

SILVER LAKE RESERVOIR COMPLEX MASTER PLAN

December 30, 2020



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abbreviations

Unless otherwise specifically defined in the Master Plan, when the following abbreviations are used, the intent and meaning will be interpreted as follows:

BOE	Los Angeles Bureau of Engineering
CAO	City Administration Office
CD4	Council District 4
CD13	Council District 13
CFD	Community Facilities District
Complex	Silver Lake Reservoir Complex
DSOD	Division of Safety of Dams
LADWP	Los Angeles Department of Water & Power
LASAN	Los Angeles Sanitation
Master Plan	Silver Lake Reservoir Complex Master Plan
O&M	Operations and Maintenance
Park	Proposed Master Plan Design
RAP	Los Angeles Department of Recreation and Parks
SLRC	Silver Lake Reservoir Complex

CHAPTER 1

EXECUTIVE SUMMARY

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1.1 Master Plan Scope of Work

The Silver Lake Reservoir Complex (herein referred to as the “Complex” or “SLRC”) located in the Silver Lake neighborhood of the City of Los Angeles (herein referred to as “the City” or “LA”) was removed from the City’s drinking water supply system in 2008 and is being repurposed as a passive public park.

The Silver Lake Reservoir Complex Master Plan (herein referred to as the “Master Plan”) provides a bold vision for a new 116-acre park that will blend urban wilderness with community park amenities. The Master Plan includes a physical plan, park activities and uses, park sustainability, funding strategies, park operations and maintenance considerations, a conceptual cost estimate, and a phasing strategy. The Master Plan scope of work has been summarized in the following Master Plan Report chapters and sections:

- Chapter 1:** Executive Summary
- Chapter 2:** Project Overview
- Chapter 3:** Analysis
- Chapter 4:** Process
- Chapter 5:** Master Plan
- Chapter 6:** Park Sustainability
- Chapter 7:** Capital Funding Strategies
- Chapter 8:** Park Governance, Operation & Maintenance

- Acknowledgments**
- References**
- Appendices**



Figure 1-1 Image of The Silver Lake Reservoir Complex today

1.2 City of Los Angeles Project Team

This Master Plan was initiated by the Council offices of Councilmember Mitch O’Farrell and Councilmember David Ryu. The Los Angeles Department of Water and Power (LADWP) financed the planning effort and worked collaboratively with the Bureau of Engineering (BOE) to define the Master Plan scope. The City Project team was led by the BOE who composed the scope of work, led the effort to hire the consultant team, and managed the Master Plan process. The City project team included staff from Councilmember Mitch O’Farrell, staff from Councilmember David Ryu, staff from the Mayor’s office, and staff from the LADWP; with input from staff in the City’s Department of Recreation and Parks (RAP), the Office of the City Administrative Officer, LA Sanitation, and others.

CONSULTANT DESIGN TEAM

The Master Plan was completed by a team of local consultants led by Hargreaves Jones, an international landscape architecture and planning firm specializing in the design of urban parks. Hargreaves Jones was selected to lead the Master Plan by the City of Los Angeles through an open RFP / interview process. The Hargreaves Jones Team (herein referred to as the “Design Team”) includes local experts in landscape architecture and architecture (Chee Salette), community outreach and engagement (The Robert Group), water resources and civil engineering (CWE), biological and cultural resources (GPA Consulting), park economics (HR&A Advisors), geotechnical and structural engineering (Beyaz & Patel), traffic engineering (JB & Associates), and cost estimating (Leyland Saylor & Associates).

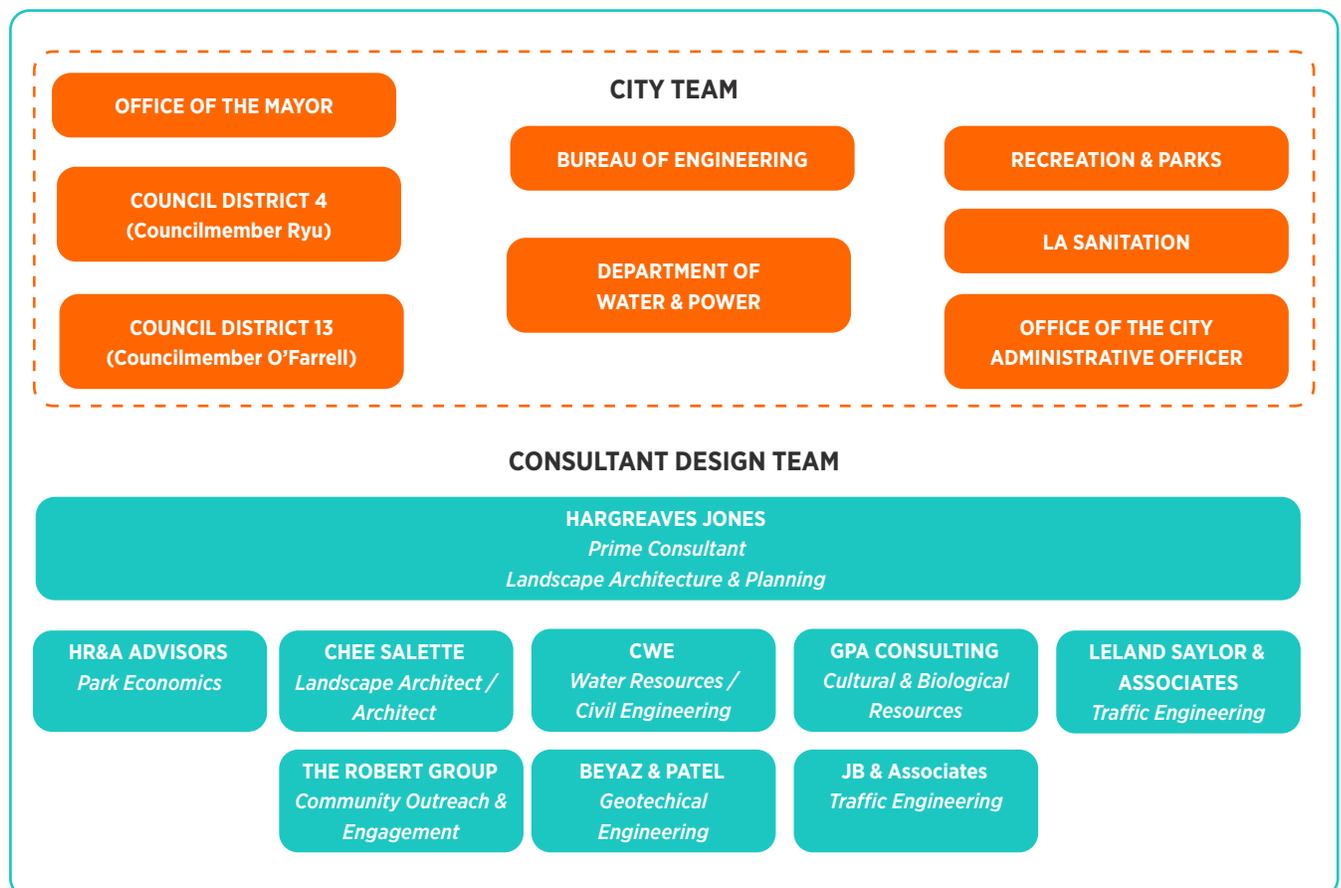


Figure 1-2 Master Plan Project Team

1.3 Project Overview

In response to a federal mandate to phase out open-air drinking water reservoirs in 2006, the LADWP decommissioned Silver Lake and Ivanhoe Reservoirs and removed them from the City of Los Angeles' potable water system. Silver Lake Reservoir was removed from service in 2008, drained in 2015 to construct the Bypass Project, and then refilled in 2017. Ivanhoe Reservoir was removed from the distribution system in 2017 and has been consistently filled with water. Although Silver Lake and Ivanhoe Reservoirs are no longer a potable water source, LADWP has active components at the Silver Lake Reservoir Complex (SLRC) which requires preserving areas of the site for system operations, personnel, and future projects. LADWP offered the majority of the Silver Lake Reservoir Complex property to be used to allow access by the community.

The Master Plan initiative was undertaken to allow the Silver Lake community and City of Los Angeles to consider repurposing this major piece of urban infrastructure for public use. The Master Plan project was officially initiated in March 2018, when the City Council approved a Memorandum of Agreement between the BOE and the LADWP, allowing the BOE to begin the Silver Lake Reservoir Complex Master Plan process. LADWP, in continuing its commitment to the neighborhood, funded the development of the Master Plan. The agreement included LADWP continuing their operational responsibilities, such as maintaining the integrity of the dams and LADWP onsite facilities.

The Master Plan was seen as a unique opportunity to transform this historically significant and iconic urban feature into a community park while addressing LADWP's on-going operational needs. The community was given a chance to determine the future of this 116 acres of land and lay out a shared vision. The proposed Master Plan design is the result of a robust community participation process and partnership between Council Offices, City departments, and consultants. It is a testament to what we can do when we work together.

1.4 Vision & Goals

As habitat continues to disappear in our increasingly urbanized world, reintroducing wildlife back into cities is becoming ever more important. Early in the community engagement process, enhancing and expanding habitat for wildlife was identified as a primary goal for the Master Plan. The Park is envisioned as a hybrid space that balances urban wilderness with human uses; unleashing the power of natural processes to create a healthy ecosystem and of human connections to nature and one another.

The Master Plan creates a foundation for realizing this vision. It conceptually defines the design, construction costs, phasing strategy, and approach to the operation of the Park. It specifies near and long-range strategies for park development and provides a framework for post-construction programming, operations, governance, and long-term financial sustainability.

The project goals listed below guided the development of the Master Plan:

- Create a clear, bold design that repurposes the SLRC into a public park
- Preserve and enhance the unique character of the SLRC
- Create a public amenity with safe and varied access
- Balance active and passive uses
- Balance wildlife habitat with human uses
- Create a design that is implementable and can be partially funded through grants
- Allow for continued LADWP operations, access, and future use

1.5 Community-Based Planning Process

This Master Plan evolved through a uniquely collaborative process integrating extensive community and stakeholder input and frequent progress reviews with City departments and the Council Districts. The 18-month community process included five large Community Workshops and eight focused meetings with the project’s Stakeholder Working Group to garner public feedback at all critical stages in the planning and design process: Analysis, Visioning and Programming; Master Plan Alternatives; Preferred Master Plan; and Final Master Plan (Figure 1-4).

The format of the Community Workshops varied from presentations and break out discussions on Thursday evenings and Saturday afternoons to an open reservoir walk at the SLRC. Due to Covid-19, the final Community Workshop was held virtually in the form of online videos and an online questionnaire which was supplemented with paper copies for those without computer access. These diverse approaches maximized opportunities to capture community input as well as give the neighborhood a chance to experience the power of the water bodies inside the fence. Community Workshops were attended by 1,570 community members and generated 8,478 questionnaire responses. The Master Plan reflects the vision and interests of the community who live near the Complex and visit it frequently. An average of 88% of respondents consistently reported living in a zip code within a 2-mile radius of the Complex and are frequent visitors – over 77% of responders visit the reservoirs at least once per week. In the final questionnaire, participants indicated that they would visit the Complex more often when the Master Plan is implemented.



Figure 1-3 Community Workshop Photos

*Community Workshop 01, June 27, 2019
Friendship Auditorium*

*Community Workshop 02, August 22, 2019
Silver Lake Reservoir Complex*



*Community Workshop 03, November 2, 2019,
Marshall High School*



*Community Workshop 04, January 23, 2020,
Friendship Auditorium*

Figure 1-4 Community Engagement Process Summary



1.6 Master Plan Overview

The new Park is conceived as a hybrid infrastructure that amplifies the use of the reservoir water bodies to attract and sustain wildlife, connect with nature and neighbors, and educate. The Master Plan design was inspired in great part by its rich history and narrative from a freshwater marsh and intermittent pond within Ivanhoe Canyon to a significant and iconic piece of Los Angeles water infrastructure.

As shown in Figure 1-5, the proposed Master Plan design consists of a series of overall park zones stitched together by a 2.5-mile, tree-lined Promenade. These zones include: The Meadow, The Knoll, Ivanhoe Overlook, Eucalyptus Grove, East and West Narrows, and South Valley.

The Park will feature two flexible lawns with shade trees, a picnic grove and ornamental gardens with an informal play area, and an environmental education center along the east edge of Silver Lake Reservoir at the base of The Knoll. At the intersection between the lawns and water, stepped seating terraces give way to wetland terraces interwoven with small footpaths. Two existing areas of woodland, The Knoll and Eucalyptus Grove, are restored to increase their upland habitat value. Extending from the shoreline embankments and within the reservoir bodies is a new ecosystem that reintroduces coastal scrub and wetland habitat to the Complex for the first time in over 100 years in the form of habitat islands and terraces.

Figure 1-5 Silver Lake Reservoir Complex Master Plan



1.7 Park Sustainability

The Master Plan design is founded on principles of sustainability, interweaving systems of ecology, water, and education cohesively. These visible forms of sustainability included in the Master Plan represent the commitment by the Silver Lake neighborhood and the City of Los Angeles to being leaders in freshwater resource management and leaders as stewards of urban wildlife.

During the Master Plan design process, a September 2019 study was published in *Science* magazine that documented a loss of three billion birds in North America, nearly 30% of the total population, since 1970. The study sites habitat loss as a significant factor contributing to this decline. Given the reservoirs' location along the Pacific Flyway and that they are such a large, freshwater resource for local and migratory birds, particularly waterfowl, the Master Plan's habitat recommendations prioritizes these avian species.

HABITAT EXPANSION AND ENHANCEMENT

Until recently, the Complex has been managed as a sterile reservoir to support the drinking water needs of Los Angeles. Its habitat value is moderate, and most significantly, it lacks food resources for birds and small terrestrial species. To remedy this, the Master Plan design focuses on increasing habitat diversity and introducing a food web, particularly for local and migratory waterfowl. The range of habitats proposed in the Master Plan will support an increasingly diverse array of birds, fish, amphibians, invertebrates, and other aquatic species. To provide this biodiversity, the Master Plan design maximizes the habitat value of existing wooded areas and creates new habitat resulting in a combined total 23 acres of dedicated habitat area.

EDUCATION AND INTERPRETATION

Along with the high priority placed on habitat and wildlife in the Master Plan, there is also an inherent responsibility for long-term stewardship. The SLRC has the potential to become an exemplary model of urban wilderness management and citizen stewardship. Through the lens of a living laboratory, the research and maintenance activities required for the long-term success of the proposed ecosystem can be made legible and transparent by increasing environmental and climate awareness across the community. The Master Plan design provides the foundation to develop a myriad of education and interpretation opportunities from organized tours, classes, school field trips, and volunteer programs, to less structured interpretive features and elements.

WATER QUALITY

The proposed water system at the SLRC has been developed to support the wetland and aquatic habitat aspirations of the Master Plan. Key variables of this system are the reservoirs' water replenishment sources (stormwater and Pollock Well), annual evaporation, aeration, recirculation, nutrient loading, and treatment wetlands. During the Master Plan development process, a Water Quality Model study was developed to predict water quality impacts in both Silver Lake and Ivanhoe Reservoirs with the goal of maintaining a level of water quantity and quality that can support the future uses proposed at the site, such as aquatic habitat. The results from the model indicated that the addition of proposed wetlands in the Master Plan, combined with LADWP's planned aeration and recirculation projects, will significantly contribute to reducing nutrients and bacteria to levels safe for sustaining aquatic habitat. This study along with the Park's water system is discussed further in Chapter 06.



Figure 1-6 Living Laboratory at Ivanhoe Overlook

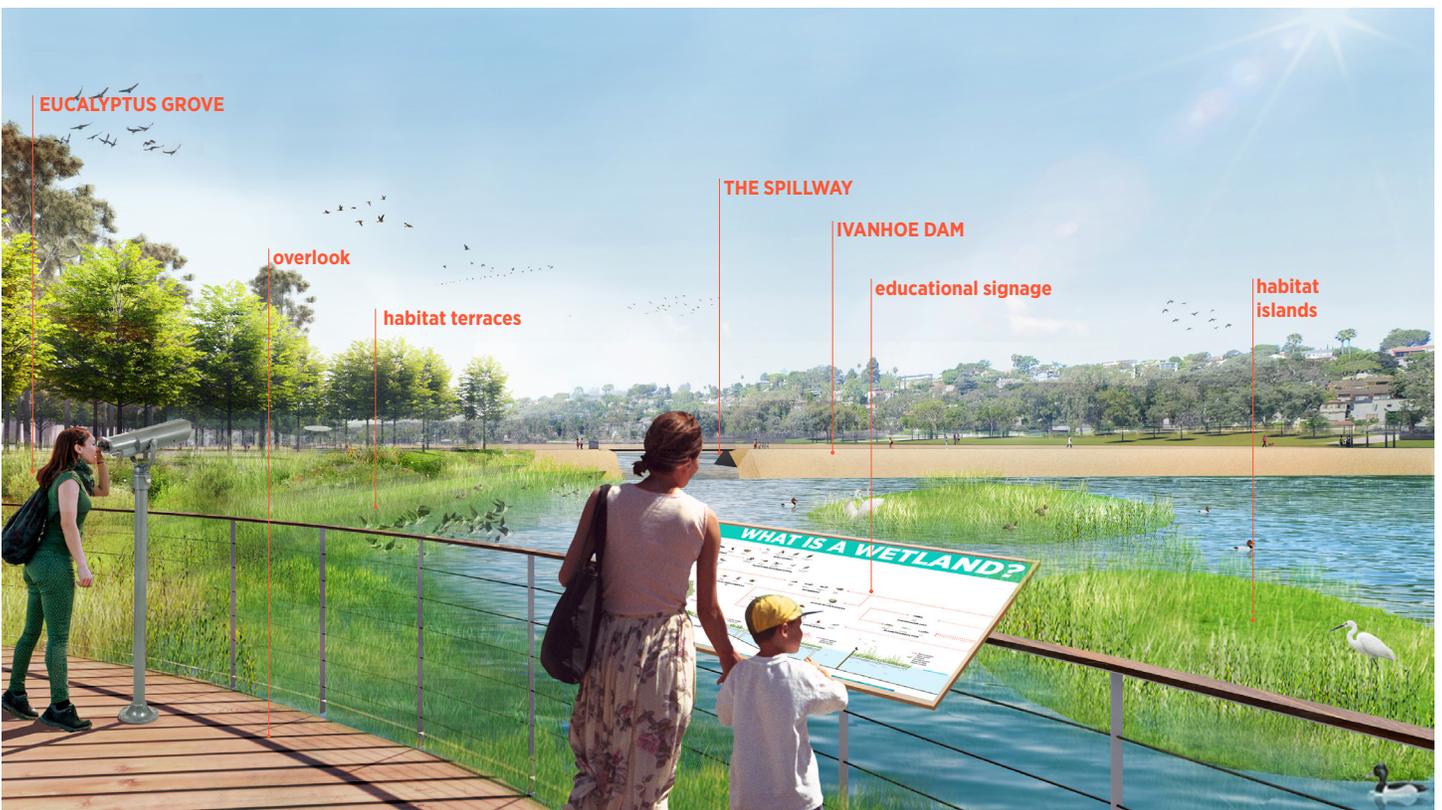


Figure 1-7 Educational Overlook at the Eucalyptus Grove

1.8 Park Phasing & Estimated Cost

The project team has identified eight potential stand-alone projects within the Master Plan design for construction phasing and fundraising. They are graphically shown in Figure 1-8 with no implied order of priority. Based on prior experience, the project team estimates each phase will take approximately 18- to 24-months to construct. Depending on funding, these phases can be constructed individually or collectively.

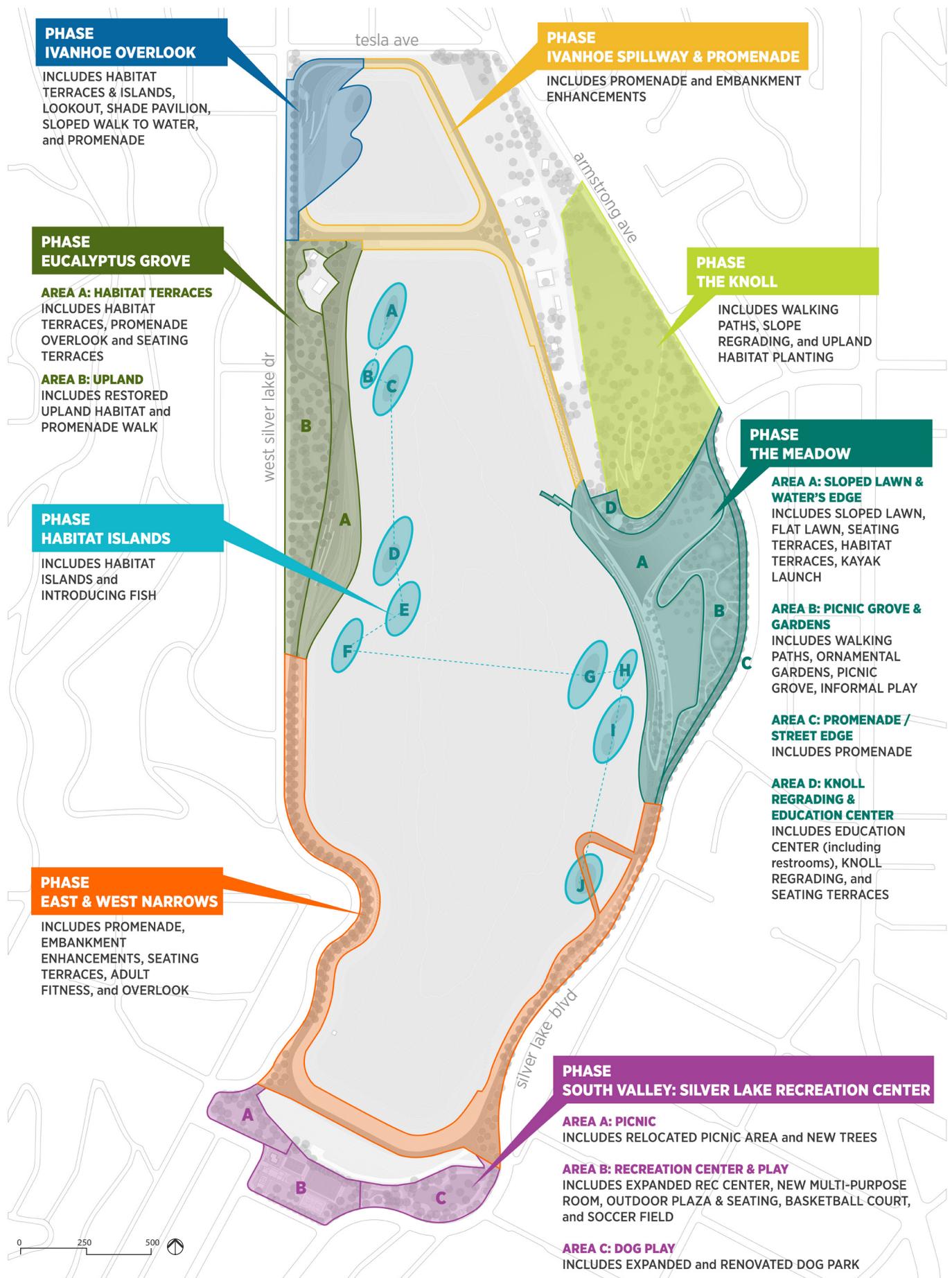
Some of the phases have many interdependent spaces or sub-phases, which require that they be built contiguously and sequentially. For instance, The Meadow design implementation will require cut and fill earthwork in order for the lawns to be excavated and the resulting fill from this work to be used to construct the seating and wetland terraces. This project work should happen first and is indicated as sub-phase A of the Meadow in Figure 1-8. Subsequently, the Picnic Grove and Ornamental Gardens can be completed next (sub-phases B & C), followed by re-grading at the base of The Knoll to install a footpath and build the Education Center (sub-phase D). Similarly, work along the water's edge including the proposed wetland terraces and overlook should be completed in the Eucalyptus Grove prior to restoring the upland habitat. The improvements in the Recreation and Parks area in the South Valley can be broken into three discrete projects: the Dog Park; the Multi-Purpose Facility, play fields and court; and the picnic area and replanting in the Grassy Patch.

The floating wetland Habitat Islands can be implemented all at once or island-by-island. Fish will need to be introduced following the completion of all major in-water construction work and floating wetland islands installation.

The overall conceptual budget for Master Plan implementation is \$268.5M. A professional cost estimator, Leland Saylor Associates, provided construction cost estimates for each proposed Master Plan phase shown in Figure 1-8. These estimates include industry assumptions for escalation, contingencies, contractor general conditions, and soft costs. They were also developed based on the assumption that all phases of the Park will be built at the same time and construction would commence in approximately two years following an environmental clearance and design phase. Therefore, this budget is subject to change as timelines are adjusted. As a conceptual estimate, the budget is intended to provide an order of magnitude cost for the Master Plan's construction to assist the City in project budgeting and funding.

Project Phase	The Meadow	\$60,300,000
	The Knoll	\$18,000,000
	Ivanhoe Overlook	\$27,400,000
	Ivanhoe Spillway and Promenade	\$11,200,000
	Eucalyptus Grove	\$67,200,000
	Habitat Islands	\$32,800,000
	East and West Narrows	\$36,000,000
	Silver Lake Recreation Center	\$15,600,000
	Total Conceptual Construction Costs	\$268,500,000

Figure 1-8 Phasing Diagram



1.9 Park Economics & Governance

CAPITAL AND O&M FUNDING

During the Master Plan development process, HR&A Advisors was retained to provide an analysis of potential public and other mechanisms to fund capital and operating needs of the proposed Park. Six public mechanisms were reviewed including: Community Finance Districts (CFD), Development Agreement Fees, Enhanced Infrastructure Financing Districts, Parcel Taxes, Quimby Fees, and Special Assessment Districts. Additional funding sources identified were Grant Funding and Philanthropic contributions.

Based on the Park's context, the needs and perspective of City staff, and a review of potential funding mechanisms, the recommended capital funding strategy for the Master Plan relies primarily on the implementation of a Community Facilities District (CFD) to generate revenue for O&M and capital bonds, which would be supplemented by Development Agreement Fees, Quimby Fees, Grants, and Philanthropic contributions.

As outlined in Section 1.8 above, the overall conceptual budget for Master Plan implementation is \$268.5M. A conceptual O&M budget of \$3.64M annually is anticipated as described in Chapter 08. Figures 1-9 and 1-10 show the range of potential funding that the recommended mechanisms could yield, as well as how these could be applied to various phases of Master Plan implementation and ongoing operations.

GOVERNANCE

To achieve the Master Plan vision, the formation of an independent, special-purpose, non-profit entity named the Silver Lake Reservoirs Park Conservancy (SLRPC) is recommended. This special-purpose entity can be completely new or represent an expanded role for one of the existing non-profit stakeholders in Silver Lake. It can provide the leadership to manage project implementation and long-term operations. It can also fundraise to support capital and operations and maintenance (O&M) costs, with a Board of Directors that is representative of committed project stakeholders. If structured to benefit from dedicated resources and funding outlined in Chapter 07, such an entity would be endowed with the staff and budget capacity necessary to champion a multi-phase implementation process; provide sustainable operations, including maintenance of unique horticulture and wetland spaces to the elevated standard envisioned in the proposed Master Plan; and coordinate revenue allocation generated by one or more CDFs and any philanthropic fundraising.

It is recommended that the SLRPC report regularly to a City Oversight Committee led by representatives from key City departments. The Oversight Committee will ensure that Park capital expenditures and ongoing operations align with the guidelines and goals for a public open space, and will provide accountability for the expenditure of public funds. The Oversight Committee will then report to City Council and the Mayor for decisions that require policy direction.

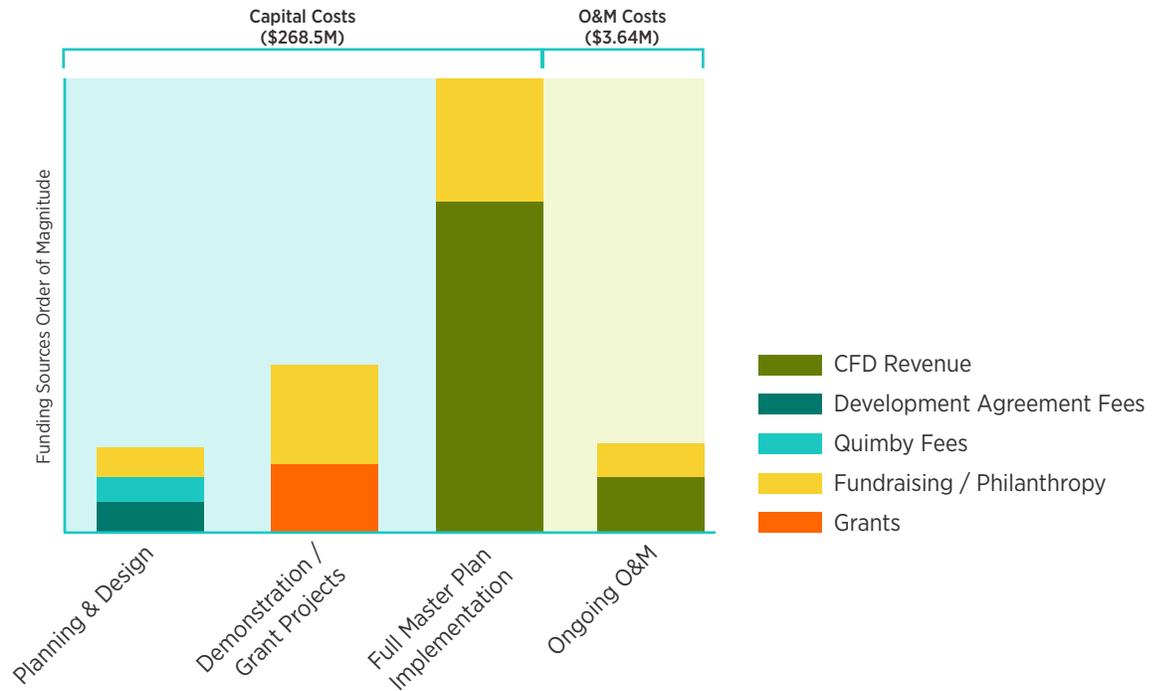
All these topics are discussed further in Chapter 07 Capital Funding Strategies and Chapter 08 Governance, Operations & Maintenance.

Figure 1-9 Park Funding Matrix

Funding Source	Potential Funding Amount	Notes
Community Facilities District (CFD)	\$150M - \$200M	Includes annual O&M costs
Quimby & Development Agreement Fees	TBD	Quimby Fees can only be used on RAP lands.
Public Grants	\$200k - \$6M	
City General Fund	TBD	
Total	\$150M to \$206M+	
Remaining Capital Funding Gap	\$62M - \$118M	Range of capital funding needed from fundraising or City General Fund.

Figure 1-10 Master Plan Implementation Funding

Chart shows the order of magnitude expected from each funding source for Master Plan implement



1.10 Near-Term Action Items

As demonstrated during the community outreach and engagement process outlined in Chapter 04, the Master Plan has garnered significant support by the community and City leaders, with the potential to catalyze environmental stewardship for generations to come. Harnessing this potential requires early initiatives to establish appropriate funding vehicles and a governance structure, provide a road map for water resource and wildlife management, and seek environmental clearance. In the near term, the Project Team recommends pursuit of the following implementation tasks listed below. Figure 1-11 provides a conceptual timeline for Master Plan implementation and the relationship and sequencing of key implementation variables.

ENVIRONMENTAL CLEARANCE

Under the State of California Environmental Quality Act (CEQA) this project will be subject to CEQA review and will need to complete an Environmental Impact Report (EIR), the additional project studies necessary for the EIR, and engage the public in the process. While some planning, design, feasibility analysis, and Park governance work can be initiated during the EIR process, none of the Master Plan design elements can be finalized or constructed until an EIR is approved by the City.

FUNDING

As the primary funding source identified for project capital, CFD implementation details should be advanced as soon as possible following Master Plan adoption and should prioritize the following:

- Engagement of a municipal advisor and/or CFD tax consultant to develop and evaluate potential structure(s) and related detailed revenue estimates.
- Engagement of bond counsel to advise on the use of tax revenue.
- Evaluation of potential voter support of the CFD mechanism.
- Identification of a funding source to support CFD formation costs of approximately \$500,000, excluding community outreach and engagement.
- Completion of a fundraising feasibility study, to establish and confirm the potential amount that can be raised from among likely donors.

GOVERNANCE

Upon the adoption of the Master Plan by City Council and concurrence of the Mayor, the City should establish a City Oversight Committee for the Park, and participate in the formation of a non-profit entity to lead the effort with the public to fund and operate the Park including the following:

- Identify a project champion who can act as a leader in this effort.
- Assemble an initial Board of Directors.
- Identify a minimum of three years of funding to support the new non-profit entity.

PLANNING

Early planning efforts to set forth the guidelines and requirements of detailed design, construction, O&M, and stewardship related to the environmental aspects of the Park will be critical to its success. These planning initiatives should include development of the following:

- Biodiversity Plan
- Wildlife Management Plan
- Tree Health Assessment
- Tree Succession Plan
- Water Quality Management Plan
- Wetlands Maintenance Plan

Figure 1-11 Master Plan Near-Term Implementation Timeline

