ECMA Water System Infrastructure Repair Estimation Plan 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	$290,000

Contribution increases in the AFM model continue to assume step increases outlined below. Adjustments will be needed as the system ages and repair experience increases. As a reminder, this reserve study makes assumptions regarding possible repairs and estimates costs and frequency accordingly. See the updated ECMA Water System Master Plan (2023) for information on alternate approaches to infrastructure testing, repair and replacement.

AFM contribution increases as follows:
2026: Contribution at $70,000, an increase over the $45,000 that was reflected in the 2025 AFM Cash Flow Projection. Increase due to addition of an "Infrastructure" replacement project assumption every 10 years.
2027-2029: $80,000 Flat
2030-2036: $90,000 Flat
2037-2055: Significant increases required to meet estimation of expenses.

Reserve Study presented to Board:	November 21, 2025
Reserve Study Accepted by Board:	November 21, 2025
Expenditures Approved by Board:	No planned expenses

ECMA Water System Infrastructure Repair Estimation Plan 2026
Redmond, Oregon
RA Cash Flow Projection - AFM

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

Beginning Balance: $290,000

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2026	650,363	70,000	6,011	159,632	206,379	435,864	47%
2027	572,378	80,000	7,274	43,920	249,733	469,514	53%
2028	595,273	80,000	7,957	64,498	273,193	488,397	56%
2029	619,084	80,000	9,171	47,504	314,860	528,396	60%
2030	643,847	90,000	10,053	69,761	345,152	549,642	63%
2031	669,601	90,000	11,513	51,380	395,285	593,761	67%
2032	696,385	90,000	12,295	75,453	422,127	617,631	68%
2033	724,240	90,000	13,697	55,572	470,251	666,275	71%
2034	753,210	90,000	14,359	81,610	493,000	693,056	71%
2035	743,710	90,000	15,687	60,107	538,580	705,457	76%
2036	710,947	90,000	9,120	324,564	313,136	489,755	64%
2037	585,440	110,000	8,793	130,024	301,906	540,402	56%
2038	608,857	150,000	7,829	190,945	268,790	539,699	50%
2039	633,211	170,000	8,945	140,634	307,101	598,341	51%
2040	658,540	170,000	8,117	206,526	278,692	598,134	47%
2041	684,882	170,000	8,897	152,109	305,480	662,137	46%
2042	712,277	200,000	8,463	223,379	290,565	662,512	44%
2043	740,768	200,000	9,781	164,522	335,824	732,361	46%
2044	770,399	250,000	10,327	241,606	354,545	733,414	48%
2045	683,896	250,000	12,798	177,947	439,396	687,625	64%
2046	526,188	250,000	6,269	480,434	215,231	259,711	83%
2047	319,358	250,000	8,183	192,467	280,947	307,389	91%
2048	332,133	250,000	7,449	282,645	255,751	276,795	92%
2049	345,418	250,000	8,927	208,172	306,506	332,472	92%
2050	359,235	250,000	7,524	305,709	258,321	299,382	86%
2051	373,604	250,000	8,495	225,159	291,657	359,602	81%
2052	388,548	250,000	6,330	330,655	217,332	323,811	67%
2053	404,090	250,000	6,714	243,532	230,514	388,945	59%
2054	420,254	250,000	3,686	357,636	126,564	350,234	36%
2055	263,404	250,000	3,395	263,404	116,555	240,077	49%

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

GROUP 30

GROUP 30 - WATER MAIN MAJOR 1/2-1X

	1986	2026	13,921	2	37	0	*Unfunded*	1 @	13,921.06

Asset ID: 1063

Emergency basis repair, including water damage, 20' section of cut/replace pipe, backfill/pavement patch, chlorination, flushing, testing.

History

Date	Cost	Vendor	Notes
10/1/18	$20,000	Latham Excavation	Part of a 2018 10" water line replacment project

2015: Repairs/Replacement to main water line due to break in the line near the walkpath by Well #2. Includes Pipe repairs, asphalt removal and replacement, and landscape damage repairs. Total cost was approximately $6100.
2017: Estimated cost increased due to experience with a major break with overtime/emergency related costs and pavement repair.
2018: As of Reserve Study completion date, no mainline break experienced.
2019: Part of a 2018 10" water line replacment project
2021: Water line break on Osprey Drive occured in 2020; only $620 excavation cost incurred, OWU repaired.
2022: As of date of study, one major break and repair occurred with a repair cost of approx. $34K.
2026: UNFUND GROUP 30. Adding a new Group 60.

GROUP 30 - WATER MAIN MINOR 1/2-1X

	1986	2026	6,961	2	36	0	*Unfunded*	2 @	3,480.27

Asset ID: 1066

Normal business day; 5' section of cut/replace pipe, backfill, minimal damage, chlorination by swabbing pipe.

2017: Adjusted cost estimate based on 2016 experience with two minor breaks during calendar year. Increased estimated number of breaks from one to two.
2018: As of Reserve Study completion date, no mainline break experienced.
2019: Waterline break experienced in October, to be repaired in 2018 for an estimated cost of $5000.
2020: Line repair at soccer field restroom $1804; line repair by conference center ($1623); estimate for line repair add'n Q4 ($2000)
2022: As of date of study, one minor break repair cost incurred of approx. $4K. Repair costs for a reported line break are not yet available but are estimated at $10K for purposes of estimating a 2022 beginning balance.
2024: Minor events in 2023 ($6284). No change to original assumptions.
2025: This asset is UNFUNDED after 2024. Line break activity in 2024 was all tracked unde this asset, with 3 minor breaks, 2 major breaks, asphalt patching required. Total known cost in 2024 as of date of study = $24,142; new break cost repair unknown at date of study, estimated at $10K.
2026: UNFUND GROUP 30. Adding a new Group 60.

GROUP 30 - WATER SERVICE-1X

	1986	2026	2,577	1	38	0	*Unfunded*	2 @	1,288.44

Asset ID: 1060

Includes install angle meter stop/meter box to allow location and isolaton in the future.

2017 - 2024: No replacement incurred as of date of the respective studies.
2025: Maintain study assumptions.
2026: UNFUND GROUP 30. Adding a new Group 60.

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
GROUP 30 continued...									
GROUP 30- WATER VALVE AND HYDRANT-1X	1986	2026	13,318	1	38	0	*Unfunded*	1 @	13,317.99

Asset ID: 1055

(2) Valves at $2,500 each ;Hydrant $3,600.
2012: Added $2,500 for air release valves, includes asphalt patch.
2012: 2 Hydrants replaced. $3,600/each, Latham Excavation.
2015: As a result of a watermain break near Well #2 in 2015, CBU staff discovered 2 broken main line valves when attempting to isolate the break in the line. These 2 valves are part of a cluster of 4 valves. It was determined that it was most cost effective to repair all 4 valves at that time. Upon further inspection, all 4 valves required replacement as opposed to repair at a budgeted cost of $17,163. Work was still pending on valve replacement at the time of the 2016 study update.
2017: Valve (4) replacement described above assumed completed at the time of the 2017 study update. No other valve replacement, hydrants or air release valves done as of date of the study.
2018 - 2024: No replacement incurred as of date of the dates of respective studies.
2025: Maintain study assumptions.
2026: UNFUND GROUP 30. Adding a new Group 60.

GROUP 40

GROUP 40 - WATER INFRASTRUCTURE PROJECT-1X	1986	2026	100,000	40	0	0	100,000	1 @	100,000.00

Asset ID: 1074

2026: NEW ASSET. Add the assumption of a major infrastructure replacement project every 10 years beginning 2026. One-time expense for each GROUP (40, 50, 60).

GROUP 40 - WATER MAIN MAJOR-5X	1986	2026	27,842	2	38	0	27,842	2 @	13,921.06

Asset ID: 1069

Emergency basis repair, including water damage, 20' section of cut/replace pipe, backfill/pavement patch, chlorination, flushing, testing. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 40 - WATER MAIN MINOR-5X	1986	2027	10,441	2	39	1	10,858	3 @	3,480.26

Asset ID: 1067

Normal business day; 5' section of cut/replace pipe, backfill, minimal damage, chlorination by swabbing pipe. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 40 - WATER SERVICE-10X	1986	2026	5,154	1	39	0	5,154	4 @	1,288.43

Asset ID: 1061

Includes install angle meter stop/meter box to allow location and isolaton in the future. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 40- WATER VALVE AND HYDRANT-10X	1986	2026	26,636	1	39	0	26,636	2 @	13,317.99

Asset ID: 1058

(2) Valves at $2,500 each ;Hydrant $3,600.

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

GROUP 40 continued...

GROUP 40- WATER VALVE AND HYDRANT continued...

2012: Added $2,500 for air release valves includes asphalt patch.
See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 50

GROUP 50 - WATER INFRASTRUCTURE PROJECT-1X

	1986	2036	100,000	50	0	10	148,024	1 @ 100,000.00

Asset ID: 1075

2026: NEW ASSET. Add the assumption of a major infrastructure replacement project every 10 years beginning 2026. One-time expense for each GROUP (40, 50, 60).

GROUP 50 - WATER MAIN MAJOR-5X

	1986	2036	55,684	2	48	10	82,426	4 @ 13,921.06

Asset ID: 1065

Emergency basis repair, including water damage, 20' section of cut/replace pipe, backfill/pavement patch, chlorination, flushing, testing. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 50 - WATER MAIN MINOR-5X

	1986	2037	20,882	2	49	11	32,146	6 @ 3,480.26

Asset ID: 1068

Normal business day; 5' section of cut/replace pipe, backfill, minimal damage, chlorination by swabbing pipe. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 50 - WATER SERVICE-10X	1986	2036	10,307	1	49	10	15,258	8 @ 1,288.43

Asset ID: 1062

Includes install angle meter stop/meter box to allow location and isolaton in the future. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 50- WATER VALVE AND HYDRANT-10X

	1986	2036	53,272	1	49	10	78,856	4 @ 13,317.99

Asset ID: 1059

(2) Valves at $2,500 each ;Hydrant $3,600.
2012: Added $2,500 for air release valves includes asphalt patch.
See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 60

GROUP 60 - WATER INFRASTRUCTURE PROJECT-1X

	1986	2046	100,000	60	0	20	219,112	1 @ 100,000.00

Asset ID: 1076

2026: NEW ASSET. Add the assumption of a major infrastructure replacement project every 10 years beginning 2026. One-time expense for each GROUP (40, 50, 60).

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
GROUP 60 continued...									
GROUP 60 - WATER MAIN MAJOR-5X	1986	2046	55,684	2	58	20	122,011	4 @	13,921.06

Asset ID: 1070

Emergency basis repair, including water damage, 20' section of cut/replace pipe, backfill/pavement patch, chlorination, flushing, testing. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 60: Assume same number of events as GROUP 50 assuming addition of a major infrastructure replacement event every 10 years beginning 2026.

GROUP 60 - WATER MAIN MINOR-5X	1986	2047	20,882	2	59	21	47,584	6 @	3,480.26

Asset ID: 1071

Normal business day; 5' section of cut/replace pipe, backfill, minimal damage, chlorination by swabbing pipe. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 60: Assume same number of events as GROUP 50 assuming addition of a major infrastructure replacement event every 10 years beginning 2026.

GROUP 60 - WATER SERVICE-10X	1986	2046	10,307	1	59	20	22,585	8 @	1,288.43

Asset ID: 1072

Includes install angle meter stop/meter box to allow location and isolaton in the future. See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 60: Assume same number of events as GROUP 50 assuming addition of a major infrastructure replacement event every 10 years beginning 2026.

GROUP 60- WATER VALVE AND HYDRANT-10X	1986	2046	53,272	1	59	20	116,725	4 @	13,317.99

Asset ID: 1073

(2) Valves at $2,500 each ;Hydrant $3,600.
2012: Added $2,500 for air release valves includes asphalt patch.
See notes under Group 30 assets for estimated cost information. The repair estimation plan assumes that repair events escalate with the system age.

GROUP 60: Assume same number of events as GROUP 50 assuming addition of a major infrastructure replacement event every 10 years beginning 2026.

ECMA Water System Infrastructure Repair Estimation Plan 2026
RA Annual Expenditure Matrix

Description	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
GROUP 30										
GROUP 30 - WATER MAIN MAJOR 1/2	*Unfunded*									
GROUP 30 - WATER MAIN MINOR 1/2	*Unfunded*									
GROUP 30 - WATER SERVICE	*Unfunded*									
GROUP 30- WATER VALVE AND HYDRANT	*Unfunded*									
GROUP 40										
GROUP 40 - WATER INFRASTRUCTURE PROJECT	100,000									
GROUP 40 - WATER MAIN MAJOR	27,842		30,114		32,571		35,229		38,104	
GROUP 40 - WATER MAIN MINOR		10,858		11,744		12,703		13,739		14,861
GROUP 40 - WATER SERVICE	5,154	5,360	5,574	5,797	6,029	6,270	6,521	6,782	7,053	7,335
GROUP 40- WATER VALVE AND HYDRANT	26,636	27,701	28,809	29,962	31,160	32,407	33,703	35,051	36,453	37,911
GROUP 40 Total:	**159,632**	**43,920**	**64,498**	**47,504**	**69,761**	**51,380**	**75,453**	**55,572**	**81,610**	**60,107**
GROUP 50										
GROUP 50 - WATER INFRASTRUCTURE PROJECT										
GROUP 50 - WATER MAIN MAJOR										
GROUP 50 - WATER MAIN MINOR										
GROUP 50 - WATER SERVICE										
GROUP 50- WATER VALVE AND HYDRANT										
GROUP 50 Total:										
GROUP 60										
GROUP 60 - WATER INFRASTRUCTURE PROJECT										
GROUP 60 - WATER MAIN MAJOR										
GROUP 60 - WATER MAIN MINOR										
GROUP 60 - WATER SERVICE										
GROUP 60- WATER VALVE AND HYDRANT										
GROUP 60 Total:										
Year Total:	**159,632**	**43,920**	**64,498**	**47,504**	**69,761**	**51,380**	**75,453**	**55,572**	**81,610**	**60,107**

ECMA Water System Infrastructure Repair Estimation Plan 2026
RA Annual Expenditure Matrix

Description	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROUP 30										
GROUP 30 - WATER MAIN MAJOR 1/2	*Unfunded*									
GROUP 30 - WATER MAIN MINOR 1/2	*Unfunded*									
GROUP 30 - WATER SERVICE	*Unfunded*									
GROUP 30- WATER VALVE AND HYDRANT	*Unfunded*									
GROUP 40										
GROUP 40 - WATER INFRASTRUCTURE PROJECT										
	148,024									
GROUP 40 - WATER MAIN MAJOR	82,426		89,152		96,427		104,296		112,806	
GROUP 40 - WATER MAIN MINOR		32,146		34,769		37,607		40,675		43,994
GROUP 40 - WATER SERVICE	15,258	15,868	16,503	17,163	17,849	18,563	19,306	20,078	20,881	21,716
GROUP 40- WATER VALVE AND HYDRANT	78,856	82,010	85,290	88,702	92,250	95,940	99,777	103,768	107,919	112,236
GROUP 40 Total:	**324,564**	**130,024**	**190,945**	**140,634**	**206,526**	**152,109**	**223,379**	**164,522**	**241,606**	**177,947**
GROUP 50										
GROUP 50 - WATER INFRASTRUCTURE PROJECT										
GROUP 50 - WATER MAIN MAJOR										
GROUP 50 - WATER MAIN MINOR										
GROUP 50 - WATER SERVICE										
GROUP 50- WATER VALVE AND HYDRANT										
GROUP 50 Total:										
GROUP 60										
GROUP 60 - WATER INFRASTRUCTURE PROJECT										
GROUP 60 - WATER MAIN MAJOR										
GROUP 60 - WATER MAIN MINOR										
GROUP 60 - WATER SERVICE										
GROUP 60- WATER VALVE AND HYDRANT										
GROUP 60 Total:										
Year Total:	**324,564**	**130,024**	**190,945**	**140,634**	**206,526**	**152,109**	**223,379**	**164,522**	**241,606**	**177,947**

ECMA Water System Infrastructure Repair Estimation Plan 2026
RA Annual Expenditure Matrix

Description	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
GROUP 30										
GROUP 30 - WATER MAIN MAJOR 1/2	*Unfunded*									
GROUP 30 - WATER MAIN MINOR 1/2	*Unfunded*									
GROUP 30 - WATER SERVICE	*Unfunded*									
GROUP 30- WATER VALVE AND HYDRANT	*Unfunded*									
GROUP 40										
GROUP 40 - WATER INFRASTRUCTURE PROJECT										
GROUP 40 - WATER MAIN MAJOR										
GROUP 40 - WATER MAIN MINOR										
GROUP 40 - WATER SERVICE										
GROUP 40- WATER VALVE AND HYDRANT										
GROUP 40 Total:										
GROUP 50										
GROUP 50 - WATER INFRASTRUCTURE PROJECT										
GROUP 50 - WATER MAIN MAJOR										
GROUP 50 - WATER MAIN MINOR										
GROUP 50 - WATER SERVICE										
GROUP 50- WATER VALVE AND HYDRANT										
GROUP 50 Total:										
GROUP 60										
GROUP 60 - WATER INFRASTRUCTURE PROJECT	219,112									
GROUP 60 - WATER MAIN MAJOR	122,011		131,967		142,736		154,383		166,981	
GROUP 60 - WATER MAIN MINOR		47,584		51,467		55,667		60,209		65,122
GROUP 60 - WATER SERVICE	22,585	23,488	24,428	25,405	26,421	27,478	28,577	29,720	30,909	32,145
GROUP 60- WATER VALVE AND HYDRANT	116,725	121,394	126,250	131,300	136,552	142,014	147,695	153,603	159,747	166,137
GROUP 60 Total:	**480,434**	**192,467**	**282,645**	**208,172**	**305,709**	**225,159**	**330,655**	**243,532**	**357,636**	**263,404**
Year Total:	**480,434**	**192,467**	**282,645**	**208,172**	**305,709**	**225,159**	**330,655**	**243,532**	**357,636**	**263,404**