Budget Committee (final): March 13, 2017
Prelim Budget Board Meeting: March 23, 2017
Final Budget Board Meeting: June 22, 2017

Carmel Area Wastewater District
Budget – Volume II
2017-18

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Carmel Area Wastewater District

2017-18

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Daryl Lauer	Collection System Superintendent
Drew Lander	Principal Engineer
James Grover	Principal Accountant
Irene Bryant	Administrative Services Coordinator

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
2017-18

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 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.

July 2015 the District issued a Notice of Proceed on Phase I of its Capital Plan. The original contract time was 700 days; however, we now expect it to extend to December 2017. The contract bid amount was $13,944,885 and change orders are at 1.43% of contract. While we are nearly finished with Phase I of our Long Term Capital Improvement Plan at the Treatment plant we have also begun pre-design for Phase II. Phase II will include demolishing the older digesters (#2 and #3) and cleaning and rehabilitating Digester #1. Then we will move on to upgrades or rehabilitation at the Influent and Effluent pump station buildings, completing conversion of all PLCs, and repurposing the Chlorine Bldg.

The first phase of plant rehabilitation includes the following functional areas:

- Electrical System Improvements
- RAS Pump Piping
- Thickener Replacement Pre-Design
- Digester Firm Capacity Improvements
- #1 Water Improvements
- #3 Water Improvements
- Dewatering Improvements
- Standby and Main Power Reliability Improvements
- Standby Blower Replacement and Blower Energy Efficiency Improvements
- Hypochlorite and Sodium Bisulfite Improvements
- Storm Water Improvements

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 $850,000 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. Significant projects include the outfall and force main that cross the south finger of the Carmel Lagoon, the Carmel Meadows line on the hillside, Hatton Canyon, and Larson Field. We're working on all of these projects as quickly and as smartly as possible.

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
2017-18

Description	2015-16 Actual	2015-16 Budget	2015-16 % of Budget	Est. 2016-17 Actual	Est. 2016-17 Budget	Est. 2016-17 % of Budget	Proposed 2017-18 Budget	% Chg. Prior Yr. Budget	Projected 2018-19 Budget	% Chg. Prior Yr. Budget
Beginning Fund Balance	24,150,205	24,460,414		23,720,740	21,528,095		15,787,494		13,518,984	
Operating Revenues	7,732,160	7,352,595	105.16%	7,960,000	7,947,301	100.16%	8,524,382	7.26%	8,749,478	2.64%
	7,732,160	**7,352,595**	105.16%	**7,960,000**	**7,947,301**	100.16%	**8,524,382**	7.26%	**8,749,478**	2.64%
Op Expend. (less deprec.)										
Treatment	2,981,186	3,514,144	84.83%	2,442,516	2,456,006	99.45%	2,613,270	6.40%	2,684,272	2.72%
Maintenance - Plant	0	0	n/a	1,207,430	1,207,430	n/a	1,345,282	11.42%	1,377,707	2.41%
Maintenance - Field	0	0	n/a	111,476	111,476	n/a	136,045	22.04%	136,890	0.62%
Administration	947,320	1,422,034	66.62%	1,536,556	1,542,042	99.64%	1,146,047	-25.68%	1,233,941	7.67%
Collection	1,007,235	1,189,416	84.68%	1,031,103	1,119,431	92.11%	1,115,413	-0.36%	1,076,229	-3.51%
Non-Departmental	0	0	n/a	0	0	n/a	465,000	n/a	490,000	5.38%
Reclamation Project	450,904	503,702	89.52%	506,100	506,100	100.00%	519,945	2.74%	535,178	2.93%
Total Operating Exp	**5,386,644**	**6,629,296**	81.26%	**6,835,181**	**6,942,485**	98.45%	**7,341,003**	5.74%	**7,534,217**	2.63%
Operating Gain/(Loss) (exclusive of depreciation)	2,345,516	723,299	324.28%	1,124,819	1,004,816	111.94%	1,183,380	17.77%	1,215,261	2.69%
Depreciation Expense	2,556,336	2,559,000	99.90%	2,661,000	2,661,000	100.00%	2,661,000	0.00%	2,661,000	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)	**(215,681)**	**(1,840,561)**	11.72%	**(1,541,041)**	**(1,661,044)**	92.78%	**(1,482,480)**	-10.75%	**(1,450,599)**	-2.15%
Non Operating Revenues	5,234,174	5,745,454	91.10%	4,075,730	5,653,096	72.10%	4,407,067	-22.04%	3,282,630	-25.51%
Non Operating Expend.	221,638	215,563	102.82%	218,813	218,813	100.00%	216,506	-1.05%	213,762	-1.27%
Net Income/(Loss)	**4,796,856**	**3,689,331**	130.02%	**2,315,876**	**3,773,239**	61.38%	**2,708,080**	-28.23%	**1,618,269**	-40.24%
Capital Budget										
Equipment Purchases										
Administration	0	0	n/a	0	0	n/a	7,000	n/a	12,000	71.43%
Maintenance	0	0	n/a	0	0	n/a	58,013	n/a	51,000	n/a
Collections	31,552	230,000	13.72%	80,000	210,840	37.94%	90,000	-57.31%	135,000	50.00%

Carmel Area Wastewater District
Budget Summary
2017-18

Description	2015-16 Actual	2015-16 Budget	2015-16 % of Budget	Est. 2016-17 Actual	Est. 2016-17 Budget	Est. 2016-17 % of Budget	Proposed 2017-18 Budget	% Chg. Prior Yr. Budget	Projected 2018-19 Budget	% Chg. Prior Yr. Budget
Treatment	100,000	332,500	30.08%	144,060	168,601	85.44%	103,437	-38.65%	29,000	n/a
Capital Improvement Projects										
Administration	0	0	n/a	0	12,000	n/a	30,000	150.00%	20,000	-33.33%
Maintenance	0	0	n/a	0	0	n/a	95,000	n/a	0	-100.00%
Collections	247,975	857,510	28.92%	540,040	1,267,428	42.61%	1,270,000	0.20%	1,985,000	56.30%
Treatment	1,428,787	2,071,500	68.97%	762,070	1,098,000	69.41%	44,000	-95.99%	40,000	n/a
Treatment Long Term Capit	5,979,203	5,694,000	105.01%	5,560,030	9,422,831	59.01%	5,945,000	-36.91%	3,375,000	-43.23%
Total Capital Budget	**7,787,517**	**9,185,510**	84.78%	**7,086,200**	**12,179,700**	58.18%	**7,642,450**	-37.25%	**5,647,000**	-26.11%
Ending Fund Balance	**23,720,740**	**21,528,095**	110.19%	**21,616,276**	**15,787,494**	136.92%	**13,518,984**	-14.37%	**12,156,113**	-10.08%

Capital Budget Summary

Carmel Area Wastewater District

Capital Budget Summary 2017-18

	ITEM	ALLOCATION						Totals
		Admin	Maintenance	Collection	Treatment	PBCSD	Recla-mation	
1	**CIP Projects for Administration**	$ 30,000						$ 30,000
2	**CIP Maintenance - Plant**		$ 95,000					$ 95,000
3	**CIP Projects for Collection System**			$ 1,270,000				$ 1,270,000
4	**CIP Projects for Treatment & Disposal**				$ 29,348	$ 14,652	$ -	$ 44,000
5	**CIP Long Term Capital Plan for Treatment & Disposal**				$ 3,733,533	$ 1,863,968	$ 347,500	$ 5,945,001
	Total CIP	$ 30,000	$ 95,000	$ 1,270,000	$ 3,762,881	$ 1,878,620	$ 347,500	$ 7,384,001
	Capital Outlay Items							
1	Email server replacement	$ 7,000						$ 7,000
2	Hacienda Station generator & transfer switch			$ 50,000				$ 50,000
3	Replace pumps t Highlands Pump Station			$ 40,000				$ 40,000
4	Filtrate pump replacement - Dewatering Bldg		$ 21,344			$ 10,656		$ 32,000
5	Bobcat trailer		$ 36,669			$ 18,332		$ 55,000
6	Mainsaver Connect program				$ 7,318	$ 3,654	$ 5,478	$ 16,450
7	Influent Pump Station wet well mixing system				$ 8,671	$ 4,329		$ 13,000
8	Thermo Scientific Gallery Discrete Analyzer				$ 15,008	$ 7,493	$ 22,500	$ 45,000
	Total Capital Outlay	$ 7,000	$ 58,013	$ 90,000	$ 30,997	$ 44,463	$ 27,978	$ 258,450
	Total CIP & Capital Outlay 17-18	**$ 37,000**	**$ 153,013**	**$ 1,360,000**	**$ 3,793,878**	**$ 1,923,083**	**$ 375,478**	**$ 7,642,451**

Carmel Area Wastewater District
Capital Budget Summary 2018-19

	ITEM	ALLOCATION						Totals
		Admin	Maintenance	Collection	Treatment	PBCSD	Recla-mation	
1	**CIP Projects for Administration**	$ 20,000						$ 20,000
2	**CIP Maintenance - Plant**		$ -					$ -
3	**CIP Projects for Collection System**			$ 1,985,000				$ 1,985,000
4	**CIP Projects for Treatment & Disposal**				$ 26,680	$ 13,320		$ 40,000
5	**CIP Long Term Capital Plan for Treatment & Disposal**				$ 2,251,125	$ 1,123,875		$ 3,375,000
	Total CIP	$ 20,000	$ -	$ 1,985,000	$ 2,277,805	$ 1,137,195	$ -	$ 5,420,000
	Capital Outlay Items							
1	Admin Office copy machine	$ 12,000						$ 12,000
2	Replace Generac portable generator			$ 70,000				$ 70,000
3	Collection Superintendent truck			$ 45,000				$ 45,000
4	Replace pumps at Monte Verde Pump Station			$ 20,000				$ 20,000
5	Plant truck		$ 40,000					$ 40,000
6	Skid Steer Loader - accessories		$ 11,000					$ 11,000
7	Siemens DeChlorination Deox 2000 Analyzer				$ 8,671	$ 4,329		$ 13,000
8	Lab Autoclave				$ 5,336	$ 2,664	$ 8,000	$ 16,000
	Total Capital Outlay	$ 12,000	$ 51,000	$ 135,000	$ 14,007	$ 6,993	$ 8,000	$ 227,000
	Total CIP & Capital Outlay 18-19	**$ 32,000**	**$ 51,000**	**$ 2,120,000**	**$ 2,291,812**	**$ 1,144,188**	**$ 8,000**	**$ 5,647,000**

Administration Dept

CAWD Administration Dept

FY 2017/18 *thru* 2021/22

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	Unscheduled
CAPITAL PROJECTS							
1	AMBAG Ortho-Imagery Project						$ 12,000
2	Network Virtual Server Project	$ 30,000					
3	Interior Painting		$ 20,000				
4	Replace Administrative Office Carpeting						$ 20,000
5	Replace Administrative Office Furnaces						$ 6,500
CAPITAL PURCHASES							
a	Server Replacement	$ 7,000					
b	General Manager's Sedan						$ 30,000
c	Admin Copy Machine		$ 12,000				
	TREATMENT & DISPOSAL TOTAL	**$ 37,000**	**$ 32,000**	**$ -**	**$ -**	**$ -**	**$ 68,500**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 37,000**	**$ 32,000**	**$ -**	**$ -**	**$ -**	**$ 68,500**

#1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**AMBAG Ortho-Imagery Project**	Contact:	Lander
Dept:	Admin	Type:	Administration
Total Cost:	$ 12,000	Useful Life:	5 years
CY Budget	$ -	Category:	Capital Improvement
Account:		Urgency:	3 = Important
Inception date:		Carry Forward:	No

Description

Geographic Information System (GIS) is the most advanced tool for analyzing spatial information in an organized manner. Regional Analysis & Planning Services (RAPS), the non-profit branch of Association of Monterey Bay Governments (AMBAG) has taken a leadership role in developing a region-wide GIS. Many agencies in the Cental Coast region have not had the finances or technical expertise to develop their own GIS infrastructure. The cost of software and hardware to support GIS is significant. RAPS is in a unique position to be able to provide GIS support for agencies in an efficient and cost effective manner. Multiple local jurisdictions and Special Districts participated in 2003 and 2007 Ortho-Imagery Project managed by AMBAG. The 2007 imagery data has passed its shelf life. An updated project is planned for 2017.

High resolution orthorectified images combine the image characteristics of an aerial photograph with the geometric qualities of map. An orthoimage is a uniform-scale image where corrections have been made for feature displacement such as building tilt and for scale variations caused by terrain relief, sensor geometry, and camera tilt. Georeferenced orthoimages support a variety of geographic information analysis and mapping applications, and provide the foundation for most public and private Geographic Information Systems.

Note: This information is not freely available. The County charges for GIS information. Google information is not available as LIDOR.

Justification

The project will assist in the engineering and design of infrastructure projects. Orthoimagery images allow the user to measure distance, calculate areas, determine shapes of features, calculate directions, determine accurate coordinates, determine land cover and use, perform change detection, and update maps. CAWD will rely on the data to map land-property boundaries and to manage infrastructure assets. It will provide baseline data for potential grant projects. And it will provide data for the sea level rise study. Joining with other local agencies makes this project more cost effective. AMBAG manages the project for all partnering agencies and Special Districts. Cost share overlap areas and multiple agencies will reduce the cost significantly.

AMBAG provides technical support via member services or RAPS

Note: CAWD did not participate in the 2003 or 2007 projects.

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
							$ 12,000	$ 12,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Study						$ 12,000	$ 12,000
Total	$ -	$ -	$ -	$ -	$ -	$ 12,000	$ 12,000

#2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Network Virtual Server Project**	Contact:	Buikema
Dept:	Admin	Type:	Administration
Total Cost:	$ 30,000	Useful Life:	5 years
CY Budget	$ 30,000	Category:	Capital Equipment
Account:	2735	Urgency:	3 = Important
Inception date:		Carry Forward:	No

Description

Server improvements are needed to keep pace with the ever improving technology. This project was implemented in 2013-14, and it is anticipated that server upgrades will be required within a 4 year period. The server installed in 2013-14 has been operating without any issues. A considerable reduction in physical space needed to house the servers has been realized already.

Current equipment installed in 2012-13

Justification

Expected life span of servers 4 years - routine replacement

The most visible benefits to the District by this implementation are:
1) reduced number of servers means less electricity used and less cooling requirements,
2) improved backup and recovery,
3) improved connectivity, and
4) improved performance metric.

Current equipment installed in 2012-13

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
		$ 30,000						$ 30,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Equipment	$ 30,000						$ 30,000
Total	$ 30,000	$ -	$ -	$ -	$ -	$ -	$ 30,000

#3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Interior Painting**	Unscheduled	Lander
Dept:	Admin	Type:	Administration
Total Cost:	$ 20,000	Useful Life:	15 years
CY Budget	$ -	Category:	Maintenance
Account:		Urgency:	3 = Important
Inception date:		Carry Forward:	No

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.

Justification

We have no record of a complete repaint on this office since initial construction in 1990. Wear and tear on the building is very evident.

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
			$ 20,000					$ 20,000

Funding Source

Primary: O&M Budget

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Contract		$ 20,000					$ 20,000
Total	$ -	$ 20,000	$ -	$ -	$ -	$ -	$ 20,000

#4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Replace Administrative Office Carpeting**	Unscheduled	Lander
Dept:	Admin	Type:	Administration
Total Cost:	$ 20,000	Useful Life:	20 years
CY Budget	$ -	Category:	Maintenance
Account:	2760	Urgency:	5 = Future
Inception date:		Carry Forward:	No

Description

It is anticipated that the Adminstrative office building carpeting, which has never been replaced, will need to be replaced within the next 5 years. 400 square yards $45/SY. 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.

Justification

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

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
							$ 20,000	$ 20,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Contract						$ 20,000	$ 20,000
Total	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000

#5 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Replace Administrative Office Furnaces**	Unscheduled	Lander
Dept:	Admin	Type:	Rehab
Total Cost:	$ 6,500	Useful Life:	15 years
CY Budget	$ -	Category:	Maintenance
Account:		Urgency:	5 = Future
Inception date:		Carry Forward:	No

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 one unit in Jan 2009.

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 2015 gas usage numbers (utilizing 80% and 96%) the potential yearly savings in natural gas from a furnace upgrade now would be $155.

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
							$ 6,500	$ 6,500

Funding Source

Primary: O&M Budget

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Equip/Service						$ 6,500	$ 6,500
Total	$ -	$ -	$ -	$ -	$ -	$ 6,500	$ 6,500

#a FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Server Replacement**	Unscheduled	Buikema
Dept:	Admin	Type:	Lab
Total Cost:	$ 7,000	Useful Life:	15 years
CY Budget	$ 7,000	Category:	Capital Equipment
Account:		Urgency:	3 = Important
Inception date:		Carry Forward:	No

Description

Assuming no changes in technology, the existing mail server will be four years old in 2017-18 and should be replaced. The estimate is for hardware and installation.

Justification

Replaced in 2013-14 the server has a four year life span and is routinely replaced. If possible, we will extend; however, this is a critical piece of infrastructure and must be maintained.

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
		$ 7,000						$ 7,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Equipment	$ 7,000						$ 7,000
Total	$ 7,000	$ -	$ -	$ -	$ -	$ -	$ 7,000

#b FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**Admin Copy Machine**	Unscheduled	Buikema
Dept:	Admin	Type:	Administration
Total Cost:	$ 12,000	Useful Life:	10 years
CY Budget	$ -	Category:	Capital Equipment
Account:		Urgency:	3 = Important
Inception date:		Carry Forward:	No

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.

Justification

The Admin copy machine receives considerable use every working day and is a critical piece of office equipment. While technology will certainly change over the next five years; based on current usage we are planning for its replacement with an upgraded machine.

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
			$ 12,000					$ 12,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Equipment		$ 12,000					$ 12,000
Total	$ -	$ 12,000	$ -	$ -	$ -	$ -	$ 12,000

#c FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	**General Manager's Sedan**	Contact	Buikema
Dept:	Admin	Type:	Administration
Total Cost:	$ 30,000	Useful Life:	15 years
CY Budget	$ -	Category:	Capital Equipment
Account:		Urgency:	3 = Important
Inception date:		Carry Forward:	No

Description

The current vehicle 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

Justification

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

Expenditures:	Prior	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
							$ 30,000	$ 30,000

Funding Source

Primary: Capital Reserves

Budget Impact/Other

Budget Items	17/18	18/19	19/20	20/21	21/22	Unsched.	Total
Labor							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other - Equipment						$ 30,000	$ 30,000
Total	$ -	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000

Maintenance Field - Maintenance

CAWD Maintenance Field - Maintenance

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	NFPA 70b compliance certification on industrial electrical applications	$ 40,000						
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
	TREATMENT & DISPOSAL TOTAL	**$ 40,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 40,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

#1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: NFPA 70b compliance certification on industrial electrical applications
Dept: Collections
Total Cost: $ 40,000
CY Budget $ 40,000
GL Account:

Contact: Stevens
Area Pump Station
Asset Type: Electrical
Avg Useful Life: 5 years
Est Residual Life: 5 years
% Consumed Life: 100
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

All collections system lift station electrical panels and equipment.

Year Built: 1970
Rehabilitation Date (Extendng life of Asset): n/a
Rehab Life Extension: n/a
Asset Condition Rating:

Justification

NFPA 70b Chpt. 1 section requires all industrial electrical applications to be inspected and confirmed to be in a safe operating condition every 5 years in order to reduce hazards to life and property due to malfunction or failure of electrical systems or equipment. Staff proposes hiring a qualified electrical contractor to inspect all electrical panels and equipment and perform an Electrical Preventive Maintenance (EPM) progarm.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	10	Substantial Widespread Health Effects 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	9	Loss of Process Functionality for less than 1 week
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Management	Predictive & Preventative Maintenance
Non Asset Risk Management	Take Asset out of Service

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 25,000						$ 25,000
Engineering								$ -
Parts & Supplies		$ 15,000						$ 15,000
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ 40,000

Maintenance Plant
Capital Improvement Projects

CAWD Maintenance Plant - CIP

FY 2017/18 *thru* 2022/22

Project #	Reliability Centered Maintenance	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Reliability Centered Maintenance	$ 45,000	$ -	$ -	$ -	$ -	$ -	
2	Chemical Containment Area	$ 50,000						
3								
4								
5								
6								
7								
	TREATMENT & DISPOSAL TOTAL	**$ 95,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 95,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Long Term Capital Projects are on Separate Worksheet

#1 **FY 2017-18 Budget**

Project Name:	Reliability Centered Maintenance	
Dept:	Maintenance	
Total Cost:	$	45,000
CY Budget	$	45,000
GL Account:		

Contact:	Stevens
Avg Useful Life	15 years
Asset Type	Plant
% Consumed Life:	
Category:	Capital Improvement
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The RCM apporach uses various tools and puts forth the vision of how to evaluate equipment to prolong equipment useful life and avoid process system failures.

Year Built: n/a
Rehabilitation Date (Extendng life of Asset):
Rehab Life Extension:
Asset Condition Rating:

Justification

Staff proposes CAWD hire a qualified contractor to conduct an Equipment Criticality Assessment (ECA), reliability centered maintenance (RCM) study and assist in the development of a proactive maintenance procedure and the implementation of a preventative maintenance progarm. This project will center on the new digester boiler system and will include the following: Asset hierarchy, Critically analysis, operator driven tasks and maintenance tasks. Using this format, staff will be able to evaluate equipment and have a vision into what is RCM.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact		
Safety COF	5	Minor Injury/Health Risk (Readily Treatable)
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	5	Major In-House Repair Work less than $25,000

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 Capital Reserves

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 45,000						$ 45,000
	Total	$ 45,000	$ -	$ -	$ -	$ -	$ -	$ 45,000

#2 **FY 2017-18 Budget**

Project Name:	Chemical Containment Area	
Dept:	Maintenance	
Total Cost:	$	50,000
CY Budget	$	50,000
GL Account:		

Contact:	Stevens
Avg Useful Life:	5 years
% Consumed Life:	
Category:	Maintenance
Urgency:	2 = Very Important
Carry Forward:	Yes

Asset Description

Construction of a concrete containment area approximately 14 feet wide and 25 feet long with a minimum 12 inch high concrete containment, adjacent to the fuel storage tanks at the Maintenance building. This area will serve as a protected area where petroleum based material will be stored. The area will be covered with a metal roof structure and screened from view. This area will take into consideration flood protection and pollution control. Note: The project is a carry forward from 2016-17 budget of $45,000.

Year Built: n/a
Rehabilitation Date (Extendng life of Asset):
Rehab Life Extension:
Asset Condition Rating:

Justification

Prior to the demolition of the old shop building that was located where the new locker room is today all petroleum product was stored there. Since that time staff has attempted to keep all the material in the existing storage building next to Tertiary. Staff has since recognized that the storage of our oils and fluids in that building is not the best use of the space and having the material closer to the shop where it is used would be easier to access. The proposed containment will also comply with the NPDES requirements for proper pollution control.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
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	9	Loss of Process Functionality for less than 1 week
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Corrective Maintenance
Non Asset Risk Management	Take Asset out of Service

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 50,000						
	Total	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 45,000

Maintenance Plant

Capital Purchases

CAWD Maintenance Plant - Capital Purchases

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Filtrate Pump replacement dewatering building	$ 32,000						
2	Plant truck		$ 40,000					$ 45,000
3	Skid Steer Loader- Accessories ex. Sweeper, bucket attachment		$ 11,000		$ 15,000			$ 15,000
4	Utility Cart			$ 8,000				
5	Covered Parking for equipment						$ 17,000	
6	Bobcat trailer	$ 55,000						
7								
8								
9								
10								
11								
12								
	TREATMENT & DISPOSAL TOTAL	**$ 87,000**	**$ 51,000**	**$ 8,000**	**$ 15,000**	**$ -**	**$ 17,000**	**$ 60,000**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ 29,000	$ 17,000	$ 2,667	$ 5,000	$ -	$ 5,667	$ 20,000
	CAWD COST	**$ 58,000**	**$ 34,000**	**$ 5,333**	**$ 10,000**	**$ -**	**$ 11,333**	**$ 40,000**

1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Filtrate Pump replacement dewatering building
Dept:	Maintenance
Total Cost:	$ 32,000
CY Budget	$ 32,000
GL Account:	

Contact:	Stevens
Area	DeWatering Bldg
Asset Type:	Building Machinery
Avg Useful Life:	15 years
Est Residual Life:	1 year
% Consumed Life:	
Category:	Maintenance
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Filtrate pumps are used to return press water to the headworks. Replacment of the 10hp pump and assoicated plumbing/electrical connections. Also includes touchup painting when complete.

Justification

These pumps are required when using either the belt press or the new screw press that will be installed as part of the Phase 1 project. Filtrate pumps return press water to the headworks and the two pumps function in redundancy. One of the existing pumps has been replaced due to failure last year, and the second has begun to leak very badly. This pump has reached the end of life based on hours in service, and visual inspection indicates that there will be a very low probability of reconstruction of this asset.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	Cannot be down a month
Safety COF	No impact to Safety
Spill/Odor/Noise COF	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	No Impact to Environment
Process Functionality COF	Maintaining Process Functionality requires staff divert from other work
Cost COF	Major In-House Repair Work less than $25K

Asset Risk Management Strategy

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

Funding Source

Primary- Capital Budget

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ 32,000						$ 32,000
	$ 32,000	$ -	$ -	$ -	$ -	$ -	$ 32,000

2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Plant truck
Dept:	Maintenance
Total Cost:	$ 85,000
CY Budget	$ -
GL Account:	

Contact:	Lander
Area	Vehicle
Asset Type:	Vehicle Fleet
Avg Useful Life:	25 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Equipment
Urgency:	4 = Less Important
Carry Forward:	No

Asset Description

Replacement of aging plant vehicle. To be used by plant staff for District related errands and occasionally for staff to take to local meetings or for transportation to conferences. Vehicle is proposed to be a medium duty pickup.

Justification

In 2016 the Chevy flat bed pickup was decommissioned due to needed repairs beyond the value of the vehicle and because it was no longer going to pass SMOG testing. In this event the truck could no longer be used off plant grounds so it had very little utility for the District. This truck was used primarily by the Maintenance staff. Staff now use electric carts for most in-plant transport of tools and materials, however a pickup is occasionally needed to pick up equipment or supplies from local retailers. This vehicle would be available for all staff to utilize when needed.

Currently the use of plant vehicles is in a state of transition. All plant vehicles are being made available for all departments to use and the District does have three trucks of varying age to be used in this capacity. This truck will not be replaced immediately in order to give staff a year to determine if this vehicle is necessary, or if determined to be needed, then this year will give staff time to determine what type of truck will best serve the District. (i.e. since a flatbed truck is being decommissioned do we need that type of truck or another standard bed truck?)

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	Can be our of service indefinitely
Safety COF	No impact to Safety
Spill/Odor/Noise COF	No effect on Spills/Odors/Noise
Permit/Environmental COF	No Impact on Environment
Process Functionality COF	No change in Process Functionality
Cost COF	No Cost

Asset Risk Management Strategy

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

Funding Source

Primary- Capital Budget

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ -	$ 40,000	$ -	$ -	$ -	$ 45,000	$ 85,000
	$ -	$ 40,000	$ -	$ -	$ -	$ 45,000	$ 85,000

3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Skid Steer Loader- Accessories ex. Sweeper, bucket attachment
Dept:	Maintenance
Total Cost:	$ 41,000
CY Budget	$ -
GL Account:	

Contact:	Stevens
Area	Vehicle
Asset Type:	Vehicle Fleet
Avg Useful Life:	20 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Equipment
Urgency:	4 = Less Important
Carry Forward:	No

Asset Description

A skid steer loader is budgeted to be purchased in FY2016-17. These budget items are to purchase attachments to the loader which will provide additional utility. The loader comes standard with loader bucket. Staff proposes a sweeper attachment in FY18-19 and a backhoe hydraulic bucket in FY21-20.

Justification

During the Phase 1 improvements the onsite contractor has been using a skid steer loader for dozens of tasks. The vehicle has been proven to be very versatile. It is used with a sweeper attachment weekly for keeping the plant roads free of debris. It also has been used with the backhoe attachment for small digging jobs. These attachments were demonstrated to be very useful and Staff wishes to retain this capability after the contractor has finished. Staff feels these attachments would be used enough on site to make purchase worthwhile.

Condition Rating / Consequence of Failure (COF)

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

Asset Risk Management Strategy

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

Funding Source

Primary- Capital

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ -	$ 11,000	$ -	$ 15,000	$ -	$ 15,000	$ 41,000
	$ -	$ 11,000	$ -	$ 15,000	$ -	$ 15,000	$ 41,000

4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Utility Cart
Dept:	Maintenance
Total Cost:	$ 8,000
CY Budget	$ -
GL Account:	

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

Asset Description

Electric utility cart to replace existing fleet cart. Cart will be simillar to a Taylor-Dunn or Cushman model flat bed vehicle for use by plant staff to transport materials to worksites inside the plant grounds.

Justification

Management has begun to transition from gas vehicles on the plant grounds to only using electric/solar carts. This is safer than larger gas vehicles and has been working out well. As plant carts reach the end of their service life they will be replaced. A couple of carts are more than 15 years old. Staff will continue to maintain them well in hopes of extending service life however it is expected that the next cart to be replaced will be within the next 5 years.

Condition Rating / Consequence of Failure (COF)

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

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmnt	Take Asset out of Service

Funding Source

Primary- Capital

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ -	$ -	$ 8,000	$ -	$ -	$ -	$ 8,000
	$ -	$ -	$ 8,000	$ -	$ -	$ -	$ 8,000

5 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Covered Parking for equipment
Dept:	Maintenance
Total Cost:	$ 17,000
CY Budget	$ -
GL Account:	

Contact:	Stevens
Area	Vehicle
Asset Type:	Support Equipment
Avg Useful Life:	20 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Improvement
Urgency:	4 = Less Important
Carry Forward:	No

Asset Description

Parking shed for electric carts and other plant machinery to be constructed adjacent to the metal storage building. To be a carport constructed of steel on concrete foundation.

Justification

To prolong the life of the electric carts used on the treatment plant grounds the vehicles need to be parked under a cover so rain and sunlight do not weather the carts too quickly. Due to storage constraints there are few places to park carts inside existing buildings. This shelter will provide a parking area for the vehicle carts. Staff proposes not to construct this until Phases 1 & 2 have been completed in case some design changes conflict with where this structure is proposed to go.

Condition Rating / Consequence of Failure (COF)

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

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmnt	

Funding Source

Primary- Capital Budget

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ -	$ -	$ -	$ -	$ -	$ 17,000	$ 17,000
	$ -	$ -	$ -	$ -	$ -	$ 17,000	$ 17,000

6 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Bobcat Tractor
Dept:	Maintenance
Total Cost:	$ 55,000
CY Budget	$ 55,000
GL Account:	

Contact:	Stevens
Area	Vehicle
Asset Type:	Vehicle Fleet
Avg Useful Life:	20 years
Est Residual Life:	20 years
% Consumed Life:	
Category:	Capital Equipment
Urgency:	3 = Important
Carry Forward:	Yes

Asset Description

A skid steer compact loader, commonly referred to as "Bobcat", is a small loader, six feet long, five feet tall and wide. Skid steer loaders generally have a loader bucket for moving material such as dirt or sand, but can be converted to serve other duties such as a brush cutter, a hammer, a manhole cutter or raod grader. These attachments can be easily changed and rented on an as needed basis. The proposal also includes $5K for the purchase of a trailer to allow staff to transport bobcat to a field site for use.

Justification

This unit would benefit CAWD in many ways, it can be used by all departments, it is easy to transport and would be able to help complete small and large work requests. This unit would enable our Collections Department to better maintain easements, access remote manholes and help with manhole replacement. In addition this unit will be used by Maintenance and Operations staff to transport material, cut grass, trim trees, adn even become a street sweeper with the right attachments. The unit will have a Tier 4 engine. Initial purchase includes two attachments: a) bucket, and b) sweeper.

Condition Rating / Consequence of Failure (COF)

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

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmnt	

Funding Source

Primary- Capital Budget

Secondary- Capital Reserves

Budget Impact/Other

	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other	$ 55,000	$ -	$ -	$ -	$ -		$ 55,000
	$ 55,000	$ -	$ -	$ -	$ -	$ -	$ 55,000

Maintenance Plant

Maintenance

CAWD Maintenance Plant - Maintenance

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	NFPA 79 Operations electric control repair	$ 45,000						
2	Concrete Repair - Spalling on buildings, plugs, walkways	$ 30,000	$ 30,000					
3	Door Replacement	$ 30,000	$ 30,000					
4	Mini power centers Aeration 4 total	$ 25,000						
5	LIMS Software update/suport (50% Reclamation)	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	
6	Headworks 200 amp Feeder Panel Replacement	$ 10,000						
7	Outfall Inspection	$ 8,850	$ 8,850	$ 9,000	$ 9,000	$ 9,000	$ 9,500	
8	Chlorine gas system annual service	$ 7,000						
9	Aeration Station Suspended solids probes service contact with Hach	$ 4,857	$ 4,954	$ 5,053	$ 5,154	$ 5,257	$ 5,363	
10	TOC Annual Service (50% Reclamation)	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	
11	Moisture Analyzer Annual Service	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	
12	Polymer injection units	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	
13	Hach LDO probe annual maintenance	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	
14	Pressure transducer calibration	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	
15	Liquid Flow Meter Calibration	$ 700	$ 4,500	$ 700	$ 4,500	$ 700	$ 4,500	
16	Air Flow Meter Calibration (66% Reclamation)		$ 4,000		$ 4,000		$ 4,000	
17	Perimeter fencing replacement							$ 169,000
18	Various roof repair/replacement	$ 75,000	$ 75,000	$ 35,000	$ 35,000			
	TREATMENT & DISPOSAL TOTAL	**$ 259,637**	**$ 180,534**	**$ 72,983**	**$ 80,884**	**$ 38,187**	**$ 46,593**	**$ 169,000**
	RECLAMATION SHARE	$ 7,765	$ 10,405	$ 7,765	$ 10,405	$ 7,765	$ 10,405	$ -
	PBCSD SHARE	$ 83,873	$ 56,653	$ 21,718	$ 23,470	$ 10,131	$ 12,050	$ 56,277
	CAWD COST	**$ 167,999**	**$ 113,476**	**$ 43,501**	**$ 47,010**	**$ 20,292**	**$ 24,137**	**$ 112,723**

1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: NFPA 79 Operations electric control repair
Dept: Maintenance
Total Cost: $ 45,000
CY Budget $ 45,000
GL Account:

Contact: Stevens
Area Ops Bldg
Asset Type: Electrical
Avg Useful Life: 5 years
Est Residual Life: 5 years
% Consumed Life: 100
Category: Maintenance
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Operations building SCADA, telephone, signals and alarm systems maintenance.

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

Justification

NFPA 79 Section 1 sets forth the standard for all electronic controls 600v or less, which is used to control larger electrical equipment, which must be maintained to this standard of functionality and safety for the operations system. Staff will contract a qualified electrical contractor to perform an inspection and repair/testing of all effected systems.

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	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Management	Corrective Maintenance
Non Asset Risk Management	Take Asset out of Service

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 40,000						$ 40,000
Engineering								$ -
Parts & Supplies		$ 5,000						$ 5,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 45,000	$ -	$ -	$ -	$ -	$ -	$ 45,000

2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Concrete Repair - Spalling on buildings, plugs, walkways
Dept: Maintenance
Total Cost: $ 60,000
CY Budget $ 30,000
GL Account:

Contact: Stevens
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 25 years
Est Residual Life: 1 year
% Consumed Life: 100
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Spalling concrete is concrete that has broken up, faked, or become pitted. This is usually the result of a combination of poor installation and environmental factors that stress the concrete, causing it to become damaged. On a low level it can be purely cosmetic in nature, but it can also result in structural damage, such as damage to reinforcing bars positioned inside the concrete. For this reason it is important to address spalling when it first starts to appear.

The signs of spalling are easy to spot. The surface will become rough and flaky, and may pit. In some cases, chunks of concrete break loose from the installation. The concrete can also start to crack, especially if large chunks break off. It can be repaired by totally removing the damaged section of concrete and filling it in with cement.

Year Built: various
Rehabilitation Date: n/a
Rehab Life Extension:
Asset Condition Rating:

Justification

There are several products on the market designed to repair concrete spalling. The District will address areas throughout the plant to ensure the length of asset life is maximized.

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	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

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	Take Asset out of Service

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 25,000	$ 25,000					$ 50,000
Engineering								$ -
Parts & Supplies		$ 5,000	$ 5,000					$ 10,000
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 30,000	$ 30,000	$ -	$ -	$ -	$ -	$ 60,000

3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Door Replacement
Dept: Maintenance
Total Cost: $ 60,000
CY Budget $ 30,000
GL Account:

Contact: Stevens
Area Misc Structures
Asset Type: Building Machinery
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life: 100
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Trestment Facility building doors, louvers and vents provide safety and ventaliation to facility buildings.

Rehabilitation Date: various
Rehab Life Extension:
Asset Condition Rating:

Justification

Treatment facility doors, louvers and vents need to be replaced as weather has taken it's toll and they have come to the end of useful life. Where possible, the doors will be refinished. However, in many cases the doors have been so neglected that the best option is replacement. Maintenance has been working on doors throughout the facility and plans on completing this project in 2018-19.

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	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	Take Asset out of Service

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 30,000	$ 30,000					$ 60,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 30,000	$ 30,000	$ -	$ -	$ -	$ -	$ 60,000

4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Mini power centers Aeration 4 total
Dept: Maintenance
Total Cost: $ 25,000
CY Budget $ 25,000
GL Account:

Contact: Stevens
Area Misc Structures
Asset Type: Building Machinery
Avg Useful Life: 20 years
Est Residual Life: 1 year
% Consumed Life: 100
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The power centers at Aeration provide 120/208v for control of electrical devices such as air valves, samplers, lighting, etc.

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

Justification

The power centers are past their useful life and should be replaced to comply with the NEC code and the NFPA 70e standard.

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	5	Short Duration; Small qty Event Offsite; Small no. of Complaints
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	Take Asset out of Service

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 10,000						$ 10,000
Engineering								$ -
Parts & Supplies		$ 15,000						$ 15,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 25,000	$ -	$ -	$ -	$ -	$ -	$ 25,000

5 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: LIMS Software update/suport (50% Reclamation)
Dept: Maintenance
Total Cost: $ 67,980
CY Budget $ 11,330
GL Account:

Contact: Stevens
Area Misc Structures
Asset Type: Instrumentation
Avg Useful Life: 1 year
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Laboratory Information Management System (LIMS) software update and annual support.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

LIMS is used daily to generate reports and track data more efficiently.

We need to ensure we have the latest updates and assistance from software company tech staff to minimize any downtime. Keeping up-to-date with the software also allows us to take advantage of any fixes or improvements made to the program.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 3 Cannot be down a month
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 67,980
Total		$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 11,330	$ 67,980

6 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Headworks 200 amp Feeder Panel Replacement
Dept: Maintenance
Total Cost: $ 10,000
CY Budget $ 10,000
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Pipe (Process Buried)
Avg Useful Life: 50 years
Est Residual Life: 25 years
% Consumed Life: 40
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The headworks power panel is the 120/208 power for all electrical devices at headworks. This panel is the control side for all motors, controllers and lighting at headworks.

Year Built: 1972
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The panel is past its useful life and should be replaced toconform with the NEC code and the NFPA 70e standard. This improvement is planned to be installed with the improvements anticipated as part of Phase II construction; however, as a precaution staff plans to purchase the correct replacement equipment and have it available in the event that the panel shows signs of imminent failure.

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	5	Short Duration; Small qty Event Offsite; Small no. of 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		

Asset Risk Management Strategy

Capital Improvement Risk	Plan Rehabilitation/Replacement
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	Take Asset out of Service

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 5,000						$ 5,000
Engineering								$ -
Parts & Supplies		$ 5,000						$ 5,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 10,000	$ -	$ -	$ -	$ -	$ -	$ 10,000

7 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Outfall Inspection
Dept: Maintenance
Total Cost: $ 54,200
CY Budget $ 8,850
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Pipe (Process Buried)
Avg Useful Life: 50 years
Est Residual Life: 25 years
% Consumed Life: 40
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Video inspection of the ocean outfall discharge pipe. This is the second year of a fixed 3 year contract with Global Diving & Salvage out of Vallejo, CA

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Required by National Pollutant Discharge Elimination system (NPDES) discharge permit in Section E.IX.C "At least one time per year, the Discharger shall visually inspect the outfall struture and report in the Annual Report regarding its physical integrity. The inspection shall note leaks and potential leaks using dye studies if necessary."

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		
Permit/Environmental COF	10	Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	10	Loss of Process Functionality Indefintely
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$8,850	$8,850	$9,000	$9,000	$9,000	$9,500	$ 54,200
Total		$ 8,850	$ 8,850	$ 9,000	$ 9,000	$ 9,000	$ 9,500	$ 54,200

8 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Chlorine gas system annual service
Dept:	Treatment
Total Cost:	$ 7,000
CY Budget	$ 7,000
GL Account:	

Contact:	Waggoner
Area	Chlor/Dechlor Bldg
Asset Type:	Instrumentation
Avg Useful Life:	1 year
Est Residual Life:	
% Consumed Life:	
Category:	Maintenance
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

Annual service of the Chlorine vacuum system including all switch over valves, chlorinators, and standby vacuum system. This will be the last required service because of the new Sodium Hypochlorite bldg.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This annual service is required for continued safe operation and meeting the manufacturer's required service interval.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF	9	Major Health Risk (Chronic/Long Recovery) or Death
Spill/Odor/Noise COF		
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 7,000						$ 7,000
	Total	$ 7,000	$ -	$ -	$ -	$ -	$ -	$ 7,000

9 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Aeration Station Suspended solids probes service contact with Hach
Dept: Treatment
Total Cost: $ 30,638
CY Budget $ 4,857
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Process Equip (Solid)
Avg Useful Life: 1 year
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The suspended solids probes are used for continuous monitoring of the Activated Sludge process which is critical to correct operation of the plant process. They help to monitor and control suspended solids. This process is vital to meeting NPDE discharge requirements and contaminant removal.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

This service interval meets the manufacturer's recommendation to ensure proper operation, reliability, and accuracy.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	5	Violate Weekly Average Effluent Limitation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 4,857	$ 4,954	$ 5,053	$ 5,154	$ 5,257	$ 5,363	$ 30,638
	Total	$ 4,857	$ 4,954	$ 5,053	$ 5,154	$ 5,257	$ 5,363	$ 30,638

10 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: TOC Annual Service (50% Reclamation)
Dept: Treatment
Total Cost: $ 25,200
CY Budget $ 4,200
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Instrumentation
Avg Useful Life: 1 year
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 1 = Critical
Carry Forward: No

Asset Description

Total Organic Carbon/Total Nitrogen (TOC/TN)

TOC is the amount of carbon found in an organic compound and it used as a non-specific indicator of water quality. A typical analysis measures both total carbon present and the so-called "inorganic carbon". TOC analysis is a quick and accurate alternative to the more lengthy biological oxygen demand (BOD) and chemical oxygen demand (COD) tests traditionally reserved for assessing wastewater.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Used to supply Ops with F/M data for better plant monitoring and for detecting any biofouling on Reverse Osmosis membranes. Need to ensure minimal downtime; therefore, annual maintenance by company tech is warranted.
F/M = Food to Micro-organism ratio

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt

Funding Source

Primary Operating Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 25,200
	Total	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 25,200

11 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Moisture Analyzer Annual Service
Dept:	Treatment
Total Cost:	$ 15,000
CY Budget	$ 2,500
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Instrumentation
Avg Useful Life:	1 year
Est Residual Life:	
% Consumed Life:	
Category:	Maintenance
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

Moisture Analyzer is used by Operations to determined the percent solids for primary, secondary, and tertiary processes. It enables staff to make process changes where and when necessary.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This piece of equipment will be used more frequently by Lab and Operational staff. Accurate results are critical to evaluate the treatment plant process. Maintaining the accuracy of the instrument and reducing the risk of being out of specifiation requires testing by a qualified service provider. Calibration must be done by a service technician.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 15,000
	Total	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 15,000

12 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Polymer injection units
Dept: Treatment
Total Cost: $ 13,200
CY Budget $ 2,200
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Instrumentation
Avg Useful Life: 1 year
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 1 = Critical
Carry Forward: No

Asset Description

There are currently three polyblend polymer injection units in operation around the treatment plant. Two at the Dewatering Building providing polymer to the Ashbrook belt press and the other is providing polymer to the Dissolved Air Flotation Thickener (DAFT).

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

These funds are used to provide replacement parts as needed to ensure reliability of these units.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 13,200
	Total	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 13,200

13 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Hach LDO probe annual maintenance
Dept:	Treatment
Total Cost:	$ 10,800
CY Budget	$ 1,800
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Instrumentation
Avg Useful Life:	1 year
Est Residual Life:	
% Consumed Life:	
Category:	Maintenance
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

Hach's Luminescent Dissolved Oxygen (LDO) probe is used to determine water quality. Simultaneously displays dissolved oxygen and temperature readings.

These dissolved oxygen probes are located in the Aeration and Flow Equalization Tanks which provide vital information to properly operate the treatment plant process.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The proper calibration of these pressure transducers is critical to the biological and dewatering process as well as proper blower and pump control.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 10,800
	Total	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 10,800

14 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Pressure transducer calibration	
Dept:	Treatment	
Total Cost:	$	7,200
CY Budget	$	1,200
GL Account:		

Contact:	Waggoner
Area	Chlor/Dechlor Bldg
Asset Type:	Instrumentation
Avg Useful Life:	1 year
Est Residual Life:	
% Consumed Life:	
Category:	Maintenance
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Pressure transducer, also called pressure sensor, measures pressur of gases or liquids.

At CAWD these pressure transducers are located: (1) in the Blower building to control the air supply to the aeration tanks which oxygenate for proper biological activity. (2) At the Chlor/Dechlor building to control the #3 water system which provides water to the Dewatering process, packing water, and general use.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The proper calibration of these pressure transducers is critical to the biological and dewatering process as well as proer blower and pump control.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 7,200
	Total	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 7,200

15 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Liquid Flow Meter Calibration
Dept: Treatment
Total Cost: $ 15,600
CY Budget $ 700
GL Account:

Contact: Waggoner
Area Misc Structures
Asset Type: Pipe (Process Buried)
Avg Useful Life: 50 years
Est Residual Life: 25 years
% Consumed Life: 40
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The District maintains a total of 11 flow meters throughout the facility. These meters require, per the manufacturer, calibration every 24 months. The only exceptions are are the Influent and Effluent flow meters which are calibrated semi-annually.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

We are required by our NPDES permit and recommended by the manufacturer to calibrate flow meters either bi-annually or semi-annually (Influent and Effluent).

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	9	Minor Environmental Damage, but Ecosystem can Recover
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt Strategic Changes to Level of Service

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 700	$ 4,500	$ 700	$ 4,500	$ 700	$ 4,500	$ 15,600
	Total	$ 700	$ 4,500	$ 700	$ 4,500	$ 700	$ 4,500	$ 15,600

16 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Air Flow Meter Calibration (66% Reclamation)
Dept: Treatment
Total Cost: $ 12,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Blower Bldg
Asset Type: Process Equip (Liquid)
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

We have three blower air flow meters: One that feeds air to the Activated Sludge process, one that feeds the plan Equalization basin, and one that feeds the Micro Filtration Backwash air scour system. All these flow meters supply a flow signal to the programmable logic controller (PLC) for blower control so their operation is critical for the safe operation of the blower, equipment being supplied air, and for saving on energy costs associated with incorrect flow values.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The manufacturer of the flow meters recommends calibration every 24 months.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
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		

Asset Risk Management Strategy

Capital Improvement Risk
Maintenance Risk Mgmt Preventative Maintenance
Non Asset Risk Mgmt

Funding Source

Primary Operating Budget Secondary 66% Reclamation

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 4,000		$ 4,000		$ 4,000	$ 12,000
Total		$ -	$ 4,000	$ -	$ 4,000	$ -	$ 4,000	$ 12,000

17 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Perimeter Fencing replacement
Dept:	Treatment
Total Cost:	$ 169,000
CY Budget	$ -
GL Account:	

Contact:	Stevens
Area	Misc Structures
Asset Type:	Structure
Avg Useful Life:	25 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Improvement
Urgency:	1 = Critical
Carry Forward:	Yes

Asset Description

Replacement of current perimeter chain link security fence around the facility and all gates. The plant is roughly 8 acres in size. Fence will be replaced with an eight foot tall, PVC coated, chain link (2") fence with no barbed wire at this time. Project will include the removal of the existing perimeter fence, installation of new posts, erection of new chain-link fence, with five perimeter personnel access gates. Fence post material specificiaton includes PVC coating of posts and a wall thickness of piping that will provide a minimum 25 year life in the harsh marine environment.

Board approval to bid May 29, 2014 Resolution #2014-19

Year Built:	1970s
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This budget item was added to the Treatment Plant budget in 2014 in response to an earlier burglary at the Plant. The existing fence and posts have reached the end of their usable life and require replacement. The perimeter fence serves as a security fence to protect the public as well as to ensure wild animals do not enter the Treatment Plant. It is a critical part of plant security. The decision to construct a 9 foot fence over a shorter fence and barbed wire was made to prevent access from deer and curious individuals. Research into fence heights concluded tht a taller fence, even without barbed wire provided better security. Plans and specifications for this project have been prepared and are ready to bid. Staff has postpones the fence replacement due to the Phase I construction. We have been attempting to move excess dirt to the perimeter of the facility for flood control.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF		
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		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 169,000	$ 169,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 169,000	$ 169,000

18 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Various roof repair/replacement
Dept: Treatment
Total Cost: $ 220,000
CY Budget $ 75,000
GL Account:

Contact: Stevens
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life: 90
Category: Maintenance
Urgency: 3 = Important
Carry Forward: Yes

Asset Description

Nearly all the structures installed between 1970 and 1985 were installed with gravel and tar roof system. These roofs require inspectin and minor repairs about every 5 years and are considered to have a 25 to 30 year service life. Roofs of the different structures have been inspected and have been scheduled based on need. In some cases the equipment on the roof requires replacement which accelerated the roof replacement. Staff will contract for replacement of the roof and related roof equipment in one contract, therefore some roofs will cost more than a similar roof with no equipment installed on the roof. Some buildings have been maintained better than others over the years and may only require resealing and not a full roof replacement.

Buildings to receive replacement roofs or repair: Operations, Influent, Blower, RAS-WAS Control room, Chlorine, Laboratory, Reclamation

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

Justification

The roofs have faired fairly well with minor repairs over the years but many have reached the end of service life. Basic repair and/or replacement is required to protect structural integrity of the facilities. Full roof replacements will not be recommended unless the roofing system has been compromised. Most roofs will be repaired and resealed and all flashing replaced. In some cases service equipment that must be removed to erpair the roof will also be replaced upon reinstallation.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF		
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		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 75,000	$ 75,000	$ 35,000	$ 35,000			$ 220,000
	Total	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ -	$ -	$ 220,000

Collections Dept
Capital Improvement Projects

CAWD Collections Dept - CIP

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Construction of new gravity sewer line for Carmel Meadows Gravity Easement (carry over)		$ 850,000					
2	Replacement of annual Long Term CIP sewer lines		$ 850,000	$ 850,000	$ 850,000	$ 650,000	$ 900,000	
3	Engineering , planning and environmental	$ 75,000	$ 75,000	$ 75,000	$ 50,000	$ 50,000	$ 50,000	
4	Construction of Calle La Cruz force main replacement 6" (outfall 18") (Collections to pay 1/3 cost)	$ 300,000						
5	Construction for Rancho Canada Project			$ 450,000				
6	Design for plans and replacement of Calle La Cruz Pump Station					$ 75,000		$ 700,000
7	Design for plans for Sea wall and Pump Station Refurbish at Bay & Scenic			$ 50,000	$ 50,000	$ 50,000		$ 500,000
8	Replacement of SCADA at all Pump Stations		$ 210,000					
9	Hatton Canyon Trail rehabilitation	$ 800,000						
10	Monastery Beach Pump Station			$ 45,000	$ 45,000	$ 45,000		$ 800,000
11	Rio Park Bike trail	$ 25,000						
12	Dump Pit for VacCon	$ 70,000						
	TREATMENT & DISPOSAL TOTAL	**$ 1,270,000**	**$ 1,985,000**	**$ 1,470,000**	**$ 995,000**	**$ 870,000**	**$ 950,000**	**$ 2,000,000**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 1,270,000**	**$ 1,985,000**	**$ 1,470,000**	**$ 995,000**	**$ 870,000**	**$ 950,000**	**$ 2,000,000**

#1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Carmel Meadows Gravity Sewer
Dept:	Collections
Total Cost:	$ 905,347
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:	98%
Category:	Capital Improvement
Urgency:	1 = Critical
Carry Forward:	Yes

Asset Description

Replacement of approximately 1,000 ft. of elevated, free standing ductile iron pipeline with re-engineered constrained pipe design, engineered foundation improvements for support scaffolding, and new scaffolding to support the pipeline. The pipeline is located on a District easement, on what is now State Parks land and is adjacent to the South Fork of the Carmel Lagoon. This project is carried forward because of delays in negotiations with the property owner. Staff is confident that we will resolve the issues this year.

Year Built:	1960s
Rehabilitation Date:	2017
Rehab Life Extension:	35
Asset Condition Rating:	7 Significant Deterioration

Justification

The Collections Dept. staff noted that the number of staff hours required to avoid blockages and sewer line backup of the Carmel Meadows sewer line exceeds that of nearly all other lines in the Collections system. In prior budget allocations a number of $1M has been held over as an approximate cost for the replacement of this line. Due to the highly sensitive nature of the sewer line, staff has determined that the best management practice has been to assess the line, develop a construction plan for replacement, and then plan and budget accordingly. A condition assessment was performed by Kennedy/Jenks in 2013 which recognized any additional flow from the County's Hwy 1 Causeway Project could result in additional erosion in that the ground portion has subsided over the years causing the pipe to bend and dip loosing its proper grade. Along with the supports, the Ductile Iron Pipe (DIP) is a bell and spigot style which is of great concern. In the event of more extreme hillside movement the pipes would come apart, discharging sewage directly into the Carmel Lagoon. Kennedy/Jenks recommended replacement of the manholes and replacement of the DIP with restrained joint DIP. Four alternatives for repair have been provided. Staff has reviewed the recommendations and has chosen recommendation #2, which is to replace portions of the line and the foundation supporting it. These improvements will effectively extend the useful service life of the pipeline to 35 years.

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	10 Sustained Event impacting offsite, Media Attention, Minor Property Damage
Permit/Environmental COF	10 Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	10 Loss of Process Functionality Indefintely
Cost COF	10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering	$ 55,347.00		$ 850,000					$ 850,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 850,000	$ -	$ -	$ -	$ -	$ 850,000

#2 FY 2017-18 Budget
Carmel Area Wastewater District

Project Name:	Annual Long term CIP Projects
Dept:	Collections
Total Cost:	$ 4,100,000
CY Budget	$ -
GL Account:	

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

Asset Description

The District's Long Term CIP has been completed and these projects have been rated as the top four projects:

Year 2018-19 the District has scheduled to replace 2,250 ft. of damaged and undersized pipe and 7 manholes in an easement next to Pescadero Rd. Staff spends extra time keeping these lines free of blockages. This easement has had multiple Sanitary Sewer Overflow's in the past. Maps and cost breakdown is provided in the Appendices.

Year 2019-20 the District has two projects. The first is the Morse Dr. easement project. This line segment has had structural failure in the past with the result being an SSO. Staff recommends the total replacement of 324 ft. or regrading for proper alignment. The hillside is sliding and will require reinforcement to stabilize the hill. The probability of future hillside movement will need to be addressed. The second project is the Pine Hills easement. This project consists of the replacement of 1,875 ft. and four manholes due to severe root intrusion and misaligned pipe. This easement requires staff to spend extra time to ensure it will not overflow due to its location in an easement which is not accessible to vehicles. Maps and cost breakdown is provided in the Appendices.

Year 2020-21 the District is scheduled to replace 1,474 ft. and 3 manholes in the High Meadows Easement. This easement is located behind the homes of Edgefield Dr. and is inaccessible to cleaning trucks. Staff requires extra time and equipment to keep these line segments free and clear of blockages. The District has had a past history of SSO's due to the grade of these line segments. The replacement of these segments will correct grade problems and thus require less cleaning from staff. Maps and cost breakdown is provided in the Appendices.

Year 2021-22 the District is scheduled to replace 4,383 ft. of pipe due to severe sags and grading issues. Staff broke this year into two phase with Phase One being the replacement of line segments on Rio Rd. and Oliver Dr. Phase Two will replace line segments on Allen Place, Martin Road, Hatton Road, Morse Drive, Flanders and San Carlos & Second. Maps and cost breakdown is provided in the Appendices.

Year 2022-23 the District is scheduled to rehabilitation of the Rio Rd. trunk sewer main. This truck main services the entire mouth of the valley. The current type of material of the pipe in the ground is ACP " Asbestos Cement Pipe" over the years H2S gases have destroyed the protective coating of the pipe. Staff is recommending the CIP "Cure In Place" method of rehadilation for this project. The CIP is a trenchless method which bonds to the host pipe extending the life span of the pipe for years to come. There are two main obstacles in the rehabilitation of the Rio Rd. trunk main that point the District towards CIP as the choice method in this project. The traffic on Rio Rd. and the by-pass of the sewer flow are the two biggest concerns.

Year Built:	1930s
Rehabilitation Date:	various
Rehab Life Extension:	
Asset Condition Rating:	7 Significant Deterioration

Justification

The condition assessment has been completed and the data is available for review. The complete assessment of all of CAWD's sewer lines was completed using CCTV. This assessment was performed using the ICOM computer based management program. 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.

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	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 Indefinitely
Cost COF	10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 850,000	$ 850,000	$ 850,000	$ 650,000	$ 900,000	$ 4,100,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 850,000	$ 850,000	$ 850,000	$ 650,000	$ 900,000	$ 4,100,000

#3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name: Engineering, Planning & Environmental
Dept: Collections
Total Cost: $ 375,000
CY Budget $ 75,000
GL Account:

Contact: Lauer
Area Sewer Lines
Asset Type: Collections Gravity
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life: 90%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Professional services for the analysis and preparation of construction documents and bid documents as needed to prepare for the Annual long term sewer replacement plan.

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

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 permitting documents 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	n/a
Safety COF	n/a
Spill/Odor/Noise COF	n/a
Permit/Environmental COF	n/a
Process Functionality COF	n/a
Cost COF	n/a

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering		$ 75,000	$ 75,000	$ 75,000	$ 50,000	$ 50,000	$ 50,000	$ 375,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 75,000	$ 75,000	$ 75,000	$ 50,000	$ 50,000	$ 50,000	$ 375,000

#4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Calle la Cruz Force Main
Dept:	Collections
Total Cost:	$ 300,000
CY Budget	$ 300,000
GL Account:	

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

Asset Description

Design and construct a permanent 6" HDPE replacement force main to cross the Carmel Lagoon, from Calle la Cruz pump station to connect with the existing force main. Approximately 400 feet of new piping. This project will "piggy-back" on the Treatment Plant CIP for replacement of the 24" outfall. This project assumes that a replacement pipe cannot be placed on the existing crossing, that the existing crossing will need to be reconstructed and that the sewer force main will either be constructed to attach to a new aerial crossing, or that a new pipe will be placed underneath the lagoon in a joint trench with the new force main. For the purpose of this item Collections will assume the cost of only the design and construction of the line itself and not the construction of a new crossing structure or the cost of the excavation. Due to the complexity of the environmental review required for the work in the Lagoon it is not anticipated that construction will begin until 17-18.

Year Built:	1960s
Rehabilitation Date:	2017-18
Rehab Life Extension:	50
Asset Condition Rating:	5 Moderate Deterioration

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 develop the construction plans needed to permanently replace the temporary line. It is anticipated that the line will require trenching or boring under the lagoon. If environmental concerns prohibit the more traditional pipe repair processes under consideration, the costs of the construction will increase substantially.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9 Cannot be down 8 hours
Safety COF	3 Minor Inconvenience
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)

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 300,000						$ 300,000
Engineering	$ 80,000.00							$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000

#5 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Rancho Canada Project
Dept:	Collections
Total Cost:	$ 450,000
CY Budget	$ -
GL Account:	

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

Asset Description

Rancho Canada Subdivision Construction and Annexation: Rancho Canada has proposed converting one of its golf courses to a subdivision of Single Family Dwellings (SFD's). The design has plans to extend the trunk main that stops at MH S807, located in the driveway to the District main office, to a point near the current club house at the golf course.

Year Built:	2019-20
Rehabilitation Date:	n/a
Rehab Life Extension:	n/a
Asset Condition Rating:	

Justification

It would be in the District's best interest to take advantage of the opportunity to piggy-back on this project to both upsize the pipeline with a pipe diameter of 24" (ID - Internal Dimensions) for future capacity demands, and to extend this pipeline at that diameter all the way to Via Mallorca. 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

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	5	Short Duration; Small qty Event Offsite; Small no. of 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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other				$ 450,000				$ 450,000
Total		$ -	$ -	$ 450,000	$ -	$ -	$ -	$ 450,000

#6 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Calle la Cruz Pump Station
Dept:	Collections
Total Cost:	$ 775,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Pump Station
Avg Useful Life:	50 years
Est Residual Life:	20 years
% Consumed Life:	
Category:	Capital Improvement
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Relocation of the Calle la Cruz pump station to the immediate West of the existing station. This would include a land swap with State Parks to locate the pump station adjacent to the current pump station and then decommission and remove the existing station and realignment of influent piping. New pump station to include: drywell pumps to be converted to wet well pumps, new "T-Lock" wet well with 10,000 gal capacity, control room for generator equipment.

Year Built:	1960's
Rehabilitation Date:	Unscheduled
Rehab Life Extension:	50
Asset Condition Rating:	6

Justification

The Calle la Cruz pump station was constructed as part of the 1960 subdivision of Carmel Meadows. Since that time the pump station has received a number of upgrades to the pumps, electronics and wet well resurfacing to extend its life. Recent evaluation and rehabilitation finds that the pump station is in relatively good condition. However staff anticipates that changes to the management of the Carmel Lagoon water level as well as the potential increase of debris and flood waters from the completion of Highway 1 Causeway will increase the risk of flooding and decrease the reliability of this asset. This pump station is adjacent to the southern finger of the Carmel Lagoon and staff anticipates that this equipment will need to be elevated to continue to function in this location. Also the introduction of influent from the Highlands Pump Station has increased the levels of hydrogen sulfide (H2S) in the wet well. The construction of a new wet well pump station would resolve these issues and provide another 50+ years lifespan for this asset. The Calle la Cruz pump station is a critical asset for the District as it serves all of the District customer connections south of the Carmel River. The pump station currently has a 15+ year life remaining so a new wet well will remain unscheduled until timelines for the highway causeway project have been determined.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9 Cannot be down 8 hours
Safety COF	3 Minor Inconvenience
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	10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)

Asset Risk Management Strategy

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

Funding Source

Primary	Capital Budget	Secondary	Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor							$ 700,000	$ 700,000
Engineering						$ 75,000		$ 75,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ -	$ -	$ -	$ -	$ 75,000	$ 700,000	$ 775,000

#7 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Sea Wall at Bay & Scenic
Dept:	Collections
Total Cost:	$ 650,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Structure
Avg Useful Life:	40 years
Est Residual Life:	10 years
% Consumed Life:	
Category:	Capital Improvement
Urgency:	3 = Important
Carry Forward:	No

Asset Description

This project will be accomplished in three parts in order to plan and accomplish structural improvements to extend the life of the Bay & Scenic pump station. First, the design of the project (18-19). Second, the environmental review (19-20). And finally, construction (Unscheduled).

Year Built:	1950s
Rehabilitation Date:	2018-19
Rehab Life Extension:	50
Asset Condition Rating:	5 Moderate Deterioration

Justification

The Bay & Scenic pump station is a critical Collections Department asset serving more than 200 properties in the Carmel Point 7th Addition neighborhood. 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 50 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.

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)

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering				$ 50,000	$ 50,000	$ 50,000	$ 500,000	$ 650,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ 50,000	$ 50,000	$ 50,000	$ 500,000	$ 650,000

#8 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Collection System SCADA
Dept:	Collections
Total Cost:	$ 210,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	SCADA
Avg Useful Life:	15 years
Est Residual Life:	5 years
% Consumed Life:	
Category:	Capital Improvement
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Replacement of SCADA (Supervisory Control & Data Acquisition) units 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:	2018-19
Rehab Life Extension:	20
Asset Condition Rating:	5 Moderate Deterioration

Justification

These SCADA 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 to use and more clearly visible user interface. Our current systems make it difficult to see under certain conditions without being able to adjust the back lit screen properties. The Treatment plant will be upgrading their SCADA in the next few years and staff will save all of their old components to provide Collections SCADA with parts if needed over the next 5 years.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5 Cannot be down a week
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	
Cost COF	5 Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 210,000					$ 210,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 210,000	$ -	$ -	$ -	$ -	$ 210,000

#9 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Hatton Canyon trail rehabilitation
Dept:	Collections
Total Cost:	$ 800,000
CY Budget	$ 800,000
GL Account:	

Contact:	Lauer
Area	Sewer Lines
Asset Type:	Structure
Avg Useful Life:	20 years
Est Residual Life:	1 year
% Consumed Life:	
Category:	Capital Improvement
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

The District maintains a sewer easement nearly the entire length of Hatton Canyon. State Parks has indicated that if we wish to maintain our easement it will be our responsibility to construct a roadway. It will require that the District submit a plan to State Parks and that they approve said plan. Approval generally takes 18 months for a State Parks project.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	5 Moderate Deterioration

Justification

State Parks owns the land in Hatton Canyon and the District holds an easement for sewer. State Parks has taken the position of doing nothing and keeping it in a "natural" state. The result is that the creek has moved outside of its banks and is essentially now running down the roadway and damaging the roadway. The District's infrastructure is underwater during winter storms and our risk of a sanitary sewer spill is greatly increased. Staff has spoken with State Parks and inquired about the possibility of the property being surplused out of State Parks and into the District's hands. If we held ownership to the land we would then be able to manage it based on our status as a utility. We think initially there is a considerable amount of work to be done that will have a significant price tag. We need to cut back vegetation, return the creek to its original bank, engineer a permanent solution to keep it in its banks, and finally repair the roadway.

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	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		
Cost COF	7	Emergency Contractor Needed to Address Failure (less than $500,000)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor	$ 75,000.00	$ 800,000						$ 800,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$	800,000 $ -	$ -	$ -	$ -	$ -	$ -	$ 800,000

#10 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Monastery Beach Pump Station
Dept:	Collections
Total Cost:	$ 935,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Pump Station
Avg Useful Life:	50 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Improvement
Urgency:	2 = Very Important
Carry Forward:	

Asset Description

Construction of a pump station at Monastery Beach - it would be in close proximity to existing State Parks restroom facilities. 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:	
Rehab Life Extension:	
Asset Condition Rating:	

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 - primarily with the pumps and with hydrogen sulfide. 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	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	Add Backup/Redundancy
Maintenance Risk Mgmt	Corrective Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor							$ 800,000	$ 800,000
Engineering			$ 45,000	$ 45,000	$ 45,000			$ 135,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ -	$ 45,000	$ 45,000	$ 45,000	$ -	$ 800,000	$ 935,000

#11 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Rio Park Bike Trail
Dept:	Collections
Total Cost:	$ 25,000
CY Budget	$ 25,000
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:	No

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:
Rehab Life Extension:
Asset Condition Rating: 1 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	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering		$ 25,000						$ 25,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 25,000	$ -	$ -	$ -	$ -	$ -	$ 25,000

#12 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Dump Pit for VacCon
Dept:	Collections
Total Cost:	$70,000
CY Budget	$70,000
GL Account:	

Contact:	Lauer
Area	Misc Structures
Asset Type:	Structure
Avg Useful Life:	30 years
Est Residual Life:	
% Consumed Life:	
Category:	Capital Improvement
Urgency:	3 = Important
Carry Forward:	Yes

Asset Description

The Collection dump pit is a place for the dewatering of debris that has been collected in the VacCon 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:
Rehab Life Extension: n/a
Asset Condition Rating: 1 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.

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		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering	$ -	$ 70,000						$ 70,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ 70,000	$ -	$ -	$ -	$ -	$ -	$ 70,000

Collections Dept
Capital Purchases

CAWD Collections Dept - Capital Purchases

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Replace Generator & Transfer switch at Hacienda Pump Station	$ 50,000						
2	Replace Pumps at Highlands Pump Station	$ 40,000						
3	Replace Generac Portable Generator		$ 70,000					
4	Replace Pumps at Monteverde Pump Station		$ 20,000					
5	Replace Collection Superintendent Truck (2009)		$ 45,000					
6	Replace Hydro-Vacume Truck (#4)			$ 300,000				
7	Replace Pump Round Truck (# 8)				$ 40,000			
8	Replace Pumps at Bay & Scenic Pump Station				$ 20,000			
9	Replace Pumps at Hacienda Pump Station					$ 20,000		
10	Replace Electrical Control Panel at Hacienda Pump Station						$ 40,000	
11	Relpace Backhoe (Collections 40% , Operations 60%)							$ 75,000
12	Replace Large Dump Truck (Collections 50%, Operations 50%)							$ 50,000
	TREATMENT & DISPOSAL TOTAL	**$ 90,000**	**$ 135,000**	**$ 300,000**	**$ 60,000**	**$ 20,000**	**$ 40,000**	**$ 125,000**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 90,000**	**$ 135,000**	**$ 300,000**	**$ 60,000**	**$ 20,000**	**$ 40,000**	**$ 125,000**

#1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Generator and ATS Power Service Panel at Hacienda PS	Contact:	Lauer
Dept:	Collections	Area	Pump Station
Total Cost:	$ 50,000	Asset Type:	Electrical
CY Budget	$ 50,000	Avg Useful Life:	25 years
GL Account:		Est Residual Life:	5 years
		% Consumed Life:	
		Category:	Capital Equipment
		Urgency:	2 = Very Important
		Carry Forward:	No

Asset Description

The generator and automatic power transfer switch at the Hacienda pump station. In the event that the utility power supply goes out, the generator supplies electricity and the transfer switch is responsible for controlling the flow of electricity when line power goes out and is then restored. Without this, the generator and utility supplying power at the same time would damage the station. The station requires 240 volt AC, 60 Hz, 100 Amp, 35 kW, 3 phase power.

Reference: Condition tracking of asset/load testing available in ICOM program or Mainsaver

Year Built:	~1990's
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This generator, automatic transfer switch, and power service panel are 25 years old and at the end of their service life. Although still functional, it is recommended they be replaced prior to failure. The generator has been in service for many years and is requiring much more maintenance than in prior years. The block heater has been plagued with issues, the exhaust is worn through the muffler. The generator is very noisy, causing complaints from neighbors. Newer automatic transfer switch's (ATS) have the capability of switching over in the case of a "brown out," which is loss of one but not all phases of supplied electricity. The older one still in service is unable to distinguish this difference and therefore will allow the pumps to run without adequate power which in turn could damage them. The power service panel is very old and designed for pump system equipment that is no longer active at this station. An update of this panel will align it with our current system needs. Therefore the investment to replace these necessary components is strongly recommended to bring this system up to par with the systems that are already in service at our other pump stations. The potential growth in the valley means we may need to look at upsizing this generator. At this time the budget does not account for upsizing or growth.

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	3	Violate Daily Max Effluent
Process Functionality COF		
Cost COF	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies		$ 50,000						$ 50,000
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000

#2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	New Pumps for Highlands Pump Station
Dept:	Collections
Total Cost:	$ 40,000
CY Budget	$ 40,000
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Pump Station
Avg Useful Life:	15 years
Est Residual Life:	5 years
% Consumed Life:	
Category:	Capital Equipment
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

Replace model 3152 Flygt pumps at Highlands pump station with the new model 3153 Flygt. The District is preparing for the possibility of a catastrophic failure of the current pumps due to the amount of time that they have been rebuilt. The current pumps have been rebuilt several times due to a defect in the lower bearing seals. The problem of seal failure has been fixed but the number of times that they have been rebuilt has lowered the life expectancy. Wastewater has damaged internal components and there has been pitting. Pump operates off the edge of the pump curve.

Reference: Condition tracking of asset available in ICOM program or Mainsaver

Year Built:	2004
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The Flygt pump model 3152 was discontinued a few years ago. It is a recommendation by Flygt to switch to their new model 3153 high head pump. These pumps have been in service for over 10 years but have several rebuilds on each one of them. This is an estimated replacement date and staff will re-evaluate the performance yearly. These pumps run off the edge of the pump curve and the lifespan is reduced due to this. The possibility of new larger breakers and power service will be evaluated when a change to the larger model has been decided.

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	3	Violate Daily Max Effluent
Process Functionality COF		
Cost COF	9	Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies		$ 40,000						$ 40,000
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ 40,000

#3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replace Generac Portable Generator
Dept:	Collections
Total Cost:	$ 70,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Vehicle Fleet
Avg Useful Life:	25 years
Est Residual Life:	25 years
% Consumed Life:	
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.

Reference: Condition tracking of asset/load testing available in ICOM program or Mainsaver

Year Built:	1999
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	4

Justification

The useful life of trailer mounted generators is considered to be 20 years. It is nearing its 20 year projected life cycle. This unit has experienced issues starting. Recent maintenance expenses have increased significantly. Once this unit is running it runs well, but if it is set up as a pump station emergency power source, we need to know that it will start up every time it is called upon by the automatic transfer switch. It did pass the most recent load testing but some concerns were noted. Quieting technologies have improved over the last couple decades and emissions standards have become more stringent. Since these generators get deployed in residential areas, having a substantially less noisy generator would make us good neighbors to our constituents that reside in close proximity to our pump stations powered with this unit. Due to exposure to salt air, this generator is experiencing electrical corrosion. Housing of generator is rusting after 17 years. This generator is used primarily at Bay & Scenic pump station and must be "ready to go" given the pivotal nature of this station. Consequences of power failure would be a spill directly into the ocean.

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	5	Maintaining Process Functionality requires staff divert from other work
Cost COF	3	In-house Repair Work less than $1,000

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 70,000					$ 70,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 70,000	$ -	$ -	$ -	$ -	$ 70,000

#4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replace Pumps at Monte Verde & 16th Pump Station
Dept:	Collections
Total Cost:	$ 20,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Pump Station
Avg Useful Life:	25 years
Est Residual Life:	25 years
% Consumed Life:	
Category:	Capital Equipment
Urgency:	1 = Critical
Carry Forward:	No

Asset Description

Direct replacement of two existing Flygt model 3127 pumps at Monte Verde and 16th. These pumps are installed in the wet well at Monte Verde 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.

Reference: Condition tracking of asset available in ICOM program or Mainsaver
Year Built: 2003
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating: 3 Minor Defects Only

Justification

These pumps are nearing the end of their life span and they are recommended for direct replacement with the same model Flygt pump. 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. Pumps to be installed by staff. 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 2018-19.

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

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 20,000					$ 20,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 20,000	$ -	$ -	$ -	$ -	$ 20,000

#5 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Unit#17, Collections Superintendent Truck
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:	
Category:	Capital Equipment
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Replacement of Unit #17, the 2009 Chevy 4X4, with vehicle of like model having 4 door crew cab with powered windows and door locks.

Year Built:	2009
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

Replacement of the 2009 Chevy 4x4 (Unit #17) which currently has 78,358 miles 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. The necessity for the crew cab arises from the need to more easily enter and egress from the rear of the vehicle cabin. With the current model it can only be done from the forward quarters. The crew cab will also allow personnel to enter and exit without disruption to the driver and other passengers. Historically the Superintendent vehicle is replaced every 10 years. The District will look at condition and performance closely at that time and extend if possible.

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

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 45,000					$ 45,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 45,000	$ -	$ -	$ -	$ -	$ 45,000

#6 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Unit #4, Vaccon
Dept:	Collections
Total Cost:	$ 300,000
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:	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:	10
Rehab Life Extension:	
Asset Condition Rating:	5 Moderate 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 as it nears the end of its service life. It had the top end of the engine rebuilt in January 2015. Although that repair will keep it in service for the foreseeable near future, major repairs like this are potentially more likely. The auxiliary motor that supplies the water pressure for pipeline service has experienced many issues over the last several years. For the District to be able to continue its level of community service and rapid response, approval of this valuable asset should be highly considered. 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.

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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies				$ 300,000				$ 300,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000

#7 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Unit #8, 2009 Ford F250 with Utility Bed
Dept:	Collections
Total Cost:	$ 40,000
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 Improvement
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Replacement of Unit #8: This vehicle 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 is a plethora of 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 has a bumper crane which is used to hoist pumps into and out of wet wells for service and replacement. With its highly visible profile thanks to on board heavy duty warning lights, it is also often used in traffic control operations in the field when the Collections Crew is working on line segments that are on busy roadways or blind turns.

Year Built:	2009
Rehabilitation Date:	
Rehab Life Extension:	12
Asset Condition Rating:	3 Minor Defects Only

Justification

The justification for replacing this truck is that it is such a valuable asset to the District's Collection System and response in the event of emergencies and normal course of duties, that to let the older unit go past its expected effective life cycle and potentially become unreliable would be at the detriment of the District's ability to provide the exemplary service the community has come to rely upon. Further, the need for an extended cab has become apparent so that staff can keep their protective clothing and other personal effects and Personal Protective Equipment (PPE's) in the "clean" quarters of the cab, separated from the contaminants commonly found in the Collection System. Lastly the need for power windows and door locks which the current unit does not have. When pulling up on the scene of emergencies and SSO's, often times emergency personnel approach from the passenger side, and in order to facilitate quick and effective communication, the ability to roll the passenger window down without reaching over potentially compromising all other imperative vehicle controls should be a fleet requirement.

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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies					$ 40,000			$ 40,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ 40,000	$ -	$ -	$ 40,000

#8 FY 2017-18 Budget

Carmel Area Wastewater District

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

Contact:	Lauer
Area	Pump Station
Asset Type:	Pump Station
Avg Useful Life:	25 years
Est Residual Life:	5 years
% Consumed Life:	
Category:	Capital Equipment
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Replacement of existing Flygt model 3127 pumps at Bay & Scenic: The Bay & Scenic pump station will, in year 2020-21, be the subject of a pump station remodel. The remodel will include the replacement of the 3127 pumps with the same model but installed inside the wet-well. Full description of the station remodel in the CIP section of budget.

Reference: Condition tracking of asset available in ICOM program or Mainsaver

Year Built:	2004
Rehabilitation Date:	18
Rehab Life Extension:	
Asset Condition Rating:	3 Minor Defects Only

Justification

These pumps are nearing the end of their life span and they are recommended for direct replacement with the same model Flygt pump. 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 led 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. Pumps have had new impellers installed. Pumps are currently in relatively good shape, i.e. satisfactory. However, this is a long term view. The manufacturer indicates after 20 years a replacement may be a better option than rebuild.

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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies					$ 20,000			$ 20,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ -	$ 20,000	$ -	$ -	$ 20,000

#9 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of 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:	25 years
Est Residual Life:	5 years
% Consumed Life:	
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.

Reference: Condition tracking of asset available in ICOM program or Mainsaver

Year Built:	1999
Rehabilitation Date:	20
Rehab Life Extension:	
Asset Condition Rating:	3 Minor Defects Only

Justification

These pumps are nearing the end of their life span and they are recommended for direct replacement with the same model Flygt pump. As these pumps age they will not be as efficient as new pumps leading to higher costs of operation. Over time, cavitation can cause pitting on the impellers that leads to vibration wear from no longer being balanced. Rocks and metals that find their way into the sewer may cause these same effects as they crack, pit, and break the impellers and volutes.

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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies						$ 20,000		$ 20,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ -	$ -	$ 20,000	$ -	$ 20,000

#10 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replace Electrical Control Panel at Hacienda PS
Dept:	Collections
Total Cost:	$ 40,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Electrical
Avg Useful Life:	25 years
Est Residual Life:	5 years
% Consumed Life:	
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:	20
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

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies							$ 40,000	$ 40,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000	$ 40,000

#11 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replacement of Unit #11, 1991 John Deere Backhoe/Loader
Dept:	Collections
Total Cost:	$ 75,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Vehicle
Asset Type:	Vehicle Fleet
Avg Useful Life:	30 years
Est Residual Life:	15 years
% Consumed Life:	
Category:	Capital Equipment
Urgency:	4 = Less Important
Carry Forward:	No

Asset Description

Replacement of unit #11 1991 John Deere Backhoe/Loader. Unit #11 is a 1991 John Deere Backhoe/Loader. It is a diesel powered, wheeled machine with hydraulically controlled buckets for scooping and digging through a variety of materials. It features an enclosed cab to keep the operator safe from airborne particulates from the digging process and climate controlled for comfort. It features a multispeed transmission, automatic load leveling on the loader, telescoping backhoe arm for greater reach. The District may consider a mini-excavator in lieu of a backhoe when it becomes time to make a final decision. A mini-excavator will do many of the same things as a backhoe and costs roughly $40K.

Year Built:	1991
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

It is advised that budgeting for the replacement of unit #11 be considered but unscheduled. This piece of equipment is used by both the Collections and Treatment Departments for a variety of tasks. For Collections, we don't use it often, but when we need it, it is a valuable tool. Although we do not dig with the backhoe much since we can hydro excavate with the Vaccon, we still need it to load the material into the dump trucks for backfill of trenches. We also use it to refresh the pit area where we dump our spoils from the Vaccon after digging or cleaning wet wells. Furthermore, the Vaccon cannot dig in every location we need to access, so this machine still allows you to get onsite and do the job quickly. It is coming up on 25 years of service so it is only natural that its dependability has lessened over time. It has recently been serviced so it should be able to perform its essential duties for the near future. The benefit of keeping this equipment budgeted for replacement or the current one in service at a cost, is that when you need it, there really is nothing like the mechanical and hydraulic forces that this machine can generate. One scoop can dig in seconds or minutes what could take personnel an hour or more, or even all day to do.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF		
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

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies							$ 75,000	$ 75,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 75,000	$ 75,000

#12 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Replace Unit #7, 1991 Kodiak 2.5 Ton Dump Truck	Contact:	Lauer
Dept:		Area	Vehicle
Total Cost:	$ 50,000	Asset Type:	Vehicle Fleet
CY Budget	$ -	Avg Useful Life:	20 years
GL Account:		Est Residual Life:	10 years
		% Consumed Life:	
		Category:	Capital Equipment
		Urgency:	4 = Less Important
		Carry Forward:	No

Asset Description

Replacement of unit #7 1991 Chevy Kodiak 2.5 ton dump truck. (50% Collection & 50% Treatment).

Year Built:	1992
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

This year unit #7 hits 25 years of service. It has about 1,000 miles on the odometer. Staff has reported some mechanical troubles with it; but overall it seems to still be in working condition. With proper maintenance it should still be of use to the District. The replacement is currently unscheduled, but it is advised that budgeting for replacement should commence.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1 Can be out of service idenfinitely
Safety COF	
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

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Capital Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies							$ 50,000	$ 50,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000

Collections Dept

Maintenance

CAWD Collections Dept - Maintenance

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Ice Pigging of Highlands Force Main			$ 35,000				
2	Spot Repair of 15 Defects in Pipes		$ 80,000		$ 80,000			
3	Root Foaming	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	
4	Pump Station Generator Load Testing		$ 6,000		$ 6,000		$ 6,000	
5								
6								
7								
8								
9								
10								
11								
12								
	TREATMENT & DISPOSAL TOTAL	**$ 53,000**	**$ 139,000**	**$ 88,000**	**$ 139,000**	**$ 53,000**	**$ 59,000**	**$ -**
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 53,000**	**$ 139,000**	**$ 88,000**	**$ 139,000**	**$ 53,000**	**$ 59,000**	**$ -**

#1 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Ice Pigging of Highlands Force Main
Dept:	Collections
Total Cost:	$ 35,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Sewer Lines
Asset Type:	Collections Force
Avg Useful Life:	50 years
Est Residual Life:	40 years
% Consumed Life:	
Category:	Maintenance
Urgency:	3 = Important
Carry Forward:	No

Asset Description

The Highlands force main is a 2.9 mile long 4 inch line the delivers sewage from the Highlands pump station to the Calle La Cruz pump station under pressure.

Year Built:	2005
Rehabilitation Date:	
Rehab Life Extension:	5
Asset Condition Rating:	2

Justification

Ice Pigging is the use of ice with a "Slurpee" like consistency to scour the inside of force mains. Think of the way glaciers scour the land when they migrate down the landscape, picking up rocks and debris along the way, leaving a smooth path. This method of cleaning force mains was invented in Europe and only recently has it been used in the US. Pigging is the use of a mechanical device that is installed into the force main to clean build up and clear obstructions. The Highland force main has not been cleaned since it was installed due to the length and size, 2.9 miles in length and 4 inches in diameter. The District believes that the use of Ice Pigging is the best method of pigging due to fact that you can let the ice melt if for some reason it gets stuck.

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	9	Minor Environmental Damage, but Ecosystem can Recover
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)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor				$ 35,000				$ 35,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ 35,000	$ -	$ -	$ -	$ 35,000

#2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Spot Repairs
Dept:	Collections
Total Cost:	$ 160,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Sewer Lines
Asset Type:	Collections Gravity
Avg Useful Life:	25 years
Est Residual Life:	5 years
% Consumed Life:	
Category:	Maintenance
Urgency:	
Carry Forward:	No

Asset Description

Staff will utilize closed circuit TV (CCTV) footage of the system lines and other annual inspections to develop a list of pipes that have localized damage or defect (i.e. hole, break) and issue Request for Proposals (RFP) annually from local contractors for the repair of these lines. Staff anticipates approximately 15 repairs per year will be required for the next 10 years. These repairs will be conducted on lines that are otherwise in good condition with a remaining life of 10 years or greater.

Year Built:	varies
Rehabilitation Date:	20
Rehab Life Extension:	20
Asset Condition Rating:	5 Moderate Deterioration

Justification

CCTV footage has revealed that many portions of the Collections System piping is in relatively good condition. However, there are still blockages being caused by roots, localized damage to pipes that has occurred over the years by both soil settlement and private plumbers. Replacing lines can be expensive. With the implementaion of the annual root foaming program many of the existing lines can become fully functional and allow the District to extend their useful life simply by repairing the larger localized damages between pipe joints where roots and rocks have entered the system. This work will be contracted out. Delaying the repairs of the pipes (identified as crucial) will only cause more costly repairs in the future. If the majority of the repairs are completed over the following ten years, staff will be able to keep up and it will extend the system's performance wothout the need of outside contracting.

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	7	Short Duration; Large qty Event offsite; Aggressive Complaints; No Property Damage
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF		
Cost COF	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 80,000		$ 80,000			$ 160,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 80,000	$ -	$ 80,000	$ -	$ -	$ 160,000

#3 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Root Foaming
Dept:	Collections
Total Cost:	$ 318,000
CY Budget	$ 53,000
GL Account:	

Contact:	Lauer
Area	Sewer Lines
Asset Type:	Collections Gravity
Avg Useful Life:	5 years
Est Residual Life:	5 years
% Consumed Life	
Category:	Maintenance
Urgency:	
Carry Forward:	No

Asset Description

Root control of the District's sewer mains using a foaming agent. Carmel's sewer system has historically had a problem with tree root intrusion because of the forest setting that surrounds it. Root foaming is a cost effective method of managing those roots. The root foaming program is integrated into ICOM as part of the Collection system preventative maintenance program. The root foaming agent is applied by an outside contractor. The cost of root foaming is $1.32/foot and the District is averaging 40,000 feet per year.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The condition assessment has shown that root intrusion is the number one problem in the District's Collection System. Along with routine cleaning, root foaming will help combat our root intrusion problem and help reduce the Sanitary Sewer Overflows (SSO) caused by roots.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
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	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

Capital Improvement Risk	
Maintenance Risk Mgmt	Preventative Maintenance
Non Asset Risk Mgmt	

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals		$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 318,000
Utility								$ -
Other								$ -
	Total	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 53,000	$ 318,000

#4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Pump Station Generators Load Testing
Dept:	Collections
Total Cost:	$ 18,000
CY Budget	$ -
GL Account:	

Contact:	Lauer
Area	Pump Station
Asset Type:	Support Equipment
Avg Useful Life:	25 years
Est Residual Life:	20 years
% Consumed Life:	
Category:	Maintenance
Urgency:	
Carry Forward:	Yes

Asset Description

Biennial Pump Station Generator Evaluations: The generator evaluations are performed by a qualified independent contractor who brings a load bank tester to hook up to the station generators and the portable generators in the Collections Dept. This test puts a simulated pre-determined load to cause the generator to have to work harder to keep up with demand. Successful testing verifies the power generation equipment is capable of handling emergency demands.

Year Built: Year Built:	Various
Rehabilitation Dat bilitation Date:	
Rehab Life Extens ife Extension:	
Asset Condition R ndition Rating:	2

Justification

Biennial Pump Station Generator Evaluations put a load on the generator system to test for proper operation. It is recommended that the testing continue at an annual interval. Upon 3 successful annual tests, the testing schedule may be set to every other year. In the event that a generator would fail, it would be preferable that it do so in the testing phase so the District has an opportunity to repair or replace it rather than during an emergency situation where it would be difficult, at best, to keep the pump station supplied with power.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10 Cannot be down 1 hour
Safety COF	3 Minor Inconvenience
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	10 Loss of Process Functionality Indefinitely
Cost COF	9 Regulatory Fines and Lawsuits + Emergency Contractor Needed (less than $1 Million)

Asset Risk Management Strategy

Capital Improvement Risk	Moderate Repair
Maintenance Risk Mgmt	Predictive & Preventative Maintenance
Non Asset Risk Mgmt	Strategic Changes to Level of Service

Funding Source

Primary Operating Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 6,000		$ 6,000		$ 6,000	$ 18,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ -	$ 6,000	$ -	$ 6,000	$ -	$ 6,000	$ 18,000

Treatment Dept
Capital Improvement Projects

CAWD Treatment Dept - CIP

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	SBS tank repurposing (Brine receiving project)	$ 25,000						
2	Plant EQ Upgrade		$ 30,000					
3	Aeration Basin # 5&6, Slide Gates	$ 16,000						
4	Grease Receiving System Retrofit for Wet-Waste	$ 3,000	$ 10,000					
	TREATMENT & DISPOSAL TOTAL	**$ 44,000**	**$ 40,000**	$ -	$ -	$ -	$ -	$ -
	RECLAMATION SHARE	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	PBCSD SHARE	$ 14,652	$ 13,320	$ -	$ -	$ -	$ -	$ -
	CAWD COST	**$ 29,348**	**$ 26,680**	$ -	$ -	$ -	$ -	$ -

Note: Long Term Capital Projects are on Separate Worksheet

1 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: SBS tank repurposing (Brine receiving project)
Dept: Treatment
Total Cost: $ 25,000
CY Budget $ 25,000
GL Account:

Contact: Waggoner
Area SBS/Hypo Bldg
Asset Type: Support Equipment
Avg Useful Life: 20 years
Est Residual Life: 15 years
% Consumed Life: $ 25
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Re-purpose the current SBS feed tank that will be decommissioned with the completion of the HYPO/SBS building. The 7,000 gallon thermal lined chemical tank used for storing Sodium Bisulfite will be retrofitted with external pump and additional plumbing to feed directly to the disenfection channel.

Year Built:
Rehabilitation Date: This projet will Extend the life of the asset by finding alternate uses for an otherwise obsolete asset.
Rehab Life Extension:
Asset Condition Rating:

Justification

Tank will be decommissioned in Fall of 2017 and replaced with new tanks in the new SBS/Hypo Building with the completion of the Phase 1 WWTP Improvement project. Staff is looking to repurpose the 7,000 gallon SBS Tank to resume receiving Brine (reject) from smaller RO system in the area. The tank would receive the brine and slowly meter the liquid into the effluent flow to ocean discharge as not to place extra salt loadings on the RO system.

This is a revenue generating project as the District currently charges $0.03 per gallon at that revenue income this project would pay for itself in 1 year.
The expected use is based on 5 loads a day, 5 days a week, for 20 weeks per year. Staff will negotiate with local treatment facilities and develop service contracts with these entities prior to completing any improvements. This will ensure payback to the District for making this investment.

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	3	In-house Repair Work less than $1,000

Probability of Failure 5%

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 Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22 22-23	Total
Labor		$ 10,000					$ 10,000
Engineering		$ 5,000					$ 5,000
Parts & Supplies		$ 10,000					$ 10,000
Chemicals							$ -
Utility							$ -
Other							$ -
	Total	$ 25,000	$ -	$ -	$ -	$ -	$ - $ 25,000

2 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Plant EQ Upgrade
Dept: Treatment
Total Cost: $ 30,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area Pump Station
Asset Type: Pump Station
Avg Useful Life: 20 years
Est Residual Life: 20 years
% Consumed Life: $ -
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Reduandancy (backup) pump system for Flow Equalization Basin

Year Built: 2005
Rehabilitation Date: 2018
Rehab Life Extension: 20 years
Asset Condition Rating: 7 Significant Deterioration

Justification

The current Equalization Basin Pumping System has only one pump and it is been in operation for 5 years. Staff would like to install a second pump in the Equalization basin to be able to pull and service pump #1 or be able to switch to the second pump in case of failure of pump #1.

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	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF	3	In-house Repair Work less than $1,000

Probability of Failure 80%

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 Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 11,000					$ 11,000
Engineering			$ 1,000					$ 1,000
Parts & Supplies			$ 18,000					$ 18,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 30,000	$ -	$ -	$ -	$ -	$ 30,000

3 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Aeration Basin # 5&6, Slide Gates	Contact:	Waggoner
Dept:	Treatment	Area	Misc Structures
Total Cost:	$ 16,000	Asset Type:	Valve Gate
CY Budget	$ 16,000	Avg Useful Life:	20 years
GL Account:		Est Residual Life:	1 year
		% Consumed Life:	$ 99
		Category:	Capital Improvement
		Urgency:	1 = Critical
		Carry Forward:	No

Asset Description

Influent Slide Gates (Flow Control by adjustable weir) for aeration basins 5 & 6,
Each aeration basin has three Influent slide gates.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

One Influent slide gate in Aeration basin 5 has been deteriorated to the point of failure, needs to be replaced within the next budget year.
Two Influent slide gate in Aeration basin 6 have been deteriorated to the point of failure, needs to be replaced within the next budget year.

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	5	Major In-House Repair Work less than $25,000

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 Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 5,000						$ 5,000
Engineering								$ -
Parts & Supplies		$ 10,000						$ 10,000
Chemicals								$ -
Utility								$ -
Other		$ 1,000						$ 1,000
	Total	$ 16,000	$ -	$ -	$ -	$ -	$ -	$ 16,000

4 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name:	Grease Receiving System Retrofit for Wet-Waste	Contact:	Waggoner
Dept:	Treatment	Area	Misc Structures
Total Cost:	$ 13,000	Asset Type:	Process Equip (Gas)
CY Budget	$ 3,000	Avg Useful Life:	20 years
GL Account:		Est Residual Life:	
		% Consumed Life:	$ 5
		Category:	Capital Improvement
		Urgency:	4 = Less Important
		Carry Forward:	No

Asset Description

Exiting grease receiving station was constructed in 2010. System will be modified slightly to receive a wet waste slurry to be injected into the Digester in the same manner as the grease. Research and engineering is proposed for FY 17-18 with modifications being made the following year if certain conditions are met regarding revenue generation.

Year Built:	2010
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The existing grease receiving station has not been fully utilized since construction due to some operational problems. Staff has investigated other uses for the grease receiving station to generate additional revenue. Wet Waste is food waste generated from grocery retailers and is a potential revenue source as State regulations are proposed which will require this type of food waste to be composted and not taken to the landfill. Wet waste can be sued as food for the Digester and it will prodcue addtional methane gas. Staff proposes to study this potential revenue source and develop a partnership with a hauler trying to developed this business. Funding in FY 17-18 is needed for initial investigation of this use. Funding in FY 18-19 would be used to retrofit the existing station to began a pilot project. Additional funding will be needed however this project will not move forward without a contract with an external hauler who is committed to bring material to the Treatment plant.

Pay back of this investment is not fully developed since wet waste is a newer energy source. The amount of additional gas generated will help establish a baseline for additional power generation equipment to consume the gas. If this pilot project is successful a future revving station to receive wet waste, grease and septage would be developed.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	Can be out of service indefinitely
Safety COF	No impact to Safety
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	No impact to operations
Cost COF	

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 Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 2,000					$ 2,000
Engineering		$ 2,000	$ 2,000					$ 4,000
Parts & Supplies			$ 6,000					$ 6,000
Chemicals								$ -
Utility								$ -
Other		$ 1,000						$ 1,000
	Total	$ 3,000	$ 10,000	$ -	$ -	$ -	$ -	$ 13,000

Treatment Dept
Capital Purchases

CAWD Treatment Dept - Capital Purchases

FY 2017/18 *thru* 2022/23

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	Unscheduled
1	Mainsaver "Connect" program (total cost $16,450 33% Reclamation $5477, CAWD $10,973)	$ 16,450						
2	Influent Pump Station wet well mixing system	$ 13,000						
3	Siemens DeChlorination Deox 2000 Analyzer		$ 13,000					
4	Thermo Scientific Gallery Discrete Analyzer (50% Reclamation)	$ 45,000						
5	Lab BOD incubator (50% Reclamation)			$ 12,000				
6	Lab Autoclave (50% Reclamation)		$ 16,000					
7	Lab Muffle Furnance (50% Reclamation)			$ 13,500				
8	Lab Ion Chromatograph (100 % Reclamation)					$ 150,000		
	TREATMENT & DISPOSAL TOTAL	**$ 74,450**	**$ 29,000**	**$ 25,500**	**$ -**	**$ 150,000**	**$ -**	**$ -**
	RECLAMATION SHARE	$ 27,978	$ 8,000	$ 12,750	$ -	$ 150,000	$ -	$ -
	PBCSD SHARE	$ 15,475	$ 6,993	$ 4,246	$ -	$ -	$ -	$ -
	CAWD COST	**$ 30,997**	**$ 14,007**	**$ 8,504**	**$ -**	**$ -**	**$ -**	**$ -**

#1 FY 2017-18 Budget
Carmel Area Wastewater District

Project Name:	Mainsaver "Connect" program
Dept:	Treatment
Total Cost:	$ 16,450
CY Budget	$ 16,450
GL Account:	

Contact:	Waggoner
Area	Ops Bldg
Asset Type:	Computer/Network
Avg Useful Life:	5 years
Est Residual Life:	5 years
% Consumed Life:	0
Category:	Capital Improvement
Urgency:	3 = Important
Carry Forward:	No

Asset Description

Mainsaver Connect is an extention of the Mainsaver program utilizing the lastest features and remote access. Utilizing the latest Web technologies, Mainsaver Connect provides core Asset Management functionality to the mobile workforce. Mainsaver Connect supports application portability across multiple hardware platforms such as Smartphones, Tablets, and Laptops utilizing Windows iOS and Android operating systems and supporting multiple web browser technologies such as Internet Explorer, Safari, Chrome and Firefox.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

Using Mainsaver Connect to access our current Mainsaver program using tablets will help to improve plant operations and increase efficiency. This moble access will allow plant staff to utilize tablets in many ways: 1) to improve plant efficiencies by having plant equipment run time data and equipment check sheets all entered into Mainsaver via the tablet which eliminates staff time to re-enter this data into other databases making this information harder to track. 2) Allows for the mobility to enter equipment issues directly into Mainsaver remotely making for faster response to issues and not requiring staff to "remember" to create a work request when at a computer. 3) Allows for the ability to better track for time allocated to specific work orders. 4) Allow plant staff to use the latest application of the program developed by Mainsaver.

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	5	Major In-House Repair Work less than $25,000

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 Budget Secondary Reclamation 33.3%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 16,450						$ 16,450
	Total	$ 16,450	$ -	$ -	$ -	$ -	$ -	$ 16,450

#2 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Influent Pump Station wet well mixing system
Dept:	Treatment
Total Cost:	$ 13,000
CY Budget	$ 13,000
GL Account:	

Contact:	Waggoner
Area	Pump Station
Asset Type:	Building Machinery
Avg Useful Life:	10 years
Est Residual Life:	10 years
% Consumed Life:	0
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Pulsed Hydraulics' Mixing technology Hydro-Pulses compressed air through 316 stainless steel forming plates on the bottom of the tank, forming very large bubbles that rise at 4 ft per second to the surface. As they rise the drag tank contacts with them. This system is a course bubbler mixing system to allow solids, debris, and grease to not settle in the wet well. The system is comprised of a diffuser disc, system control panel and air compressor.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

Due to the accumlation of solids, plastics, debris, and grease in the Influent wet well, this mixing system will keep these items in suspension allowing them to move potential pass through the Influent pumps to the Headworks. Here this material will be passed through the channel grinder then removed by the conveyer system. This mixing system will help the Treatment Plant operation in a number of ways: 1) This will reduce staff time required to remove this material from the Influent pumps twice a week. 2) This will increase the efficiency of the Influent pumps by decreasing the pump's power requirements because of the accumulation of material in the impeller.

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	3	In-house Repair Work less than $1,000

Probability of Failure 10%

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies		$ 13,000						$ 13,000
Chemicals								$ -
Utility								$ -
Other								$ -
	Total	$ 13,000	$ -	$ -	$ -	$ -	$ -	$ 13,000

#3 FY 2017-18 Budget

Carmel Area Wastewater District

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

Contact:	Waggoner
Area	Effluent Bldg
Asset Type:	Support Equipment
Avg Useful Life:	15 years
Est Residual Life:	1 year
% Consumed Life:	93%
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Siemens Deox 2000 DeChlorination Analyzer continously montiors the dechlorinated Residual of the plant effluent for ocean discharge. This montioring is to ensure continuous permit compliance when sending plant effluent to the ocean and is recorded by both a circular chart as well as SCADA. These values are recorded daily and submitted to the Regional Board in our monthly Discharge Monitoring Report.

Year Built:	2002
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

To ensure continous compliance with the NPDES permit, this analyzer is of high importance. This DeChlorination Analzer was installed approxemenly in 2002, it has almost reached its useful life. Although staff performs all required maintenance to ensure its reliability and accuracy, there are some parts that are no longer supported. Staff has developed a contingency plan in the event of a failure of this analyzer - having a replacement unit available would ensure continuous permit compliance.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	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	3	Violate Daily Max Effluent
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)
		Probability of Failure 10%

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 Budget

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor			$ 2,500					$ 2,500
Engineering								$ -
Parts & Supplies			$ 10,500					$ 10,500
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ 13,000	$ -	$ -	$ -	$ -	$ 13,000

#4 FY 2017-18 Budget

Carmel Area Wastewater District

Project Name:	Thermo Scientific Gallery Discrete Analyzer
Dept:	Treatment
Total Cost:	$ 45,000
CY Budget	$ 45,000
GL Account:	

Contact:	Waggoner
Area	Misc Structures
Asset Type:	Support Equipment
Avg Useful Life:	10 years
Est Residual Life:	10 years
% Consumed Life:	0
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

The analyzer provides an integrated platform for two measurement techniques, photometric and electrochemical (ECM), which can be run in parallel. Simultaneous determination of several analytes from a single sample and many automated features ensure efficiency in analysis. Parallel determiniation of deveral analytes from a single sample as well as the presence of several automated features ensures analytical efficiency. Each individual reaction cell is isolated and temperature stabilized enabling highly controlled reaction conditions.

Year Built:	n/a
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

Thermo Scientific Gallery analyzer is an automated laboratory instrument that allow the lab to increase sample analysis . The Gallery system can perform a multiple set of tests that would reduce the current analysis from a multiple of different sample equipment to one piece of equipment. The dual benefits of time and cost savings for test reagents and chemical cost would be reduced by the calibration of the Gallery system. The Gallery system uses all approved EPA methods to meet the requirements of the Environmental Laboratory Accreditation Program (ELAP) and the TNI methodology and requirements. There would be a learning curve to receive the training from the manufacturer and the time for the analyst to be comfortable to operate. It is the intent that the CAWD laboratory will acquire the ELAP or TNI certification to be able to perform and report results usng the Gallery analyzer instead of the present system of contract laboratory for analysis. There will still be a need for the contract lab to analyze samples for testing that we cannot perform, but the cost savings for the Gallery analyzer should reduce the contract lab costs. The cost savings come from sample analysis time, instrumentation replacement, consumable standards and reagents along with the glassware for the instruments. The Ion Chromatography unit that tests the two CAWD reclamation samples, the four golf courses and the two PBCSD reclamation samples is on schedule to be out of life in the next year or two and will no longer be supported by the manufacturer. The Kjeltac Tecator distillation unit that analyzes for ammonia can be retired out of service and will not need to be replaced with a new unit, the Gallery Analyzer can analyze for Ammonia, Total Kjedahl Nitrogen (TKN) and Urea. The CAWD lab would need to apply for ELAP certificaton for reportable analysis data.

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	10	Permit Jeopardized Environmental Damage Requires Remediation
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)
		Probability of Failure 5%

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 Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 45,000						$ 45,000
Total		$ 45,000	$ -	$ -	$ -	$ -	$ -	$ 45,000

#5 FY 2017-18 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:	85
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

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

Year Built:	Jul-04
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	10 Unserviceable

Justification

The incubator was purchased back in 2005 and remains operating 24 hours a day and out lived its time. I had a service technician inspect the incubator and his advise was to be prepared for the compressor to stop working and it would be cost effective to have it replaced. The BOD analysis is a NPDES permit requirement making this a critical piece of laboratory equpment and necessary to remain compliant.

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)
		Probability of Failure 20%

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 Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies				$ 12,000				$ 12,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -	$ -	$ -	$ 12,000	$ -	$ -	$ -	$ 12,000

#6 FY 2017-18 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:	98
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 positive prior to disposal. It is essential to complete permit required analysis and maintain compliance with EPA and ELAP requirements.

Year Built:	Jun-93
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The autoclave has outlived its useful life. Will include the purchase of a new model.

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

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 Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies			$ 16,000					$ 16,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total	$ -		$ 16,000	$ -	$ -	$ -	$ -	$ 16,000

#7 FY 2017-18 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:	50
Category:	Capital Equipment
Urgency:	3 = 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 Suspend Solids. The data from the % Volatile is used for monthly and annual NPDES

Year Built:	2011
Rehabilitation Date:	
Rehab Life Extension:	
Asset Condition Rating:	

Justification

The muffle furnace is used in the laboratory to provide the Operations Department with process control data and for reportable NPDES permit. The muffle furnace was purchased in 2011 and repaired in 2016. The service technician that performed the repair noted that this unit is old and parts will be difficult to order. Most of the units have reduced the electronic equipment and the unit that is in place is not universal parts.

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)
		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 Budget Secondary Reclamation 50%

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies				$ 13,500				$ 13,500
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ 13,500	$ -	$ -	$ -	$ 13,500

#8 FY 2017-18 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:	70
Category:	Capital Equipment
Urgency:	2 = Very Important
Carry Forward:	No

Asset Description

Ion Chromatography is a laboratory instrument to analyize various chemical constituents for Reclamation Project. The IC performs the majority of analysis (Anion, Cation, T-metals, and Boron) for the Reclaim line on a weekly schedule and all of PBCSD samples collected monthly. The ICS 5000 unit is currently recommended as the "like-to-like" exchangeable, with the least cost.

Year Built:	2011
Rehabilitation Date:	2016
Rehab Life Extension:	3 years
Asset Condition Rating:	9 Virtually Unserviceable

Justification

Our current Ion Chromatograph is scheduled for replacement to a ICS 5000 unit. Dionex will no longer be providing software, parts and service repairs after June 2017. The current IC unit had a preventative maintenance service in 2016.

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
		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 Reclamation 100% Secondary

Budget Impact/Other

	Prior Yr	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies						$ 150,000		$ 150,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ -	$ -	$ -	$ -	$ 150,000	$ -	$ 150,000

Long Term Capital Projects

CARMEL AREA WASTEWATER DISTRICT TREATMENT PLANT
LONG TERM CAPITAL PROJECTS - FY 2017/18 - 32/33

	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	Unscheduled	
1	Technical Studies	$60,000	$25,000		$35,000		$50,000			$25,000		$50,000						
2	Sea Level Rise Analysis & Planning	$100,000	$75,000					$15,000					$10,000				$10,000	
3	Arc Flash Evaluation					$30,000										$60,000		
	WWTP - PHASE I																	
4	PH I - Stand by Blower Replacement	$65,000																Phase 1 Carry forward - Staff anticipates that due to the current scheduling of the Phase 1 project that there will be a significant carry forward of this years budget. This funding was approved in 2016-17 and the values are not duplicated from the current year.
5	PH I - Standby & Main Power Integration	$750,000																
6	PH I - Hypo/SBS *(Reclamation 40%)*	$650,000																
7	PH I - #3 Water System Improvements	$25,000																
8	PH I - Dewatering	$350,000																
9	PH I - RAS Building Rehabilitation	$300,000																
10	PH I - Digester Firm Capacity Improvements	$1,000,000																
11	PH I - #1 Water Improvements	$25,000																
12	PH I - Storm water Improvements	$50,000																
13	PH I - DAFT *(Reclamation 50%)*	$175,000																
14	PH I - Flare Replacement	$265,000																
15	CM contract for PH 1 Construction	$365,000																
16	PLC Programing for PH 1	$45,000																
	TOTAL CARRY FORWARD	$4,065,000																
	WWTP - PHASE II, Early Start (ES)																	
17	PH II ES - WWTP O&M Manual	$100,000																Early Start (ES) Phase 2 early start will provide additional information for the Phase 2 project and also clear the way for the Phase 2 project by performing demolition of unneeded items.
18	PH II ES - Demo Project	$250,000	$125,000															
19	PH II ES - Design Services PH 2	$350,000	$350,000															
20	PH II ES - #1 Digester Clean and Evaluation	$175,000	$100,000															
	TOTAL PH II ES		$1,450,000															
	WWTP - PHASE II																	
21	PH II - Influent Pump station			$600,000	$400,000													Phase 2 - is the second phase of need reliability improvements as indicated in the K/J capital analysis from 2012
22	PH II - Effluent Building		$300,000	$200,000	$200,000													
23	PH II - Headworks and Grit Screening		$650,000	$400,000	$500,000													
24	PH II - #1 Digester Rehab, Mixing		$250,000	$525,000	$400,000													
25	PH II - Chlorine Building Repurpose/Electrical		$100,000	$200,000	$400,000													
26	PH II - Blower Building MCC & Power Impr		$200,000	$150,000														
27	PLC Programing for PH 2 (CalCon)		$60,000	$80,000														
28	CM Contract for PH 2 Construction		$100,000	$300,000	$200,000													
29	SCADA Network - Phase II		$145,000															
	TOTAL PH II				$6,360,000													
	WWTP - PHASE III																	
30	PH III - Design and CM assistance							$200,000	$200,000	$100,000	$100,000							Phase 3 will include co-generation improvements that meet the demands of the new treatment plant improvements.
31	PH III - Gas Conditioning System	$90,000							$525,000									
32	PH III - Co-Gen Project									$1,000,000								
33	PH III - Septage/Wet Waste/Grease Receiving										$700,000							
34	PLC Programing PH 3 (CalCon)								$50,000	$50,000	$150,000							
	TOTAL PH III										$2,225,000							
35	Air Monitoring																$15,000	
36	Micro Turbine Rehab	$148,000																
37	Dewatering Standby Equipment		$100,000	$50,000									$450,000					
38	Primary Clarifier Rehab		$225,000										$60,000		$60,000			
39	Secondary Clarifier Rehab	$250,000										$60,000		$60,000				
40	DAFT Rehab										$100,000				$60,000			
41	Digester #1 Clean and Inspect													$200,000				
42	Digester #2 Clean and Inspect											$180,000						
43	Influent Building Pump Rehab													$150,000				
44	Effluent Building Pump Rehab								$100,000									
45	Headworks Rehab													$200,000				
46	Primary Blower Rehab					$400,000										$50,000		
47	RAS Building Rehab															$150,000		
48	Aeration Basin Rehabilitation									$740,000								
49	Chlorine Contact Channel Rehab(Recl 25%)						$250,000											
50	Plant Paving & Drainage	$100,000		$150,000											$100,000			
51	Outfall Crossing	$120,000	$450,000	$500,000														
52	Operations Building Rehab	$75,000							$125,000								$40,000	
53	Lunch Room/Meeting Hall Replacement						$175,000	$600,000										
54	Misc. Yard Piping Rehab	$50,000	$120,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000								
55	Plant Landscaping	$12,000				$25,000												
56	Cathodic Protection				$30,000									$30,000			$350,000	
57	Maintenance Building Reconstruction							$430,000										
58	Influent Conveyance and Screening																$1,000,000	
59	Treatment Plant Administration Building																$3,000,000	

CARMEL AREA WASTEWATER DISTRICT TREATMENT PLANT
LONG TERM CAPITAL PROJECTS - FY 2017/18 - 32/33

	PROJECT	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	Unscheduled
60	Ocean Outfall Rehabiliatation																$1,000,000
61	Sea Level Rise Structural Protection																$15,000,000
	TREATMENT & DISPOSAL TOTAL	**$5,945,000**	**$3,375,000**	**$3,245,000**	**$2,255,000**	**$545,000**	**$565,000**	**$1,335,000**	**$1,090,000**	**$2,005,000**	**$1,050,000**	**$290,000**	**$520,000**	**$640,000**	**$220,000**	**$260,000**	**$20,415,000**
	RECLAMATION SHARE (1)	$347,500	$0	$0	$0	$0	$62,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	PBCSD SHARE	$1,863,968	$1,123,875	$1,080,585	$750,915	$181,485	$167,333	$444,555	$362,970	$667,665	$349,650	$96,570	$173,160	$213,120	$73,260	$86,580	$6,798,195
	CAWD COST	**$3,733,533**	**$2,251,125**	**$2,164,415**	**$1,504,085**	**$363,515**	**$335,168**	**$890,445**	**$727,030**	**$1,337,335**	**$700,350**	**$193,430**	**$346,840**	**$426,880**	**$146,740**	**$173,420**	**$13,616,805**

(1) PBCSD to pay 1/3 of costs. (After Reclamation portion deducted, if applicable) unless otherwise noted. *Projects in italics are not funded directly by PBCSD*

1 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Technical Studies
Dept: Treatment
Total Cost: $ 245,000
CY Budget $ 60,000
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: Yes

Asset Description

Planned Engineering Studies - To plan for the future and to provide supporting technical information for future capital projects, external third party studies are required. The studies in this catagory are 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.

STUDIES BY YEAR

17/18 - $60,000 To comply with Title 44 of Federal Code of Regulations flood impact reporting a CLOMR will be needed to ensure that all construction thus far remains compliant with prior documentation. Plant elevation surveying of new building elevations and grades is also included. The District will continue to engage external engineering services to ensure that these studies remain objective. Additional enviornmental services are also anticipated as we begin to prepare the WWTP - Phase II desgin plans.

18/19 - $25,000 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 efficency.

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. Thes funds shall be utilized to hire an outside independent firm to perform this evaluation as directed by the State Water Qualilty Conrol 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 analyis 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.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	20-21	22-23	25-26	27-28	Total
Labor		$ 60,000	$ 25,000	$ 35,000	$ 50,000	$ 25,000	$ 50,000	$ 245,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 60,000	$ 25,000	$ 35,000	$ 50,000	$ 25,000	$ 50,000	$ 245,000

2 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Sea Level Rise Analysis & Planning
Dept: Treatment
Total Cost: $ 175,000
CY Budget $ 100,000
GL Account:

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

Asset Description

The District intends to hire a independent firm to perform a sea level rise analysis of both the treatment plant as well as the collection system infrastructure that may be impacted by sea level rise (SLR). This study is a multi-year effort to provide draft guidance for incorporation of sea level rise 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.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 documnetation to support operational decisions.

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	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor	$ 50,000	$ 100,000	$ 75,000					$ 175,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 100,000	$ 75,000	$ -	$ -	$ -	$ -	$ 175,000

3 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Arc Flash Evaluation
Dept: Treatment
Total Cost: $ 90,000
CY Budget $ 30,000
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

NFPA 70E (National Fire Protection Association) develops requirements for safe work practices to protect personnel by reducing exposure to major electrical hazards. Arc Flash evaluation assessments are performed by an Electrical Engineer. The District will obtain the services of an Arc Flash specialist 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 saftey compliance.

Funds budgeted include evaluation of Arc Flash hazards at the end of Phase 2, and additional funds to re-evaluate current regulations 10 years after completion of Phase 2

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 requlation. Therefore NFPA 70E serves as a bridge between OSHA regulations and compliance.

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		
Permit/Environmental COF	1	No Impact to Environment
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	21-22	31-32				Total
Labor	$	$ 30,000	$ 60,000				$ 90,000
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other							$ -
Total	$	$ 30,000	$ 60,000	$ -	$ -	$ -	$ - $ 90,000

4 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Stand by Blower Replacement
Dept: Treatment
Total Cost: $ 65,000
CY Budget $ 65,000
GL Account:

Contact: Lander
Area: Blower Bldg
Asset Type: Building Machinery
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

The blowers provide air to the Aeration basins to maintain sufficient dissolved oxygen levels.

Currently we operate one centrifugal blower that is in use 24 hours a day 7 dys a week. This blower supplies the oxygen needed for the microorganisms in the aeration basins to survive. This blower was installed in 1998 when it was determined that the existing blower installed in 1994 was oversized and energy cost was excessive. The two existing blowers from 1994 are not dependable and are in need of costly repairs to refurbish to give us a redundant/backup system.

This project has been designed and included as part of the WWTP Rehabilitation Project. Project is a carry forward of partial funds from last year. Asset will be completed in 17/18. Replace existing standby blower with a properly sized blower to provide a backup for the only reliable blower. Include energy saving modifications to the existing blowers such as inlet throttling or variable speed drives if financially efficient (i.e. acceptable payback on energy savings investment). Other improvements to the air piping and upgrades to blower electrical systems may be included in the project.

Year Built: 1998
Rehabilitation Date: 2017
Rehab Life Extension:
Asset Condition Rating: 1 New or Excellent Condition

Justification

Failure Modes Addressed:
1. The existing standby blowers have bent drive shafts and vibrate excessively when operated. The standby blowers with bent shafts are the only backups to a single reliable blower.
2. Redundancy/reliability of the blower system. Dissolved oxygen in the aeration basins is critical for reducing BOD in the treatment process. Currently there is only one reliable blower. For a critical system such as the blowers there should be a redundant blower.
3. The blowers use the most energy of any process in the treatment plant. Investments in more energy efficient controls could reduce the overall life cycle cost of the blower system.

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 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 65,000						$ 65,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 425,000							$ -
Total		$ 65,000	$ -	$ -	$ -	$ -	$ -	$ 65,000

5 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Standby & Main Power Integration
Dept: Treatment
Total Cost: $ 750,000
CY Budget $ 750,000
GL Account:

Contact: Lander
Area:
Asset Type: Building Machinery
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

The main power feed into the plant provides electricity for plant operations. Existing equipment is antiquated and prone to failures.

This project has been designed and included as part of the WWTP Rehabilitation Project. Project is a carry forward of partial funds from last year. The remaining budget will be carried forward. Upgrade switchgear and main power feeders. Relocated updated electrical equipment to optimize space in the Operations Building and to make space in the electrical room for a future SCADA control and monitoring station. Project will be operational in 2017.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

When equipment fails there are no off the shelf replacement parts due to age of equipment. Much of the infrastructure has not been cleaned over the years and corrosion is present.

Failure Modes Addressed:
1. Lack of integration of electrical systems makes it difficult to maintain reliability of electrical systems
2. The main power feed equipment is approximately 40 years old.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 10 Cannot be down 1 hour
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 1,334,375	$ 750,000						$ 750,000
Total		$ 750,000	$ -	$ -	$ -	$ -	$ -	$ 750,000

6 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Hypo/SBS (Reclamation 40%)
Dept: Treatment
Total Cost: $ 650,000
CY Budget $ 650,000
GL Account:

Contact: Lander
Area: SBS/Hypo Bldg
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

The level of service of the chlorination and de-chlorination chemical systems is to dose and disperse chlorine upstream of the chlorine contact channel and dose SBS downstream of the chlorine contact channel. The chlorine gas system has been very effective, but it does pose certain risks and dangers to the surrounding community. The system is nearing its usefl life expectancy and it is time to over-haul the system. The District has decided to improve overall public safety by applying a liquid disinfectant which can be handled with a significant risk reduction to the public.

This project has been designed and included as part of the WWTP Rehabilitation Project. Project is a partial carryover from last year. The remaining budget will be carried forward. Convert the existing chlorine gas disinfection system to a bulk 12.5% liquid sodium hypochlorite disinfection system. A new tank storage double containment pad would be built with multiple polyethylene storage tanks to store sodium hypochlorite chemical. Chemical feed pumps would be located on the double containment pad and would pump sodium hypochlorite upstream of the chlorine contact channels for disinfection. A feed would also be provided for disinfection of the recycled water upstream of the recycled water chlorine contact channels. Construct an additional sodium bisulfite (SBS) storage tank to provide a redundant SBS storage tank to increase reliability of the de-chlorination system.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Failure Modes Addressed:
1. The existing chlorine gas cylinder room is used for both storage of standby chlorine gas cylinders and for use of cylinders. Because the chlorine gas cylinder room is used for storage of cylinders a chlorine scrubber is required per California Fire Code (CFC) Section 3704.2.2.7 Exception 2. The gas storage room is currently not equipped with a scrubber.
2. There have been minor valve failures in the chlorine gas system in the past which calls for upgrades and rehabilitation of the existing gas feed system piping.

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	3	Violate Daily Max Effluent
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Reclamation 40%

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 1,000,000	$ 650,000						$ 650,000
Total		$ 650,000	$ -	$ -	$ -	$ -	$ -	$ 650,000

7 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - #3 Water System Improvements
Dept: Treatment
Total Cost: $ 25,000
CY Budget $ 25,000
GL Account:

Contact: Lander
Area: 3 Water System
Asset Type: Process Equip (Gas)
Avg Useful Life: 20 years
Est Residual Life: 20 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

The #3 water system is the in-house recycled water supply. It was placed into service in the late 1980s and is located at the Chlor/De-chlor building (CDC). It consists of three vertical turbine pumps that pull from the chlorine contact channel #2.

This project includes refurbishing the present #3W system by replacing the strainers, automating the pressure release valve and repairing the pressure tank. This project is a partial carryforward from last year. The remaining budget will be carried forward. #3 Water improvments will be completed in 2017.

Construction of replacement equipment to rehab the existing 30 year old #3 Water System hydro pneumatic tank. Replacement of #3 strainer and replacement of electrical controls and instrumentation systems. These are old pumps and have reached the end of their useful life.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

#3 water is pumped through 6" steel pipe through a motorized strainer and is discharged to a pressurized hydro-pneumatic tank. This system has lacked the proper attention and is now restricting flow to the hydro-pneumatic tank and the strainer has failed and been out of service for several years. In addition to issues with the strainers and potentially the pressurized water tank, there are five critical gate valves associated with this system that are in need of attention.
The #3 water provides cooling to a number of key assets throughout the facility such as:

- Influent Pumps (packing)
- Effluent Pumps (packing)
- Waste Activated Sludge Pumps (packing)
- Return Activated Sludge Pumps (packing)

The system also supplies cooling and injector water for chlorination system and the microfiltration and reverse osmosis system. This injector system is also one of three ways to chlorinate the secondary effluent. This water is also used to flush lines and hose tanks throughout the plant.

This system supplies reclaimed water throughout the WWTP for pump seal water, spray-water for secondary clarifier scum collection, belt filter press spray water, and various wash-down and flushing uses.

Failure Modes Addressed: The existing #3 Water System has reached the end of its useful life and major components such as the hydro pneumatic tank could fail resulting in a loss of service, the highest consequences of failure could be related to loss of process pump seal water.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility	$ 172,500	$ 25,000						$ 25,000
Other								
Total		$ 25,000	$ -	$ -	$ -	$ -	$ -	$ 25,000

8 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Dewatering
Dept: Treatment
Total Cost: $ 350,000
CY Budget $ 350,000
GL Account:

Contact: Lander
Area: DeWatering Bldg
Asset Type: Process Equip (Solid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

The improvements are part of the WWTP Rehabilitation. The dewatering equipment dewaters digested sludge to reduce the volume of sludge that needs to be transported for disposal (approximately 85% reduction in sludge volume). This equipment is needed because the District no longer utilizes drying beds to reduce sludge volume.
The original belt press was removed as well as all polymer mixing machines that were in the basement. None of that equipment had been used for more than a decade. The District currently has no redundancy to the existing belt press. A new screw press with associated piping, electrical and SCADA improvements have become part of the WWTP Rehabilitation project. This project is a partial carry forward from last year. The remaining budget will be carried forward

Work required includes Construction of a backup dewatering skid adjacent to the existing belt filter press (BFP). Required demolition of the current non-operational BFP which was accomplished this year. Recommended dewatering equipment includes a screw press, which has a smaller footprint than a BFP and will permit future maintenance of the existing BFP. A screw press was piloted last year and has been proven to be successful. Construction should be sequenced to allow temporary dewatering activities with the new skid outside of the BFP building while demolition and maintenance activities commence inside the building. The project would also address miscellaneous mechanical, electrical systems and controls upgrades to replace assets which are near the end of their useful life. The existing belt press will be serviced and maintained as a redundant press until a future screw press is installed.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Failure Modes Addressed:
1. Lack of reliability/redundancy of existing dewatering equipment. This is currently the only operable BFP therefore if the BFP breaks down there would be no means of dewatering sludge requiring costly liquid hauling and/or emergency dewatering services.
2. Lack of maintainability of the existing BFP. The existing BFP cannot be rebuilt due to the adjacent non-operational BFP and lack of space adjacent to the unit.
3. The existing operational BFP was installed in 1998 and is need of repairs for reliable operations.
4. Other miscellaneous assets in the BFP building (e.g. filtrate return pumps, electrical and PLC equipment) are at the end of their useful life and should be replaced as part of this project for economies of scale.

The existing Input/Output (I/O) panel hardware is no longer supported by Allen-Bradley and is beyond its useful service life. This panel currently houses the remote pump station radio communication equpment, which would need to be relocated to a separate location once the remote I/O panel is eliminated. The new motor control center equipment being provided as part of the current Phase I Rehabilitation Project contains adequate space for the addition of a second screw press.

We anticipate a 10% reduction in material handling costs. We will also use less water -- a screw press will use 1/3 the water of the belt press. And, the water it does use will be returned to the headworks. Finally, there is minimal maintenance for the screw press because it runs at such a slow speed.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	5	Cannot be down a week
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 796,250	$ 350,000						$ 350,000
Total		$ 350,000	$ -	$ -	$ -	$ -	$ -	$ 350,000

9 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - RAS Building Rehabilitation
Dept: Treatment
Total Cost: $ 300,000
CY Budget $ 300,000
GL Account:

Contact: Lander
Area: RAS Pump Bldg
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

These improvements have been included in the WWTP Rehabilitation project. This project is a partial carry forward from last year. The remaining budget will be carried forward.
Repair or replace electrical equipment (wiring, breakers) in the RAS Pump Building. Install new dedicated sludge wasting pumps and an ultrasonic level sensor in the RAS wet well. Mechanical improvements include installing permanent connections for portable pumps to the RAS wet well for emergency RAS pumping in the event of a failure of the RAS pumps, piping or valves. Rehabilitation/Replacement of existing pump valves.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

After inspection of the existing electrical equipment in the RAS building staff determined that failure was imminent and that replacement of this equipment was due. Staff has put together an emergency plan for bypass if required, however appropriately fixing this issue prior to failure is the best outcome. Equipment in the RAS Pump Building has reached the end of its useful life. Several repairs have been made to this system this year just to keep the equipment functioning and without providing additional redundancy.

Failure Modes Addressed:
1. Existing electrical wiring has been severely compromised due to corrosion. Electrical equipment (wiring, breakers, etc.) are 40 years old which is beyond the average useful life of electrical equipment.
2. Existing mechanical (valves and piping) equipment is aged and will need to be rehabilitated or replaced.
3. Safety. In addition to the condition and age of electrical equipment, electrical equipment in the RAS Pump Building is in close quarters to working areas which increase hazards if work needs to be done to repair electrical equipment in the event of an electrical failure.
4. Sludge wasting pumps to replace the current practice of flow control valves may improve efficiency of the sludge process by reducing loading on solids treatment equipment.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 7 Cannot be down 1 day
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 240,000	$ 300,000						$ 300,000
Total		$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000

10 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Digester Firm Capacity Improvements
Dept: Treatment
Total Cost: $ 1,000,000
CY Budget $ 1,000,000
GL Account:

Contact: Lander
Area: DeWatering Bldg
Asset Type: Process Equip (Solid)
Avg Useful Life: 30 years
Est Residual Life: 30 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

The digesters provide solids retention time over 15 days for anaerobic digestion. Equipment level of service is to heat and mix the digester sludge to facilitate mesophilic conditions and pathogen removal in order to meet Class B bio solids regulation.

This project has been included as part of the WWTP Rehabilitation Project and will be completed in the following fiscal year. This project is a partial carry forward. The remaining budget will be carried forward. This project includes construction of a new 400,000 gal concrete Digester and assoicated equipment. The digester will provide redundancy and give us an opportunity to clean and rehab Digester #1.

Improvements include construction of a new approximately 360,000 gallon digester complete with ancillary equipment (mixing system, digester gas equipment, sludge heating equipment, etc.). The new digester would be integrated with Digester #1. New equipment is to be constructed adjacent to the new digester inside the Digester Control Building.

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

Justification

Failure Modes Addressed:
1. Capacity failure. The existing digestion system does not have adequate capacity to digest sludge with Digester #1 out of service (i.e. firm capacity with largest unit out of service).
2. Digesters #2 and #3 are both in poor condition and exhibit signs of structural degradation.
3. Digester #2 and #3 gas piping is in poor condition.
4. Digester #2 Mixer is losing a quart of oil every week which may be an indication of a seal problem.

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		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 1,811,250	$ 1,000,000						$ 1,000,000
Total		$ 1,000,000	$ -	$ -	$ -	$ -	$ -	$ 1,000,000

11 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - #1 Water Improvements
Dept: Treatment
Total Cost: $ 25,000
CY Budget $ 25,000
GL Account:

Contact: Lander
Area: 1 Water System
Asset Type: Support Equipment
Avg Useful Life: 20 years
Est Residual Life: 20 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

#1 Water supplies potable water throughout the plant for use in restrooms, sinks, lab, pump seal water, and emergency eyewash showers.

These improvements have been included in the WWTP Rehabilitation project. This project is a partial carry forward. The remaining budget will be carried forward.
Construction of a new #1 Water Feed System (storage tank, distribution system pressurization pumps, and hydropneumatic tank). New #1 Water System feed system is to be located outside of the Operations building. Replacement of #1 Water distribution piping not included, (see Misc Yard Piping Rehab and Replacement Project).

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

Justification

Failure Modes Addressed: The existing #1 Water System has reached the end of its useful life and major components such as the storage tank could fail resulting in a loss of service.

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		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 50,000	$ 25,000						$ 25,000
Total		$ 25,000	$ -	$ -	$ -	$ -	$ -	$ 25,000

12 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Storm water Improvements
Dept: Treatment
Total Cost: $ 50,000
CY Budget $ 50,000
GL Account:

Contact: Lander
Area: Pump Station
Asset Type: Pump Station
Avg Useful Life: 20 years
Est Residual Life: 20 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

These improvements have been included in the WWTP Rehabilitation project to be completed over the following two years.
The Stormwater pump station has been designed to self contain the drainage of the 7.39 acres inside the treatment plant fence line. All storm drains will run to a central wet well where any drainage from inside the plant will be returned to the head of the plant for treatment via two submersible pumps. The system is designed to return all drainage up to a plant flood event. This project includes the installation of a wet well, electrical and SCADA servicing the two submersible pumps and the in-ground piping required to return the plant drainage to the head of the plant. The piping will be epoxy line (corrosion resistant) and contain flush-outs. This pipeline will also be tied into the lines allowing the District to fill an empty digester with storm water for storage if needed. This will be one of the first projects to start the Rehabilitation project, so it is expected that some funds will be spent prior to the end of this current fiscal year.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The current storm drain system is inadequate for protecting the riparian habitat surrounding the facility. Currently our storm water collection system has no reliable means of capturing the water leaving the plant if it proved necessary, i.e. hazardous chemicals being accidently spilled into a storm drain.

This project will create an in-house pump station for the plant's drainage system. This pump station would automatically return the collected liquid to the beginning of the treatment process, as opposed to discharging to the Lagoon. We will replace the current catch basin that is manually operated with a pump station equipped with an overflow system in the event that the pump station was to fail. Additionally, we will conduct an evaluation of the piping network that feeds the system.

Our recent (Feb 2013) audit by the EPA called us out on the inlet protection at each drain. We will solve this problem by installing barriers at each drain location to prevent soil and debris or other material from entering the storm drain drop inlets.

Failure Modes Addressed: The Plant storm water system should be self-contained and all water/spills returned to the head of the plant for processing. Anything less opens the door to potentially sending pollutants out into the habitat area surrounding the facility.

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	3	Short Duration, Small qty. Event Onsite: No Complaints
Permit/Environmental COF	10	Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 347,750	$ 50,000						$ 50,000
Total		$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000

13 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - DAFT (Reclamation 50%)
Dept: Treatment
Total Cost: $ 175,000
CY Budget $ 175,000
GL Account:

Contact: Lander
Area: DAFT
Asset Type: Support Equipment
Avg Useful Life: 20 years
Est Residual Life: 20 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

This project has been designed and included as part of the WWTP Rehabilitation Project to be installed over the next two fiscal years. This design incudes the rehabilitation of our existing DAFT tank and air flotation system.

Rehabilitate the existing Dissolved Air Flotation (DAF) thickener by replacing the Launder and drive motor, replace recirculation pump with Nikunni Pump, remove air compressor and mixing tank, remove excising equipment cover. Construct Flood proofing for new equipment and piping. An automated control system minimizes operator requirements and provides the ability to monitor operation from the SCADA system.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Staff has confirmed that all side stream flows, including filter backwash from the Reclamation equipment, mixed and processed through the DAFT has resulted in better performance of the DAFT with higher solids removal than previously processing them individually. In addition staff has successfully piloted a modified aeration system using a Nikuni pump and made continuing progress reducing particulates. As a result of testing the Nikuni Recirculation pumping system over the past several months staff directed K/J to change the DAFT design to utilize the Nikuni because even higher solids capture was achieved with much less power usage and fewer pieces of equipment requiring maintenance. Redundancy for this DAFT will be provided through a package system that is scheduled for purchase in FY2019/20 -- until that time the gravity belt thickener in the primary clarifiers operates as the backup system.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 3 Cannot be down a month
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Reclamation 50%

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 675,000	$ 175,000						$ 175,000
Total		$ 175,000	$ -	$ -	$ -	$ -	$ -	$ 175,000

14 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH I - Flare Replacement
Dept: Treatment
Total Cost: $ 265,000
CY Budget $ 265,000
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: Support Equipment
Avg Useful Life: 25 years
Est Residual Life: 25 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 1 = Critical
Carry Forward: Yes

Asset Description

These improvements have been included in the WWTP Rehabilitation project to be completed over the following two years. Replace the existing methane flare with a new technology consistent with current State Air Board regulations and the associated piping.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The flare is used to burn off excess waste methane prior to releasing it into the atmosphere. It is the intent of staff to install appropriate equipment to use all available methane; however, there are times when it is necessary to burn off the excess methane. The current asset does not meet current air quality standards and has excessive oxidation/rust of the unit. Staff agreed that as part of the new digester construction a replacement flare should be relocated near the new digester with replacement piping and equipment. This would be more cost effective than relocating it at a later time, and will be an environmental benefit.

When the microturbines are in operation the District does not have any excess gas, it is all utilized to run the digesters – and the flare is not lit at all. However, a flare for waste gas is a requirement for all wastewater facilities with anaerobic digestion. Once constructed the new flare will be maintained anually and serve the District 40+ years.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	10 Cannot be down 1 hour
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	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 325,000	$ 265,000						$ 265,000
Total		$ 265,000	$ -	$ -	$ -	$ -	$ -	$ 265,000

15 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: CM contract for PH 1 Construction
Dept: Treatment
Total Cost: $ 365,000
CY Budget $ 365,000
GL Account:

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

Asset Description

Contract with Kennedy Jenks Consultants (K/J) to provide Construction Management and Engineering services over the duration of the Phase 1 Treatment Plant improvements currently under construction.

Year Built: 2016-2017
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The Phase 1 improvements are estimated to cost $15,000,000 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 will be in the hundreds 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 provided a very competitive price to perform 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 7 Cannot be down 1 day
Safety COF 3 Minor Inconvenience
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 997,832	$ 365,000						$ 365,000
Total		$ 365,000	$ -	$ -	$ -	$ -	$ -	$ 365,000

16 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PLC Programing for PH 1
Dept: Treatment
Total Cost: $ 45,000
CY Budget $ 45,000
GL Account:

Contact: Lander
Area:
Asset Type: Computer/Network
Avg Useful Life: 15 years
Est Residual Life: 15 years
% Consumed Life: 0
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: Yes

Asset Description

The Long Term Capital Project includes an upgrade of multiple Programmable Logic Controllers (PLC) throughout the plant. To place these PLCs into service will require specialized professional services. We have contracted with CalCon to initiate this work and would like to have them continue. We are looking at CalCon not only on a one time basis to assist with installation of project; but over the long haul to assist and give customer support to SCADA and PLC issues. Please NOTE: this is a projected change from current vendor TESCO. The District had sole-sourced with TESCO for many years; however, the last few years have not been satisfied with customer service and made a decision to change to CalCon.

Year Built: 2016
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

CalCon Systems is a full-service process control, instrumentation and automation firm specializing in turn-key design/build system integration and support services. The company has completed thousands of process control system projects since they were founded in 1987. Their technical staff is experienced in a wide range of industrial processes including wastewater. From design, build, and installation to maintenance, operation, upgrades, instrument calibrations and emergency service support they provide value with customer service and expertise in industrial processes. The District requires these specialized services in order to complete the PLC upgrade.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 5 Cannot be down a week
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 100,000	$ 45,000						$ 45,000
Total		$ 45,000	$ -	$ -	$ -	$ -	$ -	$ 45,000

17 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - WWTP O&M Manual
Dept: Treatment
Total Cost: $ 100,000
CY Budget $ 100,000
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: Structure
Avg Useful Life: 25 years
Est Residual Life:
% Consumed Life:
Category: Capital Equipment
Urgency: 3 = Important
Carry Forward: Yes

Asset Description

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 practicies. 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.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The District contracted with Kennedy Jenks to update its O&M manual in January 2016. Total project $250,000, with a reallocation of $50,000 from the Construction Management contract and $100,000 for 2016-17 and 2017-18.

The upgrade is to provide an electronic version that will be accessible on the plant network and wll 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.

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		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other	$ 150,000	$ 100,000						$ 100,000
Total		$ 100,000	$ -	$ -	$ -	$ -	$ -	$ 100,000

18 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - Demo Project
Dept: Treatment
Total Cost: $ 375,000
CY Budget $ 250,000
GL Account:

Contact: Lander
Area: Digesters
Asset Type: N/A
Avg Useful Life:
Est Residual Life: 1 year
% Consumed Life: 99
Category: Maintenance
Urgency: 3 = Important
Carry Forward: No

Asset Description

The age of the three original digester tanks ranges from 39 to 77 years. Today these structures do not conform to the safety standards required by regulatory agencies for fluid filled tanks. The equipment servicing these tanks has also reached the end of its life and will be disposed of. Demo will take the tanks flat to the existing ground level. Work is to be competed after the Phase 1 improvements are done and operational. (Reference Kennedy/Jenks Tech Memo No. 4 dated December 20, 2012 "Digestion System Improvements Pre-Design".

This project includes the removal of the digesters currently known as #2, #3, #4. This project will include the cleaning of the tanks, and the removal of all three including any equipment servicing them and electrical. In 1938 Digester 3 and Sludge Holding Tank 4 were built, in 1960 Digester 2 was built, and in 1976 Digester 1 and the Digester Control Building were built.

Year Built: 1938
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The digesters and lunch room are old structures that have outlived their useful lifespan. The old digesters have serious performance/safety issues and although #4 is used as a holding tank, they cannot safely function as digesters. The lunch room (aka original lab building) has certainly outlived its usefulness. The walls of the building are experiencing some water damage issues and staff feels the best course of action is to demo the building.

The existing motor control center equipment located in the lunch room building is well beyond its useful service life. There are very few loads connected to this motor control center equipment, most of which are related to the building itself. Thus, this motor control center can be eliminated with no additional requirements should it be decided to demolish the entire building.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 250,000	$ 125,000					$ 375,000
Total		$ 250,000	$ 125,000	$ -	$ -	$ -	$ -	$ 375,000

19 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - Design Services PH 2
Dept: Treatment
Total Cost: $ 700,000
CY Budget $ 350,000
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: N/A
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Planning ahead for Phase 2 improvements, this budget item is included to anticipate the cost of additional Construction Management services for the WWTP Phase 2 project. This item will include the services of a Construction Manager to manage several construction projects or to manage one bid package of several projects as was done with the Phase 1 construction.
Currently a number of the Phase 2 projects are shaping up to be projects individually bid and completed. However there is approximately $7,000,000 in projects that may become one bid package. A project of that size would require Construction Management services.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

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 Construction manager to ensure good document control and to make sure contractors stay on task.

The current Construction Management Services contracted from Kennedy Jenks Consulting (KJ) includes multiple back-office specialities that KJ is able to provide. The hourly rate of the principle is $190/hr.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering		$ 350,000	$ 350,000					$ 700,000
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 350,000	$ 350,000	$ -	$ -	$ -	$ -	$ 700,000

20 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II ES - #1 Digester Clean and Evaluation
Dept: Treatment
Total Cost: $ 275,000
CY Budget $ 175,000
GL Account:

Contact: Lander
Area: Digesters
Asset Type: N/A
Avg Useful Life:
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 after the new digester is brought on line. 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.

Digester #1 was last cleaned in 1999.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The Digester #1 has not been cleaned and serviced in over 15 years. Clenaing should occure overy 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 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 175,000	$ 100,000					$ 275,000
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 175,000	$ 100,000	$ -	$ -	$ -	$ -	$ 275,000

21 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - Influent Pump station
Dept: Treatment
Total Cost: $ 1,000,000
CY Budget $ -
GL Account:

Contact: Lander
Area:
Asset Type: Electrical
Avg Useful Life: 25 years
Est Residual Life: 5 years
% Consumed Life: 85
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Influent Pump Station is the first station for wastewater that reaches the Treatment Plant. It includes not only pumps, but wet well and control centers to manage all equipment.

1. Replacement of existing motor control center MCC-ISM
2. Replacement of existing Influent Pump variable frequency drives

MCC-ISM = Motor Control Center Influent Pump Station

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

Justification

Both the existing MCC-ISM and Influent Pump variable frequency drive equipment are beyond their useful service life. All of this equipment needs to be replaced in kind, modified as required should process pumping equipment be replaced.

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	5	Maintaining Process Functionality requires staff divert from other work
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other				$ 600,000	$ 400,000			$ 1,000,000
Total	$ -	$ -	$ -	$ 600,000	$ 400,000	$ -	$ -	$ 1,000,000

22 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - Effluent Building
Dept: Treatment
Total Cost: $ 700,000
CY Budget $ -
GL Account:

Contact: Waggoner
Area:
Asset Type:
Avg Useful Life: 30 years
Est Residual Life: 10 years
% Consumed Life: 65
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

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 may need to be upgraded sooner than previously anticipated and the Phase 2 design process will review multiple options for this rehabilitation.

Rehabilitate the existing effluent pump system with new/rebuilt effluent pumps, paint all equipment and upgrade aging electrical systems in the effluent building.

MCC-ESM = Motor Control Center Effluent Pump Station

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 recently inspected and performed 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; however, staff feels it appropriate to postpone this work while we undertake the WWTP Rehabilitation.

The existing MCC-ESM equipment is well beyond its useful service life and new replacement parts are no longer commercially available. Additionally, the MCC-ESM 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-6 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	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 300,000	$ 200,000	$ 200,000			$ 700,000
Total	$ -	$ -	$ 300,000	$ 200,000	$ 200,000	$ -	$ -	$ 700,000

23 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - Headworks and Grit Screening
Dept: Treatment
Total Cost: $ 1,550,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: Support Equipment
Avg Useful Life: 30 years
Est Residual Life: 5 years
% Consumed Life: 90
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Rehabilitate equipment, piping and electrical assets in the headworks area. The assets that should be rehabilitated range from the channel grinder equipment, sludge piping, and electrical system to meet arc flash requirements. The arc flash study proposed in 2016-17 will analyze and evaluate risk. Only qualified persons are allowed to work on electrical systems.

MCC-HM = Motor Control Center Headworks

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The Headworks process removes rags and grit from the liquid treatment process including primary clarifier sludge and scum pumps which convey sludge and scum to the digesters. The grit removal system functioning today has had numerous mechanical issues over the past 3 years. Also there are several newer technologies that would greatly improve the process if implemented. As staff continues to inspect and develop this project over the next couple years there will be better detail.

Failure Modes Addressed:
1. The Headworks was originally built about 40 years ago. Improvements in 2001 addressed repairs to some equipment but other equipment has not been rehabilitated and is beyond the average useful life.
2. Existing electrical equipment is obsolete and therefore difficult to maintain.

The existing MCC-HM and MCC-HSM equipment is well beyond its useful service life. As part of the current Phase I Plant Rehabilitation Project, space provisions have been included at the Operations Building for the expansion of new motor control center equipment designed to serve all of the Headworks loads. To facilitate these connections, a new underground electrical ductbank will be required between the Headworks and Operations Building.

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	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 650,000	$ 400,000	$ 500,000			$ 1,550,000
Total	$ -	$ -	$ 650,000	$ 400,000	$ 500,000	$ -	$ -	$ 1,550,000

24 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - #1 Digester Rehab, Mixing
Dept: Treatment
Total Cost: $ 1,175,000
CY Budget $ -
GL Account:

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

Asset Description

Work is proposed on Digester #1 which is currently the primary digester for the Treatment plant. The digester will be opened and cleaned, inspected for damage and corrosion. It is anticipated that this digester will require a spray on lining and possibly some structural repair. The roof dome is steel and will most likely require some significant maintenance. The roof may need to be removed and repaired or replaced with an alternative roofing material. This digester currently is mixed with draft tube mixers. These mixers will require maintenance, and possibly a coating application. Staff will investigate an improved mixing process.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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. Since the treatment plant does not have another reliable digester, staff added a new digester tank to the Phase 1 WWTP Rehabilitation project commencing this year. Once this digester is on line, staff will be able to turn off the existing tank which will then be cleaned and inspected to determine what rehabilitation is required.

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 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 250,000	$ 525,000	$ 400,000			$ 1,175,000
Total	$ -	$ -	$ 250,000	$ 525,000	$ 400,000	$ -	$ -	$ 1,175,000

25 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - Chlorine Building Repurpose/Electrical
Dept: Treatment
Total Cost: $ 700,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Chlorine Contact
Asset Type: Building Machinery
Avg Useful Life: 20 years
Est Residual Life:
% Consumed Life: 75
Category: Capital Improvement
Urgency: 4 = Less 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 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.

MCC = Motor Control Center

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

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.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 100,000	$ 200,000	$ 400,000			$ 700,000
Total	$ -	$ -	$ 100,000	$ 200,000	$ 400,000	$ -	$ -	$ 700,000

26 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH II - Blower Building MCC & Power Impr
Dept: Treatment
Total Cost: $ 350,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Blower Bldg
Asset Type: Electrical
Avg Useful Life: 30 years
Est Residual Life: 5 years
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

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 being provided as part of the Phase I Plant Rehabilitation Project.

MCC = Motor Control Center

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

In 2013 staff conclued that the electrical equipment in the blower buildng 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, thus making system operation more efficient.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	7	Cannot be down 1 day
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 200,000	$ 150,000				$ 350,000
Total		$ -	$ 200,000	$ 150,000	$ -	$ -	$ -	$ 350,000

27 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PLC Programing for PH 2 (CalCon)
Dept: Treatment
Total Cost: $ 140,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: Instrumentation
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

SCADA is the backbone control system of the treatment plant. During Phase 2 a number of PLC program modifications will be required. CalCon will be contracted to provide programing and coordination support between the SCADA controls and the new equipment being contemplated in Phase 2.

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

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 on both the programming and coordination between the Contractor and the work they are required to do. Staff proposes to stay with CalCon at this time to maintain continuity in programing.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3 Cannot be down a month
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	3 Routine Operations to maintain process functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 60,000	$ 80,000				$ 140,000
Total		$ -	$ 60,000	$ 80,000	$ -	$ -	$ -	$ 140,000

28 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: CM Contract for PH 2 Construction
Dept: Treatment
Total Cost: $ 600,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: N/A
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Contract with Kennedy Jenks (K/J) Consultants to provide Construction Management and Engineering services over the duration of the Phase 2 Treatment Plant improvements expected to be constructed over a two/three year period.

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

Justification

The Phase 1 improvements are estimated to cost $8,000,000 for construction. A project of this size requires constant oversight and management of both documents as well as good communicaiton with the Contractor. The engineering submittals for review will be in the hundreds and there are a number of technical specialties that will be required for both inspection as well as document review. The Construction managment job will be full time position that will also require additinal technical expertice.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	1	No change in Process Functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 100,000	$ 300,000	$ 200,000			$ 600,000
Total		$ -	$ 100,000	$ 300,000	$ 200,000	$ -	$ -	$ 600,000

29 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: SCADA Network - Phase II
Dept: Treatment
Total Cost: $ 145,000
CY Budget $ -
GL Account:

Contact: Lander
Area: Misc Structures
Asset Type: Instrumentation
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = 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: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 145,000					$ 145,000
Total	$ -	$ -	$ 145,000	$ -	$ -	$ -	$ -	$ 145,000

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

Project Name: PH III - Design and CM assistance
Dept: Treatment
Total Cost: $ 600,000
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

Planning ahead for Phase III improvements will be very important. This budget item is included to anticipate the cost of additional Construction Management services for the WWTP Phase 3 project. This item will include the services of a Construction Manager to manage several construction projects or to manage one bid package of several projects as was done with the Phase I construction and the proposed Phase II construction.
This Phase will include a comprehensive evaluation of off grid power capabilities at the treatment plant. Gas production in the digesters will be well understood by the time we are prepared to undertake this project. Generation equipment will be proposed to handle onsite gas production as well as the potential of using natural gas to generate power at a reduced cost. This planning will required detailed studies and construction plans.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The District will be developing revenue sources which may create additional gas production. It is not environmentally preferable to create extra gas that has to be flared off. The full gas production of the treatment plant should be maximized in generating power and heating the digesters and other building heating needs. A well designed project will maximize power production which could significantly save the District each year, as well as reduce the treatment plant carbon footprint.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1	Can be out of service idenfinitely
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	1	No change in Process Functionality
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	23-24	24-25	25-26	26-27	27-28	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other			$ 200,000	$ 200,000	$ 100,000	$ 100,000		$ 600,000
Total		$ -	$ 200,000	$ 200,000	$ 100,000	$ 100,000	$ -	$ 600,000

31 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH III - Gas Conditioning System
Dept: Treatment
Total Cost: $ 615,000
CY Budget $ 90,000
GL Account:

Contact: Lander
Area: Digester Control Bldg
Asset Type: Process Equip (Gas)
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = 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: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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. This fiscal year work repairs the existing system to prevent another turbine from being damaged. Also the damaged turbine will be repaired. This system should last until a future project is developed to support additional gas production. This years improvements are important, the follow up system design is considered a future improvement.

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		
Process Functionality COF	1	No change in Process Functionality
Cost COF	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	24-25	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other		$ 90,000				$ 525,000	$ 615,000
Total		$ 90,000	$ -	$ -	$ -	$ 525,000	$ 615,000

32 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH III - Co-Gen Project
Dept: Treatment
Total Cost: $ 1,000,000
CY Budget $ -
GL Account:

Contact: Lander
Area Digester Control Bldg
Asset Type: Process Equip (Gas)
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life:
Category:
Urgency: 4 = Less Important
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 differtent type of turbine, or recipricating engine.

MCC-SM = Motor Control Center Digestion Bldg.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 genrator is desirable. Since this equipment is not critical to the operation of the facility, and the new boiler installed last year has the capability to use digester gas, it will not be critical for the District to replace this equipment prior to failure. It is important however to replace this equipment with similar power generation equipment in order to continue to utilize all available methane.
Further research and study will be conducted by staff prior to recommending replacement equipment.

Electrical provisions have been included as part of the current Phase I Plant Rehabilitation Project to transfer all electrical loads from existing MCC-SM to the new motor control center equipment being provided at the new Digester Control Building No. 2. At this time, however, the existing microturbine units are connected through the existing MCC-SM equipment. Even though the existing MCC-SM equipment is well beyond its useful service life, it is being retained until the microturbines reach the end of their useful service life. At the end of this service life, the existing MCC-SM equipment will be demolished and the exisiting loads transferred to the new motor control center equipment at Digester Control Building No. 2.

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	5	Major In-House Repair Work less than $25,000

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	25-26	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 1,000,000	$ 1,000,000
Total	$ -	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000

33 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PH III - Septage/Wet Waste/Grease Receiving
Dept: Treatment
Total Cost: $ 700,000
CY Budget $ -
GL Account:

Contact: Lander
Area Digester Control Bldg
Asset Type: Process Equip (Gas)
Avg Useful Life: 15 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 4 = Less Important
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: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 reciver. 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 idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	26-27	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 700,000	$ 700,000
Total	$ -	$ -	$ -	$ -	$ -	$ 700,000	$ 700,000

34 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: PLC Programing PH 3 (CalCon)
Dept: Treatment
Total Cost: $ 250,000
CY Budget $ -
GL Account:

Contact: Lander
Area Digester Control Bldg
Asset Type: Instrumentation
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 4 = Less Important
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 improvments.

Year Built: 1990s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	24-25	25-26	26-27	27-28	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other			$ 50,000	$ 50,000	$ 150,000		$ 250,000
Total	$ -	$ -	$ 50,000	$ 50,000	$ 150,000	$ -	$ 250,000

35 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Air Monitoring
Dept: Admin
Total Cost: $ 15,000
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: N/A
Avg Useful Life: 10 years
Est Residual Life:
% Consumed Life:
Category: Maintenance
Urgency: 4 = Less Important
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 provided 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 deter ongoing costs.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Board of Directors discussion in 2016 resulted in the Board request to include expenditures for 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.

Additional expenditures may follow as a result of the information gathered.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 15,000	$ 15,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ 15,000

36 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Micro Turbine Rehab
Dept: Treatment
Total Cost: $ 148,000
CY Budget $ 148,000
GL Account:

Contact: Lander
Area: Digester Control Bldg
Asset Type: Process Equip (Gas)
Avg Useful Life: 10 years
Est Residual Life: 5 years
% Consumed Life: 50
Category: Capital Improvement
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. There are two 30KW turbines; however, one is currently not operational and needs rehabilitation. Failure of the turbines has been analyzed and determined to be moisture failure. The gas conditioning system will also be repaired together with this work. The non operational turbine will be repaired and will either be put back into service or both turbines will be traded to Misco Water for a single 60KW model. The 60KW model would provide the same level of service of the two 30KW units but it is more robust and requires less maintenance. This would be the preferable repair but it will only occur if a trade can be agreed upon. A purchase of a new 60KW unit without sale or trade of the 30KW units would be too costly.

Year Built: 2000
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The treatment plant produces sufficient digester gas to produce up to 60KW power generation and also heat the digester 90% of time in a 24hr period. With only one turbine operational the treatment plant is required to flare gas and supplement digester heating with natural gas. Payback on the micro turbine investments have not appear to be reached over the life since install, however these improvements are essential to reduce consumption of external natural gas and reduce surplus heat discharge to the environment. The single 60KW unit will reduce maintenance costs and provide additional durability, however if that negotiation is not successful the second 30KW turbine will be repaired. The 30KW turbines require frequent maintenance. A single larger turbine would be welcome, it would require less maintenance, parts are more accessible and maintenance is less costly.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1 Can be out of service idenfinitely
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	1 No change in Process Functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary: Capital Budget Secondary: Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor		$ 48,000						$ 48,000
Engineering								$ -
Parts & Supplies		$ 100,000						$ 100,000
Chemicals								$ -
Utility								$ -
Other								$ -
Total		$ 148,000	$ -	$ -	$ -	$ -	$ -	$ 148,000

37 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Dewatering Standby Equipment
Dept: Treatment
Total Cost: $ 600,000
CY Budget $ -
GL Account:

Contact: Lander
Area DeWatering Bldg
Asset Type: Process Equip (Solid)
Avg Useful Life: 25 years
Est Residual Life: 10 years
% Consumed Life: 60
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

After installation of the Screw Press dewatering equipment in Phase I, the existing belt press can 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:
Rehab Life Extension:
Asset Condition Rating:

Justification

The sludge dewatering system needs to maintain redundancy because hauling unpressed sludge for disposal is very expensive. The exisitng press needs some repair which will be completed after the new screew press is installed. 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 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	28-29	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other			$ 100,000	$ 50,000		$ 450,000	$ 600,000
Total	$ -		$ 100,000	$ 50,000	$ -	$ - $ 450,000	$ 600,000

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

Project Name: Primary Clarifier Rehab
Dept: Treatment
Total Cost: $ 345,000
CY Budget $ -
GL Account:

Contact: Lander
Area Primary Clarifiers
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 1 year
% Consumed Life: 50%
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Primary Clarifiers remove settleable solids from the liquid treatment process and are a required part of the treatmetn process. Rehabilitate the Primary Clarifier structures. Rehabilitate effluent launders (coating). Replace sludge collector mechanisms. Includes painting and repair of center islands. Every twelve years the drives will be removed and serviced, tank will be inspected biannually as part of routine maintenance and any touchup painting will be taken care of at that time. Future replacement of the entire interior mechanism is farther than 20 years into the future.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Full inspections have not occurred on the remaining clarifiers; however, Primary #2 has been taken down and will be fully reconditioned in fiscal year 2016-17. Inspection of other clarifiers in the past year have given us a good understanding of what to expect in the remaining tanks. With proper rehabilitation these tanks will serve the District for many decades to come.

Failure Modes Addressed:
1. The Primary Clarifier structures are over 40 years old which is the average useful life for this type of structure. There are signs of degradation of the concrete structure both on the exterior of the tanks (cracks with efflorescence) and inside the effluent and scum boxes (concrete biogenic sulfide corrosion).
2. The Primary Clarifier Sludge Collectors are beyond their useful life and will need to be replaced.

Planning for belt drive service every twelve years is required to ensure the drive is properly cared for.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	28-29	30-31	Total
Labor			$ 50,000			$ 50,000
Engineering						$ -
Parts & Supplies			$ 150,000			$ 150,000
Chemicals						$ -
Utility						$ -
Other			$ 25,000	$ 60,000	$ 60,000	$ 145,000
Total	$ -		$ 225,000	$ - $ 60,000	$ - $ 60,000	$ 345,000

39 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Secondary Clarifier Rehab
Dept: Treatment
Total Cost: $ 370,000
CY Budget $ 250,000
GL Account:

Contact: Lander
Area Secondary Clarifiers
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 25 years
% Consumed Life: 50
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Secondary Clarifiers remove suspended and floatble biomass from the mixed liquor coming from the Aeration Basins. Rehabilitate Secondary Clarifier structures after detailed inspection. Rehabilitate effluent launders (coating). Replace sludge collector mechanisms and eelctrical service.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

One of the two clarifiers were taken out of service last year and 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 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 should be 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.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	27-28	29-30	Total
Labor		$ 50,000				$ 50,000
Engineering						$ -
Parts & Supplies		$ 175,000				$ 175,000
Chemicals						$ -
Utility		$ 25,000				$ 25,000
Other				$ 60,000	$ 60,000	$ 120,000
Total		$ 250,000	$ -	$ - $ 60,000	$ - $ 60,000	$ 370,000

40 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: DAFT Rehab
Dept: Treatment
Total Cost: $ 160,000
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: 65
Category: Capital Improvement
Urgency: 4 = Less Important
Carry Forward: No

Asset Description

The DAFT is an important part of the plant process. It helps to remove solids from the plant waste streams and improves plant performance. The Dissolved Air Flotation Thickener is being rehabilitated as part of the Phase I project. This unit is used to remove solids from waste streams at the activated sludge process as well as from MF/RO reject. The tank structure is in good condition. Staff estimates that a concrete coating could be a valuable improvement in 10 years. Future drive maintenance will be required. The new Phase 1 pumps and equipment will be maintained moving forward and will not be a capital expense.

Year Built: 1980s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

This asset needs to be maintained to ensure it is in good working condition. There is no redundant DAFT; however, plant operations staff can operate the plant without it for a limited amount of time if need so a redundant DAFT is not required.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	26-27	30-31	Total
Labor						$ -
Engineering						$ -
Parts & Supplies						$ -
Chemicals						$ -
Utility						$ -
Other				$ 100,000	$ 60,000	$ 160,000
Total	$ -	$ -	$ -	$ 100,000	$ - $ 60,000	$ 160,000

41 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Digester #1 Clean and Inspect
Dept: Treatment
Total Cost: $ 200,000
CY Budget $ -
GL Account:

Contact: Lander
Area Digesters
Asset Type: Process Equip (Solid)
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category:
Urgency:
Carry Forward:

Asset Description

The Digester #1 is the 600,000gal tank constructed in the early 1970's. This tank will 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: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Operating Budget

Budget Impact/Other

	16-17	17-18				29-30	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 200,000	$ 200,000
Total	$ -	$ -	$ -	$ -	$ -	$ 200,000	$ 200,000

42 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Digester #2 Clean and Inspect
Dept: Treatment
Total Cost: $ 180,000
CY Budget $ -
GL Account:

Contact: Lander
Area Digesters
Asset Type: Process Equip (Solid)
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category:
Urgency:
Carry Forward:

Asset Description

Digester #2 is under construction as part of the Phase I project. This digester will need to be fully serviced every 10-12 years. Tank will be emptied, cleaned and inspected.

Year Built: 2017
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 maintainedproperly the structures will last indefinitely.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Operating Budget

Budget Impact/Other

	16-17	17-18	18-19	19-20		27-28	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 180,000	$ 180,000
Total	$ -	$ -	$ -	$ -	$ -	$ 180,000	$ 180,000

43 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Influent Building Pump Rehab
Dept: Treatment
Total Cost: $ 150,000
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type: Pump Station
Avg Useful Life: 30 years
Est Residual Life: 15 years
% Consumed Life: 50
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

The influent building will recive electrical rehabiliation during the Phase II project. Improvments needed in the future will replace the pumps as needed and service other piping.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The existing Fairbanks/Morris pumps have served the District well. They were serviced in 2016 and will receive new VFD drivews as part of Phase II. These motors will recive mainteance over the next 12 years and in year 12 the motors will need to be replaced. There are three pumps and motors at a cost of $50,000 each.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19			29-30	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 150,000	$ 150,000
Total	$ -	$ -	$ -	$ -	$ -	$ 150,000	$ 150,000

44 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Effluent Building Pump Rehab
Dept: Treatment
Total Cost: $ 100,000
CY Budget $ -
GL Account:

Contact: Lander
Area Effluent Bldg
Asset Type: Process Equip (Liquid)
Avg Useful Life: 30 years
Est Residual Life: 10 years
% Consumed Life: 80%
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

Effluent building pumps will require replacements within the next 5 to 10 years. This will include servicing the volute, impeller and a new electric motor.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

These 2 large 150 HP pumps were serviced in 2016 and will continue to be maintained. They are not used very much because the Wimco pump takes care of daily flows, 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. The motors will reach the end of their useful life within 7 years.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	24-25	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 100,000	$ 100,000
Total	$ -	$ -	$ -	$ -	$ -	$ 100,000	$ 100,000

45 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Headworks Rehab
Dept: Treatment
Total Cost: $ 200,000
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type:
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category:
Urgency:
Carry Forward:

Asset Description

Anticipated repair of pumps and motors installed as part of the Phase II project. Ten years after the Phase II improvements the drive on the grit launderer will need service.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 process improves.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1 Can be out of service idenfinitely
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	1 No change in Process Functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	29-30	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other						$ 200,000	$ 200,000
Total	$ -	$ -	$ -	$ -	$ -	$ 200,000	$ 200,000

46 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Primary Blower Rehab
Dept: Treatment
Total Cost: $ 450,000
CY Budget $ -
GL Account:

Contact: Lander
Area Blower Bldg
Asset Type: Building Machinery
Avg Useful Life: 25 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 4 = Less Important
Carry Forward: No

Asset Description

Air supply is a critical componenet for aeration processes within wastewater treatment. A reliable low pressur blower system is essential to ensure cotinuous operations. After balancing of the air demand in the plant during the Phase II 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 primary turblex blower that was installed in the early 2000's.

Year Built: 2017
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	31-32	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other						$ 400,000	$ 50,000	$ 450,000
Total	$ -	$ -	$ -	$ -	$ -	$ 400,000	$ 50,000	$ 450,000

47 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: RAS Building Rehab
Dept: Treatment
Total Cost: $ 150,000
CY Budget $ -
GL Account:

Contact: Lander
Area RAS Pump Bldg
Asset Type: Structure
Avg Useful Life: 35 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Maintenance and replacement of electrical, PLC and controller equipment as needed. In 20 years the Phase I improvements will need to be inspected and replaced as needed.

Year Built: 2017
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Electrical components and PLC equipment degrade over time. 20 years after the Phase I improvements the District will need to inspect and upgrade components to remain current with safety regulations or operational parameters.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1 Can be out of service idenfinitely
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	3 Routine Operations to maintain process functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary

Secondary

Budget Impact/Other

	16-17	17-18	18-19	19-20	31-32	Total
Labor						$ -
Engineering						$ -
Parts & Supplies						$ -
Chemicals						$ -
Utility						$ -
Other					$ 150,000	$ 150,000
Total	$ -	$ -	$ -	$ -	$ 150,000	$ 150,000

48 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Aeration Basin Rehabilitation
Dept: Treatment
Total Cost: $ 740,000
CY Budget $ -
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The Aeration Tank is where raw or settled wastewater ismixed with return sludge and aerated.

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: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 3 Routine Operations to maintain process functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	25/26	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 740,000	$ 740,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 740,000	$ 740,000

49 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Chlorine Contact Channel Rehab(Recl 25%)
Dept: Treatment
Total Cost: $ 250,000
CY Budget $ -
GL Account:

Contact: Lander
Area Chlorine Contact
Asset Type: Process Equip (Chemical)
Avg Useful Life: 35 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
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. The minimum contact time is usually 30 minutes.

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

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 Distirct's NPDES permit requires that we disinfect prior to discharge into our outfall or prior to turning it over to Reclamation for additional sanitaization.

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	9 Loss of Process Functionality for less than 1 week
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Reclamation 25%

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 250,000	$ 250,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 250,000	$ 250,000

50 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Plant Paving & Drainage
Dept: Treatment
Total Cost: $ 350,000
CY Budget $ 100,000
GL Account:

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

Asset Description

Aspalt and drainage improvements inside the treatment plant gounds.

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

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 idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	30-31	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 100,000		$ 150,000			$ 100,000	$ 350,000
Total		$ 100,000	$ -	$ 150,000	$ -	$ -	$ 100,000	$ 350,000

51 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Outfall Crossing
Dept: Treatment
Total Cost: $ 1,070,000
CY Budget $ 120,000
GL Account:

Contact: Lander
Area Bridge
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

The District owns the suspension bridge across the Carmel River, between the Treatment Plant and Larson Field. The bridge crossing supports an abandoned 14 inch diameter cast iron pipe and abandoned 18 inch diameter cement lined steel pipe. It is a three span supsension steel truss bridge and contains a wood plank walkway above th epipes. We have been in contact with the City of Carmel and other agencies in an attempt to get a collaborative effort at bridge rehabilitation and a pedestrian coastal trail across the river.

Year Built: 1930s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

There is observable structural degradation of the pipe trestle struture. An analysis undertaken in 2011 by Cornerstone Engineering advised that the struture is not imminently subject to collapse under its own weight. However, pedestrian live loads should not be allowed on the structure with the excepton of one or two maintenance personnel at a time as the structure is both structurally and functionally deficient for pedestrians. The pipe trestle structure lacks a positive lateral load path and is vulnerable to collapse under lateral loading froma significant seismic or hydraulic event. While a collapse may not be a life threatening event, it could create a dam in the Carmel River causing upstream flooding and other hydraulic issues.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	1 Can be out of service idenfinitely
Safety COF	10 Substantial Widespread Health Effects or Death
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	1 No change in Process Functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Possible Grant funding Secondary Capital Budget

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 120,000	$ 450,000	$ 500,000				$ 1,070,000
Total		$ 120,000	$ 450,000	$ 500,000	$ -	$ -	$ -	$ 1,070,000

52 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Operations Building Rehab
Dept: Treatment
Total Cost: $ 240,000
CY Budget $ 75,000
GL Account:

Contact: Lander
Area Ops Bldg
Asset Type: Structure
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 3 = Important
Carry Forward: No

Asset Description

The Operations Building was constructed during the 1970s and will be 50 years old at the date of suggsted rehabilitation. It is a concrete two story building that houses the Central Motor Control Panel, Electrical hub, SCADA, Conference rooms, and telecommunications hub. This building was lightly remodeled on the interior durng 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.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

At 50 years of age we anticipate need to perform repairs to the Operation Building to maintain and extend its service life. This structure houses critical plant functions and is key to operations control.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3 Cannot be down a month
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	10 Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	3 Routine Operations to maintain process functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	24-25	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 75,000				$ 125,000	$ 40,000	$ 240,000
Total		$ 75,000	$ -	$ -	$ -	$ 125,000	$ 40,000	$ 240,000

53 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Lunch Room/Meeting Hall Replacement
Dept: Treatment
Total Cost: $ 775,000
CY Budget $ -
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Support Equipment
Avg Useful Life: 30 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. The District hired Congleton Architects to assist with the plant layout and design of both the locker room, a new area for staff, and for treatment plant meetings. This plan is being implemented in 2 phases. Phase 1 is the construction of the locker room building currently under construction. Phase 2 will be a new building as illustrated on the site plant prepared by Congleton Architects. The full design of the building has not been completed so design will occur in FY22-23 with construction to follow.

Year Built: n/a
Rehabilitation Date:
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 idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	22-23	23-24	Total
Labor							$ -
Engineering							$ -
Parts & Supplies							$ -
Chemicals							$ -
Utility							$ -
Other					$ 175,000	$ 600,000	$ 775,000
Total	$ -	$ -	$ -	$ -	$ 175,000	$ 600,000	$ 775,000

54 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Misc. Yard Piping Rehab
Dept: Treatment
Total Cost: $ 530,000
CY Budget $ 50,000
GL Account:

Contact: Lander
Area: Yard Piping
Asset Type: Pipe (Process Buried)
Avg Useful Life: 30 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very 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:
Rehab Life Extension:
Asset Condition Rating:

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	1 Can be out of service idenfinitely
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	10 Permit Jeopardized Environmental Damage Requires Remediation
Process Functionality COF	1 No change in Process Functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 50,000	$ 120,000	$ 90,000	$ 90,000	$ 90,000	$ 90,000	$ 530,000
Total		$ 50,000	$ 120,000	$ 90,000	$ 90,000	$ 90,000	$ 90,000	$ 530,000

55 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Plant Landscaping
Dept: Treatment
Total Cost: $ 37,000
CY Budget $ 12,000
GL Account:

Contact: Lander
Area Landscaping
Asset Type: N/A
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category: Maintenance
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: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

The trees surrounding the treatment plant are 40 years old. These trees will need to be replaced with native species in the next 25 years 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 idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality
Cost COF

Asset Risk Management Strategy

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

Funding Source

Primary Operating Budget

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other		$ 12,000				$ 25,000		$ 37,000
Total		$ 12,000	$ -	$ -	$ -	$ 25,000	$ -	$ 37,000

56 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Cathodic Protection
Dept: Treatment
Total Cost: $ 410,000
CY Budget $ -
GL Account:

Contact: Lander
Area
Asset Type:
Avg Useful Life:
Est Residual Life:
% Consumed Life:
Category:
Urgency:
Carry Forward:

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 themetal 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 5 years.

Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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	7	Cannot be down 1 day
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	3	Violate Daily Max Effluent
Process Functionality COF	5	Maintaining Process Functionality requires staff divert from other work
Cost COF		

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	29-30	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other					$ 30,000	$ 30,000	$ 350,000	$ 410,000
Total		$ -	$ -	$ -	$ 30,000	$ 30,000	$ 350,000	$ 410,000

57 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Maintenance Building Reconstruction
Dept: Treatment
Total Cost: $ 430,000
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: 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: 1970s
Rehabilitation Date:
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 idenfinitely
Safety COF	
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	1 No change in Process Functionality
Cost COF	

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	23-24	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 430,000	$ 430,000
Total		$ -	$ -	$ -	$ -	$ -	$ 430,000	$ 430,000

58 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Influent Conveyance and Screening
Dept: Treatment
Total Cost: $ 1,000,000
CY Budget $ -
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 35 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

This project would include the construction of a bar screen at the headworks. A bar screen is a mechanical filter used to remove large objects, such as rags and plastics from wastewater. It is part of the primary filtration flow and typically is the first, or preliminary, level of filtration, being installed at the influent. Typically consists of a series of vertical steel bars spaced between 1 and 3 inches apart. Bar screens however come in many designs. Some employ automatic cleaning mechnisms using electric motors and chains. Some must be cleaned manually by means of a heavy rake. Items removed fromthe influent are called screenings and are collected in dumpsters and disposed of in landfills. As the bar screen collects objects, the water levels will rise, and so they must be cleared regularly to prevent overflow.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

This project is only a potential place holder until the improvements at he Grit Tank are completed under the Phase II project is completed. If pump ragging can be addressed and a bar screen becomes unnecessary then this project will be deleted. Currently staff must manually "de-rag" the influent pumps 2-3 times a weeks because of the accumulation of solid material in the pumps. Perhaps the biggest offender are rags -- or wipes, as they tend to stick together and grow in size. This project will potentially eliminate this task and reduce wear on the influent pumps.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	3	Cannot be down a month
Safety COF		
Spill/Odor/Noise COF		
Permit/Environmental COF		
Process Functionality COF	3	Routine Operations to maintain process functionality

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 1,000,000	$ 1,000,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000

59 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Treatment Plant Administration Building
Dept: Treatment
Total Cost: $ 3,000,000
CY Budget $ -
GL Account:

Contact: Lander
Area Misc Structures
Asset Type: Structure
Avg Useful Life: 35 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 2 = Very Important
Carry Forward: No

Asset Description

Selling the Rio Road Administration building and new construction of the facility at the treatment plant, or construction of a new Administration Building intended to house 1) All Superintendents, 2) Meeting Room, 3) Training rooms, and 4) engineering space.

Year Built: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

Justification

Locating the Administration building at the treatment plant would be a very effective way to combine daily operations with the administrative needs of the District. However, with the current environmental and political climate in and around the lagoon this project is highly unlikely.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact 1 Can be out of service idenfinitely
Safety COF
Spill/Odor/Noise COF
Permit/Environmental COF
Process Functionality COF 1 No change in Process Functionality

Asset Risk Management Strategy

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

Funding Source

Primary Capital Budget Secondary Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 3,000,000	$ 3,000,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 3,000,000

60 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Ocean Outfall Rehabiliatation
Dept: Treatment
Total Cost: $ 1,000,000
CY Budget $ -
GL Account:

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

Asset Description

Emergency repair to the WWTP outfall in the event of storm damage or natural disaster.

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.

Our NPDES permit requires an annual inspection of the outfall pipeline.
Year Built: 1970s
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 (#56 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.

Condition Rating / Consequence of Failure (COF)

Loss of Service Impact	9	Cannot be down 8 hours
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	5	Maintaining Process Functionality requires staff divert from other work
Cost COF		

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 Capital Reserves

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 1,000,000	$ 1,000,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000,000	$ 1,000,000

61 **FY 2017-18 Budget**

Carmel Area Wastewater District

Project Name: Sea Level Rise Structural Protection
Dept: Treatment
Total Cost: $ 15,000,000
CY Budget $ -
GL Account:

Contact: Lander
Area Sea Level Rise
Asset Type: Structure
Avg Useful Life: 50 years
Est Residual Life:
% Consumed Life:
Category: Capital Improvement
Urgency: 5 = Future
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: n/a
Rehabilitation Date:
Rehab Life Extension:
Asset Condition Rating:

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 cost projection was developed based on the following 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	10 Substantial Widespread Health Effects or Death
Spill/Odor/Noise COF	
Permit/Environmental COF	
Process Functionality COF	
Cost COF	10 Regulatory Fines and Lawsuits + Emergency Contractor Needed (greater than $1 Million)

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 Reserves Secondary

Budget Impact/Other

	16-17	17-18	18-19	19-20	20-21	21-22	Unscheduled	Total
Labor								$ -
Engineering								$ -
Parts & Supplies								$ -
Chemicals								$ -
Utility								$ -
Other							$ 15,000,000	$ 15,000,000
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000,000	$ 15,000,000

Reclamation Capital

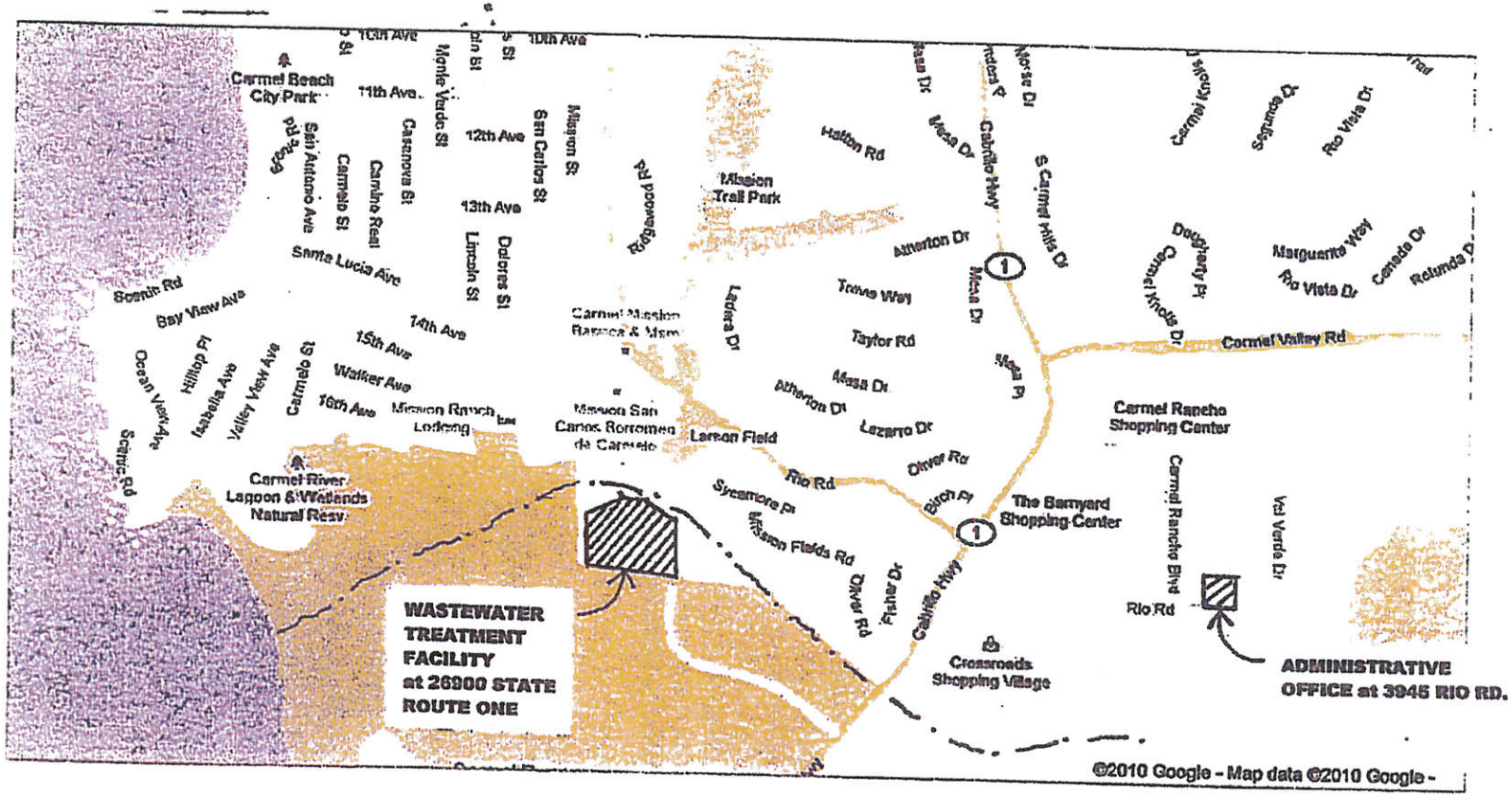
Reclamation Project

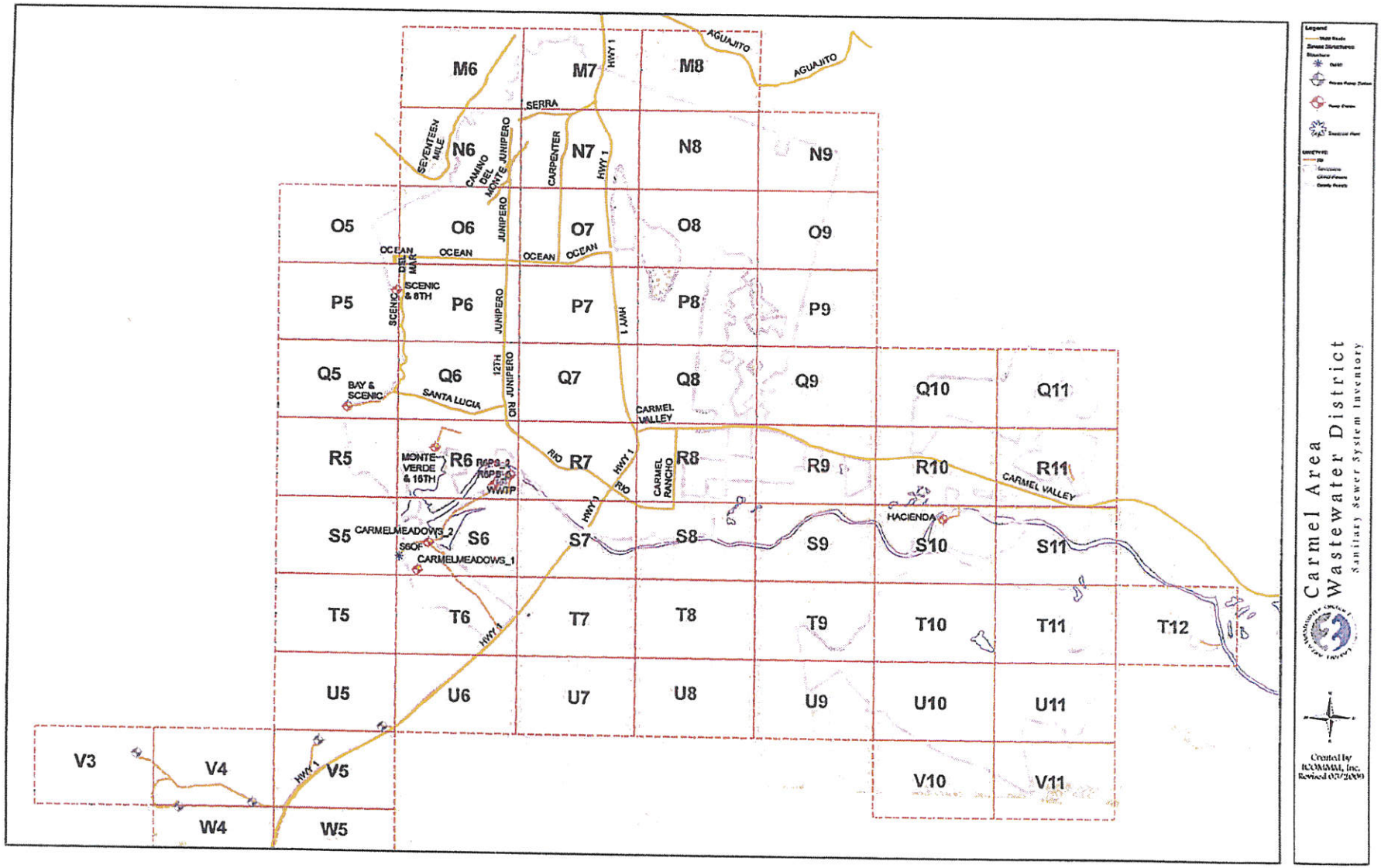
FY 2017/18 *thru* 2021/22

Project #	PROJECT	17/18	18/19	19/20	20/21	21/22	Unscheduled
CAPITAL PROJECTS							
1	Hypo/SBS (40% Recl)	$650,000					
2	DAFT (50% Recl)	$175,000					
CAPITAL PURCHASES							
a	Mainsaver Connect Program (1/3 Recl)	$16,450					
b	Thermo Scientific Gallery Discrete Analyzer (50% Recl)	$45,000					
c	Lab BOD Incubator (50% Recl)			$12,000			
d	Lab Autoclave (50% Recl)		$16,000				
e	Lab Muffle Furnace (50% Recl)			$13,500			
f	Lab Ion Chromatorgraph (100% Recl)					$150,000	
	TREATMENT & DISPOSAL TOTAL	**$886,450**	**$16,000**	**$25,500**	**$0**	**$150,000**	**$0**
	RECLAMATION SHARE	$375,478	$8,000	$12,750	$0	$150,000	$0
	PBCSD SHARE	$170,154	$2,664	$4,246	$0	$0	$0
	CAWD COST	**$340,818**	**$5,336**	**$8,504**	**$0**	**$0**	**$0**

Budget Maps

The Wastewater Treatment Facility is located South of the City of Carmel at 26900 State Route One. Heading South on State Route One, take an immediate right turn after crossing the Carmel River bridge. The Facility is approximately 1/3 mile West of State Route One.

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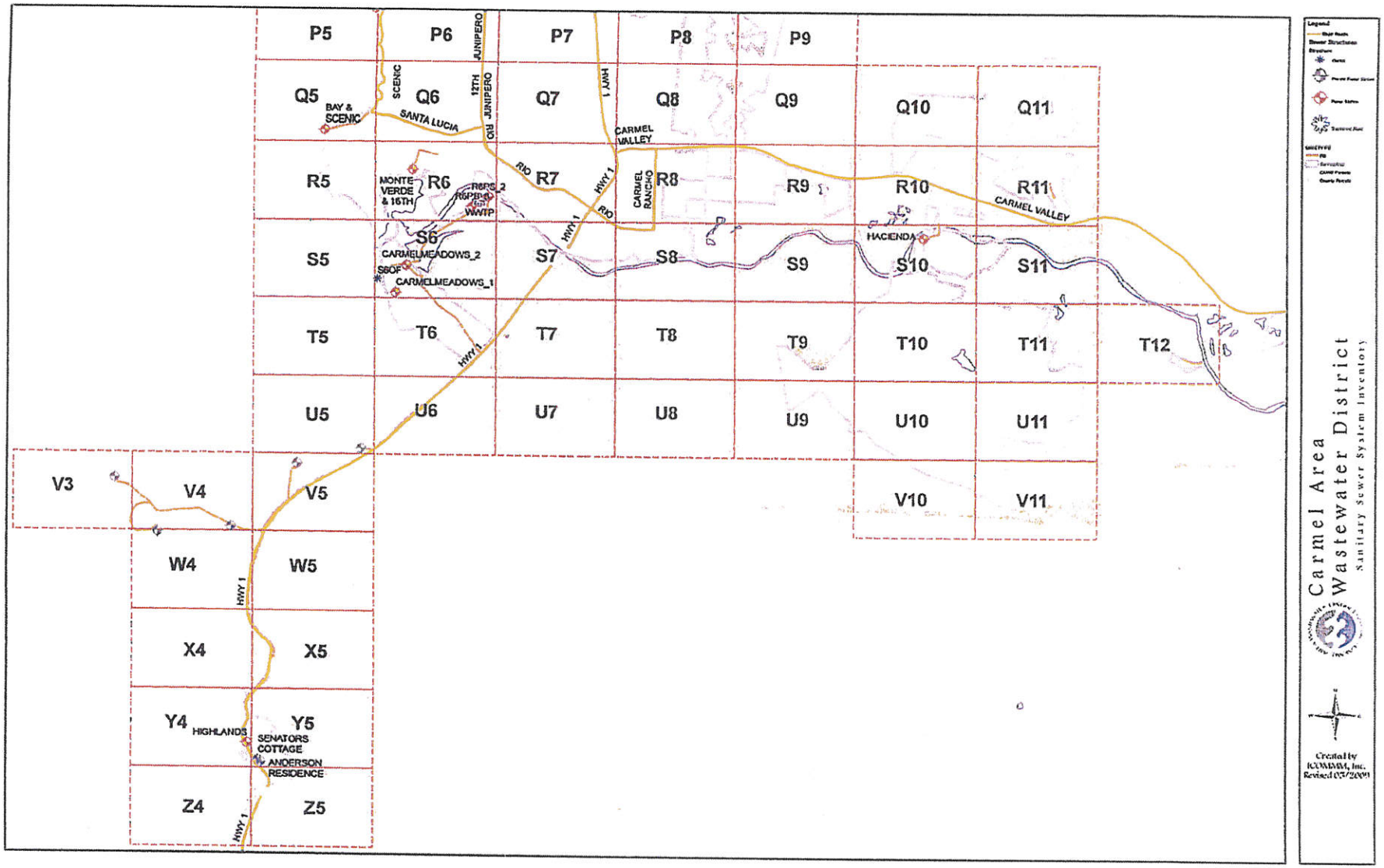
AGUAJITO
SERRA
SEVENTEEN MILE
CAMINO DEL MONTE
JUNIPERO
CARPENTER
HWY 1
OCEAN
DEL MAR
SCENIC
SCENIC & 8TH
12TH
RIO
BAY & SCENIC
SANTA LUCIA
CARMEL VALLEY
MONTE VERDE & 16TH
R6P3_2
R6P5_1
WWTP
CARMEL RANCHO
HACIENDA
CARMELMEADOWS_2
S6OF
CARMELMEADOWS_1
Carmel Area Wastewater District
Sanitary Sewer System Inventory
Created by RCOMMAL, Inc.
Revised 03/2009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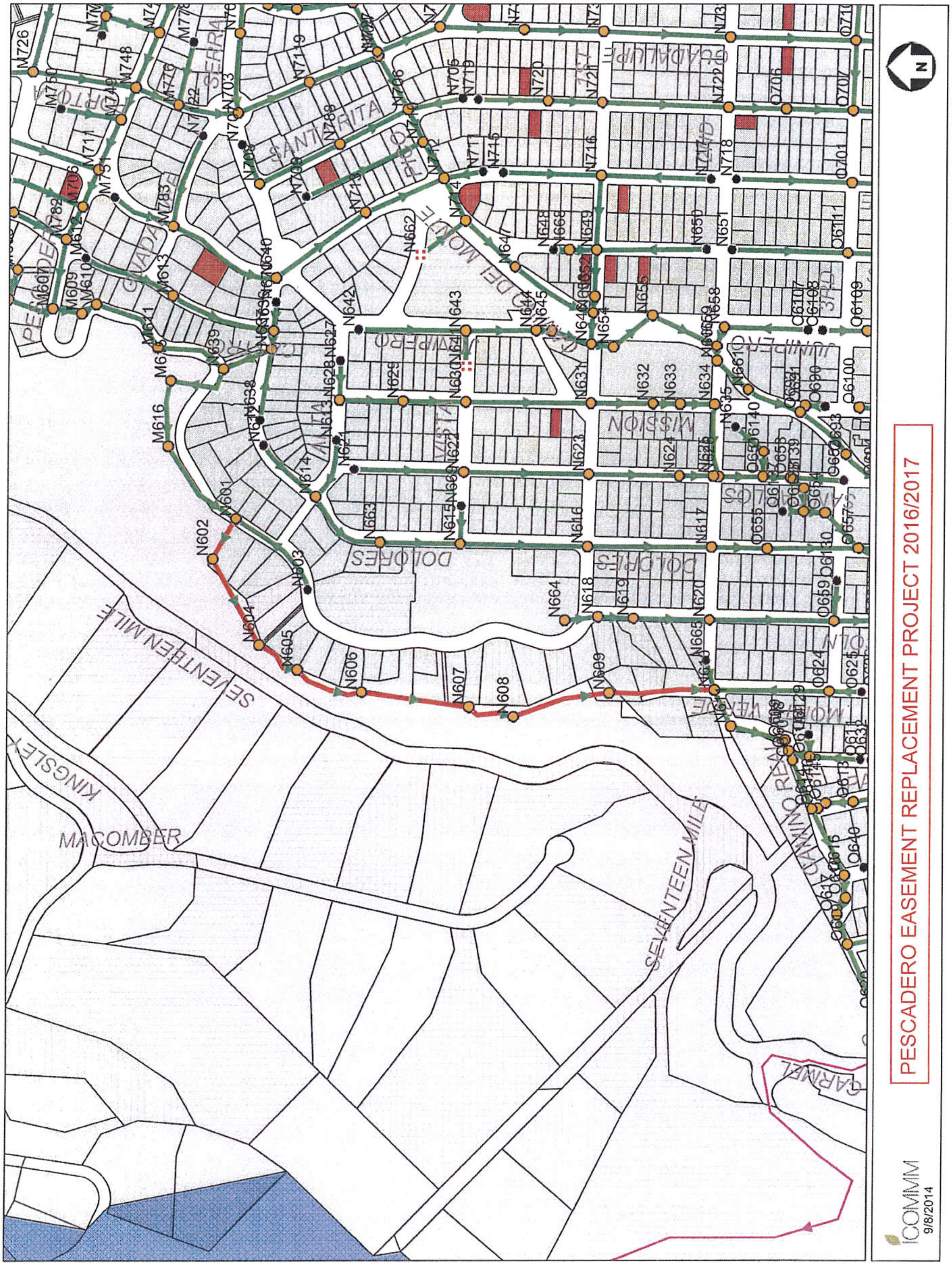
X5
Y4
Y5
Z4
Z5
JUNIPERO
SCENIC
12TH
BAY & SCENIC
SANTA LUCIA
RIO
HWY 1
CARMEL VALLEY
CARMEL RANCHO
MONTE VERDE & 16TH
WWTP
CARMELMEADOWS_2
CARMELMEADOWS_1
HACIENDA
HIGHLANDS
SENATORS COTTAGE
ANDERSON RESIDENCE
Carmel Area Wastewater District
Sanitary Sewer System Inventory
Created by
Revised 05/2009

2016-17 Pescadero Replacement Project


PESCADERO EASEMENT REPLACEMENT PROJECT 2016/2017
ICOMMM
9/8/2014
SEVENTEEN MILE
KINGSLEY
MACOMBER
CARMEL
DOLORES
MISSION
JUNIPERO
SAN CARLOS
GUADALUPE
SANTA RITA
SERRA
CAMINO DEL MONTE
CAMINO REAL
MONTE VERDE
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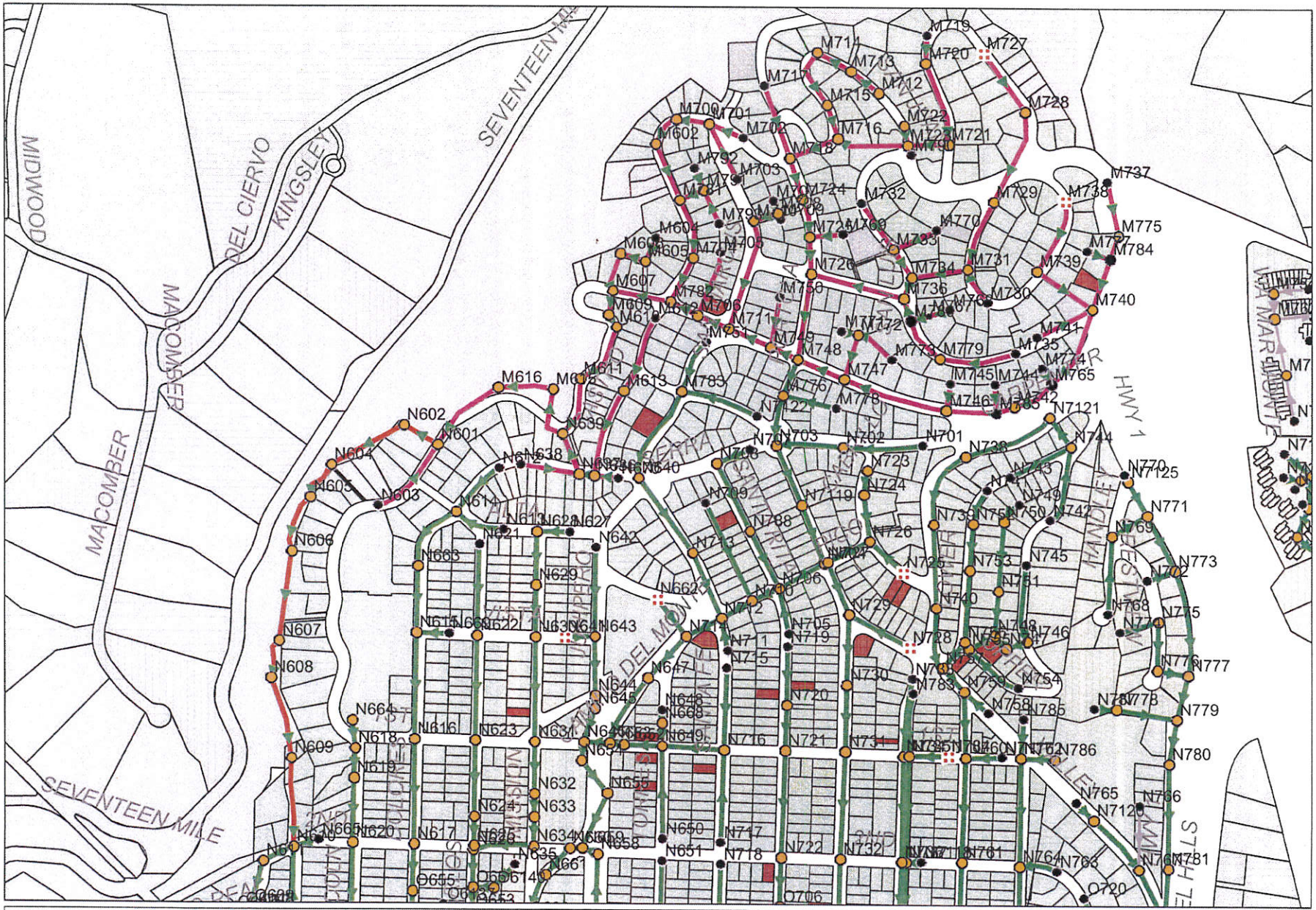


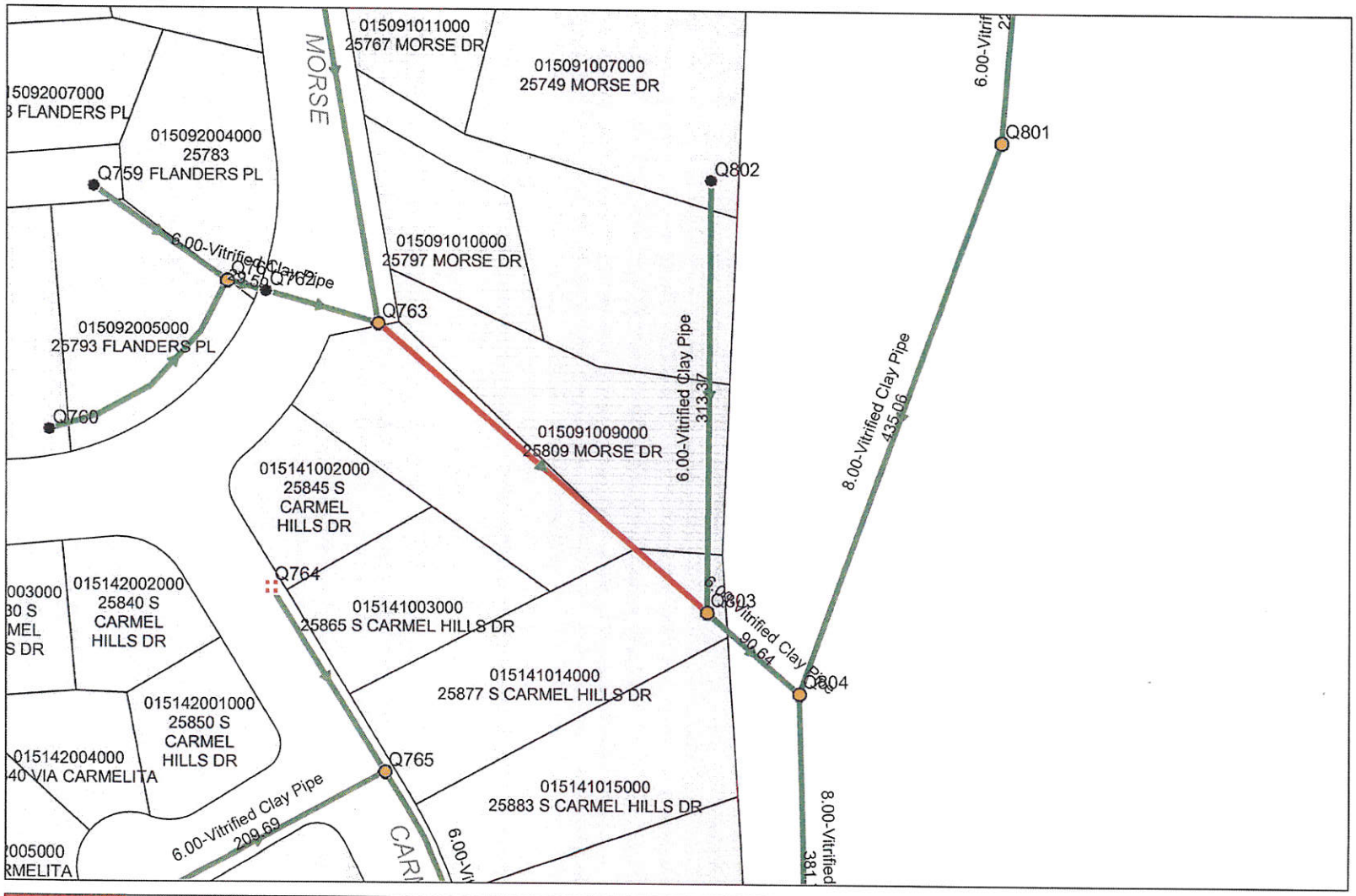
ICOMMM
9/8/2014

THE PURPLE LINES REPERSENT FLOWS THAT FEED THE PESCADERO EASMENT

Pescadero Canyon Easment Replacement	Length	Pipe Size	Laterals per line segment	Manholes to be replaced
N604-N605	174.1	6	3	N602
N601-N602	165.5	6	1	N604
N602-N604	352.5	6	5	N605
N605-N606	256.9	6	4	N606
N606-N607	387	6	6	N607
N607-N608	171.3	6	2	N608
N608-N609	354.5	6	4	N609
N609-N610	378.5	6	5	
	TOTAL		TOTAL	TOTAL
	2240.3		30	7
	COST		COST	COST
	$120 PER FOOT		$2000 PER LATERAL	$10,000 PER MANHOLE
	2241' X $120 = $268,920		$2000 X 30 = $60,000	$10,000 X 7 = 70,000
	$268,920		$60,000	$70,000
TOTAL COST OF PROJECT	$398,920			

Staff is recomending replacement of the Pescadero Easment sewer lines and manholes.Staff recomends using pipebusting on most of the replacement and open cut on one segment to correct grade. Staff has used the CCTV rating system of PACP which is a NASSCO nation wide standard.
The contractor will increase the pipe size from 6 inch to 8 inch. There will district easment work that will need to addressed pryor construction.
Staff will be using a scale of 1-5 on rating the prioriy on which line segment to replace first with 5 being a high priority. These segments rated a 5 due to location, condition and pryor SSO history.

2017-18 Morse Dr. &
Pine Hills
Replacement Project



RedZone ROBOTICS

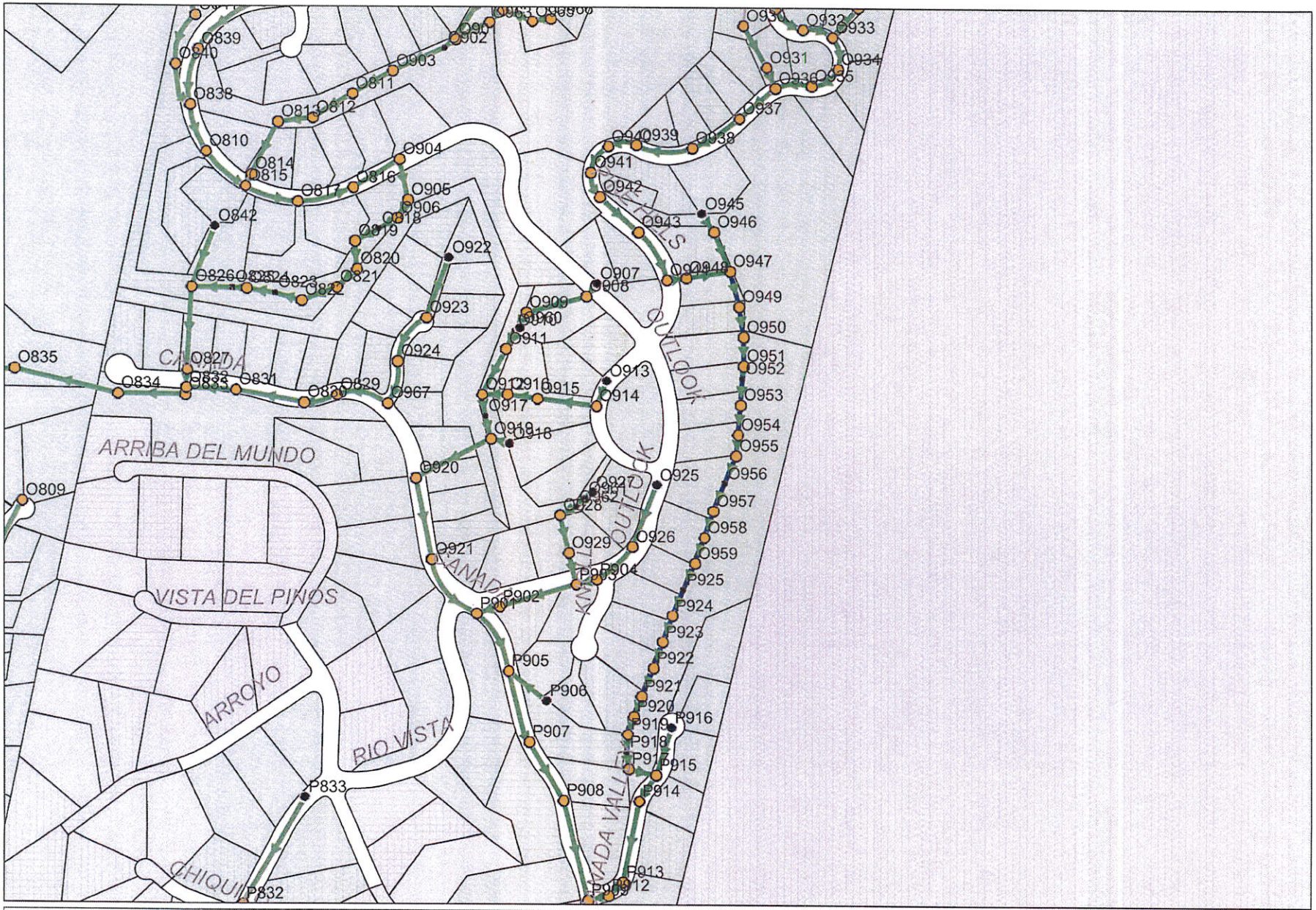
10/8/2014

MORSE DR. EASMENT

N

Morse Dr. Easment	Length	Size
Q763-Q803	323.9	6
	COST	
	$150 X 323.9 = $48,585	
TOTAL COST OF PROJECT	$48,585	

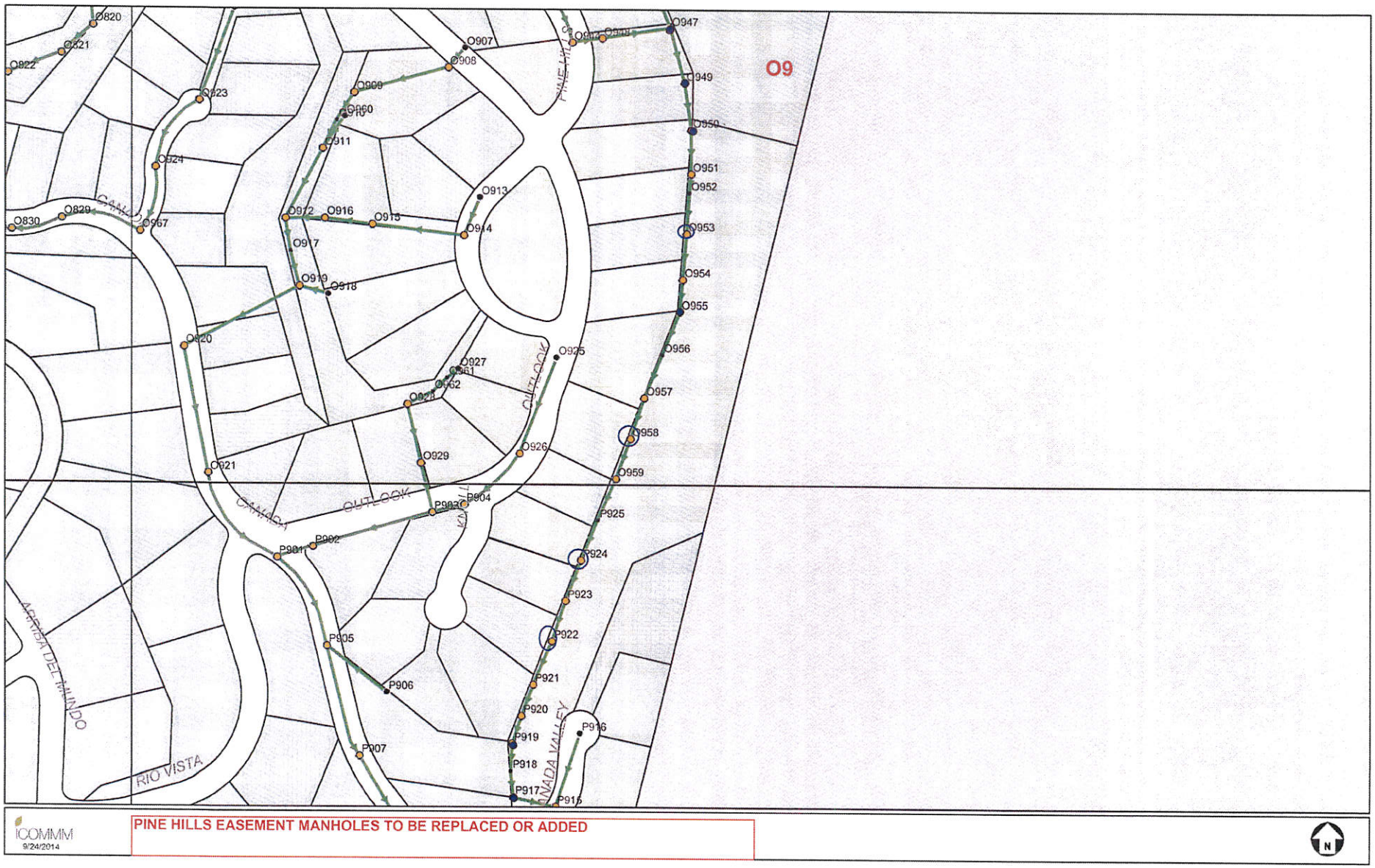
This Project or line segment has had structial failure in the past with the result of an SSO. Staff recomends this line segment be either replaced or regraded for proper alinement. The hillside is sliding and will require renforcement to stablize the hill. The probility of future hillside movement will need to be addressed.



ICOMMM
9/8/2014

PINE HILLS EASEMENT

N



ICOMMM
9/24/2014

PINE HILLS EASEMENT MANHOLES TO BE REPLACED OR ADDED

Pine Hills Easment Replacement	Length	Pipe Size	Laterals per line segment	Manhole to be replaced
P923-P922	100.1	6		
O947-O949	131.2	6	1	
O949-O950	114.8	6	1	
O950-O951	102.4	6	1	
O951-O952	44.5	6		
O952-O953	95.6	6	1	O953
O953-O954	107.3	6	1	
O954-O955	75	6	1	
O955-O956	107.7	6		
O956-O957	107.7	6	1	
O957-O958	100.3	6		O958
O958-O959	98.9	6	1	
O959-P925	105	6	1	
P918-P917	60.3	6		
P919-P918	63.7	6	1	
P920-P919	68	6		
P921-P920	77.6	6	1	
P922-P921	110.6	6		P922
P924-P923	101.2	6	2	
P925-P924	102.4	6	1	P924
	TOTAL		TOTAL	TOTAL
	1874.3		14	4
	COST		COST	COST
	$120 PER FOOT		$50 PER LATERAL	$10,000 PER MANHOLE
	1874.3' X $120 = $224,916		$50 X 14 = $700	$10,000 x 4 = $40,000
	$224,916		$700	$40,000
TOTAL COST OF PROJECT	$265,616			

Staff is recomending replacement of the Pine Hills easment sewer lines and manholes.Staff recomends using the open cut method for replacement Staff has used the CCTV rating system of PACP which is a NASSCO nation wide standard. The contractor will increase the pipe size from 6 inch to 8 inch. There will district easment work that will need to addressed pryor construction. Staff will be using a scale of 1-5 on rating the priority on which line segment to replace first with 5 being a high priority. These segments rated a 5 due to location, condition and pryor SSO history.

2018-19 High Meadows Replacement Project


N8
HIGH MEADOWS EASEMENT PROJECT
OUTLOOK
HIGH MEADOW
GREENFIELD
EDGEFIELD
CARMEL HILLS
N854
N855
N856
N857
N858
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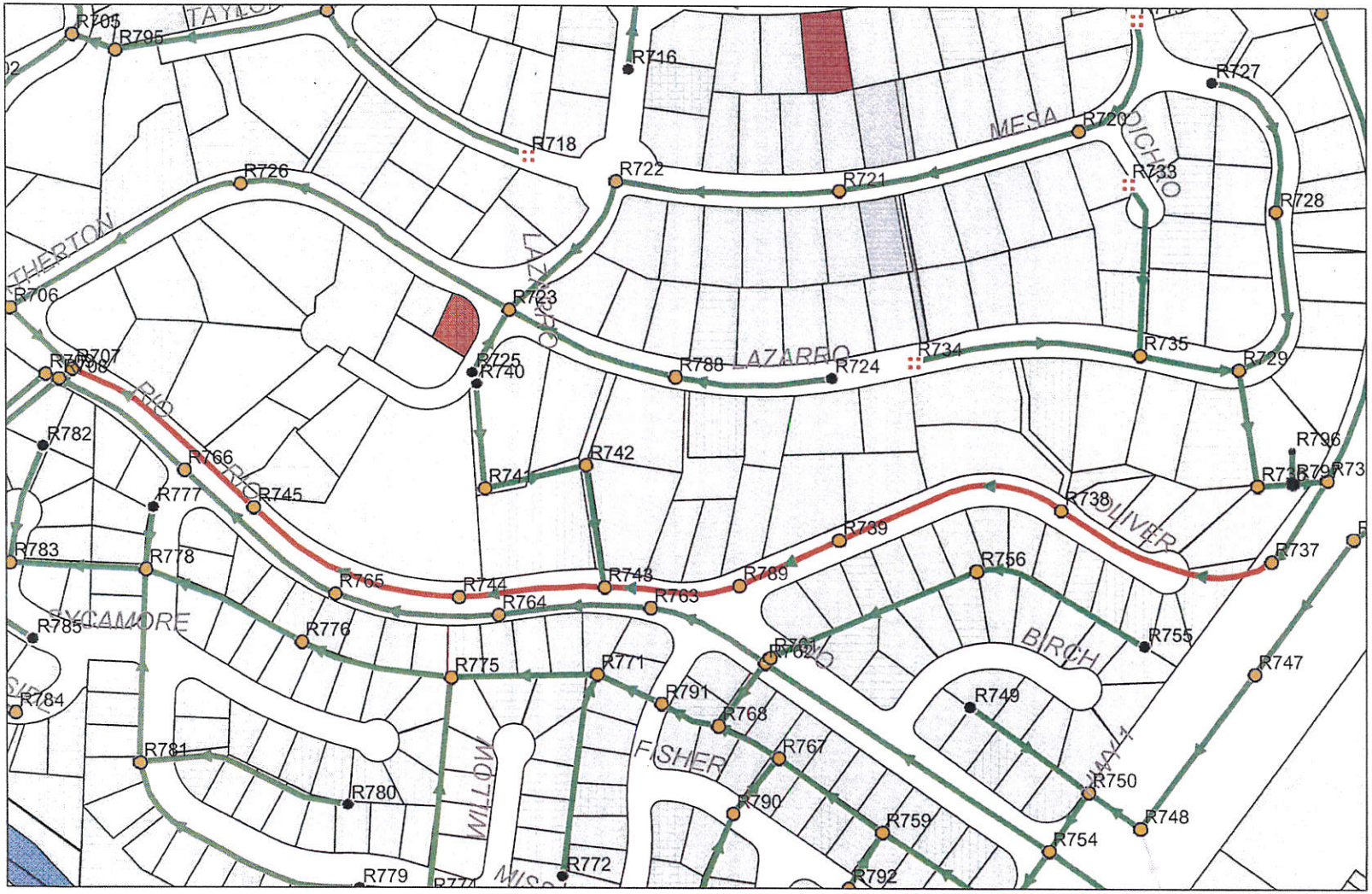
N7101
N7102
N7103
N7104
N7105
N7106
N7107
N7114
N7115
N773
N777
N779
N780
COMMM
9/24/2014

High Meadows Easment	Length	Size	Laterals per line segment	Manholes to be Replaced
N7107-N827	283.7	8	3	
N7100-N7101	90.2	8		N7-100
N7101-N7102	91	8		
N7102-N7103	92.8	8		
N7103-N7104	92.9	8		
N7104-N7105	92.7	8	2	N7-104
N7105-N7106	83	8		
N7106-N7107	106.2	8	2	N7-107
N791-N795	67.6	8		
N795-N796	58.6	8		
N796-N797	114.2	8		
N797-N798	104	8		
N798-N799	92.2	8		
N799-N7100	104	8		
	TOTAL		TOTAL	TOTAL
	1473.1		7	3
	COST		COST	COST
	$120 PER FOOT		$50 PER LATERAL	$10,000 PER MANHOLE
	1473.1 X $120 = $176,772		$50 X 7 = $350	$10,000 X 3 = $30,000
	$176,772		$350	$30,000
TOTAL COST OF PROJECT	$207,122			

Staff is recomending replacement of the High Meadows easment sewer lines and manholes.Staff recomends using the open cut method for replacement Staff has used the CCTV rating system of PACP which is a NASSCO nation wide standard. The contractor will replace the existing 8 inch. There will district easment work that will need to addressed pryor construction. Staff will be using a scale of 1-5 on rating the priority on which line segment to replace first with 5 being a high priority. These segments rated a 5 due to location, condition and pryor SSO history.

2019-20 Rio Road
& Other Locations
Replacement Project

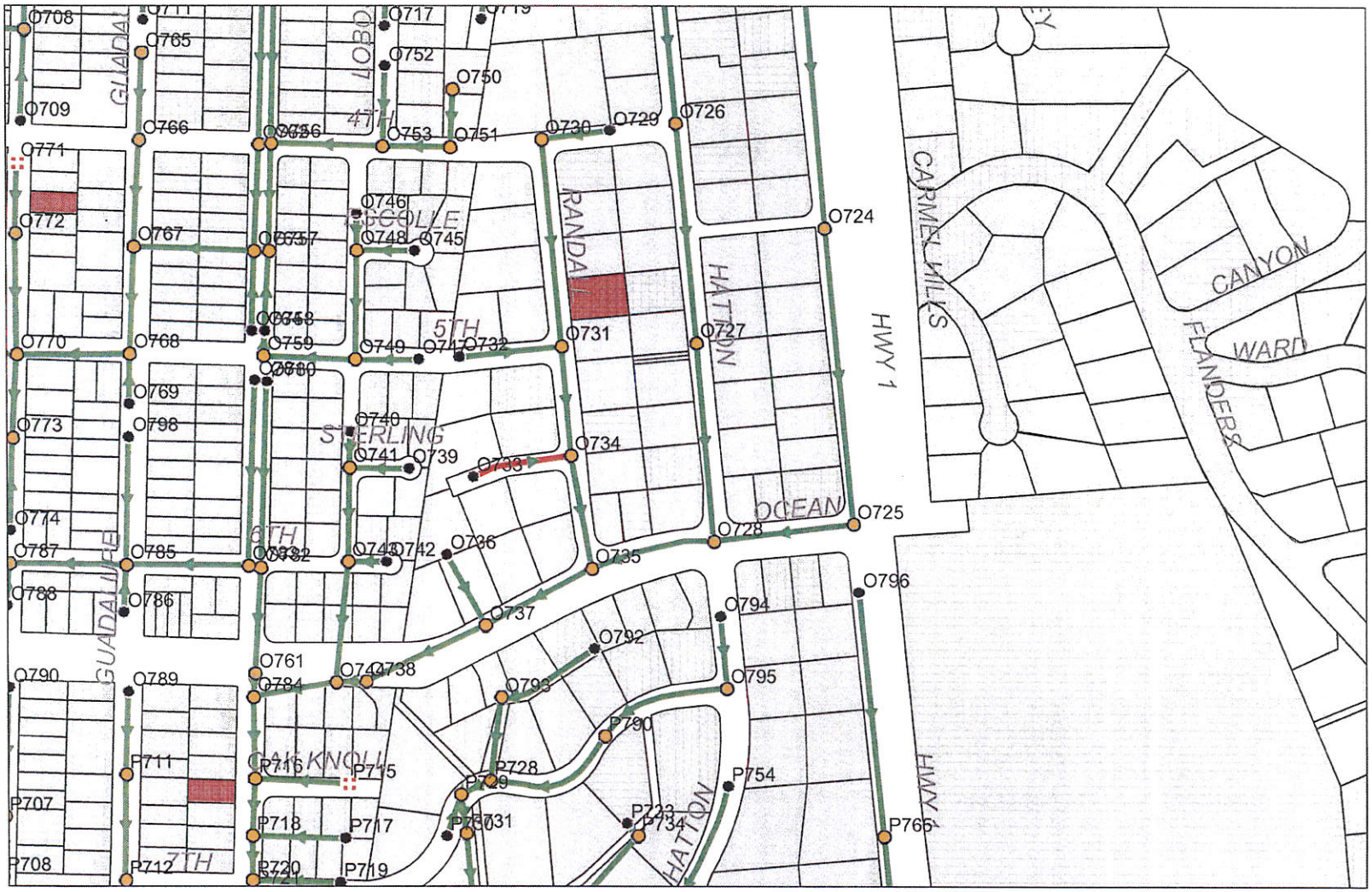


RedZone ROBOTICS

10/3/2014

RIO DR. & OLIVER REPLACEMENT PROJECT

N

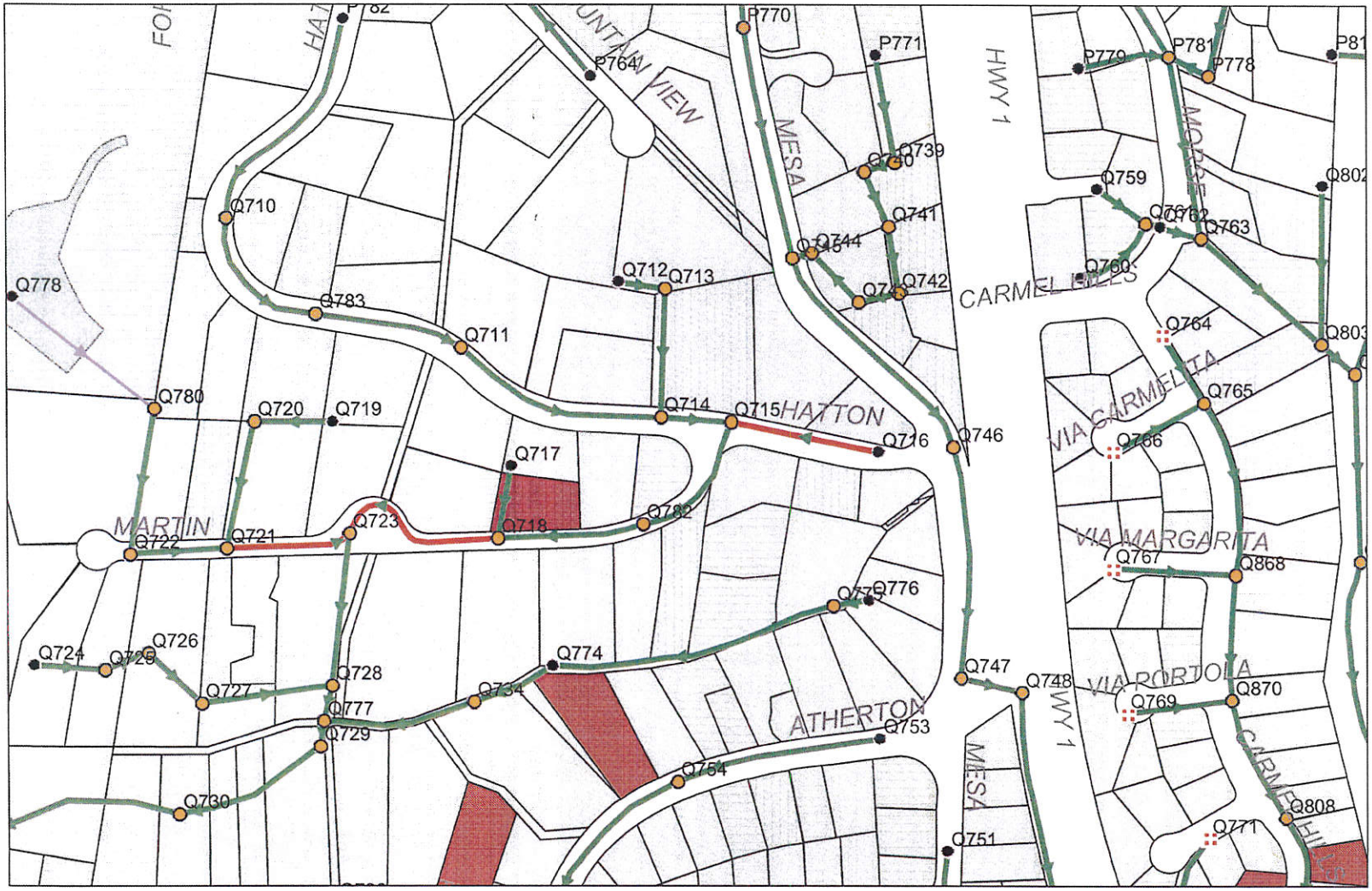


RedZone ROBOTICS

10/3/2014

ALLEN PLACE REPLACEMENT PROJECT

N

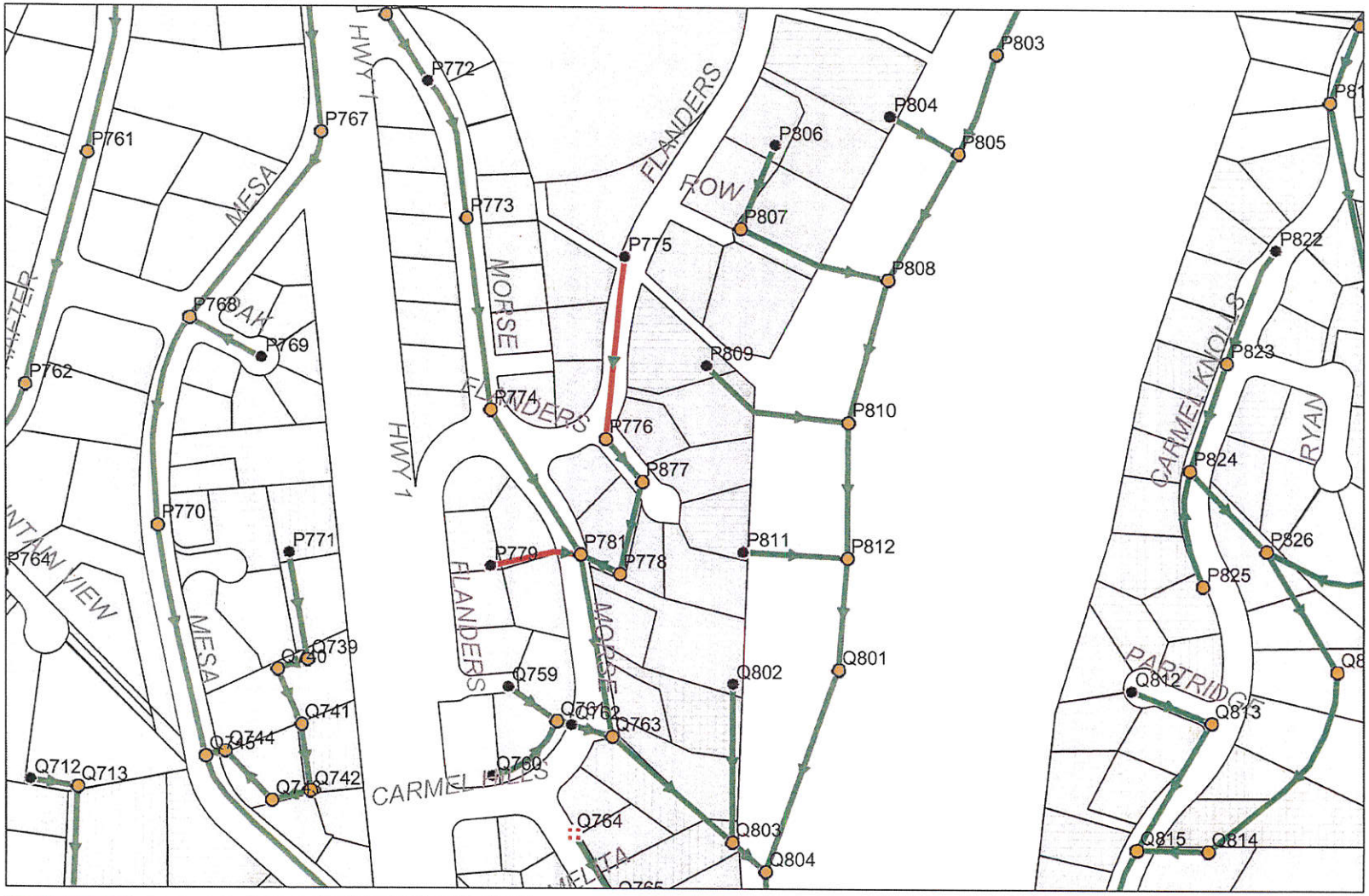


RedZone ROBOTICS

10/3/2014

MARTIN RD. & HATTON RD. REPLACEMENT PROJECT

N

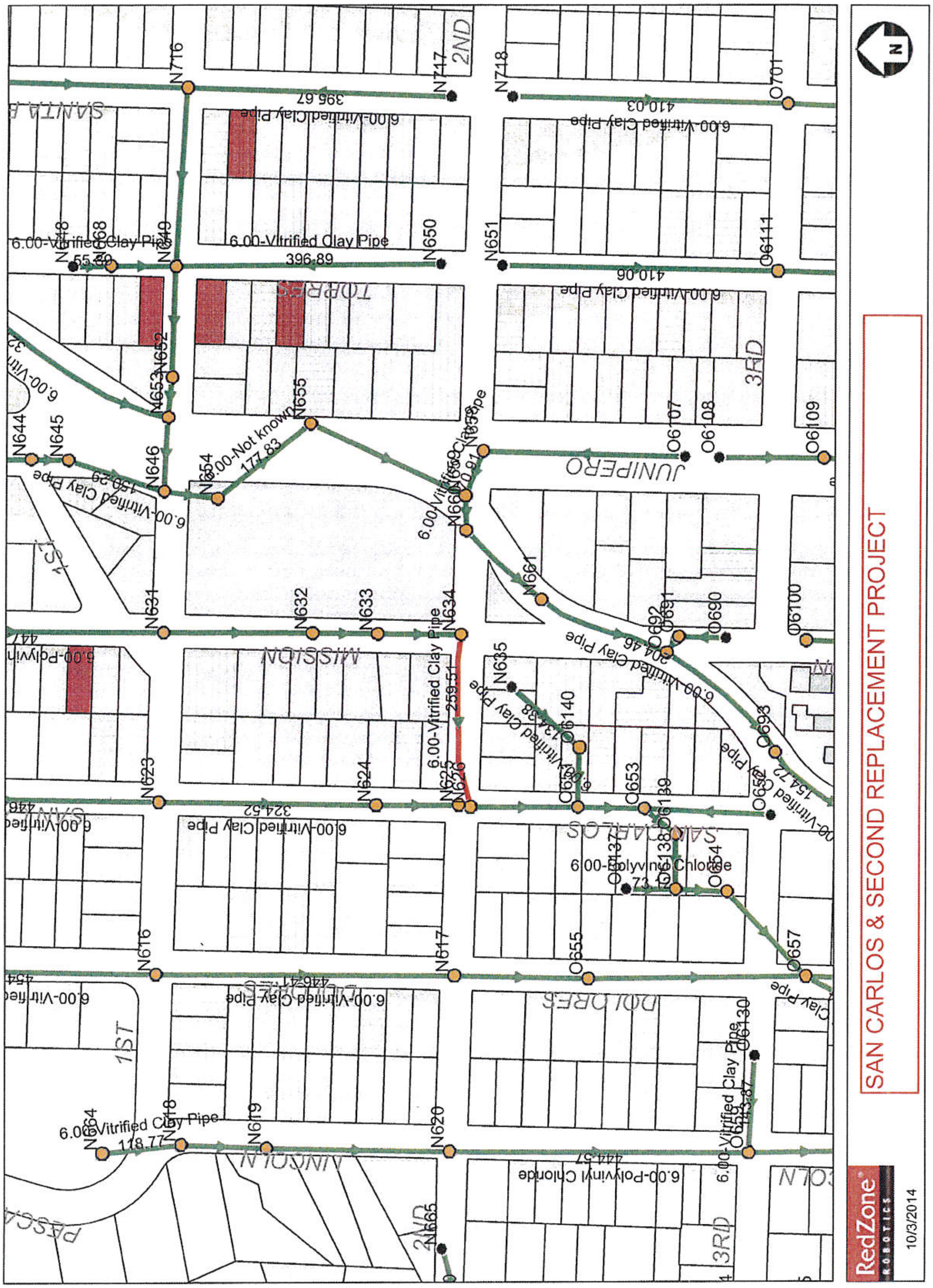


RedZone ROBOTICS

10/3/2014

MORSE DR. & FLANDERS REPLACEMENT PROJECT

N


SAN CARLOS & SECOND REPLACEMENT PROJECT
RedZone ROBOTICS
10/3/2014
N
SANTA F
TORRES
JUNIPERO
MISSION
SAN CARLOS
DOLORES
LINCOLN
1ST
2ND
3RD
PESCA
6.00-Vitrified Clay Pipe
396.67
396.89
410.03
410.06
55.30
150.29
6.00-Not known
177.83
259.51
324.52
446.41
444.57
204.46
154.72
134.38
73.12
118.77
143.87
6.00-Polyvinyl Chloride
N716
N747
N718
N650
N651
N649
N652
N653
N655
N644
N645
N646
N654
N631
N632
N633
N634
N635
N623
N624
N616
N617
N618
N619
N620
N665
N661
O701
O6111
O6109
O690
O6100
O693
O653
O6139
O6140
O654
O655
O657
O6130

Rio Regrading	Length	Size	Laterals per line segment
R737-R738	421.9	6	7
R738-R739	438.5	6	7
R739-R789	202.3	6	5
R743-R744	269.7	6	2
R744-R745	423.2	6	4
R745-R707	422.9	6	8
R789-R743	251.4	6	4
Regrading Phase 2			
N634-N626	259.5	6	2
O733-O734	214.2	6	5
P775-P776	370.7	6	10
P779-P781	185	6	2
Q716-Q715	304	6	6
Q718-Q723	364.3	6	3
Q721-Q723	255.2	6	3
	TOTAL		TOTAL
	4382.8		68
	COST		COST
	$120 PER FOOT		$50 PER LATERAL
	4382.8' X $120 = $525,936		$50 X 68 = $3400
	$525,936		$3,400
TOTAL COST OF PROJECT	$529,336		

Staff is recomending replacement of the Rio Rd. sewer lines and various line in phase two.Staff recomends using the open cut method for replacement because all line segments listed have grade issues.Staff has used the CCTV rating system of PACP which is a NASSCO nation wide standard Staff will be using a scale of 1-5 on rating the priority on which line segment to replace first with 5 being a high priority. These segments rated a 5 due to sever grade, condition and pryor SSO history.

Appendices

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

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
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
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
lbs	Pounds
LIMS	Laboratory Information Management Software
MCC	Motor Control Center
MCRT	Mean Cell Retention Time
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	[Elevaton above] Mean Sea Level
NEC	National Electric Code
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
TMDL	Total Maximum Daily Load
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