Budget Committee (final): March 8, 2018
Prelim Budget Board Meeting: March 22, 2018
Final Budget Board Meeting: June 28, 2018

Carmel Area Wastewater District
Budget – Volume 2
2018-19

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Carmel Area Wastewater District

2018-19

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Gregory D'Ambrosio	Director (Budget Committee)
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Robert Siegfried	Director (Budget Committee)
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Irene Bryant	Administrative Services Coordinator
Chris Foley	Maintenance Superintendent
James Grover	Principal Accountant
Drew Lander	Principal Engineer
Daryl Lauer	Collection System Superintendent
Patrick Treanor	Plant Engineer
Ed Waggoner	Operations Superintendent

Mission Statement

Carmel Area Wastewater District is a special district dedicated to protecting the public health and the environment by the cost-effective collection and treatment of wastewater and the return of clean water to the environment.

Carmel Area Wastewater District
2018-19

Table of Contents

Capital Budget Introduction

Capital Projects/Maintenance Budget & Long-Range Plan

The District's long range financial plan is wedded to its 15 year Treatment Plant Capital Improvement Program (CIP), its Renewal and Replacement Schedule for Equipment, and the 5 year Collection System CIP schedule.

In March 2012 the District retained Kennedy/Jenks Consultants to perform a condition survey of the assets at the treatment plant and to develop an asset database to document and analyze the asset condition data. Based on the findings from the survey the District embarked on a program to improve the management of the wastewater treatment plant. The 15-years capital improvement program that staff and Kennedy/Jenks developed is the foundation for what we are doing today. Engineering, Operations, and Management staff have all committed to maintaining and extending the original 15 year plan to ensure we are keeping pace with replacement needs.

The District issued a Notice of Completion for Phase I in January 2018. We immediately began to consider Phase 2 and other rehabilitation projects around the facility. Our intention is to present the Board of Directors with a proposal for Phase 2 at the July 2018 regular board meeting. As you can see, we're not resting or backing away from the challenge. Staff is all in. The Board has a vision for the future. And finally, the public has been incredibly supportive.

A brief recap of the three major projects on board for fiscal year 2018-19 follows:

Hatton Canyon Sewer Line Rehabilitation: State Parks owns the land in Hatton Canyon and the District holds an easement for sewer. The District's infrastructure is underwater during winter storms and our risk of a sanitary sewer spill has greatly increased because of the road way failure. The sewer line that flow through Hatton canyon are approximately 60 years old and are made of Vitrified Clay Pipe (VCP). The pipe size is 8 inch and is almost a mile in length that starts north of the Carmel High in the canyon and flows to Carmel Valley Road.

Replace Pump Station SCADA: These SCADA PLC-5 controls are outdated and many of the components are hard to find. The PLC-5 (Programmable Logic Controller) component is no longer made. Newer PLC models offer an easier user interface, smaller footprint and more options. The Treatment plant has upgrading a portion of the PLC/SCADA under phase 1, staff has been saving and using old components to provide Collections SCADA with a bridge until the replacement. The reliability of the PLC and other components are a few of the reason the Treatment plant is upgrading their SCADA as well. Staff plans to integrate the collection SCADA into the Ignition software. Staff will perform a radio band feasibility to possibly eliminate old coper land lines.

Calle la Cruz force main & Outfall Project: In August of 2013 staff discovered an emergency condition of imminent failure of the Calle la Cruz force main over the Carmel Lagoon. This prompted immediate action to replace 400 ft. of the existing line with a durable HDPE pipe laid above grade. The emergency repair was an unbudgeted expense for 2013. Staff has worked with Kennedy/Jenks this year to design and develop construction plans for the permanent replacement of the outfall and force main crossing of the Carmel Lagoon. Approximately 440 feet of force main piping will be installed in a joint trench with the 24' HDPE outfall line under the Carmel Lagoon then encased in concrete. Due to the complexity of the environmental review required for the work in the Lagoon it is not anticipated that construction will begin until the summer of budget year 18-19. Staff has summited a grant application with FEMA & CalOES grant funding is expected to take a few months. This project is combined with the replacement of the outfall line and for budgeting Collections will pay 1/4 of the total cost.

Phase II Rehab Project: Consultant/Engineering services contract with Kennedy Jenks Consultants (K/J) to provide engineering services to develop plans and specifications for the Plant Rehabilitation - Phase 2 ES improvements. These design services include the preparation of demolition plans for equipment to be removed now that Phase 1 is operational and plans and specifications needed to evaluate digester #1 which will be taken out of service. Contract management services during demolition is needed to maintain good document control.

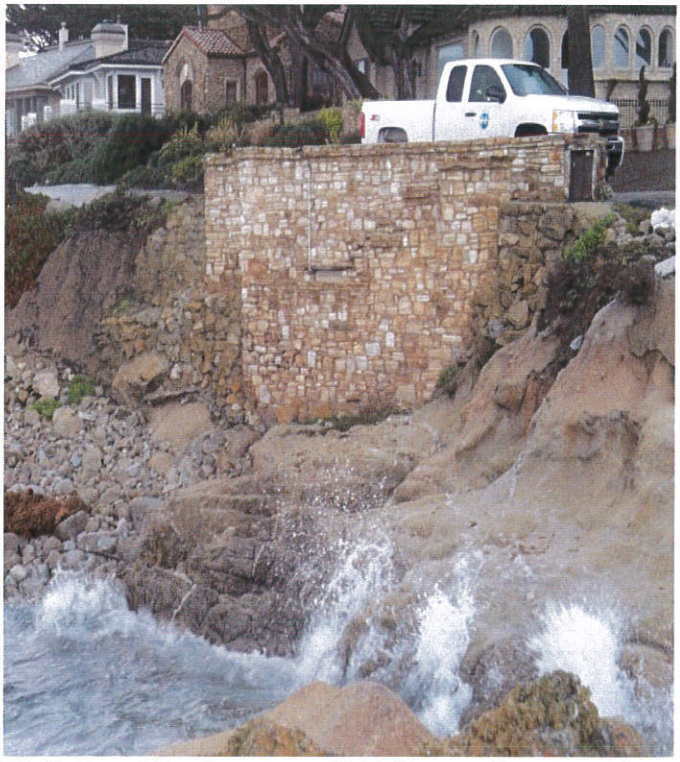
Renewal & Replacement (R&R) – Long Range Plan within the Operating Budget

The average annual maintenance and repairs budget projected for the Secondary Treatment Plant over 15 years is estimated to be in the range of $900,000 per year. This estimate includes asset materials, installation costs, construction markups, contingency, and engineering costs.

We are working on a 15 year long term plan for the Collection System; however, until it is complete we are relying on our 5 year Collection System CIP schedule. We estimate that the amount of average annual maintenance and repairs budget for the Collection System should also be in the range of $800,000 per year. We do have some significant challenges in Collections. We started rehabilitation at the treatment plant; but we've got quite a bit to do in the field as well.

Total Replacement Cost vs. CIP/Maintenance Budget

On a percentage basis, the 15-year average annual investment in capital improvement projects is estimated to range between 2% and 4% annually of the total estimated replacement cost of the Secondary Treatment Plant. The corresponding maintenance budget is estimated to equate between 0.60% to 1.4% of the total estimated replacement cost of the Secondary Treatment Plant. We believe those percentages are reasonable. An annual renewal budget of 3% assumes that the assets are renewed at a rate of once every 33 years; 4% assumes a renewal rate of once every 25 years. The average of all assets average useful life list in the Kennedy/Jenks plan database is about 38 years. Given that asset renewal was minimized over the past decade it is reasonable that the current asset renewal rate would be accelerate compared to the overall average useful life of the assets.



Unfortunately, the current bidding environment is quite high in California. We feel fortunate that our Phase I project was bid prior to the current escalation. It is likely that we will need to strategize and prioritize projects to stretch our financial resources as much as possible. We've also applied to the California Office of Emergency Services for mitigation grant funding to see if there is any assistance available. Admittedly this it is difficult to get grant funding these days, but we think the time and effort are worth making the application. Rest assured we are attempting to plan and strategize well to ensure that we serve the public both efficiently and effectively.

Fundamental Service Goals for our Facility

The mission of CAWD is to safely, reliably, and cost-effectively treat wastewater to meet regulatory compliance and return this treated wastewater back into the environment. The fundamental and strategic levels of service are the guiding principles for what the treatment plant should be set to accomplish. If assets are not serving to meet these levels of service then they should be rehabilitated, replaced, phased out of operation, or removed from service.

The fundamental levels of service that speak to our mission include:

- To be compliant with all current regulatory waste discharge permits and to be positioned to comply with probably future regulations.
- To be cost effective in operating and maintaining the District's facilities.
- To invest in safety practices to eliminate personal injuries or environmental hazards from occurring at District facilities.
- To apply fail safe systems and redundancy to maintain reliability.
- To provide secondary treated wastewater to the Reclamation Project tertiary microfiltration/reverse-osmosis plant.
- To plan for and appropriately handle severe flooding events which can occur at the treatment plant.

Budget Summary

Carmel Area Wastewater District
Budget Summary
2018-19

Description	2016-17 Actual	2016-17 Budget	2016-17 % of Budget	Est. 2017-18 Actual	Est. 2017-18 Budget	Est. 2017-18 % of Budget	Proposed 2018-19 Budget	% Chg. Prior Yr. Budget	Projected 2019-20 Budget	% Chg. Prior Yr. Budget
Beginning Fund Balance	24,150,206	21,528,095		24,454,990	15,787,494		22,112,381	-9.58%	20,205,666	-8.62%
Operating Revenues	8,651,989	7,947,301	108.87%	8,426,931	8,524,382	98.86%	9,261,993	9.91%	9,456,003	2.09%
	8,651,989	**7,947,301**	108.87%	**8,426,931**	**8,524,382**	98.86%	**9,261,993**	9.91%	**9,456,003**	2.09%
Op Expend. (less deprec.)										
Treatment	2,341,173	2,456,006	95.32%	2,335,751	2,613,270	89.38%	2,713,651	16.18%	2,709,517	-0.15%
Maintenance - Plant	1,031,392	1,207,430	n/a	1,015,586	1,207,430	84.11%	1,695,392	66.94%	1,318,881	-22.21%
Maintenance - Field	109,594	111,476	n/a	47,039	111,476	42.20%	100,225	113.07%	68,765	-31.39%
Administration	1,030,078	1,542,042	66.80%	1,113,667	1,542,042	72.22%	1,598,421	43.53%	1,577,111	-1.33%
Collection	1,012,737	1,119,431	90.47%	909,897	1,119,431	81.28%	1,237,423	36.00%	1,205,809	-2.55%
Reclamation Project	448,974	506,100	88.71%	519,945	506,100	102.74%	457,133	-12.08%	471,350	3.11%
Total Operating Exp	**5,973,948**	**6,942,485**	86.05%	**5,941,885**	**7,099,749**	83.69%	**7,802,245**	31.31%	**7,351,434**	-5.78%
Operating Gain/(Loss) (exclusive of depreciation)	2,678,041	1,004,816	266.52%	2,485,045	1,424,633	174.43%	1,459,748	-41.26%	2,104,569	44.17%
Depreciation Expense	2,428,485	2,661,000	91.26%	2,669,000	2,669,000	100.00%	2,669,000	0.00%	2,669,000	0.00%
Amortization Expense	4,860	4,860	100.00%	4,860	4,860	100.00%	4,860	0.00%	4,860	0.00%
Operating Gain/(Loss)	**244,696**	**(1,661,044)**	-14.73%	**(188,815)**	**(1,249,227)**	15.11%	**(1,214,112)**	543.02%	**(569,291)**	-53.11%
Non Operating Revenues	4,931,756	5,653,096	87.24%	3,031,303	4,407,067	68.78%	3,719,631	22.71%	2,769,763	-25.54%
Non Operating Expend.	218,813	218,813	100.00%	216,506	216,506	100.00%	213,762	-1.27%	215,625	0.87%
Net Income/(Loss)	**4,957,639**	**3,773,239**	131.39%	**2,625,982**	**2,941,334**	89.28%	**2,291,757**	-12.73%	**1,984,847**	-13.39%
Capital Budget										
Equipment Purchases										
Administration	0	0	n/a	7,000	7,000	100.00%	0	-100.00%	12,000	n/a
Maintenance	0	0	n/a	58,013	58,013	100.00%	200,000	244.75%	0	-100.00%

Carmel Area Wastewater District
Budget Summary
2018-19

Description	2016-17 Actual	2016-17 Budget	2016-17 % of Budget	Est. 2017-18 Actual	Est. 2017-18 Budget	Est. 2017-18 % of Budget	Proposed 2018-19 Budget	% Chg. Prior Yr. Budget	Projected 2019-20 Budget	% Chg. Prior Yr. Budget
Collections	80,000	210,840	37.94%	90,000	90,000	100.00%	0	-100.00%	400,000	n/a
Treatment	144,060	168,601	85.44%	103,438	103,438	100.00%	33,000	-68.10%	38,000	15.15%
Capital Improvement Projects										
Administration	0	12,000	n/a	30,000	30,000	100.00%	0	-100.00%	0	n/a
Maintenance	0	0	n/a	95,000	95,000	100.00%	0	-100.00%	0	n/a
Collections	540,040	1,267,428	42.61%	1,270,000	1,270,000	100.00%	2,210,000	74.02%	1,490,000	-32.58%
Treatment	762,070	1,098,000	69.41%	44,000	44,000	100.00%	164,001	272.73%	0	-100.00%
Treatment Long Term Capit	5,560,030	9,422,831	59.01%	5,945,000	5,945,000	100.00%	4,265,331	-28.25%	1,765,000	-58.62%
Total Capital Budget	**7,086,200**	**12,179,700**	58.18%	**7,642,451**	**7,642,451**	100.00%	**6,872,332**	-10.08%	**3,705,000**	-46.09%
Ending Fund Balance	**24,454,990**	**15,787,494**	154.90%	**22,112,381**	**13,760,237**	160.70%	**20,205,666**	-8.62%	**21,159,373**	4.72%

Capital Budget Summary

Carmel Area Wastewater District

Capital Budget Summary 2018-19

	ITEM	ALLOCATION						Totals
		Admin	Maintenance	Collection	Treatment	PBCSD	Recla-mation	
1	CIP Projects for Administration	0						0
2	CIP Maintenance - Plant		0					0
3	CIP Projects for Collection System			2,210,000				2,210,000
4	CIP Projects for Treatment & Disposal				97,716	48,785	17,500	164,001
5	CIP Long Term Capital Plan for Treatment & Disposal				2,844,976	1,420,356	0	4,265,332
	Total CIP	0	0	2,210,000	2,942,692	1,469,141	17,500	6,639,333
1	Capital Equipment - Administration	0						0
2	Capital Equipment - Maintenance		133,333			$66,667		200,000
3	Capital Equipment - Collections			0				0
4	Capital Equipment - Treatment				12,119	6,051	14,830	33,000
	Total Capital Outlay	0	133,333	0	12,119	72,718	14,830	233,000
	Total CIP & Capital Outlay 18-19	**0**	**133,333**	**2,210,000**	**2,954,811**	**1,541,859**	**32,330**	**6,872,333**

Carmel Area Wastewater District

Capital Budget Summary 2019-20

	ITEM	ALLOCATION						Totals
		Admin	Maintenance	Collection	Treatment	PBCSD	Recla-mation	
1	CIP Projects for Administration	0						0
2	CIP Maintenance - Plant		0					0
3	CIP Projects for Collection System			1,490,000				1,490,000
4	CIP Projects for Treatment & Disposal				0			0
5	CIP Long Term Capital Plan for Treatment & Disposal				1,177,255	587,745		1,765,000
	Total CIP	0	0	1,490,000	1,177,255	587,745	0	3,255,000
1	Capital Equipment - Administration	12,000						12,000
2	Capital Equipment - Maintenance		0					0
3	Capital Equipment - Collections			400,000				400,000
4	Capital Equipment - Treatment				22,011	10,989	5,000	38,000
	Total Capital Outlay	12,000	0	400,000	22,011	10,989	5,000	450,000
	Total CIP & Capital Outlay 19-20	**12,000**	**0**	**1,890,000**	**1,199,266**	**598,734**	**5,000**	**3,705,000**

Administration

CAWD Administration Dept

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
CAPITAL PROJECTS								
1	Interior Painting			$ 20,000				
2	Replace Administrative Office Carpeting							$ 20,000
3	Replace Administrative Office Furnaces							$ 6,500
4	Update bathrooms - new tile & paint							$ 20,000
5								
CAPITAL PURCHASES								
a	Admin Copy Machine		$ 12,000					
b	General Manager's Sedan							$ 30,000
c								
	TREATMENT & DISPOSAL TOTAL	**$ -**	**$ 12,000**	**$ 20,000**	**$ -**	**$ -**		**$ 76,500**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -		$ 5,000
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -		$ -
	CAWD COST	**$ -**	**$ 12,000**	**$ 20,000**	**$ -**	**$ -**		**$ 71,500**

1 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Interior Painting
Dept.: Admin
5 yr. Cap Projection: $ 20,000
CY Budget -
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The District has not had the interior building walls painted since 1990. There has been some "touch up" work over the years, but we've reached the point where there are repairs that need to be done (i.e. cracks, separation at corners, chipping, etc.) and then the entire office repainted.

Year Built: 1990
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 5 Moderate Deterioration

Justification

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	3	In-house Repair Work less than $1,000
Total COF:	10	

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	-	-	-	20,000	-	-	-	$20,000
Total		-	-	$20,000	-	-	-	$ 20,000

2 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Replace Administrative Office Carpeting
Dept.: Admin
5 yr. Cap Projection: $ 20,000
CY Budget $ -
GL Account:

Contact: Lander
Area Administration
Asset Type: Administration
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

It is anticipated that the Administration office building carpeting, which has never been replaced, will need to be replaced within the next 5 years. 400 square yards at $45/yd. To prolong the carpet life, staff proposes to include a maintenance item to professionally clean the carpets every six months. The proposed carpet replacement will remain an unscheduled expense and be re-evaluated each year.

Year Built: 1990
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 5 Moderate Deterioration

Justification

Original carpet from 1990 when the building was constructed and is showing obivious signs of wear. We currently have carpets cleaned every six months and are hoping to stretch out wear as long as possible

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	13	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 20,000	$ 20,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000

3 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Replace Administrative Office Furnaces
Dept.: Treatment
5 yr. Cap Projection: $ 6,500
CY Budget $ -
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

It is anticipated that the Administrative Office building furnaces will need to be replaced at some future date. There are a total of three furnaces in the building. We have had intermittent repairs to the system and replaced on unit in Jan 2009.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): 2009
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

The furnaces are being allowed to "run to fail". We have the ability to replace the furnaces on relatively short notice and would make an effort to repair first and then replace as required.

Current minimum efficiency rating requirement is 96%. Furnace #1 is at 80% and #2 is less than 80% as it is older than rating system. Taking the 2016 gas usage numbers *utilizing 80% and 96%) the potential yearly savings in natural gas from a furnace gas upgrade now would be approximately $170.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF		
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	3	In-house Repair Work less than $1,000
Total COF:	12	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor							$	$ -
Engineering							$	$ -
Parts & Supplies							$	$ -
Chemicals							$	$ -
Utility							$	$ -
Other							$ 6,500	$ 6,500
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,500	$ 6,500

4 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Update bathrooms - new tile & paint
Dept.: Treatment
5 yr. Cap Projection: $ 20,000
CY Budget $ -
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The bathrooms in the Admin Offices were tiled and painted in 1990 when the building was completed. After 28 years it is time to update the paint and tile.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): 1990
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

The paint and tile should be updated to bring the bathrooms up to more current standards. Current building code requires tile half way up the walls. We have some left over tile from the floors in the main working area, or a decision can be made to go with a coordinating tile.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	10	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 20,000	$ 20,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000

a **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Admin Copy Machine
Dept.: Admin
5 yr. Cap Projection: $ 12,000
CY Budget $ -
GL Account:

Contact: Buikema
Area Administration
Asset Type: Office Equip
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The current machine was purchased in July 2013 for $10,732. The technician advises that the typical lifespan is 5-7 years. We have budgeted for year 6 - but will stretch out replacement purchase depending on the condition of the machine and parts availability.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 3 Minor Defects Only

Justification

The Admin copy machine receives considerable use every working day and is a critical piece of office equipment. While technology will certainly continue to change, based on current average usage we are planning for its replacement with an upgraded machine. The usage on this machine is heavy due to printing of board packets and other admin material.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	1	No Cost
Total COF:	10	

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering			$12,000					$12,000
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -		$12,000	$ -	$ -	$ -	$ -	$ 12,000

b **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: General Manager's Sedan
Dept.: Admin
5 yr. Cap Projection: $ 30,000
CY Budget $ -
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The current vehicle (Hyundai Santa Fe) was purchased in 2016 and has less than 10,000 miles on the odometer. We estimate this car will last over 100,000 miles. Replacement is estimated, at minimum, after 10 years.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

This vehicle is used by all staff for daily business meetings, conferences, and training. Whil eit is predominately used by Administration staff, it is available to plant staff for travel to conferences/training. The ability to handle up to four large adults comfortably makes this vehicle quite useful.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact
Safety COF 7 Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF
Permit/Environmental COF 1 No Impact to Environment
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF 1 No Cost
Total COF: 12 Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor								$ -
Engineering							$30,000	$30,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000

Maintenance – Plant

Capital Equipment

CAWD Maintenance Plant - Capital Equipment

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
1	Relocate Eaton Switchgear breaker controls to safe location	$ 60,000						
2	Headworks Grit Pump Redundancy	$ 30,000						
3	Secondary Scum Sump Pump	$ 30,000						
4	Replace SCADA Historian	$ 20,000						
5	Install Domain controller for SCADA	$ 20,000						
6	Mainsaver Purchasing Module	$ 20,000						
7	Mainsaver Connect Mobile Module	$ 20,000						
8								
	TREATMENT & DISPOSAL TOTAL	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ 66,667	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 133,333**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

1 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Relocate Eaton Switchgear breaker controls to safe location
Dept:	Maintenance
Total Cost:	$ 60,000
CY Budget	$ 60,000
GL Account:	

Contact:	Foley
Area	Headworks
Asset Type:	Support Equipment
Avg Useful Life:	20 years
Est Residual Life:	15 years
% Consumed Life:	25
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Headworks Grit Pump removes the first settled solids from the plant inflow. This pump is critical to ensuring the removal of solids to prevent non organic material from building up in the Digester. Proper operation of this pump extends the life of cleaning cycles of the Digester tanks.

Year Built:	2013
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The Headworks currently has one Grit Pump with no redundancy. This pump can be taken out of service for short periods of time it is critical in the headworks process of removing sand, grit, rocks and other inorganic materials prior to active treatment of the wastewater stream. Purchase of a spare pump is proposed as a less expensive alternative to installation of redundant pumps. This pump can be taken out of service for repair but not for extended periods of time. The lead time of a replacement pump is several weeks so maintaining a pump on plant grounds provides staff the ability to replace a damaged pump immediately if needed.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF	26	Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Management	
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies		$ 60,000	$ -	$ -	$ -	$ -	$ -	$ 60,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total		$ 60,000	$ -	$ -	$ -	$ -	$ -	$ 60,000

2 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Headworks Grit Pump Redundancy
Dept:	Maintenance
Total Cost:	$ 30,000
CY Budget	$ 30,000
GL Account:	

Contact:	Foley
Area	Secondary Clarifiers
Asset Type:	Process Equip (Liquid)
Avg Useful Life:	20 years
Est Residual Life:	
% Consumed Life:	100
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Scum pump at secondary clarifiers is used to remove skimmed solids from the secondary clarifier tanks. These solids are removed to be ultimately processed in the Digester.

Year Built:	1978
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The Secondary Scum pump was the original pump style from the 1978 plant expansion. This pump did not have thermal protection which would shut off the pump if it gets to warm or if the pump runs dry. This pump has been damaged in the past due to these scenarios. The proposed replacement pump will include thermal protection to prevent future failures of this equipment. This will also extend the life of this asset as heat damage has occurred several times in the past.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF	26	Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Management	
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

3 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Secondary Scum Sump Pump
Dept:	Maintenance
Total Cost:	$ 30,000
CY Budget	$ 30,000
GL Account:	

Contact:	Foley
Area	Secondary Clarifiers
Asset Type:	Process Equip (Liquid)
Avg Useful Life:	30 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Improvement
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Switchgear breaker and generator transfer controls for treatment plant main electrical gear. Currently cabinet must be open and staff has to be adjacent to the 480volt circuit breakers to open, close or reset them during testing or to reset after failure.

Year Built:	2017
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This solution is an engineered fix to remove the need for staff to be exposed to a potential arc flash hazard. This modification to the switch gear will allow a greater number of operational staff to be able to test and reset the switchgear.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF	24	Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

4 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Replace SCADA Historian
Dept:	Maintenance
Total Cost:	$ 20,000
CY Budget	$ 20,000
GL Account:	

Contact:	Foley
Area	Ops Bldg
Asset Type:	SCADA
Avg Useful Life:	15 years
Est Residual Life:	1 year
% Consumed Life:	90
Category:	Capital Equipment
Urgency:	3 = Important
Carry Forward:	No

Asset Description

SCADA Historian records all regulatory and process data for the Treatment plant. This system is requiredfor regulatory compliance.

Year Built:	1986
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

Th cureent historian is a part of the RSView software which is being phased out as part of the software upgrade to Ignition ®. The new histrian software will provide better functionallity and reporting. The RSView software is no longer supported and is obsolete.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	10	Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF	37	Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000

5 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Install Domain controller for SCADA
Dept:	Maintenance
Total Cost:	$ 20,000
CY Budget	$ 20,000
GL Account:	

Contact:	Foley
Area	Ops Bldg
Asset Type:	SCADA
Avg Useful Life:	15 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Domain Controller for SCADA will provide login security to the SCADA system and prevent unothorized acess or tampering.

Year Built:	
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This control system provides an important function to ensuring cyber security best practices for water/wastewater critical infrustructer. This will integrate with the Ingnition software and prevent external unauthorized access. The treatment plant system doese require external remote montoring of some equipment and processes by vendors and on call staff. This system will provide the security needed to allow this gateway.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF		
Permit/Environmental COF	10	Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF	30	Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000

6 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Mainsaver Purchasing Module
Dept:	Maintenance
Total Cost:	$ 20,000
CY Budget	$ 20,000
GL Account:	

Contact:	Foley
Area	Ops Bldg.
Asset Type:	Computer/Network
Avg Useful Life:	15 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Purchasing Module is the tracking software system used by staff to prepare and submit purchase orders for approval. The purchase order process is used to track all purchases and allocate costs to processes and equipment. This system will replace the existing Share Point program.

Year Built:	
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The Existing purchase order program will no longer be supported by Microsoft® and was custom built for CAWD. The proposed Mainsaver Module will integrate into the current CMMS work order system and inventory control. This will reduced staff time needed for manual data entry and scanning under the current system. It is anticipated that this program will reduce approximately 10 hrs. of staff time each week from manual paperwork tasks and allow for better tracking of material and create better access to historic documents. This system is required for district public transparency and accounting.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF		
Cost COF		
Total COF	9	

Probability of Failure N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	
Non Asset Risk Management	

Funding Source

Primary Capital Budget

Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000

7 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Mainsaver Connect Mobile Module
Dept:	Maintenance
Total Cost:	$ 20,000
CY Budget	$ 20,000
GL Account:	

Contact:	Foley
Area	Ops Bldg.
Asset Type:	Computer/Network
Avg Useful Life:	15 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Mainsaver Connect Mobile Module allows operations and maintenance staff to access work orders, O&M manuals, and equipment maintenance history in the field while they are working on equipment. This will give staff access to the Mainsaver CMMS system from field tablets. Staff will also be able to use scanning equipment to check out tools, equipment and inventory and apply to work orders.

Year Built:	
Rehabilitation Date (Extending life of Asset):	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This tool will increase staff productivity and improve maintenance records, provide timely information about equipment and will improve safety by providing field access to lockout tag out, fall protection data, and other maintenance standard operating procedures. Staff will be able to check out inventory and provide real-time asset control and inventory tracking. This system is the first step in "just-in-time" inventory management and ordering.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours	
Safety COF			
Spill/Odor/Noise COF			
Permit/Environmental COF			
Process Functionality COF			
Cost COF			
Total COF	9	Probability of Failure	N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies	$	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ 20,000

Collections

Capital Improvement

CAWD Collections Dept - CIP

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
1	Hatton Canyon Access Sewer Line Rehabilitation (Carry Over)	$ 1,450,000						
2	Replacement of SCADA at all Pump Stations	$ 300,000						
3	Calle La Cruz force main & Outfall replacement	$ 250,000						
4	Engineering , Planning and Environmental	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	
5	High Meadows Canyon Sewer Line Replacement	$ 90,000						
6	Annual CIP sewer line replacement projects		$ 850,000	$ 850,000	$ 850,000	$ 900,000	$ 900,000	
7	Rancho Canada Sewer Line Relocation Project		$ 450,000					
8	Dump Pit for VacCon		$ 70,000					
9	Monastery Beach Pump Station							$ 850,000
10	Bay & Scenic Pump Station Sea Wall & Rehabilitation							$ 250,000
11	Rio Park Bike Trail (Carry Over)							$ 25,000
	TREATMENT & DISPOSAL TOTAL	**$ 2,210,000**	**$ 1,490,000**	**$ 970,000**	**$ 970,000**	**$ 1,020,000**	**$ 1,020,000**	**$ 1,125,000**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE		$ -					
	CAWD COST	**$ 2,210,000**	**$ 1,490,000**	**$ 970,000**	**$ 970,000**	**$ 1,020,000**	**$ 1,020,000**	**$ 1,125,000**

1 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Hatton Canyon Access Sewer Line Rehabilitation (Carry Over)
Dept.: Collections
5 yr. Cap Projection: $ 1,450,000
CY Budget $ 1,450,000
GL Account:

Contact: Lauer
Area Sewer Lines
Asset Type: Collections Gravity
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life: 100%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

State Parks owns the land in Hatton Canyon and the District holds an easement for sewer. The District's infrastructure is underwater during winter storms and our risk of a sanitary sewer spill has greatly increased because of the road way failure. The sewer line that flow through Hatton canyon are approximately 60 years old and are made of Vitrified Clay Pipe (VCP). The pipe size is 8 inch and is almost a mile in length that starts north of the Carmel High in the canyon and flows to Carmel Valley Road.

Year Built: 1950s
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 8

Justification

The District has had three major overflows over the past 20 years. The District experienced a large SSO resulting in 145,000 gallons of sewage flowing directly into the Hatton creek and then into the Carmel river ultimately ending up in the Ocean. Staff is currently working with MNS Engineering for designs for the replacement of this sewer line. This project and the Hatton road project will be both completed at the same time. Staff is in the review process with FEMA & CalOES grant funding which will take a few months.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 10 Cannot be down 1 hour
Safety COF
Spill/Odor/Noise COF 10 Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF 9 Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF
Cost COF 9 Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF: 38 Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary Grant Funding

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor	$2,500,000	$ 1,450,000						$ 1,450,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 1,450,000	$ -	$ -	$ -	$ -	$ -	$ 1,450,000

2 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Replacement of SCADA at all Pump Stations
Dept.: Collections
5 yr. Cap Projection: $ 300,000
CY Budget $ 300,000
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: SCADA
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life: 98%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

SCADA (Supervisory Control & Data Acquisition) units are located at all District Pump Stations. The SCADA systems used at the pump stations are programmable logic control interfaces. Once set up, they automate the pump station. Examples of controlled systems include the pumping process, wet well conditions, alarm notifications, reporting current state conditions.

Year Built: 1998
Rehabilitation Date (Extending life of Asset): 2018-19
Rehab Life Extension: 20
Asset Condition Rating: 8

Justification

These SCADA PLC-5 controls are outdated and many of the components are hard to find. The PLC-5 (Programmable Logic Controller) component is no longer made. Newer PLC models offer an easier user interface, smaller footprint and more options. The Treatment plant has upgrading a portion of the PLC/SCADA under phase 1, staff has been saving and using old components to provide Collections SCADA with a bridge until the replacement. The reliability of the PLC and other components are a few of the reason the Treatment plant is upgrading their SCADA as well. Staff plans to integrate the collection SCADA into the Ignition software. Staff will perform a radio band feasibility to possibly eliminate old coper land lines.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF		
Process Functionality COF		
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	19	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Moderate Repair
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies		$ 300,000					$	300,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total		$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000

3 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Calle La Cruz force main & Outfall replacement
Dept.: Collections
5 yr. Cap Projection: $ 250,000
CY Budget $ 250,000
GL Account:

Contact: Lauer
Area Outfall
Asset Type: Collections Force
Avg Useful Life: 50 years
Est Residual Life: 5 years
% Consumed Life: 98%
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

Aerial portion (200 feet) of the Calle La Cruz force main 2685 feet in total length 6 inch size and Ductile Iron Pipe (DIP) in Material. The section that will be replaced is a temporary piece of HDPE installed in 2013.

Year Built: 1960s
Rehabilitation Date (Extending life of Asset): 2018-19
Rehab Life Extension: 70
Asset Condition Rating: 8

Justification

In August of 2013 staff discovered an emergency condition of imminent failure of the Calle la Cruz force main over the Carmel Lagoon. This prompted immediate action to replace 400 ft. of the existing line with a durable HDPE pipe laid above grade. The emergency repair was an unbudgeted expense for 2013. Staff has worked with Kennedy/Jenks this year to design and develop construction plans for the permanent replacement of the outfall and force main crossing of the Carmel Lagoon. Approximately 440 feet of force main piping will be installed in a joint trench with the 24' HDPE outfall line under the Carmel Lagoon then encased in concrete. Due to the complexity of the environmental review required for the work in the Lagoon it is not anticipated that construction will begin until the summer of budget year 18-19. Staff has summited a grant application with FEMA & CalOES grant funding is expected to take a few months. This project is combined with the replacement of the outfall line and for budgeting Collections will pay 1/4 of the total cost.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 9 Cannot be down 8 hours
Safety COF 1 No impact to Safety
Spill/Odor/Noise COF 10 Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF 10 Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF
Cost COF 10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)
Total COF: 40 Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary Grant Funding

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 250,000						$ 250,000
Engineering	$ 300,000							$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 250,000

4 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Engineering , Planning and Environmental
Dept.: Collections
5 yr. Cap Projection: $ 720,000
CY Budget $ 120,000
GL Account:

Contact: Lander
Area Sewer Lines
Asset Type: Collections Gravity
Avg Useful Life:
Est Residual Life:
% Consumed Life: N/A
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

List of Projects that will require additional engineering, planning and environmental consultants :

Annual Long Term CIP Project
Rancho Canada Project
Relocation of Calle La Cruz Pump Station
Sea Wall and Pump Station Rehabilitation at Bay & Scenic Pump Station
Monastery Beach Pump Station

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: N/A

Justification

Many of the sewer line replacement projects contemplated by the Collections Department are located in easement areas where environmental or physical constraints make direct line replacement difficult. These funds will be used as needed to acquire engineering, planning or environmental services to prepare bid documents or document as built construction as needed. This type of analysis prior to construction will also allow staff to estimate budgets much more accurately.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF
Cost COF
Total COF: N/A

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management:
Non Asset Risk Management:

Funding Source

Primary Capital Budget

Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$	120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 720,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 720,000

5 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: High Meadows Canyon Sewer Line Replacement
Dept.: Collections
5 yr. Cap Projection: $ 90,000
CY Budget $ 90,000
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

This sewer line segment N791 to N797 is 237 feet long and is 8 inches in size made of cast iron pipe (CIP). This trunk line services the High Meadow's Terrace, High Meadows Lane and the Ridge condos area and is located in a canyon easement off od High Meadows Drive.

Year Built: 1966
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 8

Justification

During a manhole evaluation that was conducted during the summer of 2017 staff notice a crack developing at one of the CIP bell and spigots. Staff attempted a CCTV inspection of the sewer line and found that the line back graded towards the bell and spigot and staff could not properly view the crack from inside. Staff performed a temporary repair both internal and external at the crack on the bell. Staff informed the District Engineer of the problem and a field visit was preformed. During the visit a complete inspection of the segment was done. Staff noted that the CIP line was in low spot of the canyon and a drainage channel was now formed over the sewer line putting the sewer pipe in the water most of the year. Staff would like to relocate the sewer line on the hillside out of the water channel and reinforce the crossing of the sewer line where it crosses the creek.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF		
Process Functionality COF	1	No change in Process Functionality
Cost COF		
Total COF:	12	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 90,000					$	90,000
Engineering							$	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total		$ 90,000	$ -	$ -	$ -	$ -	$ -	$ 90,000

6 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Annual CIP sewer line replacement projects
Dept.: Collections
5 yr. Cap Projection: $ 4,350,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Sewer Lines
Asset Type: Collections Gravity
Avg Useful Life: 50 years
Est Residual Life: 5 years
% Consumed Life: 95%
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

The District's Long Term CIP has prioritized these five projects as critical : **Carmel**

Meadows Gravity Sewer Replacement Project : Line segments S615 to T603, 1300 feet of Ductile Iron Pipe (DIP) on a aerial span and eight manholes. This project is located on a easement next to Ribera Rd. and was originally installed in the early 1960's.

Pescadero Canyon Gravity Sewer Replacement Project : Line segments N601 to N10, 2200 feet of Vitrified Clay Pipe (VCP) and 7 manholes. This project is located in a easement next to Pescadero Rd. and was original installed in the Early 1920's.

Pine Hills Gravity Sewer Replacement Project : Line segments O947 to P915, 2600 feet of Vitrified Clay Pipe (VCP) and four manholes. This project is located in a easement next to Pine Hills Dr. and was originally installed in the mid 1960's.

High Meadows & Morse Dr. Gravity Sewer Replacement Project : The High meadows portion of this combined project is line segment N797 to N826, 1650 feet of Vitrified Clay Pipe (VCP) and 1 manhole in a easement originally installed in mid 1950's. The Morse Dr. part is Q763 to Q803, 340 feet of Ductile Iron Pipe (DIP) in a easement originally installed in the early 1960's.

Sags & Grading Repairs and Replacement Project : This project has 3,961 ft. of Vitrified Clay Pipe (VCP) located through out the District in the right of way. Staff broke this year into two phase with Phase One being the replacement of line segments R738 to R707 on Rio Rd. and Oliver Dr originally installed in the 1950's. Phase Two will replace line segments O733 to O734 on Allen Place, Q718 to Q721 on Martin Road, Q716 to Q715 on Hatton Road, P779 to P781 on Morse Drive, P775 to P776 on Flanders and N634 to N626 on San Carlos & Second.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The condition assessment has been completed and the data is available for review. What was done is the complete assessment of all of CAWD's sewer lines using CCTV. This assessment was performed using the ICOM computer based management program. The first step was to perform a complete assessment using CCTV, this part is now complete. Now that we have the data the ICOM program rates all the sewer pipes using a severity index rating system of 1 - 5 with 1 being a pipe that has no defects and is in good shape and 5 being a line segment with one or more structural defects. Using ICOM we can address the worst pipes in the District and maintain the lines with a rating of 3-4 using more frequent cleaning or root foaming to prolong their lifespan until lines that are in the worst shape are repaired. SSO history and the consequence of failure along with the defect rating from CCTV data combined have identified these five projects for repair. Please see attached map.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10	Cannot be down 1 hour
Safety COF		
Spill/Odor/Noise COF	10	Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	10	Loss of Process Functionality Indefintely
Cost COF	10	Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)
Total COF:	49	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 850,000	$ 850,000	$ 850,000	$ 900,000	$ 900,000	$	4,350,000
Engineering							$	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ 850,000	$ 850,000	$ 850,000	$ 900,000	$ 900,000	$	4,350,000

7 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Rancho Canada Sewer Line Relocation Project
Dept.: Collections
5 yr. Cap Projection: $ 450,000.00
CY Budget $ -
GL Account:

Contact: Lauer
Area Sewer Lines
Asset Type: Collections Gravity
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life: 90%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Rancho Canada Subdivision Sewer Line Capacity increase and Relocation Project : This project is for the relocation of current sewer trunk lines that serves the eastern most assists of the District. Line segments starting at R1006 on Via Mallorca and ending at S807 on Rio Rd. varies in size from 12 inch to 8 inch and is Truss pipe in material that was installed in the early 1970's. Rancho Canada has proposed converting one of its golf courses to a subdivision of Single Family Dwellings (SFD's) and donated the other golf course land to Monterey Regional Park System.

Year Built: 1973
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating:

Justification

Rancho Canada subdivision is currently planning to install a new alignment of the 12 inch sewer trunk line that currently runs through the property. It would be in the District's best interest to take advantage of this opportunity on this project to upsize the pipeline with a pipe diameter of 24" (ID - Internal Dimensions) for future capacity demands. The developer is asking for the District to fund the difference in cost from 12 inch to 24 inch. Staff has approached the Regional Park District with plans to extend this pipeline at the end of the Rancho Canada subdivision all the way to Via Mallorca at the increased size of 24". If more of the Carmel Valley area is annexed into our system, we will benefit from this upgrade now by not incurring the future costs of needing to upgrade later when it is realized the initial pipe capacity was insufficient to convey the potential wastewater generated. The District's extension would include roughly 1,900 ft. of pipe replacement (1,900 x $150) and 6 manholes (6 x $10K). The developer may pay for part of this project depending on the extent of their project. Based on the current movement of the developer the time frame for this work has been moved to FY19/20. See Map

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF
Cost COF
Total COF: N/A

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget

Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other		$	450,000				$	450,000
Total	$ -	$	450,000	$ -	$ -	$ -	$ -	$ 450,000

8 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Dump Pit for VacCon
Dept.: Collections
5 yr. Cap Projection: $ 70,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Administration
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Collection dump pit is a place for the dewatering of debris that has been collected in the Vacon vacuum truck. While Collections is the primary user of this, the Treatment plant has used this area in the past also. Once the debris has been dumped into the pit drains will carry the liquid to the headworks to be properly disposed of. Currently the District has a hole dug and dumps into the large hole and water is left to evaporate or be absorbed.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4 New or Excellent Condition

Justification

The District needs a contained area to properly decant and dispose of debris collected in the vacuum truck. The construction of this disposal area will remove water and not allow it to be absorbed directly into the ground. This project is pending Costal Commission permitting.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	1	No change in Process Functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	38	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor			$ 70,000					$ 70,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ 70,000	$ -	$ -	$ -	$ -	$ 70,000

9 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Monastery Beach Pump Station
Dept.: Collections
5 yr. Cap Projection: $ 850,000.00
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Construction of a pump station at Monastery Beach: The structure would be built so that there was a minimal footprint to keep any disturbance to the area to a minimum. It has not yet been designed, but staff believes it would likely be underground or similar to Ribera Station. State Parks has verbally indicated they would be in favor of a pump station at this location. They have asked us to write a letter requesting its inclusion in their General Plan.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 1

Justification

The Highlands Pump Station requires pumping for 3 miles to reach the Calle la Cruz station. Since it was constructed we have experienced multiple issues at Highlands PS, primarily with the pump seals and the pumps running off the pump curve. The long length of the force mains allows solids to turn septic and produces hydrogen sulfide at the downstream pump station. Engineering believes that a pump station between Highlands and the plant would reduce, if not eliminate the problems. Reducing the length of pipe between pump station would help to reduce pumping issues and more importantly perhaps, reduce hydrogen sulfide concentrations.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF		
Cost COF		
Total COF:	9	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Add Backup/Redundancy
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies							$ 850,000	$ 850,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 850,000	$ 850,000

10 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Bay & Scenic Pump Station Sea Wall & Rehabilitation
Dept.: Treatment
5 yr. Cap Projection: $ 250,000.00
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 50 years
Est Residual Life: 10 years
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

This project will consists of structural improvements to the current sea wall to extend the life of the Bay & Scenic pump station. The current sea wall has seen deterioration and erosion caused by large storm events and sea level rise. Bay & Scenic pump station is currently serving more than 200 properties in the Carmel Point area and has been in service since the 1950's.

Year Built: 1950's
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: 70
Asset Condition Rating: 8

Justification

The pump station is located immediately adjacent to the Pacific Ocean underneath the public roadway. Due to existing topography, this pump station cannot be relocated or otherwise decommissioned. For several years staff has observed erosion and deterioration of the decorative Carmel stone facade that protects the pump station from ocean forces during high tides and storm surges. In 2008 the County performed hardscaping (shotcrete) of some of the banks to help protect the slopes and extend the life of the roadway. Since that time erosion of the sandstone has continued and is becoming a concern to staff. Since the pump station is in relatively good condition and has provided more than 60 years of continuous service, staff recommends repairing the exterior wall and sandstone which is beginning to crack and fall off into the ocean. Due to the critical location of this pump station, all of the regulatory agencies with jurisdiction over the area (Coastal Commission, NMFS) and the anticipated expense to accomplish repairs, staff recommends the development of design plans to prolong the life of this asset and perform this maintenance within 4 years. Due to the proximity to the Pacific ocean this pump station has been included in the District wide sea level rise study.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 9 Cannot be down 8 hours
Safety COF
Spill/Odor/Noise COF 10 Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF
Process Functionality COF
Cost COF 10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)
Total COF: 29 Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Plan Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor								$ -
Engineering							$ 250,000	$ 250,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,000	$ 250,000

11 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Rio Park Bike Trail (Carry Over)
Dept.: Collections
5 yr. Cap Projection: $ 25,000.00
CY Budget $ -
GL Account:

Contact: Lauer
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 4 = Less Important
Carry Forward: Yes

Asset Description

Improvements to District parcel through Rio Park for District access. This project is designed to allow safe public pedestrian passage through the open space in the park that is adjacent to the neighboring school. Currently there is not a trail for public access. The proposed trail will cross over our infrastructure in several locations.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4 New or Excellent Condition

Justification

The pedestrian recreation path construction is in the design phase and it has been determined that it will cross our infrastructure in two locations. Because the City of Carmel-by-the-Sea intends on building a bike path the District will need to clear and build a pathway for its own access. The District has already invested in the tree removal along the proposed pathway for access and potential tree root intrusion into the trunk mains that run through this site and upgraded to tamper resistant fiberglass reinforced polymer (FRP) manhole frame and lids

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF		
Total COF:	4	

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management:
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	Unscheduled	Total
Labor							$ 25,000	$ 25,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000

Collections

Capital Equipment

CAWD Collections Dept - Capital Equipment

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
1	Replace Hydro-Vacuum Truck (#4)		$ 320,000					
2	Replace Generac Portable Generator		$ 80,000					
3	Replace Pump Round Truck (# 8)			$ 45,000				
4	Replace Collection Superintendent Truck (#17)				$ 45,000			
5	Replace Pumps at Monte Verde Pump Station					$ 25,000		
6	Replace Pumps at Bay & Scenic Pump Station					$ 25,000		
7	Replace Pumps at Hacienda Pump Station					$ 20,000		
8	Replace Electrical Control Panel at Hacienda Pump Station						$ 55,000	
	TREATMENT & DISPOSAL TOTAL		**$ 400,000**	**$ 125,000**	**$ 45,000**	**$ 70,000**	**$ 55,000**	
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	
	CAWD COST		**$ 400,000**	**$ 125,000**	**$ 45,000**	**$ 70,000**	**$ 55,000**	

1 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Hydro-Vacuum Truck (#4)
Dept: Collections
Total Cost: $ 320,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Vehicle
Asset Type: Vehicle Fleet
Avg Useful Life: 10 years
Est Residual Life: 1 year
% Consumed Life 90
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Replacement of Unit #4, 2008 Vaccon Combination Hydro Cleaning - Vacuum truck: Unit #4 currently serves as the District's primary hydro cleaning and SSO response vehicle. It's 3/4 inch hose has a smaller diameter allowing a longer hose section to be used (800 ft.), greatly increasing our reach into easements and is more agile than its 1 inch counterpart so it is ideal in most of our cleaning operations. The truck's ability to vacuum up areas affected by SSO's greatly increases our containment and mitigation efforts. The truck's vacuum and water pressure capabilities also allow us to use it as a hydro excavator. This process enables us to dig down to affected pipe lines to be repaired or for exploratory "potholes" to investigate the location of assets without damaging other known or unknown structures or utilities within the work zone. It has 800 gallons of usable water storage and 5 cubic yards of removed liquid and debris capacity with decanting capabilities.

Year Built: 2008
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 7 Significant Deterioration

Justification

At time of replacement, this vehicle will have over 10 years of service and approximately 10,000 hours of run time. This vehicle is a purpose built machine with lots of mechanical parts and computerized controls. With the frequent and heavy duty use it endures, it can be expected that the cost of servicing and repairing of this unit will continue to increase the older this unit get's. This unit had the top end of the engine rebuilt in January 2015, although that repair will keep it in service, major repairs like this are more likely. The auxiliary motor that supplies the water pressure for pipeline service has experienced many electrical issues over the last several years due to shorts in wiring and faulty computers. For the District to be able to continue its level of service and rapid response this vehicle need to be reliable and ready to use at anytime. This vehicle is also utilized for emergency spill clean up when called upon by the City of Carmel and other areas inside the District when called upon by the Fire Departments. While we may be able to be rebuild, this unit takes a considerable amount of abuse. Simply rebuilding the motor ignores the multiple systems/moving parts/electrical wiring required for optimal use on this vehicle. Staff has already spent a considerable amount of time on electrical issues. Additionally, the back end of the debris tank is starting to show evidence of rust. The vacuum side (3 blade fan system) pulls dirt/debris through it and takes considerable wear and would need to be addressed as well in a rebuild. The old unit vehicle could be sold to a disadvantage community that normally would not be able to afford to purchase a new Hydro-Vac truck.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	25	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 320,000					$ 300,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000

2 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Generac Portable Generator
Dept: Collections
Total Cost: $ 80,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Vehicle Fleet
Avg Useful Life: 20 years
Est Residual Life: 5 years
% Consumed Life 75
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: No

Asset Description

The 1999 Generac 44 kW 270/480 volt 61 amp 3 phase portable diesel generator. This generator is typically used at the Bay and Scenic pump station but is also capable of providing back up power for all pump stations. Currently, all the stations are undergoing compatibility upgrades so this Generator can be deployed and quickly connected at all stations. Additionally, this generator is set up to run a bypass pump in the event of an emergency or through routine maintenance. This generator may also be utilized at the plant on a nonemergency basis.

Year Built: 1999
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 7 Significant Deterioration

Justification

Recent maintenance and load testing look to increased the reliability this unit for few additional years. The two areas of: the major concerns, generators get deployed in residential areas noise is always a concern and the other is new emissions standards. Quieting technologies have improved over the last couple decades and emissions standards have become more stringent. This generator is used primarily at Bay & Scenic pump station and must be "ready to go" given the pivotal nature of this station. This generator will be load tested in the 17/18 budget year, along with maintenance the district looks to extend the life of this asset however new emissions requirements need to be addressed. This generator is a tier 0 motor in regards to emissions and the Air Board is requiring a tier 4 motor by 2020, the District needs to be prepared to meet these requirements by 2020.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	3	In-house Repair Work less than $1,000
Total COF:	29	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies		$	80,000				$	80,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total		$	80,000	$ -	$ -	$ -	$ -	$ 80,000

3 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Pump Round Truck (# 8)
Dept: Collections
Total Cost: $ 45,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Vehicle
Asset Type: Vehicle Fleet
Avg Useful Life: 10 years
Est Residual Life: 5 years
% Consumed Life:
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Ford F-250 is one of the District's first response vehicles for most emergencies, and second response vehicle in the event of an Sanitary Sewer Overflow (SSO). It is an integral part of the Collections System operations and maintenance. On board are tools used to mitigate SSO's, make repairs in the field, mark out sewer lines when USA tickets are requested and for other repairs as needed. This truck is also the most used for towing the standby generators to the needed locations. It has a utility bed that provides lots of storage for all the required tools for essential field functions and roof racks to transport lengths of pipe, ladders and other materials. Additionally, this truck the District has with a crane, which is used to hoist pumps into and out of wet wells for service and replacement.

Year Built: 2009
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 7 Significant Deterioration

Justification

This unit has a slight engine oil leak that has had it in the repair shop of the past few years. During the last inspection the dealership noted that the rear main oil seal was the cause of the oil leak and that the repair would be over $5,000. Staff agreed that the district would monitor the leak and that it would be cost effective to replace the truck in 20/21 due to mileage, age and reliability. It is recommended that this vehicle be retired from the CAWD fleet and sold.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	3	In-house Repair Work less than $1,000
Total COF:	12	

Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies				$ 45,000			$	45,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ 45,000	$ -	$ -	$ -	$ 45,000

4 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Collection Superintendent Truck (#17)
Dept: Collections
Total Cost: $ 45,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Vehicle
Asset Type: Vehicle Fleet
Avg Useful Life: 15 years
Est Residual Life: 5 years
% Consumed Life 75
Category: Capital Equipment
Urgency: 4 = Less Important
Carry Forward: No

Asset Description

Chevy 4X4 truck (Unit #17) primary use as the Collection Superintendent's vehicle with a duel purpose of employee conference vehicle. This vehicle was purchased in 2009 and currently has 85,000 miles on it.

Year Built: 2009
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 5 Moderate Deterioration

Justification

Replacement of the 2009 Chevy 4x4 (Unit #17) which currently has 85,000miles on it. This truck is the Collections Superintendent truck as well as the main vehicle for transportation of the Collection staff to/from conferences and training. Staff is looking at a crew cab truck as the replacement of the current quad cab, this would fit the entire staff of (5) and give Collections the ability to use one vehicle to attend events that require all of the Staff. The District will look at condition and performance closely at that time and extend if possible. Staff will look at the possibility of repurposing this truck to either Maintenance or Operations.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	14	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								
Parts & Supplies					$ 45,000			$ 45,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -		$	45,000	$ -	$ -	$ 45,000

5 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Pumps at Monte Verde Pump Station
Dept: Collections
Total Cost: $ 25,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 20 years
Est Residual Life: 5 years
% Consumed Life 75
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: No

Asset Description

Flygt model 3127 pumps at Monte Verde and 16th. These pumps are installed in the wet well at Monte Verde during the station upgrade in 2003.

Year Built: 2003
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 5 Moderate Deterioration

Justification

Staff will complete a two year baseline of pump efficiency testing at all pump stations and will monitor these pump for a drop in efficiency and a rise in electrical usage. At the time of replacement the pumps will be almost 20 years old and will not be as efficient as new pumps leading to higher costs of operation. Over time, cavitation can cause pitting on the impellers that lead to vibration wear from no longer being balanced. Rocks and metals can find their way into the sewer causing these same effects as they crack, pit, and break the impellers and volutes. Currently the pumps are in satisfactory condition; however, we are taking a proactive planning stance and will adjust its position in the budget if required as we get closer to 2022/23.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF		
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	20	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies					$ 25,000		$	25,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ 25,000	$ -	$ -	$ 25,000

6 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Pumps at Bay & Scenic Pump Station
Dept: Collections
Total Cost: $ 25,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 20 years
Est Residual Life: 5 years
% Consumed Life 75
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: No

Asset Description

Flygt model 3127 pumps at Bay & Scenic pump station.. These pumps are a dry pit installation that took place during the station upgrade in 2004.

Year Built: 2004
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 3 Minor Defects Only

Justification

Staff will complete a two year baseline of pump efficiency testing at all pumps stations and will monitor these pumps for a drop in efficiency and a rise in electrical usage. At the time of replacement the pumps will be almost 20 years old and might not be as efficient as new pumps leading to higher costs of operation. Over time, cavitation can cause pitting on the impellers that lead to vibration wear from no longer being balanced. Rocks and metals can find their way into the sewer causing these same effects as they crack, pit, and break the impellers and volutes. Currently the pumps are in satisfactory condition; however, we are taking a proactive planning stance and will adjust its position in the budget if required as we get closer to 2022/23.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	35	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies						$ 25,000		$ 25,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -		$ 25,000	$ -	$ 25,000

7 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Pumps at Hacienda Pump Station
Dept: Collections
Total Cost: $ 20,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 20 years
Est Residual Life: 5 years
% Consumed Life 75
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: No

Asset Description

Direct replacement of existing 3102 Flygt pumps at Hacienda pump station: These pumps are installed in the wet well at Hacienda and lift the wastewater from the lower elevation to a higher elevation at which point the wastewater can then gravity flow its way to the plant.

Year Built: 1999
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 3 Minor Defects Only

Justification

Staff will complete a two year baseline of pump efficiency testing at all pump stations and will monitor these pump for a drop in efficiency and a rise in electrical usage. At the time of replacement the pumps will be almost 20 years old and will not be as efficient as new pumps leading to higher costs of operation. Over time, cavitation can cause pitting on the impellers that lead to vibration wear from no longer being balanced. Rocks and metals can find their way into the sewer causing these same effects as they crack, pit, and break the impellers and volutes. Currently the pumps are in satisfactory condition; however, we are taking a proactive planning stance and will adjust its position in the budget if required as we get closer to 2022/23.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	24	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies						$ 20,000	$	20,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ -	$ 20,000

8 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Replace Electrical Control Panel at Hacienda Pump Station
Dept: Collections
Total Cost: $ 55,000
CY Budget $ -
GL Account:

Contact: Lauer
Area Pump Station
Asset Type: Electrical
Avg Useful Life: 25 years
Est Residual Life: 5 years
% Consumed Life 80
Category: Capital Improvement
Urgency: 4 = Less Important
Carry Forward: No

Asset Description

The Control Panel at Hacienda Pump Station was installed in 1999 and houses all the breakers, motor starters, and delicate electronics that keep the pump station operational.

Year Built: 1999
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 3 Minor Defects Only

Justification

The Control Panel at Hacienda Pump Station was installed in 1999. The Pump Station has had several major upgrades since the control panel was installed. A new generator Transfer switch is scheduled for 17/18 and the service panel was installed in 16/17. This upgrade will complete the pump station electrical improvements and will be good for years to come. At time of scheduled replacement, this control panel will have been in service for 24 years.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	24	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Preventative Maintenance
Non Asset Risk Management	

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies							$ 55,000	$ 55,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -		$ 55,000	$ 55,000

Treatment Plant

Capital Improvement

CAWD Treatment Dept - CIP

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
1	Effluent Building Wet Well Mixing System	$ 30,000						
2	Aeration Basin Slide Gates # 5&6	$ 14,000						
3	Dream Report Software for SCADA and LIMS (Recl 50%)	$ 13,000						
4	SCADA host Historian/Domain Controller (Recl 50%)	$ 12,000						
5	Replace Laboratory Grade Water System. (Recl 50%)	$ 10,000						
6	Aeration Basin #5 Baffle	$ 30,000						
7	Aeration Basin #6 Baffle	$ 30,000						
8	DeWatering elevator/Fall Safe Hatch	$ 25,000						
	TREATMENT & DISPOSAL TOTAL	**$ 164,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	RECLAMATION SHARE	$ 17,500	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ 48,785		$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 97,716**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Long Term Capital Projects are on Separate Worksheet

1 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Effluent Building Wet Well Mixing System
Dept: Treatment
Total Cost: $ 30,000
CY Budget $ 30,000
GL Account:

Contact: Waggoner
Area Outfall
Asset Type: Support Equipment
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Effluent Building Wet Well Mixing System

Year Built: 1972
Rehabilitation Date: 2018
Rehab Life Extension: 20 years
Asset Condition Rating: 7

Justification

The Effluent Building Wet Well recieves flows from the treatment plant secondary clarifier(s) and/or the Reverse Osmosos System. The secondary clarifier(s) effluent flow stream containes settleable solids that can settle out in the wet well. The RO Reject flow stream is a highly concentrated brine that can precipitate out both settleable and suspened solids. These settleable solids from both of these flow streams have caused NPDES voliations. This is due to the low flow and lack of volocity in the wet well which allows settleable solids collect in "dead" areas of the wet well and can accumulate to the point where the Labrotory permit composite sampler grabs these concentrated solids thus causing a permit viloation. Staff has determined that a mixing system will help these settledable solids to stay suspened allowing the composite samples to be representive of the effluent flow stream, and then be discharged to the ocean.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	20	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 5,000						$ 5,000
Engineering								$ -
Parts & Supplies		$ 25,000						$ 25,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

2 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Aeration Basin Slide Gates # 5&6
Dept: Treatment
Total Cost: $ 14,000
CY Budget $ 14,000
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Valve Gate
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life $ 100
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Slide gates for aeration basins 5 & 6 to either stop or control flow of wastewater into each aeration basin.

Year Built: 1994
Rehabilitation Date: N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 significant Deterioration

Justification

This to replace the remain three gates out of a total of the six gates in the basins. These gates are corroded beyond repair. These gates cannot seal off the individual basins when trying to isolate one basin from the other. The manufacture recommends to replace gates rather than trying to repair once seeing the photographs of the slide gates themselfs.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	18	Probability of Failure (%) 95%

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 4,000						$ 4,000
Engineering								$ -
Parts & Supplies		$ 10,000						$ 10,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 14,000	$ -	$ -	$ -	$ -	$ -	$ 14,000

3 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Dream Report Software for SCADA and LIMS (Recl 50%)
Dept: Treatment
Total Cost: $ 13,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Ops Bldg
Asset Type: SCADA
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life $ 99
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Software that collects from SCADA data and LIMS data and prepares reports to be generated from the collected data to send California State Water Board-Central Coast Region and other regulatory agencies.

Year Built:
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

With the new Ignition SCADA System being implement facility wide. Dream Report Software replaces the obsolete Report Builder so the reporting can be done through the new Ignition SCADA system.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	30	Probability of Failure (%) 100% with new SCADA System

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other		$13,000					$	13,000
Total		$ 13,000	$ -	$ -	$ -	$ -	$ -	$ 13,000

4 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: SCADA host Historian/Domain Controller (Recl 50%)
Dept: Treatment
Total Cost: $ 12,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Ops Bldg
Asset Type: SCADA
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life $ 100
Category: Capital Equipment
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Software that collects SCADA data Historian and allows reports to be generated from the collected data to send California State Water Board-Central Coast Region.

Year Built: 1994
Rehabilitation Date: N/A
Rehab Life Extension: N/A
Asset Condition Rating: End of Useful Life

Justification

Current Historian is no longer supported by vendor. And with the new Ignition Program Based SCADA system an upgraded Historian/Domain Report contoller is needed to build Operations Reports for the Staff and the California State Water Board-Central Coast Region.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10	Cannot be down 1 hour
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	31	Probability of Failure (%) 50%

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Equipment Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other		$12,000					$	12,000
Total	$	12,000 $	- $	- $	- $	- $	- $	12,000

5 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Replace Laboratory Grade Water System. (Recl 50%)
Dept: Treatment
Total Cost: $ 10,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Support Equipment
Avg Useful Life: 10 years
Est Residual Life: 1 year
% Consumed Life $ -
Category: Capital Equipment
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Laboratory Water Purification System for Laboratory Grade Water for analysis. (40% Reclamation)

Year Built: 2000
Rehabilitation Date: 2011
Rehab Life Extension: 3 years
Asset Condition Rating: 7 No replacement Parts

Justification

The current water system used in the laboratory has been in place since the laboratory was constructed in 2000. The unit has been maintained over the years in August 2017 a resistivity cell failed the Laboratory staff installed the backup cell and tried to order a replacement cell. At that time the manufacture responded to the order request by informing the Laboratory staff this water system no longer was manufactured and no spare parts or components are avaliabile. The laboratory water system is needed to provide Type 2 water for specific analysis and quality control for the laboratory staff.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	25	Probability of Failure (%) 20%

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Equipment Secondary

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 3,000						$ 3,000
Engineering								$ -
Parts & Supplies		$ 7,000						$ 7,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	$ 10,000	$ -	$ -	$ -	$ -	$ -	$ 10,000

6 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Aeration Basin 5 baffle
Dept: Treatment
Total Cost: $ 30,000
CY Budget $ 30,000
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Process Equip (Liquid)
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life N/A
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Treatment Plant Aeration Basin 5

Year Built: 1994
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating: 7 Significant De Major repair, rehabilitate

Justification

Install Director II Tank Baffles made by Environetics Inc. These modular baffles use a stainless steel frame with integrated reinforced geomembrane panels. By installing these baffles staff can improve the operation of the activated sludge process by the following: 1. Improved isolation of the Anoxic Zone to increase the Denitrification process thus improving the overall treatment plant performance. 2. To eliminate flow short circuiting. This would greatly improve the aeration detention time and oxygen transfer thus improving the Nitrification process and the potential for blower energy savings.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	9	Loss of Process Functionality for less than 1 week
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	26	Probability of Failure (%)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 5,000						$ 5,000
Engineering								$ -
Parts & Supplies		$ 25,000						$ 25,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

7 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Aeration Basin 6 baffle
Dept: Treatment
Total Cost: $ 30,000
CY Budget $ 30,000
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Process Equip (Liquid)
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life N/A
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Treatment Plant Aeration Basin 6

Year Built: 1994
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating: 7 Significant De Major repair, rehabilitate

Justification

Install Director II Tank Baffles made by Environetics Inc. These modular baffles use a stainless steel frame with integrated reinforced geomembrane panels. By installing these baffles staff can improve the operation of the activated sludge process by the following: 1. Improved isolation of the Anoxic Zone to increase the Denitrification process thus improving the overall treatment plant performance. 2. To eliminate flow short circuiting. This would greatly improve the aeration detention time and oxygen transfer thus improving the Nitrification process and the potential for blower energy savings.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	9	Loss of Process Functionality for less than 1 week
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	26	Probability of Failure (%)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 5,000					$	5,000
Engineering							$	-
Parts & Supplies		$ 25,000					$	25,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

8 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: DeWatering elevator/Fall Safe Hatch
Dept: Treatment
Total Cost: $ 25,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Support Equipment
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life N/A
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Dewatering Building hatches need improved fall protection - the hatches are not currently safe.

Year Built: 1994
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating: 7 Significant De Major repair, rehabilitate

Justification

Install new hatches and fall protection in two hatches at Dewatering

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	9	Loss of Process Functionality for less than 1 week
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	26	Probability of Failure (%)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Improvement

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	5,000
Engineering							$	-
Parts & Supplies		$ 25,000					$	25,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total		$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

Treatment Plant

Capital Equipment

CAWD Treatment Dept - Capital Purchases

FY 2018/19 *thru* 2023/24

Project #	PROJECT	18/19	19/20	20/21	21/22	22/23	23/24	Unscheduled
1	Pallet Jacks/Stackers (50% Reclamation)	$ 10,000						
2	Lab BOD incubator (50% Reclamation)		$ 12,000					
3	Lab Autoclave (50% Reclamation)		$ 16,000					
4	Lab Muffle Furnance (50% Reclamation)			$ 13,500				
5	Lab Ion Chromatograph (100 % Reclamation)			$ 150,000				
6	Siemens DeChlorination Deox 2000 Analyzer	$ 13,000						
7	Ops & Lab Surface Pros	$ 10,000	$ 10,000					
	TREATMENT & DISPOSAL TOTAL	**$ 33,000**	**$ 38,000**	**$ 163,500**	**$ -**	**$ -**	**$ -**	**$ -**
	RECLAMATION SHARE	$ 14,830	$ 5,000	$ 81,750	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ 6,051	$ 10,989	$ 27,223	$ -	$ -	$ -	$ -
	CAWD COST	**$ 12,119**	**$ 22,011**	**$ 54,527**	**$ -**	**$ -**	**$ -**	**$ -**

1 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name:	Pallet Jacks/Stackers (50% Reclamation)
Dept:	Treatment
Total Cost:	$ 10,000
CY Budget	$ 10,000
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	10 years
Est Residual Life:	1 year
% Consumed Life:	90
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Pallet Jack is a device to be able to move heavy items (chemical Totes and Equipment) in different areas of the treatment facility.

Year Built:	2003
Rehabilitation Date (Extendng life of Asset):	N/A
Rehab Life Extension:	N/A
Asset Condition Rating:	7 Significant Deterioration

Justification

The two pallet jacks currently used through out the treatment facility are more than 10 years old and in need of replacement with equipment that can either move items or stack items in different areas of the plant.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	7	Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	3	In-house Repair Work less than $1,000
Total COF	22	Probability of Failure 30%

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies	$	10,000					$	10,000
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$	10,000	$ -	$ -	$ -	$ -	$ -	$ 10,000

2 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Lab BOD incubator (50% Reclamation)
Dept:	Treatment
Total Cost:	$ 12,000
CY Budget	$ -
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	15 years
Est Residual Life:	1 year
% Consumed Life	87
Category:	Capital Equipment
Urgency:	3 = Important
Carry Forward:	Yes

Asset Description

The BOD incubator is used to incubate the BOD analysis samples at a specific temperature of 20.0 C. This is a NPDES required analysis for Tertiary DMR and for CAWD NPDES permit.

Year Built:	2004
Rehabilitation Date (Extendng life of Asset):	2017
Rehab Life Extension:	2 years
Asset Condition Rating:	7 Significant Deterioration

Justification

The incubator was purchased in 2005 and remains operating 24 hours a day and is close to its average useful life. Service techicians replaced the cooling compressor in 2017 which can give the unit 2 to 3 years of useful service. The BOD analysis is a NPDES permit requirement making this a critial equipment in the laboratory to remain compliant to the permits.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	9	Loss of Process Functionality for less than 1 week
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF	34	Probability of Failure

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies		$	12,000					$ 12,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$	12,000	$ -	$ -	$ -	$ -	$ 12,000

3 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Lab Autoclave (50% Reclamation)
Dept:	Treatment
Total Cost:	$ 16,000
CY Budget	$ -
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	20 years
Est Residual Life:	1 year
% Consumed Life	100
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The autoclave is used to conduct NPDES permit coliform tests and to destroy samples that are completed prior to disposal. It is essential to complete the permit required analysis and maintain compliance with EPA and ELAP requirements.

Year Built:	Jun-93
Rehabilitation Date (Extendng life of Asset):	N/A
Rehab Life Extension:	N/A
Asset Condition Rating:	7 Significant Deterioration

Justification

The autoclave unit has reached the end of the service life recommended by the manufacturer.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF	26	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary: Operating Budget — Secondary: Reclamation 50%

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 16,000					$ 16,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$	16,000	$ -	$ -	$ -	$ -	$ 16,000

4 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Lab Muffle Furnance (50% Reclamation)
Dept:	Treatment
Total Cost:	$ 13,500
CY Budget	$ -
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	10 years
Est Residual Life:	5 years
% Consumed Life	70
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The muffle furnace is used in the laboratory to provide the Operations Department with process control data on the Volatile Total Suspended Solids. The data from the percent volatile solids is used for monthly and annual NPDES reporting.

Year Built:	2011
Rehabilitation Date (Extendng life of Asset):	Apr-16
Rehab Life Extension:	2 years
Asset Condition Rating:	3 Minor Defects Only

Justification

The muffle furnace was purchased during 2011 and repaired in 2016. The service report stated that this unit model is no longer produced and parts are limited at this time.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF	20	Probability of Failure

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary Reclamation 10%

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering							$	-
Parts & Supplies			$	13,500			$	13,500
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$	13,500	$ -	$ -	$ -	$ 13,500

5 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name:	Lab Ion Chromatograph (100 % Reclamation)
Dept:	Treatment
Total Cost:	$ 150,000
CY Budget	$ -
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	15 years
Est Residual Life:	5 years
% Consumed Life	55
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The Ion Chromatograph unit is a Laboratory instrument used to analyze various chemical constituents for the process control and reporting for the Reclamation Project.

Year Built:	2011
Rehabilitation Date (Extendng life of Asset):	2016
Rehab Life Extension:	4 years
Asset Condition Rating:	7 Significant Deterioration

Justification

The Ion Chromatography unit is coming to the end of its useful life as outlined by the manufacturer service representative. The manufacture of the Ion Chromatory unit will stop supporting parts and services in the next two years. Once that support stops replacement parts and consumables will become difficult to obtain along with service request of the equipment.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF	22	Probability of Failure: Moderate

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Strategic Changes to Level of Service

Funding Source

Primary Reclamation 50% Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies				$ 150,000				$ 150,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ 150,000	$ -	$ -	$ -	$ 150,000

6 **FY 2017-18 Budget**
Carmel Area Wastewater District

Project Name:	Siemens DeChlorination Deox 2000 Analyzer
Dept:	Treatment
Total Cost:	$ 13,000
CY Budget	$ 13,000
GL Account:	

Contact:	Waggoner
Area	Effluent Bldg
Asset Type:	Support Equipment
Avg Useful Life:	15 years
Est Residual Life:	1 year
% Consumed Life	98
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Siemens Deox 2000 Dechlorination Analyzer continously monitors the dechlorinated residual of the plant effluent for ocean discharge. The montioring is to ensure continous permit NPDES compliance when sending (Secondary or Brine Discharge) effluent to the ocean.These values are recorded by both a Circular Chart as well as data on the plant's SCADA System. These values are recorded daily and submitted to the Central Coast Regional Board on a monthly basis in our DMR's and NPDES.

Year Built:	2002
Rehabilitation Date (Extendng life of Asset):	N/A
Rehab Life Extension:	N/A
Asset Condition Rating:	5 Moderate Deterioration

Justification

To ensure continous compliance with the NPDES permit, this analyzer is of high importance. The unit was installed in 2002, it has reached it's useful life expectancy. Staff performs all required maintenance to the unit to ensure the reliability and accuracy of the unit. The manufacture no longer supports this model unit.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	10	Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	9	Loss of Process Functionality for less than 1 week
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF	39	Probability of Failure 10%

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Take Asset out of Service

Funding Source

Primary Capital Budget Secondary Operating Budget

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor		$ 2,500						$ 2,500
Engineering								$ -
Parts & Supplies		$ 10,500						$ 10,500
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 13,000	$ -	$ -	$ -	$ -	$ -	$ 13,000

7 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Ops & Lab Surface Pros
Dept: Treatment
Total Cost: $ 20,000
CY Budget $ 10,000
GL Account:

Contact: Waggoner
Area Ops Bldg
Asset Type: SCADA
Avg Useful Life: 5 years
Est Residual Life: 1 year
% Consumed Life: n/a
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

Currently staff does not use Surface Pro Tablets for Operational Rounds or CMMS Program.

Year Built: N/A
Rehabilitation Date: N/A
Rehab Life Extension: N/A
Asset Condition Rating: N/A

Justification

To better enter data and keep track of rounds, CMMS work including Inventory, preventive and corrective maintanance work at the Treatment Plant. Management Staff is recommending the purchase of up to 10 Surface Pro Tablets (over two years) so staff members can log in their time and work they acomplish, along with rounds reading and observations while in the field. By inputting in the field this will save valuable time by not having staff members continually returning to the Operation or maintenance buildings to enter data.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	3	In-house Repair Work less than $1,000
Total COF	18	Probability of Failure (%) 0%

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Capital Equipment

Budget Impact/Other

	Prior Yr	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 10,000	$ 10,000					$ 20,000
Total		$ 10,000	$ 10,000	$ -	$ -	$ -	$ -	$ 20,000

Long Term Capital

1 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Technical Studies
Dept.: Treatment
5 yr. Cap Projection: $ 135,000.00
CY Budget $ 50,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Planned Engineering Studies - To plan for the future and to provide supporting technical information for capital projects, external third party studies are required. The studies in this category may not associated with any one specific project but are applicable to the treatment plant as a whole. Some examples of studies performed in this category include flood reports (to evaluate and manage flood risk), electrical efficiency and structural evaluation of existing buildings or equipment. In some cases technical studies are needed to properly evaluate the scope of planned Capital projects.

PLANNED STUDIES BY YEAR

18/19 - $50,000 To continue to ensure best management practices in operation; additional efficiency studies will be needed at the completion of the WWTP - Phase I construction project.

20/21 - $35,000 To review energy usage and power generation possibilities. Also the Phase I construction will be audited for efficiency.

22/23 - $50,000 The current NPDES permit requires a technical evaluation be completed regarding the Plant effluent effects on the Carmel Bay every 10 years. These funds shall be utilized to hire an outside independent firm to perform this evaluation as directed by the State Water Quality Control Board (SWQCB).

25/26 - $25,000 Independent plant operations and process audit to evaluate improvements made to the plant during the First 10 Years of the CIP implementation.

27/28 - $50,000 Current OSHA regulations require an Arc-Flash analysis to be maintained current at industrial facilities. The treatment plant Arc-Flash study was completed in 2016 and will need to be redone in 10 years. The 2016 study will be updated as we complete the Phase I project in 2017 and every ten years will suffice for the general Arc-Flash analysis cycle.

32/31 - $60,000 In 15 years a comprehensive treatment plant audit would be valuable data for future planning. Flood studies and equipment audits are conceivable future studies for planning purposes.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

Specialized technical evaluation is an integral part of the Capital Improvement planning process. These technical evaluations are a tool to obtain required data upon which engineering and planning decisions can be refined. Studies are also required to provide documentation to support operational decisions.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	7	Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF		
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	1	No Cost
Total COF:	12	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary: Capital Budget
Secondary:

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$60,000	$50,000	$0	$35,000	$0	$50,000	$0	$ 135,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ 50,000	$ -	$ 35,000	$ -	$ 50,000	$ -		$ 135,000

2 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Coastal Commission Permitting
Dept.: Treatment
5 yr. Cap Projection: $ 80,000.00
CY Budget $ 65,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Development of a Local Area Coastal Plan in 2018/19 fiscal year will be maintained and updated every 5 years. Costs include some consultant fees and environmental study details needed to successfully take the plan to the Coastal commission

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

The Treatment Plant is located in the Jurisdiction of the California Coastal Commission (CCC). CCC permitting is required by law for all planned future capital improvement. The District plans to develop and maintain a Local Area Coastal Plan for operation and maintenance of the Treatment plant. This plan will be reviewed and approved by the CCC and will allow staff to perform the routine maintenance and capital outlay which is presented in the LTCIP without perpetual permit applications with the CCC. This plan will save the District both staff time and cost, and will add transparency to District capital development plans.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	13	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$65,000	$0	$0	$0	$0	$15,000	$ 80,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	65,000 $	- $	- $	- $	- $	15,000	$ 80,000

3 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Sea Level Rise Analysis & Planning
Dept.: Treatment
5 yr. Cap Projection: $ 135,000.00
CY Budget $ 120,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Sea Level Rise (SLR) and Climate impact studies which evaluate the risk and probability of failure of District assets resulting from changing climate. These studies are contracted by the District through the RFP process with independent consulting firms who specialize in climate change analysis.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 4

Justification

This study is a multi-year effort to provide draft guidance for incorporation of SLR into capital planning for the CAWD. The intent is to enable CAWD to better understand and prioritize projects with reference to SLR and to encourage collaboration among all departments on this effort. The responsibility for assessment and adaptation will be the responsibility of each department and will be returned to Budget Committee and the full Board for consideration. These funds will allow staff to pursue consultants with expertise in planning for SLR and to allow staff to purchase software or contract with firms to run models to better understand the future impacts to infrastructure.

The Regional Water Quality Control Board is requiring a Sea Level Rise Analysis prior to any permit renewal. CAWD's permit is scheduled for renewal Jananuary 11, 2019.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	1	No Cost
Total COF:	5	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$100,000	$120,000	$0	$0	$0	$0	$15,000	$ 135,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ 120,000	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ 135,000

4 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Arc Flash Evaluation
Dept.: Treatment
5 yr. Cap Projection: $ 30,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Arc Flash evaluation assessments are performed by an Electrical Engineer. The District will obtain the services of an Arc Flash specialist through the RFP process to re-evaluate reports prepared during the Phase 1 project and update the assessment after Phase 1 and 2 have been completed. These reports will be used to plan future capital electrical needs and to demonstrate worker safety compliance.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 3 Minor Defects Only

Justification

OSHA regulations state an employer must identify and assess the electrical hazards for employees and protect them from those hazards. This includes arc flash and shock. OSHA defers to NFPA 70E for how to comply with this regulation. Therefore NFPA 70E serves as a bridge between OSHA regulations and compliance. These studies are required by California employment safety codes.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	21	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$0	$0	$0	$0	$30,000	$0	$0 $	30,000
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ 30,000	$ -	$ -	$	30,000

5 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH II ES - WWTP O&M Manual
Dept.: Treatment
5 yr. Cap Projection: $ 110,000.00
CY Budget $ 60,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: Yes

Asset Description

The O&M Manual is and upgrade from standard paper documents. The O&M Manual is an electronic version that will be accessible on the plant network and will update the entire facility (exclusive of Reclamation) with basic operating parameters, schematics, Standard Operating Procedures, Vendor Manuals, Engineering drawings, etc. It will be accessible from any computer terminal or tablet utilized at the plant. The District contracted with Kennedy Jenks to update its O&M manual in January 2016. Total project was projected to take $250,000, with a reallocation of $50,000 from the Construction Management contract and $100,000 for 2016-17 and 2017-18.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 6

Justification

CAWD is required to maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain useful and relevant, the O&M manual must be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual should be maintained in a usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff. Funding is proposed after major improvements to update this manual.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF		
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	20	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$100,000	$60,000	$0	$0	$50,000	$0	$0	$ 110,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	60,000 $	- $	- $	50,000 $	- $	-	$ 110,000

6 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - Demo Project (Carry forward)
Dept.: Treatment
5 yr. Cap Projection: $ 325,000.00
CY Budget $ 325,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

This project includes the removal of the digesters currently known as the original #2, #3, #4 tanks. This project will include the demolition of the tanks, off hall of debris and back filling the holes to grade. This project also includes the removal of all equipment servicing them and electrical. In 1938 Digester 3 and Sludge Holding Tank 4 were built, in 1960 Digester 2 was built.

Year Built: 1960
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 10 Unserviceable

Justification

The proposed demolition is required to remove failed equipment. These assets have exceeded their life expectancy and are no longer functional on the plant grounds. This demolition will clear way to utilize this area for other plant uses. Demolition of the old tanks will be carried into next fiscal year. Only $50,000 is anticipated to be expended on this item before the year is out. A portion of the FY17/18 budget will be a carried forward to be added to the expected expenditures in FY18/19.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management:
Non Asset Risk Management: Take Asset out of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$250,000	$325,000	$0	$0	$0	$0	$0	$ 325,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	325,000 $	- $	- $	- $	- $	-	$ 325,000

7 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - Engineering Design Services PH 2
Dept.: Treatment
5 yr. Cap Projection: $ 175,000.00
CY Budget $ 175,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Consultant/Engineering services contract with Kennedy Jenks Consultants (K/J) to provide engineering services to develop plans and specifications for the Plant Rehabilitation - Phase 2 ES improvements. These design services include the preparation of demolition plans for equipment to be removed now that Phase 1 is operational and plans and specifications needed to evaluate digester #1 which will be taken out of service. Contract management services during demolition is needed to maintain good document control.

Year Built: Varies
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: 20 -40 years
Asset Condition Rating: 6

Justification

Phase 1 was very successful, in part to the detail of the plans and specifications prepared by K/J. To maintain consistency of documentation and design for Phase 2 the District will plan to maintain a similar level of professional services which have been provided during Phase 1. The District does not have enough staffing to perform all tasks required during the construction of multi-discipline projects. The Principal engineer will need to rely on a project manager to ensure good document control and to make sure contractors stay on task.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	
Cost COF	
Total COF:	N/A

Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$350,000	$175,000	$0	$0	$0	$0	$0	$ 175,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	175,000 $	- $	- $	- $	- $	- $	- $ 175,000

8 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH II ES - #1 Digester Clean and Evaluation
Dept.: Treatment
5 yr. Cap Projection: $ 100,000.00
CY Budget $ 100,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The District will hire a professional digester cleaning company to empty and clean the existing digester #1 in FY17/18. After the tank has been cleaned thoroughly the District will contract with a structural evaluation service provider to evaluate the condition of the digester using non destructive testing techniques.

Year Built: 1976
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The digester #1 has not been cleaned and serviced in over 19 years. Cleaning should occur over 10 years as a rule of thumb. Staff has noted some signs of structural damage. This information will be used to better plan for and make the Phase 2 design decisions.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	10	Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	34	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$175,000	$100,000	$0	$0	$0	$0	$0	$ 100,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	100,000 $	- $	- $	- $	- $	- $	- $ 100,000

9 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II - Influent Pump Station
Dept.: Treatment
5 yr. Cap Projection: $ 1,350,000.00
CY Budget $ 150,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Building Machinery
Avg Useful Life: 35 years
Est Residual Life: 5 years
% Consumed Life: 85%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Influent Pump Station contains the pumps required to receive sewage into the treatment plant. This building also includes the back up generators for the secondary treatment plant.

The Phase II Technical Memo #2 prepared by K/J Consultants identifies a number of High and Medium risk mechanical items which are nearing end of life. These items include motor control electrical improvements, PLC improvements, pump mechanical and fuel system improvements. Firm capacity electrical improvements to bring further redundancy to the Standby generators have also been identified.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

Failure of the Influent Pump Station pumping system would result in raw sewage back up and a very probable significant sewage spill on the north side of the Carmel River. The Variable Frequency Drives and the Motor Control Center are near end of life. Significant routine maintenance is needed to reduce the risk profile of this equipment. New equipment would greatly reduce the probability of failure of this item. During the Phase I project staff identified additional items of risk associated with the 450KW backup generator. Firm capacity improvements will be needed to continue reliable back up power to the treatment plant.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	40	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$150,000	$600,000	$600,000	$0	$0	$0	$ 1,350,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 150,000	$ 600,000	$ 600,000	$ -	$ -	$ -	$ 1,350,000

10 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH II - Effluent Building
Dept.: Treatment
5 yr. Cap Projection: $ 950,000.00
CY Budget $ 150,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Building Machinery
Avg Useful Life: 35 years
Est Residual Life: 5 years
% Consumed Life: 85%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Effluent Building is the final pump station which discharges effluent to the ocean. This pump station is only required when plant inflow exceeds the processing capacity of the Tertiary wastewater reclamation system. Very little discharge is sent out to the ocean most of the year, however in the winter it is possible that peak flows exceed 10 million gallons per day. In these situations the majority of this flow would be discharged to the ocean. Failure of this pump station would result in a reportable unexpected bypass.

The Phase II Technical Memo #2 prepared by K/J Consultants identifies a number of High and Medium risk mechanical items which are nearing end of life. Electrical upgrades (New MCC, etc.) are proposed to be included in Phase 2. Other building clean up will be undertaken by staff. The Variable Frequency Drive (VFD) controllers will need to be upgraded and the Phase 2 design process will review multiple options for this rehabilitation.
Rehabilitation of the existing effluent pump system will include new/rebuilt effluent pumps, paint all equipment and upgrade aging electrical systems in the effluent building.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The effluent pumping system is essential to the function of the treatment plant. The pumps have operated reliably for many years with little to no maintenance. Staff has continued to inspected and perform maintenance on these pumps and found that due to the minor use they receive during periods of dry weather the pumps are in relatively good shape now that they have been cleaned up. The electrical system is still very old and requires upgrades. Staff have been monitoring this equipment for 5 years.

The existing Motor Control Center (MCC) equipment is well beyond its useful service life and new replacement parts are no longer commercially available. Additionally, the MCC main circuit breakers are in need of replacement. To enhance power system reliability, the existing main power feeders to MCC-ESM, which are nearly 40 years old, need to be replaced with new conductors. The existing PLC-5 hardware is no longer supported by Allen-Bradley and is beyond its useful service life. The existing main power feeder conduits enter the structure via the basement. During wet weather, there is significant water intrusion into the basement level via the electrical conduits. To mitigate this problem, the existing underground duct bank runs would be modified to turn the "up" above grade and enter the building at the ground level. The existing bubbler level system is beyond its useful service life and will require significant long-term maintenance. This level measurement system would be replaced with a modem ultrasonic level measurement system.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	40	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$150,000	$200,000	$600,000	$0	$0	$0	$ 950,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 150,000	$ 200,000	$ 600,000	$ -	$ -	$ -	$ 950,000

11 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II - Headworks and Grit Screening
Dept.: Treatment
5 yr. Cap Projection: $ 1,670,000.00
CY Budget $ 120,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Building Machinery
Avg Useful Life: 45 year
Est Residual Life: 1 year
% Consumed Life: 98%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The headworks and grit classifier system remove non organic material from the wastestream prior to the process of active treatment. This system separates the heavy non-biological material such as sand, gravel, plastics and metals from the wastestream to prevent build up of these materials later in treatment processes.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

An efficent and effective headworks will reduce matinteance costs in subsequnt treatment processes and will improve performance of the Digester. The existing equipment is primarily origional equipment from 1972 with the last major improvements completed in the early 1990's. The concrete builidng is in very good conditon, however electrical and steel equipment have reached end of life. A substantial rehabilitation of the mechanical equipment and replacment of the electrical panels will be required to extend the life of this asset.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	40	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$120,000	$0	$650,000	$900,000	$0	$0	$ 1,670,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ 120,000	$ -	$ 650,000	$ 900,000	$ -	$ -	$ -	$ 1,670,000

12 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II - #1 Digester Rehab, Mixing
Dept.: Treatment
5 yr. Cap Projection: $ 1,475,000.00
CY Budget $ 300,000.00
GL Account:

Contact: Lander
Area Digesters
Asset Type: Process Equip (Solid)
Avg Useful Life: 50
Est Residual Life: 5 years
% Consumed Life: 93%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Digester #1 is one of two digesters which serve the treatment plant. This tank is essential to providing firm capacity of the treatment plant permit. This digester must be repaired and maintained in operational condition as it provides redundancy when the new digester #2 is in operations. K/J has provided recommendations for the repair of this tank and funding in FY18/19 is for the design of these improvements. These recommendations will be developed and design plans will include the needed repairs in the Phase 2 rehabilitation.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The Digester is an essential process of the Treatment Plant facility. This piece of equipment is usually scheduled for maintenance every 8 to 10 years and it was scheduled for cleaning in 2013 at which point 12 years had already passed since the last inspection of the Digester. However due to some mechanical failures at the treatment plant, staff could not isolate this tank and allow it to be taken out of service. The new digester is now online allowing staff to move forward with the cleaning and evaluation of digester #1.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	
Cost COF	
Total COF:	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Add Backup/Redundancy
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$300,000	$0	$775,000	$400,000	$0	$0	$ 1,475,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ 300,000	$ -	$ 775,000	$ 400,000	$ -	$ -	$ -	$ 1,475,000

13 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II - Chlorine Building Repurpose/Electrical
Dept.: Treatment
5 yr. Cap Projection: $ 900,000.00
CY Budget $ 200,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Support Equipment
Avg Useful Life: 40 years
Est Residual Life: 5 years
% Consumed Life: 88%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Chlorine Building will be decommissioned with the completion of Phase I HYPO building improvements. The building contains the Motor Control Center (MCC) for numerous pumps and controllers of plant equipment. This asset will be rehabilitated by upgrading the MCC and removing obsolete equipment including the Chlorine system. The space will then be repurposed as storage, or office space. The best use of this space has yet to be established.

The Phase II Technical Memo #2 prepared by K/J Consultants identifies a number of High and Medium risk mechanical items which are nearing end of life. Design will occur in FY18/19 and will be included in the Phase 2 project.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 5 Moderate Deterioration

Justification

The Chlorine Building is a well constructed structure which has many years of useful life left in the concrete and steel. It is not evident that this structure should be demolished at this time, staff will have a full structural evaluation completed on this building to ensure compliance with seismic regulations. Assuming this building does not have any structural issues it will be repurposed for other plant needs to be determined. The electrical equipment in this building is at end of life and will be relocated within the structure. The Chlorine analyzers also are at end of life and need to be replaced. This project includes all those improvements.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10	Cannot be down 1 hour
Safety COF	7	Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	41	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$200,000	$100,000	$400,000	$200,000	$0	$0	$ 900,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 200,000	$ 100,000	$ 400,000	$ 200,000	$ -	$ -	$ 900,000

14 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PH II - Blower Building MCC & Power Impr
Dept.: Treatment
5 yr. Cap Projection: $ 1,670,000.00
CY Budget $ 120,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Building Machinery
Avg Useful Life: 40 years
Est Residual Life: 5 years
% Consumed Life: 88%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Blower equipment is essential permit compliance in the secondary treatment plant. Replacement of the existing power distribution equipment is required. As part of this electrical equipment replacement effort, the existing stand alone PG&E service feed to this building can be eliminated and power feeders can come from the Phase 1 switchgear installation. Provisions for elimination of this equipment has already been built in to the new main switchgear installed during the Phase I Plant Rehabilitation Project.

The Phase II Technical Memo #2 prepared by K/J Consultants identifies a number of High and Medium risk mechanical items which are nearing end of life.

Year Built: 1978
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 5 Moderate Deterioration

Justification

In 2013 staff conclude that the electrical equipment in the blower building was within 8years of its useful life. Since the MCC equipment at this location will be approaching the end of its useful service life, it will be replaced to retain process reliability and avoid replacement part obsolescence issues. Elimination of the "stand alone" PG&E service feed to this building will further simplify plant power distribution system configuration. This will also save on power costs as PG&E billing will improve.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	28	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$120,000	$0	$650,000	$900,000	$0	$0	$ 1,670,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ 120,000	$ -	$ 650,000	$ 900,000	$ -	$ -	$ -	$ 1,670,000

15 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: PLC Programing for PH 2
Dept.: Treatment
5 yr. Cap Projection: $ 140,000.00
CY Budget $ 40,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: SCADA
Avg Useful Life: 15 years
Est Residual Life: 5 years
% Consumed Life: 66%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

During the Phase 2 installation the District will need to continue to replace the old SCADA (Supervisory Control and Data Acquisition) system and replace it with the new Ignition® software. It is not efficient to run or maintain two different software packages to control the treatment plant. Ignition is working well and as old equipment gets retired the new system is installed in its place.

The Phase II Technical Memo #2 prepared by K/J Consultants identifies a number of High and Medium risk SCADA and PLC items which are nearing end of life.

Year Built: Varies
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 6

Justification

This description will be refined during planning stages for Phase 2. CalCon has provided SCADA programming support for Phase 1 and the District has been satisfied with the work they have done.

As part of the general upgrade of plant facilities the District needs to also upgrade its control system. SCADA systems are widely used in wastewater to assist operators by automating certain operating, trouble shooting and data logging functions. CAWD's existing SCADA system has evolved in piecemeal fashion over the years. The system now consists of various programmable logic controllers and other devices that have been cobbled together resulting in a functional but inefficient amalgamation of equipment and interfacings that only minimally integrate older components. Some of those components are no longer replaceable in the marketplace - they have simply aged out of service. There is a need for consistency in the SCADA network for operating the Districts facilities.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	9	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	40	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$40,000	$40,000	$40,000	$20,000	$0	$0	$ 140,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 40,000	$ 40,000	$ 40,000	$ 20,000	$ -	$ -	$ 140,000

16 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: CM Contract for PH 2 Construction
Dept.: Treatment
5 yr. Cap Projection: $ 500,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Consultant/Engineering services contract with Kennedy Jenks Consultants (K/J) to provide engineering services to provide construciton managment services over work proposed to be bid under the Phase 2 Rehabiliation progect. These services would be similar to the servie provided during the construciton of the Phase 1 proejct.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The Phase 2 improvements are estimated to cost $6,000,000 for construction. A project of this size requires constant oversight and management of both documents as well as good communication with the Contractor. The engineering submittals for review are extensive and there are a number of technical specialties that will be required for both inspection as well as document review. K/J Consultants have proven to be very responsive to the District and they have perfomed well proving they can provide these services together. The Construction managment job will be a full time position that will also require additional technical expertise. K/J has the ability to provide all of these services during construction.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management:
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$100,000	$200,000	$200,000	$0	$0	$ 500,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 100,000	$ 200,000	$ 200,000	$ -	$ -	$ -	$ 500,000

17 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: SCADA Network - Phase II
Dept.: Treatment
5 yr. Cap Projection: $ 250,000.00
CY Budget $ 150,000.00
GL Account:

Contact: Lander
Area
Asset Type: Instrumentation
Avg Useful Life: 15 years
Est Residual Life: 1 year
% Consumed Life: 93%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

As part of the general upgrade of plant facilities the District needs to also upgrade its SCADA (Supervisory Control and Data Acquisition) system. SCADA systems are widely used in wastewater to assist operators by automating certain operating, trouble shooting and data logging functions. CAWD's existing SCADA system has evolved in piecemeal fashion over the years. The system now consists of various programmable logic controllers and other devices that have been cobbled together resulting in a functional but inefficient amalgamation of equipment and interfacings that only minimally integrate older components. Some of those components are no longer replaceable in the marketplace - they have simply aged out of service. There is a need for a state-of-the-art SCADA network for operating the Districts facilities.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 6

Justification

Staff evaluated several SCADA systems and after thorough analysis staff requested Board approval in 2015 to purchase a SCADA network upgrade named IGNITION®. This system had much lower cost than any other system on the market. Ignition is a JAVA based software package for SCADA. The implementation of the SCADA during 2016 has gone very well. CalCon has integrated the new software in with the plant upgrades as part of the Phase 1 rehabilitation.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	30	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management:
Non Asset Risk Management:

Funding Source

Primary: Capital Budget

Secondary:

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$150,000	$100,000	$0	$0	$0	$0	$ 250,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 150,000	$ 100,000	$ -	$ -	$ -	$ -	$ 250,000

18 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH III - Design and CM assistance
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Consultant/Engineering and construction management services may be required when the improvements under the Phase 3 proposal become needed. These services will be contracted out similarly to both Phase 1 and Phase 2.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The Phase 3 improvements are estimated to cost $3,000,000 for construction. If the district does not have adequate staffing at the time when the Phase 3 improvements become relevant then these services will need to be contracted out.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management:
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

19 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH III - Gas Conditioning System
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life: 10 years
% Consumed Life: 2%
Category: Capital Improvement
Urgency: 4 = Less Important
Carry Forward: No

Asset Description

Gas conditioning system consists of a chiller and gas compressor. This system removes water from the digester gas and compresses the gas so it can be used in the micro turbines and the boiler. It is important to condition the gas so that the sensitive power generation equipment is not damaged and to maintain a high quality of gas to comply with Air Board permitting requirements.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating: 7 Significant Deterioration

Justification

The gas conditioning system is needed to clean digester gas so it can be used to generate power and run the digester boiler. This system was installed with the original micro turbine project and it is in need of some comprehensive repairs. Repairs are to be completed to the existing system to prevent another turbine from being damaged. This system will operate for the next 10 years to support the new turbine.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	10	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$90,000	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ -	$ -	$ -	$ -	$ -

20 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH III - Co-Gen Project
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Support Equipment
Avg Useful Life: 10 years
Est Residual Life: 10 years
% Consumed Life: 0%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Install new co-generation equipment to replace the existing Capstone turbines. In general, turbines have a useful life of 80,000 hrs. New equipment will be sized for full plan gas production capacity and may be a different type of turbine, or reciprocating engine.

Year Built: 2027
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 1 New or Excellent Condition

Justification

This equipment provides a useful life of 10 years. With proper care and bearing replacement staff intends to extend these assets. The turbines have experienced some failures due to moisture, so a more durable generator is desirable. The turbines to be installed in FY18/19 include all maintenance costs. It is important however to similar equipment in order to continue to utilize all available methane and provide redundancy to the boiler for heating the digester.
Further research and study will be conducted by staff prior to recommending replacement equipment.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	10	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

21 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PH III - Septage/Wet Waste/Grease Receiving
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Support Equipment
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life: 0%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Construction of a new Wet Waste/Septage/Grease receiving station to be located adjacent to new Digester. Station will be able to receive up to 10,000gal/day (2 tankers of ~ 5,000 gal size) of material and will be injected directly into the Digester through pump and piping system to be installed.

Year Built: 2028
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 1 New or Excellent Condition

Justification

Preliminary design by K/J of a septage/grease receiver concluded that the pay back at this time would be up to 10 years. Additional investigation by staff this year has uncovered the potential for wet waste to also be added to this receiver. Additional study will occur but this could help double revenue generated. Staff feels that this service would be a good source of revenue and will work with local haulers . This facility is not needed at this time until other more critical improvements are made. This facility is not critical to the operation of the treatment plant or improving reliability. The existing grease receiving station can be utilized better and will be modified to run a pilot test. This improvement can be re-evaluated every couple of years to see if the value to the District improves.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	10	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

22 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: PLC Programing PH 3
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Support Equipment
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life: 0%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Supervisory Control and Data Acquisition (SCADA) is control system architecture that uses computers, networked data communications, and graphical user interfaces for high-level process supervisory management. It also uses other peripheral devices such as programmable logic controllers and discrete Proportional-integral-derivative (PID) controllers to interface to the process plant or machinery. SCADA programing will be required to add additional equipment and controls to the Phase 3 improvements.

Year Built: 2028
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 1 New or Excellent Condition

Justification

Any new equipment brought on line in Phase III will be required to be integrated into the plant control systems.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	32	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

23 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Primary Clarifier Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Primary Clarifiers
Asset Type: Process Equip (Liquid)
Avg Useful Life: 40 years
Est Residual Life: 40 years
% Consumed Life: 2%
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Primary Clarifiers remove settleable solids from the liquid treatment process and are a required part of the treatment process. There are two tanks which provide full redundancy. Both tanks have been fully rehabilitated and will require annual inspection and maintenance with major drive services occurring every 10 to 12 years.

Year Built: 2018
Rehabilitation Date (Extending life of Asset): Mar-18
Rehab Life Extension: 40
Asset Condition Rating: 1 New or Excellent Condition

Justification

The primary clarifiers are essential to meeting permit in the secondary plant. They need to be maintained in good working order to reduce risk and consequence of failure. Both clarifiers have been fully serviced and are on track to last another 40 years.

Planning for center drive service every 10 to 12 years is required to ensure the drive is properly cared for.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	18	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Add Backup/Redundancy
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$225,000	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

24 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Micro Turbine Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Support Equipment
Avg Useful Life: 10 years
Est Residual Life: 10 years
% Consumed Life: 0%
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The micro turbines consume digester gas to generate power and to maintain digester temperature in place of burning the methane in the flare. One of two turbines will be replaced in FY17/18 with a C65KW unit. The new unit comes with a 10 year maintenance agreement. The district will maintain this system for 10 years at which time additional cogeneration expenditures will be required.

Year Built: 2018
Rehabilitation Date (Extending life of Asset): Mar-18
Rehab Life Extension: 10
Asset Condition Rating: 1 New or Excellent Condition

Justification

The Microturbines provide secondary heating for the digesters as well as produce incidental power. Operation of equipment which can make beneficial use of the digester gas produced is environmentally superior to the act of flaring off the gas without using this renewable fuel source.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	13	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$148,000	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

25 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Outfall Crossing
Dept.: Treatment
5 yr. Cap Projection: $ 1,350,000.00
CY Budget $ 1,350,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life: 15 years
% Consumed Life: 70%
Category: Maintenance
Urgency: 1 = Critical
Carry Forward: No

Asset Description

The portion of the outfall pipe crossing the Carmel Lagoon is in need of repair. This outfall and the Calle La Cruz force main are critical infrastructure to the District.

Year Built: 1970
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 50
Asset Condition Rating: 7 Significant Deterioration

Justification

The Big Sur Land Trust has proposed a floodplain enhancement project which will have some impact to this pipeline. The District has elected to put the line under the lagoon and permitting and flood mitigation grant funding are anticipated to be available this year.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	10	Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)
Total COF:	41	Probability of Failure: High

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary Grant Funding

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$120,000	$1,350,000	$0	$0	$0	$0	$0	$ 1,350,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	1,350,000 $	- $	- $	- $	- $	-	$ 1,350,000

26 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Plant Paving & Drainage
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: N/A
Avg Useful Life: 35 years
Est Residual Life: 15 years
% Consumed Life: 62%
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

Asphalt and drainage improvements inside the treatment plant grounds. After the Phase 1 project was completed staff identified additional underground work that needs to be accomplished prior to paving. This work will occur after underground work has been completed.

Year Built: Various
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 25
Asset Condition Rating: 7 Significant Deterioration

Justification

After Phase I and Phase II much of the existing asphalt will have been removed for new underground piping. This project will design and install new drainage and asphalt to meet future needs of the treatment plant.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Corrective Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$100,000	$100,000	$0	$0	$50,000	$0	$0	$ 150,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 100,000	$ -	$ -	$ 50,000	$ -	$ -	$ 150,000

27 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Operations Building Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Influent Manhole
Asset Type: Process Equip (Liquid)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

The Operations Building was constructed during the 1970s. It is a concrete two story building serving operations and housing all of the main switchgear and treatment plant servers. It is in relatively good condition with new equipment installed as part of Phase 1 and Phase 2.

Year Built: 1972
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 2

Justification

The Ops Building houses the Central Motor Control Panel, Electrical hub, SCADA, Conference rooms, and telecommunications hub. This building was lightly remodeled on the interior during 2015. Currently the exterior is in reasonably good condition with no evidence of cracking of failure. The roof is currently in poor condition but is scheduled to be replaced in 2018. Funding in FY24/25 will address any needed painting, window repair, wall and door repairs, flooring and other capital improvements. This structure is critical due to the important equipment located inside it.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	48	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$75,000	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

28 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Misc. Yard Piping Rehab
Dept.: Treatment
5 yr. Cap Projection: $ 570,000.00
CY Budget $ 120,000.00
GL Account:

Contact: Lander
Area
Asset Type: Support Equipment
Avg Useful Life: 40 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

After inspections of select buried piping segments that have a high consequence of failure, it may be found that the buried pipeline should be rehabilitated. An allowance is estimated for rehabilitation of buried piping in the WWTP.

Buried piping with a high consequence of failure and selected for possible rehabilitation include:
#1 Water Distribution Piping, #3 Water Distribution Piping, Natural Gas Piping, Fire Water Piping, Influent Piping, Carmel Meadows Influent Pipeline, Digester #1 Sludge Piping, Digester #1 Gas Piping, Digester Gas Piping to Flare, Gas Pit, Digesters Supernatant Piping, Secondary Clarifier #1 Effluent Piping, Piping between the Headworks and Primary Clarifiers

Year Built: Various
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 5 Moderate Deterioration

Justification

Piping level of service to carry fluids, gas or chemicals without leaks or breaks. Leaks and breaks should be proactively mitigated to avoid spills to the environment.

Failure Modes Addressed:
1. Lack of proactive failure mitigation and condition assessment of buried piping.
2. The condition of buried piping is unknown however due to the prevalent corrosion that can occur in wastewater process piping it is likely that condition issues exist in some buried piping.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	26	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$50,000	$120,000	$90,000	$90,000	$90,000	$90,000	$90,000	$ 570,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	120,000 $	90,000 $	90,000 $	90,000 $	90,000 $	90,000	$ 570,000

29 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Treatment Plant Planting and Screening
Dept.: Treatment
5 yr. Cap Projection: $ 120,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: N/A
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Planning and landscaping around the treatment plant. This will include the replacement of trees around the perimeter of the treatment plant to replace the eucalyptus trees. Some planting will begin this year if an agreement with State Parks can be reached to plant new screening on Parks lands.

Year Built:
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 5 Moderate Deterioration

Justification

The trees surrounding the treatment plant are 40 years old. These trees will need to be replaced with native species in the next 20years to maintain coverage and screening of the treatment plant.

Director D'Ambrosio has provided staff with a vegetation management plan for the plant grounds. The intent is to maintain the plant grounds in harmony with the surrounding nature preserve that is State Parks.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	$ -
Engineering	$12,000	$0	$60,000	$0	$0	$60,000	$0	$ 120,000
Parts & Supplies							$	$ -
Chemicals							$	$ -
Utility							$	$ -
Other							$	$ -
Total	$ -	$ 60,000	$ -	$ -	$ 60,000	$ -	$	$ 120,000

30 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Secondary Clarifier Rehab
Dept.: Treatment
5 yr. Cap Projection: $ 250,000.00
CY Budget $ 250,000.00
GL Account:

Contact: Lander
Area Secondary Clarifiers
Asset Type: Process Equip (Liquid)
Avg Useful Life: 40 years
Est Residual Life: 1 year
% Consumed Life: 99%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Secondary Clarifiers remove suspended and floatable biomass from the mixed liquor coming from the Aeration Basins. These tanks are critical to permit compliance. Secondary Clarifier #2 has been fully reconditioned. Secondary #1 is scheduled for the same conditioning in FY18/19. Rehabilitation includes repair of the effluent launders (coating). Replace sludge collector mechanisms and electrical service.

Year Built: 1976
Rehabilitation Date (Extending life of Asset): Mar-18
Rehab Life Extension: 20
Asset Condition Rating: 1 New or Excellent Condition

Justification

One of the two clarifiers were taken out of service in FY16/17and rehabilitated. The inspection revealed that the structure is in good shape. Some coating repair was needed and an overall rehab was completed with new drive mechanism and island. This will be the same repair for Clarifier #2. Every 10 to 12 years the Clarifiers will be taken down and serviced. Down times have been staggered between the 4 clarifiers.
Failure Modes Addressed:
1. The secondary Clarifier Structures are 40 years old (Clarifier #1) and 30 years old (Clarifier #2) which is about the average useful life for this type of structure. Because they are nearing the end of their useful life the structures are evaluated and repaired to extend the useful life as warranted.
2. The Secondary Clarifier Sludge Collectors are beyond their useful life and will need to be replaced.

Planning for center drive service every 10 to 12 years is required to ensure the drive is properly cared for.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	18	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Add Backup/Redundancy
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$250,000	$0	$0	$0	$0	$0	$ 250,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	250,000 $	- $	- $	- $	- $	-	$ 250,000

31 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Dewatering Standby Equipment
Dept.: Treatment
5 yr. Cap Projection: $ 100,000.00
CY Budget $ 50,000.00
GL Account:

Contact: Lander
Area Dewatering Bldg.
Asset Type: Process Equip (Solid)
Avg Useful Life: 40 years
Est Residual Life: 10 years
% Consumed Life: 75%
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The new Screw Press dewatering equipment installed in Phase I is working very well. The existing belt press is now a redundant asset providing back up to the screw press. It is in poor condition so it will need to be cleaned up and placed in standby. The belt press will be repaired and painted with in house maintenance staff and will be cycled by operations staff to maintain its capability to be placed in service when needed.

Year Built: 2018
Rehabilitation Date (Extending life of Asset): Mar-18
Rehab Life Extension: 10
Asset Condition Rating: 1 New or Excellent Condition

Justification

The sludge dewatering system needs to maintain redundancy because hauling un-pressed sludge for disposal is very expensive. The existing press needs some repairs such as replacement of the belt and servicing of the pneumatic cylinders. Once the belt press has been serviced, it will continue to serve the District as a secondary press for its remaining 10 years of projected life. A future screw press will replace the belt press and is anticipated to be 10 years in the future.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	17	Probability of Failure: Medium

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$50,000	$50,000	$0	$0	$0	$0	$ 100,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 50,000	$ 50,000	$ -	$ -	$ -	$ -	$ 100,000

32 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: #3 Water System Automation
Dept.: Treatment
5 yr. Cap Projection: $ 75,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area 3 Water System
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 2%
Category: Capital Equipment
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The #3 water system is the non-potable process water used by staff to wash down tanks, clean equipment, and provides seal water to some pumps. #3 water is critical to the operation of the plant. The Phase 1 project recently improved the reliability of this system significantly. This project includes the automation often #3 water system so that it can be controlled by pressure feedback directly to VFD controlled motors.

Year Built: 1976
Rehabilitation Date (Extending life of Asset): Mar-18
Rehab Life Extension: 20
Asset Condition Rating: 1 New or Excellent Condition

Justification

The #3 automation project will save the district a significant amount of money by not ruing pumps when water is not needed. This improvement is one cost saving measure PG&E has identified to reduce power consumption at the treatment plant.

Planning for center drive service every 10 to 12 years is required to ensure the drive is properly cared for.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	18	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$75,000	$0	$0	$0	$0	$ 75,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ 75,000

33 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Cathodic Protection
Dept.: Treatment
5 yr. Cap Projection: $ 30,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Outfall
Asset Type: Support Equipment
Avg Useful Life: 50 years
Est Residual Life: 40 years
% Consumed Life: 20%
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Cathodic protection is used to protect the outfall piping and some internal plant piping. It is a technique used to control the corrosion of a metal surface by making it the cathode of an electrochemical cell. A simple method of protection connects the metal to be protected to a more easily corroded "sacrificial metal" to act as the anode. The sacrificial metal then corrodes instead of the protected metal. This equipment will need to be replaced as it is already over 40 years old. The in ground anodes are in good condition and were tested in 2014. The District will continue to test the Cathodic protection system every 7 years.

Year Built: 1970
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 3 Minor Defects Only

Justification

Cathodic Protection helps internal and external corrosion defects, stress corrosion cracking, incorrect operation, weather, and other outside forces. Adverse consequences of failure of system could be environmental contamination, operational safety, disaster, reconstruction and recovery costs. Failure to maintain the cathodic protection will allow electrolysis to eat away at the outfall pipe. This would be a very expensive replacement project. It is much cheaper to maintain the system.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	18	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$0	$0	$0	$30,000	$0	$0	$0 $	30,000
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$	30,000	$ -	$ -	$ -	$ 30,000

34 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Lunch Room/Meeting Hall Replacement
Dept.: Treatment
5 yr. Cap Projection: $ 775,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Structure
Avg Useful Life: 40 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Replace the existing lunch room, conference room and outside lunch area with a new 2000 sqft manufactured building and elevated deck.

Year Built:
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating:

Justification

The existing building used as the lunch room and meeting facility for plant related meetings is nearing 80 years old. This building has been repurposed several times over the decades and is nearing its useful life in its current configuration. A new facility would be designed to better serve the staff and provide a location to hold larger meetings indoors, as the current meeting room only holds 15 persons which makes it difficult to hold meeting for the entire staff.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: N/A

Asset Risk Management Strategy

Capital Improvement Risk: Add Backup/Redundancy
Maintenance Risk Management:
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$175,000	$600,000	$0	$ 775,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ 175,000	$ 600,000	$ -	$ 775,000

35 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Primary Blower Rehab
Dept.: Treatment
5 yr. Cap Projection: $ 400,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Blower Bldg.
Asset Type: Process Equip (Gas)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Air supply is a critical component for aeration processes within wastewater treatment. A reliable low pressure blower system is essential to ensure continuous operations. After balancing of the air demand in the plant during the Phase 2 project and after the installation of the new blower as part of the Phase I project, the District will wait two years and evaluate the air supply process for the plant. This project will include evaluating installation of a smaller blower, or replacement of the Lamsom blower that was installed in the 1970's

Year Built: 1972
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 2

Justification

The primary blower will have over 20 years of service and may need a major overhaul. The new blower, installed during the Phase 1 project, will provide redundancy to the air demands of the plant. If it is determined even greater reductions would benefit the District during low flow periods, a smaller blower may be proposed.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	48	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$400,000	$0	$ 400,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ 400,000	$ -	$ 400,000

36 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Chlorine Contact Channel Rehab (Recl 25%)
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Chlor/Dechlor Bldg.
Asset Type: Process Equip (Liquid)
Avg Useful Life: 40 years
Est Residual Life: 15 years
% Consumed Life: 62%
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

Chlorine Contact Channel is a basin that provides sufficient detention time of chlorine contact with wastewater for disinfection to occur. Staff anticipates needing to apply some coating to the interior of these channels to prolong life of this asset within 5 years.

The District's Chlorine Contact Channels are underneath the Chlor/Dechlor building.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): Jul-17
Rehab Life Extension: 25
Asset Condition Rating: 2

Justification

Disinfection is a critical step in the wastewater treatment process. Disinfection is designed to kill or inactivate most microorganisms in wastewater -- essentially killing all pathogenic bacteria. The district's NPDES permit requires that we disinfect prior to discharge into our outfall or prior to turning it over to Reclamation for additional sanitization. This asset must be maintained.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10	Cannot be down 1 hour
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	10	Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	52	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$250,000	$0	$ 250,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ 250,000	$ -	$ 250,000

37 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Rio Road Administration Building
Dept.: Treatment
5 yr. Cap Projection: $ 70,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life: 20 years
% Consumed Life: 60%
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Rio Road Administration building is the main office for the district where all administrative functions including Board meetings are held. A new roof will be needed in the next 5 years.

Year Built: 1990
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 4

Justification

The Administration building needs to be maintained well as it serves as a place where the public interacts with staff. Also, the cost of replacement of the office greatly exceeds the cost of maintenance. Recent maintenance has really improved the life of the building, this will continue into the future.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	14	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$70,000	$0	$ 70,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ 70,000	$ -	$ 70,000

38 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Maintenance Building Addition
Dept.: Treatment
5 yr. Cap Projection: $ 430,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Outfall
Asset Type: Structure
Avg Useful Life: 40 years
Est Residual Life: 40 years
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

Addition to the Maintenance building or possibly a second story for storage and equipment service. After the Phase I and Phase II projects the District will evaluate the maintenance and storage needs of the plant and propose an improvement according to that evaluation.

Year Built:
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating:

Justification

With the improvement of equipment and systems on the plant grounds staff anticipates that the Maintenance department will need to grow to accommodate the technical needs of the plant. The treatment plant is using electronic lockers to store equipment and supplies which greatly reduces the cost of surplus materials but these cabinets are large. If they continue to prove valuable to the District then a project will be brought forward to construct a space that is more conducive to these cabinets which will allow staff to better access the equipment. We have also recognized the need for more vehicle bays -- currently they are used for storage, making it difficult to use them for maintenance.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	1	No Cost
Total COF:	6	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$430,000	$ 430,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 430,000	$ 430,000

39 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Influent Building Pump Rehab
Dept.: Treatment
5 yr. Cap Projection: $ 100,000.00
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Process Equip (Liquid)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

The influent building will receive electrical rehabilitation during the Phase II project. Improvements proposed for future rehab includes replacement of the pumps as needed and service of other piping and valves

Year Built: 1976
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 2

Justification

The existing Fairbanks/Morris pumps have served the District well. They were serviced in 2016 and will receive new VFD drives as part of Phase II. These motors will receive maintenance and possibly an additional smaller pump will be installed for times of low flow. Work in 23/24 will include servicing the pumps and motors, and also the piping.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	24	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$100,000	$ 100,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000	$ 100,000

40 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Aeration Basin Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 15 years
% Consumed Life: 50%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

The Aeration Tank is where activated sludge is controlled to biology remove organics from the wastewater stream. This process is critical to the permit compliance of the district.

The Aeration Basins were constructed in the 1970s. Concrete tanks like these last for 50+ years provided they are taken care of. Currently the District's tanks are in very good condition. This is a provision for a future rehabilitation of the tanks that will become more focused over time.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): Jul-17
Rehab Life Extension: 25
Asset Condition Rating: 2

Justification

Aeration is a critical component of the wastewater process. The District current has four Aeration Basins of varying ages -- however they are all built in the 1970s or 1980s. In order to continue to provide wastewater service to the community all tanks must be maintained. The treatment plant will be taking care of internal servicing of the air dissipaters however it is anticipated that in 7 to 10 years in the future the air distribution system will need replacing and the tanks may need some coating.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	7	Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	42	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

41 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: DAFT Rehab (Recl 50%)
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area DAFT
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 2%
Category: Capital Equipment
Urgency: 5 = Future
Carry Forward: No

Asset Description

The Dissolved Air Flotation Thickener (DAFT) removes suspended solids from side stream flows prior to returning these waste streams back to the headworks. This equipment helps to make other systems work more efficiently and it improves secondary water quality, which improves water quality sent to the microfiltration system. This equipment can be bypassed and not used. The DAFT has recently been improved and little mechanical work will be needed for many years. The tank could require interior coating to protect he concrete in 10 years from the most recent rehabilitation. Coating is scheduled for FY26/27

Year Built: 1976
Rehabilitation Date (Extending life of Asset): Jul-05
Rehab Life Extension: 25
Asset Condition Rating: 1 New or Excellent Condition

Justification

The DAFT is an important asset for efficiency and reducing suspended solids into the treatment plant. This tank can be easily maintained for many decades to come with periodic investment.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	1	No impact to Safety
Spill/Odor/Noise COF	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	18	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$0	$0	$0	$0	$0	$0	$0 $	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

42 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Digester #2 Clean and Inspect
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Digesters
Asset Type: Process Equip (Solid)
Avg Useful Life: 50 years
Est Residual Life: 50 years
% Consumed Life: 1%
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Digester #2 was constructed as part of Phase 1 plant rehabilitation. This digester will need to be fully serviced every 10-12 years. Tank will be emptied, cleaned and inspected.

Year Built: 1976
Rehabilitation Date (Extending life of Asset): Jul-05
Rehab Life Extension: 30
Asset Condition Rating: 1 New or Excellent Condition

Justification

The digester must be serviced to ensure both life expectancy as well to maintain efficiency and good working condition. The district will only have two fully redundant tanks so it is important to take care of them. If maintained properly the structures will last indefinitely. Every ten years the tank will be taken out of service and inspected. If minor repairs are undertaken every 10 years this tank can serve the district for many decades. It is anticipated that interior coatings will need to be repaired every 30 years, that is the rehab life extension.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	36	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor							$	-
Engineering	$0	$0	$0	$0	$0	$0	$0 $	-
Parts & Supplies							$	-
Chemicals							$	-
Utility							$	-
Other							$	-
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

43 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Effluent Building Pump Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Effluent Bldg.
Asset Type: Process Equip (Liquid)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

The Effluent building will receive electrical rehabilitation during the Phase II project. Improvements proposed for future rehab includes replacement of the pumps as needed and service of other piping and valves.

Year Built: 1976
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 2

Justification

These 2 large 150 HP pumps were serviced in 2016 and will continue to be maintained until they are replaced or rehabbed again in the Phase 2 project. They are not used very much because the Wimco pump takes care of daily flows which are not reclaimed. Only during substantial rain events do the 150 HP pumps turn on. Since they are only in use for a few hours they are under little pressure, and they only pump clean effluent and will remain in good shape as long as they receive annual maintenance. It is proposed that in 10 years from now the motors and pumps will need servicing.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	24	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

44 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Digester #1 Clean and Inspect
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Digesters
Asset Type: Process Equip (Solid)
Avg Useful Life: 50 years
Est Residual Life: 25 years
% Consumed Life: 2%
Category: Capital Equipment
Urgency: 5 = Future
Carry Forward: No

Asset Description

The Digester #1 is the 600,000gal tank constructed in the early 1970's. This tank is scheduled to be completely overhauled as a Phase II project. Every 10 to 12 years a digester should be cleaned and inspected. This project will be for the cleaning and inspection of the tank estimated 10 years after rehabilitation.

Year Built: 1976
Rehabilitation Date (Extending life of Asset): Jul-05
Rehab Life Extension: 30
Asset Condition Rating: 1 New or Excellent Condition

Justification

The digester must be serviced to ensure both life expectancy as well to maintain efficiency and good working condition. The district will only have two fully redundant tanks so it is important to take care of them. If maintained properly the structures will last indefinitely. This asset is already 40 years old and the rehabilitation will extend the life of this tank by 30 years. Every ten years the tank will be taken out of service and inspected. If minor repairs are undertaken every 10 years this tank can serve the district for many more years to come. It is anticipated that interior coatings will need to be repaired every 30 years, that is the rehab life extension.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:		Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management: Strategic Changes to Level of Service

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

45 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Headworks Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Influent Manhole
Asset Type: Process Equip (Liquid)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Anticipated future repair of pumps and motors installed as part of the Phase 2 project. 10 to 15 years after the Phase 2 improvements the drive on the grit launderer will need service. This item is for potential rehabilitation of the Headworks assets 10 years after the Phase 2 project is complete.

Year Built: 1972
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension: 30
Asset Condition Rating: 2

Justification

To maintain new improvements for the headworks, the District will schedule this equipment for routine service, inspection and coating as needed. The grit tank is an important part of the plant process as it removes all large material from the flow stream. When this equipment works well the entire treatment plant process is more efficient. Anticipated expenditure in FY31/32 is for tank and channel coating.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	24	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

46 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: RAS Building Rehab
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area RAS Pump Bldg.
Asset Type: Process Equip (Liquid)
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
Carry Forward: No

Asset Description

Maintenance and replacement of electrical, PLC and controller equipment as needed. In 15 years the Phase I improvements will need to be inspected and planning for replacement needs to begin.

Year Built: 1972
Rehabilitation Date (Extending life of Asset): Jul-17
Rehab Life Extension: 25
Asset Condition Rating: 2

Justification

Electrical components and PLC equipment degrade over time. 20 years after the Phase I improvements the District will be ready to upgrade some components to remain current with safety regulations or operational parameters.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	48	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

47 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Sea Level Rise Structural Protection
Dept.: Treatment
Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Design plans, environmental analysis, permit acquisition, construction management and physical construction of a comprehensive solution to combat impacts associated with sea-level rise. The potential impact to the Treatment plant has not fully been analyzed, however based on growing scientific consensus this tentative plan will include protection from wave run up or high tide events.

Sea Level Rise RFP authorized by Board of Directors 03-23-17
Establish "Defend or Managed Retreat" Reserve authorized 03-23-17

Year Built: 1990
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 2

Justification

The treatment plant is 2500 feet from the existing beach so under current assumptions sheet pile or seacant wall design will include a concrete wall cap to provide both protection from wave events and subsurface water intrusion. There is a possibility that future data will prove a policy of "managed retreat" is preferable to asset protection. If data becomes available which leads to an alternative conclusion to protecting the treatment plant then this cost projection will be deleted and a new project will be defined to include plant relocation. For that reason this item is not assigned a future date for construction but it will remain unscheduled until a more definitive expectation for impacts becomes evident. Under current assumptions the plant will be able to be protected through walls and piles. This item is unscheduled because the Sea Level Rise analysis is not yet completed.

Cost assumptions: Design and CM - $3.3M, Environmental documentation and permitting - $0.5M, Construction of secant pile wall with concrete cap wall (3800 linear ft.) - $9.5M, Rip-rap revetment - $0.4M, +10% contingency. Total $15M

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10	Cannot be down 1 hour
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	7	Violate Monthly Average Effluent Limitation or Fail Class B Biosolids
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)
Total COF:	49	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

48 **FY 2018-19 Budget**
Carmel Area Wastewater District

Project Name: Ocean Outfall Rehabilitation
Dept.: Treatment
Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life: 20 years
% Consumed Life: 60%
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The outfall pipeline was installed in the 1970s and has experienced a break only one time - in the early 2007. That break in the pipeline cost $647,504 to repair. The cause of the break remains unknown. Emergency repair to the WWTP outfall in the event of storm damage or natural disaster. This item is an unscheduled repair as it is not anticipated but if it occurs a repair must be made immediately.

Year Built: 1970
Rehabilitation Date (Extending life of Asset):
Rehab Life Extension:
Asset Condition Rating: 2

Justification

The ocean outfall is a critical asset to the function of the treatment plant. The design of the outfall appears to be very good in that it is bedded on the granite shelf and the ocean-ward side is concrete encased for protection. The full length of the transmission line is over 3000ft. Transmission line inspection in 2014 of the underground portion inside the lagoon revealed that the pipe was in good shape and that the cathodic protection was active and working well with approximately 40 years of life remaining on the anode. A separate budget expense has been generated for the repair of the portion of the pipeline suspended over the south finger of the lagoon (#41 Outfall Crossing). Independent of the crossing the pipeline is not susceptible to damage from the environment accept in cases of strong storms, earthquakes or accidental damage from anchored ships which should affect the pipeline exposed in the ocean. The portion of the pipe located in open water is exposed and can also be damaged by the ocean environment. The District should plan for repairs to this structure. The estimate for a potential repair was developed from prior history. In 2007 a repair was required due to damage revealed during the annual inspection. That repair cost was approximately $700,000. Our NPDES permit requires an annual inspection of the outfall pipeline.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF	7	Moderate Injury/Health Risk (Short Recovery)
Spill/Odor/Noise COF	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	7	Maintaining Process Functionality Requires Emergency Outside Assistance
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)
Total COF:	40	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk: Plant Rehabilitation/Replacement
Maintenance Risk Management: Predictive & Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

49 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Air Monitoring
Dept.: Treatment
5 yr. Cap Projection: $ -
CY Budget $ -
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Instrumentation
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life: 0%
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

Installation of air quality sampling equipment to be connected via WIFI so that data can be web enabled. Air quality equipment and specifications will be specified by Monterey Bay Air Quality Board so that data can be correlated with local databases. Includes purchase of equipment, installation, web enabled programing and research needed to reduce ongoing costs.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating:

Justification

Board of Directors discussion in 2016 resulted in the Board request to include investigation into air quality monitoring. Air quality data gathered will be site specific and can be utilized to develop a correlation between employee respiratory health and air quality. In addition, any data gathered on site can be compared to other regional air quality monitors to view any variations. Not health issues have been reported or are identified. This proposal was developed from a discussion on preventative illness.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000
Total COF:	12	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$0	$0	$0	$0	$0	$0	$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

50 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Phase 1 - Carry forward amount
Dept.: Treatment
5 yr. Cap Projection: $ 274,332.00
CY Budget $ 274,332.00
GL Account:

Contact: Treanor
Area Misc. Structures
Asset Type: Instrumentation
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life: 0%
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

Carry forward of Phase I project funding to complete as builts, drawings, etc.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating:

Justification

These funds were allocated as part of original Phase I project (Resolution 2014-44).

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF
Cost COF
Total COF:

Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget

Secondary

Budget Impact/Other

	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$274,332	$0	$0	$0	$0	$0	$ 274,332
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 274,332	$ -	$ -	$ -	$ -	$ -	$ 274,332

51 **FY 2018-19 Budget**

Carmel Area Wastewater District

Project Name: Perimeter Fencing
Dept.: Treatment
5 yr. Cap Projection: $ 100,000.00
CY Budget $ 50,000.00
GL Account:

Contact: Lander
Area Misc. Structures
Asset Type: Instrumentation
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life: 0%
Category: Maintenance
Urgency: 5 = Future
Carry Forward: No

Asset Description

Fencing around the Treatment Plant facility has deteriorated and should be replaced.

Year Built: N/A
Rehabilitation Date (Extending life of Asset): N/A
Rehab Life Extension: N/A
Asset Condition Rating:

Justification

Replacement of fencing around Treatment Plant with 8' chain link. The gate has been replaced with an automatic gate installed. Although much of the fencing is difficult to access due to vegetation, the fence should still be replaced.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service indefinitely
Safety COF	3	Minor Inconvenience
Spill/Odor/Noise COF	1	No Effect on Spills/Odors/Noise
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	1	No change in Process Functionality
Cost COF		
Total COF:	7	Probability of Failure: Low

Asset Risk Management Strategy

Capital Improvement Risk:
Maintenance Risk Management: Preventative Maintenance
Non Asset Risk Management:

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

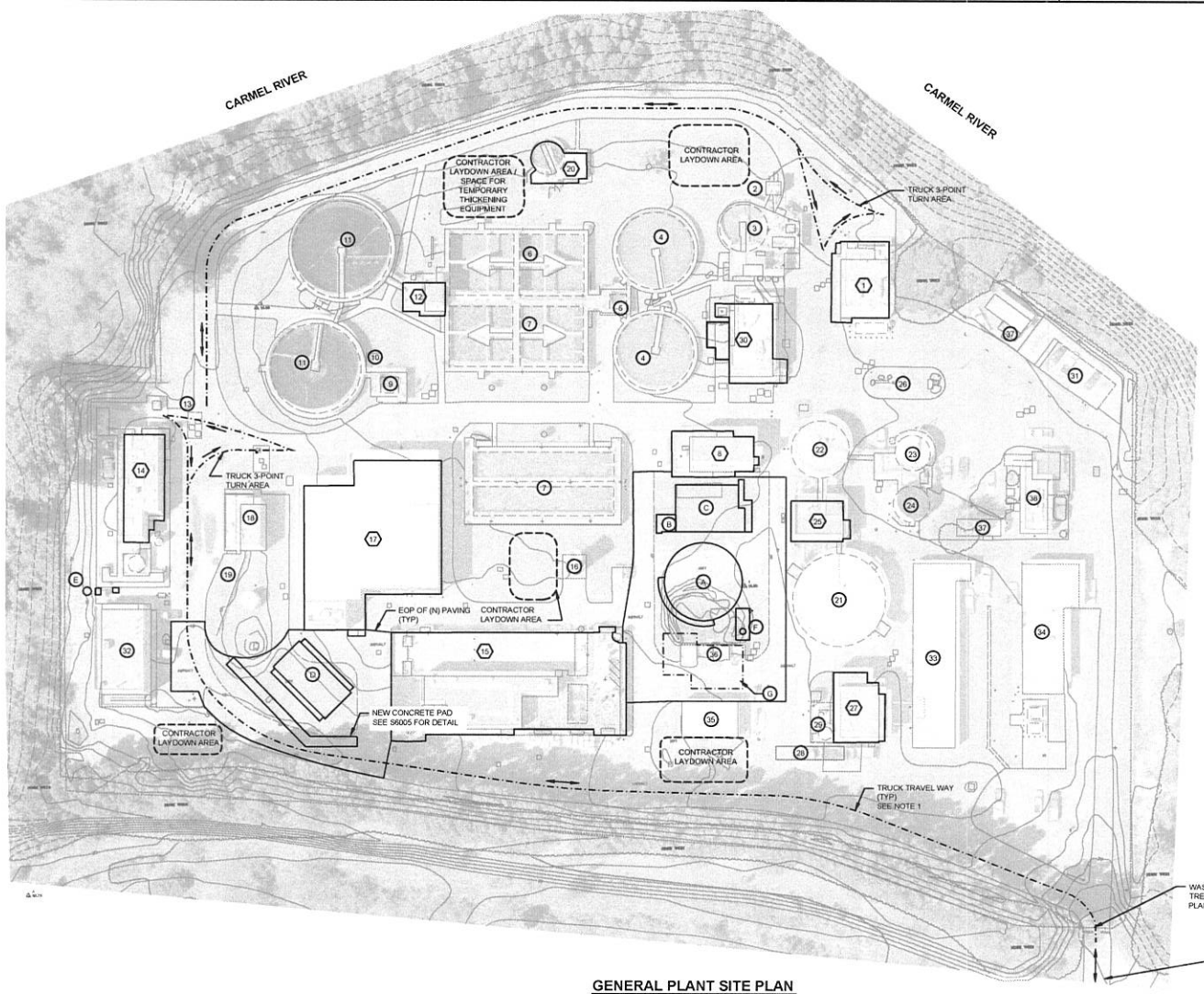
	Prior Yr.	18-19	19-20	20-21	21-22	22-23	23-24	Total
Labor								$ -
Engineering	$0	$50,000	$50,000	$0	$0	$0	$0	$ 100,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 50,000	$ 50,000	$ -	$ -	$ -	$ -	$ 100,000

Reclamation

RECLAMATION PROJECT CAPITAL								
Project #	Lead	PROJECT	18/19	19/20	20/21	21/22	22/23	Unscheduled
CAPITAL PROJECTS								
1	CAWD	Equalization Influent Basin electrical work.	$ 80,000					
2	CAWD	Filter Rehababilitation of 6 filters	$ 50,000	$ 300,000				
3	CAWD	PLC Programing Update	$ 50,000	$ 50,000				
4	CAWD	Sulfuric Acid Tank Install	$ 20,000					
5	CAWD	Dream Report Software for SCADA & LIMS (50% CAWD)	$ 13,000					
6	CAWD	SCADA host Historian/Domain Controller (50% CAWD)	$ 12,000					
7	CAWD	Replace Lab Grade Water System (50% CAWD)	$ 10,000					
8	CAWD	Asset Analysis - Long Term Capital Plan	$ 5,000	$ 25,000				
9	CAWD	Painting of Tertiary Building		$ 50,000	$ 50,000	$ 50,000		
10	CAWD	Floor Drain Improvements (Carryover)		$ 15,000				
11	CAWD	Chlorine Contact Channel Rehab (75% CAWD)					$ 250,000	
12	PBCSD	Forest Lake Pump Station Improvements	$ 500,000					
13	PBCSD	Poppy Hills Storage Tank Rehabilitation Project	$ 250,000	$ 950,000				
14	PBCSD	SCADA System Rehabilitation	$ 250,000					
15	PBCSD	Pipeline Cathodic Protection Project		$ 250,000				
16	PBCSD	Storage Tank Cathodic Protection Equipment		$ 25,000				
CAPITAL PURCHASES								
a	CAWD	PLC Updating Equipment	$ 100,000					
b	CAWD	Sulfuric Acid Tank	$ 25,000					
c	CAWD	Mainsaver - Purchasing Module (CAWD 66.7%)	$ 19,650					
e	CAWD	Mainsaver - Connect Mobile (CAWD 66.7%)	$ 19,550					
f	CAWD	Pumps, KSB: KRTK 150-401/266/G-S, Controls	$ 18,000	$ 18,000				
g	CAWD	Effluent Flow Meter	$ 15,000					
h	CAWD	Pallet Jacks/Stackers (50% CAWD)	$ 10,000					
i	CAWD	Lab Autoclave (50% CAWD)		$ 16,000				
j	CAWD	Lab BOD incubator (50% CAWD)		$ 12,000				
k	CAWD	Lab Ion Chromatograph			$ 150,000			
l	CAWD	Lab Muffle Furnace (50% CAWD)			$ 13,500			
		RECLAMATION PROJECT	**$ 1,447,200**	**$ 1,711,000**	**$ 213,500**	**$ 50,000**	**$ 250,000**	**$ -**
		CAWD SHARE	$ 48,646	$ 14,000	$ 6,750	$ -	$ 187,500	$ -
		PBCSD SHARE	$ -	$ -		$ -	$ -	$ -
		RECLAMATION PROJECT	**$ 1,398,554**	**$ 1,697,000**	**$ 206,750**	**$ 50,000**	**$ 62,500**	**$ -**

Maps

Carmel Area Wastewater District - Service Area with Parcels



GENERAL PLANT SITE PLAN

0 20 40 60
1"=40'

EXISTING STRUCTURES

1. INFLUENT PUMP STATION / STANDBY GENERATOR BUILDING
2. INFLUENT MANHOLE STRUCTURE
3. HEADWORKS
4. PRIMARY SEDIMENTATION TANKS
5. ANOXIC SELECTOR STRUCTURE
6. EQUALIZATION TANK
7. AERATION BASINS
8. BLOWER BUILDING
9. MIXED LIQUOR DISTRIBUTION STRUCTURE
10. MIXED LIQUOR FLOWMETER VAULT
11. SECONDARY SEDIMENTATION TANKS
12. RAS/WAS PUMP STATION
13. SECONDARY EFFLUENT DIVERSION STRUCTURE
14. CHLORINATION BUILDING
15. TERTIARY BUILDING
16. GYPSUM FEED SILO
17. MICROFILTRATION / REVERSE OSMOSIS FACILITY
18. EFFLUENT PUMP STATION
19. OUTFALL PIPE
20. DISSOLVED AIR FLOTATION THICKENER
21. DIGESTER NO. 1
22. OLD DIGESTER NO. 2
23. DIGESTER NO. 3
24. DIGESTER NO. 4 (SLUDGE HOLDING TANK)
25. DIGESTER CONTROL BUILDING
26. WASTE GAS BURNER
27. DEWATERING BUILDING
28. DEWATERED SLUDGE TRUCK PARKING
29. GREASE RECEIVING STATION
30. OPERATIONS BUILDING
31. CONCRETE SLAB
32. LABORATORY
33. VEHICLE STORAGE BUILDING
34. MAINTENANCE SHOP
35. EQUIPMENT STORAGE BUILDING
36. MATERIALS STORAGE BINS
37. OFFICE TRAILER
38. EMPLOYEE BREAK BUILDING

NEW STRUCTURES

- A. DIGESTER NO. 2
- B. FERRIC CHLORIDE STORAGE
- C. DIGESTER NO. 2 CONTROL BUILDING
- D. HYPO/SBS STORAGE
- E. STORMWATER PUMP STATION
- F. WASTE GAS BURNER

FUTURE STRUCTURES

- G. FUTURE SEPTAGE/VACTOR RECEIVING STATION

EXISTING STRUCTURES TO RECEIVE NEW WORK

1. INFLUENT PUMP STATION / STANDBY GENERATOR BUILDING
8. BLOWER BUILDING
12. RAS/WAS PUMP STATION
14. CHLORINATION BUILDING
15. TERTIARY BUILDING
17. MICROFILTRATION / REVERSE OSMOSIS PAD
20. DISSOLVED AIR FLOATATION THICKENER
25. DIGESTER CONTROL BUILDING
27. DEWATERING BUILDING
30. OPERATIONS BUILDING

LEGEND

- (A) NEW AND FUTURE STRUCTURES
- (#) EXISTING STRUCTURES
- (#) EXISTING STRUCTURES TO RECEIVE NEW WORK

NOTES:
1. TRUCK ACCESS IS REQUIRED IN AND OUT OF THE WWTP SITE AS PART OF REGULAR OPERATIONS. CONTRACTOR SHALL MAINTAIN ACCESS FOR TRUCKS DURING CONSTRUCTION ALONG THE TRUCK TRAVEL WAYS SHOWN. CONTRACTOR SHALL PROVIDE TRENCH PLATES, GRAVEL ROADS, AND/OR OTHER MEANS OF MAINTAINING TRUCK ACCESS DURING CONSTRUCTION.
2. CONTRACTOR TRUCK ACCESS IN AND OUT OF CONSTRUCTION AREAS SHALL BE VIA THE TRUCK TRAVEL WAYS SHOWN EXCEPT AS IS NECESSARY FOR CONSTRUCTION AT THE (E) OPERATIONS BUILDING, (E) BLOWER BUILDING, AND (E) INFLUENT BUILDING.
3. PROVIDE SIGNAGE TO WARN VEHICLES TRAVELING NORTHBOUND AND SOUTHBOUND ON HIGHWAY 1 OF CONSTRUCTION VEHICLES ENTERING ONTO HIGHWAY 1 FROM THE PLANT ACCESS ROAD. THE SIGNAGE SHALL BE INSTALLED NORTHBOUND AND SOUTHBOUND OF THE INTERSECTION OF THE PLANT ACCESS ROAD AND HIGHWAY 1 AT 200 FEET AND 100 FEET FROM THE INTERSECTION. A MINIMUM OF 4 SIGNS SHALL BE PROVIDED. SIGNS SHALL BE VISIBLE SUCH THAT VEHICLES TRAVELING IN BOTH DIRECTIONS ON HIGHWAY 1 ARE WARNED OF THE INTERSECTION AHEAD AND POSSIBILITY OF CONSTRUCTION VEHICLES ENTERING ROAD.
4. REFER TO SPECIFICATION SECTION 01550 FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

100% DESIGN

NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER PATRICK D. TREANOR No. C71555 Exp. 6/30/15 CIVIL STATE OF CALIFORNIA

DESIGNED	SJE
DRAWN	SJE
CHECKED	JMW

CARMEL AREA WASTEWATER DISTRICT
CARMEL
WWTP REHABILITATION PROJECT - PHASE 1

Kennedy/Jenks Consultants ©
303 SECOND STREET, SUITE 300 SOUTH, SAN FRANCISCO, CALIFORNIA 94107

GENERAL PLANT SITE PLAN

FILE NAME	
JOB NO	1368019 00
DATE	JANUARY 2015
SHEET	G0007

N:\2015\1368019 00-CAWD-WWTP-Rehab\1368019-G0007.dwg 1/12/2015 9:07 AM PATRICK TREANOR

Appendices

Technical Terms

Technical Terms

Account – A record of a business transaction.

Accounting System – The structure of records and procedures that discovers, records, classifies, summarizes, and reports information on the financial position and results of operations of the District as a governmental entity.

Accrual Basis – The recognition of a revenue or expense in a fiscal year even though the actual cash may not be received or paid until the following year.

Adoption – Formal action by the Board of Directors. The adoption of the budget sets the financial framework for subsequent fiscal year(s).

Agency Treatment Charges – Revenues derived from long-term contracts with other entities to whom the District provides sewage treatment, such as Pebble Beach Community Services District and California State Parks at Point Lobos.

Allocation of Expenses – The manner in which revenues and expenses are accounted for in the different service functions of the District. For example: sewage collection, treatment and disposal. This function is further divided into Operations and Maintenance (O&M), Capital Purchases, and Capital Improvement Program (CIP).

Amortization – The spreading out of capital expenses for intangible assets over a specific period of time (usually over the asset's useful life) for accounting purposes. Amortization is similar to depreciation, which is used for tangible assets, and to depletion, which is used with natural resources.

Assets – Resources owned by the District

Asset Management – Maintaining a desired level of service for optimal asset performance at the lowest life-cycle cost. Lowest life-cycle cost refers to the best appropriate cost for rehabilitating, repairing or replacing an asset.

Authorized Positions – Number of staff positions authorized for the fiscal year.

Average Dry Weather Flow – The average non-storm flow over 24 hours during the dry months of the year (May through September). It is composed of the average sewage flow and the average dry weather inflow and infiltration.

Biochemical Oxygen Demand – the amount of dissolved oxygen needed (i.e. demanded) by aerobic biological organisms to break down organic material present in in a given water sample at certain temperature over a specific time period. BOD is used as a guage of the effectiveness of wastewater treatment plants.

Biosolids – Sludge residual from the treatment process.

Budget – The District's financial plan for a given period of time, which includes revenues, expense, and other expenditures that provide funding for services provided to

District customers. It contains an Operating Budget and a Capital Budget.

- Operating Budget – The financial plan for non-capital revenues and expenses.
- Capital Budget – The financial plan of capital expenditures, part of the long-range plan.

Capital Assets – Assets owned by the District that have a useful life of more than 1 year and a cost of over $10,000. Capital assets include land, buildings, machinery, equipment, and major improvements and rehabilitation that extend the useful life of an asset by 1 year or more.

Capital Improvement Program (CIP) – Accounts for revenues, capital contributions, and repayments, and allocates designated resources for capital improvements such as construction, purchase of new facilities and equipment, or major reconstruction of existing infrastructure.

Clean Water Act (CWA) – The primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and non point pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

Cogeneration – Production of energy as a result of utilizing the by-products of the solids treatment process.

Computerized Maintenance Management System (CMMS) – A software package that is used for inventory control, procurement management, fixed asset condition assessment and maintenance repair management. The District uses a CMMS product called MainSaver.

Contingency – Reserves included in each fiscal year budget as an allowance for unanticipated expenses.

Connection Fees – Governed by Ordinance No. 85-2. Connection fees represent one-time contributions of resources to the District, imposed on all new connections to the District. The intent of these fees is to recover the capacity cost of sewer facilities within the existing system.

Cost of Living Adjustment (COLA) – An increase in wage compensation to offset the adverse conditions of inflation on salaries, or a provision for price increases based on the historical index of general inflation. Labor negotiation adjustments are based on the Consumer Price Index-Wage Earners San Francisco-Oakland Bay Area (CPI-W) for the period of December of the preceding year through December of the current year.

Depreciation – Loss in asset value over the useful life of a capital asset as a result of wear, deterioration, or obsolescence.

District Service Charges – Revenues received from customers for serwer services, under Ordinance No. 2015-01.

Effluent – Treated wastewater.

Enterprise Fund – Accounts for operations and business activities in a manner similar to

a private business, where the intent is that the costs of providing services to the general public are recovered primarily through user fees.

Fiscal Year (FY) – a 12-month financial measurement period between July 1 and June 30.

Fund – A fiscal accounting entity with a self-balancing set of accounts recording cash and other financial resource, liabilities and equity. Funds are segregated based on specific services or objectives in accordance with special regulations, restrictions, or limitations.

Grants – Contributions by other governmental entities or organizations to provide funding for a specific project.

Interest Income – Revenues received by the District from investments.

Lift Station – facilities to move wastewater from lower to higher elevation.

Long-Range Plan – The District maintains a long-range Construction Plan. It details planned projects by cost and target year. During each budget cycle, the planned projects for the next 2 years are moved into the budget document and the Board approves necessary funds for their implementation. The plan forecasts both capital project requirements and long-term needs for major repairs and maintenance of the sewer system.

Net Position – The difference between assets plus deferred outflow of resources, and liabilities plus deferred inflow of resources.

Non-operating – Enterprise fund revenues or expenses that are not a result of its primary service activities.

National Pollutant Discharge Elimination System (NPDES) – Introduced in 1972, it is a permit system for regulating point sources of pollution. Point sources may not discharge pollutants to surface waters without a permit from the NPDES system. The system is managed by the United States Environmental Protection Agency (EPA) in partnership with state environmental agencies.

Operating Expenses – Costs incurred by the District in the course of service to customers.

Operating Revenues – Funds received by the District through its normal business operations.

Operation & Maintenance (O&M) – Accounts for revenues and expenses related to the day-to-day operations of sewer services.

Ordinance – A local law set forth by the Board of Directors.

Other or Miscellaneous – Revenues or expenses aggregated on the financial statements for accountability purposes.

Overhead Rates – The purpose of overhead rates is to recover the cost of benefits, non-productive time, and other resources, such as administration and engineering services.

Overhead Recovery – Revenues from the application of overhead rates to actual staff salaries, for time spent on projects and

assignments in renewal and replacement and capital improvement projects.

Permits and Inspection Fees – Fees imposed to cover the cost of issuing sewer permits, inspecting sewer work, and maintaining permanent District records. Those fees are governed by Ordinance No. 85-1.

Proposition 218 – Passed by California voters on November 5, 1996 with effective date of July 1, 1997, it requires local governments to obtain the approval of property owners in a local ballot measure before levying a new or increased tax assessment of those property owners. In 2006, the California Supreme Court ruled that Proposition 218 applies to local water, recycling and sewer charges.

Renewal and Replacement (R&R) – Accounts for revenues and expenses associated with repairs on maintenance of collections and treatment facilities or equipment.

Resolution – A special or temporary order of the Board of Directors. A resolution requires less formality that a statute or ordinance.

Revenues – Income received by providing services, or from investment or other sources.

Sewer Rates – Fees paid by customers for sewer services. The District utilizes a rate model that was designed by the State Water Resources Board and includes components for biochemical oxygen demand (BOD), suspended solids (SS) and flow.

Suspended Solids – Refers to small solid particles which remain in suspension in water as a colloid or due to the motion of the water. It is used as one indicator of water quality.

List of Common Acronyms

List of Common Acronyms

ACWA	Assoc of California Water Agencies
AF	Acre Feet
APWA	American Public Works Assoc
AWWA	American Water Works Assoc
BFE	Base Flood Elevation (FEMA)
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BTU	British Thermal Units
C&I	Calcium & Ion
Cal OES	California Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalPERS	California Public Employees Retirement System
CASA	California Association of Sanitation Agencies
CAWD	Carmel Area Wastewater District
CCAMP	Central Coast Ambient Monitoring Program
CCLEAN	Central Coast Long Term Environ Assess Network
CCTV	Closed Circuit Television
CECs	Constituents of Emerging Concern
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIP	Capital Improvement Project/Plan
CL2	Chlorine
CMMS	Computerized Maintenance Mgmt Software
CMOM	Capacity, Management, Operations & Maintenance
COD	Chemical Oxygen Demand
CPI	Consumer Price Index
CRWQCB	Calif Regional Water Quality Control Board
CSDA	California Special District Association
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
CU FT	Cubic Feet
CWA	Clean Water Act (EPA)
CWEA	California Water Environment Assoc
DAF	Dissolved Air Flotation
DEG	Degrees
DEIS	Draft Environmental Impact Statement (NEPA/EPA)
DHS	Department of Health Services
DO	Dissolved Oxygen
DWF	Dry Weather Flow
EA	Environmental Assessment (NEPA/EPA)
EFT	Electronic Funds Transfer
EIS/EIR	Environmental Impact Statement/Report
ELAP	Environmental Laboratory Accreditation Program
EPA	[U.S.] Environmental Protection Agency
ESMP	Electronic Self-Monitoring Report
F/M	Food to Microorganism ratio
FEB	Flow Equalization Basin
FEMA	Federal Emergency Management Agency
FOG	Fats, Oils and Grease
GAL	Gallon
MF/RO	Microfiltration/Reverse Osmosis
MG/L	Milligrams per Liter
MGD	Million Gallons per Day
MLSS	Mixed Liquor Suspended Solids
MLVSS	Mixed Liquor Volatile Suspended Solids
MOU	Memorandum of Understanding
MPN	Most Probable Number (of coliform organisms)
MPWMD	Monterey Peninsula Water Management District
MSL	[Elevation above] Mean Sea Level
NEC	National Electric Code
NELAC	National Environmental Laboratory Accreditation Council
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Serivce (NOAA)
NOAA	National Oceanic & Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	Non-Point Source [Pollution]
OM&R	Operations, Maintenance, and Replacement
OSHA	Occupational Safety & Health Act
PBC	Pebble Beach Company
PBCSD	Pebble Beach Community Services District
PCB's	Polychlorinated Biphenyls
PEHP	Post Employment Health Plan
pH	Hydrogen Ion Concentration (Potential of Hydrogen)
POTW	Publicly Owned Treatment Works
PPM	Parts per Million
PS	Point Source [Pollution]
PS	Pump Station
PSI	Pounds per Square Inch
QA/QC	Quality Assurance/Quality Control
RAS	Return Activated Sludge
RFP	Request for Proposals
RFQ	Request for Qualifications
RMP	Risk Management Program
RO	Reverse Osmosis
RPM	Revolutions per Minute
RWQCB	Regional Water Quality Control Board
SAR	Sodium Absorption Ratio
SBS	Sodium Bisulfite
SCADA	Supervisory Control and Data Acquisition
SOR	Standard Oxygen Requirement
SOUR	Specific Oxygen Uptake Rate
SRF	State Revolving Loan Fund
SRT	Solids Retention Time (same as MCRT)
SRV	Sewer Relief Valve
SS	Suspended Solids (same as TSS)
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SVI	Sludge Volume Index
SWRCB	State Water Resources Control Board
TDML	Total Maximum Daily Load

List of Common Acronyms

GASB	Government Accounting Standards Board
GPD	Gallons per Day
HP	Horsepower
I/I	Infiltration and Inflow
IPR	Indirect Potable Reuse
IRWUG	Independent Reclaimed Water Users Group
kw	Kilowatt
kwH	Kilowatt hour
LAFCO	Local Agency Formation Commission
LAMP	Local Area Management Plan
lbs	Pounds
LIMS	Laboratory Information Management Software
MCC	Motor Control Center
MCRT	Mean Cell Retention Time
TMP	Trans Membrane Pressure
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TS/TSS	Total Suspended Sollids
UV	Ultraviolet Treatment
VFD	Variable Frequency Drive
VS	Volatile Solids
VSS	Volatile Suspended Solids
WAS	Waste Activated Sludge
WDR	Waste Discharge Requirements
WEF	Water Environment Federation
WPCF	Water Pollution Control Federation
WWTP	Waste Water Treatment Plant