9084	Seismic Upgrade - DMF 42" Effluent Piping	2013	CE	Replacement or Reconstruction of Existing Facilities	15302			
9096	Plant Architectural Painting	2009	CE	Repair of Existing Facilities	15301			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9097	Plant Deck Re-coating	2012	CE	Replacement or Reconstruction of Existing Facilities	15302			
9103	Landscape Impoundment Improvements	2015				May be included w/Conveyance System CEQA	Included in EIR for Conveyance System	EIR was approved April 13, 2017
9105	Document Management System	2008	SE	Feasibility and Planning Study	15262			

			Exempt Projects			CEQA Documentation		
Project No.	Project Name	Start Date	SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9107	CCT Concrete and Steel Protective Coating Replacement	2012	CE	Replacement or Reconstruction of Existing Facilities	15302			
9113	Evaluation of Plant Under slab Piping	2012	CE	Repair of Existing Facilities	15301			
9118	SCADA Integration with Integrated Business Management System	2009	CE	Not a project under CEQA	15378			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9120	RAS Pump Suction Pipe Replacement	2008	CE	Replacement or Reconstruction of Existing Facilities	15302			
9128	PST 3 & 4 Protective Coatings	2015	CE	Replacement or Reconstruction of Existing Facilities	15302			
9130	Capital Improvement Engineering	2008	CE	Not a project under CEQA	15378			
9131	Plant Service Road Resurfacing-Phase 2	2008	CE	Replacement or Reconstruction of Existing Facilities	15302			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9158	State Revolving Fund Financial Assistance	2009	CE	Not a project under CEQA	15378			
9159	OCIP Funding	2009	CE	Not a project under CEQA	15378			
9168	Thickening Improvements - Phase I	2008	CE	Replacement or Reconstruction of Existing Facilities	15302			
9171	Interior Coating of Horizontal Influent 24" Mix Pipes for Digester 3	2008	CE	Repair of Existing Facilities	15301			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9177	Implement Security Plan Enhancements	2011	CE	Existing Facilities	15301			
9188	DMF Underdrain Access Hatches	2012	CE	Replacement or Reconstruction of Existing Facilities	15302			
9192	Drying Beds Northern Expansion	2013	CE	Replacement or Reconstruction of Existing Facilities	15302			
9196	Electronic O&M Manuals	2013	CE	Not a project under CEQA	15378			
9206	Site Waste Piping and Pump Replacement	2012	CE	Repair of Existing Facilities	15301			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9215	Digester #1 Rehabilitation	2015	CE	Repair of Existing Facilities	15301			
9223	Final Effluent Pump Replacement	2014	CE	Replacement or Reconstruction of Existing Facilities	15302			
9225	DCP2 Processor Upgrade	2015	CE	Not a project under CEQA	15378			
9226	DMF Platforms	2015	CE	New Construction of Small Structures	15303			
9229	Food Waste: Receiving Station and Digester Improvements	2015	CE	Replacement or Reconstruction of Existing Facilities	15302			NOE filed March 23, 2016

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9231	BioforceTech Dryer System	2015	CE	Cogeneration Projects at Existing Facility	15329			NOE filed 10/01/2015 Notice of non-responsibility 11/06/2015
9232	Long Term Strategic Recycled Water Planning	2015	SE	Feasibility and Planning Study	15262			
9235	Digester Gas Storage	2016	CE	Cogeneration Projects at Existing Facility	15329			
9236	CEC SAF-MBR	2018	CE	Existing Facility	15329			NOE filed 06/03/2017
9237	Radio Road Wetlands Restoration	2017				IS Required		

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9240	Standby Generators Feed Relocation and Electrical Panel Upgrades	2020	CE	Existing Facilities	15301			
9241	Primary Effluent Channel Recoating	2020	CE	Repair of Existing Facilities	15301			
9242	Fixed Film Reactor Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9243	PST Thickening Project	2020	CE	Replacement or Reconstruction of Existing Facilities	15302			
9244	Digester 3 Cleaning and Rehab	2020	CE	Repair of Existing Facilities	15301			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9245	Digester 2 Cleaning and Rehab	2020	CE	Repair of Existing Facilities	15301			
9246	Activated Sludge Process Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9247	SHB Electrical Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9248	Cogeneration Engine System Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9249	Fine Screening Process Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9250	Wet Side Power Rehabilitation	2020	CE	Repair of Existing Facilities	15301			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9251	Laboratory HVAC Rehabilitation	2020	CE	Repair of Existing Facilities	15301			
9252	Repair of Final Effluent Pump Suction Piping	2020	CE	Repair of Existing Facilities	15301			
9253	Repair of Underslab Piping	2020	CE	Repair of Existing Facilities	15301			
9254	Waste Gas Burner Replacement	2020	CE	Replacement or Reconstruction of Existing Facilities	15302			
9400	Nutrient Removal	2017	CE	Replacement or Reconstruction of Existing Facilities	15302	Further Project Definition Required		

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9401	Side Stream Treatment	2018	CE	Replacement or Reconstruction of Existing Facilities	15302			
9500	RESCU Administrative Activities	2020	CE	Not a project under CEQA	15378			
9501	Pump Station Rehabilitation	2015				IS Required; CEQA Required	Included in EIR for Conveyance System	EIR approved April 13, 2017
9502	Front-of-the-Plant	2015				IS Required; CEQA Required	Included in EIR for Conveyance System	EIR approved April 13, 2017
9503	WWTP Improvements Phase II	2017	CE	Replacement or Reconstruction of Existing Facilities	15302			

Project No.	Project Name	Start Date	Exempt Projects			CEQA Documentation		
			SE=Statutory CE=Categorical Exemption	Reason for Exemption	CEQA Guideline Reference	Initial Study Required?	Action Taken	Date
9807	12 kV Primary Switchgear	2017	CE	New Construction of Small Structures	15303			
9808	In-Plant Power (12kV) Rehabilitation	2017	SE	Emergency Project	15269			
9810	Energy Storage	2017	CE	New Construction of Small Structures	15303			
9811	Solar PV System	2017	CE	Existing Facilities	15301			

Appendix D
References

Appendix D
References

Information contained in the SVCW 2020 Capital Improvement Program Update was derived from multiple sources, including written documents and staff and consultant knowledge. The following list comprises the reference basis for the project information.

SVCW 10-Year Capital Improvement Program – April 2008

- Adopted CIP inclusive of 131 Projects

SVCW 10-Year Capital Improvement Program – 2018 Update

- Adopted CIP Update

SVCW Engineering Division Staff

- Program Managers from each CIP Program

SVCW Operations & Maintenance Division Staff

- Needs assessment; discussions with O&M Department Manager

Outside Resources

- Construction Management Team
- Operations, Maintenance & Engineering Consultants
- Owners' Advisors teams for RESCU

Capital Improvement Program Project Master Plans

- Energy System Master Plan, CDM, dated June 2009
- Biosolids Master Plan, Brown and Caldwell, dated September 2010
- Corrosion and Odor Control Master Plan, Whitley Burchett & Associates, dated June 2010
- Conveyance System Master Plan, Winzler & Kelly, draft dated December 2011

SVCW Capacity Analysis Report

- Prepared by Brown and Caldwell, October 2013
- Verification Technical Memorandum prepared by Kennedy/Jenks, April 2017

BACWA Nutrient Removal Studies

- Participation in Contracts Management Group and Permit Group