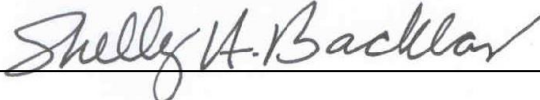


**SANTA MONICA MOUNTAINS CONSERVANCY  
GRANT APPLICATION**

<b>Project Name:</b> Completing The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study	<b>Amount of Request:</b> \$77,050  <b>Total Project Cost:</b> \$245,180 <b>Matching Funds:</b> <b>Lat/Long:</b>												
<b>Applicant Name:</b> Friends of the Los Angeles River	<b>Project Address:</b> Multiple												
<b>Applicant Address:</b> 570 W. Avenue 26, #250 Los Angeles, CA 90065	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:33%;">County</th> <th style="width:33%;">Senate District</th> <th style="width:33%;">Assembly District</th> </tr> <tr> <td align="center">Los Angeles</td> <td align="center">24</td> <td align="center">51</td> </tr> </table>	County	Senate District	Assembly District	Los Angeles	24	51						
County	Senate District	Assembly District											
Los Angeles	24	51											
<b>Phone:</b> 323 223-0585 <b>Email:</b> sbacklar@folar.org	<b>Tax ID:</b> 95-4171497												
<b>Grantee's Authorized Representative:</b> <i>Name and Title:</i> Shelly Backlar, Vice President of Programs <span style="float:right"><i>Phone</i> 323 223-0585</span>													
<b>Overhead Allocation Notice:</b> <input checked="" type="checkbox"/> Any overhead costs will be identified as a separate line item in the budget and invoices. <input checked="" type="checkbox"/> The Conservancy encourages grantees to reduce overhead costs including vehicle and phone expenses. <input checked="" type="checkbox"/> The overhead allocation policy has been submitted prior to, or with, the grant application.													
<b>Outreach and Advertising Requirement:</b> <input checked="" type="checkbox"/> Applicant has read the staff report and board resolution regarding contract policies. <input checked="" type="checkbox"/> Applicant has adopted contract policies for the purpose of increasing outreach and advertising to disadvantaged businesses and individuals. <i>All check boxes must be checked</i>													
<b>Brief Project Description:</b> In 2019 FoLAR received funding from the Santa Monica Mountains Conservancy to conduct the LA River Recreation Zone and Ecosystem Feasibility Study – initially focused on the Elysian Valley/Cypress Park Stretch, identified in the ARBOR Plan as the site for 1,000 linear feet of concrete removal, 300 feet of channel widening and over 20 acres of ecosystem restoration. This initial exploration suggests the potential to achieve greater flood risk reduction, by integrating findings into a broader, regional approach to flood management that also aligns with the Upper LA River Tributary Plan. <span style="float:right">*attach additional pages with project detail</span>													
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Tasks / Milestones:</th> <th style="width:30%;">Budget:</th> <th style="width:30%;">Completion Date</th> </tr> </thead> <tbody> <tr> <td>1 Sherwood Design Engineers</td> <td align="center">\$52,000</td> <td align="center">January 2021</td> </tr> <tr> <td>2 FoLAR Project Management</td> <td align="center">\$15,000</td> <td align="center">January 2021</td> </tr> <tr> <td>3 15% Administrative Overhead</td> <td align="center">\$10,050</td> <td align="center">January 2021</td> </tr> </tbody> </table>		Tasks / Milestones:	Budget:	Completion Date	1 Sherwood Design Engineers	\$52,000	January 2021	2 FoLAR Project Management	\$15,000	January 2021	3 15% Administrative Overhead	\$10,050	January 2021
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I certify that the information contained in this Grant Application form, including required attachments, is accurate.													
 <hr/> <i>Signature of Authorized Representative</i>	July 15, 2020 <hr/> <i>Date</i>												
STATE OF CALIFORNIA ♦ THE NATURAL RESOURCES AGENCY													

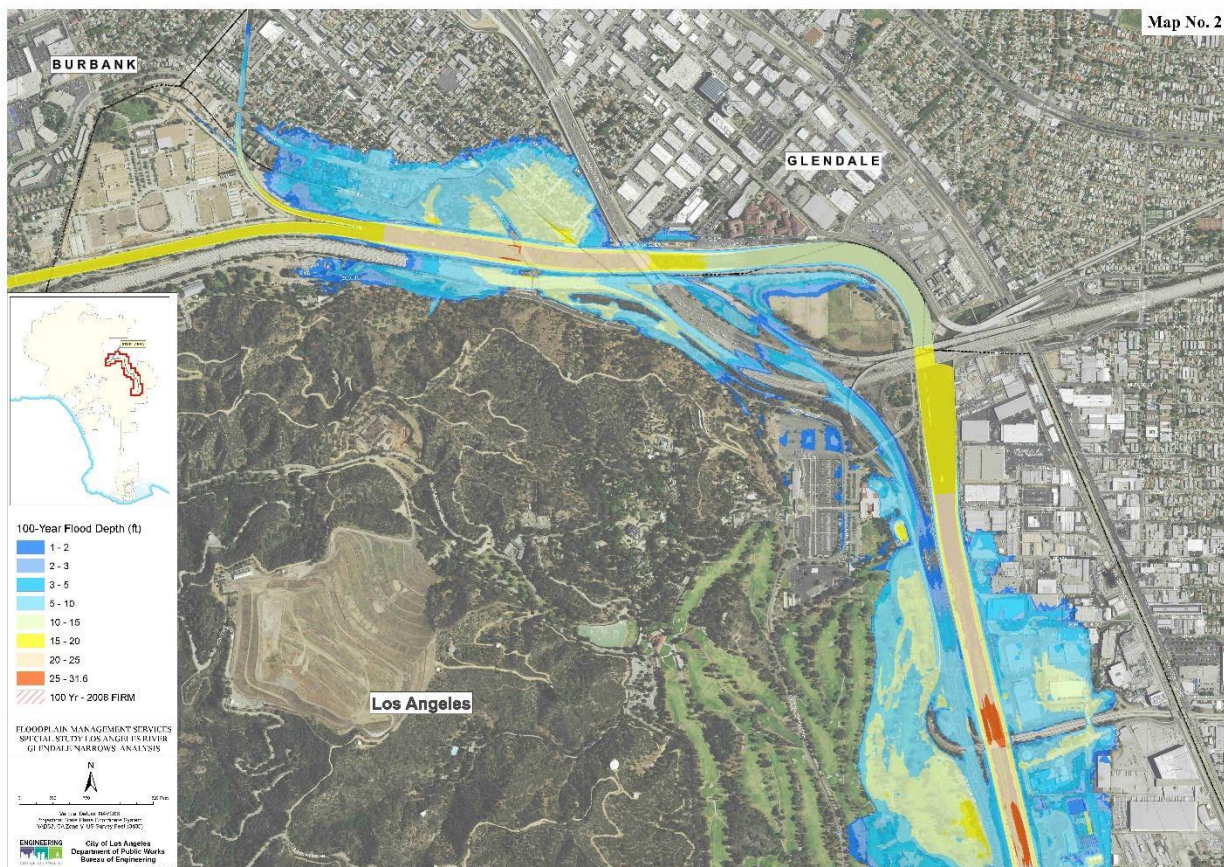


## Completing the Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study

### Background

In October 2016, the U.S. Army Corps of Engineers released a Hydraulic Report entitled "Floodplain Analysis, Los Angeles River: Barham Boulevard to First Street for the Los Angeles River Flood Plain Management Services Special Study". The study, conducted at the request of the Los Angeles City Department of Public Works, Bureau of Engineering, provided a guide – for planning only – to assist communities in formulating floodplain management decisions. The study revealed that:

- 3,000 parcels north of downtown Los Angeles in neighborhoods such as Atwater Village and Elysian Valley could be submerged by an average of 5 to 10 feet of water in the event of a 100-year storm.
- It also found that other areas such as Griffith Park, Glendale and Burbank could see significant flooding.



Map 2 from the USACE Hydraulic Study area, depicting flooding depth for a 100-year flood

### The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study

**Friends of the Los Angeles River (FoLAR)** has advocated for an equitably accessible and ecologically restored Los Angeles River for over three decades, with a priority focus in the Elysian Valley/Cypress Park section of the River. In recent years we co-authored the legislation that provided the basis by which the River's recreation zones were established and provided \$1M to the City of Los Angeles and the US Army Corps of Engineers to complete what remains the most ecologically progressive study on the Los Angeles River – the LA River Ecosystem Restoration Study (ARBOR). That plan and Alternative 20 as its preferred alternative was successfully adopted by both agencies in 2016. The River now has the biggest opportunity to accomplish the ecosystem restoration envisioned in that plan as the City is currently engaged in planning and design for what is arguably the most important site in that plan – G2.

In August 2019, FoLAR received a \$172,500 Proposition 1 grant from the Santa Monica Mountains Conservancy to **conduct the Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study**. At that time plans to improve the G2 Parcel, 42 acres within a 100-acre complex, now known as the **100 Acre Vision**, of current and future open space on the River, were well underway. This stretch of River encompasses a recreation zone and is identified in the ARBOR Plan as the site for:

- 1,000 linear feet of concrete removal,
- 300 feet of channel widening and,
- Over 20 acres of ecosystem restoration.

This Funding allowed FoLAR to commission a multi-benefit Study – led by Sherwood Engineering Design – that initially focused on River modifications and ecosystem restoration as described in the ARBOR Plan, while also focusing on enhancing the recreation zone and improving flood risk. The initial focus was a localized one, referred to in the Study as the **District Approach**. It focused on the Cypress Park and Elysian Valley stretch because:

- This section of the river is presented with coming plans and projects that could potentially provide substantial opportunities for habitat restoration and improved flood protection for the surrounding community.
- No current plans for this section of the river include a significant improvement to flood control for these communities.
- Several new plans threaten to undermine access to nature and a healthy natural river, citing flood control.

The **District Approach** examined the flood protection needed for a 100-year storm. Six outflows contribute to both the volume of water entering the channel and the impact that flow poses for channel capacity from the Bowtie Parcel to the Arroyo Seco Confluence. Constraints and opportunities are noted, and tool kits were created.

- **Green Our Communities from Streetscape to Sponge-scape** – identifies multiple green infrastructure solutions that include habitat and ecology, water strategies, and community features that were identified as desired in neighborhoods within the **North East Los Angeles Plan** conducted in 2014.
- **An Ecological Spine examines strategies to increase channel capacity** identifying channel widening to expand volume, plus sediment and vegetation management.
- **Resilient Boulevards** examines strategies to manage an historic flood event by implementing projects on Riverside Drive, and San Fernando Road – in alignment with community-identified features detailed in the **North East Los Angeles Plan**.

Sherwood Design Engineering began examining options for a **Regional Approach** to managing flood risk with design elements identified in the **Los Angeles River Revitalization Master Plan** and the **ARBOR Plan**. This watershed-based approach focused on strategies to manage water upstream as a way to

improve both flood protection levels and habitat enhancement associated with the Taylor Yard Opportunity site.

These early explorations suggest the potential to achieve greater flood risk reduction, and potentially reduce the need for some of the more costly flood mitigation infrastructure projects identified in the District Approach analysis.

### The Opportunity and Need

This proposal would build on these initial findings and further the **Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study** to explore how the District and Regional Approaches can be integrated to:

- Echo the 11 multi-benefit design concepts and project elements that are detailed in over 344 opportunity areas detailed in the **Upper Los Angeles River Tributary Plan**.
- Support the goals and inform the **100 Acre Vision** -- a partnership between the Mountains Recreation and Conservation Authority, California State Parks, and the City of Los Angeles -- to establish equity, ecology, River revitalization and flood management as the cornerstones for the Park's design, implementation, and programming.
- Align with the **California State and Los Angeles Regional Waterboards' Los Angeles River Flows Project** that strives to better evaluate the cumulative impacts of potential flow reductions and provides a science-based approach for assessing flow necessary to sustain beneficial uses of the Los Angeles River.
- Address tangible ways to guarantee public safety and **flood protection solutions associated with climate change, that must be achieved with both 100-year and 500-year storms**.
- **Protect Cypress Park and Elysian Valley residents** from flooding in ways that minimize disruption of their communities.
- **Incorporate Atwater Village**, another River-adjacent community where flood protection is urgently needed.
- **Produce a comprehensive document** that can be presented to and used by departments, agencies, and community members for decision making.

### Budget

ITEM	COST
Sherwood Design Engineers	\$52,000
Project Management	\$15,000
Indirect Cost Recovery (15%)	\$10,050
<b>Total Request</b>	<b>\$77,050</b>

### The Scope of Work

Sherwood Design Engineers proposes the following design phases relative to the preparation of anticipated documents, and to support the sharing of this information with other organizations.

### **Incorporate Atwater Village**

The Civil Engineer will expand the study area, to test feasibility of extending the proposed approach upstream. Where feasible, solutions including regional detention as well as localized channel modification and bypass structures will be evaluated. This task will include the following services:

1. Update model to include area shown in Exhibit A
2. Design Team and Client Coordination
3. Collection and review of infrastructure-based data and information including but not limited to stream flow rates and characteristics, recycled water parameters, water quality, precedent projects/studies, proposed interventions, engineering reports, and modeling of channel geometry and hydrology.
4. Develop internal basis of design to be referenced throughout, and incorporated into documentation

#### **Deliverables Include:**

1. Engineering to evaluate the feasibility of expanding proposed solution(s)
2. Modify and develop existing and additional narrative and exhibits as necessary

### **Validate Regional & Local Engineering Models**

The Civil Engineer will review the modeling and information collected and created in the previous feasibility study to validate accuracy, and incorporate any new information that can be obtained:

1. Engineering Modeling
  - a. Review the flood modeling that exists, to ensure consistency with accepted industry standards and existing assumptions specific to the project area
  - b. Identification and review of additional studies, infrastructure improvements currently under way, and other information germane to the subject matter (such as flood risk, public health, access, and ecological restoration).
2. Update Information
  - a. Review all information in the context of expanded study area and information sharing
  - b. Identification of overlapping, competing and/or synergistic opportunities as they pertain to the study goals
  - c. Incorporation of Design Team information as deemed relevant by the Civil Engineer and Client

#### **Deliverables Include**

1. Updated background information
2. Updated feasibility study

### **Final Presentation Documents**

The Civil Engineer will compile and make ready for sharing, a final document and presentation that is concise, well vetted, and graphically appropriate to be shared with stakeholders and/or publicly. This phase will include the following work:

1. Complete narrative report, consistent with Client Mission & Vision
  - a. Coordinated Goals; Mission and Vision provided by Client
  - b. Internally consistent Narrative, edited and approved by Client
  - c. Graphic and written information compiled into a report
2. Complete graphic presentation, expanded to include new information
  - a. Concise and easily communicated update
  - b. Appropriate to intended audience(s)
  - c. Includes new information proposed herein and incorporates narrative

**Deliverables Include**

1. One (1) Final Report, intended for publication
2. One (1) Final Presentation, intended to be shared on screen

**A detailed project proposal follows this grant request.**

**Addressing Evaluation Criteria**

The Project addresses 8 of the purposes set forth in Water Code Section 79732(a)

**1. Protect and increase the economic benefits arising from healthy watersheds, fishery resources, and instream flow.**

According to the Environmental Protection Agency, watersheds substantially affect the quality of life for people and the environment overall:

**Reduced drinking water treatment and infrastructure costs.** Natural landscapes filter pollutants and protect water quality. A review of treatment costs and watershed characteristics for 27 drinking water utilities found that for every 10% increase in forest cover of the source water area, chemical and treatment costs decrease by 20% (Ernst, 2004). In a separate case, New York City found it significantly more cost-effective to protect the watershed's natural land cover and forests to provide natural filtration, rather than installing a multi-billion-dollar water treatment facility (Barnes et al., 2009).

**Reduced flood mitigation costs.** Floods cause an average of \$8 billion in damage every year in the United States. Floodplains and natural landscapes minimize the area and impacts of floods, reduce the burden on public drainage infrastructure and increase groundwater recharge (Postel and Richter, 2003).

**Increased revenues and job opportunities.** Healthy watersheds provide ample opportunities for fishing, boating, swimming, hiking, biking, wildlife viewing and ecotourism. Over 30 million people in the U.S. fish recreationally and these anglers generate approximately 1 million jobs and over \$45 billion in retail sales annually (Southwick Associates, 2008). Overall, the outdoor recreation industry contributes \$646 billion annually to the economy, supports 6.1 million jobs, and generates \$79.6 billion in federal and state tax revenues (Outdoor Industry Association, 2003). <https://www.epa.gov/hwp/benefits-healthy-watersheds#economic>

**2) Implement watershed adaptation projects in order to reduce the impacts of climate change on California's communities and ecosystems.**

Los Angeles County will likely be affected by climate change in the following ways: more severe droughts, more intense heat spells and loss of California's native biodiversity. The design of this Project anticipates these changes and will mitigate them. Native plant landscaping will cover the easement area.

This will serve as new and enhanced habitat and open space for wildlife, minimizing the threats of Global Warming on California's biodiversity.

The projects proposed for the **100 Acre Vision** and the **Hydrology Study's District Approach** also employ water treatment and conservation measures to improve the quality of water and reduce trash and other pollutants in Los Angeles River. Since this Study is adjacent to the soft bottom portion of the River, there is much more wildlife that survives there than in other areas. Additionally, the Study area is near Griffith Park which provides habitat to sensitive species. Improving the water quality within the River is essential to the survival of the area's wildlife species. Additionally, the density of trees and vegetation within the proposed project will sequester carbon and cool the atmosphere. To date this Study includes comprehensive tool kits illustrating best management practices such as floodable golf courses and playgrounds, sponge streets and resilient boulevards that incorporate permeable surfaces, native plants and trees, and bioswales to collect and clean water before it enters the river. **Flood protection needed to accommodate a 100-year storm can be achieved with the District Approach.**

By integrating concepts identified in the **Hydrology Study's District Approach** reinforces the goals detailed in the 100 Acre Partnership's Letter of Intent, however, **by integrating the District and Regional Approaches, flood protection associated with a 500-year-storm may be achieved**, while also reinforcing and integrating and connecting to the concepts and projects identified in the **Upper Los Angeles River Tributary Plan**.

**3) Restore river parkways throughout the state, including, but not limited to, projects pursuant to the California River Parkway Act of 2004 (Chapter 3.8 (commencing with Section 5750) of Division 5 of the Public Resources Code), in the Urban streams Restoration Program established pursuant to Section 7048, and urban river greenways.**

The Los Angeles River is both a River Parkway and an Urban Stream. The Project is directly adjacent to the Río de Los Angeles and "Bowtie" State Parks, the G2 Taylor Yard River Park, and the Los Angeles River itself in the highly urbanized Los Angeles River watershed. Southern California contains a wonderful network of open space and trails throughout local mountains and the coastline, but it is not readily accessible to all urban residents as better linkages need to be made to existing public parks. The Study examines new gateways to the directly adjacent River parkway and create a new Greenway along the River north bank and will bring nature to the urban community.

By integrating the **Hydrology Study's District Approach with the Regional Approach**, projects identified under the Upper Los Angeles River Tributary Plan, that include

**4) Protect and restore aquatic, wetland, and migratory bird ecosystems, including fish and wildlife corridors and the acquisition of water rights for instream flow.**

From the ARBOR Plan:

In this reach, the River would be widened and sloped back to the east to restore freshwater marsh habitat, expanding the soft bottom. At the upstream end of the reach, a backwater wetland would be created within the "Bowtie" parcel. These measures would help restore some of the River's natural floodplain, restoring aquatic riparian habitat. This reach includes the G2 parcel of the Taylor Yard complex, which has long been identified as a cornerstone site for LA River restoration.

Open waterways, such as the River, function as habitat corridors for migratory birds and small mammals, and therefore provide an appropriate location for greening and restoration efforts. Through

proposed stormwater daylighting and capture at the site, the Study will address significantly reducing the amount of pollutants presently being expelled into the River untreated and thus improve the habitat potential and water quality within the River and Pacific Ocean. As mentioned, the project is adjacent to the soft-bottom portion of the Los Angeles River where more species survive, fly and swim to, as well as the Arroyo Seco Confluence. It is also adjacent to Elysian Park and downstream from Griffith Park, which are home to many sensitive plant and animal species, and this project will provide a significant habitat link and node within an important ecological and wildlife corridor. By capturing and treating urban runoff on the site, it will improve water quality in the River and help to protect and restore aquatic, wetland, and migratory bird ecosystems. Additionally, the installation of native plant landscaping (trees and shrubs) will provide new habitat for area bird and other species.

**9) Protect and restore rural and urban watershed health to improve watershed storage capacity, forest health, protection of life and property, stormwater resource management, and greenhouse gas reduction.**

Sherwood Design Engineers is a civil engineering practice with 16-years' experience providing complex project deliverables for public agency, campus, land use, civic, and private development interests at scales ranging from single family to 20,000-acre land use frameworks. Founded as a professional practice that values the integration of design, ecology, and engineering, the firm has analyzed many river and stream projects including evaluation of levee and flood control structures, stream flows, channel geometry, and heavily regulated engineered conveyance systems. In addition to the provided project work, our direct channel engineering experience includes Permanente Creek in Mountain View, West Channel in Sunnyvale, flood canals in Guangzhou China, Strawberry Creek improvements at UC Berkeley Campus, Islais Creek in San Francisco, and current work on the Guadalupe River in San Jose. In response to our recent meeting in Los Angeles, the primary pursuit is to assess the viability of straightening a stretch of the LA River adjacent to the G2 Taylor Yard as an alternative to proposed flood control measures. To ensure options are fully understood, including flood risk conditions studies by the Army Corps of Engineers, our proposal also incorporates some investigation of surrounding urban hydrology dynamics.

As mentioned in response #4 above, the Study will consider the need to reduce the amount of pollutants presently being expelled into the River untreated and will thus protect and restore the health of the watershed and improve storage within the local groundwater aquifer. Storm drain daylighting projects proposed for the Study area will manage stormwater runoff by capturing, treating and infiltrating which will help to improve water quality, increase watershed storage capacity, and reduce the volume of water entering the River. Furthermore, proposed plans in the Study area call for installation of California native trees and shrubs. The purpose of the trees is to create habitat for local wildlife, provide shade for pedestrians, reduce the Urban Heat Island effect, generate oxygen, and remove pollutants from the air thus helping to address and reduce Greenhouse Gas (GHG) emissions and helping with the adverse impacts of global warming. The future spacing of the vegetation will maximize those benefits.

**10) Protect and restore coastal watersheds, including, but not limited to, bays, marine estuaries, and nearshore ecosystems.**

The Los Angeles River is a coastal watershed, and the Study addresses projects that restore natural processes and improve water quality.



**11) Reduce pollution or contamination of rivers, lakes, streams, or coastal waters, prevent and remediate mercury contamination from legacy mines, and protect or restore natural system functions that contribute to water supply, water quality, or flood management.**

The Study considers proposed designs to reduce sediment, trash, and organic matter from loading and contaminating the Los Angeles River draining the watershed thereby limiting sedimentation and encouraging ground water recharge. Per the ARBOR Plan, projects will be designed to capture, treat, and infiltrate the maximum amount of wet and dry weather urban runoff in order to remove various pollutants including trash, metals, bacteria, and oil from the water before they can reach the river. Once implemented, the captured runoff will infiltrate thereby increasing the water supply in the local aquifer and will reduce the volume of water entering the river (helping with flood management). Furthermore, the G2 site is currently contaminated with many different metals, petroleum hydrocarbons, and chlorinated solvents from its historic use as a railroad facility. Site cleanup and multiple-benefit improvements will help reduce the opportunity for contaminants to migrate from the site during storm events, thereby protecting the watershed. Additionally, the Los Angeles River Ecosystem Restoration Plan (LARERP or “ARBOR” plan) also aims to restore a hydrologic connection from the River to the G2 site, which will help contribute to increasing local water supply, improving water quality, and enhanced flood management.

**12) Assist in the recovery of endangered, threatened, or migratory species by improving watershed health, instream flows, fish passage, coastal or inland wetland restoration, or other means, such as natural community conservation plan and habitat conservation plan implementation.**

The primary purpose of the ARBOR Plan, where the Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study takes place, is to reestablish riparian strand, freshwater marsh, and aquatic habitat communities and reconnect the River to major tributaries, its historic floodplain, and the significant ecological areas of the Santa Monica Mountains, San Gabriel Mountains, Elysian Hills, and Verdugo Mountains. The Project area is within a globally scarce Mediterranean ecosystem, which covers only 2% of the Earth’s land surface but accounts for 20% of all known plant species. Over 90% of Southern California’s riparian habitat has been lost along with 95% of California’s wetlands and 40% of its reptiles and amphibians. The California Floristic Province is one of the top 25 global hotspots of rapid biodiversity loss. Approximately 140 federally protected bird species are supported by the LA River.

**Applicants are required to provide a brief description of how the project furthers the goals articulated in the plan and meets one of the three following objectives:**

1. More reliable water supplies;
2. **Restoration of important species and habitat;** and

This Feasibility Study takes place in the L.A. River Ecosystem Restoration Area, also known as ARBOR. The ARBOR Study includes restoration of the aquatic riparian ecosystem native to the Los Angeles River along an approximately 11-mile stretch that would provide ecosystem benefits while maintaining existing levels of flood risk management. Recreation opportunities consistent with the restored ecosystem would also be provided. The G2/Taylor Yard site is considered “the crown jewel” of LA River Restoration as both the city’s Los Angeles River Revitalization Master Plan and the ARBOR Study indicate that removing concrete and restoring wetland habitat is feasible here.

Channelization of the Los Angeles River has degraded the remaining habitat values of the River by straightening the River’s course, diminishing its plant and wildlife diversity and quality, disconnecting it from its floodplain and significant ecological zones, and dramatically changing its appearance and function. The Project area is within a globally scarce Mediterranean ecosystem, which covers only 2% of the Earth’s land surface but accounts for 20% of all known plant species. The California Floristic

Province is one of the top 25 global hotspots of rapid biodiversity loss. Over 90% of Southern California's riparian habitat has been lost along with 95% of California's wetlands and 40% of its reptiles and amphibians. Approximately 140 federally protected bird species are supported by the LA River

1. More resilient and sustainably managed water infrastructure.

**The project will provide multiple benefits related to water quality, water supply, and/or watershed protection and restoration.**

**The Study will examine more reliable water supplies pursuant to the California Water Action Plan.**

According to the California Water Action Plan:

Ensuring water security at the local level includes efforts to conserve and use water more efficiently, to protect or create habitat for local species, to ensure food security, to recycle water for reuse, to capture and treat stormwater for groundwater recharge and reuse, and to remove salts and contaminants from brackish or contaminated water or from seawater. But mostly it requires integrating disparate or individual government efforts into one combined regional commitment where the sum becomes greater than any single piece.

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study results in more reliable water supplies pursuant to the California Water Action Plan to:

· Improve Land Use and Water Alignment the Governor's Office of Planning and Research (OPR) **continues to engage local land use authorities, California Native American tribes, water agencies and other stakeholders to develop recommendations to better align land use and water management.** OPR will issue and incorporate recommendations as applicable into the general plan guidelines. OPR will give special consideration to improving consistency between local land use plans and decisions and local water management plans, including integrated regional water management plans.

**The project results in restoration or protection of important species and habitat pursuant to the California Water Action Plan.**

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study addresses the following actions that result in restoration or protection of important species and habitat:

- Protect and restore degraded stream and meadow ecosystems to assist in natural water management and improved habitat. Meadows provide a natural storage opportunity, critically important with a changing climate, while properly functioning stream systems reduce downstream sedimentation and enhance critical aquatic habitat.
- Support and expand funding for protecting strategically important lands within watersheds to ensure that conversion of these lands does not have a negative impact on our water resources. By working with willing landowners, protection of key lands from conversion will result in a healthier watershed by reducing polluted runoff and maintaining a properly functioning ecosystem.

**The project employs new or innovative technology or practices, including decision support tools that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation.**

Sherwood Engineering Design brings a deep toolbox of strategies that can be deployed, and a comprehensive approach that helps find synergies that result in multi-benefit projects. Most notable are

their Proprietary Design Tools that include integrated water balance models, urban design metrics, design tools, and preliminary probable cost models.

**The project uses renewable or non-potable water sources of water, such as reclaimed water, captured stormwater, or other method**

Sherwood Engineering Design has expertise with and a reputation as integrated water infrastructure leaders. One of their many qualifications includes onsite water reuse and planning experience in California, which provides the ability to evaluate discharge and water quality influences on stream flows.

**The project is located in or adjacent to communities defined no less than 81 percent disadvantaged as defined by the CalEnviroScreen 3.0 tool.**

The proposed project is located in Glassell Park and the US Census tract occupied by the entire G2/Taylor Yard site is shown on CalEnviroScreen 3.0 to be a 95-100% Disadvantaged Community (DAC), with a pollution burden percentile of 99%.

**The project has demonstrated capability of collecting and treating runoff from off-site sources.**

This Study focuses on a section that offers the opportunity to provide direct access to the Los Angeles River in historically underserved communities. The G2/Taylor Yard project area is critical to the fulfillment of the ARBOR Study goals to restore ecosystem values in and along the Los Angeles River. The area presents an urgent opportunity to improve water quality, re-create wetland habitat, unique ecological resources of the LA River and ensure parks and open space for communities to enjoy. This project builds upon over 30 years of education, advocacy and stewardship to realize a Los Angeles River that benefits both humans and wildlife while also solving issues related to cleaning stormwater runoff and creating open-space in an urban, park-poor environment.

**Applicant has proven that implementation of the project is feasible**

As a result of their experience, the Sherwood Design Engineering team feels confident that they can evaluate visionary concepts for improvements along the LA River, advance these ideas, and if feasible, implement them. The primary pursuit is to assess the viability of straightening a stretch of the LA River adjacent to the G2 Taylor Yard as an alternative to proposed flood control measures. To ensure options are fully understood, including flood risk conditions studies by Army Corps of Engineers, this proposal also incorporates some investigation of surrounding urban hydrology dynamics.

**Applicant has financial capacity to perform project on a reimbursable basis.**

Both Friends of the Los Angeles River and Sherwood Engineering Design have the ability to sustain we during this project on a reimbursable basis.

**Applicant, or active project partner, has successfully completed multiple projects of similar size and scope.**

Sherwood Engineering Design is a civil engineering practice with 16-years' experience providing complex project deliverables for public agency, campus, land use, civic, and private development interests at scales ranging from single family to 20,000-acre land use frameworks. Founded as a professional practice that values the integration of design, ecology, and engineering, the firm has analyzed many river and stream projects including evaluation of levee and flood control structures, stream flows, channel geometry, and heavily regulated engineered conveyance systems. In addition to the provided project work, our direct channel engineering experience includes Permanente Creek in Mountain View,

West Channel in Sunnyvale, flood canals in Guangzhou China, Strawberry Creek improvements at UC Berkeley Campus, Islais Creek in San Francisco, and current work on the Guadalupe River in San Jose.

**The project is a partnership between two or more organizations and each organization has committed to contributing toward project implementation.**

Friends of the Los Angeles River played a significant role in the adoption of the ARBOR study. Most significant is our raising funds for the city of Los Angeles and the U.S. Army Corps of Engineers to complete the visionary plan that identified projects focused on improving habitat along an 11-mile stretch of the Los Angeles River. By engaging Sherwood Design Engineers our goal is to build upon the data and hydrological modeling that informed both the city's Los Angeles River Revitalization Masterplan and the ARBOR Plan to realize the wetland habitat restoration and flood protection recommended by both.

**Completion of the project would assist a government agency in fulfilling a water resources protection, watershed ecosystem restoration, or multi-benefit river parkway plan.**

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study represents an opportunity to apply cutting-edge engineering techniques utilized in the local, national and international restoration projects Sherwood Design Engineering has implemented to answer questions associated with the impacts of climate change and current flood mapping projections to reveal implementable scenarios that will transform a barren landscape into precious wetland habitat that will restore decimated ecosystems that can clean and stormwater, recharge groundwater supplies, and show the world how urban restoration can also increase flood protection.

**The project provides a plan or feasibility study that enhances cooperative watershed health protection and restoration important to two or more organizations.**

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study

**Applicant, or project partner, has 1+ year's experience maintaining and operating projects of similar size and scope.**

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study focuses on projects identified under the Los Angeles River Revitalization Master Plan and the ARBOR Plan. The proposed Study is meant to provide data and engineering schematics that can assist the Los Angeles Bureau of Engineering, the U.S. Army Corps of Engineers, State Parks, the Mountains Recreation and Conservation Authority, and any other agencies with the experience and missions associated with projects such as the G2/Taylor Yard Riverfront Park and the Bowtie Demonstration Project. Furthermore, the results of the proposed Study have the potential to inform and shape other projects in the ARBOR Plan, and further downstream.

**The project implements a major component of an existing relevant plan related to a major recreational public use facility or watershed ecosystem restoration plan.**

The Los Angeles River Recreation Zone Ecosystem Enhancement Feasibility Study supports visions and plans detailed in the city's Los Angeles River Revitalization Master Plan, and the city and US Army Corps of Engineers' ARBOR Plan to restore habitat and ecosystem function via green infrastructure projects. Both plans point to the Taylor Yard as an opportunity site where storm drains are daylighted, riparian habitat is re-created, the channel is terraced for easy access to the River, and removing concrete is removed to widen the River and provide a place where stormwater retention that will mitigate flooding is feasible. The Study looks at a stretch River that flows through the Elysian Valley Recreation Zone, a

popular place for kayaking and fishing that is sanctioned from Memorial Day until the end of September each year. The goal is to realize the plans to transform barren, polluted land into places where the public – especially the disadvantaged community members in the immediate vicinity, can access and enjoy the River.

**The project provides a high-quality access point for nearby open space, parkland, regional multi-modal trails, or water-based recreation.**

The Los Angeles Bureau of Engineering has three preliminary park designs for the G2/Taylor Yard. All three designs feature amenities for the public including viewing platforms, walking trails, native plantings, and even a bridge that would connect the both sides of the River – from Taylor Yard River Park to the MRCA’s Lewis MacAdams Riverfront and Marsh Parks. Visitors will have opportunities to watch birds, attend outdoor concerts, and even kayak.

**Applicant has conducted outreach to the affected communities.**

FoLAR’s programs and events connect diverse community members to the River as a way to change public perception and advocate for a River where both humans and habitat can thrive. Our Great Los Angeles River CleanUp is recognized by American Rivers as the largest urban river cleanup in the country. CleanUp sites located in the ARBOR sites are the most popular – bring from 500 to 1,200 out in a single day. Our proven track record of community engagement resulted in the purchase and creation of three River-adjacent parks that were slated for warehouse development: Los Angeles State Historic Park, Rio de Los Angeles State Park, and the Bowtie Parcel. We advocated and mobilized the public to promote the most robust version of the ARBOR Plan that was adopted by the Los Angeles City Council, the Los Angeles County Board of Supervisors, the regional and national U.S. Army Corps of Engineers. We were on the team that won the bid to create a vision for G2/Taylor Yard because of education and outreach successes, and we are on the team that is conducting outreach associated with the Bowtie Demonstration Project – a joint venture between the Nature Conservancy and the Prevention Institute working to protect ecologically important lands and waters for nature and people. The Project’s goals are to treat stormwater using natural infrastructure, deliver additional benefits to urban residents, and enhance biodiversity across the urban landscape. One key strategy for achieving these goals is to create a proof-of-concept multi-benefit stormwater capture demonstration project.

**The project includes interpretive programming or personal interpretation, and a plan to reach community audiences with meaningful information about a watershed resource.**

Friends of the Los Angeles River’s mission is to ensure a publicly accessible and ecologically sustainable Los Angeles River by inspiring River stewardship through community engagement, education, advocacy, and thought leadership. Our 38’ mobile visitor and education center, the LA River Rover, brings the River to the people and the people to the River. Our Source to Sea watershed education program includes a standards-based curriculum for grades 2 through 12 where students learn about the River’s past, present and possible future through in-class lessons, and hands-on activities on the River Rover as well as on LA River field trips. Projects envisioned for the Study Area incorporate recreation, engagement, programs and interpretive signage to enhance the public’s experience and inform visitors about the area’s rich history, cultural significance, and the abundant bird and wildlife that rely on wetland habitat for their existence. The Bowtie Demonstration Project involves community members from the Elysian Valley, Glassell and Cypress Parks, and Atwater Village in the visioning process for green infrastructure projects that clean stormwater runoff, enhance flood protection by retaining water, and provide a more natural environment for community members to use and enjoy.

Interpretive programming and personal interpretation are integral now, before, during and after projects are built.

**The project adds visitor-serving amenities, accessibility, and public safety improvements to public parkland with multiple ecosystem benefits.**

Community members engaged during the outreach connected to the G2/Taylor Yard River Park convey that they want to see trees and other plants bring the barren landscape back to life. Another concern is associated with soil contamination and whether activities now and in the future may be harmful to their children's health. Improvements associated with projects in the ARBOR Plan look at both current conditions and possible changes needed to clean the soil, filter and clean stormwater, and provide landscaping for multiple habitat types. Both State Parks and the Mountains Recreation and Conservation Authority have expressed interest in providing buildings where Rangers would work and potentially live on the Study sites. The three preliminary design concepts for G2/Taylor Yard River Park include natural plantings, viewing platforms, an amphitheater, a cultural center, and many more amenities that appeal to those who live in the immediate area and those who will flock to experience the River and the other amenities that will be available.

**The project provides non-personal interpretive elements that will significantly enhance appreciation and enjoyment of a watershed resource.**

Non-personal interpretive elements such as signage, exhibits and publications are integral to the projects envisioned in the Study Area. Visitors will be able to take in the sites, read about the area's history, flora, fauna, wetland treatment amenities, and more at their own pace.

**The project creates a new venue for education and/or interpretation activities that promote water conservation and stewardship or enhances an existing venue.**

Projects planned for the Study Area significantly raise the bar for urban river restoration. With the data and engineering schematics compiled in this Study, stewardship, education, water conservation, quality and use will derive from experiences and on-site programming. Furthermore, the projects realized will provide a destination for visitors from all over the world. If we can achieve it here, the sky is the limit.

**The project results in new public access to a watershed resource with high interpretive and/or educational value or enhances existing access.**

The Study Area includes the G2/Taylor Yard and Bowtie Parcel sites, as well as Rio de Los Angeles State Park. A bridge is being built slightly downstream from the Taylor Yards parcels that will connect the open space and habitat restoration projects in Glassell Park to the Los Angeles River Greenway and bike path in the Elysian Valley. This Study looks at the connections between recreational trails, open space, habitat enhancement, wetland habitat restoration and other amenities in an area that, when combined with the Bowtie Parcel, Taylor Yard and Rio de Los Angeles Park would make up 100 acres of park space in one of the most densely populated, park-poor communities in East Los Angeles.

**Project will benefit specially protected species pursuant to the California Wildlife Protection Act of 1990.**

According to the ARBOR Study: The Glendale Narrows contains considerable riparian habitat within the soft bottom channel that has potential for connection to adjacent habitat areas. However, its survival is threatened by infestation from non-native, invasive species. The Audubon Society has documented that there are already meaningful habitat connections for avian (bird) species between the LA River in the

Glendale Narrows and nearby large habitat areas.” Implementing restoration recommendations in the Study Area include:

- Restoration of rare southwestern riparian and aquatic habitats
- Potential to support two (2) federally threatened and endangered species
- Significant benefits to local and migratory species
- Restoration of floodplain connections
- Restoration of habitat nodes and movement corridors
- Opportunities for regional habitat connections
- Increased connection to the Pacific Flyway

#### **EXTRA CONSIDERATION POINTS QUANTIFIABLE CARBON REDUCTION POINTS**

**The project develops or maintains multi-use trails that connect communities, provides access to public resources and reduces vehicle miles traveled.**

There is a bridge being built upstream in Atwater Village for pedestrians, cyclists and equestrians, there is a bridge being built downstream from the Metro Train Yard and another proposed in the G2/Los Angeles River Park preliminary plan. All of these bridges connect the Los Angeles River Greenway and bike path to the other side of the River. Public transportation along Riverside Drive and San Fernando Road is available and the Metro Gold line runs alongside the River from Union Station with stops at Chinatown, Highland Park/Avenue 26. A Commuter Rail line stops in Glendale with bus connections to proposed projects.

**The project engages local communities through outreach, education, and interpretation regarding long-term stewardship and climate change awareness.**

Part of the Sherwood Design Engineering work plan includes outreach pertaining to the proposed Study. FoLAR’s education, outreach, and advocacy programs along with our annual Great Los Angeles River CleanUp emphasize River stewardship. Messaging about how wetland habitats mitigate climate change and add to flood protection is integral to our current programs and is being planned for the proposed projects in the Study area.

#### **ADDITIONAL CRITERIA**

**Completion of the project would assist in fulfilling a Federal water resources protection or watershed ecosystem restoration plan.**

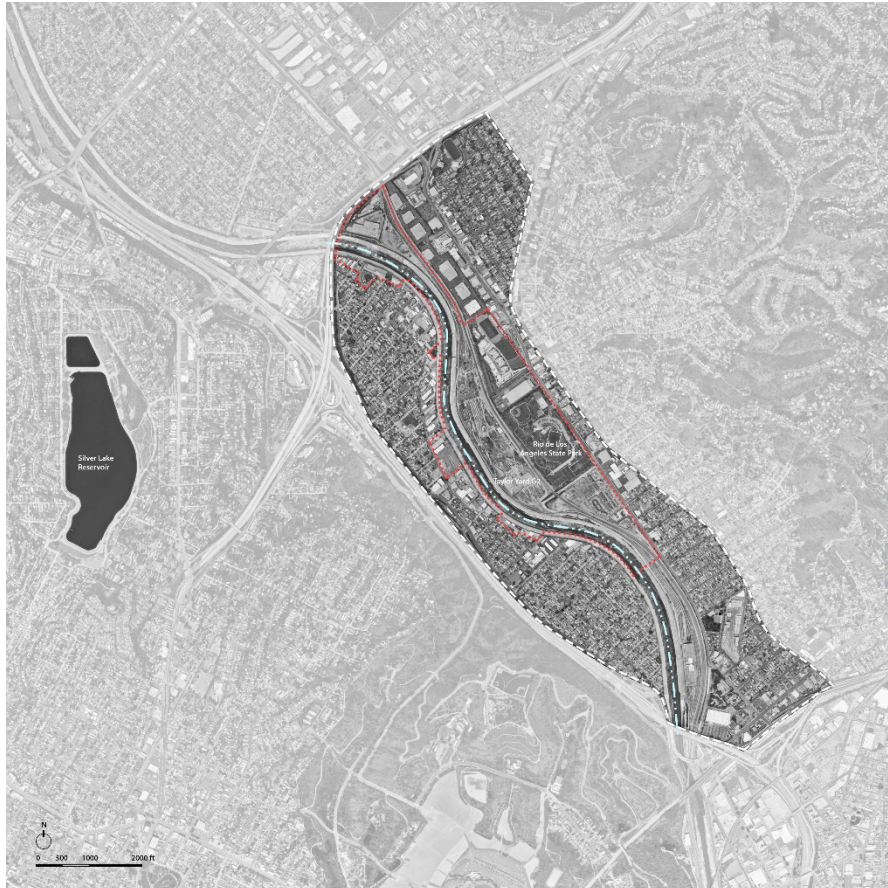
The Los Angeles River Recreation Zone Ecosystem Feasibility Study draws upon hydrological modeling conducted by the U.S. Army Corps of Engineers in association with the Los Angeles River Revitalization Master Plan and the ARBOR Plan. These efforts are also recognized and play integral parts in the Urban Waters Federal Partnership. The LA River Rover was recognized as one of eight original Urban Wildlife Refuge Partners because of our ability to connect with diverse community members in an urban environment.

**Project is within 1 mile of public transportation.**

Per above, there is ample public transportation in the Study area.

# Elysian Valley / Atwater Village LA River Reach Los Angeles, CA

DRAFT – LIMIT OF WORK NEEDS UPDATE



## Scope and Fee Proposal for Civil Engineering Services: River Study Advancement

Sherwood Design Engineers  
May 15, 2020







## Scope and Fee Proposal

May 15, 2020

Friends of LA River (FoLAR)  
Attn: Melissa Christiansen

### RE: Scope and Fee Proposal for Civil Engineering Services River Study Advancement

Dear Ms. Christiansen,

In response to your request, Sherwood Design Engineers (the “Civil Engineer” hereinafter) is pleased to submit this proposal to Friends of the Los Angeles River (the “Client” hereinafter) for engineering services to advance prior work, providing validation of findings, refined information, and exhibits that can be shared with other organizations and stakeholders. Work produced will be at two scales; regional watershed-based solutions throughout the LA River, and the Elysian Valley Recreation Zone of the Los Angeles River, within the City of Los Angeles, CA. This proposal describes professional civil engineering services to be performed by the Civil Engineer in collaboration, as appropriate, with the Client’s team members and consultants (the “Design Team” hereinafter).

It is understood by both parties that concurrent studies may be under way by public and/or private entities, and that responsible agencies may be engaged in planning and/or other activities that contradict the proposed work. It is further understood that Sherwood Design Engineers may engage sub-consultants as needed to obtain supporting information for this work, at their own discretion and within the bound of the Scope of Work and associated fees described herein.

The work proposed will provide a better understanding of feasible enhancements, and includes a second phase of work to support presentation of information and facilitation of stakeholder engagement. We will initiate proposed services upon the approval of this proposal, and as directed by the Client.

### 1.0 PROJECT UNDERSTANDING

The Civil Engineer will work with the Client to refine and validate proposed strategies for improving the characteristics of channel(s) within the described reach of the Los Angeles River, for flood control and other programmatic goals. These characteristics are intended to solve known and predicted flood risk, allow for protection of public and private property in Elysian Valley, and the improvement of public access to the river. Work undertaken will be done with the ultimate goal to improve the human experience and public health of residents, sustainability and resilience of the urban fabric, and ecological value of the riparian corridor. This scope of work will be for a duration of approximately 90 days, as detailed in this document.

This work is intended to advance the Mission and Vision of FoLAR, and specifically to highlight the opportunity Los Angeles has to utilize, feature, and benefit from the unique and substantial natural resource offered by the Elysian Valley reach of the Los Angeles River. Prior work provided technical analysis to understand the feasibility of various alternatives; the proposed work advances recommendations at regional and local scales in a format that can be shared. The resulting study will assist regional and local stakeholders in evaluating an approach to watershed improvements that can significantly alleviate flooding in vulnerable and developing neighborhoods. Sherwood will consistently communicate with the Client Team to ensure new information is integrated. Every project is subject to specific requirements and conditions that cannot be fully anticipated and may require additional documentation and support not covered in this scope.

#### 1.1 Limits of Work

The Limits of Work for this project encompasses the area(s) highlighted in Exhibit A- Area of Study, and further constrained as follows. The previous engineering study area focused primarily on the Los Angeles River channel from the Glendale Freeway overpass downstream to the Interstate Hwy 5 overpass. That concept will be extended, in a limited capacity, to include the stretch of river upstream and adjacent to Atwater Village – to evaluate potential for additional flood relief.

## 2.0 PROJECT PHASING AND DELIVERABLES

The Civil Engineer proposes the following design phases relative to the preparation of anticipated documents, and to support the sharing of this information with other organizations.

### PHASE I: Advancement of Feasibility Study

- 1.1 Incorporate Atwater Village
- 1.2 Validate Regional and Local Engineering Models
- 1.3 Final Presentation Materials

### PHASE II: Stakeholder Engagement Support

- 2.1 Coordination and Scheduling
- 2.2 Prepare for Meetings & Events
- 2.3 Attend Meetings & Events

It is understood that the Civil Engineer will provide electronic files to Client for their own use, to be shared at Client discretion. Refer to phase(s) below for specific deliverables.

### **PHASE I: Advancement of Feasibility Study**

#### **2.1.1 Incorporate Atwater Village**

The Civil Engineer will expand the study area, to test feasibility of extending the proposed approach upstream. Where feasible, solutions including regional detention as well as localized channel modification and bypass structures will be evaluated. This task will include the following services:

1. Update model to include area shown in Exhibit A
2. Design Team and Client Coordination
3. Collection and review of infrastructure-based data and information including but not limited to stream flow rates and characteristics, recycled water parameters, water quality, precedent projects/studies, proposed interventions, engineering reports, and modeling of channel geometry and hydrology.
4. Develop internal basis of design to be referenced throughout, and incorporated into documentation

#### **Deliverables include:**

1. Engineering to evaluate the feasibility of expanding proposed solution(s)
2. Modify and develop existing and additional narrative and exhibits as necessary

#### **2.1.2 Validate Regional & Local Engineering Models**

The Civil Engineer will review the modeling and information collected and created in the previous feasibility study to validate accuracy, and incorporate any new information that can be obtained:

1. Engineering Modeling
  - a. Review the flood modeling that exists, to ensure consistency with accepted industry standards and existing assumptions specific to the project area
  - b. Identification and review of additional studies, infrastructure improvements currently under way, and other information germane to the subject matter (such as flood risk, public health, access, and ecological restoration).
2. Update Information
  - a. Review all information in the context of expanded study area and information sharing
  - b. Identification of overlapping, competing and/or synergistic opportunities as they pertain to the study goals
  - c. Incorporation of Design Team information as deemed relevant by the Civil Engineer and Client

#### **Deliverables include:**

1. Updated background information
2. Updated feasibility study

#### **2.1.3 Final Presentation Documents**

The Civil Engineer will compile and make ready for sharing, a final document and presentation that is concise, well vetted, and graphically appropriate to be shared with stakeholders and/or publicly. This phase will include the following work:

1. Complete narrative report, consistent with Client Mission & Vision
  - a. Coordinated Goals; Mission and Vision provided by Client
  - b. Internally consistent Narrative, edited and approved by Client
  - c. Graphic and written information compiled into a report
2. Complete graphic presentation, expanded to include new information
  - a. Concise and easily communicated update
  - b. Appropriate to intended audience(s)
  - c. Includes new information proposed herein and incorporates narrative

**Deliverables include:**

1. One (1) Final Report, intended for publication
2. One (1) Final Presentation, intended to be shared on screen

## PHASE II: Stakeholder Engagement Support

### 2.2.1 Coordination & Scheduling

The Civil Engineer will provide support to the Client, to coordinate internally and with others, for the purpose of engaging stakeholders and sharing information provided by the Civil Engineer. This phase is intended to be upon request, on a Time & Materials basis, and may include the following services:

1. Internal and external communication with Civil Engineer and the Client
2. Determine appropriate attendees for meetings and events
3. Outreach, possibly including interviews and/or surveys
4. Assist the Client in the process of creating opportunities to share information with stakeholders
  - a. Stakeholder Communication
  - b. Venue Procurement
  - c. Invitations
  - d. Timing & Scheduling

**Deliverables include:**

1. Client support as needed and requested, on a T&M basis

### 2.2.2 Prepare for Meetings & Events

The Civil Engineer will support the Client by providing information, preparing documents, and clarifying information provided, upon request and on a Time & Materials basis:

1. Evaluate information appropriate to specific meetings and events
2. Prepare exhibits, presentations, and other information specific to scheduled meetings/events
3. Clarification of information, data, modeling, including procurement of additional information as needed and possible

**Deliverables include:**

2. Client support as needed and requested, on a T&M basis

### 2.2.3 Attend Meetings & Events

The Civil Engineer will work with the Client to evaluate one or more alternatives to be presented to stakeholders, and prepare documentation to assist in stakeholder outreach. Illustrative exhibits are anticipated to provide graphic content to augment the Final Feasibility Report. The number of alternatives may determine how many exhibits are provided per project, and will be as agreed upon by the Client, and not to exceed contracted maximum of four alternatives.

**Deliverables include:**

3. Client support as needed and requested, on a T&M basis

**3.0 ADDITIONAL PROJECT SCOPE & SERVICES (NOT INCLUDED IN PROPOSED FEE)**

The following are some services that are not included in this proposal. We will be pleased to provide these and other additional services that may become necessary as the project proceeds. Additional services will be provided for additional compensation, as agreed upon in writing, via additional documentation.

1. Stake Holder Outreach, except as described herein as Time & Materials
2. Field survey deliverables exceeding the normal course of informal evaluation and information validation
3. Engineering design in AutoCAD or other formal deliverables exceeding calculations and illustrative exhibits specifically described herein
4. Final design drawings or specifications for planning, permit, construction, or other formal submittals to agencies, jurisdictional entities, contractors, or financial or regulatory stakeholders

**4.0 ASSUMPTIONS**

The following items are to be provided by the Client prior to or upon commencement of work:

1. Site plan backgrounds to be used for exhibits and plans
2. Available site utility information, record documents, existing engineering and utility analysis
3. Environmental Assessments and other available Reports
4. Infrastructure Assessments as available

**5.0 BASIC AND ADDITIONAL FEES FOR SERVICES**

Phase I fees below will be billed on a time and materials basis. Fee estimates are based on the schedule below and are subject to revision based on changes to this schedule. Phase II work, and any additional services, can be provided upon written request and will be billed on a Time and Materials basis or by contract addendum.

<b>A. BASIC SERVICES</b>	<b>Duration</b>	<b>T&amp;M Fee</b>	<b>Estimated Reimbursable</b>
<b>Phase I</b>			
1.1 Incorporate Atwater Village	2 weeks	\$15,000	\$200
1.2 Validate Engineering Models	2 weeks	\$10,000	\$200
1.3 Final Presentation Materials	2 weeks	\$5,000	\$200
<b>Phase II – Time &amp; Materials</b>			
2.1 Coordination & Scheduling	2 weeks	\$4,500	\$200
2.2 Prepare for Meetings & Events	2 weeks	\$5,500	\$200
2.3 Attend Meetings & Events	2 weeks	\$10,000	\$200
<b>Total Fee Estimate</b>	<b>12 Weeks</b>	<b>\$50,000</b>	<b>\$1,200</b>

*\*Duration is defined as elapsed time to completion, from initiation of phase or scope of work upon our receipt of your written authorization to proceed.*

**3 EXCLUSIONS CONSULTANT SHALL NOT BE REQUIRED TO PROVIDE THE FOLLOWING SERVICES.**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Agency Fees</li> <li>2. Geotechnical Report</li> </ol> | <ol style="list-style-type: none"> <li>13. Building Waterproofing – other than items in scope</li> </ol> |
|--|--|

3. Legal Descriptions
4. Foundation/ Structural Design
5. Mitigation of contaminants resulting from unidentified leaking above ground or underground storage tanks
6. Soils testing / remediation / removal
7. Percolation tests
8. MEP Design Service
9. Hazardous Waste Remediation
10. Flow/pressure or hydrant flow test
11. Materials Testing and Inspection reports.
12. O&M plans for Mechanical systems
14. Utility demand engineering for electrical service, gas services, telecommunication service, street lights and sidewalk lights
15. Connection location for buildings by others; electric meter and gas meter layout by MEP consultant
16. Site graphics
17. Traffic Engineering and Traffic Studies
18. Verification or inspection of construction activities in the field.
19. Utility Design in BIM or 3D format.

#### 4 REIMBURSABLE EXPENSES

*Reimbursable costs as defined in the schedule will be billed in accordance with Sherwood Design Engineers' Fee Schedule – see Attachment I. Ordinary expenses of approximately 10 percent of the labor budget should be anticipated.*

#### 5 RETAINER & INITIATION

For your reference, copies of our current fee schedule and our Standard Terms and Conditions have been included with this proposal and will be part of this agreement. In order to initiate services in support of this project we request a retainer of **\$5,000**. An invoice for the retainer will follow this proposal. Should you find the terms of this proposal acceptable, please sign and return one copy to our San Francisco office along with a check in the amount of **\$5,000**.

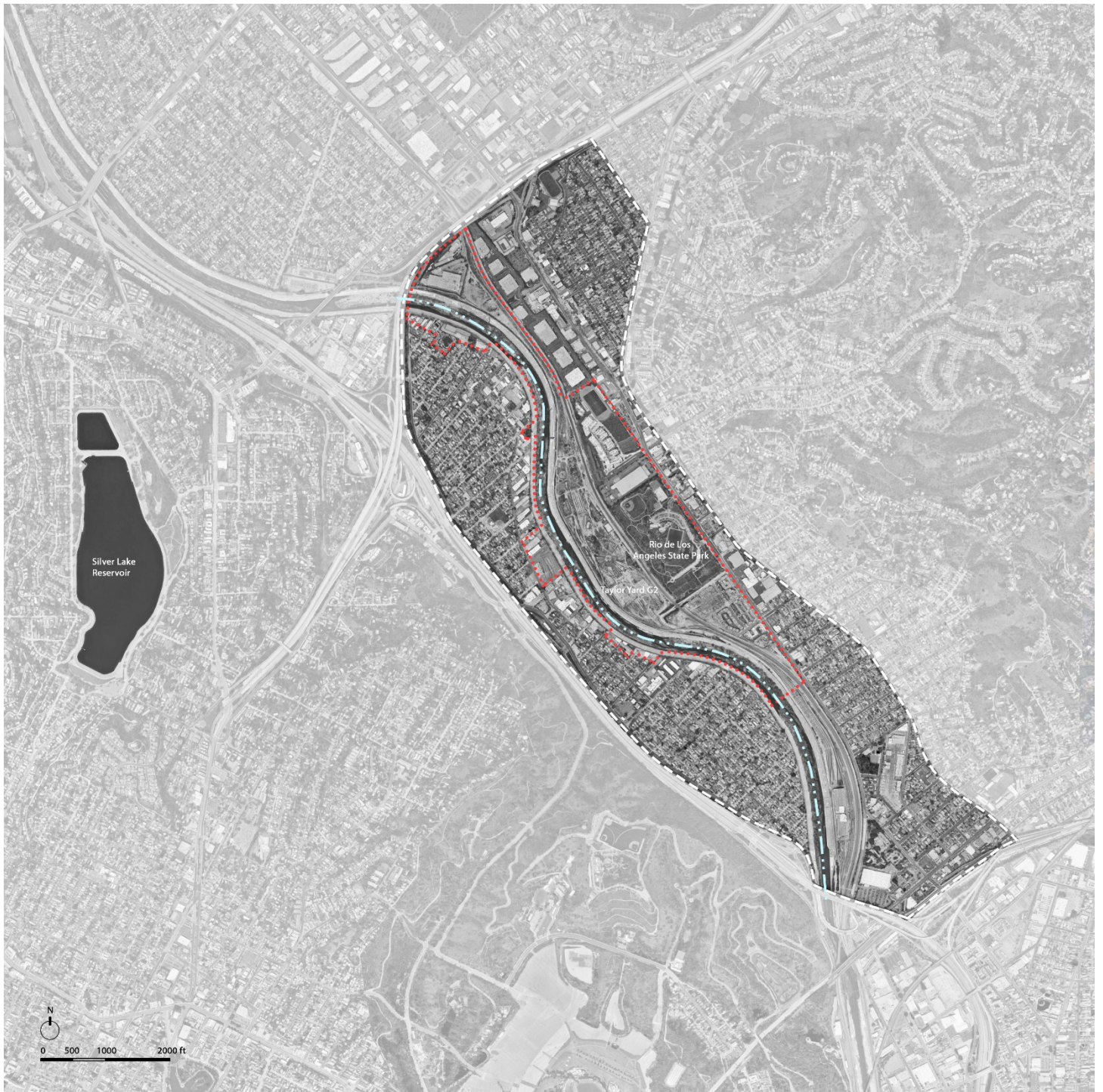
We thank you for this opportunity to submit this proposal and look forward to beginning work with you on this exciting project!

Sincerely,



Josiah Raison Cain  
Principal / Director of Innovation

**EXHIBIT A – LIMIT OF WORK**



**ATTACHMENT I – STANDARD TERMS AND CONDITIONS**

1. Contracting Parties: Sherwood Design Engineers firm identified in the Acknowledgment below (“Sherwood Design Engineers” or “SDE”) shall perform the scope of work (“Services”) described in the Proposal in accordance with the following terms and conditions. The “Client” is the person or entity identified as such in the Acknowledgment below. The “Project” is the project identified in the Proposal.
2. Client Responsibilities: The Client shall provide a representative authorized to act on the Client's behalf, provide full information regarding the Project, and shall render decisions on submissions by SDE in a timely manner relative to the schedule and comply with any obligations on its part identified in the Proposal.
3. Rates and Estimates: The hourly rates on which the Proposal has been estimated and which shall apply to Additional Services are:

<b><u>Personnel</u></b>	<b><u>Rate</u></b>
Senior Engineer	\$205
Senior Project Manager	\$195
Project Manager	\$180
Project Engineer	\$175
Design Engineer III / Designer III	\$165
Design Engineer II / Designer II	\$150
Senior CAD Drafter	\$150
Design Engineer I / Designer I	\$140
CAD Drafter	\$135
Graphic Designer	\$135
Project Assistant	\$110

Principals’ and Managing Principals’ time on projects is chargeable at \$210 to \$280 per hour. Senior Principals are \$450.

*Charges for outside services, equipment, and facilities not furnished directly by Sherwood Design Engineers will be billed at cost plus 10%. Such charges may include, but shall not be limited to printing reproduction services; shipping, delivery, and courier charges; sub consultant fees and expenses; special fees, permits and insurance; transportation on public carriers, and consumable materials. Mileage will be charged at the prevailing IRS rate per mile.*

These rates apply to the current period and are subject to increase by SDE each January 1 and July 1 or when foreign exchange rates cause the hourly rates to decrease in relation to the USD by more than 5% from the rate at the date of this Proposal.

Unless the proposal establishes a fixed fee or fee cap, any estimate in the Proposal is an estimate only. If it appears that the fee will exceed the estimate, SDE shall advise the Client. If the Proposal establishes a fixed fee or fee cap, the fixed fee or cap applies only to the basic services specified in the Proposal, and not to Additional Services.

The fee basis for Additional Services shall be at the rates set forth above. Additional Services are services beyond the basic services described in the Proposal, and may result from a variety of factors including (1) changes that increase the size, quality or complexity of the Project; (2) directives that are inconsistent with approvals previously given by the Client; (3) revisions to documents caused by a change in the construction budget and/or the schedule; (4) change in schedule; (5) additional deliverables requested by the Client.

4. Invoices: Unless other payment terms are set forth in the Proposal, fees for professional services and reimbursable expenses shall be billed monthly. Invoices will generally be for work and expenses performed or incurred during the fiscal month prior to the date of invoice for the defined scope of work.



Fees quoted in the Proposal and rates specified herein do not include any form of tax, which must be added and paid by the Client, if applicable (including but not limited to foreign withholding tax, value added tax, Hawaii GET, etc.). Any initial/retainer payment called for by the Proposal will be credited to the final invoice.

5. Reimbursable Expenses: Pass-through consultant fees and other expenses such as travel, printing, CAD plotting, reproduction, copying, postage, shipping, fax, telephone, special renderings, mock-ups, etc. shall be billed by SDE at cost plus 15%, unless otherwise stated in Attachment II – Professional Personnel Service Fees. Interoffice travel by SDE staff between SDE offices required to perform these services will be billed at cost without markup. See Attachment III - Schedule of Reimbursable Expenses.

6. Payment: All invoices are due and payable upon receipt regardless of the Client's project funding mechanism, non-performance of business partners, the approval of any government or agency of government, or the initiation of construction or sales. Sherwood Design Engineers expressly reserves the right to suspend its service and/or terminate this agreement should any invoice remain unpaid 45 days past the invoice date. A late charge and rebilling fee of 1.5% per month will be added to, and be payable with, all amounts not paid within 45 days of the invoice date. All rights of set off at common law or in equity which the Client would otherwise be entitled to exercise are expressly excluded.

7. Termination: Either party may terminate this agreement for any reason or for no reason after giving twenty (20) working days written notice to the other party. In the event of termination of this agreement, SDE shall be paid in full for all time (at standard bill rates above) and reimbursable expenses committed and incurred up to the date of termination or which cannot reasonably be avoided, or in the case of a fixed fee assignment SDE shall be paid in full for the percentage of work complete as reasonably determined by SDE. Save for the Client's obligation to make these payments neither party shall have any other liability to the other in case of termination.

8. Standard of Care: In the performance of its duties and obligations under and in connection with this agreement, SDE shall perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances at the same time and in the same or similar locality. Notwithstanding any other provision of this agreement or the Proposal, no greater duty shall be imposed on SDE.

9. Instruments of Service: All SDE documentation for this Project shall be provided to the Client in the English (USA) language. All Instruments of Service shall be provided in either imperial units of measure or metric units unless specifically agreed otherwise between the Client and SDE.

Plans, specifications, concepts, designs, drawings, calculations and other documents, including those in electronic form, prepared by SDE or its consultants are Instruments of Service useful with respect to this Project. SDE shall be deemed the authors and owners of the Instruments of Service prepared by them and shall retain all common law, statutory and other reserved rights, including copyrights. SDE grants to the Client a non-exclusive, non-assignable license to use, and to sublicense contractors to use, SDE's Instruments of Service solely to construct, use and maintain the Project, provided that the Client complies with all obligations, including prompt payment of all sums when due, under this agreement. Unless otherwise agreed in writing, any termination of this agreement prior to completion of the Project shall terminate this license. Upon such termination, the Client shall refrain from making reproductions of Instruments of Service and shall return to SDE all originals and reproductions. Submission or distribution of Instruments of Service to meet official regulatory requirements or for similar purposes is not publication in derogation of the reserved rights of SDE. The Client shall not use the Instruments of Service for future additions or alterations to this Project or for other projects. Any unauthorized use of the Instruments of Service shall be at the Client's sole risk. If SDE's services described in the Proposal involve the provision of any prototypical design, the license granted hereunder shall extend only to such number of each prototype as is specified in the Proposal. Further use of the Instruments of Service shall require an additional license fee to be agreed between SDE and the Client.

10. Use of Sherwood Design Engineers Name and Depictions of Project. Notwithstanding the provisions in Section 1.9 restricting the use of Instruments of Service, the Client may use renderings, conceptual and schematic drawings, models and photographs of models, computer-generated depictions, and photographs of the Project ("Depictions") for marketing and promotional use. In using Depictions and in otherwise describing and promoting the Project, the Client shall give appropriate credit to SDE and indicate its role in the Project. Before using Depictions, the Client shall consult with SDE about the nature of the Client's intended use. SDE may revoke permission to use Depictions and SDE's name at any time, and such permission is personal to the Client and may not be assigned.

11. Choice of Law. This agreement shall be governed by the substantive law of the state or other jurisdiction in which the principal place of business of the SDE firm entering into this agreement is located, as designated in the Acknowledgement below, excluding its conflict of law rules. The parties further submit and agree to the exclusive jurisdiction of the courts sitting in that state or other jurisdiction.

12. Time Limitations: SDE reserves the right to renegotiate or withdraw this proposal in the event that the Client does not execute within two (2) months of the date of the Proposal. No action or proceedings arising out of or in connection with this agreement, whether in contract, tort, for breach of statutory duty or otherwise, may be commenced after the expiration of two (2) years from the earliest of (i) the date of completion by SDE of its services under this agreement, (ii) termination of this agreement, or (iii) substantial completion of the Project.

13. Limitation of Liability: The Client and SDE mutually waive consequential damages for claims, disputes and other matters in question arising out of or relating to this agreement. In addition, in recognition of the relative risks and benefits of the Project to both the Client and SDE, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the liability of SDE and its sub-consultants to the Client for any and all claims, losses, costs, damages of any nature whatsoever, or claims expenses from any cause or causes, including attorneys' fees and costs and expert witness fees and costs, including those resulting from negligence, breach of contract, breach of statutory duty or otherwise (collectively "Claims") so that their total aggregate liability for and in connection with the entire Project which is the subject of this agreement, regardless of how limited in scope the services under this agreement may be, shall not exceed SDE's available insurance limits at the time of judgment, attempted collection or settlement. The Client further agrees not to hold any officers, principals, directors, employees, consultants or agents of SDE or its affiliates liable in respect of any Claims. All of the limitations on liability in this paragraph shall only apply to the extent permitted by law. If these limits of liability are not acceptable to the Client, SDE will negotiate a different limit in consideration of an alternative fee structure. The Client's signature on the Proposal indicates that the Client declines such opportunity to negotiate an alternative fee.

14. Budgets and Cost: SDE's participation in any budget process and any value engineering is provided only for determining general scope and quality parameters and to provide general assistance to the Client in developing budgets and estimates of construction cost. In no event shall SDE be deemed responsible for, or have any liability with respect to, the accuracy of any budget or cost estimate or the certification or verification of any payments to contractors. The Client shall have the sole responsibility to assure cost compliance and limitations in the Client's contracts with its contractors.

15. Priority, Assignment, No Third-Party Rights: This agreement supersedes all prior negotiations, representations, or agreements whether written or oral. This agreement can be modified only by a written document signed by both parties. All work carried out and services performed by SDE in connection with the Project prior to the date of this agreement shall be deemed to have been carried out subject to the terms and conditions of this agreement. In the event of any inconsistency between anything contained in the Proposal and these terms and conditions, these terms and conditions shall prevail. The Client may not assign the benefit of this agreement or any rights arising under it without the prior written consent of SDE. There are no third-party beneficiaries to this agreement.

16. International Assistance. If the Project is located in a place other than the United States, the Client shall use all reasonable efforts to assist SDE, its personnel and their dependents in obtaining: visas, work permits, customs and currency clearances for business and personal property and funds, emergency assistance, and the like, and access to organizations and information useful for the performance of SDE's services.

17. Dispute Resolution. Each party agrees not to commence any lawsuit against the other party without first complying with these requirements. Each party with a claim of any kind ("Claim") shall notify the other party or parties in writing of the Claim. Such writing shall describe the nature and location of the matter that is the subject of the Claim in reasonable detail (the "Claim Notice"). Within a reasonable period of time after receipt of the Claim Notice, which period shall not exceed sixty (60) days, the party or parties receiving the Claim Notice and the party making the Claim shall meet and confer in the County of the Project or elsewhere as agreed to discuss the Claim. If the parties cannot thereby resolve the Claim, the Claim shall be submitted to non-binding mediation pursuant to the mediation procedures adopted by JAMS or any successor entity thereto or to any other entity offering mediation services that is acceptable to the parties. The parties shall cooperate so that the mediation session can be held as soon as practicable, and no later than sixty days after the meet and confer of the parties referenced above.

**ATTACHMENT II - PROFESSIONAL PERSONNEL SERVICE FEES**JANUARY 1, 2018 – DECEMBER 31, 2018

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<b><u>Personnel</u></b>	<b><u>Rate</u></b>
Senior Engineer	\$205
Senior Project Manager	\$195
Project Manager	\$180
Project Engineer	\$175
Design Engineer III / Designer III	\$165
Design Engineer II / Designer II	\$150
Senior CAD Drafter	\$150
Design Engineer I / Designer I	\$140
CAD Drafter	\$135
Graphic Designer	\$135
Project Assistant	\$110

Principals' and Managing Principals' time on projects is chargeable at \$210 to \$280 per hour. Senior Principals are \$450.

*Charges for outside services, equipment, and facilities not furnished directly by Sherwood Design Engineers will be billed at cost plus 10%. Such charges may include, but shall not be limited to printing reproduction services; shipping, delivery, and courier charges; sub consultant fees and expenses; special fees, permits and insurance; transportation on public carriers, and consumable materials. Mileage will be charged at the prevailing IRS rate per mile.*

**ACKNOWLEDGEMENT**

The respective obligations of the parties are set forth in the Proposal, including any schedules or exhibits referred to therein, and in the ATTACHMENT I - STANDARD TERMS AND CONDITIONS which is attached to the Proposal and made a part thereof. If both the Client and Owner have signed this Acknowledgement, both shall be responsible jointly and severally to pay amounts invoiced and due to Sherwood Design Engineers.

**Proposal:**

Letter dated \_\_\_\_\_ for the \_\_\_\_\_

**Billing:** Preferred Billing Method:  US Mail  Email  Both

Billing contact name: \_\_\_\_\_

Billing contact email: \_\_\_\_\_

Special Instructions: \_\_\_\_\_

**Client:**  
 Full Name: \_\_\_\_\_  
 Attention: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Federal Tax ID \_\_\_\_\_

**Owner:**  
 Full Name: \_\_\_\_\_  
 Attention: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Federal Tax ID \_\_\_\_\_

x  
 Agreed Title Date

x  
 Agreed Title Date

**Sherwood Design Engineers:**

This agreement is with only the following identified entity which is solely responsible to provide the Service:

- † Sherwood Design Engineers – 2548 Mission Street, San Francisco CA 94110, USA
- † Sherwood Design Engineers – 483 Tenth Avenue, Suite 325, New York, NY 10018, USA
- † Sherwood Design Engineers – 611 W. 22nd St., Suite 205, Houston, TX 77008

x  
 Agreed Title Date

S. Bry Sarté  
 Principal Engineer  
 California Certificate No. 60244

John Leys  
 Principal Engineer  
 California Certificate No. 72828