UTICA

WATER AND POWER AUTHORITY

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UTICA WATER AND POWER AUTHORITY MASTER PLAN

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UTICA WATER AND POWER AUTHORITY MASTER PLAN

Executive Summary

The Utica Water and Power Authority (UWPA) is the steward of a historically significant and operationally complex system of water conveyance and hydroelectric infrastructure that serves critical public purposes within Calaveras County and the surrounding region. Much of this infrastructure dates back more than a century and operates in a challenging environment characterized by aging assets, wildfire exposure, limited access, financial constraints, and evolving regulatory oversight.

This Master Plan establishes a long-range planning and governance framework to guide UWPA's stewardship of these critical assets over a 10- to 20-year horizon. It is intentionally policy-focused rather than project-specific. The Plan does not authorize capital projects, expenditures, or regulatory actions. Instead, it defines the principles, assumptions, and decision-making framework that inform future actions taken through UWPA's Strategic Plan, Capital Improvement Plan (CIP), and annual budget process.

A central purpose of this Master Plan is to support disciplined, defensible decision-making under conditions of uncertainty. UWPA's planning environment includes significant external risks, including wildfire, environmental variability, regulatory change, and financial volatility. In response, this Plan emphasizes reliability, public safety, regulatory compliance, risk reduction, and long-term financial sustainability while preserving flexibility to adapt as conditions evolve.

Regulatory compliance is treated as a core institutional value throughout this Plan. UWPA recognizes its responsibility as a public agency entrusted with critical infrastructure and adopts a posture of responsible self-compliance regardless of regulatory pathway. The Master Plan is structured to remain valid under multiple potential regulatory outcomes, including continued hydroelectric licensing or operation under a Federal Energy Regulatory Commission (FERC) exemption, without assuming reduced standards or diminished oversight.

This Master Plan's financial strategy is grounded in a long-range evaluation of UWPA's principal financial and infrastructure decisions over the full lifecycle of its assets. That evaluation establishes that continued operation of UWPA's hydroelectric generation is the value-creating path for the enterprise and the principal driver of its long-term financial position; that securing a perpetual FERC exemption is the highest-value compliance outcome; that necessary infrastructure recapitalization can be financed through disciplined long-term borrowing without disrupting rate continuity; and that protecting the Authority's generation revenue through ongoing reinvestment is its most important standing financial-protection task. The Plan adopts these conclusions as guiding direction while leaving specific financing, rate, and project decisions to the Strategic Plan, Capital Improvement Plan, and annual budget process.

The Master Plan also reflects lessons learned from UWPA's operational history, including past wildfire events that demonstrated the vulnerability of exposed infrastructure and the importance of resilience, recoverability, and emergency preparedness. Rather than attempting to eliminate all risk, the Plan prioritizes identification and mitigation of high-consequence risks, phased investment aligned with financial capacity, and adaptive management informed by experience and ongoing monitoring.

Adoption of this Master Plan signifies the UWPA Board of Directors' commitment to transparent governance, disciplined planning, and responsible stewardship of the Utica system for present and future generations. The Plan provides a durable framework for aligning long-term objectives with near-term priorities while preserving Board authority, local control, and accountability as UWPA continues to navigate an increasingly complex operating environment.

1. Introduction, Purpose, and Authorization

1.1 Introduction

The Utica Water and Power Authority (UWPA) owns and operates a unique system of water conveyance and hydroelectric facilities that serve municipal, agricultural, and public purposes within Calaveras County. The infrastructure under UWPA's stewardship is historically significant, operationally complex, and critical to the reliability of downstream water supply and power generation.

UWPA's facilities face increasing challenges related to aging infrastructure, wildfire exposure, access limitations, financial constraints, and regulatory oversight. These challenges require long-range, disciplined planning to ensure that decisions made today preserve flexibility, manage risk, and support reliable service well into the future.

This Master Plan is intended to provide that long-range planning framework.

1.2 Purpose of the Master Plan

The purpose of this Master Plan is to establish a long-term planning and governance framework to guide UWPA's stewardship of its water conveyance and hydroelectric infrastructure over a 10- to 20-year planning horizon.

Specifically, this Master Plan is intended to:

- Define UWPA's long-term service objectives and planning philosophy
- Identify key planning drivers, constraints, and risks affecting UWPA's system
- Establish planning assumptions to guide future decision-making
- Provide a consistent framework for evaluating infrastructure needs
- Inform future Strategic Plans, Capital Improvement Plans (CIPs), and annual budgets

This Master Plan emphasizes reliability, regulatory compliance, risk reduction, and financial sustainability. It is designed to support informed Board decision-making under conditions of uncertainty, including potential changes in regulatory requirements and external risk factors.

1.3 Scope and Limitations

This Master Plan is a policy and planning document. It does not authorize specific projects, capital expenditures, rate changes, or contractual commitments.

In particular:

- This Master Plan does not approve or commit UWPA to any specific capital project
- This Master Plan does not establish project schedules, costs, or funding mechanisms
- This Master Plan does not replace or supersede the Capital Improvement Plan, Strategic Plan, or annual budget process

Specific infrastructure projects, funding decisions, and implementation actions are evaluated, approved, and funded separately through UWPA's established governance processes.

The Master Plan is intended to guide those future decisions, not to predetermine them.

1.4 Authorization and Governance

This Master Plan is adopted by the UWPA Board of Directors pursuant to its authority under the Joint Powers Agreement and applicable state law. The Board retains full discretion over policy direction, budgeting, capital investment, and regulatory strategy.

Adoption of this Master Plan signifies the Board's intent to use it as a guiding framework for long-range planning and decision-making. It does not create binding obligations, vested rights, or enforceable commitments.

The Board may amend, revise, or replace this Master Plan at any time as conditions, priorities, or regulatory circumstances change.

1.5 Relationship to Other Planning Documents

UWPA employs an integrated planning framework consisting of three primary documents:

• Master Plan – Establishes long-term objectives, planning assumptions, and decision-making principles (10–20 years)
• Strategic Plan – Identifies near-term priorities, performance objectives, and risk posture (approximately 3–5 years)
• Capital Improvement Plan (CIP) – Identifies, prioritizes, and schedules specific capital projects and funding strategies over a rolling multi-year period

This Master Plan provides the long-range context within which Strategic Plans and CIPs are developed and updated. Consistency among these documents is essential to ensure transparent, disciplined, and adaptable governance.

1.6 Planning Horizon and Flexibility

The planning horizon for this Master Plan is intentionally long-term to reflect the lifecycle of UWPA's infrastructure and the importance of preserving flexibility in the face of uncertainty. The plan does not rely on detailed forecasting or assumptions about growth, expansion, or future demand.

Instead, it establishes a framework that allows UWPA to adapt to changing conditions, regulatory outcomes, and financial realities while maintaining a consistent commitment to system reliability and responsible stewardship.

2. Planning Framework and Relationship to Other Plans

UWPA employs an integrated planning framework designed to align long-term vision, near-term priorities, and actionable capital investments. This framework ensures that decisions are deliberate, transparent, and consistent with UWPA's governance responsibilities and risk posture.

2.1 Overview of the Integrated Planning Framework

UWPA's planning framework consists of three primary planning documents, each serving a distinct role and time horizon:

Master Plan (10–20 Year Horizon)

The Master Plan establishes UWPA's long-term service objectives, planning assumptions, and decision-making principles. It provides the overarching policy and planning framework that guides UWPA's stewardship of its water conveyance and hydroelectric infrastructure over a 10- to 20-year horizon.

The Master Plan focuses on reliability, safety, regulatory compliance, risk management, and financial sustainability. It does not authorize specific projects or expenditures, nor does it rely on detailed forecasts or prescriptive solutions. Instead, it defines the boundaries, constraints, and priorities within which future decisions are evaluated.

By emphasizing principles and assumptions rather than project lists, the Master Plan preserves flexibility and remains applicable under a range of future conditions.

Strategic Plan (Approximately 3–5 Year Horizon)

The Strategic Plan translates the Master Plan's long-term direction into near-term priorities, goals, and performance objectives over a three- to five-year planning horizon. It reflects current conditions, operational realities, and emerging risks while remaining grounded in the Master Plan's long-term framework.

Strategic Plan updates allow UWPA to adjust course as conditions evolve, including changes in regulatory requirements, system condition, financial capacity, or risk exposure. The Strategic Plan serves as a key tool for aligning organizational focus, resource allocation, and Board oversight.

Capital Improvement Plan (Approximately 5–10 Year Horizon)

The Capital Improvement Plan (CIP) is the primary implementation mechanism for UWPA's infrastructure strategy. The CIP identifies, prioritizes, and schedules specific capital projects and associated funding strategies over a rolling five- to ten-year period.

Projects included in the CIP are evaluated for consistency with the Master Plan's planning principles and the Strategic Plan's priorities. The CIP provides greater specificity regarding scope, cost, timing, and funding while remaining adaptable to changing conditions.

Unlike the Master Plan, the CIP is updated regularly to reflect project progress, refined cost estimates, funding availability, and regulatory developments.

Integration and Governance

Together, the Master Plan, Strategic Plan, and Capital Improvement Plan form a cohesive planning system. The Master Plan establishes direction, the Strategic Plan sets priorities, and the CIP implements projects. Annual budgets provide formal authorization for expenditures and staffing.

This integrated approach supports effective Board governance, ensures accountability, and enables UWPA to manage risk and uncertainty while maintaining reliable service and responsible stewardship of its infrastructure.

2.2 Role of the Master Plan

The Master Plan provides the foundational policy framework for UWPA's long-range planning and decision-making. It establishes the strategic context within which all subsequent operational, capital, financial, and regulatory actions are evaluated. The Master Plan itself does not authorize specific projects, expenditures, or rate actions; rather, it defines the governing principles, assumptions, and constraints that guide future Board and management decisions.

By focusing on long-term objectives, system reliability, regulatory compliance, and risk management—rather than project-level prescriptions—the Master Plan supports disciplined governance while preserving flexibility to respond to evolving legal, environmental, financial, and operational conditions. This approach enables UWPA to align future actions with applicable regulatory requirements while maintaining adaptive, transparent, and fiscally responsible decision-making.

2.3 Role of the Strategic Plan

The Strategic Plan serves as UWPA's primary near-term implementation instrument for the Master Plan. It translates the Master Plan's long-range policy direction into prioritized initiatives, organizational objectives, and performance measures over a three- to five-year planning horizon.

Through regular updates, the Strategic Plan enables UWPA to respond to changing operating conditions, regulatory requirements, and emerging risks while maintaining alignment with the Master Plan's long-term objectives and governance framework. This structure ensures continuity of strategic direction while supporting accountability, transparency, and adaptive management.

2.4 Role of the Capital Improvement Plan

The Capital Improvement Plan (CIP) is the primary mechanism for implementing UWPA's long-term infrastructure strategy. It translates system needs, planning assumptions, and policy direction established in the Master Plan and Strategic Plan into specific capital projects, including scope, cost estimates, schedules, and proposed funding approaches.

The CIP is maintained and updated on a rolling basis to reflect project advancement, refined cost information, funding availability, system condition assessments, and applicable regulatory or compliance requirements. This process supports informed Board oversight, fiscal discipline, and alignment of capital investments with UWPA's long-term objectives and regulatory obligations.

2.5 Relationship to Annual Budgeting and Governance

The annual budget provides the formal authorization for expenditures, staffing levels, and resource allocations necessary to implement the Strategic Plan and the Capital Improvement Plan. Budget development is informed by UWPA's long-range planning framework but is reviewed and approved separately through the Board's established governance and fiscal oversight processes.

Collectively, the Master Plan, Strategic Plan, Capital Improvement Plan, and annual budget constitute an integrated system of planning, execution, and accountability. This framework supports effective Board oversight, regulatory compliance, financial stewardship, and transparent decision-making, while ensuring that near-term actions remain aligned with UWPA's long-term objectives and public responsibilities.

2.6 Plan Alignment and Consistency

Maintaining alignment and internal consistency among UWPA's planning documents is essential to effective governance and informed decision-making. When updates to any planning document indicate changes to underlying assumptions, priorities, risk considerations, or strategic direction, related plans are reviewed and updated as appropriate to preserve coherence across the planning framework.

This integrated approach ensures that UWPA's long-term vision, near-term actions, and financial commitments remain aligned, transparent, and defensible, supporting regulatory compliance, fiscal responsibility, and sustained Board oversight.

3. Key Planning Drivers, Constraints, and Risks

UWPA's planning environment is influenced by a combination of physical, operational, financial, and regulatory factors that shape long-term decision-making. These drivers, constraints, and risks inform the assumptions and policy frameworks established in this Master Plan and provide the context for evaluating future actions.

Understanding and proactively managing these factors is essential to effective governance, regulatory compliance, and prudent infrastructure stewardship. A disciplined, risk-based planning approach enables UWPA to balance reliability, affordability, and sustainability while maintaining flexibility in the face of changing conditions.

3.1 Aging Infrastructure and Asset Condition

Much of UWPA's water conveyance and hydroelectric infrastructure was constructed decades ago, with portions dating back more than a century. While these facilities have been maintained, modified, and adapted over time, many assets exceed their original design life and were built under standards that differ significantly from current engineering, safety, and operational practices.

Aging infrastructure increases UWPA's exposure to unplanned outages, emergency repairs, and escalating lifecycle costs. In some locations, asset deterioration may be difficult to detect prior to failure, particularly where facilities are remote, buried, or otherwise difficult to access. These conditions heighten operational and financial risk and underscore the importance of proactive condition assessment, risk-based prioritization, and timely reinvestment to support long-term reliability, safety, and regulatory compliance.

3.2 Wildfire Exposure and Emergency Risk

UWPA's water conveyance and hydroelectric systems traverse heavily forested, mountainous terrain that is increasingly exposed to wildfire risk. Wildfires pose direct threats to aboveground infrastructure—including flumes, powerhouses, control structures, transmission and distribution equipment—as well as indirect risks related to access constraints, power outages, debris flows, and post-fire erosion.

UWPA's experience during the 2001 Darby Fire in Calaveras County underscores the severity of these risks. The fire destroyed significant portions of UWPA's conveyance system, including major flume segments, resulting in extended service disruption and emergency reconstruction under challenging conditions. That event highlighted the vulnerability of exposed assets, the difficulty of accessing damaged facilities during and after wildfire events, and the importance of advance planning, redundancy, and rapid response capability. The lessons learned from the Darby Fire continue to inform UWPA's approach to infrastructure resilience, emergency preparedness, and capital reinvestment.

Wildfire-related emergencies may restrict access to critical facilities for extended periods, delay repairs, and amplify the consequences of infrastructure failure—particularly when water supply reliability is essential for fire suppression, public safety, and recovery efforts. Post-fire conditions, including slope instability and debris flows, can further threaten system integrity even after the initial event has passed.

Planning for wildfire resilience and emergency response is therefore a central driver of UWPA's long-term infrastructure strategy. This includes prioritizing risk reduction for high-consequence assets, improving system robustness and recoverability, and ensuring that planning, capital investment, and operational decisions account for increasingly frequent and severe emergency conditions.

3.3 Limited Redundancy and Single-Point Failures

Due to the historic configuration of the Utica system and the geographic constraints of the service area, portions of UWPA's infrastructure have limited redundancy. In some locations, individual facilities, conveyance segments, or operational components function as single points of failure, where loss or impairment could significantly disrupt water deliveries, hydroelectric generation, or both.

While full system redundancy is not feasible or cost-effective in all cases, understanding these vulnerabilities is essential to informed governance and long-term planning. The Master Plan emphasizes identification of high-consequence failure points, evaluation of risk exposure, and consideration of mitigation strategies that reduce the likelihood of failure or improve system recoverability when failures occur. This approach supports prudent investment decisions that balance reliability, affordability, and operational resilience within UWPA's constrained operating environment.

3.4 Financial Constraints and Affordability

UWPA operates within financial constraints that directly influence the pace and scale of infrastructure investment. Available revenues must support ongoing operations and maintenance, regulatory and compliance obligations, capital reinvestment needs, and reserve levels sufficient to respond to emergencies and unplanned events.

Given these constraints, capital investments must be carefully phased and prioritized to balance near-term affordability with the long-term risks and costs associated with deferred maintenance, emergency repairs, and service disruption. Financial limitations reinforce the need for disciplined, risk-based decision-making and transparent evaluation of tradeoffs, ensuring that limited resources are directed toward the highest-consequence needs while preserving UWPA's long-term financial sustainability and operational resilience. The Authority's capacity to manage these constraints depends heavily on protecting its hydroelectric generation revenue, which is the principal resource enabling UWPA to fund reinvestment from its own operations rather than relying solely on member contributions or deferral.

3.5 Regulatory and Compliance Uncertainty

UWPA operates within a complex and evolving regulatory environment that includes federal oversight of hydroelectric facilities and state requirements governing water rights, environmental protection, workplace safety, and dam safety. A central regulatory consideration for UWPA is the ongoing pursuit of a Federal Energy Regulatory Commission (FERC) exemption for its hydroelectric facilities. While UWPA is actively working toward this outcome, the timing, scope, and ultimate regulatory pathway remain subject to external agency review and determination.

UWPA's long-term vision under a potential exemption is grounded in responsible self-compliance. Exemption from FERC licensing does not diminish UWPA's commitment to safety, environmental stewardship, or operational accountability. Rather, UWPA views responsible self-compliance as a core governance value, one that emphasizes rigorous internal standards, proactive risk management, transparent oversight, and continued adherence to applicable state and federal requirements. This approach reflects UWPA's responsibility as a public agency entrusted with critical water and energy infrastructure.

Regulatory uncertainty is therefore a defining long-term planning risk for UWPA. This Master Plan is intentionally structured to remain valid under multiple regulatory outcomes by emphasizing flexibility, phased investment, and clear decision triggers rather than fixed assumptions or irrevocable commitments. By focusing on compliance readiness, adaptive planning, and disciplined governance, UWPA is positioned to remain operationally sound, financially responsible, and compliant regardless of the ultimate regulatory pathway.

3.6 Operational and Access Constraints

Many UWPA facilities are located in remote, steep, or rugged terrain with limited access for routine inspections, maintenance activities, and emergency response. Seasonal weather conditions, wildfire impacts, road availability, and land ownership or easement constraints can further restrict access and limit the timing of work.

These operational realities increase the time, cost, and complexity of both planned and unplanned repairs and elevate the consequences of infrastructure failures. As a result, planning decisions must account not only for asset condition, but also for access limitations, constructability, workforce safety, and long-term operability. Recognizing these constraints supports more realistic scheduling, prudent risk management, and informed prioritization within UWPA's long-term planning framework.

3.7 Implications for Long-Range Planning

Taken together, these planning drivers, constraints, and risks underscore the need for a conservative, adaptive approach to long-range planning. UWPA's operating environment is characterized by aging infrastructure, wildfire exposure, limited redundancy, financial constraints, regulatory uncertainty, and operational access challenges. In this context, the Master Plan prioritizes reliability, safety, and regulatory compliance while preserving flexibility to respond to evolving conditions and emerging risks.

Rather than relying on detailed forecasts or prescriptive solutions that may become outdated, the Master Plan establishes a durable policy framework for evaluating tradeoffs, managing risk, and guiding future decisions. This framework is implemented through the Strategic Plan, Capital Improvement Plan, and annual budget process, ensuring that near-term actions remain aligned with long-term objectives while maintaining disciplined governance and Board oversight.

4. UWPA Background and Regional Role

This section provides an overview of the formation of the Utica Water and Power Authority (UWPA) and its role within the regional water and power system. Understanding UWPA's historical development, governance structure, and legacy infrastructure is essential to contextualizing current planning priorities, operational responsibilities, and long-term constraints.

UWPA's evolution from a historic mining-era system to a modern public agency has shaped both the configuration of its infrastructure and the obligations it carries today. This background informs the Master Plan's emphasis on risk-based stewardship, regulatory compliance, and long-term reliability within a constrained and highly interdependent regional environment.

4.1 Historical Development of the Utica System

The Utica water conveyance system originated during the California Gold Rush, when extensive networks of canals, flumes, reservoirs, and power facilities were constructed to support mining operations throughout the Sierra Nevada foothills. Over time, these facilities transitioned from privately operated mining infrastructure to assets serving broader public purposes, including municipal water supply, agricultural use, and hydroelectric generation.

The longevity of the Utica system reflects both the durability of its original construction and the successive adaptations made to accommodate evolving uses, ownership structures, and regulatory requirements. At the same time, this long history contributes directly to many of the infrastructure, operational, and compliance challenges addressed in this Master Plan. Legacy design standards, aging materials, and system configurations rooted in historic conditions shape today's planning constraints and underscore the need for deliberate, risk-based stewardship of these critical assets.

4.2 Formation of the Utica Water and Power Authority

The Utica Water and Power Authority (UWPA) was formed as a Joint Powers Authority to preserve local control over historic water rights and infrastructure that are critical to the region. Through its creation, participating public agencies established a collaborative governance structure that enables collective ownership, operation, and long-term management of the Utica system in a manner aligned with local priorities and public accountability.

4.3 UWPA's Regional Role

UWPA operates as a wholesale provider of water conveyance and hydroelectric services rather than a retail utility. Its facilities support member agencies and other public purposes by conveying water from historic source areas to downstream systems and generating hydroelectric power where feasible, consistent with available infrastructure and regulatory authorization.

UWPA's role is regional in nature, supporting multiple communities, agricultural users, and public interests across the Highway 4 corridor. The Authority does not provide retail water service, set retail rates, or engage in land-use planning. Instead, UWPA enables its member agencies to fulfill those responsibilities by maintaining reliable, compliant, and resilient backbone infrastructure. This defined role informs the Master Plan's focus on system reliability, risk management, and long-term stewardship rather than growth-driven or retail-level planning.

4.4 Importance of Local Control and Stewardship

Local control of the Utica system is a foundational principle of UWPA's mission and governance. Stewardship of historic water rights and infrastructure requires balancing current service obligations with the responsibility to preserve and maintain these assets for future generations. This balance is especially important given the age, complexity, and regional significance of the Utica system.

This Master Plan reflects UWPA's commitment to responsible stewardship, transparent governance, and coordinated decision-making. Through collaboration with member agencies and engagement with applicable regulators, UWPA seeks to manage its infrastructure in a manner that is fiscally responsible, operationally sound, and consistent with long-term public interests, ensuring the continued viability of the Utica system as a critical regional resource.

5. Governance, Ownership, and Interagency Context

This section describes UWPA's governance structure, ownership responsibilities, and relationships with member agencies and other public entities. Clear definition of roles, authorities, and coordination responsibilities is essential to effective long-term planning, regulatory compliance, and accountable stewardship of UWPA's infrastructure.

By clarifying how governance, ownership, and interagency coordination function together, this section provides the institutional context necessary to support disciplined decision-making, transparent oversight, and alignment between UWPA's long-term planning framework and its operational responsibilities.

5.1 Governance Structure

UWPA is governed by a five-member Board of Directors representing its member agencies (City of Angels Camp and Union Public Utility District) and the public. The Board is responsible for establishing policy direction; approving planning documents, budgets, and major capital investments; and providing oversight of regulatory compliance and financial stewardship.

The Board acts collectively and retains final authority over UWPA's strategic, financial, and regulatory decisions. Board actions are guided by the Joint Powers Agreement, applicable state law, and UWPA's adopted planning and governance documents. This structure ensures accountability, transparency, and consistency in decision-making while supporting UWPA's long-term stewardship responsibilities.

5.2 Ownership and Operational Responsibilities

UWPA owns and operates the Utica water conveyance and hydroelectric facilities. Ownership of these assets carries responsibility for operation, maintenance, repair, regulatory compliance, and long-term stewardship consistent with applicable laws, permits, and governance policies.

UWPA's member agencies retain responsibility for downstream distribution systems, retail water service, and customer-level operations. This clear separation of ownership and operational responsibilities supports effective governance, clarifies accountability, and avoids duplication of roles while enabling coordinated planning across the regional water system.

5.3 Role of Management and Staff

Day-to-day operation and management of UWPA's facilities are delegated to professional staff under the direction of the Board of Directors. Staff are responsible for system operations and maintenance, regulatory coordination and compliance, project development and implementation, and preparation of reports and analyses to support Board oversight.

Staff provide technical expertise, analysis, and recommendations to inform Board decision-making, but do not exercise independent policy-making or financial authorization authority. This clear separation of roles supports accountability, transparency, and effective governance while enabling informed and timely decision-making.

5.4 Interagency Coordination

UWPA coordinates with multiple external agencies and partners in the course of its operations and long-range planning. These include its member agencies, neighboring water and power utilities, emergency response and public safety organizations, and state and federal regulatory agencies.

Effective interagency coordination is essential to maintaining reliable service, supporting emergency response, and meeting regulatory and compliance obligations. Coordination enables UWPA to align infrastructure planning, share information, manage system interdependencies, and respond efficiently to events that extend beyond UWPA's direct operational control. This collaborative approach supports regional resilience while preserving UWPA's defined governance and ownership responsibilities.

5.5 Regulatory and Institutional Relationships

UWPA interacts with a range of regulatory and institutional entities that influence operational requirements, compliance obligations, and long-term planning considerations. These include the Federal Energy Regulatory Commission (FERC), state regulatory and oversight agencies, and other institutions with jurisdiction over water rights, dam safety, environmental protection, and workplace safety.

UWPA seeks to maintain constructive, transparent, and professional relationships with regulators while preserving local control and the Board's authority over policy, planning, and investment decisions. This approach reflects UWPA's commitment to compliance, accountability, and responsible self-governance, ensuring that regulatory engagement supports rather than supplants UWPA's long-term stewardship responsibilities and public mission.

5.6 Governance Implications for Planning

UWPA's governance structure and interagency context reinforce the need for clear planning frameworks, defined roles, and documented decision-making processes.

Effective long-range planning requires alignment among the Board, management, member agencies, regulators, and external partners, particularly given the complexity of UWPA's infrastructure, regulatory environment, and risk profile.

This Master Plan supports effective governance by establishing long-term policy direction, clarifying planning boundaries, and providing a common reference point for decision-making. By doing so, it enhances transparency, accountability, and consistency across UWPA's planning, budgeting, and implementation processes while preserving Board authority and institutional flexibility.

6. System Overview and Existing Conditions

This section provides a high-level overview of UWPA's infrastructure system and summarizes existing conditions relevant to long-range planning. The intent is to describe the general nature, configuration, and condition of UWPA's water conveyance and hydroelectric assets to inform policy-level planning and governance decisions.

This overview is not intended to duplicate detailed asset inventories, engineering analyses, or project-specific evaluations. Those technical details are addressed through the Capital Improvement Plan (CIP), asset management records, and supporting studies. Instead, this section establishes the system-wide context necessary to understand planning drivers, constraints, and long-term stewardship considerations.

6.1 Overview of the Utica System

UWPA owns and operates a complex, interconnected system of reservoirs, canals, flumes, penstocks, powerhouses, and associated control, monitoring, and access facilities. The system originated during the Gold Rush era and has been modified and expanded over time to support public water conveyance and hydroelectric generation.

The Utica system traverses mountainous and heavily forested terrain, creating inherent operational challenges and exposure to environmental, wildfire, and access-related risks. System components are geographically dispersed yet operationally interdependent, requiring coordinated operation, maintenance, and planning. These characteristics influence system reliability, emergency response, and long-term stewardship considerations central to this Master Plan.

6.2 Asset Age and Design Legacy

Many components of UWPA's system exceed their original design life and were constructed using materials, methods, and engineering standards that differ substantially from modern practice. Although these facilities have provided reliable service over extended periods, age-related deterioration and legacy design limitations increase both the likelihood of failure and the complexity, cost, and risk associated with maintenance and repair.

The historic and legacy nature of the Utica system constrains the feasibility of wholesale replacement and large-scale system reconfiguration. As a result, long-range planning must emphasize incremental, prioritized reinvestment focused on risk reduction, reliability, and compliance rather than comprehensive modernization. This approach supports responsible stewardship of legacy infrastructure while recognizing financial, environmental, and operational constraints.

6.3 Condition Assessment and Operational Experience

Understanding existing system conditions relies on a combination of inspections, routine and corrective maintenance activities, operational performance data, and staff institutional knowledge. In some locations, access limitations, embedded infrastructure, or environmental constraints restrict the ability to directly observe asset condition, increasing reliance on indirect indicators and historical performance.

Operational experience—including response to outages, emergency repairs, near-miss events, and routine maintenance—provides critical insight into system vulnerabilities, failure modes, and performance trends. This practical knowledge complements formal assessments and informs risk-based planning, prioritization, and decision-making under conditions of uncertainty.

6.4 Environmental Exposure and Climate Variability

UWPA's facilities are exposed to a range of environmental conditions, including wildfire, extreme weather events, erosion, debris flows, and seasonal access constraints. These exposures affect asset condition, maintenance needs, operational reliability, and the consequences of infrastructure failure, particularly for facilities located in remote or environmentally sensitive areas.

This Master Plan does not rely on specific climate projections or detailed modeling outputs. Instead, it assumes a range of plausible future conditions and emphasizes resilience, adaptability, and conservative decision-making in the face of uncertainty. By focusing on robustness and recoverability rather than precise prediction, the planning framework supports long-term reliability and prudent stewardship under changing environmental conditions.

6.5 Existing Constraints and Vulnerabilities

Existing system constraints include limited redundancy in certain segments, reliance on single conveyance paths, and challenges related to access, constructability, and repair logistics. In some cases, failure of individual components could result in disproportionate service impacts affecting water deliveries, power generation, or emergency response capability.

Identification and understanding of these constraints and vulnerabilities inform the risk-based planning, prioritization, and investment framework described elsewhere in this

Master Plan. Recognizing where consequences are highest supports disciplined decision-making and alignment of limited resources with UWPA's most critical reliability and compliance needs.

6.6 Relationship to Capital Planning

This overview of existing system conditions provides the policy-level context for identifying infrastructure needs and informing long-range capital planning decisions. Detailed asset inventories, condition assessments, cost estimates, and project-specific evaluations are maintained separately and reflected in the Capital Improvement Plan (CIP) and supporting technical documentation.

By intentionally separating high-level system understanding from project-level detail, the Master Plan preserves flexibility, supports disciplined prioritization, and strengthens the defensibility of future investment decisions. This structure ensures that capital planning remains responsive to changing conditions while remaining aligned with UWPA's long-term governance, risk management, and stewardship objectives.

7. Planning Assumptions and Future Conditions

This Master Plan is based on a defined set of planning assumptions that establish a consistent and defensible framework for long-range decision-making. These assumptions reflect UWPA's role, authority, governance structure, and operating environment, and are intended to guide policy-level planning rather than predict specific future outcomes.

The assumptions are designed to support reliable service, regulatory compliance, and responsible stewardship while preserving flexibility to adapt to changing conditions, emerging risks, and regulatory outcomes. By clearly documenting these assumptions, the Master Plan provides transparency, supports informed Board decision-making, and establishes a stable reference point for future updates to the Strategic Plan, Capital Improvement Plan, and annual budgets.

7.1 Service Area and Role Assumptions

This Master Plan assumes no expansion of UWPA's service area and no change in UWPA's fundamental role as a wholesale water conveyance and hydroelectric operator. UWPA does not provide retail water service and does not engage in land-use planning, growth management, or demand forecasting.

Future changes in population, land use, or customer demand are addressed by UWPA's member agencies through their respective planning and regulatory processes and are not projected or evaluated in this Master Plan. This assumption establishes clear planning boundaries and ensures that UWPA's long-range planning remains focused on system reliability, risk management, and stewardship of existing infrastructure.

7.2 Water Rights and Supply Assumptions

This Master Plan assumes continued reliance on UWPA's existing water rights and historic sources of supply. No new water rights, diversions, or additional supply sources are assumed, evaluated, or proposed as part of this plan.

The Master Plan does not assess supply augmentation, expansion, or reallocation alternatives. Any future changes to water rights, diversion capacity, or supply arrangements would require separate technical analysis, regulatory review, environmental compliance, and explicit Board authorization. This assumption ensures that long-range planning remains focused on stewardship and reliability of existing supplies rather than speculative expansion.

7.3 Climate Variability and Environmental Conditions

Planning assumptions reflect increasing climate variability, including changes in precipitation patterns, runoff timing, drought frequency, and the occurrence of extreme weather events. These conditions may affect system operations, maintenance demands, access constraints, and overall risk exposure over time.

This Master Plan does not rely on specific climate projections or modeling outputs. Instead, it assumes a range of plausible future environmental conditions and emphasizes resilience, adaptability, and conservative decision-making. This approach supports long-term reliability and prudent stewardship in the face of uncertainty while avoiding reliance on speculative forecasts.

7.4 Regulatory and Policy Environment

This Master Plan assumes continued regulatory oversight at both the federal and state levels, including requirements related to hydroelectric authorization, dam safety, environmental protection, and water resources management. A central regulatory consideration over the planning horizon is UWPA's pursuit of a Federal Energy Regulatory Commission (FERC) exemption for its hydroelectric facilities. The timing, scope, and ultimate outcome of this effort remain subject to regulatory review and determination.

The Master Plan is structured to remain valid under multiple regulatory outcomes, including achievement of a FERC exemption, continuation under full licensing or relicensing requirements, or changes in compliance obligations over time. UWPA's planning framework does not assume reduced standards or diminished oversight under any outcome. Instead, it is grounded in a commitment to responsible self-compliance as a core institutional value emphasizing rigorous internal standards, proactive risk management, transparent governance, and continued adherence to applicable state and federal requirements.

By avoiding fixed regulatory assumptions or irreversible commitments, and by reinforcing ownership of compliance responsibilities regardless of regulatory pathway, this Master Plan preserves flexibility while supporting accountability, safety, and long-term stewardship. This approach enables UWPA to adapt to regulatory change while maintaining Board authority, local control, and a defensible compliance posture.

7.5 Capital Investment and Financial Assumptions

This Master Plan assumes that capital investments will be phased over time and aligned with UWPA's financial capacity. Large-scale, irreversible, or high-commitment investments are evaluated carefully in light of system risk, regulatory uncertainty, and long-term affordability.

Funding strategies may include a combination of operating revenues, reserves, grants, and partnerships, as appropriate. The Master Plan does not assume the availability of specific funding sources, funding levels, or financing mechanisms. Instead, it establishes a flexible framework that supports disciplined prioritization, informed Board decision-making, and adaptation to changing financial conditions.

7.6 Operational and Technological Considerations

Planning assumptions recognize that operational practices, monitoring technologies, and regulatory expectations will continue to evolve over time. This Master Plan does not assume wholesale system modernization, but supports incremental, targeted improvements where they demonstrably enhance safety, reliability, compliance readiness, or operational efficiency.

Technology adoption is evaluated within the context of lifecycle cost, maintainability, cybersecurity considerations, and staff capacity. This approach ensures that operational and technological improvements are sustainable, support long-term stewardship of legacy infrastructure, and do not create unintended operational or financial burdens.

7.7 Use and Limitations of Assumptions

The planning assumptions outlined in this section are not predictions, guarantees, or commitments. They are intended to provide a consistent and transparent baseline for evaluating options, assessing tradeoffs, and guiding future policy and investment decisions.

If conditions change materially, these assumptions may be revisited and refined through updates to the Strategic Plan, Capital Improvement Plan, or this Master Plan, subject to Board review and approval as appropriate. This approach preserves adaptability while maintaining continuity and defensibility in UWPA's long-range planning framework.

8. Service Objectives and Reliability Standards

This section defines UWPA's service objectives and the reliability standards that guide long-range planning, operational priorities, and capital investment decisions. These objectives reflect UWPA's role as a wholesale water conveyance and hydroelectric operator and are focused on public safety, regulatory compliance, and long-term stewardship of existing infrastructure.

The service objectives and reliability standards set forth in this section are not intended to facilitate system expansion or growth. Rather, they provide a policy framework for evaluating performance, prioritizing risk reduction, and directing limited resources toward maintaining reliable, resilient, and compliant service over time.

8.1 Core Service Objectives

UWPA's primary service objective is to provide reliable and safe water conveyance and hydroelectric operations sufficient to meet existing obligations and support public safety and emergency response needs. UWPA manages its infrastructure to maintain continuity of service under normal operating conditions and to reduce both the likelihood and consequences of service disruptions.

This Master Plan does not assume or plan for expansion of service capacity beyond existing obligations. However, it does not preclude future expansion if circumstances, regional needs, regulatory conditions, and Board policy direction warrant consideration. Any potential expansion would be subject to separate analysis, regulatory review, and explicit Board authorization. Service objectives in this Master Plan therefore remain focused on reliability, risk reduction, compliance, and long-term stewardship of the existing system.

8.2 Reliability as a Planning Priority

Reliability is the central planning priority for UWPA. Reliability encompasses the ability of the system to operate as intended under normal conditions, withstand foreseeable stresses, and recover from adverse events with minimal disruption to water conveyance, power generation, and emergency response capability.

Planning and investment decisions prioritize actions that enhance system reliability, reduce the likelihood of failure, and mitigate known vulnerabilities particularly where potential failures could have high consequences for public safety, regulatory compliance, or continuity of essential services. This reliability-focused approach guides long-range planning, capital prioritization, and operational decision-making across UWPA's infrastructure portfolio.

8.3 Safety and Public Protection

Protection of public safety is a fundamental element of UWPA's service objectives. Safety considerations include the structural integrity of water conveyance facilities, the safe and compliant operation of hydroelectric assets, and the protection of employees, contractors, and the public.

Infrastructure investments, operational practices, and planning decisions are evaluated with consideration of safety risk reduction, compliance with applicable safety and regulatory standards, and emergency response readiness. This focus supports UWPA's obligation to operate critical infrastructure responsibly while minimizing the likelihood and consequences of incidents that could affect public safety or environmental protection.

8.4 Regulatory Compliance Standards

Regulatory compliance is a core value of UWPA and a foundational element of its service objectives. UWPA is committed to maintaining compliance with applicable federal, state, and local regulatory requirements, and treats compliance as a baseline service standard rather than a discretionary objective.

As regulatory requirements evolve, UWPA's planning, operational, and capital investment decisions prioritize timely and proactive compliance to reduce enforcement risk, avoid service disruptions, and preserve operational and financial flexibility. This commitment reflects UWPA's responsibility as a public agency to exercise responsible self-compliance, maintain regulatory readiness, and steward critical infrastructure in a manner that protects public safety, environmental resources, and long-term system viability.

8.5 Emergency and Wildfire Reliability Considerations

UWPA's service objectives incorporate the need to maintain operational capability during emergency events, including wildfires, extended power outages, extreme weather, and other high-consequence disruptions. Consistent with the Strategic Plan's emphasis on risk reduction and resilience, reliability standards account for access limitations, backup power needs, operational redundancy where feasible, and coordination with emergency responders and member agencies.

UWPA's experience with past wildfire events—including system damage and access constraints—has informed a planning focus on consequence management and recovery capability. As reflected in the Capital Improvement Plan (CIP), planning and investment decisions prioritize mitigation of Tier 1 risks where failures could impair emergency response, public safety, or regulatory compliance. In many cases, improving system recoverability, repairability, and response readiness provides greater resilience than attempting to prevent all failures.

Emergency and wildfire reliability considerations are integrated into long-range planning regardless of regulatory pathway. Whether operating under a FERC exemption or continued licensing requirements, UWPA's approach emphasizes responsible self-compliance, proactive risk management, and coordination with regulatory and emergency partners. This framework supports reliable service under adverse conditions while preserving flexibility to adapt to evolving risks and regulatory expectations.

8.6 Service Limitations and Clarifications

UWPA's service objectives and reliability standards are intentionally limited in scope and purpose. UWPA does not establish retail service levels, customer-level performance standards, or growth-based service guarantees. Those responsibilities remain with member agencies and are addressed through their respective operational, regulatory, and planning processes.

The reliability standards described in this Master Plan are qualitative and policy-based rather than numeric, design-specific, or engineering-prescriptive. Detailed performance criteria, operating limits, and technical requirements are addressed through operational procedures, applicable regulatory standards, project-level analyses, and implementation mechanisms such as the Strategic Plan and the Capital Improvement Plan (CIP).

This approach preserves the Master Plan's role as a long-range governance and policy framework, supports flexibility under evolving conditions, and reinforces UWPA's core values of regulatory compliance, responsible self-compliance, and disciplined stewardship. By avoiding over-specification at the master planning level, UWPA maintains clear accountability, reduces unintended commitments, and strengthens the defensibility of future Board decisions.

9. Infrastructure Needs and Capital Planning Principles

UWPA's long-term infrastructure strategy is grounded in a disciplined, risk-based approach to identifying system needs and prioritizing capital investment. Consistent with the Strategic Plan and the Capital Improvement Plan (CIP), this approach emphasizes reliability, safety, regulatory compliance, and financial sustainability while recognizing the constraints of aging infrastructure, limited redundancy, and regulatory uncertainty.

This section describes the principles used to evaluate infrastructure needs and guide capital planning decisions at a policy level. It does not identify, rank, or authorize specific projects, funding commitments, or schedules. Project-level decisions, cost estimates, and implementation sequencing are addressed separately through the CIP and annual budget process, subject to Board approval.

By establishing clear capital planning principles rather than prescriptive solutions the Master Plan preserves flexibility under evolving conditions, including potential outcomes associated with the FERC exemption process or continued licensing requirements. These principles reinforce UWPA's core values of regulatory compliance, responsible self-compliance, and prudent stewardship, and provide a defensible framework for future capital decisions made in alignment with Board direction and available resources.

9.1 Identification of Infrastructure Needs

Infrastructure needs are identified through a combination of routine inspections, condition assessments, operational experience, regulatory findings, and structured risk evaluation. Information from maintenance records, outage and incident response, compliance activities, and staff institutional knowledge plays a critical role in understanding system performance, emerging vulnerabilities, and long-term risk exposure.

Given the age, configuration, and access limitations of the Utica system, not all asset conditions can be directly observed or fully characterized through visual inspection alone. Accordingly, identification of infrastructure needs emphasizes both observed deficiencies and potential failure modes that could result in high-consequence outcomes for public safety, regulatory compliance, service reliability, or financial stability. This approach aligns with the Strategic Plan's focus on proactive risk reduction and informs the tiered prioritization framework applied through the Capital Improvement Plan (CIP).

By integrating operational experience, regulatory obligations and consequence-based risk evaluation, UWPA ensures that infrastructure needs are identified in a manner consistent with responsible self-compliance and long-term stewardship rather than reactive response to failures.

9.2 Risk-Based Prioritization Framework

UWPA prioritizes infrastructure needs using a risk-based framework that evaluates both the likelihood of failure and the consequences of failure. Consequences may include impacts to public safety, service reliability, regulatory compliance, environmental resources, financial stability, and emergency response capability. This consequence-driven approach reflects UWPA's commitment to disciplined governance and responsible stewardship of critical infrastructure.

Consistent with the Strategic Plan and implemented through the Capital Improvement Plan (CIP), infrastructure needs are prioritized using a tiered framework that elevates projects addressing mandatory safety or regulatory requirements and those that mitigate high-consequence risks. Tier 1 priorities—where failure could result in significant safety, compliance, or service impacts—are addressed ahead of discretionary improvements, enhancements, or capacity-driven investments.

By focusing on consequence and risk reduction, UWPA ensures that limited capital resources are directed toward the most critical needs while preserving flexibility and affordability.

9.3 Capital Planning Principles

Capital planning decisions are guided by the following principles:

- Protection of public safety and system reliability, consistent with UWPA's core service objectives
- Regulatory compliance as a core value, ensuring that capital investments support proactive, responsible self-compliance
- Reduction of single-point failures and critical system vulnerabilities, with priority given to high-consequence risks
- Phased investment aligned with financial capacity, preserving affordability and reserve stability
- Preservation of flexibility under regulatory and operational uncertainty, avoiding irreversible commitments where feasible

- Consideration of lifecycle costs, constructability, and long-term operability, including maintenance and staffing implications

Together, these principles—reflected in the Strategic Plan and implemented through the Capital Improvement Plan (CIP)—support transparent, consistent, and defensible evaluation of capital needs over time. They provide a disciplined framework for Board decision-making while allowing UWPA to adapt to changing conditions and emerging risks.

9.4 Relationship to the Capital Improvement Plan

The Capital Improvement Plan (CIP) is the primary implementation tool for UWPA's infrastructure strategy. It translates infrastructure needs and capital planning principles established in this Master Plan and informed by the Strategic Plan into specific projects, schedules, cost estimates, and funding approaches over a rolling multi-year horizon.

The CIP is updated periodically to reflect changing system conditions, regulatory requirements, project progress, and financial considerations. Maintaining consistency between the Master Plan, Strategic Plan, and CIP is essential to disciplined governance and defensible capital decision-making. This alignment ensures that capital investments advance UWPA's service objectives, risk-reduction priorities, and regulatory compliance commitments while remaining responsive to evolving conditions and Board direction.

9.5 Phasing and Adaptability

Recognizing financial, operational, and regulatory constraints, UWPA emphasizes phased implementation of capital investments where feasible. Phasing allows UWPA to address the most critical risks first consistent with the tiered prioritization framework in the Strategic Plan and Capital Improvement Plan (CIP), while preserving the ability to adjust scope, timing, and sequencing as conditions evolve.

This approach reduces exposure to irreversible commitments, supports affordability and reserve stability, and enables adaptive management under uncertain future conditions. By maintaining flexibility in capital planning, UWPA strengthens its ability to respond to changing regulatory requirements, system performance, and Board policy direction while advancing long-term reliability and stewardship objectives.

9.6 Documentation and Transparency

Decisions related to infrastructure needs and capital investments are documented through Board actions, Capital Improvement Plan (CIP) updates, and annual budget approvals. This documentation provides transparency, supports accountability, and establishes a clear record of how capital decisions align with identified needs, risk-based prioritization, and adopted planning principles.

Maintaining clear and consistent documentation strengthens governance, facilitates regulatory and audit review, and ensures that capital investment decisions are defensible, traceable, and aligned with UWPA's long-term service objectives and stewardship responsibilities.

10. Financial Strategy and Funding Philosophy

UWPA's financial strategy is designed to support reliable operations, responsible stewardship of long-lived infrastructure, and sustained regulatory compliance while maintaining affordability for member agencies and stakeholders. This strategy recognizes the financial realities associated with aging assets, variable revenues, regulatory obligations, and the need for emergency readiness.

This section establishes the principles that guide financial decision-making in support of UWPA's long-term planning objectives. Consistent with the Strategic Plan and implemented through the Capital Improvement Plan (CIP) and annual budget process, the financial strategy emphasizes disciplined prioritization, reserve stability, transparency, and flexibility under uncertain future conditions. It recognizes that the assets and obligations UWPA stewards are multi-generational, that the decisions most consequential to the Authority's financial future concern the continued operation of its revenue-generating infrastructure and the path by which it maintains regulatory compliance, and that disciplined near-term financing of necessary recapitalization preserves rather than constrains long-term value. These principles provide a defensible framework for balancing near-term affordability with long-term reliability and risk reduction.

10.1 Financial Objectives

UWPA's primary financial objectives are to:

- Maintain the financial capacity to safely operate, maintain, and repair essential infrastructure, supporting reliable service delivery
- Support timely reinvestment in aging assets to reduce long-term risk, emergency repair exposure, and lifecycle costs
- Maintain adequate reserve levels to respond to emergencies, revenue variability, and unforeseen events
- Align capital investment decisions with realistic and sustainable funding capacity, consistent with affordability considerations
- Preserve flexibility under regulatory, economic, and operational uncertainty, avoiding overcommitment
- Pursue grant funding, partnerships, and new revenue opportunities proactively, where they align with UWPA's service objectives, risk-reduction priorities, and long-term stewardship responsibilities

These objectives emphasize long-term financial stability, resilience, and stewardship rather than short-term cost minimization. UWPA's hydroelectric generation is the dominant driver of the Authority's long-term financial position and the principal source of revenue beyond water conveyance fees. Protecting and reinvesting in that revenue-generating capacity is therefore treated as a leading financial and operational priority, because it is the asset that most enables the enterprise to fund its own renewal and to preserve future affordability for ratepayers. A proactive approach to external funding and revenue diversification consistent with the Strategic Plan and implemented through the Capital Improvement Plan (CIP) supports affordability, accelerates priority investments, and reduces reliance on reserves or member agency contributions while maintaining regulatory compliance as a core value.

10.2 Affordability and Stewardship Balance

UWPA recognizes the importance of balancing affordability for member agencies and stakeholders with the need for sustained reinvestment in critical infrastructure. While deferring maintenance or capital improvements may reduce near-term costs, prolonged deferral can increase long-term financial risk, emergency repair exposure, and potential impacts to reliability, safety, and regulatory compliance.

Accordingly, UWPA's financial strategy seeks to smooth capital investment over time, avoid sharp cost fluctuations, and prioritize funding toward the highest-consequence risks. Consistent with the Strategic Plan and implemented through the Capital Improvement Plan (CIP), this approach supports disciplined stewardship of long-lived assets while maintaining affordability, transparency, and long-term financial stability. Long-horizon analysis reinforces this posture: strategies which appear to avoid debt do not necessarily avoid cost, and that disciplined financing of necessary reinvestment is generally more protective of long-term value and affordability than continued deferral. The Authority therefore evaluates the full lifecycle cost of its choices rather than near-term cash position alone.

10.3 Reserve Policy and Financial Resilience

Financial reserves are a key component of UWPA's financial resilience and risk management strategy. Reserves provide the capacity to respond to emergency repairs, unplanned outages, regulatory-driven obligations, and other unforeseen events without immediate reliance on external financing or extraordinary revenue measures.

This Master Plan assumes that reserve levels are reviewed periodically by the Board of Directors and maintained at levels appropriate to UWPA's risk exposure, infrastructure condition, revenue variability, and operational complexity. Consistent with the Strategic Plan and Capital Improvement Plan (CIP), reserves are intended to support stability and flexibility rather than replace disciplined planning, proactive reinvestment, or pursuit of external funding opportunities. Reserve policies must account for drought conditions and the possibility of decreased revenues while also maintaining regulatory compliance and capital improvement needs. The Authority sizes its operating reserve to the most severe plausible draw it could face rather than to expected conditions, recognizing that the binding constraint on reserves is typically the regulatory compliance pathway: where a more costly compliance outcome remains possible, reserves are planned to that contingency and released toward a lower baseline target once the favorable outcome is secured. This approach ties reserve adequacy directly to the Authority's regulatory and revenue risks rather than to a fixed figure.

10.4 Funding Sources and Strategies

UWPA's infrastructure investments may be funded through a combination of operating revenues, reserves, grants, partnerships, debt financing, and other legally available funding mechanisms. The Master Plan does not assume the availability, timing, or scale of any specific funding source and avoids reliance on speculative or uncertain revenues. Where significant recapitalization of long-lived infrastructure is required within the planning period, this Master Plan supports the disciplined use of long-term debt financing serviced from enterprise revenues, structured so that necessary reinvestment can proceed without compromising rate continuity or the Authority's revenue-generating capacity. Such financing is evaluated against realistic terms and stress-tested against adverse conditions before commitment.

Grant and partnership opportunities are pursued selectively and proactively where they align with UWPA's service objectives, risk-reduction priorities, and long-term stewardship responsibilities. Consistent with the Strategic Plan, external funding is evaluated to ensure that it does not impose undue long-term financial, operational, or regulatory obligations, compromise local control, or conflict with UWPA's core value of regulatory compliance.

10.5 Phased Investment and Financial Flexibility

Consistent with the planning assumptions of this Master Plan, capital investments are evaluated for phased implementation where feasible. Phasing allows UWPA to manage cash flow, align expenditures with available funding, and adjust investment timing in response to changing system conditions, financial capacity, and regulatory developments.

This approach supports financial flexibility, preserves affordability, and reduces exposure to irreversible commitments under uncertain future conditions. By emphasizing phased investment, UWPA strengthens its ability to adapt to evolving risks while advancing long-term reliability, regulatory compliance, and responsible stewardship of critical infrastructure. The Authority also recognizes that disciplined financing creates future optionality: once near-term obligations such as debt service are retired, the resulting financial headroom may be directed toward accelerated reinvestment, strengthened reserves, or relief to ratepayers, as Board policy and conditions at that time warrant. Preserving this future flexibility is itself a financial objective of the phased approach.

10.6 Relationship to Budgeting and Capital Planning

UWPA's financial strategy is implemented through the annual budget and the Capital Improvement Plan (CIP). The annual budget provides near-term authorization for operating and capital expenditures, while the CIP establishes multi-year capital priorities, cost estimates, and funding approaches consistent with available financial capacity.

Maintaining consistency among the Master Plan, Strategic Plan, CIP, and annual budget is essential to transparent, disciplined, and defensible financial decision-making. This alignment ensures that financial actions reflect long-term objectives, risk management priorities, and regulatory compliance commitments while preserving Board oversight and adaptability.

11. Regulatory, Risk, and Resiliency Framework

UWPA operates within a complex and evolving regulatory, operational, and risk environment that directly affects long-term infrastructure planning and decision-making. Regulatory requirements, environmental conditions, system vulnerabilities, and external events all influence how UWPA manages its assets and fulfills its public responsibilities.

This section describes the framework UWPA uses to identify, evaluate, and manage regulatory uncertainty, system risks, and resiliency needs. The framework emphasizes proactive compliance as a core value, consequence-based risk management, and adaptive planning. By focusing on policy-level principles rather than prescriptive solutions, this approach preserves flexibility, supports local control, and enables disciplined, defensible decision-making under changing conditions.

11.1 Regulatory Environment Overview

UWPA's facilities operate within a multi-layered regulatory environment that includes federal, state, and local oversight. Regulatory requirements address hydroelectric operations, water rights administration, environmental protection, dam safety, workplace safety, and related compliance obligations. These requirements influence both near-term operational practices and long-term capital planning decisions.

The regulatory landscape is dynamic, and future requirements may evolve in scope, timing, or cost. Regulatory compliance is a core value of UWPA, and the Master Plan emphasizes adaptability and compliance readiness rather than fixed assumptions or irreversible commitments. This approach supports proactive risk management, preserves local control, and enables informed Board decision-making as regulatory conditions change.

11.2 FERC Regulatory Pathways

A defining element of UWPA's long-range planning environment is the uncertainty associated with Federal Energy Regulatory Commission (FERC) oversight of its hydroelectric facilities. This Master Plan recognizes two potential regulatory pathways:

- FERC Exemption – Continued operation under a perpetual conduit exemption framework, issued once with no recurring renewal obligation, subject to applicable compliance, reporting, and oversight requirements. This is the pathway UWPA is actively pursuing and the highest-value long-term compliance outcome.

- FERC Relicensing – Full relicensing of hydroelectric facilities, involving expanded regulatory review and the potential for additional capital, operational, and environmental obligations. Because a full license runs only a few decades, relicensing is a recurring rather than one-time obligation over the long planning horizon, which materially increases its lifetime cost relative to a perpetual exemption.

UWPA's pursuit of a FERC exemption reflects a desire to preserve local control while maintaining high standards of safety, reliability, and regulatory compliance. The Authority treats securing the exemption as a strategic priority rather than an administrative formality, because it preserves continued generation while avoiding the recurring cost and review burden of repeated relicensing. At the same time, UWPA maintains a funded relicensing fallback so that continued generation is assured under either outcome. Regardless of the regulatory pathway, UWPA treats compliance as a core value and emphasizes responsible self-compliance, proactive risk management, and transparency in governance.

The Master Plan is intentionally structured to remain valid under either outcome by avoiding assumptions that depend on a specific regulatory result. The regulatory outcome functions as a decision trigger within UWPA's financial and reserve planning: while the exemption remains pending, the Authority sizes its reserves to the more demanding relicensing contingency and maintains a funded fallback, releasing reserves toward a lower baseline target once a perpetual exemption is secured. By focusing on risk reduction, resiliency, and phased decision-making rather than fixed regulatory expectations, UWPA preserves flexibility and supports disciplined, defensible planning under regulatory uncertainty while also reinforcing a commitment to public safety, regulatory compliance, and transparent planning as core values of the Authority's mission and operations.

11.3 Risk Management Principles

UWPA applies a structured composite risk management approach that considers both the likelihood and consequences of adverse events. Risks evaluated through this framework include infrastructure failure, wildfire impacts, regulatory noncompliance, financial exposure, and operational disruption.

Risk management principles embedded in this Master Plan include prioritization of high-consequence risks, proactive regulatory compliance planning, and integration of risk considerations into capital investment, financial strategy, and operational decision-making. This consequence-based approach aligns with the tiered prioritization framework applied through the Capital Improvement Plan (CIP) and supports disciplined allocation of limited resources to the areas of greatest need.

11.4 Wildfire Resiliency and Emergency Preparedness

Wildfire represents one of the most significant external risks to UWPA's system, given its location in forested and mountainous terrain. Planning for wildfire resiliency includes consideration of asset hardening, defensible space, access improvements, backup power, emergency response coordination, and post-event recovery capability.

UWPA's experience during past wildfire events, including the 2001 Darby Fire in Calaveras County, informs this approach. That event demonstrated the vulnerability of exposed infrastructure, the challenges associated with access and emergency repairs, and the importance of advance planning, redundancy where feasible, and rapid recovery capability. Lessons learned from the Darby Fire continue to shape UWPA's emphasis on consequence management, system recoverability, and coordination with emergency responders to this day.

Consistent with UWPA's operating environment, the Master Plan emphasizes measures that reduce vulnerability and improve recoverability rather than attempting to eliminate wildfire risk entirely. This approach recognizes the practical limitations of operating in a high-risk environment while prioritizing public safety, system reliability, regulatory compliance, and continuity of essential services.

11.5 System Resiliency and Adaptability

Resiliency is defined as the ability of UWPA's system to withstand, respond to, and recover from adverse events while maintaining essential functions. System resiliency encompasses the physical condition and configuration of infrastructure, organizational readiness and staffing capacity, financial resilience, and coordination with external partners.

The Master Plan supports incremental, risk-informed improvements that enhance resiliency and adaptability over time, consistent with the Strategic Plan and implemented through the Capital Improvement Plan (CIP). This approach avoids premature or irreversible commitments, preserves flexibility under uncertain future conditions, and supports long-term reliability, regulatory compliance, and responsible stewardship.

11.6 Decision Triggers and Adaptive Management

Given regulatory uncertainty, environmental variability, and evolving system conditions, UWPA's planning framework incorporates adaptive management principles. Significant changes in regulatory requirements, risk exposure, asset condition, system performance, or financial capacity may trigger reevaluation of planning assumptions, capital priorities, or financial strategies.

These decision triggers are addressed through structured updates to the Strategic Plan and Capital Improvement Plan (CIP), and, when appropriate, through amendment of this Master Plan. This approach supports timely, informed adjustment while preserving Board oversight, transparency, and consistency across UWPA's planning and governance framework.

12. Implementation, Monitoring, and Plan Maintenance

This section describes how the Master Plan is implemented, monitored, and maintained over time. The Master Plan is intended to function as an active governance and planning tool that informs UWPA's ongoing decision-making, rather than as a static or self-executing document.

Through regular review, integration with other planning documents, and Board oversight, the Master Plan provides a durable framework for guiding long-range policy decisions while remaining responsive to changing conditions, emerging risks, and regulatory developments.

12.1 Implementation Through Other Planning Documents

Implementation of this Master Plan occurs through UWPA's established planning and governance processes. The Master Plan itself does not authorize projects, expenditures, or staffing; rather, it provides the long-range policy context that guides decisions made through the Strategic Plan, Capital Improvement Plan (CIP), and annual budget.

The Strategic Plan translates the Master Plan's long-term objectives, values, and risk posture into near-term priorities, initiatives, and performance goals. The CIP implements the Master Plan's infrastructure planning principles by identifying specific projects, schedules, cost estimates, and funding strategies. Annual budgets provide formal authorization for expenditures and staffing necessary to carry out approved plans.

Together, these documents ensure disciplined execution, transparency, and accountability while preserving Board oversight and flexibility in responding to changing conditions.

12.2 Performance Monitoring and Reporting

Progress toward the objectives of this Master Plan is monitored through regular reporting to the Board of Directors as part of Strategic Plan updates, Capital Improvement Plan (CIP) reviews, and annual budget discussions. Monitoring focuses on indicators related to system reliability, risk reduction, regulatory compliance, financial stability, and emergency preparedness.

The Master Plan does not establish prescriptive performance metrics or thresholds. Instead, it provides a policy framework within which performance measures may be developed, refined, and adjusted over time through the Strategic Plan and related reporting processes to reflect evolving priorities, system conditions, and regulatory expectations. This approach supports transparency, informed oversight, and adaptive management without constraining future decision-making.

12.3 Plan Maintenance and Updates

This Master Plan is intended to function as a living document. It will be reviewed by the UWPA Board of Directors at least every five years, and more frequently as warranted by significant changes in regulatory requirements, system conditions, financial circumstances, or risk exposure.

Updates to the Master Plan may range from minor clarifications to comprehensive revisions, depending on the nature and scope of the issues prompting review. Amendments are adopted by Board action in accordance with UWPA's governance procedures. This approach ensures that the Master Plan remains current, relevant, and defensible while preserving Board oversight, transparency, and long-term planning flexibility.

12.4 Consistency and Governance Oversight

Consistency among the Master Plan, Strategic Plan, Capital Improvement Plan (CIP), and annual budget is essential to effective governance and disciplined decision-making. When inconsistencies arise, they are identified and addressed transparently through the planning, review, and budget approval processes.

The UWPA Board of Directors retains ultimate responsibility for ensuring that planning documents remain aligned with UWPA's mission, core values, risk posture, and long-term stewardship obligations. This governance oversight ensures accountability, preserves local control, and supports informed, defensible decision-making over time.

12.5 Closing Statement

This Master Plan establishes a disciplined and flexible framework for the long-term stewardship of the Utica Water and Power Authority's water conveyance and hydroelectric system. It reflects UWPA's responsibility to manage historically significant infrastructure in a manner that prioritizes public safety, system reliability, regulatory compliance, and financial sustainability.

The Plan is intentionally designed to guide decision-making rather than prescribe outcomes. By focusing on risk-based planning, phased investment, and adaptive management, UWPA preserves the ability to respond to changing regulatory conditions, environmental risks, and financial realities while maintaining continuity of service and local control. The Plan affirms that protecting the Authority's revenue-generating infrastructure, securing durable regulatory authorization, and financing necessary reinvestment in a disciplined manner together represent the value-creating path for current and future ratepayers. Implementation of the Plan occurs through established governance processes, including the Strategic Plan, Capital Improvement Plan, and annual budget, ensuring transparency, accountability, and Board oversight.

As a living document, this Master Plan will continue to evolve as conditions change and new information becomes available. Its value lies not in fixed assumptions or commitments, but in the consistent application of sound planning principles and responsible governance. Through this framework, the UWPA Board of Directors affirms its commitment to thoughtful stewardship of the Utica system for the benefit of current and future generations.