

# WTD Depreciation and Cash Funding Approach

MWPAAC  
May 4, 2023

# Overview

- Depreciation at WTD
  - Asset Categories
  - Creating a Depreciation Schedule Forecast
- Cash Funding Approach
  - Original Cost Depreciation
  - Rate Smoothing
  - Comparison with 40% Cash Funding

# Asset Categories and Useful Life

Major Asset Category	Minor Asset Category	Booked Asset Useful Life	Asset Management Team Best Estimate Real Lives	Asset Management Notes
BUILDINGS	BUILDING, CONCRETE (excluding digestors)	35-50	50	
BUILDINGS	HVAC SYSTEM	25	25	
BUILDINGS	ROOFS	15	30	Depending on roof material type
BUILDINGS	BUILDING, CONCRETE (Digestors Only)	35-50	50	
FRN, MCH & EQP	ELECT CONTROL DEV	10	15	
FRN, MCH & EQP	GENERAL LAB EQUIP	10	10	
FRN, MCH & EQP	GENERATORS	10	25	
FRN, MCH & EQP	MEMBRANES	15	12	
FRN, MCH & EQP	MONITORING EQUIP	7	15	
FRN, MCH & EQP	OFFICE EQUIPMENT	10	10	
FRN, MCH & EQP	SEWAGE ODOR CONTROL	10	25	Depending on size and type of unit
FRN, MCH & EQP	SEWAGE TREAT EQUIP	10-20	20	Depending on type of equipment
FRN, MCH & EQP	STORAGE TANK	10-20	25	Depending on use(chemical, sewage, water
FRN, MCH & EQP	WASTEWATER PUMPS	10	25	Depending on size and usage
IMP OT BLD	LANDSCAPING	20	20	
IMP OT BLD	PAVEMENT/Access	40	40	
MAJOR EQUIPMENT	TRUCKS-TRAILERS, Vessel	10-25	12	
OTHER UTILITY	SEWER TRUNK LINES/Interceptors	50	75	Depending on Material and usage
SOFTWARE	SOFTWARE	3-10	7	

# Example Forecasted Depreciation Schedule

Existing Depreciation (A) + Forecasted Depreciation (B) = Forecasted Annual Depreciation (C) = **Cash Funding Target**

WTD assumes an average life of new assets is 40 years

	CIP	Year of Construction	Depreciation Schedule (2023 - 2032)									
			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Historical ←	\$ 1,701,704,067	1983 - 2021	42,542,602	42,169,732	41,778,218	41,367,129	40,935,486	40,482,260	40,006,373	39,506,692	38,982,026	38,431,128
	<b>(A) Existing Depreciation</b>		\$ 42,542,602	\$ 42,169,732	\$ 41,778,218	\$ 41,367,129	\$ 40,935,486	\$ 40,482,260	\$ 40,006,373	\$ 39,506,692	\$ 38,982,026	\$ 38,431,128
Forecast	\$ 100,000,000	2022	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
	\$ 108,000,000	2023		2,700,000	2,700,000	2,700,000	2,700,000	2,700,000	2,700,000	2,700,000	2,700,000	2,700,000
	\$ 116,640,000	2024			2,916,000	2,916,000	2,916,000	2,916,000	2,916,000	2,916,000	2,916,000	2,916,000
	\$ 125,971,200	2025				3,149,280	3,149,280	3,149,280	3,149,280	3,149,280	3,149,280	3,149,280
	\$ 136,048,896	2026					3,401,222	3,401,222	3,401,222	3,401,222	3,401,222	3,401,222
	\$ 146,932,808	2027						3,673,320	3,673,320	3,673,320	3,673,320	3,673,320
	\$ 158,687,432	2028							3,967,186	3,967,186	3,967,186	3,967,186
	\$ 171,382,427	2029								4,284,561	4,284,561	4,284,561
	\$ 185,093,021	2030									4,627,326	4,627,326
	\$ 199,900,463	2031										4,997,512
\$ 215,892,500	2032											
	<b>(B) Forecasted Depreciation</b>		\$ 2,500,000	\$ 5,200,000	\$ 8,116,000	\$ 11,265,280	\$ 14,666,502	\$ 18,339,823	\$ 22,307,008	\$ 26,591,569	\$ 31,218,895	\$ 36,216,406
	<b>(C) Forecasted Annual Depreciation</b>		\$ 45,042,602	\$ 47,369,732	\$ 49,894,218	\$ 52,632,409	\$ 55,601,988	\$ 58,822,083	\$ 62,313,381	\$ 66,098,261	\$ 70,200,921	\$ 74,647,534
	<b>(D) Forecasted Annual CIP</b>		\$ 108,000,000	\$ 116,640,000	\$ 125,971,200	\$ 136,048,896	\$ 146,932,808	\$ 158,687,432	\$ 171,382,427	\$ 185,093,021	\$ 199,900,463	\$ 215,892,500
	<b>(E) Cash-Funding Ratio</b>		41.7%	40.6%	39.6%	38.7%	37.8%	37.1%	36.4%	35.7%	35.1%	34.6%

# Wastewater Treatment Depreciation Forecast

Existing Depreciation Schedule (Year End 2021). Land is excluded from schedule, assumed to be 3.9% of capital spending. All values in \$m.

Forecasted Future Depreciation	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Existing Depreciation Schedule										
BUILDINGS	53.00	52.83	52.76	52.23	51.87	50.49	49.84	48.86	43.22	42.19
FRN, MCH & EQP	36.00	33.14	29.65	23.58	19.24	16.34	14.74	14.50	7.80	7.42
IMP OT BLD	5.58	5.58	5.58	5.58	5.58	5.47	5.46	5.30	4.01	3.96
INTANGIBLE	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
MAJOR EQUIPMENT	0.17	0.17	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
OTHER UTILITY	51.27	51.20	51.16	51.16	50.91	50.58	50.37	50.27	50.22	50.19
<b>Total Existing Depreciation</b>	<b>146.25</b>	<b>143.15</b>	<b>139.50</b>	<b>132.89</b>	<b>127.94</b>	<b>123.23</b>	<b>120.74</b>	<b>119.26</b>	<b>105.59</b>	<b>104.09</b>
Future Depreciation										
2021-2023 CWIP Estimates*	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29
Future CIP Depreciation Schedule	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87
-		9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76
-			11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27
-				12.83	12.83	12.83	12.83	12.83	12.83	12.83
-					15.76	15.76	15.76	15.76	15.76	15.76
-						19.35	19.35	19.35	19.35	19.35
-							21.90	21.90	21.90	21.90
-								22.19	22.19	22.19
-									20.52	20.52
<b>End Future Schedule</b>										<b>20.56</b>
<b>Total Future Depreciation</b>	<b>37.16</b>	<b>46.92</b>	<b>58.19</b>	<b>71.02</b>	<b>86.78</b>	<b>106.13</b>	<b>128.03</b>	<b>150.22</b>	<b>170.75</b>	<b>191.31</b>
<b>Forecasted Total Depreciation</b>	<b>183.41</b>	<b>190.07</b>	<b>197.69</b>	<b>203.91</b>	<b>214.72</b>	<b>229.35</b>	<b>248.77</b>	<b>269.49</b>	<b>276.34</b>	<b>295.41</b>

\*Not capitalized yet

# Cash Funding Targets and Smoothing

Once a cash target is established the next step is to ‘Smooth’ the rate. Rate Smoothing is done to create gradual rate transitions between years instead of spikes and total cash funding is roughly the same before and after smoothing. The benefit of using Original Cost (OC) Depreciation and then applying smoothing is more rate stability, future rates will trend closer to forecasts.

<b>Cash-Funding Calculations (\$m)*</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2024-2033</b>
Step 1: Cash Target: Forecasted Depreciation	\$183.41	\$190.07	\$197.69	\$203.91	\$214.72	\$229.36	\$248.77	\$269.49	\$276.34	\$295.41	\$ 2,309.17
Forecasted Annual CIP	\$327.67	\$406.35	\$468.98	\$533.93	\$656.05	\$805.27	\$911.72	\$923.78	\$854.21	\$855.91	\$ 6,743.87
<b><i>Cash-Funding Ratio Before Smoothing</i></b>	<b><i>56.0%</i></b>	<b><i>46.8%</i></b>	<b><i>42.2%</i></b>	<b><i>38.2%</i></b>	<b><i>32.7%</i></b>	<b><i>28.5%</i></b>	<b><i>27.3%</i></b>	<b><i>29.2%</i></b>	<b><i>32.4%</i></b>	<b><i>34.5%</i></b>	<b><i>34.2%</i></b>
Step 2: Cash Target (Smooth Rate Increases)	\$190.09	\$198.65	\$200.75	\$218.79	\$228.96	\$236.17	\$232.45	\$241.30	\$252.24	\$287.43	\$ 2,286.84
Forecasted Annual CIP	\$327.67	\$406.35	\$468.98	\$533.93	\$656.05	\$805.27	\$911.72	\$923.78	\$854.21	\$855.91	\$ 6,743.87
<b><i>Cash-Funding Ratio After Smoothing</i></b>	<b><i>58.0%</i></b>	<b><i>48.9%</i></b>	<b><i>42.8%</i></b>	<b><i>41.0%</i></b>	<b><i>34.9%</i></b>	<b><i>29.3%</i></b>	<b><i>25.5%</i></b>	<b><i>26.1%</i></b>	<b><i>29.5%</i></b>	<b><i>33.6%</i></b>	<b><i>33.9%</i></b>

\*Initial cash target and smoothed cash target will be slightly different due to timing of debt in the 10-Year Financial Forecast

# Additional recommendation: 1.40x debt service coverage ratio

WTD recommends the use of a 1.40x debt service coverage ratio as a secondary rate-setting requirement for producing rate proposals

- This will honor MWPAAC's original recommendation implemented in 2017 and signal to rating agencies that WTD is committed to maintaining strong financial metrics

# 2024-2033 Sewer Rate Projection (OC vs 40%)

	Adopted		Proposed		Projection						
Original Cost Depreciation*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	5.75%	5.75%	5.75%	6.50%	6.50%	6.50%	7.00%	7.00%	7.00%	7.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.65	\$69.92	\$74.47	\$79.69	\$85.27	\$91.24	\$97.63
Rate Increase \$	\$2.84	\$3.00	\$3.17	\$3.36	\$4.01	\$4.27	\$4.55	\$5.22	\$5.58	\$5.97	\$6.39
All-In Debt Service Coverage	1.56x	1.73x	1.73x	1.67x	1.68x	1.65x	1.61x	1.53x	1.50x	1.47x	1.51x
Projected CIP Spend (\$m)	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856
Annual Cash Funding	60%	58%	49%	43%	41%	35%	29%	25%	26%	30%	34%
Average Cash Funding					6-Year Average		39.8%	10-Year Average			33.9%
Total Debt Balance (\$m)	\$3,587	\$3,512	\$3,593	\$3,721	\$3,915	\$4,198	\$4,615	\$5,114	\$5,615	\$6,018	\$6,386
Debt to Asset (Capitalization Ratio)	89%	84%	81%	79%	77%	76%	75%	75%	75%	74%	74%
Debt to Operating Revenue	6.2x	5.6x	5.4x	5.2x	5.1x	5.1x	5.2x	5.3x	5.4x	5.4x	5.3x

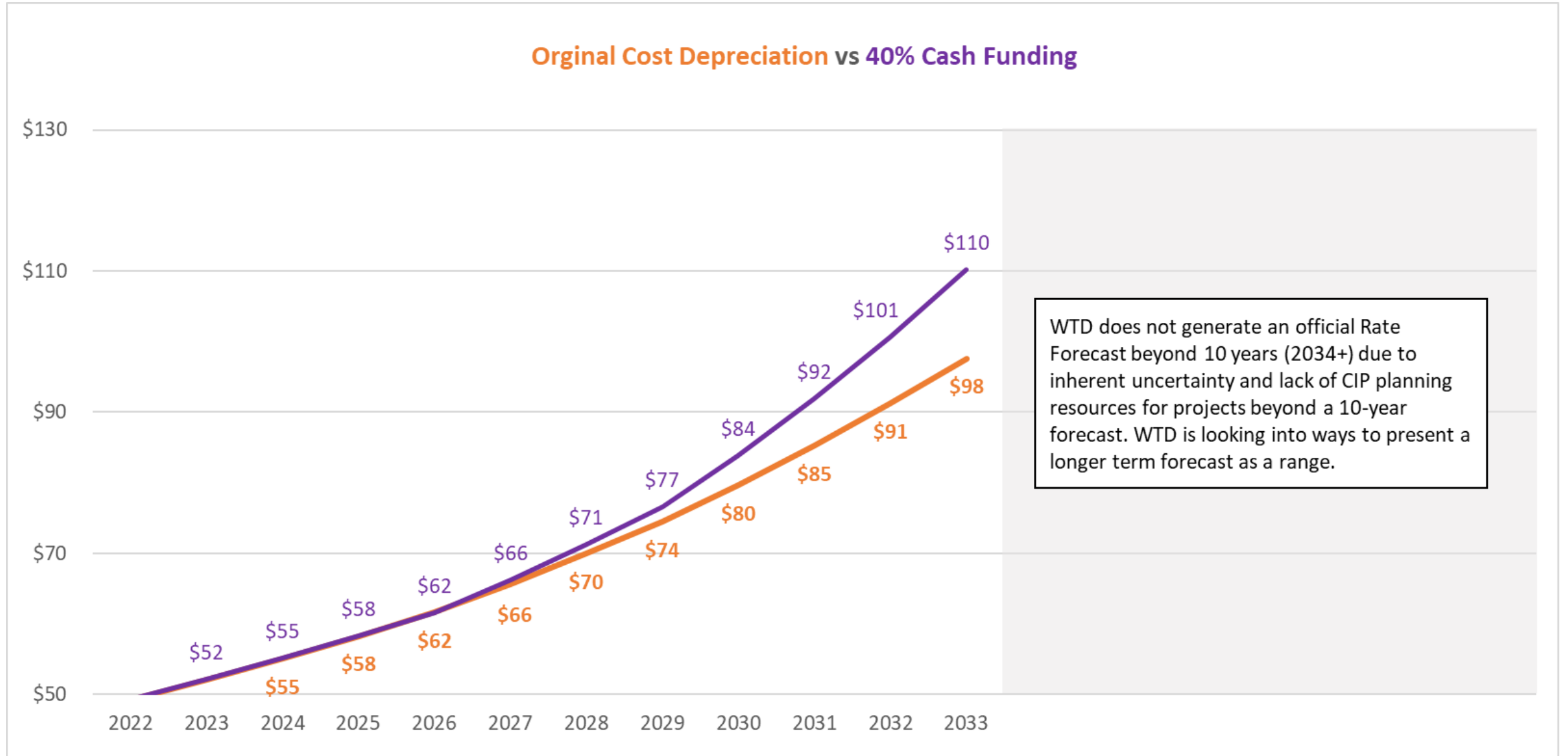
\*Proposed rate

40% Cash Funding	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	5.75%	5.75%	5.75%	7.50%	7.50%	7.50%	9.50%	9.50%	9.50%	9.50%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$66.27	\$71.25	\$76.60	\$83.88	\$91.85	\$100.58	\$110.14
Rate Increase \$	\$2.84	\$3.00	\$3.17	\$3.36	\$4.63	\$4.98	\$5.35	\$7.28	\$7.97	\$8.73	\$9.56
All-In Debt Service Coverage	1.56x	1.73x	1.73x	1.67x	1.70x	1.69x	1.67x	1.63x	1.65x	1.68x	1.80x
Projected CIP Spend (\$m)	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856
Annual Cash Funding	60%	58%	49%	43%	42%	37%	32%	30%	34%	42%	51%
Average Cash Funding					6-Year Average		41.1%	10-Year Average			40.0%
Total Debt Balance (\$m)	\$3,587	\$3,512	\$3,593	\$3,721	\$3,915	\$4,192	\$4,596	\$5,072	\$5,528	\$5,859	\$6,121
Debt to Asset (Capitalization Ratio)	89%	84%	81%	79%	77%	76%	75%	74%	74%	73%	71%
Debt to Operating Revenue	6.2x	5.6x	5.4x	5.2x	5.1x	5.0x	5.0x	5.1x	5.0x	4.8x	4.6x

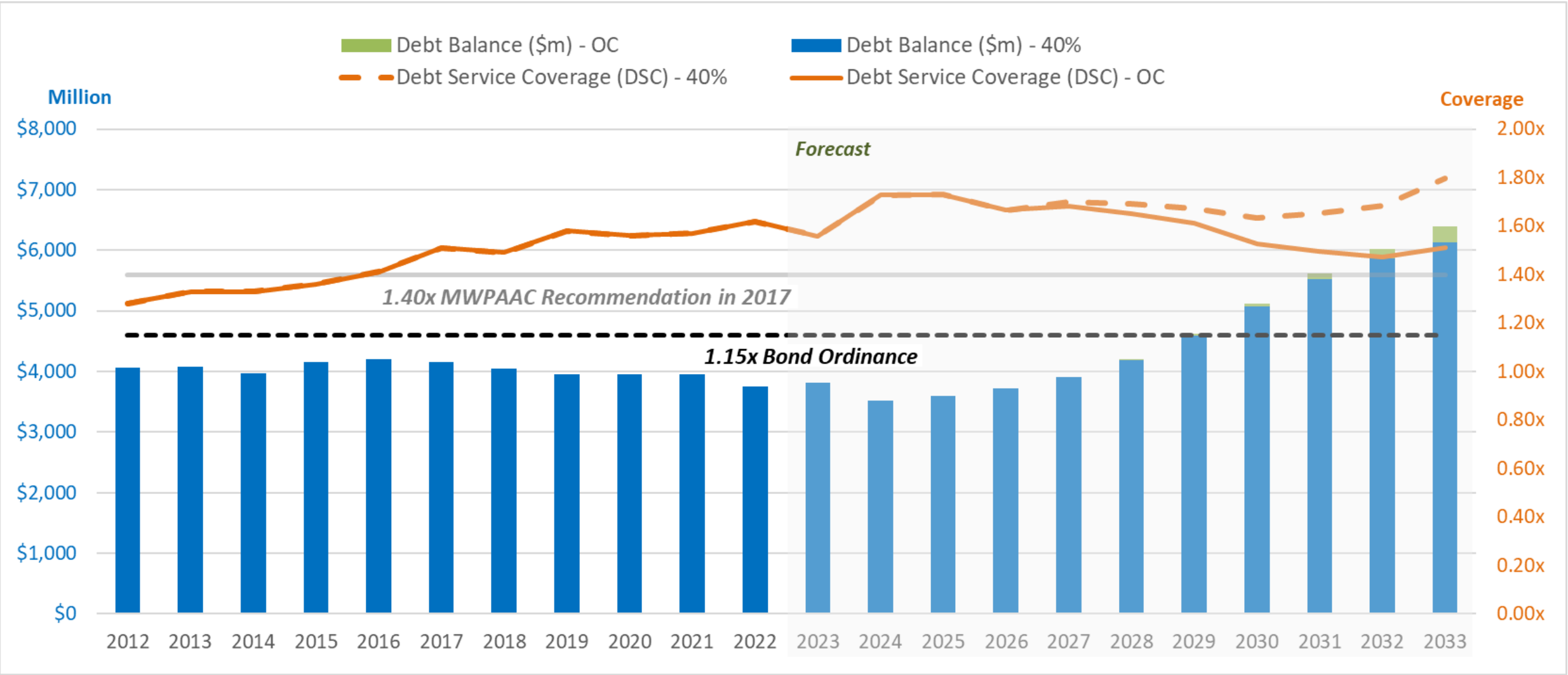
Revenue Forecast (\$m)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
Revenue - OC	513.05	548.89	584.17	626.06	670.93	719.01	774.15	833.44	897.24	965.91	7,132.85
Revenue - 40%	513.05	548.89	584.17	631.97	683.69	739.58	814.85	897.75	989.09	1,089.68	7,492.73
<b>40% - OC</b>	\$ -	\$ -	\$ -	\$ 5.91	\$ 12.76	\$ 20.57	\$ 40.70	\$ 64.31	\$ 91.85	\$ 123.77	\$ 359.87



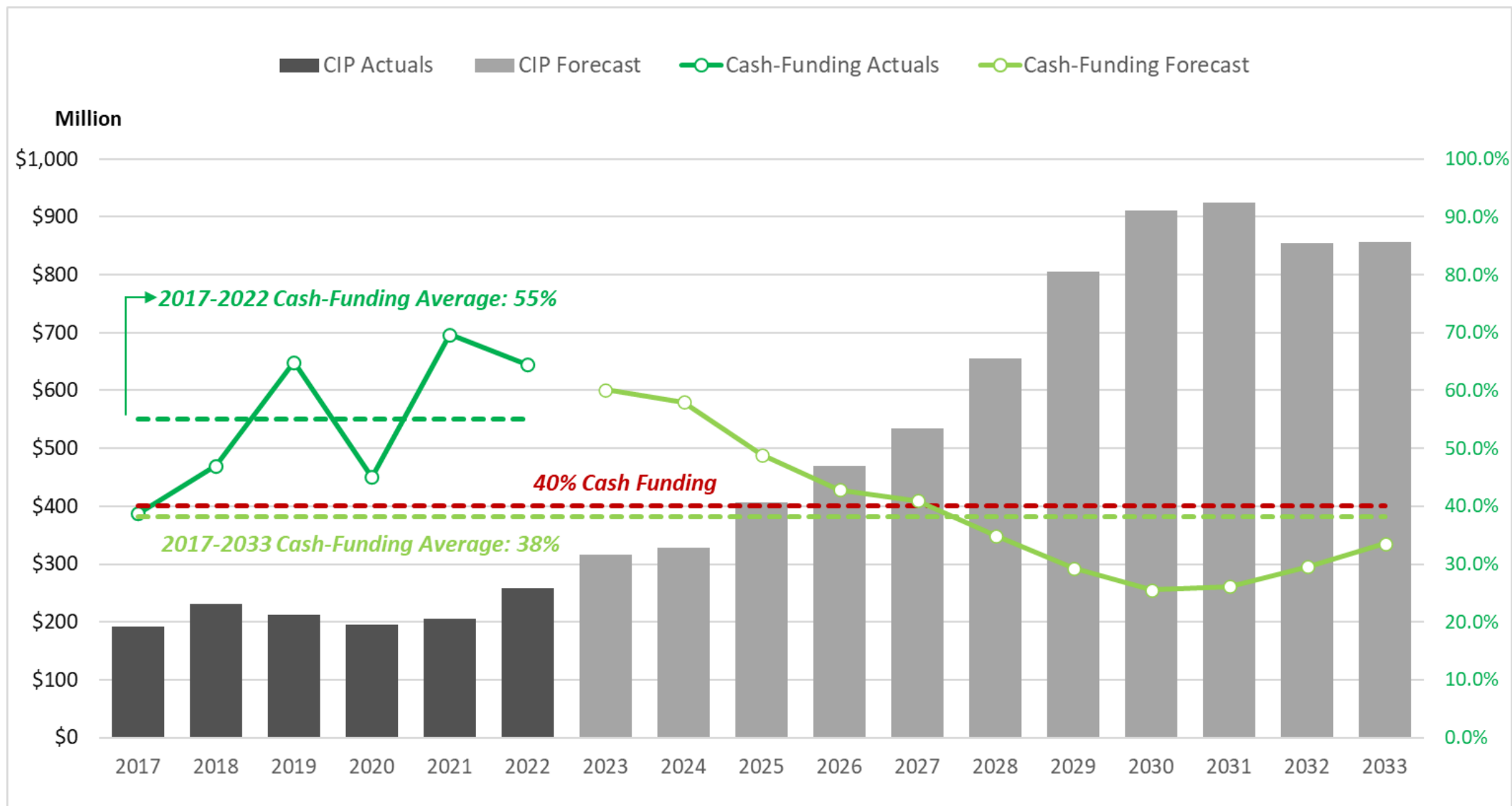
# WTD Capital Cash Funding Methods Comparison



# Forecasted WTD Debt Balances and Coverage

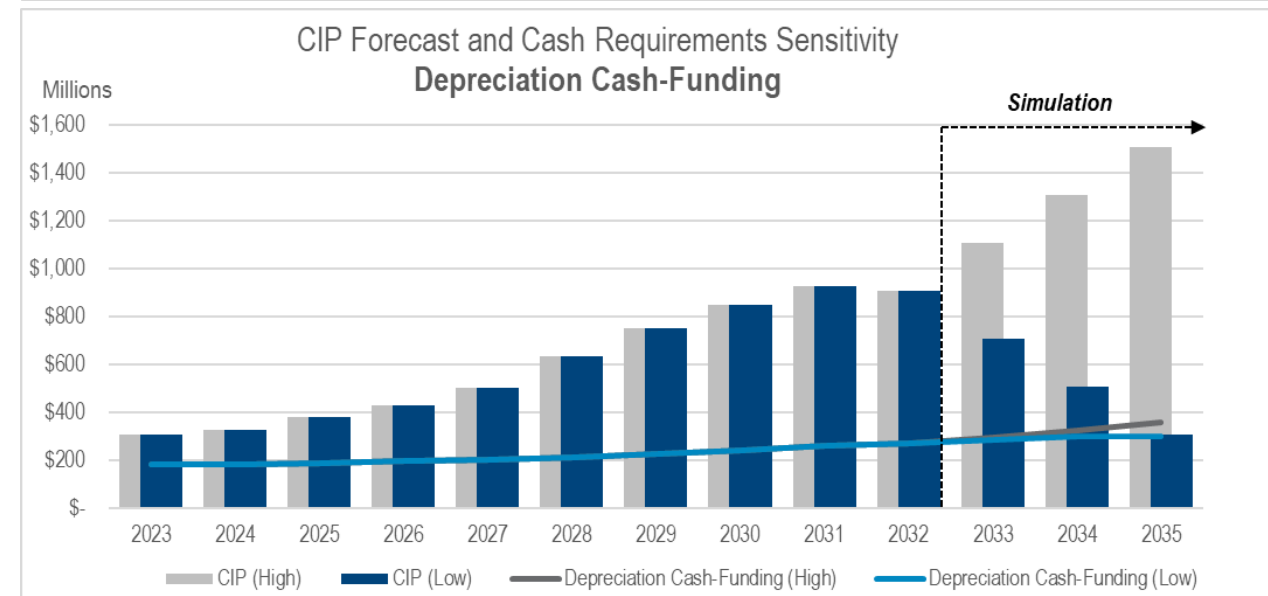
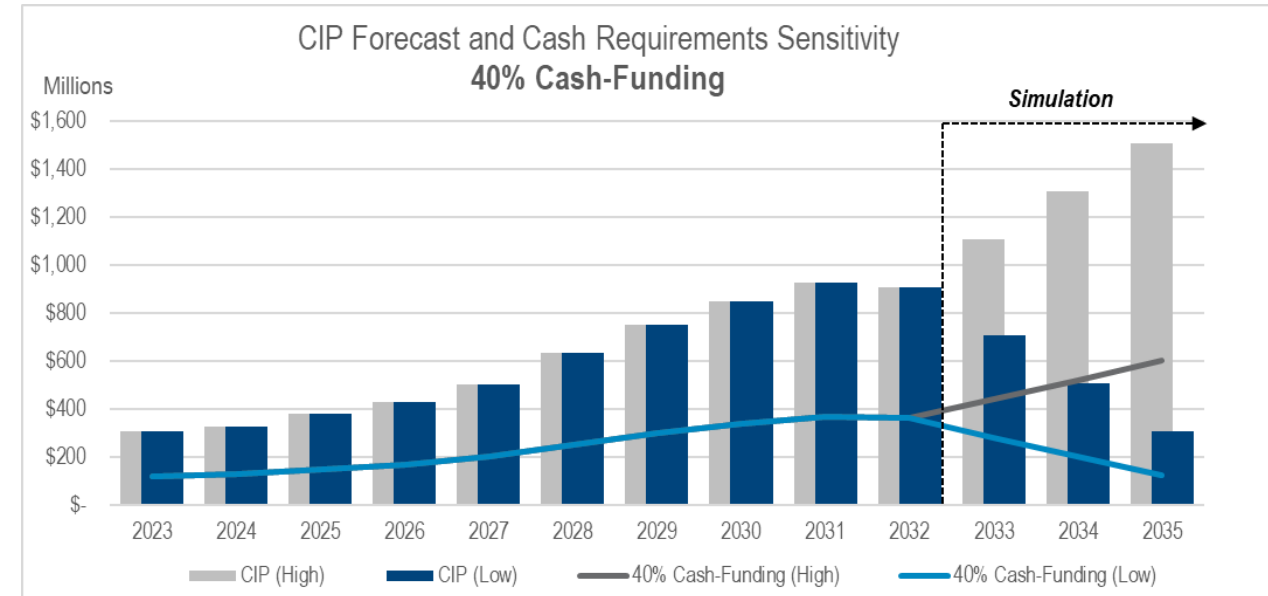


# WTD CIP and Cash Funding Forecast + History (2017-2033)



# Volatility Example

- The sensitivity analysis on the right shows what would happen if CIP increases or decreases by \$200 million a year after 2032 under two different cash-funding alternatives
- Under a 40% cash-funding approach, cash requirements (and rates) change in proportion to CIP growth, which can lead to rate volatility
- Under a depreciation cash-funding approach, cash requirements (and rates) change much more gradually over time but the changes last longer—there is more stability in the rates





**Wastewater Treatment Division  
Rates, Capital, & Debt Management**

Devin ViBarnes  
Rates, Capital, & Debt Management  
Manager