UTICA WATER AND POWER AUTHORITY · EST. 1852

100-Year Strategic Funding Plan

Comprehensive Financial Analysis, Risk Assessment, and Recommendation

Hydroelectric Generation, FERC Compliance, and Infrastructure Funding · Forecast Horizon 2028–2127

About this report. This document is the full analytical record behind the Authority's long-term funding decision. It establishes the modeling methodology and assumptions, examines the financial foundations of value over a century-long horizon, defines and values every credible option, stress-tests the resulting choice against the assumptions most likely to be wrong, assesses ratepayer impact, and develops a recommendation with a phased implementation plan. It is intended to support a fully informed Board decision and to serve as the durable reference document for that decision.

Document control	Detail
Prepared for	Board of Directors & Ratepayer Public
Forecast horizon	100 years (2028–2127), all figures nominal
Primary recommendation	Retain hydro; secure FERC exemption; fund infrastructure renewal and reserves from operating surplus
Headline outcome	$137.4M 100-year cumulative net cash on the recommended path, before the infrastructure renewal program is sized
Basis	100-Year Strategic Financial Plan workbook and supporting analyses

Table of Contents

Executive Summary 4
1 · Introduction and Background 6
1.1 Purpose and Scope 6
1.2 The Authority and the Assets It Stewards 6
1.3 The decisions before the Board 6
1.4 Why A 100-Year Horizon 7
1.5 How This Report is Organized 7
2 · Methodology and Assumptions 8
2.1 Modeling Approach and Conventions 8
2.2 Revenue Assumptions 8
2.3 Operating Cost and Staffing Assumptions 8
2.4 Infrastructure Renewal: Treatment in This Revision 9
2.5 Decommissioning Assumptions 9
2.6 Limitations and Conservatism 9
3 · Financial Analysis: The Foundations of Value 10
3.1 The Revenue Architecture: Why Water Rates Cannot Decide the Question 10
3.2 Hydro Generation as the Value Engine 10
3.3 The Cash-Flow Profile Over Time 10
3.4 Cumulative Position at Strategic Horizons 11
3.5 Regulatory Compliance and Dam Safety 12
3.6 The Recurring Cost of Dam-Safety and FERC Compliance 12
4 · The Options, Defined and Valued 14
4.1 The Structure of The Decision 14
4.2 Option 1 — Retain Hydroelectric Assets 14
4.3 Option 2 — Retire Hydroelectric Assets 14
4.3.1 Water Sales as a Partial Offset Under Retire 15
4.4 The FERC Compliance Fork (Within Retain) 16
4.5 The Exemption Path in Detail 16
4.6 The Relicensing Path in Detail 16
4.7 Valuing the Full Option Set 17
5 · Risk Analysis and Stress Testing 19
5.1 A Framework: Direction, Magnitude, And Absolute Attractiveness 19
5.2 Stress Test 1 — Hydro Revenue Floor (−20%) 19
5.3 Stress Test 2 — O&M Inflation (+0.5–1%/Yr Over the First 30 Years) 20
5.4 Synthesis of the Stress Tests 20
5.5 Reserve Sizing Under the Adopted Reserve Policy 21

5.6 Consolidated Risk Register 23
5.7 Reframing the Risk of Retiring Hydroelectric Assets 23
6 · Ratepayer Impact 24
6.1 Rate Continuity Under Both Options 24
6.2 Rate-Relief Optionality Under Retain 24
6.3 What Retiring Hydroelectric Generation Forecloses 25
7 · Recommendation and Implementation 26
7.1 The Recommendation 26
7.2 Why the Recommendation Follows from the Analysis 26
7.3 Decision Triggers 26
7.4 Phased Implementation 27
7.5 Governance and Ongoing Stewardship 27
8 · Conclusion 28
Appendix A · Key Assumptions 29
Appendix B · Detailed Financial Tables 32
B.1 Annual Net Cash Flow by Period 32
B.2 Cumulative Net Position at Strategic Horizons 32
Appendix C · Stress-Test Results in Detail 33
Appendix D · Methodology, Sources, and Traceability 34
Appendix E · Glossary 35

Executive Summary

The Utica Water and Power Authority (UWPA) stewards multi-generational water and power infrastructure on behalf of its member entities. Two decisions of long-term consequence now sit before the Board: whether to continue operating the Authority's hydroelectric generation assets, and how the Authority will fund the renewal of shared infrastructure from within the enterprise. A third, nested question follows from the first — if generation continues, how the Authority maintains compliance with its Federal Energy Regulatory Commission (FERC) licenses, both of which expire in 2033. This report analyzes all three questions over a full 100-year horizon and develops a single, internally consistent recommendation.

The central finding is that hydroelectric generation is the dominant driver of the Authority's long-term financial position. Held flat at its current level, hydro contributes approximately $157 million of revenue over the horizon — a figure larger than any other lever in the model. Because water-rate revenue is identical regardless of the decision, the choice turns almost entirely on whether the Authority preserves or forfeits this generation revenue.

Three conclusions emerge from the analysis that follows, and they are mutually reinforcing:

1. **Retaining the hydro is the value-creating decision.** Continuing generation produces a 100-year cumulative operating position of approximately $131 million on a regulation-neutral basis, before the infrastructure renewal program is applied (Section 2.4), against roughly $8 million if the asset is retired — an advantage of roughly $123 million that is almost entirely attributable to hydro revenue. Even crediting Retire with the partial offset of selling raw water in lieu of generation (about $24.8 million over the horizon, analyzed in Section 4.3.1), the recommended path still leads by roughly $104 million on a fully-costed basis: selling water is a materially lower-value use of the same resource than running it through the powerhouses.
2. **Within that decision, a perpetual FERC exemption is the highest-value compliance path.** Securing a conduit exemption rather than undertaking recurring relicensing lifts the recommended-path outcome to approximately $137 million on a regulation-neutral basis and avoids a multi-million-dollar obligation that would otherwise recur roughly every forty years. Carrying the Authority's recurring dam-safety and FERC compliance program explicitly (about $9.2 million over the horizon, applied to both options) lowers each option's headline figure by that amount — placing the recommended path near $128 million fully costed — while leaving the advantage over retiring the asset essentially unchanged. Section 3.6 sets out this analysis in full.
3. **The recommendation is robust.** Across three independent stress tests — spanning reduced generation and modest cost inflation — retaining the asset outperforms retiring it in every case, by a margin ranging from roughly $92 million to $123 million.

Accordingly, this report recommends that the Board **retain hydroelectric operations, pursue the FERC conduit exemption as the primary compliance path while maintaining a funded relicensing fallback, fund infrastructure renewal and reserve contributions from the enterprise's operating surplus — with the renewal program to be sized by the FY 2026-27 capital studies rather than assumed in advance — hold the water rate at $40 per meter per month, and maintain reserves at the targets adopted in Resolution No. 22-11, supplemented by**

a relicensing contingency until the exemption is secured. The balance of this report sets out the methodology, evidence, and risk analysis on which that recommendation rests, and the implementation plan through which it would be carried out.

SECTION 1

1 · Introduction and Background

1.1 Purpose and Scope

This report provides the complete financial and strategic basis for the Authority's long-term funding decision. Its purpose is threefold: to document the analytical methodology so that the conclusions can be independently understood and re-tested; to present every credible option on a common, comparable basis; and to develop a recommendation that follows transparently from the evidence rather than being asserted in advance. The scope is deliberately long — a full century — because the assets and obligations in question are themselves multi-generational, and shorter analytical windows systematically understate both the durability of the value at stake and the optionality the decision creates.

The report does not attempt to resolve engineering, legal, or environmental questions in their own right; where those matters bear on the financial analysis — for example, the regulatory timeline for FERC compliance — they are incorporated as modeling assumptions and flagged accordingly. All monetary figures are expressed in nominal dollars unless otherwise noted, and all derive from the Authority's 100-Year Strategic Financial Plan workbook and its supporting analyses.

1.2 The Authority and the Assets It Stewards

UWPA serves a combined base of 3,879 metered connections through its member entities — the Union Public Utility District (UPUD), and the City of Angels Camp. In addition to the water-conveyance system that serves these connections, the Authority owns and operates two small hydroelectric powerhouses: the P-2019 Utica Project and the P-2699 Angels Project. Each operates under a thirty-year FERC license, and both licenses expire in 2033.

These hydroelectric assets are central to the decision at hand for two reasons. First, they are the Authority's only material source of revenue beyond water rates, and they therefore represent the single line item that distinguishes one strategic path from another. Second, their continued operation is contingent on a regulatory outcome — the renewal or replacement of the expiring licenses — which introduces both a cost and a timing question that the financial model must capture. The infrastructure that supports both the water and power functions is aging and requires recapitalization within the planning period, which is the proximate reason a funding strategy must be settled now, ahead of the capital studies that will size the program.

1.3 The decisions before the Board

The strategic question resolves into two nested decisions, with a third dimension — robustness — governing how much confidence the Board can place in the answer:

1. **The primary fork: retain or retire generation.** Under "Retain," the Authority continues hydroelectric operations and funds infrastructure renewal from its own operating surplus and reserves. Under "Retire," it decommissions the hydro assets, raises no capital, and operates as a water-only enterprise.

2. **The compliance fork (within Retain): exemption or relicensing.** Because both licenses expire in 2033, continued generation requires one of two compliant regulatory outcomes — a perpetual conduit exemption or a full FERC relicensing. This question only arises if the Authority chooses to retain the asset.
3. **Robustness.** Whatever the recommended direction, the Board must know whether it survives adverse but plausible assumptions. Three sensitivity analyses, across three risk categories, test exactly this.

To avoid the ambiguity that arises when a single label is used for different concepts, this report uses descriptive terms throughout: **Retain** and **Retire** for the primary fork, and **Exemption path** and **Relicensing path** for the compliance fork. A traceability table in Appendix D maps these terms to the labels used in earlier working documents.

1.4 Why A 100-Year Horizon

Water and hydroelectric infrastructure are among the longest-lived assets any public enterprise holds. Capital commitments made in the next five years will outlive every individual involved in making them, and the obligations they create — capital renewal, regulatory compliance, asset stewardship — extend across multiple generations of ratepayers. A planning horizon shorter than the useful life of the assets would distort the comparison between options by truncating exactly the period in which the decisive differences emerge.

This is not a theoretical concern. As the analysis in Section 3 shows, Retain's advantage is already material at the twenty-five-year mark and roughly triples over the remainder of the century; a conventional twenty-five- or thirty-year window would capture less than a third of the value at stake. A century-long horizon also surfaces the rate-relief optionality discussed in Section 6, which a shorter analysis would miss entirely. The horizon is therefore chosen to match the economic life of the decision, not for rhetorical effect.

1.5 How This Report is Organized

Section 2 documents the methodology and the assumptions that drive every figure in the report. Section 3 establishes the financial foundations — where value comes from and how cash flows behave over time. Section 4 defines each option precisely and values them on a common basis. Section 5 subjects the resulting choice to a structured risk analysis and three stress tests, and derives the appropriate reserve and contingency targets under the Authority's adopted Reserve Policy. Section 6 examines the impact on ratepayers. Section 7 develops the recommendation and its implementation plan, and Section 8 concludes. Five appendices provide the full assumption set, detailed financial tables, complete stress-test results, sources and traceability, and a glossary.

SECTION 2

2 · Methodology and Assumptions

The credibility of any long-horizon forecast rests on the transparency of its assumptions. This section sets out the modeling approach and every material input, so that the Board can see precisely what the conclusions depend on and where the genuine uncertainties lie. Section 5 then flexes the inputs most likely to be wrong.

2.1 Modeling Approach and Conventions

The analysis is built on an annual cash-flow model spanning 2028 through 2127. For each year and each option, the model computes net cash flow as the sum of revenues less operating costs, decommissioning obligations where applicable, and any regulatory cost. These annual figures are accumulated into a running cumulative position, which is the primary basis for comparison: because the options differ in the timing as well as the magnitude of their cash flows, only a cumulative view captures the full economic difference between them.

All figures are nominal. Revenues are not indexed to inflation after rate adoption, and core operating costs are held flat in the base case; this is a deliberately conservative convention that, as Section 5 shows, understates the absolute attractiveness of both options equally without affecting the choice between them. Where a real-terms or inflation-adjusted view would change the interpretation, the report notes it explicitly.

2.2 Revenue Assumptions

The model recognizes two revenue streams. Water-rate revenue is generated by 3,879 meters at $40 per meter per month, producing $1,861,920 per year, or approximately $186.2 million over the horizon. This stream is identical under every option, because the water system operates regardless of whether hydro generation continues. Hydroelectric revenue is held flat at $1,569,889 per year, contributing approximately $157.0 million over the horizon under Retain and zero under Retire.

Holding hydro revenue flat for a century is a strong assumption, and the report treats it as such. It is reasonable as a central case — generation output is relatively stable year to year — but it does not capture equipment aging, hydrological variability, or the renegotiation of power-purchase terms. Because hydro revenue is the model’s dominant lever, Section 5 stresses it directly with a sustained twenty-percent reduction, and Section 7 recommends ongoing reinvestment specifically to protect it.

2.3 Operating Cost and Staffing Assumptions

Operations and maintenance (O&M) are modeled as a single editable cost of $500,000 per year, held flat in the base case and stressed with a compounding escalator in Section 5. Salary and benefit costs differ by option, reflecting the different staffing each requires. Under Retain, the Authority carries both power and water staffing, with a year-three base of approximately $1.62 million after three sequential five-percent increases in 2028, 2029, and 2030. Under Retire, reduced no-hydro staffing produces a year-three base of approximately $1.18 million. Both bases hold flat thereafter.

2.4 Infrastructure Renewal: Treatment in This Revision

This revision carries no infrastructure financing line. As of this writing no loan, bond, or other debt instrument exists, has been applied for, or has been sized, and the plan deliberately does not assume one. The scope and cost of the infrastructure renewal program will be established by the engineering and capital-planning studies funded in the FY 2026-27 budget, and any figure adopted ahead of those studies would be speculation. Under Retain, therefore, the model computes the enterprise's operating position — revenues less staffing, O&M, and, where indicated, regulatory cost — without a capital-program or debt-service deduction.

The consequence for interpretation is important and is repeated wherever it matters: the annual surplus the model shows under Retain, approximately $1.31 million per year once the salary ramp is complete, is not free cash. It is the capacity from which the Authority will fund infrastructure renewal on a pay-as-you-go basis, make the reserve contributions required by Resolution No. 22-11 (Section 5.5), and provide local match for grant funding. Once the capital studies are complete, the next revision of this plan will carry the renewal program as an explicit line and re-test every figure in this report against it.

2.5 Decommissioning Assumptions

Under Retire, the Authority incurs a $10 million decommissioning obligation, spread evenly at $1 million per year across 2028 through 2037. This is a genuine, contractually-fixed cash cost — not a soft estimate — and it falls in the first decade, which is precisely when the option is most cash-constrained. It is important to recognize this obligation as a fixed liability: the perception that retiring the asset is the "obligation-free" path does not survive the presence of a $10 million commitment by another name.

2.6 Limitations and Conservatism

Three limitations warrant explicit acknowledgment. First, the flat-revenue and flat-O&M conventions are simplifications; the model is conservative on revenue and holds core operating cost flat in the base case, and Section 5 quantifies the effect of a modest, capped O&M escalator. Second, the model does not yet carry the recurring dam-safety and FERC compliance cost as an explicit, scenario-switched line in the underlying workbook; Section 3.6 now quantifies that cost — about $91,500 per year, roughly $9.2 million over the horizon — and applies it equally to both options, Section 4 layers the exemption-versus-relicensing fork onto the baseline analytically, and Section 7 recommends incorporating both directly in the next revision. Third, the meter count is held flat at its current level of 3,879 connections throughout the horizon. This reflects a deliberate and realistic expectation for the service area, which is not anticipated to experience material connection growth; the analysis therefore assumes no growth rather than treating it as upside, and every figure in the report is calculated on that flat-meter basis. None of these limitations alters the direction of the recommendation; each affects only the magnitude of the figures, and all are addressed in the risk analysis.

SECTION 3

3 · Financial Analysis: The Foundations of Value

Before any option is weighed, it is worth establishing where the Authority's long-term value actually originates and how its cash flows behave over time. Two structural facts shape everything that follows, and understanding them makes the later comparisons almost self-evident.

3.1 The Revenue Architecture: Why Water Rates Cannot Decide the Question

The Authority's revenue has two components, and they play very different roles in the decision. Water-rate revenue — $186.2 million over the horizon — is the larger of the two, but it is identical under every option, because the water system runs whether or not the hydro generates. A revenue stream that is the same across all paths cannot, by definition, distinguish between them. It is the stable foundation on which the enterprise rests, but it is analytically neutral to the choice.

Hydroelectric revenue is the opposite. At $1,569,889 per year, it is smaller in absolute terms, but it is the only revenue line that varies with the decision: preserved in full under Retain, forfeited entirely under Retire. The decision therefore does not turn on water rates at all — it turns on whether the Authority continues to operate its generation asset. This is the single most important framing in the entire analysis, and it explains why the comparison between options is, at its core, a comparison about hydro.

3.2 Hydro Generation as the Value Engine

Over the full horizon, flat hydro revenue accumulates to approximately $157 million. The scale of that figure relative to the rest of the model is what makes it decisive. It is the reason the generation asset, on its own, produces enough cumulative cash to fund the Authority's infrastructure renewal from within the enterprise rather than through borrowing. It is, in the most literal sense, the difference between an enterprise that can self-fund its own renewal and one that cannot.

This concentration of value in a single line has a strategic implication that the report returns to repeatedly: protecting hydro revenue is the Authority's most important operational priority under the recommended path. Because so much of the case rests on this one stream, the analysis treats threats to it — equipment aging, dry years, adverse power-purchase terms — as the risks most deserving of mitigation, and Section 5 stresses it more aggressively than any other input.

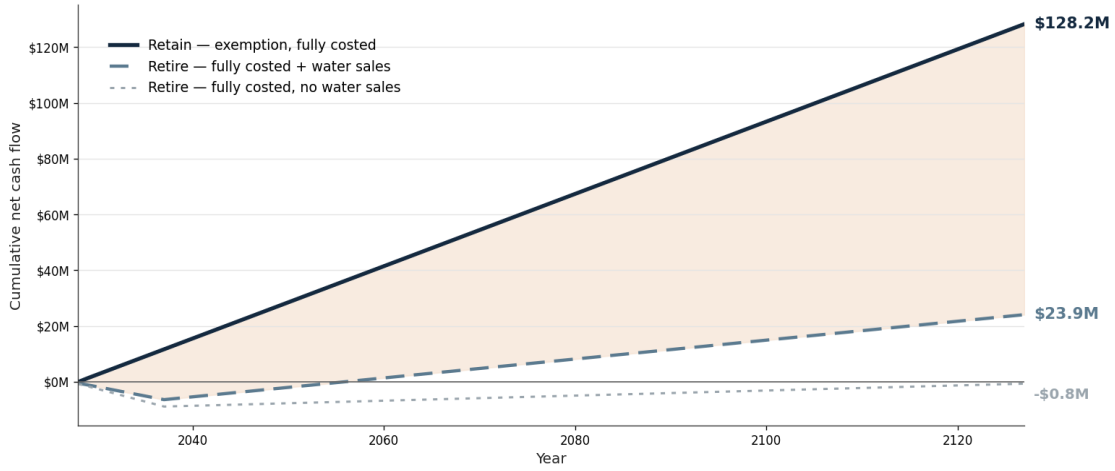
3.3 The Cash-Flow Profile Over Time

The two primary options do not merely differ in their endpoints; they follow fundamentally different trajectories, and the shape of those trajectories is the heart of the analysis. Retain runs a steady operating surplus from the first year, and that surplus compounds across the century. Retire carries its decommissioning obligation in the first decade and then settles into a permanently smaller surplus, having given up generation revenue for good.

Exhibit 1 traces the cumulative net cash position of each option across the full horizon, shown here on the fully-costed basis that carries the recurring compliance program (Section 3.6) against both options and credits Retire with the water-sale offset (Section 4.3.1). The visual tells the whole story: a steady, uninterrupted climb for Retain from 2028 onward; for Retire, an early trough driven by decommissioning, followed by a slow ascent that — even with water sales — never approaches Retain's trajectory. The shaded area between the two lines is Retain's growing advantage, which on the regulation-neutral foundation widens by approximately $2.1 million per year during the decommissioning decade and by approximately $1.13 million every year thereafter. The faint lower line shows Retire fully costed without water sales, to isolate the size of that offset.

Exhibit 1 · 100-year cumulative net cash flow (fully costed)

With compliance carried and water sales credited to Retire, the recommended path leads by ~$104M



Several specific features of the trajectory deserve note. Retain's cumulative position never turns negative: on a regulation-neutral basis it stands at roughly $1.5 million after the first year, $39.6 million at year thirty, and $131.5 million at year one hundred. Retire, by contrast, is driven to roughly negative $8 million by 2037 under the weight of decommissioning and does not return to positive territory until approximately 2081. The widely held intuition that retiring the asset is the safer course does not survive this comparison: the Retire path spends more than half a century underwater, while Retain never does.

The annual view makes the structural difference explicit. Under Retain, annual net cash flow is a surplus of roughly $1.46 million in 2028, eases to about $1.31 million per year as the three salary increases phase in through 2030, and holds at that level in perpetuity — before the infrastructure renewal program is applied (Section 2.4). Under Retire, the decommissioning decade runs annual deficits in the range of $708,000 to $817,000, after which the enterprise settles at a steady-state surplus of about $183,000 per year before water sales; crediting the water-sale offset (Section 4.3.1) lifts the average to roughly $431,000 per year, but with pronounced year-to-year swings — about $500,000 in a wet water year and far less in a dry one. Even so, the Retain surplus remains several times the size of Retire's steady state.

3.4 Cumulative Position at Strategic Horizons

The advantage of retaining the asset is not a distant-future artifact that depends on extrapolating a century out. As the checkpoints below show, Retain outperforms Retire at every horizon, and the advantage is material from the outset — roughly $38 million at twenty-five years — before widening steadily to more than $120 million at the century mark.

Horizon	End year	Retain net	Retire net	Retain advantage
25 years	2052	$33.0M	($5.3M)	+$38.3M
30 years	2057	$39.6M	($4.4M)	+$44.0M
50 years	2077	$65.9M	($0.7M)	+$66.6M
75 years	2102	$98.7M	$3.9M	+$94.8M
100 years	**2127**	**$131.5M**	**$8.4M**	**+$123.1M**

These figures are regulation-neutral: they carry no FERC compliance cost, and they therefore represent the foundation onto which Section 4 layers the cost of each compliance path. They establish the essential result — that retaining the asset is materially more valuable than retiring it at every horizon — before the regulatory question is even considered.

3.5 Regulatory Compliance and Dam Safety

Regulatory compliance is often speculated to disappear when discussing the options between Retain and Retire. Although this may seem like an appealing narrative the reality is much different. Most regulatory compliance costs owe their existence to Dam Safety regulations such as EAP, testing, inspections, ODSP, etc. Therefore, the reality is that any reduction expected in either FERC exemption or retiring hydroelectric assets would be nominal at best, but reduced costs would most likely not be realized.

3.6 The Recurring Cost of Dam-Safety and FERC Compliance

The regulation-neutral figures above carry no compliance cost of any kind. In practice the Authority incurs a continuing program of dam-safety and FERC obligations — annual inspections and certifications, recurring five- and ten-year studies and inspections, and periodic Part 12D safety reviews — that exist independently of the exemption-versus-relicensing fork analyzed in Section 4. These are the obligations catalogued in the Authority's compliance schedule, and the earlier revision of this plan did not carry them as an explicit line. This subsection corrects that omission and quantifies the burden so the Board sees the figures on a fully-costed basis.

Aggregating the scheduled items by their stated frequency and annualizing the recurring cycles produces a steady-state compliance cost of approximately $91,500 per year: roughly $1,000 of annual items, about $40,300 per year from the five-year cycle of studies and re-writes (dam-monument surveys, EAP exercises and re-writes, the ODSP re-write, the Part 12D safety review, and related work), and about $50,200 per year from the ten-year cycle (penstock ROV inspections, inundation-map updates, the Part 12D comprehensive and periodic inspections, and similar). Over the 100-year horizon this recurring burden accumulates to roughly $9.2 million. In addition, the schedule carries approximately $0.6 million of near-term, one-time studies — concrete testing, flood-study and seismicity updates, and a stability-analysis update — concentrated in the first several fiscal years.

Compliance category	Cycle total	Annualized	100-yr total
Annual items (USFS meeting, etc.)	$1,000 / yr	$1,000	$0.1M
Five-year cycle (surveys, EAP, ODSP, Part 12D review)	$201,700	$40,300	$4.0M
Ten-year cycle (ROV, inundation maps, Part 12D inspections)	$502,000	$50,200	$5.0M
Recurring compliance subtotal	**—**	**$91,500**	**$9.2M**
One-time near-term studies (FY27–FY32)	$625,000	—	$0.6M

The decisive point for the Board's decision is that this burden is, to a first approximation, common to both options. As Section 3.5 explains, most of these costs owe their existence to dam-safety regulation — EAP obligations, ODSP assessments, inspections, and monument surveys — which persist for as long as the dams themselves exist, whether or not generation continues. Decommissioning the powerhouses under Retire does not remove the dams or the reservoirs behind them, so the realistic reduction in this compliance program under Retire is nominal at best. The conservative and defensible treatment, adopted here, is therefore to apply the recurring compliance cost equally to both options.

Because the cost falls on both paths alike, it lowers each option's headline figure by roughly $9.2 million but leaves the gap between them — the actual basis for the decision — essentially unchanged. The table below restates the principal results on a fully-costed basis.

Measure	Regulation-neutral	With compliance	Change
Retain — baseline, 100-yr	$131.5M	$122.3M	−$9.2M
Retain — exemption, 100-yr (recommended)	**$137.4M**	**$128.2M**	**−$9.2M**
Retire — decommission, 100-yr	$8.4M	−$0.8M	−$9.2M
Retain advantage (exemption vs. retire)	**$129.0M**	**$129.0M**	**—**

Two conclusions follow. First, even fully costed, the recommended exemption path remains strongly positive over the horizon at roughly $128.2 million, and the Retain-over-Retire advantage is undiminished at about $129.0 million. The compliance cost is a level shift, not a lever that changes the decision. Second, the fully-costed view does sharpen one observation already made in Section 5.7: once compliance is carried explicitly, Retire's century-long position is approximately break-even rather than a modest surplus — reinforcing that retiring the asset is not the low-cost, low-risk path it is often assumed to be. Consistent with the recommendation in Section 7.5, the next revision of the model should carry this recurring compliance program as an explicit annual line, with the one-time near-term studies scheduled in the years the compliance calendar specifies, so that reserve sizing and the annual cash-flow profile reflect it directly.

SECTION 4

4 · The Options, Defined and Valued

This section defines each credible option precisely and then values the full set on a single, comparable 100-year basis. There are four distinct end-states: retire the asset, or retain it under one of three compliance-and-cost profiles.

4.1 The Structure of The Decision

The decision is best understood as a tree rather than a list. At the first node, the Authority chooses whether to retain or retire generation. If it retires, the analysis ends there — no compliance question arises and no capital is raised. If it retains, a second node opens: how to maintain FERC compliance for the two powerhouses whose licenses expire in 2033. That second choice does not affect whether the hydro runs — both compliance paths keep it running and preserve its revenue — but it materially affects the cost and recurrence of staying compliant, and therefore the long-run value of the Retain branch.

4.2 Option 1 — Retain Hydroelectric Assets

Under Retain, the Authority continues hydroelectric generation, retains its power and water staffing, and funds infrastructure renewal from its operating surplus and reserves, with the renewal program to be sized by the FY 2026-27 capital studies (Section 2.4). It preserves $1.57 million per year of generation revenue and runs an operating surplus of roughly $1.31 million per year. On a regulation-neutral basis its 100-year cumulative position is approximately $131.5 million.

4.3 Option 2 — Retire Hydroelectric Assets

Under Retire, the Authority ends hydroelectric operations, reduces staffing to water-only roles, and makes no investment in infrastructure renewal. It incurs the $10 million decommissioning obligation across 2028–2037 and permanently forfeits generation revenue. Its 100-year cumulative position is approximately $8.4 million on a regulation-neutral basis. The Authority could, however, partially offset the lost generation revenue by selling a portion of its water in lieu of running it through the powerhouses; Section 4.3.1 quantifies that offset, which improves the Retire position without closing the gap to Retain. Critically, retiring the asset is effectively irreversible: the practical optionality of restarting generation decades from now is close to zero, so this path forecloses the upside permanently rather than merely deferring it.

Dimension	Retain (continue hydro)	Retire (decommission)
Hydro generation	Continues; $1.57M/yr preserved	Ends; revenue forfeited
Infrastructure capital	Funded from operating surplus and reserves; program to be sized by FY 2026-27 studies	None

Dimension	Retain (continue hydro)	Retire (decommission)
Major obligation	Reserve contributions per Res. 22-11; renewal program (not yet sized)	$10M decommissioning, 2028–2037
Staffing	Power + water (yr-3 base ~$1.62M)	Water-only (yr-3 base ~$1.18M)
Water rate	$40/meter/month	$40/meter/month (identical)
100-yr cumulative (neutral)	$131.5M	$8.4M
Water sales (offset)	None (water runs through hydro)	~$247.5K/yr avg; ~$24.8M/100 yrs
Reversibility	Asset preserved	Effectively irreversible

4.3.1 Water Sales as a Partial Offset Under Retire

The regulation-neutral Retire figure assumes the Authority forfeits generation revenue entirely and earns nothing in its place. In practice, if the powerhouses are retired the water that would have driven them does not disappear — it remains available, and a portion of it could be sold rather than passed through generation. This subsection estimates that offset. It does not change the conclusion that Retire is the weaker path; it simply states the Retire case on its strongest reasonable footing, so the comparison is fair.

The volume available for sale varies with hydrology, and is estimated here on the same established water-year (WY) classification that underlies the hydro-revenue assumption — a thirty-year record averaging WY 2.0, within which roughly half the years are the wettest WY 1 type. The Authority estimates it could sell approximately 9,000 acre-feet in a WY 1 year, 5,500 acre-feet in a WY 2 year, and 2,000 acre-feet in a WY 3 year, with no saleable surplus in the drier WY 4 through WY 6 years, all priced at $45 per acre-foot. The per-water-year revenue that results is shown below. It should be noted with emphasis that this option risks another agency potentially seeking our water rights. Simply said, if we are not using our water rights they are subject to risk.

Water year (type)	Acre-feet sold	Price / AF	Revenue
WY 1 (wettest)	9,000	$45	$405,000
WY 2	5,500	$45	$247,500
WY 3	2,000	$45	$90,000
WY 4 – WY 6 (driest)	0	$45	—

Weighting these per-water-year amounts by how often each water-year type occurs across the thirty-year record — consistent with the WY 2.0 long-run average used elsewhere in this report — produces an average water-sale revenue of approximately $247,500 per year. Because the volumes are tied to hydrology rather than spread evenly, actual annual receipts are lumpy: a wet WY 1 year contributes about $405,000, a WY 3 year about $90,000, and the driest years nothing at all. Over the 100-year horizon the offset accumulates to roughly $24.8 million.

Layering this offset onto the fully-costed Retire position from Section 3.6 produces the comparison below. The water sales lift Retire materially — from roughly break-even to a positive cumulative position — but the recommended Retain-Exemption path still outperforms it by a wide margin.

Measure (100-yr cumulative, fully costed)	Without water	With water	Change
Retire — decommission	−$0.8M	$23.9M	+$24.8M
Retain — exemption (recommended)	**$128.2M**	**$128.2M**	**—**

Three points should be read alongside these figures. First, the offset is real but partial: even on its strongest footing, Retire-with-water reaches about $23.9 million over the century against roughly $128.2 million for the recommended path — a shortfall of about $104.3 million, almost all of it the generation revenue that selling raw water cannot replace. Second, the estimate is deliberately conservative on price and volume, holds the $45 per acre-foot rate flat in nominal terms, and assumes no saleable surplus in dry years; it does not assume any firm long-term purchase commitment, which the Authority does not currently hold. Third, and most important, the water-sale offset does nothing to address the irreversibility that is Retire's defining risk: once the powerhouses are decommissioned, the far larger generation revenue is foreclosed permanently, whereas selling water is a lower-value use of the same resource. The offset narrows the gap; it does not change the decision.

4.4 The FERC Compliance Fork (Within Retain)

Both powerhouse licenses expire in 2033, and continued generation requires one of two compliant outcomes. The structural difference between them is recurrence. A full FERC license runs only about forty years, so relicensing is not a one-time event — it recurs roughly every forty years, with renewal points falling at approximately 2033, 2073, and 2113 inside the horizon. A conduit exemption, by contrast, is issued in perpetuity: the Authority pays a much smaller cost once and never faces the process again. This difference in recurrence, more than the difference in any single cost, is what separates the two paths over a century.

4.5 The Exemption Path in Detail

The conduit exemption is the path the Authority is already pursuing. It targets completion around 2028, requires roughly $1.5 million of support work, and is issued in perpetuity with no renewal obligation. It also reduces ongoing FERC overhead by approximately $75,000 per year relative to the relicensing alternative, because it avoids the sustained consultant and reporting burden that a full license entails, and it qualifies as categorically exempt from the environmental review a relicensing would trigger.

A counterintuitive but important consequence of these features is that the exemption path scores slightly higher than the regulation-neutral baseline rather than lower. The reason is straightforward arithmetic: the $75,000 per year of avoided overhead, compounded across the horizon, accumulates to roughly $7.4 million, which exceeds the one-time $1.5 million application cost by about $5.9 million. The exemption is, in effect, a small net positive investment, not merely the cheapest way to stay compliant.

4.6 The Relicensing Path in Detail

Full FERC relicensing is the fallback should the exemption be denied or materially delayed. It is a multi-year process — roughly five years — completing around 2033, and it costs an estimated $10 to $15 million per cycle. It carries a sustained FERC overhead thereafter, is likely to require a full environmental assessment or impact statement, and, most consequentially, must be repeated roughly

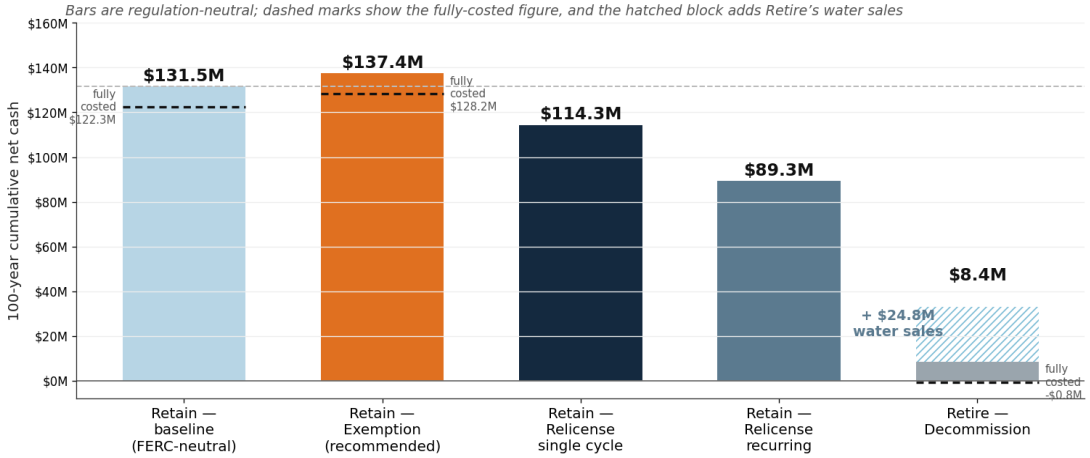
every forty years. The timing of the first cycle is itself a complicating factor: a 2033 completion lands in the plan's first years, before reserves have reached their targets, layering a large regulatory cost on top of the period in which the Authority is also funding reserve contributions and beginning infrastructure renewal. The cash-flow and reserve implications of that timing are analyzed in Section 5.

4.7 Valuing the Full Option Set

Layering each compliance path onto the regulation-neutral foundation from Section 3 produces the complete option space, valued on a single basis in Exhibit 2. The exemption path reaches approximately $137.4 million; a single relicensing cycle yields $114.3 million; recurring relicensing across the horizon yields $89.3 million; and retiring the asset yields $8.4 million. The bars are regulation-neutral for comparability; the dashed marks show the fully-costed figure once the recurring compliance program (Section 3.6) is carried, and the hatched block on the Retire bar adds the ~$24.8 million water-sale offset (Section 4.3.1). Even crediting Retire with water sales, it remains the lowest-value option by a wide margin.

Exhibit 2 · What each option is worth over 100 years

Bars are regulation-neutral; dashed marks show the fully-costed figure, and the hatched block adds Retire's water sales



Option (100-yr cumulative net)	Value	vs. exemption	vs. neutral baseline
Retain — Exemption (recommended)	$137.4M	—	+$5.9M
Retain — baseline (FERC-neutral reference)	$131.5M	−$5.9M	—
Retain — Relicense, single cycle	$114.3M	−$23.1M	−$17.2M
Retain — Relicense, recurring renewals	$89.3M	−$48.1M	−$42.2M
Retire — Decommission	$8.4M	−$129.0M	−$123.1M

Two conclusions follow directly from this exhibit. First, the regulatory fork never threatens the keep-hydro case: even recurring relicensing, the worst compliant outcome at $89.3 million, exceeds retiring the asset by roughly $81 million. The choice to retain is robust to how compliance is ultimately achieved. Second, the fork nonetheless matters a great deal for magnitude — approximately $48 million separates the best and worst compliant outcomes. Securing the exemption is therefore the

single highest-value move available within the recommended direction, and the difference between the two compliance paths is large enough to justify treating the exemption as a strategic priority rather than an administrative formality.

SECTION 5

5 · Risk Analysis and Stress Testing

A recommendation is only as good as its resilience to the assumptions that turn out to be wrong. This section applies a structured risk framework, then executes three sensitivity analyses — across two risk categories — on the variables most likely to deviate from the base case, derives the appropriate reserve and contingency targets, and consolidates the full risk picture.

5.1 A Framework: Direction, Magnitude, And Absolute Attractiveness

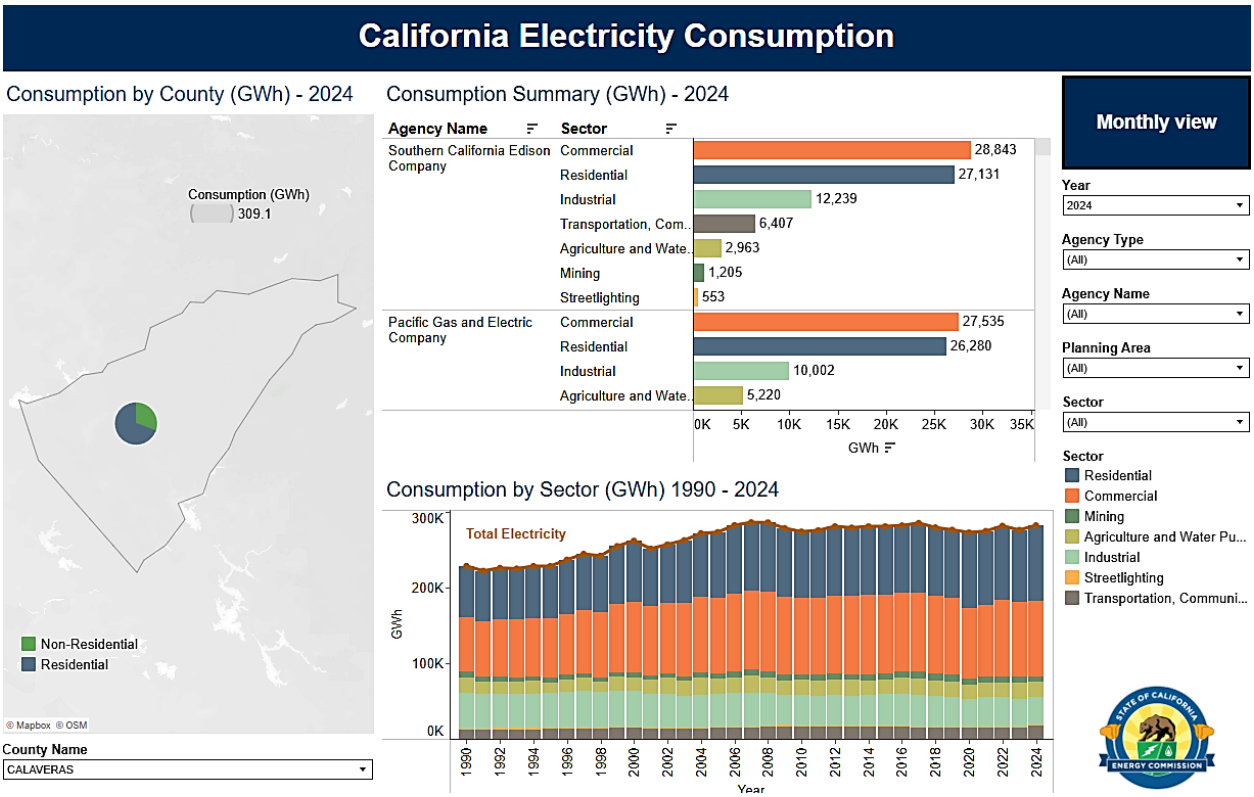
It is useful to distinguish three different things a risk can affect. A risk that changes the direction of the recommendation — that is, one that could make Retire preferable to Retain is decision-critical. A risk that changes the magnitude of Retain's advantage without reversing it affects how much is at stake but not the choice itself. And a risk that changes the absolute attractiveness of both options equally affects whether the enterprise is sustainable at all, but is neutral to the comparison. The stress tests are organized around this distinction, because conflating the three is the most common source of error in interpreting sensitivity analysis.

5.2 Stress Test 1 — Hydro Revenue Floor (−20%)

The test holds hydro revenue flat at $1.25 million per year for all hundred years — a sustained twenty-percent reduction from the $1.57 million baseline — representing a permanent decline from equipment aging, water-year variability, or unfavorable power-purchase renegotiation. This is the most aggressive single-variable stress in the battery, and deliberately so: because hydro revenue is the model's dominant lever, it is the assumption whose failure would do the most damage.

Under this stress, Retain's 100-year cumulative position falls from $131.5 million to $100.1 million — a reduction of $31.4 million — and its thirty-year position eases from $39.6 million to $30.2 million, though it remains positive in every year and therefore creates no reserve draw on its own. Even so, Retain still exceeds Retire by $91.7 million. A permanent twenty-percent haircut to the Authority's most important revenue line narrows the advantage substantially but does not come close to reversing it. The clear implication is operational: protecting hydro revenue is the first-priority risk-management task under the recommended path, and Section 7 recommends dedicated hydro-capital funding from operating surplus specifically to insure against the asset deterioration this stress models.

This stress test was built in to simulate a potential negative in planning. However, given CPUC data power consumption is rapidly increasing within the state of California due to vehicle electrification, data centers, and increase household consumption. Although this stress test was built in to show a negative to revenues the expectation given the CPUC data is that power generation revenues will continue to rise. This would create additional income revenues above the baseline figures built into this plan. This was done to ensure conservative estimates.



5.3 Stress Test 2 — O&M Inflation (+0.5–1%/Yr Over the First 30 Years)

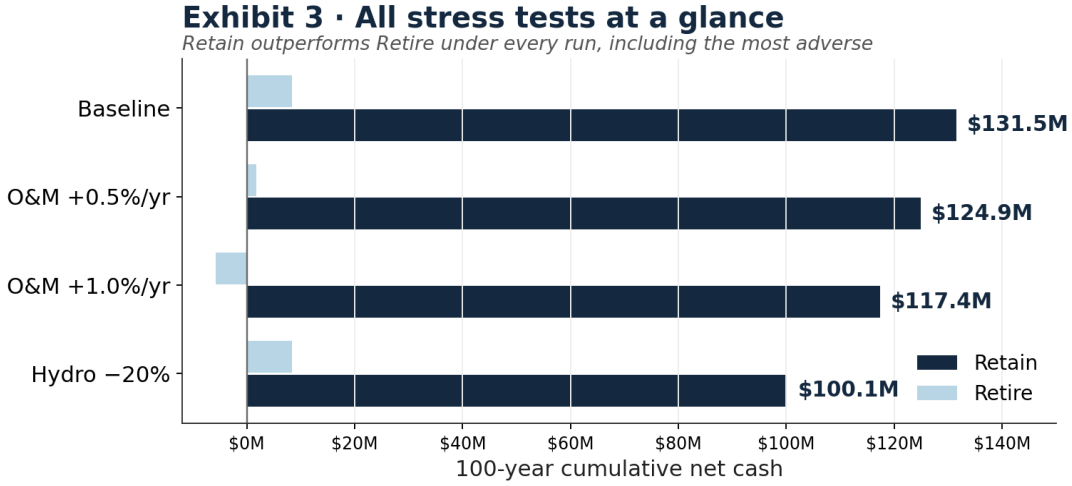
The flat-O&M convention is deliberately simple, and this test relaxes it in a measured, realistic way. Rather than assuming cost inflation compounds indefinitely, it applies a modest escalator — tested at both 0.5% and 1.0% per year — across the first thirty years (2028–2057), after which O&M is held flat at the level it has reached. This bounds the assumption to a credible window and avoids overstating long-run cost drift: by 2057 O&M reaches roughly $578,000 per year at 0.5% and $667,000 per year at 1.0%, against the $500,000 flat baseline, and it does not compound further thereafter.

The results are mild and, importantly, symmetric. At 0.5% per year, Retain's 100-year position eases from $131.5 million to $124.9 million and Retire's from $8.4 million to $1.8 million; at 1.0% per year, Retain settles at $117.4 million and Retire at negative $5.7 million. Because O&M costs are identical under both options, the escalator strikes them equally, so the advantage of Retain over Retire holds at exactly $123.1 million in both runs — unchanged from the baseline gap. The thirty-year position eases only slightly, from the base-case $39.6 million to between $37.2 million and $38.5 million, and the cumulative position remains positive throughout.

The interpretation is therefore unchanged in character but far less alarming in magnitude than an unbounded inflation assumption would suggest: cost inflation is a shared enterprise risk that affects how attractive both options are, not which one is better. It is a planning consideration to be monitored and managed through the periodic plan refresh, not a factor that bears on the retain-or-retire decision.

5.4 Synthesis of the Stress Tests

Exhibit 3 consolidates all three runs. The direction of the result is unanimous: Retain outperforms Retire in every case, including the most adverse. The smallest advantage, following the hydro stress, is still $92 million; the largest, under the symmetric O&M runs, is approximately $123 million.

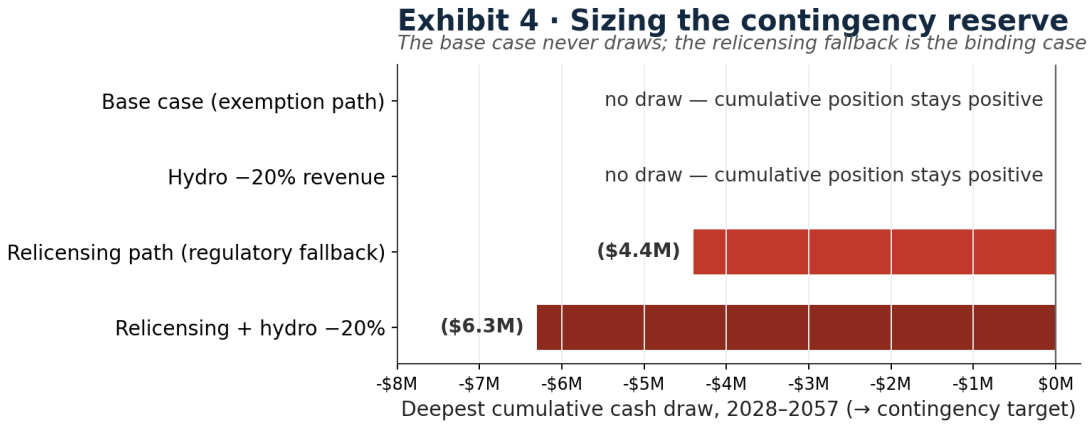


Read through the framework of Section 5.1, the battery yields a clear hierarchy. Nothing in the set changes the direction of the choice, because hydro revenue is larger than any plausible flex on the other inputs. Hydro revenue is the dominant magnitude lever — the only stress that meaningfully narrows the gap. And O&M inflation, now bounded to a realistic 0.5–1% over the first thirty years, affects the absolute attractiveness of both options equally while leaving the gap between them untouched. The Board can therefore proceed with confidence that the decision is robust, and focus its risk-management attention precisely where it matters: hydro-revenue protection as the leading operational priority, and disciplined cost management as a standing planning concern.

5.5 Reserve Sizing Under the Adopted Reserve Policy

The Authority must hold reserves sufficient to absorb the deepest cumulative cash draw it could face during the first thirty years without breaching liquidity. Because the base case carries no debt service, the deepest draw is not produced by the base case at all; it is produced by the regulatory fallback, and the contingency must be sized to that binding constraint rather than to the base case.

Exhibit 4 compares the candidate drivers. In the base case there is no draw: the cumulative position is positive from the first year, so the reserve targets the Board has already adopted (below) are the only requirement. The twenty-percent hydro stress likewise produces no draw. The binding constraint is the regulatory fallback: if the exemption is denied and the Authority must relicense, a $12.5 million cost phased across 2029–2033 drives the cumulative position to roughly negative $4.4 million at 2033, and a relicensing cycle that coincides with the hydro stress deepens that to roughly $6.3 million. Sizing the contingency to the compound case implies restricted funds of $6 to $7 million while the relicensing risk remains live.



Condition	Deepest draw, 2028–2057	Implied reserve target
Base case (exemption path)	none	Res. 22-11 policy targets
Hydro −20% revenue	none	Res. 22-11 policy targets
Relicensing path (regulatory fallback)	($4.4M)	~$4.5–5M contingency
Relicensing + hydro −20% (compound)	**($6.3M)**	**$6–7M contingency**

The reserve structure into which these figures fit is the one the Board has adopted. **Resolution No. 22-11, the Revised Utica Reserve Policy, establishes three reserve accounts — an Operating Reserve, a FERC Reserve, and a FERC/Dam Safety 5-Year and 10-Year Plan Reserve — and consolidates the former Emergency and Capital Reserves into the Operating Reserve.** The policy's targets are an Operating Reserve of 15 percent of operating budget expenses exclusive of depreciation plus any debt service, funded at $30,000 per year until that level (or $275,000) is reached; a FERC Reserve of $3,150,000 accumulated over ten years ($275,000 in FY 2022-23, $350,000 in FY 2023-24, and $400,000 per year from FY 2024-25 through FY 2028-29); and a FERC/Dam Safety Reserve set during each annual budget at the amount needed to fund the compliance activities due in that year. Emergency and capital uses of the Operating Reserve are defined in the policy, appropriations outside the annual budget require a four-fifths vote of the Board, and Section 6 of the policy allows the Board to modify the targeted amounts by majority vote on the basis of the annual reserve review.

Mapped onto that structure, this plan's findings translate into three practical rules. **First, the FERC Reserve is the natural home for the relicensing contingency: at its $3.15 million policy target it covers roughly half of the $6-to-7 million binding-case draw, and this plan recommends that the Board, acting under Section 6 of the policy, raise the FERC Reserve target to $6–7 million — or supplement it with a separately designated relicensing contingency of $3–4 million — until the exemption is secured, then return it to the policy level once compliance is locked in perpetuity.** Second, the Operating Reserve target of 15 percent of operating expenses is adequate for the base case, in which the enterprise never draws, and its capital provisions are the vehicle for the hydro-capital funding recommended in Section 7; the recurring dam-safety program (Section 3.6)

continues to be funded through the FERC/Dam Safety Reserve as the policy provides. Third, the next model revision should carry the relicensing cost as an explicit, scenario-switched line rather than as an external contingency, so that the reserve targets update automatically with the regulatory outcome and the annual reserve status report required by Section 6 of the policy can be drawn directly from the model.

5.6 Consolidated Risk Register

The following register consolidates the risks identified throughout the analysis with the mitigation appropriate to each. None of these risks inverts the recommendation; together they define the risk-management agenda for the recommended path.

Risk	Description	Mitigation
Hydro revenue decline (operational priority #1)	Flat $1.57M/yr could fall via equipment aging, dry years, or PPA terms; a sustained 20% cut costs ~$31M of cumulative value.	Fund hydro-capital renewal through the Operating Reserve's capital provisions (Res. 22-11); revisit revenue assumptions every 5 years.
Exemption denied or delayed	Triggers relicensing: ~$12.5M cost around 2033, recurring; FERC Reserve / contingency target rises to $6–7M.	Maintain a funded relicensing contingency; activate on the decision trigger in Section 7.
O&M cost inflation	Flat $500K/yr is a simplification; a 0.5–1%/yr escalator over the first thirty years reduces both options equally, leaving the choice unchanged.	Monitor through the 5-year plan refresh; build a modest, capped O&M escalator and an explicit capital-program line into the next revision.
Unsized renewal program	The infrastructure renewal program is not yet costed; the ~$1.31M/yr operating surplus is the funding capacity and must not be treated as free cash.	Complete the FY 2026-27 capital studies; carry the program as an explicit line in the next revision; fund it from surplus, reserves, and grants.
Irreversibility of Retire	Decommissioning forecloses generation permanently; restart optionality is effectively zero.	Recognize Retire's principal risk as permanent foreclosure of upside, not lower volatility.

5.7 Reframing the Risk of Retiring Hydroelectric Assets

Retire is frequently perceived as the low-risk option because it commits to no new spending. The analysis shows this framing to be mistaken on two counts. First, the $10 million decommissioning obligation is itself a fixed cost — an obligation by another name, paid by ratepayers — and it falls in the decade when the option is most cash-constrained, driving Retire underwater for decades while Retain never goes negative. Second, and more fundamentally, retiring the generation asset is effectively irreversible: the practical possibility of restarting generation decades later is close to zero. Retire's principal risk is therefore not financial volatility but the permanent foreclosure of upside — a category of risk that a conventional cost-avoidance lens misses entirely.

SECTION 6

6 · Ratepayer Impact

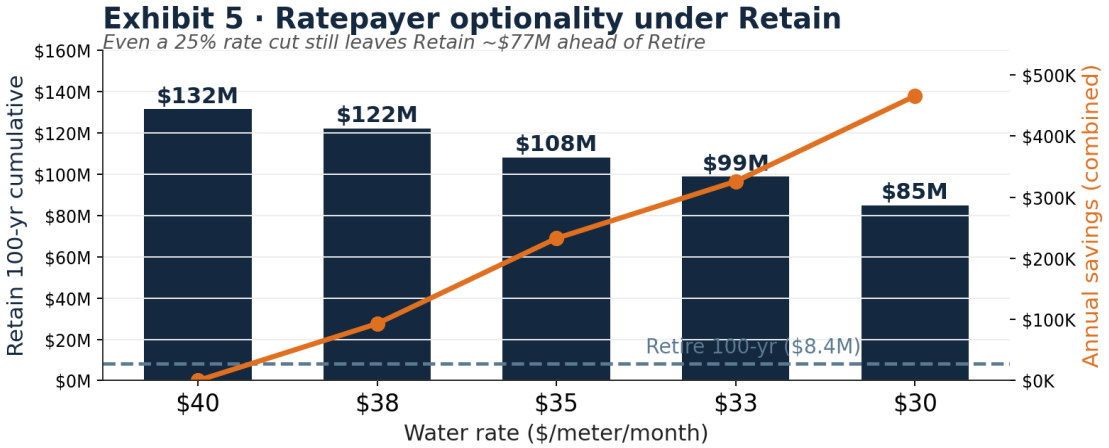
A funding decision of this scale is ultimately accountable to the ratepayers who finance it. This section examines what each option means for households, both in the near term and in the decades that follow.

6.1 Rate Continuity Under Both Options

For the foreseeable planning period, the two options are indistinguishable from a household's perspective. Both charge $40 per meter per month from 2028 onward, and neither requires a further rate increase to execute. Under Retain, infrastructure renewal and reserve contributions are funded entirely from the enterprise's own operating surplus, not from a rate hike, and the decommissioning obligation under Retire is likewise absorbed internally. The decision is therefore rate-neutral to ratepayers; the divergence between the options is a matter of the underlying enterprise's health, not of what households pay.

6.2 Rate-Relief Optionality Under Retain

The two options diverge in what they make possible, and only Retain creates room to lower rates. Because the enterprise runs a surplus of approximately $1.31 million per year under Retain, the Authority has the financial headroom to reduce water rates while still outperforming Retire by a wide margin. That headroom is not available on day one: the surplus is first committed to the reserve targets of Resolution No. 22-11 and to the infrastructure renewal program once it is sized (Section 2.4), and any rate reduction should follow the plan refresh at which those commitments are funded. Exhibit 5 and the table below quantify the optionality across a range of rates, applied conservatively from 2028 across the full horizon.



Water rate	Monthly saving / meter	Annual saving (combined)	Retain 100-yr	Beats Retire by
$40 (no change)	$0	$0	$132M	+$123M
$38	$2	$93K	$122M	+$114M

Water rate	Monthly saving / meter	Annual saving (combined)	Retain 100-yr	Beats Retire by
$35	$5	$233K	$108M	+$100M
$33	$7	$326K	$99M	+$90M
$30 (−25%)	**$10**	**$465K**	**$85M**	**+$77M**

Even the most aggressive relief tested — a twenty-five-percent reduction to $30 per meter, saving ratepayers roughly $465,000 per year in aggregate — still leaves Retain producing approximately $77 million more cumulative cash than Retire. The optionality is genuine and substantial: the Authority could meaningfully reduce household costs once reserves and the renewal program are funded and remain far ahead of the alternative.

6.3 What Retiring Hydroelectric Generation Forecloses

Under Retire, no equivalent rate reduction is financially feasible. The option’s steady-state surplus of approximately $183,000 per year cannot absorb the $465,000 of foregone revenue that a $10-per-meter cut would represent; the math simply does not allow it. The practical consequence is that retiring the asset does not merely produce a smaller surplus — it forecloses the possibility of future rate relief altogether. For ratepayers, the choice between the options is, in the long run, a choice between a path that can eventually lower their bills and one that cannot.

SECTION 7

7 · Recommendation and Implementation

7.1 The Recommendation

> **This report recommends that the Board authorize an integrated plan: (1)** retain hydroelectric operations and fund infrastructure renewal from the enterprise's operating surplus, reserves, and grant funding, with the renewal program to be sized by the FY 2026-27 capital studies; **(2)** pursue the FERC conduit exemption as the primary compliance path while maintaining a funded relicensing fallback; **(3)** set Member Agency rates in accordance with this plan to properly fund the Authority; and **(4)** maintain reserves at the targets adopted in Resolution No. 22-11, supplemented by a relicensing contingency.

7.2 Why the Recommendation Follows from the Analysis

Each element of the recommendation rests directly on a finding established earlier in the report. Retaining the asset follows from Section 3: hydro revenue is the dominant value driver, and Retain outperforms Retire at every horizon by a margin that Section 5 shows no stress test can reverse. Pursuing the exemption follows from Section 4: it is the highest-value compliance path and the single largest value-add available within the recommended direction. Holding the rate flat follows from Section 6: it is feasible under Retain in every year and preserves the rate-relief optionality that only Retain can deliver. And sizing the contingency to the relicensing fallback follows from Section 5.5: that fallback is the binding constraint on near-term liquidity. The recommendation is, in short, the conclusion the evidence compels rather than a preference imposed on it.

7.3 Decision Triggers

Because the regulatory outcome is not yet settled, the financial plan should be structured to switch automatically with it. The following triggers tie the financial model to the regulatory milestones, so that the governance document and the model tell the same story under either outcome.

Trigger	Financial action
Exemption approved / milestone reached	Lock the exemption path; release the relicensing contingency toward the Resolution 22-11 policy targets; reduce the regulatory-overhead line by ~$75K/yr.
Exemption denied or materially delayed	Activate the relicensing funding plan; raise the FERC Reserve / contingency target to $6–7M; phase the $10–15M cost across 2029–2033; revisit member-contribution smoothing.
New compliance conditions added	Update the FERC cost line in the model; re-run the 100-year forecast; bring a revised reserve target to the Board.

7.4 Phased Implementation

The recommendation is executed in five phases, from authorization through perpetual stewardship.

- **Phase 1 · Authorization (0–3 months).** Board adoption of this plan; public notice and ratepayer communication confirming rate continuity at $40/meter/month; commissioning of the FY 2026-27 capital studies that will size the infrastructure renewal program; confirmation of the exemption filing status.
- **Phase 2 · Reserve funding and capital needs assessment (3–9 months).** Confirm reserve balances against the targets of Resolution No. 22-11; designate the relicensing contingency that brings restricted funds to $6–7 million while the exemption remains pending; bring the annual reserve status report required by Section 6 of the policy to the Board; receive the capital studies and cost the infrastructure renewal program.
- **Phase 3 · Operations and stewardship (Years 1–30, 2028–2057).** Track actual versus modeled surplus annually; refresh the plan every five years, re-baselining hydro revenue, O&M, and meter counts; fund hydro-capital renewal from operating margin through the Operating Reserve's capital provisions under Resolution No. 22-11 to protect the asset that underpins the entire case.
- **Phase 4 · Capital program and rate review (first plan refresh after the capital studies are complete).** With the infrastructure renewal program sized and reserves at target, evaluate the rate-relief options of Section 6 using then-current data; refresh the rate-sensitivity analysis against the prevailing cost structure; decide whether to implement a ratepayer rebate or hold rates and accelerate capital reinvestment.
- **Phase 5 · Perpetual stewardship (2058 onward).** Provide quarterly Board reporting against the long-range model; conduct a full strategic review every ten years to ensure the assumptions remain valid; maintain hydro generation and the perpetual exemption as core enterprise assets.

7.5 Governance and Ongoing Stewardship

Beyond the immediate authorization, the analysis points to four standing additions that should be embedded in the next plan revision and maintained thereafter: an explicit infrastructure-renewal line once the FY 2026-27 capital studies are complete; an explicit, scenario-switched FERC cost line so the model reflects the regulatory outcome automatically; a modest, capped O&M escalator in the 0.5-to-1.0-percent range applied over the first thirty years, with a corresponding cost review at each plan refresh; a hydro-revenue sensitivity capability that models defined reduction events explicitly. The meter count should continue to be held flat at its current level, consistent with realistic expectations for the service area, rather than carrying any growth assumption. Together these convert the present analysis from a one-time decision document into a living governance instrument.

SECTION 8

8 · Conclusion

The Authority's long-term funding decision, examined over the full century its assets will serve, resolves into a clear and well-supported conclusion. Hydroelectric generation is the dominant driver of the Authority's financial future, contributing roughly $157 million over the horizon and accounting for almost the entire difference between the available paths. Retaining that asset and funding infrastructure renewal from within the enterprise produces a 100-year cumulative position of approximately $131 million on a regulation-neutral basis, against roughly $8 million if the asset is retired — and securing a perpetual FERC exemption lifts the recommended path to approximately $137 million while avoiding a recurring multi-million-dollar obligation.

That conclusion is not contingent on optimistic assumptions. It survives every stress test in the battery, including a permanent twenty-percent reduction in generation revenue and a realistic O&M cost-inflation scenario. In every case, retaining the asset remains the superior choice, by a margin of no less than $92 million. The risks that genuinely warrant management attention are well-identified — hydro-revenue protection as the leading operational priority, with disciplined cost management and the FERC compliance outcome as the principal planning concerns — and each has a defined mitigation.

Authorizing the recommended plan is the value-creating decision, and deferring it is not a neutral alternative: it leaves roughly $123 million of cumulative value on the table and forecloses the only path to future rate relief for ratepayers. The Board can proceed with confidence that the recommendation is sound, robust, and accountable to the ratepayers and future generations the Authority serves.

Appendix A · Key Assumptions

Input	Value	Notes
Forecast start / horizon	2028 / 100 yrs to 2127	All cash flows nominal
Infrastructure renewal program	Not yet sized	To be established by FY 2026-27 studies; funded from surplus, reserves, grants (Section 2.4)
Hydro revenue (Retain)	$1,569,889 / yr	Held flat; $157.0M over 100 yrs
Water-rate revenue	$1,861,920 / yr	3,879 meters × $40/mo × 12; $186.2M/100 yrs
UPUD / City of Angels Camp meters	2,079 / 1,800	3,879 total; held flat — no growth assumed
Monthly water rate	$40 / meter	Same in both options, 2028 onward
O&M cost	$500,000 / yr	held flat in base case (stressed at +0.5–1%/yr over 30 yrs)
Salary base — Retain (yr 3)	~$1,619,192	After 3 × 5% increases, 2028–2030
Salary base — Retire (yr 3)	~$1,179,146	Reduced no-hydro staffing
Decommissioning (Retire)	$10,000,000	Spread $1M/yr over 2028–2037
Water sales (Retire only)	~$247.5K / yr avg ($24.8M/100 yrs)	WY-weighted; 9,000/5,500/2,000 AF for WY1/2/3 at $45/AF (Section 4.3.1)
Exemption cost / savings	~$1.5M / −$75K per yr	One-time cost; perpetual overhead saving
Relicensing cost	$10–15M (mid $12.5M)	~2033; recurs ~2073 and ~2113
Recurring compliance cost	~$91,500 / yr (~$9.2M/100 yrs)	Dam-safety/FERC schedule; applied to both options (Section 3.6); plus ~$0.6M one-time
Reserve target	Res. 22-11 targets + $6–7M contingency while exemption pending	Operating 15% of opex; FERC $3.15M; Dam Safety as budgeted (Section 5.5)

Assumptions:

Assumptions had to be developed in order to develop a long-term analysis. None of these are locked in figure, but more accurately are baselines to which deviations can easily be adapted as decision points become clearer such as capital program costs or water conveyance fees. These baseline assumptions provide the Board with a starting point that can easily be compared and adapted as necessary to hone in more precise numbers and calculations while still supported by this report's long-term vision.

Forecast start / horizon: 2028, this allows time for full analysis and appropriate Prop 218 processes. The FY2026-27 has already been approved and adopted by the Board on May 20, 2026 funding UWPA for the next fiscal year. The 100-year model was selected to appropriate evaluated the lifecycle of our hydroelectric infrastructure.

Infrastructure renewal program: No loan or other financing instrument exists as of this revision, and none is assumed. Known capital improvement plan needs will be costed by the studies funded in FY 2026-27; until then the program is carried as unsized so that this plan does not speculate on

either its amount or its funding mechanism. The decision on how to fund the program will also need to reflect the reserves saved for the FERC exemption/relicensing fork established in this plan.

Hydro revenue: The figure used is the average of 32-years' worth of water year data. Over 32 years the average water year equals WY 2.0 and can confidently be used with that many years of data. Over the same 30-year period 15 WY 1's have occurred. This would bridge the year-over-year deficits built into this report; however, we must utilize these year-over-year surpluses in reserve accounts to prepare for drought years.

Water-rate revenue: The water conveyance fee collected by UPUD and the City of Angels Camp has historically underfunded Utica Water and Power Authority *see (historical analysis).* This strategic funding plan aims to correct this multi-decade underfunded approach to ensure long-term sustainability. Given the historically low funding the Authority already currently sits at a critical juncture where a large increase in fees collected has to be undertaken rather than a more preferred method of gradual increases. Unfortunately, the faster approach is more shocking to absorb by rate payers but years of deferral has created this shock in fees. The baseline for this study raises current fees from approximately $18 currently to $40 as the base. It is understood that UPUD and the City of Angels Camp charges these fees based on the total amount divided by number of meters within their respective areas of influence. This means that the rates for each member entity will not be equal to ratepayers and vary slightly. However, the baseline attempts to make a whole number to build into financial planning estimates. For example, UPUD may charge $38 while the City of Angels Camp has to charge $42, but the mean average would still equal to the $40 baseline.

UPUD / City of Angels Camp meters: This was sourced as an approximate from rate studies. Exact numbers may vary slightly. No growth was assumed over the span of the 100-year analysis, but these can be re-examined at appropriate intervals and still adjust in concert with this financial plan as needed.

Monthly water rate: This is the baseline water conveyance fee necessary. Water rate multiplied by number of meters will give the total revenue above.
O&M cost: This amount is a baseline figure for annual flume/canal repairs and capital outlay expenses. This is the most sensitive baseline figure because it can be affected by grant matching, cost of goods, inflation, tools and equipment, and vary greatly year-over-year. This must be managed appropriately through proper fiscal management and reserve account balancing.

Salary base – Retain (3-yr): As part of this analysis a 5% annual three-year increase in salaries was included to try and align the Authorities salaries more inline to market rates to improve recruitment and retention necessary to support proper succession planning.

Salary base – Retire (3-yr): This baseline figure was determined based on retiring hydroelectric assets and realigning the necessary staffing model to continue water conveyance. This was also built with the same 5% annual three-year increase as the retain model.
Decommissioning (Retire): This was a conservative estimate of costs associated with the studies, planning, consultant costs, and other costs built into decommissioning of both hydroelectric generators. This conservative cost could raise by $5-10 million dollars depending on what requirements would be to decommission.
Water sales (Retire only): This applies only under Retire and represents the sale of raw water that would otherwise have driven the powerhouses. Volumes are estimated on the established water-year classification (the same basis as hydro revenue): approximately 9,000 acre-feet in a WY 1 year, 5,500 in WY 2, and 2,000 in WY 3, with none in the drier WY 4–6 years, all at $45 per acre-foot. Frequency-weighting these across the 30-year record (mean WY 2.0) gives an average of about $247,500 per year, roughly $24.8 million over the horizon, with lumpy year-to-year receipts. The $45 rate is held flat in nominal terms and no firm long-term purchase commitment is assumed; both price

and volume can be revisited as markets and water-right conditions become clearer. See Section 4.3.1.

Exemption cost / savings: The Authority is currently going through the process of a FERC exemption. Should this be successful this was built into the financial plan to show the impact on long-term planning.

Relicensing cost: Although the Authority is working through the FERC exemption application process there is no guarantee of a successful outcome. Any long-term financial plan must consider the costs associated with relicensing with FERC.

Recurring compliance cost: This figure is derived directly from the Authority's compliance schedule by annualizing the recurring dam-safety and FERC items — annual certifications and inspections, the five-year cycle of surveys, EAP exercises, the ODSP re-write and the Part 12D safety review, and the ten-year cycle of penstock ROV inspections, inundation-map updates and the Part 12D comprehensive and periodic inspections. It excludes the separately-modeled exemption and relicensing fork. Because these obligations attach to the dams rather than to generation, the cost is applied equally to both Retain and Retire, consistent with Section 3.5; the realistic reduction under Retire is nominal. The schedule also carries roughly $0.6 million of one-time, near-term studies (concrete testing, flood-study and seismicity updates, and a stability-analysis update) concentrated in the first several fiscal years. Both should be carried as explicit lines in the next workbook revision.

Reserve target: Reserve targets follow the Revised Utica Reserve Policy adopted by Resolution No. 22-11 (Operating Reserve, FERC Reserve, and FERC/Dam Safety 5-Year and 10-Year Plan Reserve). The financial assessment and strategic funding plan must evaluate both FERC forks into its reserve contributions and planning; the $6–7 million relicensing contingency derived in Section 5.5 is presented as a recommended modification of the FERC Reserve target under Section 6 of the policy, to be sustained through all stress test factors.

Appendix B · Detailed Financial Tables

B.1 Annual Net Cash Flow by Period

Period	Retain — annual net	Retire — annual net
2028	+$1,463K	—
2028–2037 (decommissioning)	—	−$708K to −$817K/yr
2029–2030 (salary ramp)	+$1,390K to +$1,313K	—
2031–2127 (steady state)	+$1,313K/yr	—
2038–2127 (steady state)	—	+$183K/yr

B.2 Cumulative Net Position at Strategic Horizons

Horizon	End year	Retain net	Retire net	Retain advantage
25 years	2052	$33.0M	($5.3M)	+$38.3M
30 years	2057	$39.6M	($4.4M)	+$44.0M
50 years	2077	$65.9M	($0.7M)	+$66.6M
75 years	2102	$98.7M	$3.9M	+$94.8M
100 years	**2127**	**$131.5M**	**$8.4M**	**+$123.1M**

Appendix C · Stress-Test Results in Detail

Stress test	Retain 30-yr	Retain 100-yr	Retire 100-yr	Advantage
Baseline	$39.6M	$131.5M	$8.4M	$123.1M
Hydro −20%	$30.2M	$100.1M	$8.4M	$91.7M
O&M +0.5%/yr (30 yr)	$38.5M	$124.9M	$1.8M	$123.1M
O&M +1.0%/yr (30 yr)	$37.2M	$117.4M	($5.7M)	$123.1M

Reading the table. The 30-year column is the cumulative position at year thirty (2057), shown for comparability with the reserve analysis in Section 5.5; it is positive in every run, which is why no reserve draw arises outside the relicensing fallback. The advantage column is the Retain premium at year 100; it is exactly $123.1M for the symmetric O&M-inflation runs, which strike both options identically, and narrows but never closes for the asymmetric hydro-revenue stress, which affects Retain alone. Meter count is held flat across all runs, consistent with the realistic service-area expectation.

Appendix D · Methodology, Sources, and Traceability

This report consolidates and extends three prior working analyses — an executive briefing on the retain-or-retire decision, a FERC pathway analysis of the exemption-versus-relicensing fork, and a stress-test addendum executing the sensitivity runs — into a single integrated study, with the meter-growth and O&M-inflation assumptions revised to reflect a flat meter count and a capped 0.5–1% cost escalator. All three derive from the same 100-Year Strategic Financial Plan workbook, and every shared figure has been cross-verified across them and reconstructed independently for this report; the figures tie out to the published values at every checkpoint.

Terminology traceability. Earlier working documents used “Scenario A/B” labels that carried different meanings in different contexts. To eliminate that ambiguity, this report uses descriptive terms throughout. For anyone consulting the source files, they map as follows:

Term used here	Prior label	Meaning
Retain Hydro Assets	Briefing “Scenario A”	Continue hydro operations
Retire Hydro Assets	Briefing “Scenario B”	Decommission hydro
Exemption path	Plan “Scenario A”	Conduit exemption, ~2028, perpetual
Relicensing path	Plan “Scenario B”	Full FERC relicense, ~2033, recurring

All inputs are editable on the Assumptions tab of the source workbook, and changing a value there propagates through both options. Recommended additions for the next revision, drawn from the risk analysis, include an explicit infrastructure-renewal line, an explicit relicensing-cost line, a modest capped O&M escalator (0.5–1% over the first thirty years), and a dedicated hydro-revenue sensitivity capability. The meter count is held flat at its current level throughout, with no growth assumption, consistent with realistic expectations for the service area.

Appendix E · Glossary

Term	Definition
Conduit exemption	A perpetual FERC authorization for qualifying conduit hydropower, issued once with no renewal requirement.
Cumulative net cash flow	The running total of annual net cash flow from 2028 forward; the primary basis for comparing options.
Decommissioning	The retirement and safe shutdown of the hydro assets under Retire, costed at $10M over 2028–2037.
FERC	The Federal Energy Regulatory Commission, which licenses the Authority's two hydroelectric projects.
JPA / member entities	The joint-powers structure through which UWPA serves UPUD and the City of Angels.
Nominal dollars	Dollar figures not adjusted for inflation; the convention used throughout this report.
Relicensing	Full FERC license renewal, costed at $10–15M per ~40-year cycle, with recurrence inside the horizon.
Reserve Policy (Res. 22-11)	The Revised Utica Reserve Policy adopted by the Board, establishing the Operating Reserve, FERC Reserve, and FERC/Dam Safety 5-Year and 10-Year Plan Reserve and their funding targets.