ECMA Utility 2026
RA Reserve Study Summary

Report Date	November 1, 2025
Budget Year Beginning	January 1, 2026
Budget Year Ending	December 31, 2026

Report Parameters

Inflation	4.00%
Interest Rate on Reserve Deposit	3.00%
2026 Beginning Balance	$1,342,000

AFM Cash Flow Projection Model
Contribution increases are shown as follows:

2026:	Increase = Contribution $220,500, up from $210,000 as shown in 2025 reserve study.
2027 – 2042:	5% Annual Increase
2043 – 2055:	0% Annual Increase

Reserve Study presented to Board:	November 21, 2025
Reserve Study Accepted by Board:	November 21, 2025
Expenditures Approved by Board:	Pending approval Q1 2026 of Planned

ECMA Utility 2026
Redmond, Oregon
RA Cash Flow Projection- AFM Model 5% annual to 2042, then 0%

Report Date November 01, 2025
Beginning Fiscal Year January 01, 2026

Beginning Balance: $1,342,000

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2026	2,443,372	220,500	23,789	769,550	816,739	973,705	84%
2027	2,530,416	231,525	29,515	64,426	1,013,353	1,176,798	86%
2028	2,631,632	243,101	34,653	101,344	1,189,763	1,358,973	88%
2029	2,736,898	255,256	39,096	141,834	1,342,282	1,516,834	88%
2030	2,846,374	268,019	47,324	32,833	1,624,792	1,804,694	90%
2031	2,957,263	281,420	40,819	545,590	1,401,440	1,580,512	89%
2032	3,075,553	295,491	49,459	48,297	1,698,094	1,875,316	91%
2033	3,198,576	310,266	57,551	89,977	1,975,934	2,150,687	92%
2034	3,326,519	325,779	65,456	119,836	2,247,333	2,417,777	93%
2035	3,459,579	342,068	72,621	168,692	2,493,330	2,657,166	94%
2036	3,597,963	359,171	54,854	1,024,041	1,883,314	2,029,339	93%
2037	3,741,881	377,130	64,681	104,410	2,220,715	2,346,327	95%
2038	3,891,556	395,986	50,313	939,605	1,727,409	1,828,827	94%
2039	4,047,218	415,786	59,026	175,654	2,026,567	2,100,067	97%
2040	4,209,107	436,575	72,563	44,380	2,491,324	2,533,912	98%
2041	4,377,472	458,404	63,613	829,303	2,184,037	2,185,359	100%
2042	4,552,570	481,324	77,888	69,104	2,674,144	2,628,459	102%
2043	4,734,673	481,324	92,088	85,867	3,161,690	3,089,740	102%
2044	4,924,060	481,324	74,361	1,164,321	2,553,054	2,465,698	104%
2045	5,121,022	481,324	90,747	9,481	3,115,643	3,036,258	103%
2046	5,325,863	481,324	58,791	1,637,257	2,018,502	1,956,025	103%
2047	5,538,898	481,324	70,235	158,672	2,411,389	2,390,761	101%
2048	5,760,454	481,324	80,120	222,057	2,750,775	2,797,826	98%
2049	5,990,872	481,324	86,227	357,853	2,960,474	3,101,640	95%
2050	6,230,507	481,324	98,822	147,740	3,392,879	3,658,688	93%
2051	6,479,727	481,324	80,362	1,195,455	2,759,110	3,172,936	87%
2052	6,738,916	481,324	94,796	80,576	3,254,653	3,849,434	85%
2053	7,008,473	481,324	106,165	197,150	3,644,991	4,458,255	82%
2054	7,288,812	481,324	114,986	293,462	3,947,838	5,017,661	79%
2055	7,580,364	481,324	131,330	51,485	4,509,007	5,878,549	77%

Description	Date In Service	Replacement Date	Current Cost	Useful Life Adjustment	Remaining	Future Cost	Quantity	Unit Cost

GENERAL NOTES REGARDING ASSETS

2026: Cost of assets was inflated at 3.0% unless use of recent actual costs was appropriate.
2025: Cost of assets was inflated at 3.7% unless use of recent actual costs was appropriate.
2024: Cost of assets was inflated at 4% unless use of recent actual costs was appropriate.
2023: Cost of assets was inflated at 8% unless use of recent actual costs was appropriate.
2022: Cost of assets was inflated at 3.5% unless use of recent actual costs was appropriate.
2021: Cost of assets was inflated at 3.2% unless use of recent actual costs was appropriate.
2020: Cost of assets was inflated at 2.8% unless use of recent actual costs was appropriate.
2019: Cost of assets was inflated at 2.8% unless use of recent actual costs was appropriate.
2018: Cost of assets was inflated at 2.8% unless use of recent actual costs was appropriate.
2017: Cost of assets was inflated by 3.0% unless use of recent actual costs or bids received were appropriate.
2016: Cost of assets was inflated by 3.0% unless use of recent actual costs or bids received were appropriate.
2015: Cost of assets was inflated by 2.8% unless use of recent actual costs or bids received were appropriate.
2014: Cost of assets was inflated by 2% unless use of recent actual costs or bids received were appropriate.
2013: Cost of assets was inflated by 2% unless use of recent actual costs or bids received were appropriate.
2012: Cost of assets was inflated by 4% unless use of recent actual costs was appropriate.

Cline Butte Utilities (CBU) sold assets to Oregon Water Utilities (OWU) June of 2017. OWU is utility system manager pursuant to systems management agreement with ECMA.

Well #2B ("new" Well 2 in 2009) is located near Fairway 8 and 9. Add "B" designation for 2018 Reserve Study.

- Pumps into domestic system
- Converting from motor and bearings on top of the shaft to a submersible pump/motor system
- Submersible pump/motor system purchase approved by Board Nov 9, 2017; show as complete/new in 2017.

Well #2A ("old" Well 2) was improved in 2013 to pump water into the domestic system during periods of low demand.

- Pump and motor are submersible
- ECMA has commissioned a study by Cascade Geoengineering in Fall 2021 to address various matters related to the domestic water source that will include an evaluation of the Well #2A well casing. No information available as of the date of this study with regard to potential costs associated with study results and recommendations. Recommended drilling replacement Well 2A.
- ECMA approved drilling replacement well for 2A to begin/complete late 2023/early 2024. 12 inch well hole. Old Well #2A to be capped. New well numbering expected to change.
- New well constructed in 2024 as planned. Well #2A will be abandoned, capped by 2024 YE. New well is #2C. UNFUND Well #2A assets.

Well #2C (replacement of Well #2A) - Same plan to use during periods of low demand, staying with 25 hp motor/pump, but 12" hole allows for upgrade if needed in the future to larger (100hp) pump.

- Pump and motor are submersible
- New pump column, flow meter and pump/motor. Pump panel and Pump Panel VFD serving #2A will not be replaced and are connected to #2C

Well #4 is located adjacent to the Maintenance Building. New well drilled in 2013, new well number assigned as Well #4 by Oregon Health Authority in 2014. References changed from Well #3 to Well #4 in this study.

- Pump and motor are submersible
- Pumps into lake and switches to feeding domestic system if need indicated by systems.

SCADA System- Supervisory Control and Data Acquisition System was installed in 2014 to convey data electronically to system operators for real time information on utility equipment operations and allows for remote supervision and control of the

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

GENERAL NOTES continued...

General Notes Regarding Assets continued...

connected equipment. This system is connected to the SCADA receiver and software system installed and operated at the Ridge and licensed to CBU. In 2014, the new SCADA system was installed to convey data to the system manager for Well #2 and Well #2A. In 2015, the system was further enhanced to integrate Well #4 and allow for amp readings at Well #2 and #2A. This system was expanded in 2019 to convey data related to the sewer system.

WPCF Permitting Costs and related DEQ requirements are estimated costs only. ECMA owns 56 cells in 14 beds. The Oregon Water Utilities (OWU) owned 34 cells and now permitted seperately to OWU.

2024: Adjust life for WPCF permit renewal to 10 years to reflect current permit term.

Drainfield Beds Per discussions with CBU and WH Pacific, two Drainfield Bed components in the Study were unfunded and subsequently omitted from Study, leaving one full Drainfield Bed funded and the related cost assumed for a single bed replacement. A new component was added to fund valve replacement and pipe maintenance in the drainfield beds as necessary on an annual basis. 2017: Adjusted life of the valve replacement and pipe maintenance to 10 years in order to fund a more proactive and consistent replacement plan for valves/pipes.

2023: All phases of valve replacement & pipe maintenance completed in 2022.

WATER

Air Gap, Eagle Lake 2018 2043 16,263 25 0 17 31,680 1 @ 16,263.45

Asset ID: 1101

Asset added for the 2019 Reserve Study. Price from Cascade Pump quote. Includes: labor and materials to install 1 air gap system to protect the system delivering water from wells 2 and 4 to the lake. material includes: 6" ductile iron pipe and restrained joints, fabricated SS manhole cover with removeable sides, excavation and installation.

Water Booster Pump Motor, Refurbish

2021 2031 3,888 5 0 5 4,730 1 @ 3,887.92

Asset ID: 1025

2005: Refurbish added per EC with cost and life information provided by W H Pacific.
2017: Cost to refurbish per Cascade Pump 2016 invoice$1,535 (asset used in 2016 to refurbish one 20 HP booster motor)
2020: OWU Management confirmed unit cost with Cascade Pump and Irrigation.
2021: OWU confirms asset showing signs of needing a rebuild. Plan for 2021.
2022: Asset planned for refurbish prior to 2021 year end.
2023: Assume impeller replaced with refurbish. Inflated 2021 cost 2 years.

History

Date	Cost	Contractor	Comments
12/2021	$3240	Cascade Pump	Additional parts and labor to replace impeller.

Water Booster Pump, 20HP *1024 Unfunded*

Asset ID: 1024

Located in Well House #2. Useful life set at 10 years rather than 20 due to the pump cycling 24/7.

2010: Added cost to include an increase in line size from 4" to 6" ($2,000) that may be needed.
2011: Line size was only increased for 3'. Remaining 4" replacement would have been outside of building.
2014: Reduced unit cost by $2200 for VFD, previously included. Added Booster Pump, VFD to Study in 2015.
2017: This pump has been refurbished and is on shelf until needed, (2016 cost to refurbish per Cascade Pump invoice $1,535)

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
WATER continued...									
Water Booster Pump, 20HP	2016	2026	9,073	10	0	0	9,073	1 @	9,072.58
Asset ID: 1097									
Located in Well House #2. Useful life set at 10 years rather than 20 due to the pump cycling 24/7.									
2017: This pump is new and in current use, (2016 cost per Cascade Pump invoice $6,155)									
2020: OWU Management confirmed unit cost with Cascade Pump and Irrigation.									
Water Booster Pump, VFD	2011	2026	3,340	10	5	0	3,340	1 @	3,340.11
Asset ID: 1079									
Added to study in 2015. Previously included in Water Booster Pump, 20HP. Estimated price provided by Bryan at Cascade Pump.									
2021: No sign of issues or failure; hold the useful life at 10 years, adjust replacement by 2 years to 2023.									
2024: No replacement needed in 2023, adjust replacement to 2024 (OWU).									
2025: No replacement needed in 2024, adjust replacement to 2025 (OWU).									
2026: No replacement needed in 2025, adjust replacement to 2026 (OWU).									
Water Booster Pump, VFD Panel	2011	2036	3,036	20	5	10	4,495	1 @	3,036.48
Asset ID: 1088									
Added to Study in 2014.									
2021: Adjust life by 2 years to sync with adjusted life for VFD replacement.									
2024: Adjust life by 1 year to sync with adjusted life for VFD replacement.									
2025: Adjust life by 1 year to sync with adjusted life for VFD replacement.									
2026: Adjust life by 1 year to sync with adjusted life for VFD replacement.									
Well #2A, Flow Meter *1084 Unfunded*									
Asset ID: 1084									
Black sand is a degrading factor with this piece of equipment.									
2014: Added to Study at the installed price. Flow Meter is a 4" McCrometer meter.									
2018: Asset "Useful Life" adjusted from 5 to 10 years per OWU Management. Consider Magnetic meter as a replacment unit.									
2024: WELL 2A REPLACEMENT: Flow meter at end of estimated life. New equipment for replacement well.									
2025: UNFUND WELL 2A ASSET.									
Well #2A, Pump Column *1081 Unfunded*									
Asset ID: 1081									
2014: Added to Study. Pump Column (Drop Pipe) is 300 lineal feet of 4" galvanized pipe. Cost to replace is $4500 in materials plus $3,000 in labor costs to pull and set column. Costs are per Bryan at Cascade Pump.									
2024: WELL 2A REPLACEMENT: Assume new equipment for replacement well.									
2025: UNFUND WELL #2A ASSET.									
Well #2A, Pump/Motor Replace *1080 Unfunded*									
Asset ID: 1080									
2014: Added to Study. Well #2A Pump and Motor: 25 HP Submersible pump and motor at cost of $6,000 equipment and materials plus $3,000 in labor to pull and replace. Estimate includes reuse of wire (cost to purchase new wire would be $9 plf if required). Costs are per Bryan at Cascade Pump. No pump/motor refurb planned, motor not rebuildable.									
2024: WELL 2A REPLACEMENT: Pump/Motor at end of estimated life. New equipment for replacement well.									
2025: UNFUND WELL #2A ASSET.									

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
WATER continued...									
Well #2B, Bldg. Paint	2018	2026	2,251	5	3	0	2,251	1 @	2,250.86

Asset ID: 1001

History

Date	Cost	Contractor	Comments
2008	$1500	K&S Painting	Included: New building extension
2012	$1,500	S&S Painting	
2018	$1475	Impact Painting	

2024: Adjust life of exterior painting and siding by 1 year to 2024 to be done after replacement well drilling project complated.
2025: Exterior paint and siding project extended to 2025 as new well project not yet complete at end of painting season.
2026: Project not done in 2025. Plan for 2026.

Well #2B, Bldg. Roof	2007	2037	5,875	30	0	11	9,044	10 @	587.46

Asset ID: 1002

770 sq ft installed in 2005.
200 sq ft added as part of well #2 extension in 2007.
Assumes replacement of all in same year.

2009: Cost adjusted from 3.20/sq ft to 2.00/sq ft based on local market and includes tear out and disposal.
2014: Cost increased to $2.65/sq ft to align with other EMCA small buildings so that similar quality materials may be used on this building.
2024: Convert quantity to roof square measurement, round to 10 squares. Increase cost/square to reflect current Central Oregon contractor estimates for composition roofing. Includes tear off, disposal.

Well #2B, Bldg. Heater	2023	2043	2,190	20	0	17	4,265	1 @	2,189.63

Asset ID: 1106

2023: Asset added to study.

History

Date	Cost	Contractor	Comments
1/2023	$1971	WW Granger	Heater, electrician cost, Cascade Pump assist

Well #2B, Bldg. Siding	1985	2035	20,518	50	0	9	29,203	1992 @	10.30

Asset ID: 1004

Added to study in 2001 due to subject approaching 15+ years with an estimated life of 15 - 20 years remaining. Estimated costs are based on the local market and reflect tear out and removal, pre-staining, Hardi-Plank siding.
Quantity includes new section in 2008 (332 sq ft) Total replacement may not be required.

2009: Adjusted life per recommendation of ECMI management.
2012: Noted by CBU repair work is needed.
2019: Asset replacment aligned with exterior paint.
2024: Adjust life of siding for full building based on the one time south side replacement, and based on condition assessment by ECM. Line exterior painting up with siding replacement. Cost estimate revised to assume Hardi-Plank at $9/SF, including tear off, disposal. Quantity updated based on Keeton-King Oct 2023 new takeoff information.
2025: Cost estimate increased to $10/SF.

Well #2B, Bldg. Siding, S. Side-1X	1985	2026	10,280	50	-9	0	10,280	752 @	13.67

Asset ID: 1108

Added to study in 2001 due to subject approaching 15+ years with an estimated life of 15 - 20 years remaining. Estimated costs are based on the local market and reflect tear out and removal, pre-staining, Hardi-Plank siding.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #2B, Bldg. Siding, S. Side continued...

Quantity includes new section in 2008 (332 sq ft) Total replacement may not be required.

2009: Adjusted life per recommendation of ECMI management.
2012: Noted by CBU repair work is needed.
2019: Asset replacment aligned with exterior paint.
2024: South side replacement recommended based on condition assessment by ECM. Plan to do after new well construction complete in 2024. Cost estimate revised to assume Hardi-Plank at $9/SF, including tear off, disposal. Quantity reflects south side only, based on Keeton-King Oct 2023 new takeoff information.
2025: Cost estimate increased to $10/SF. Project delayed to 2024 as well drilling project not complete as of date of study.
2026: Project not done in 2025, plan for 2026. Cost estimate updated based on 2025 Keeton-King estimate, inflated by 3% for 2026.

Well #2B, Cleaning 2017 2027 19,934 10 0 1 20,731 1 @ 19,933.66
Asset ID: 1061

2013: Added to 2014 study per recommendation of CBU, includes set up/ pump pull/camera/clean/replace.
2018: To restore yield in the event of black sand and associated materials. Approved as part of the conversion to submersible pump/motor system. Well cleaning to restore well to original depth of 336' (from 312'). Cost based on Cascade Pump & Irrigation Change Order bid dated 11/7/2017.

Well #2B, Column 2017 2047 7,682 30 0 21 17,506 1 @ 7,682.31
Asset ID: 1053

2010: This was separated as a separate asset in the 2011 study and replacement will coincide with replacement schedule for pump/shaft/bearings. Cost is materials/shipping only; cost to pull is included in other work scheduled at the same time.
2018: Cost based on Cascade Pump & Irrigation change order bid dated 11/7/2017. 300 LF 6" column pipe T&C (galvanized adder) $4877; 6" fabricated discharge head $796. Old column material to be sold for scrap/salvage value.
2019: Cost assocoiated with the 2017 Cascade Pump and Irrigation "Change Order". Includes: 300' 6" column pipe T&C (galvanized adder) and 6" fabricated discharge head. Total cost $5,673.

Well #2B, Flow Meter 2019 2029 5,875 10 0 3 6,609 1 @ 5,875.18
Asset ID: 1058

Black sand is a degrading factor with this piece of equipment.

History

Date	Cost	Vendor	Notes
5/2019	$4,460	Cascade Pump	Includes: McMW500, Labor and freight

2012: 8" inline turbine.
2014: Flow meter converted from standard to analog output to sync with SCADA. Work done by Cascade Pump. No increase in useful life.
2019: Asset replacment pushed 1 year per OWU Management.
2020: Unit Cost updated per contractor's invoice

Well #2B, Pressure Compressor 1985 2026 10,247 15 26 0 10,247 1 @ 10,246.58
Asset ID: 1027

Added to 2004 study for refurbishing of well pressure tank. This was previously included in the well pressure tank replacement. Separated cost per the recommendation of WH Pacific and CBU. Located at Well #2 house.

2009: Useful life changed from 6 years to 15 years per recommendation of CBU due to low useage.
Life adjusted per recommendation of CBU.
2017: Adjusted life based on CBU input.
2018 - 2025: Asset replacment pushed forward each year per OWU Management. Plan to run to failure. OWU advised no

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #2B, Pressure Compressor continued...

concern if inoperative for a time.
2026: Same plan.

Well #2B, Pressure Tank 1985 2035 53,986 50 0 9 76,839 1 @ 53,986.33
Asset ID: 1028

Approximately 5000 gallon horizontal pressure tank located in Pump Building #2. Cost estimate reduced per WH Pacific in 2004 to reflect air compressor as a separate asset from pressure tank.

2010: Adusted life to 50 years.
2020: OWU inspected tank interior, results are good with a coating on the inside and only a couple tiny rust spots.

Well #2B, Pump Control Valve 2002 2032 10,824 30 0 6 13,695 1 @ 10,823.67
Asset ID: 1032

Black sand is a degrading factor with this piece of equipment.
Part of Board approved upgrade project completed in 2002. Relocated to new Well #2 in 2008.

Well #2B, Pump Control Valve, Refurbish
2022 2027 1,717 5 0 1 1,786 1 @ 1,717.29
Asset ID: 1076

2018: "Unit Cost" adjusted down per direction of OWU Management.

History

Date	Cost	Contractor	Comments
2012	$1,265	Cascade Pump	Bernard 4" 2540 rebuilt kit.
6/22/17	$300	Cascade Pump	Rebuild pump to waste valves
8/2022	$533	Cascade Pump	Valve refurbish

Well #2B, Pump Motor Refurbish *1033 Unfunded*
Asset ID: 1033

Costs updated with WH Pacific in 2013. Cost includes rewinding motor, replacing bearings.

History

Date	Cost	Contractor	Comments
2012	$3,637	Cascade Pump	Pump motor refurbish, top and bottom bearing clean coat and oil. Did not include rewind.
2013	$8,500	Cascade Pump	New Motor 2013

2018: Motor being replaced with submersible pump/motor system, approved by Board November 2017.

Well #2B, Pump Motor Replace *1029 Unfunded*
Asset ID: 1029

100 hp vertical turbine pump located in domestic well house #2. The 100 hp pump motor services an 8" line.

2007: Refurbished.
2010: Revised life from 15 years to 20 years per receommendation of CBUC and WH Pacific. Assumes refurbish would be on a 5 year cycle.
2012: Refurbished
2013: New motor replaced by Cascade Pump. Includes 100hp VFD Motor 1800 RPM/460V/3 phase 50 HS, labor and freight.
2017: Reduced estimated life due to change in refurbishing plan. Adjusted life to coincide with pump/shaft/berrings.
2018: Replaced with a submersible pump/motor based on Board approval November 2017. Unfund this equipment replacement.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #2B, Pump Motor Replace continued...

Motor may be usable for golf irrigation system and to be kept in storage.
2020: OWU to talk to Golf management to determine if this spare motor would be useful for Golf equipment. If moved to Golf, remove the asset from Utility study and add to Golf study.

Well #2B, Pump Motor Spare *1078 Unfunded*
Asset ID: 1078

GE VHS motor S/N 0102003672

2015: Added to study; updated cost to actual cost of $1786 plus $170 charge for delivery with forklift. Work included motor rebuild, 2 thrust bearings, 1 idler bearing, clean and rein, machine and face ratchet assembly, new oil. Repair costs to keep spare, back up motor.
2018: Unfund. Well 2B converted to submersible pump/motor November 2017.

Well #2B, Pump Panel 2013 2033 42,747 20 0 7 56,252 1 @ 42,746.52
Asset ID: 1030

Adjusted estimated life in 2013 from 15 years to 20 years per WH Pacific recommendation.

2009: VFD replaced for a cost of $8927. It did not extend the life of the panel.
2012: Cost estimate updated with Cascade Pump & Irrigation Services. Includes new/current technology changes.
2013: Cascade Pump and Irrigation Services: Materials and Equipment at $28,672 plus labor to install at $7325, less cost of VFD at $7,000. VFD included in Cascade Pump invoice #35727- per Brett at CBU.

Well #2B, Pump Panel VFD 2017 2027 12,951 10 0 1 13,470 1 @ 12,951.47
Asset ID: 1067

2013: Added to 2014 study. Previously included in Pump Panel costs provided by WHP. Includes VFD for a 100hp motor.
2014: Updated cost to $7,000 from $10,500, pricing per Bryan at Cascade Pump.
2018: VFD replaced early due to change to submersible pump/motor system approved November 2017. Cost based on Cascade Pump & Irrigation change order bid dated 11/7/2017. 125HP Danfoss FC202 VFD ($8484) plus added installation cost ($1080). Replaced VFD may be usuable for Well #4. Discuss with OWU for 2019 study update.
2019: Cost assocoiated with the 2017 Cascade Pump and Irrigation "Change Order". Includes: 125HP Danfoss FC202 VFD andlabor. Total cost $9,564.

Well #2B, Pump/Motor Replace 2018 2028 51,061 10 0 2 55,228 1 @ 51,061.07
Asset ID: 1098

History

Date	Cost	Vendor	Notes
4/26/18	$18,830	Cascade Pump	

2018: New submersible pump/motor system approved by Board November 2017. Cost based on Cascade Pump & Irrigation change order bid dated 11/7/2017. Components include:
10WA Submersible turbine pump end ($4286)
100HP Submersible motor ($12116)
2 deep well check valves ($1652)
320' submersible cable with splice kit ($3737)
600 LF 1.25 poly transducer chase ($407)
Plus labor cost to pull old equipment, well inspect ($7240). All costs installed. 2018 reserve study to package all assets in one ID initially. For 2019 update, discuss need and cost for a refurbishing asset and separate cable asset.
2019: Cost associated with the 2017 Cascade Pump and Irrigation "Change Order". Includes: 10WA submersible pump end, 100HP submersible motor, two deep well check valves, 320' double OTT submersible cable with splice kit and 600 FT transducer chase. Total cost $22,198. Discussed separating assets for Reserve Study purposes with Oregon Water Utilities.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #2B, Pump/Motor Replace continued...

Conclusion was to keep in one asset group.
2020: Motor only replaced under manufacturer warranty. Labor cost only was incurred for the warranty replacement. No extension of estimated life.

Well #2B, Pump/Shaft/Bearings *1031 Unfunded*
Asset ID: 1031

History

Date	Cpst	Contractor	Comments
2013	$24,384	Cascade Pump	Includes 10D-9 Fairbanks water Lube Bowl Assembly, discharge head, 1.5" x10' shaft w/sleeve, water lube bearing retainers w/inserts, pull emergency pump equipment, mobilization, pull new line shaft pump equipment, modify discharge piping to except new discharge head, start-up and calibration.

2010: This was separated out in the study and includes bowls, impellors and shaft. Shaft replaced in 2010 by vendor. Cost provided by WH Pacific and includes $6,000 to pull the equipment and $5,000 for refurbishment and misc. replacement items as needed.
2013: Assumes addition of a 25hp jockey pump in well #2A (old 2). Without the well #2A improvements, estimated life would reduce to 2-3 years.
2017: Life adjusted at recommendation of CBU management.
2018: Asset unfunded. Replaced with submersible pump/motor (see new asset ID 1098) approved by Board November 2017.

Well #2C, Bollards 2025 2045 4,500 20 0 19 9,481 1 @ 4,500.00
Asset ID: 1113

New asset for 2026 study; four bollard posts on concrete pad installed to protect well head. Cost $3,491. Estimated cost higher to include demo on replacement.

Well #2C, Flow Meter 2024 2034 9,330 10 0 8 12,768 1 @ 9,329.74
Asset ID: 1109

Flow meter serving #2A being replaced Fall 2024 to serve new Well #2C.

History

Date	Cost	Contractor	Comments
10/2024	$9,058	Cascade Pump	UPGRADE to McCrometer Ultra Mag Flow meter; includes labor to remove/install new meter and interconnect w/SCADA

2025: Cost increase covers upgrade to 4" McCrometer Ultra Mag Flow meter with ProCom Converter (NSF61); 24 VDC, 4-20ma output, pluse output, 50' cord; Materials $6778; Labor to install and connect w/SCADA $2280.

Well #2C, Pump Column 2024 2054 10,300 30 0 28 30,887 1 @ 10,300.00
Asset ID: 1110

New column pipe in Well #2C, installed by Cascade Pump. 340' - 4" galvanized steel. Cascade Pump quoted $4,418 (pipe) and $3,720 (install labor) for total $8,138. Previous #2A inflated estimated cost was $11,055. Reduce to $10,000 for new Well #2C based on Cascade Pump pricing.

Well #2C, Pump Panel 2014 2034 4,555 20 0 8 6,233 1 @ 4,554.71
Asset ID: 1083

2014: Added to Study.
2024: Assume used for Well 2A replacement well.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #2C, Pump Panel continued...

2025: **REVISED THE AID 1083 WELL #2A ASSET TO WELL #2C.**

Well #2C, Pump Panel VFD 2014 2029 10,628 10 5 3 11,955 1 @ 10,627.67
Asset ID: 1082

2014: Added to Study. Costs include pulling old VFD and replacing with new.
2024: WELL 2A REPLACEMENT: Pump panel VFD at end of estimated life. New equipment for replacement well.
2025: Determined that pump panel VFD did NOT need replacing. Parametrix recommended 5 year replacement extension. REVISED THE AID 1082 WELL #2A ASSET TO WELL #2C.

Well #2C, Pump/Motor Replace 2024 2034 13,664 10 0 8 18,700 1 @ 13,664.13
Asset ID: 1111

25 hp 460v 6" submersible motor and Goulds 6 CLC-8ST submersible pump bowl assembly.

2025: New submersible pump/motor installed in new Well #2C. Cascade Pump advised pump/motor cost including installation was $11,832, as part of larger project installing and transfering equipment from #2A to #2C. Maintain previous cost estimate, inflated, for the reserve study.

Well #4, Cleaning 2024 2034 22,729 10 0 8 31,107 1 @ 22,729.36
Asset ID: 1065

2013: Added to 2014 study per recommendation of CBU includes set up/camera/clean.
2018: To restore yield in the event of black sand and associated materials.
2021: Life adjusted by 1 year to sync up with next schedule for pump/motor replace (pull from well). Recommendation of OWU.

History

Date	Cost	Contractor	Comments
July 2024	$10,830	Cascade Pump	Cleaning done in conjunction with pump replacement, so labor cost is lower.

2025: Hold higher cleaning cost in study to reflect separate cleaning event.

Well #4, Fence 2014 2038 12,043 24 0 12 19,280 1 @ 12,042.54
Asset ID: 1077

100	- lf Ext. Perimeter Fencing	@	$38.50	$3,850.14
1	- 12 ft. Ext Permiter Gate	@	$959.21	$959.21
48	- lf Interior Fencing	@	$27.32	$1,311.15
1	- 24 ft Interior 2-panel Gate	@	$1,534.72	$1,534.72
182	- lf Tear Out and Disposal	@	$2.49	$453.65
1	- Contingency	@	$829.45	$829.45
1	- Fence Upgrade for generator	@	$3,104.22	$3,104.22
			Total =	$12,042.54

2014: Fencing installed to isolate Well 4 from maintenance area. Exterior Perimeter Fencing is 6 ft, chainlink fence with green slats and 3 strand barbed wire. Interior Fencing is 6 foot Chainlink Fencing, no slats, no barbed wire.
Installed costs including removal and disposal (see calculation).

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #4, Fence continued...

2020: Fence upgraded planned to accommodate generator. Estimated cost of $2500 added to calculation.

Well #4, Flow Meter Domestic 2020 2026 4,925 5 1 0 4,925 1 @ 4,925.03
Asset ID: 1054

Black sand is a degrading factor with this piece of equipment.

Added to study in 2010 located on top of Well #3.
McCrometer MW 500 w/ FC 100 digital display, 4-20 MA Output, 24V power supply.

History

Date	Cost	Contractor	Comments
2015	$3,341	Cascade Pump	Including installation
2020	$3,786	Cascade Pump	Invoice #33563. 2" SS Meter w/M3000 GPM totalizer

2014: Project not completed by Study update.
2015: Project completed in 2015 by Cascade Pump and Irrigation at a cost of $3341 including installation.
2026: OWU did not receommend replacement in 2025. Life extended.

Well #4, Flow Meter Irrigation 2012 2026 3,864 10 4 0 3,864 1 @ 3,863.98
Asset ID: 1055

Black sand is a degrading factor with this piece of equipment.

Added to 2010 study: Includes a remote read.

History

Date	Cost	Contractor	Comments
2012	$2500	Cascade Pump	Invoice #33563. 2" SS Meter w/M3000 GPM totalizer

2022 - 2024: Asset replacement pushed forward each year per OWU Management.
2025: Asset replacement pushed to 2025 per OWU Management.
2026: OWU did not recommend replacement in 2025. Life extended.

Well #4, Pump Column 2019 2049 19,101 30 0 23 47,078 1 @ 19,100.86
Asset ID: 1035

History

Date	Cost	Vendor	Notes
4/19	$6,832	Cascade Pump	Includes: 294' Galv pipe

2009: Cost $5084 included two sections replaced and entire column inspected.
2018: Column pulled from well #3 and used on well #4; information per OWU Managenent on date in service.
2020: Vendor cost in 2019 did not include labor for installation (materials only). Labor cost was included with the pump/motor replacement.

Well #4, Pump Control Valve 2012 2042 9,550 30 0 16 17,886 1 @ 9,549.67
Asset ID: 1045

Black sand is a degrading factor with this piece of equipment.

2008: Added to study
2009: Cost $5941.68
2010: Adjusted useful life from 10 years to 6 years.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #4, Pump Control Valve continued...

2013: Adjusted useful life from 6 years to 30 years with the assumption refurbishing will occur on a 5 year schedule.

Well #4, Pump Control Valve, Refurbish 2022 2027 1,717 5 0 1 1,786 1 @ 1,717.30

Asset ID: 1049

History

Date	Cost	Contractor	Comments
6/22/17	$300	Cascade Pump	Rebuild pump to waste valves
8/2022	$808	Cascade Pump	Valve refurbish

2018: "Unit Cost" adjusted down per direction of OWU Management.

Well #4, Pump Panel 2009 2029 20,596 20 0 3 23,168 1 @ 20,596.18

Asset ID: 1034

2009: Cost $22,455 included VFD, new 200 amp service installed due to electrical code restricions and calibrate.
2013: Separated VFD previously included in this line item.
2020: Electrical upgrade planned for Fall 2019 to install transfer switch at estimated cost of $11,251. Replacement cost for this asset was NOT adjusted for the 2020 reserve study. Consider for 2021 study if estimated cost needs to be revised.

Well #4, Pump Panel Transfer Switch 2020 2035 14,900 15 0 9 21,208 1 @ 14,900.29

Asset ID: 1105

2021: New asset added to Well #4 Pump Panel to accommodate connection to a generator. Cascade Pump total cost, installed was $11,842. Estimated cost for replacement assumed at $12,000.

Well #4, Pump Panel VFD 2019 2029 15,910 10 0 3 17,897 1 @ 15,910.17

Asset ID: 1104

History

Date	Cost	Vendor	Notes
4/19	$6,322	Cascade Pump	Includes: 100 HP VFD motherboard

2013: Added to 2014 study previously included Pump Panel costs provided by WHP. Includes VFD for a 75 hp motor.
2020: Resolved duplicated Asset ID# 1067 by copying this to new Asset ID 1104. Vendor cost in 2019 did not include labor for installation (materials only). Labor cost was included with the pump/motor replacement.

Well #4, Pump VFD *1102 Unfunded*

Asset ID: 1102

2020: Added to 2020 study to track this spare equipment located in Well #2 well house. Unfund. Includes used VFD motherboard for a 100 hp motor previously on well #2A. The VFD could be used at Well #4 (compatible).

Well #4, Pump/Motor Cable 2024 2029 6,458 5 0 3 7,264 1 @ 6,458.10

Asset ID: 1068

History

Date	Cost	Vendor	Notes
4/19	$2,963	Cascade Pump	Includes: 300' I/0 sub wire and labor
7/24	$6,048	Cascade Pump	Includes: 400' I/O sub wire and labor

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well #4, Pump/Motor Cable continued...

2013: Separated from pump/motor refurbish and replacement assets as may need replacement on different schedule.

2018: Asset replacment pushed 1 year per OWU Management.
2020: Vendor cost in 2019 did not include labor for installation (materials only). Labor cost was included with the pump/motor replacement.
2025: Cost estimate increased to 2024 cost, inflated. Pump lowered 41' in well due to lower water level.

Well #4, Pump/Motor Refurbish *1036 Unfunded*
Asset ID: 1036

2008: Life adjusted due to assumed replacement in 2013.
Cost for servicing wiring, pull pump, replace impellers if needed, inspect motor and casing.
Actual cost 2009: $15,465 Work done by Cascade Pump included pulling pump and motor and evaluating condition, which did not warrant replacement.
2013: Cost does not include cable.
2018: Asset replacment pushed 1 year per OWU Management.
2019: Unfunded per OWU Management. Will only replace with new due to labor cost to pull existing equipment.

Well #4, Pump/Motor Replace 2024 2029 28,160 5 0 3 31,676 1 @ 28,160.20
Asset ID: 1037

Cost estimate for submersible pump. Cost includes pulling pump and motor. Replace with new pump (bowl assembly) and motor.

History

Date	Cost	Vendor	Notes
4/19	$19,187	Cascade Pump	Includes: 9WAHC-3STG sub turbine, 8" 75 HP (sub) pump motor, 6" deep well VFD and labor
7/24	$26,364	Cascade Pump	Includes: 9WAHC-3ST bowl assembly; 75 HP submersible pump motor, installed.

2012: Updated cost information provided by CBU. Includes 8T-75-550 Bowl assembly, 75 HP Franklin sub-motor, sand fighter series, wire splice set, 6" DI deep well check valve, mobilization, pull and set approximately 300' 6" galv. pipe, crane truck and tooling.
2013: Bowl assembly, 75HP Franklin sub-motor, labor mobilization, pull and set approx. 300' of 6" galvanized pipe, crane truck and tooling. Cascae Pump & Irrigation Sevices Invoice #35484.
2019: Cost updated per estimate provided by Casscade Pump and Irrigation. Includes: 9WAHC-3STG sub turbine (550GMP @ 440TDH), *' 75 HP submersible motor (3500 RPM, 480V, 60Hz), two 6" DI deep well VFD check valves, splice kit, tape, banding and labor. **NOT INCLUDED:** Submersible wire and column pipe.
OWU conducted pump test Fall 2018; motor and pump showing signs of wear. Plan is to pump test halfway through Summer 2019 irrigation season and compare test results to determine rate of wear. Life adjusted from 20 to 10 years per OWU and Cascade Pump and Irrigation.
2020: Asset life adjusted per OWU recommendation (10 yrs to 5 yrs). OWU plans to do pump test every 2 years to evaluate pumping performance.
2021: Next scheduled pump test is for late 2021.
2022: Do pump test in 2022.
2023: Pump test completed & plan to do annually. Indicators are to continue with 2024 replacement assumption.
2025: Cost estimate increased to 2024 actual cost, inflated.

Well, Drilling 12 inch 2024 2024 2044 494,400 20 0 18 1,001,564 1 @ 494,400.00
Asset ID: 1107

2013: Added to 2014 study per recommendation of CBU, includes cost related specifically to drilling a new well.
2023: Estimated cost not updated other than annual inflation following 2014 cost experience. Other factors may influence cost.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

WATER continued...

Well, Drilling 12 inch 2024 continued...

2024: New asset for 12 inch well drilling to replace Well #2A; difference in total project cost estimate ($567,000), including contingency, less $26,050 other assets in study listed for replacement at study estimate in 2024.
2025: Cost estimate adjusted to $480,000 based on 2024 Well #2C cost: Well drilling 12" hole (377'), 12" casing (338'); enginnering, project management fees, mobilization, setup, cleanup, testing.

Well, Drilling Well #2B/#4 replacement 2013 2038 494,400 20 5 12 791,550 1 @ 494,400.00

Asset ID: 1066

2013: Added to 2014 study per recommendation of CBU, includes cost related specifically to drilling a new well.
2023: Estimated cost not updated other than annual inflation following 2014 cost experience. Other factors may influence cost.
2024: Future well replacement needs estimated at 20 years. Well #2B constructed in 2009; Well #4 in 2013. Cost estimate to assume Well #2A replacement (less equipment estimate of $80K)
2025: Adjust cost estimate to reflect 2024 cost experience with Well #2C (12" hole). Extend life +5 years, based on new #2C being larger 12" hole as backup to #2B, and Well #4 cleaning and new pump in 2024.

SEWER

Comp Filter Fan 2010 2026 3,780 10 6 0 3,780 1 @ 3,779.95

Asset ID: 1006

Wiring replaced in 1998, motor replaced in 1999. Fan replaced in 2000 with fan purchased 5-6 years ago.
Cost reflects fan and motor.

2010: Revise cost to actual in 2010.
2014: Fan purchase planned for Q4 2014. Purchase not completed at time of study update. Update actual costs in 2015.
2015: Per CBU staff, after new vent piping was installed the Filter Fan began operating properly so it was not replaced. Changed In Service date back to 2010.
2017: Asset scheduled to be completed fall of 2106
2018 - 2025: OWU Management advises condition warrants extended life. [continue note until equipment failure or OWU recommended replacement.
2026: Same plan.

Comp Filter Panel Breakers 2002 2026 1,801 15 9 0 1,801 1 @ 1,800.70

Asset ID: 1007

2011: Breakers would only be replaced and not panel box itself per CBU.
2012: Cost estimate provided by CBU include new conduit and wire for added Compost Fan.
2018 - 2025: OWU Management advises condition warrants extended life. [continue note until equipment failure or OWU recommended replacement.
2026: Same plan.

Comp Filter Piping 2014 2034 2,667 20 0 8 3,650 1 @ 2,666.87

Asset ID: 1008

Replaced in 1996 due to fire.

2012: Piping from dosing tank to compost filter - underground from filter vault.
2014: Project not complete at time of Study update. Update actual cost in 2015.
2015: Costs updated for 2016 study based on actual cost from Latham Construction. Breakdown of costs between piping and media provided by on site Supervisor at Latham Construction. Invoices show combined progress costs. Pipe Labor was $1356.25, Pipe and pipe materials totaled $453.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
SEWER continued...									
Comp Filter Vault	1994	2026	7,401	20	12	0	7,401	1 @	7,400.86

Asset ID: 1009

2009: Life adjusted based on information provided by CBUC.
2012: Tank size is 1,765 gallon and is custom made.
2014: Vault Replacement is not planned due to possible change in system type that would not require a vault.
2024: Reverse 2014 note re change in system. OWU Management advises condition warrants extended life.
2026: Extended life. OWU did not recommend replacements in 2025.

Compost Filter Media	2014	2026	8,186	10	2	0	8,186	1 @	8,186.37

Asset ID: 1005

Media installed in 2014 consists one layer of 1-3" round drain rock, layer of filter fabric, topped with 24cf of BioPure, engineered biological meidal and 24cf of ECS LC Coconut shell carbon.

2008: Changed useful life from 3 years to 5 years per the recommendation of CBUC and new product being used having a longer life.
2010: Estimate received from CONTECH Construction Products, Inc. compost leaf media is $125 per cubic yard/estimated 4 cubic yard would be needed ($500). Shipping costs are $575 for 4 cubic yards.
2012: Increased cost to $8,000 per CB for new media product (polymer coated rock).
2014: Media has been ordered and planned for replacement in Q4 2014, not completed at time of study update. Update actual cost in 2015.
2015: Costs updated for 2016 study based on actual costs from Latham Construction. Breakdown of costs between piping and media provided by on site supervisor at Latham Construction. Invoices show combined progress costs. Labor costs to remove old media and install new totaled $2251.25. Media materials, including trucking totaled $3302.54.
2019: To be inspected in 2019, adjust "Useful Life" accordingly; OWU Management.
2020 - 2023: Asset replacment pushed forward each year per OWU Management.
2024: Based on operational history, OWU recommends changing the estimated life from 5 to 10 years.
2025: Recommendation from OWU pending on replacement. Adjust life to 2025.
2026: Recommendation from OWU pending on replacement. Adjust life to 2026.

Drainfield Beds	2001	2026	106,651	10	15	0	106,651	1 @	106,650.63

Asset ID: 1014

Original Note: Cost based on actual in 2001, which included consulting fees, permits, test holes, conduit work, and construction of 4 cells. Estimated life adjusted based on actual experience with beds since 1985. Assumes that resting beds will need to be rebuilt in each 10 year cycle. Total beds is 14; keep reserve assets at 3 beds based on successful resting program to date. Bed = 4 cells. Estimated life changed in 2001 from 15 years to 10 years. For 2007 study, base cost was updated to reflect an 8% increase instead of the typical 4% due to recommendation of W & H and the increase in pipe costs and overall material in general.

2009: Base cost was not increased.
2010: Base cost was not increased - cost estimate provided by Taylor Northwest indicates $13,000/each to remove and replace one cell. $9,000 would be to build new and $4,000 to dispose of old piping. This assumes that a place would be available on-site to dispose of material, not hauled to a landfill.
2012: Per discussion with ECM, CBU, and WH Pacific recommend reviewing replacement of beds in a new location vs. replacement in same location.2014: Per discussions with CBU and WH Pacific, two Drainfield Bed components in the Study were unfunded, leaving one full Drainfield Bed funded and the related cost assumed for a single bed replacement. A new component was added to fund valve replacement and pipe maintenance in the drainfield beds as necessary on an annual basis.
2017 - 2020: Asset replacement pushed forward each year per OWU Management.
2021: OWU advises the drainfield beds are functioning as intended. The cycles of pipe and valve maintenance (6 phases) are

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Drainfield Beds continued...

scheduled to continue. Although no specific plan to rebuild a drainfield bed in 2021, maintain the asset life and assumption that funds should be available to manage possible failure.
2022: Asset replacement pushed 1 year to 2022 per OWU Management.
2023: Continue extending life, pending data/information on DEQ permitting & requirements.
2025: Adjust life to 2026, year of DEQ permit renewal.

Drainfield Beds, Valve and Pipe Maintenance- Ph 1

2015	2026	25,628	10	1	0	25,628	1 @	25,628.50

Asset ID: 1087

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year.
2016: Work was not completed for Phase 1- 2015 at time of study update.
2017: Work still pending for phase 1 in October 2016. Planned to complete fall 2016.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Asset unit cost adjusted per OWU recommendation and based on phase 5 rehab costing. Hold Phases 1 - 5 at estimated $20,000 based on experience with these beds.
2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 2

2016	2027	25,628	10	1	1	26,654	1 @	25,628.50

Asset ID: 1091

History

Date	Cost	Vendor	Notes
6/7/2018	$3,237	Mark Latham Excavation	

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2017: Asset completed in 2016 and reset for the 2017 Reserve Study. Price updated per contractor's invoice
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Asset unit cost adjusted per OWU recommendation and based on phase 5 rehab costing. Hold Phases 1 - 5 at estimated $20,000 based on experience with these beds.
2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 3

2017	2028	25,628	10	1	2	27,720	1 @	25,628.50

Asset ID: 1092

History

Date	Cost	Vendor	Notes
6/7/2018	$8,489	Mark Latham Excavation	

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2018: Asset schedule for fall 2017 replacment per OWU Management. Check for completion in the 2019 Reserve Study update and roll back "In Service" date to 6/1/1986, "Life Adjustment" of 21 if not completed.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Drainfield Beds, Valve and Pipe Maintenance- Ph 3 continued...

2020: Asset unit cost adjusted per OWU recommendation and based on phase 5 rehab costing. Hold Phases 1 - 5 at estimated $20,000 based on experience with these beds.
2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 4

2018	2029	25,628	10	1	3	28,829	1 @	25,628.50

Asset ID: 1090

History

Date	Vendor	Price	Notes
6/7/2018	Mark Latham Excavation	$19,474	Board approved additional funds for a larger project scope

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Asset unit cost adjusted per OWU recommendation and based on phase 5 rehab costing. Hold Phases 1 - 5 at estimated $20,000 based on experience with these beds.
2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 5

2019	2030	25,628	10	1	4	29,982	1 @	25,628.49

Asset ID: 1093

History

Date	Cost	Vendor	Notes
8/2019	$20,090	Cascade Pump	Includes: 4 - 6 inch gate valves, 4 repair sleeves, mobilization, excavaton, backfill, thrust blocks, rockhammer work

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Unit Cost updated per contractor's invoice. Hold Phases 1 - 5 at estimated $20,000 based on experience with these beds.
2021: Corrected the life adjustment to 0 so repeats on 10 year cycle.
2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 6

2021	2032	25,628	10	1	6	32,428	1 @	25,628.49

Asset ID: 1094

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Asset unit cost adjusted per OWU and ECM recommendation and based on recommendation to add more contingency for original construction unknowns for remaining beds (phases 6 and 7).
2021: Planned pipe/valve work is estimated at $26,000, although work not commenced at date of study so conditions remain unknown. Assume upon completion, any original construction design issues are corrected and estimated cost for future cycles

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Drainfield Beds, Valve and Pipe Maintenance- Ph 6 continued...

roll back to $20,000.

2026: Per OWU push all phases forward one year.

Drainfield Beds, Valve and Pipe Maintenance- Ph 7

	2022	2033	25,628	10	1	7	33,725	1 @	25,628.50

Asset ID: 1095

2014: Added to study to fund valve replacement and pipe repairs/replacement as needed on an annual basis. Funding assumes replacement/repair work in 2 of 14 beds or 8 of 56 cells. Assumes 4 valve replacements at an estimated $1000 each with an additional $4,000 in assumed pipe repairs or $1,000 per cell in 8 cells per year for 7 consecutive years.
2019: 20% contingency added due to original construction design unknown, "Unit Cost" based off current history.
2020: Asset unit cost adjusted per OWU and ECM recommendation and based on recommendation to add more contingency for original construction unknowns for remaining beds (phases 6 and 7).
2022: Asset replacements/maintenance pushed to 2022 per OWU Management. Variance possible to replace valves to bypass in-line valves.
2023: Work completed in 2022. No bypass required.
2026: Per OWU push all phases forward one year.

History

Date	Cost	Vendor	Notes
6/2022	$22,911	Cascade Pump	No major variance to routine work. Bypass not needed.

Fence Paint, Dosing Tank-1X

	2025	2030	2,438	5	0	4	2,852	1 @	2,437.55

Asset ID: 1099

History

Date	Cost	Vendor	Notes
3/15/18	$1,800	Impact Painting	First round fence seal coat

2020: Replacement count set to 4. Set new assumption after fence is replaced, scheduled for 2042.
2024: Project not completed in 2023 due to weather constraint Fall 2023; plan for 2024. Replacement count is set at "2" for last paint in 2029, assuming replacement in 2033 with chain link w/vinyl slats.
2025: Repeat of 2024 comment.

Fence, Dosing Tank

	2018	2035	17,108	15	2	9	24,350	1 @	17,107.92

Asset ID: 1012

History

Date	Cost	Vendor	Notes
3/15/18	$7,482	ECM Assoc	Includes: labor, delivery removal / disposal and install of new

Fencing around dosing tank. Includes 143' of flat top cedar, (2) gate posts, (6) corner posts, (1) main gate, 18' all wood gate, (1) 8' all wood gate with 4' main gate. Installed by JR's Fencing. Would need to unroll and replace existing fence in replacement of dosing tanks. Costs to be out of R/M.
2017: Price reflects replacement of existing plus 200' new fence per Mikes Fencing (see proposal in 2017 paper file). Includes removal and disposal of existing structure, installation of 6' tall chainlink fence with vinyl slats, two 14' vehicle gate and one 4' man gate; addition to enclose dosing tank fan block house. Based on materials change, useful life revised to 24 years (adjusted to replace wood fence in 2017).
Excluded: Tree removal from south side of dosing tank fan house for new fence addition.
2018: Asset schedule for fall 2017 replacment per OWU Management. Check for completion in the 2019 Reserve Study update

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Fence, Dosing Tank continued...

and roll back "In Service" date to 6/1/2003, "Life Adjustment" of -10 if not completed.
2019: Unit Cost adjusted to reflect actual contractor invoice.
2023: Revised useful life from 25 to 15 years to reflect the 2018 new fence was wood, without needed gate. **Update cost in 2023 to assume chain link w/vinyl slats and gates (2017 proposed fencing).**
2024: Updated cost based on 2017 Mike's Fence bid inflated at 3% annually thru 2022, then 8%, then 4% to bring current. Quote not updated.

Flow Meter, Dosing Tank	2025	2055	4,500	30	0	29	14,034	1 @	4,500.00

Asset ID: 1114

2026: Ne asset. Original (1985) flow meter replaced 9/2025. Cascade Pump $4,433 installed.

Logic Controller	2021	2026	25,372	5	0	0	25,372	1 @	25,371.56

Asset ID: 1020

Estimated cost includes timer device.

2010: Increased cost to include a Programmable Logic Controller (PLC), software, installation and wiring costs. Cost estimate provided by CBUC assumes new programming/software required.
2011: Actual cost $16,583 for PLC.
2017: Asset scheduled to be completed fall of 2017
2018: Asset replacement pushed 1 year per OWU Management.
2019: Asset replacment pushed 1 year per OWU Management. To be inspected by OWU Management for a 2019 replacement.
2020: Asset replacment pushed 1 year per OWU Management. To be inspected by OWU Management for a 2020 replacement.
2021: OWU recommends purchasing a replacement unit in anticipation of possible failure, and to avoid system being down if order/delivery delays.
2022: Asset replacement planned prior to year end 2021 per OWU Management. 2021 purchase was for one component only. Update study with actual purchase info when available.

Permit Application, Processing and F.. *1085 Unfunded*

Asset ID: 1085

Permit Area covers 14 drainfield beds (56 cells) owned by EMCA and 34 drainfield beds owned by ECRD, costs are split proportionately (62% / 38%) based on bed counts owned by each.

2010: Revise cost in 2011 per actual costs in 2010 when completed.
2011: Estimated $12,000 in actual costs. Left unchanged from 2010 estimated cost as future application may require more time.
2012: See sewer system master plan for permit status.
2014: Separated permit application preparation, processing and fees from any costs associated with DEQ study or monitoring requirements related to permit renewal due to several year delays in permit issuance by DEQ. Adjust life each year that permit remains submittted but pending. Cost of $8300 represents 62% of $13,375 (inflated from the estimated actual cost in 2011 of $12,000).
2017: DEQ issued WPCF permit June 2016 with a 10 year term. The 5 year useful life was not changed due to the potential for DEQ to implement interim or new requirements on the system, despite the 10 year permit term.
2021: Adjusted life to estimate cost in 2022 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2022: Adjusted life to estimate cost in 2023 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2024: Adjust life to assume next expense at 10 year term of WPCF permit issued in 2016.
2025: New asset to reflect start of application renewal process in 2025, involving engineer professional fees.
2026: Unfund. Minimal Parametrix work expected in Q4 2025.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Permit Application, Processing and Fees-WPCF 2026

	2016	2026	13,000	10	0	0	13,000	1 @	13,000.00

Asset ID: 1112

Permit Area covers 14 drainfield beds (56 cells) owned by EMCA and 34 drainfield beds owned by ECRD, costs are split proportionately (62% / 38%) based on bed counts owned by each.

2010: Revise cost in 2011 per actual costs in 2010 when completed.
2011: Estimated $12,000 in actual costs. Left unchanged from 2010 estimated cost as future application may require more time.
2012: See sewer system master plan for permit status.
2014: Separated permit application preparation, processing and fees from any costs associated with DEQ study or monitoring requirements related to permit renewal due to several year delays in permit issuance by DEQ. Adjust life each year that permit remains submittted but pending. Cost of $8300 represents 62% of $13,375 (inflated from the estimated actual cost in 2011 of $12,000).
2017: DEQ issued WPCF permit June 2016 with a 10 year term. The 5 year useful life was not changed due to the potential for DEQ to implement interim or new requirements on the system, despite the 10 year permit term.
2021: Adjusted life to estimate cost in 2022 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2022: Adjusted life to estimate cost in 2023 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2024: Adjust life to assume next expense at 10 year term of WPCF permit issued in 2016.
2025: New asset to reflect completion of application renewal process in 2026, involving engineer fees, other fees.
2026: Combine estimate 2025 & 2026 fees. Revise estimated life from 5 to 10 years assuming new permit renewal repeats at 10 years.

Permit Conditions/Requirements, WPCF

	2016	2026	412,000	5	5	0	412,000	1 @	412,000.00

Asset ID: 1023

Permit Area covers 56 drainfield beds owned by EMCA. The 34 drainfield beds owned by ECRD, costs are not permitted seperately to Cline Butte Enviromental.
Original estimate includes estimated costs by WH Pacific associated with possible hydrogeologic studies, monitoring wells or other conditions of approval as determined by DEQ at time of permit application and/or issuance. The cost was not revised or inplated for the 2017 study. There were no permitting conditions in 2016 requiring any expense.
Actual cost of permit renewal unknown until time of renewal Permit renewal in 2010 did not require these activities. Costs include Hydrogeologic study and monitoring well.

2008: Jim Frost, (WH Pacific) and Bob McDaniel (CBUC) are beginning the application process.
2010: No additional requirements made by DEQ in 2010 upon submitting the permit application.
2012: See sewer system master plan for permit renewal status.
2015: Updated cost to include estimated costs for possible requirements for hydrogeologic studies that were formerly included in "Permit Application, WPCF" resulting in an increase of $20,000.
2017: DEQ issued WPCF permit June 2016 with a 10 year term, no change to estimated cost. The 5 year useful life was not changed due to the potential for DEQ to implement interim or new requirements on the system, despite the 10 year permit term.
2021: Adjusted life to estimate cost in 2022 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2022: Adjusted life to estimate cost in 2023 based on no current indication from DEQ in Fall 2020 of permit changes or new requirements.
2024: Adjust life to assume next expense at 10 year term of WPCF permit issued in 2016.
2025: Parametrix recommends getting a cost estimate updated for a hydrogeologic study, expecting that cost could be $200K. Two ground monitoring wells would be another $200K. Increase cost estimate to $400K to be conservative until

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost

SEWER continued...

Permit Conditions/Requirements, WPCF continued...

renewal requirements known.

Pump Panel, Starters 2012 2026 3,901 10 4 0 3,901 2 @ 1,950.74

Asset ID: 1019

Changed useful life from 12 to 10 years due to corrosive environment (10/94). This is for replacement of starters only and not panel box. Per CBU, Panel box is unlikely to be replaced.

History

Date	Cost	Contractor	Comments
2012	$2572	CBU	

2023: Extended life by one year. 2024 - 2025: Repeat extensions recommended by OWU.
2026: OWU did not recommend replacement for 2025. Extend to 2026.

Pump, Dosing Tank 1 2015 2035 12,009 20 0 9 17,092 1 @ 12,008.82

Asset ID: 1013

Duplex pump system located at the dosing tank.
Myeyers 4VHXS 7.5 HP, 230 V, single phase 1750 RPM, 8.5" impeller, non clog sewage pump

2014: Cost estimate from Cascade Pump at $8,150 installed plus 10% contingency, total of $9,000.
2015: Updated costs per actual invoices, includes pump and installation.

Pump, Dosing Tank 2 2008 2028 13,266 20 0 2 14,349 1 @ 13,266.16

Asset ID: 1040

Duplex pumps located at the dosing tank.

History

Date	Cost	Contractor	Comments
9/3/2008	$11074.65	Cascade Pump and Irrigation Services	

2014: Cost estimate from Cascade Pump at $8,150 installed plus 10% contingency, total of $9,000.

Tank, Dosing - Old Decommission *1011 Unfunded*

Asset ID: 1011

2010: This is the original dosing tank that is still in place. CBUC confirms this will not be replaced - listed unfunded asset in study in 2011 to indicate on premise but not funded.
2012: Cost includes filling w/sand and labor to decommision tank. Replacement count set to 1.
2013: Decommisioned and filled in 2013.

Tank, Dosing 3000 Gallon 2002 2026 35,549 20 4 0 35,549 2 @ 17,774.35

Asset ID: 1051

Measurement and cost per HTS in 2002. 3000 gallon size tank, valves and misc items associated with tank. Adjusted life from 30 years to 15 years. Assumes tanks are not and will not be coated (interior surface). Tanks are second and third in flow order. Includes Dosing Tank 1 and Dosing Tank 2.

2018: Asset replacment pushed 1 year per OWU Management.
2019: To be inspected in 2018 for a possible 2019 replacment per OWU Management.
2020: Asset replacment pushed 1 year per OWU Management.
2021: OWU advises the improved piping and air flow would support changing the useful life from 15 to 20 years.
2022: Asset replacement pushed from 2022 to 2023 per OWU Management.
2023: OWU advises a 2 year extension is appropriate based on condition.
2024: OWU advises condition warrants extension to 2025.
2026: OWU did not recommend replacement for 2025. Extend to 2026.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
SEWER continued...									
Tank, Dosing Slide Rail	2002	2026	15,504	20	4	0	15,504	2 @	7,751.99

Asset ID: 1017

Cost based on estimate per Mel Baker at United Pump and Supply Company. Changed life from 3 years to 5 years in 2002 per recommendation of Mel Baker based on product change of material to stainless steel. This asset is tied to asset #1051 (Tank, Dosing 3000 Gallon)

2008: Life adjusted based on information provided by CBUC.
2010: Life adjusted based on information provided by WH Pacific to 20 year useful life from a 5 year useful life.
2013: Life adjusted based on information provided by WHP to 15 year useful life from a 20 year useful life.
2018: Asset replacment pushed 2 years per OWU Management. To be inspected by OWU for possible 2019 replacement.
2020: Asset replacment pushed 1 year per OWU Management.
2021: OWU advises the improved piping and air flow would support changing the useful life from 15 to 20 years.
2022: Asset replacement pushed from 2022 to 2023 per OWU Management.
2023: OWU advises a 2 year extension is appropriate based on condition.
2024: OWU advises condition warrants extension to 2025.
2026: OWU did not recommend replacement for 2025: Extend to 2026.

Tank, Screening 3000 First tank	2013	2026	18,684	10	3	0	18,684	1 @	18,683.53

Asset ID: 1056

Measurement and cost per HTS in 2002. 3000 gallon size tank, valves and misc items associated with tank. Adjusted life from 30 years to 15 years. Assumes tank is not and will not be coated (interior surface).

2010: This is the tank that gets effluent first, shorter life estimated.
2012: Revised name from Dosing Tank to Screening Tank per recommendation of CBU/WH.
2013: New 3000 gallon tank installed by Latham Excavation. Cost includes re-route electric conduit, 3000 gallon concrete septic tank, core drilling, risers, lids and installation.
2023: OWU advises a 1 year extension is appropriate based on condition.
2024: OWU advises condition warrants extension to 2025.
2026: OWU did not recommend replacement for 2025. Extebd to 2026.

SCADA

SCADA System, Equipment, Well #4 Integration	2015	2026	23,870	10	1	0	23,870	1 @	23,869.75

Asset ID: 1089

2015: SCADA System was expanded to include Well #4 and enhance the system at Well #2 and #2A to allow reading of amp output. Work on this project was not completed at time of 2016 study update. Cost based on Authorized PO Amount. Update with actual costs at 2017 update.
2026: Not replaced in 2025. Request update on system & costs from OWU.

SCADA System, Well #2 and #2A Integration	2014	2026	24,245	10	2	0	24,245	1 @	24,244.64

Asset ID: 1086

Installed in 2014. System presently integrated with Well #2 and Well #2A. Separate components in 2015 study update.
2025: OWU recommendation pending for SCADA equipment changes, upgrades, purchase and confirmation of connection with new Well #2C.
2026: Not replaced in 2025. Request update on system & costs from OWU.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
SCADA continued...									
SCADA, Dosing Tank	2019	2029	12,833	10	0	3	14,436	1 @	12,833.47
Asset ID: 1103									
New asset for the 2020 Reserve Study. Includes: PBE-M2-400-US PowerBeam 2.4GHz radio, PEB-2AC 400-US PowerBeam 2.4 GHZ radio, AG-5G23-HP-US AirGrid Airmax, surge protector, freight and labor to install. Cost and expected life per Control Engineers. One radio located at dosing tank, transmitter located at Well #8. Estimated cost based on vendor quote. Invoices for actual cost pending at time of study.									
SCADA, Radios, All	2018	2028	3,742	10	0	2	4,048	1 @	3,742.46
Asset ID: 1100									
New asset for the 2019 Reserve Study. Includes: Phoenix radio transmitter ISM, Phoenix radio reciever, labor to install. Cost and expected life per Cascade Pump and Irrigation. Transmitter located at Well #8. 2020: OWU confirms 4 total radios at locations: Well #2, Well #4, Dosing Tank, Well 8 transmitter. Estimated cost should be reviewed for 2021 study update following receipt of final dosing tank system install.									

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2026		
WATER		
Water Booster Pump, 20HP	1 Each	9,073
Water Booster Pump, VFD	1 Each	3,340
Well #2B, Bldg. Paint	All	2,251
Well #2B, Bldg. Siding, S. Side	752 sq ft	10,280
Well #2B, Pressure Compressor	1 Each	10,247
Well #4, Flow Meter Domestic	1 Each	4,925
Well #4, Flow Meter Irrigation	1 Each	3,864
WATER - Total:		43,979
SEWER		
Comp Filter Fan	1 Each	3,780
Comp Filter Panel Breakers	1 Each	1,801
Comp Filter Vault	1 Lump Sum	7,401
Compost Filter Media	1 Lump Sum	8,186
Drainfield Beds	1 Lump Sum	106,651
Drainfield Beds, Valve and Pipe Maintenance- Ph 1	1 Lump Sum	25,628
Logic Controller	1 Each	25,372
Permit Application, Processing and Fees-WPCF 2026	1 Estimate	13,000
Permit Conditions/Requirements, WPCF	1 Estimate	412,000
Pump Panel, Starters	2 Each	3,901
Tank, Dosing 3000 Gallon	2 Each	35,549
Tank, Dosing Slide Rail	2 Each	15,504
Tank, Screening 3000 First tank	1 Each	18,684
SEWER - Total:		677,456
SCADA		
SCADA System, Equipment, Well #4 Integration	1 Lump Sum	23,870
SCADA System, Well #2 and #2A Integration	1 Lump Sum	24,245
SCADA - Total:		48,114
Total for 2026		**$769,550**
Replacement Year 2027		
WATER		
Well #2B, Cleaning	1	20,731

Description	Quantity	Expenditures
Replacement Year 2027 continued...		
Well #2B, Pump Control Valve, Refurbish		1,786
Well #2B, Pump Panel VFD	1	13,470
Well #4, Pump Control Valve, Refurbish		1,786
WATER - Total:		37,773
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 2	1 Lump Sum	26,654
Total for 2027		**$64,426**
Replacement Year 2028		
WATER		
Well #2B, Pump/Motor Replace	1 lump sum	55,228
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 3	1 Lump Sum	27,720
Pump, Dosing Tank 2	1	14,349
SEWER - Total:		42,068
SCADA		
SCADA, Radios, All	1 All	4,048
Total for 2028		**$101,344**
Replacement Year 2029		
WATER		
Well #2B, Flow Meter	1 Each	6,609
Well #2C, Pump Panel VFD	1 Each	11,955
Well #4, Pump Panel		23,168
Well #4, Pump Panel VFD	1 EA	17,897
Well #4, Pump/Motor Cable	1 Lump Sum	7,264
Well #4, Pump/Motor Replace	1 Lump Sum	31,676
WATER - Total:		98,569
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 4	1 Lump Sum	28,829

Description	Quantity	Expenditures
Replacement Year 2029 continued...		
SCADA		
SCADA, Dosing Tank	1 All	14,436
Total for 2029		**$141,834**
Replacement Year 2030		
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 5	1 Lump Sum	29,982
Fence Paint, Dosing Tank	1 lump sum bid	2,852
SEWER - Total:		32,833
Total for 2030		**$32,833**
Replacement Year 2031		
WATER		
Water Booster Pump Motor, Refurbish	1 Each	4,730
Well #2B, Bldg. Paint	All	2,739
Well #4, Flow Meter Domestic	1 Each	5,992
WATER - Total:		13,461
SEWER		
Logic Controller	1 Each	30,868
Permit Conditions/Requirements, WPCF	1 Estimate	501,261
SEWER - Total:		532,129
Total for 2031		**$545,590**
Replacement Year 2032		
WATER		
Well #2B, Pump Control Valve		13,695
Well #4, Pump Control Valve, Refurbish		2,173
WATER - Total:		15,868
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 6	1 Lump Sum	32,428
Total for 2032		**$48,297**

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2033		
WATER		
Well #2B, Pump Panel		56,252
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 7	1 Lump Sum	33,725
Total for 2033		**$89,977**
Replacement Year 2034		
WATER		
Well #2C, Flow Meter	1 Each	12,768
Well #2C, Pump Panel	1 Each	6,233
Well #2C, Pump/Motor Replace	1 Each	18,700
Well #4, Cleaning	1 Lump Sum	31,107
Well #4, Pump/Motor Cable	1 Lump Sum	8,838
Well #4, Pump/Motor Replace	1 Lump Sum	38,539
WATER - Total:		116,186
SEWER		
Comp Filter Piping		3,650
Total for 2034		**$119,836**
Replacement Year 2035		
WATER		
Well #2B, Bldg. Siding	1992 sq ft	29,203
Well #2B, Pressure Tank	1 EA	76,839
Well #4, Pump Panel Transfer Switch	1 Lump Sum	21,208
WATER - Total:		127,250
SEWER		
Fence, Dosing Tank	1 lump sum bid	24,350
Pump, Dosing Tank 1	1	17,092
SEWER - Total:		41,442
Total for 2035		**$168,692**

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2036		
WATER		
Water Booster Pump, 20HP	1 Each	13,430
Water Booster Pump, VFD	1 Each	4,944
Water Booster Pump, VFD Panel	1 Each	4,495
Well #2B, Bldg. Paint	All	3,332
Well #4, Flow Meter Domestic	1 Each	7,290
Well #4, Flow Meter Irrigation	1 Each	5,720
WATER - Total:		39,210
SEWER		
Comp Filter Fan	1 Each	5,595
Compost Filter Media	1 Lump Sum	12,118
Drainfield Beds	1 Lump Sum	157,869
Drainfield Beds, Valve and Pipe Maintenance- Ph 1	1 Lump Sum	37,936
Logic Controller	1 Each	37,556
Permit Application, Processing and Fees-WPCF 2026	1 Estimate	19,243
Permit Conditions/Requirements, WPCF	1 Estimate	609,861
Pump Panel, Starters	2 Each	5,775
Tank, Screening 3000 First tank	1 Each	27,656
SEWER - Total:		913,610
SCADA		
SCADA System, Equipment, Well #4 Integration	1 Lump Sum	35,333
SCADA System, Well #2 and #2A Integration	1 Lump Sum	35,888
SCADA - Total:		71,221
Total for 2036		**$1,024,041**
Replacement Year 2037		
WATER		
Well #2B, Bldg. Roof	10 Squares	9,044
Well #2B, Cleaning	1	30,687
Well #2B, Pump Control Valve, Refurbish		2,644
Well #2B, Pump Panel VFD	1	19,938

Description	Quantity	Expenditures
Replacement Year 2037 continued...		
Well #4, Pump Control Valve, Refurbish		2,644
WATER - Total:		64,956
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 2	1 Lump Sum	39,454
Total for 2037		**$104,410**
Replacement Year 2038		
WATER		
Well #2B, Pump/Motor Replace	1 lump sum	81,750
Well #4, Fence	1	19,280
Well, Drilling Well #2B/#4 replacement	1 Lump Sum	791,550
WATER - Total:		892,581
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 3	1 Lump Sum	41,032
SCADA		
SCADA, Radios, All	1 All	5,992
Total for 2038		**$939,605**
Replacement Year 2039		
WATER		
Well #2B, Flow Meter	1 Each	9,783
Well #2C, Pump Panel VFD	1 Each	17,696
Well #4, Pump Panel VFD	1 EA	26,492
Well #4, Pump/Motor Cable	1 Lump Sum	10,753
Well #4, Pump/Motor Replace	1 Lump Sum	46,889
WATER - Total:		111,612
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 4	1 Lump Sum	42,673
SCADA		
SCADA, Dosing Tank	1 All	21,369
Total for 2039		**$175,654**

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2040		
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 5	1 Lump Sum	44,380
Total for 2040		**$44,380**
Replacement Year 2041		
WATER		
Water Booster Pump Motor, Refurbish	1 Each	7,002
Well #2B, Bldg. Paint	All	4,054
Well #2B, Pressure Compressor	1 Each	18,454
Well #4, Flow Meter Domestic	1 Each	8,870
WATER - Total:		38,379
SEWER		
Comp Filter Panel Breakers	1 Each	3,243
Logic Controller	1 Each	45,693
Permit Conditions/Requirements, WPCF	1 Estimate	741,989
SEWER - Total:		790,924
Total for 2041		**$829,303**
Replacement Year 2042		
WATER		
Well #2B, Pump Control Valve, Refurbish		3,216
Well #4, Pump Control Valve		17,886
WATER - Total:		21,103
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 6	1 Lump Sum	48,002
Total for 2042		**$69,104**
Replacement Year 2043		
WATER		
Air Gap, Eagle Lake	1 All	31,680

Description	Quantity	Expenditures
Replacement Year 2043 continued...		
Well #2B, Bldg. Heater	1 Each	4,265
WATER - Total:		35,945
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 7	1 Lump Sum	49,922
Total for 2043		**$85,867**
Replacement Year 2044		
WATER		
Well #2C, Flow Meter	1 Each	18,900
Well #2C, Pump/Motor Replace	1 Each	27,681
Well #4, Cleaning	1 Lump Sum	46,046
Well #4, Pump/Motor Cable	1 Lump Sum	13,083
Well #4, Pump/Motor Replace	1 Lump Sum	57,047
Well, Drilling 12 inch 2024	1 Lump Sum	1,001,564
Total for 2044		**$1,164,321**
Replacement Year 2045		
WATER		
Well #2C, Bollards	1 Each	9,481
Total for 2045		**$9,481**
Replacement Year 2046		
WATER		
Water Booster Pump, 20HP	1 Each	19,879
Water Booster Pump, VFD	1 Each	7,319
Well #2B, Bldg. Paint	All	4,932
Well #4, Flow Meter Domestic	1 Each	10,791
Well #4, Flow Meter Irrigation	1 Each	8,466
WATER - Total:		51,387
SEWER		
Comp Filter Fan	1 Each	8,282

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2046 continued...		
Comp Filter Vault	1 Lump Sum	16,216
Compost Filter Media	1 Lump Sum	17,937
Drainfield Beds	1 Lump Sum	233,685
Drainfield Beds, Valve and Pipe Maintenance- Ph 1	1 Lump Sum	56,155
Logic Controller	1 Each	55,592
Permit Application, Processing and Fees-WPCF 2026	1 Estimate	28,485
Permit Conditions/Requirements, WPCF	1 Estimate	902,743
Pump Panel, Starters	2 Each	8,549
Tank, Dosing 3000 Gallon	2 Each	77,892
Tank, Dosing Slide Rail	2 Each	33,971
Tank, Screening 3000 First tank	1 Each	40,938
SEWER - Total:		1,480,445
SCADA		
SCADA System, Equipment, Well #4 Integration	1 Lump Sum	52,302
SCADA System, Well #2 and #2A Integration	1 Lump Sum	53,123
SCADA - Total:		105,425
Total for 2046		**$1,637,257**
Replacement Year 2047		
WATER		
Well #2B, Cleaning	1	45,424
Well #2B, Column	1	17,506
Well #2B, Pump Control Valve, Refurbish		3,913
Well #2B, Pump Panel VFD	1	29,513
Well #4, Pump Control Valve, Refurbish		3,913
WATER - Total:		100,270
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 2	1 Lump Sum	58,401
Total for 2047		**$158,672**
Replacement Year 2048		
WATER		
Well #2B, Pump/Motor Replace	1 lump sum	121,011

Description	Quantity	Expenditures
Replacement Year 2048 continued...		
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 3	1 Lump Sum	60,737
Pump, Dosing Tank 2	1	31,440
SEWER - Total:		92,177
SCADA		
SCADA, Radios, All	1 All	8,869
Total for 2048		**$222,057**
Replacement Year 2049		
WATER		
Well #2B, Flow Meter	1 Each	14,481
Well #2C, Pump Panel VFD	1 Each	26,194
Well #4, Pump Column		47,078
Well #4, Pump Panel		50,764
Well #4, Pump Panel VFD	1 EA	39,214
Well #4, Pump/Motor Cable	1 Lump Sum	15,917
Well #4, Pump/Motor Replace	1 Lump Sum	69,407
WATER - Total:		263,055
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 4	1 Lump Sum	63,167
SCADA		
SCADA, Dosing Tank	1 All	31,631
Total for 2049		**$357,853**
Replacement Year 2050		
WATER		
Well #4, Pump Panel Transfer Switch	1 Lump Sum	38,194
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 5	1 Lump Sum	65,694
Fence, Dosing Tank	1 lump sum bid	43,853
SEWER - Total:		109,546
Total for 2050		**$147,740**

ECMA Utility 2026
Redmond, Oregon
RA Annual Expenditures per Year

Description	Quantity	Expenditures
Replacement Year 2051		
WATER		
Water Booster Pump Motor, Refurbish	1 Each	10,365
Well #2B, Bldg. Paint	All	6,000
Well #4, Flow Meter Domestic	1 Each	13,129
WATER - Total:		29,494
SEWER		
Logic Controller	1 Each	67,636
Permit Conditions/Requirements, WPCF	1 Estimate	1,098,325
SEWER - Total:		1,165,961
Total for 2051		**$1,195,455**
Replacement Year 2052		
WATER		
Well #2B, Pump Control Valve, Refurbish		4,761
Well #4, Pump Control Valve, Refurbish		4,761
WATER - Total:		9,522
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 6	1 Lump Sum	71,054
Total for 2052		**$80,576**
Replacement Year 2053		
WATER		
Well #2B, Pump Panel		123,254
SEWER		
Drainfield Beds, Valve and Pipe Maintenance- Ph 7	1 Lump Sum	73,896
Total for 2053		**$197,150**
Replacement Year 2054		
WATER		
Well #2C, Flow Meter	1 Each	27,977

Description	Quantity	Expenditures
Replacement Year 2054 continued...		
Well #2C, Pump Column	1 Each	30,887
Well #2C, Pump Panel	1 Each	13,658
Well #2C, Pump/Motor Replace	1 Each	40,975
Well #4, Cleaning	1 Lump Sum	68,159
Well #4, Pump/Motor Cable	1 Lump Sum	19,366
Well #4, Pump/Motor Replace	1 Lump Sum	84,444
WATER - Total:		285,465
SEWER		
Comp Filter Piping		7,997
Total for 2054		**$293,462**
Replacement Year 2055		
SEWER		
Flow Meter, Dosing Tank	1 Each	14,034
Pump, Dosing Tank 1	1	37,451
SEWER - Total:		51,485
Total for 2055		**$51,485**