

COASTAL CONSERVANCY

Staff Recommendation

August 22, 2019

CITY OF RIVERSIDE URBAN AND HISTORICAL ECOLOGY CASE STUDY

19-013-01

Project Manager: Greg Gauthier

RECOMMENDED ACTION: Authorization to disburse up to \$205,000 to the San Francisco Estuary Institute to prepare the City of Riverside Urban and Historical Ecology Case Study in the County of Riverside.

LOCATION: Santa Ana River Parkway in the City of Riverside, Riverside County

PROGRAM CATEGORY: Santa Ana River Conservancy Program

EXHIBITS

Exhibit 1: [Project Location Maps](#)

Exhibit 2: [Project Letters](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31170 et seq. of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed two hundred five thousand dollars (\$205,000) to the San Francisco Estuary Institute (“the grantee”) to prepare the City of Riverside Urban and Historical Ecology Case Study.

Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Conservancy (Executive Officer) the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be retained in carrying out the project.
3. A plan for acknowledgement of Conservancy funding.”

Staff further recommends that the Conservancy adopt the following findings:

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“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 4.6 of Division 21 of the Public Resources Code, regarding the Santa Ana River Conservancy Program.
 2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.
 3. The San Francisco Estuary Institute is a nonprofit organization organized under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code.”
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PROJECT SUMMARY:

Staff recommends that the Conservancy authorize disbursement of up to \$205,000 to the San Francisco Estuary Institute (SFEI) to prepare the City of Riverside Urban and Historical Ecology Case Study (the Study) in the County of Riverside. The Study will provide science-based design guidance for optimizing restoration planning for a portion of the Santa Ana River Parkway in and around the City of Riverside, using information derived from historical ecology and urban ecology research.

The Santa Ana River Conservancy Program was established to advance resource management goals for the Santa Ana River and surrounding areas. A key step towards this goal has been the creation of the Santa Ana River Parkway, with the vision of enabling residents and visitors to experience the river corridor along its entire length while providing necessary water management functions, habitat for a unique diversity of plants and animals, and recreation, education, and health benefits. Using guidance set out in the Santa Ana River Parkway & Open Space Plan (published 2018), a number of habitat restoration and park improvement projects have been proposed, including a suite of projects within the City of Riverside. However, additional guidance is needed to ensure that these and other projects meet community needs while also providing the greatest possible ecological benefits over the long term.

Historical ecology research provides the critical baseline information needed to identify overlooked restoration opportunities and select appropriate restoration targets, key elements in realizing the conservation potential of protected open spaces and urban areas alike. The science of urban ecology provides a framework for designing urban areas that maximize biodiversity, ecosystem services, and climate resilience. The innovative approach developed by SFEI’s Resilient Landscapes Program combines historical ecology and urban ecology tools to provide landscape-scale guidance for integrating nature back into urban landscapes. Applying this approach to selected areas of the Santa Ana River Parkway in and around the City of Riverside will help ensure that planned projects in these areas have the greatest potential to benefit people, support native biodiversity, sustain water resources, and adapt to future climate change.

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The goal of the project is to provide science-based design guidance for optimizing restoration planning, using information derived from historical ecology and urban ecology research. Specific objectives of the project include: 1) development of a map and associated information documenting historical landscape patterns and processes within the study area, 2) spatial analysis characterizing landscape change over time, 3) assessment of current landscape patterns and ecological support functions provided by the river and surrounding urban areas, and 4) development of guidance and recommendations for restoration and open space design. The expected outcomes and benefits of the project are improved project designs that are informed by a holistic, place-based understanding of landscape setting, physical process, and historical context; incorporate cutting-edge science on urban greening and urban biodiversity support; are adaptive to future climate change; and lead to measurable improvements in both habitat quality and quality of life for urban residents. Findings from the project will also serve as an educational tool, providing residents and visitors with information about local history and biodiversity. The project is a case study for a portion of the Santa Ana River watershed, and the approach could be readily scaled up or transferred to other areas of the watershed.

In the historical ecology phase of the project, SFEI staff will collect and synthesize a wide range of archival data to reconstruct historical landscape conditions within the study area prior to major Euro-American modification. Diverse historical data, including maps, photographs, and textual documents, will be gathered from online databases, libraries, historical societies, and public agencies. Data will be compiled in a Geographic Information Systems (GIS) database and synthesized to create a map representing average historical ecological conditions within the study area.

In the urban ecology phase of the project, metrics will be developed to evaluate current landscape patterns and ecological support functions within the study area. This analysis will consider a number of key factors known to contribute to biodiversity support in cities, such as open space patch size, habitat connectivity, and native plant diversity. Drawing on both urban ecology science and insights from the historical ecology research, opportunities for improving habitat quality and enhancing biodiversity support will be identified.

Finally, findings from the historical ecology and urban ecology research will be synthesized to develop a series of guidelines for restoration planning and design within the study area. The guidelines will translate this new ecological understanding into locally-specific priorities and actions, such as appropriate habitat types, recommended sizes and locations of ecological improvements, opportunities for new biodiversity hubs and corridors, and opportunities for alignment with park design, urban forestry, flood risk management, and other management activities.

Site Description: The Santa Ana River watershed is the largest watershed in Southern California, and flows through a number of highly urbanized areas, including the City of Riverside. The Santa Ana River is a vital natural and recreational resource for communities along the river, providing a key water source for many residents as well as unique opportunities for accessing open space. The City of Riverside is the most populous city in the Inland Empire and Riverside County with approximately 330,000 residents.

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The project area includes approximately 12,900 acres of the Santa Ana River Parkway and adjacent areas in and around the City of Riverside. On the upstream end, the study area extends to the Santa Ana River Trail near the Highway 60 crossing, and on the downstream end it extends to the Santa Ana River Trail near the western extent of the Martha McLean-Anza Narrows Park. The study area extends laterally for approximately 2.5 miles on either side of the river corridor, encompassing portions of both the City of Riverside and unincorporated areas of Riverside County. The Santa Ana River flows through the center of the study area; approximately 4.2 river miles are contained within this area. Urban and developed areas make up about 80 percent of the study area.

The watershed supports a number of sensitive habitats, and is home to a wide range of plants and animals including threatened and endangered species such as the Santa Ana sucker (*Catostomus santaanae*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), southwestern willow flycatcher (*Empidonax traillii extimus*), arroyo toad (*Anaxyrus californicus*) and Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*). Vegetation assemblages in the study area include coastal scrub, annual grassland, riparian forest, and emergent wetland. However, the watershed faces a number of pressures such as rapid urban growth, increasing demands on water resources, surface and groundwater pollution, and accelerating climate change impacts.

Grantee Qualifications: SFEI has a record of success completing a number of similar multi-year historical ecology and urban ecology projects. Over the course of roughly 20 years, SFEI has successfully completed historical ecology investigations into more than 25 major river systems or regions spanning much of the state. The Ventura County Historical Ecology Study (completed 2011) and the Tijuana River Valley Historical Ecology Investigation (completed 2017) reconstructed historical ecological patterns and hydrological dynamics of the Ventura County lowlands and the Tijuana River Valley, respectively. Each of these projects resulted in a fully attributed GIS map of historical habitat types and channels, and produced an illustrated report detailing landscape conditions prior to major Euro-American modification. The North San Diego County Lagoons Historical Ecology Study (completed 2014), and the Historical Mapping of Southern California Coastal Wetlands (completed 2011) comprise two additional Conservancy-funded historical ecology studies.

In terms of urban ecology, SFEI's Reoaking Silicon Valley project (completed 2017) evaluated past and present landscapes to investigate how oaks have been eliminated from an urban landscape, synthesized existing scientific literature to quantify the ecological value of oak ecosystems, and provided guidance for how to reintegrate oaks back into urban landscapes. The project laid the groundwork for SFEI's urban ecological investigations that have been followed by multiple other projects, including an Urban Ecological Planning Guide for Santa Clara Valley (recently published) and the Urban Biodiversity Framework that synthesizes existing urban ecology research, describes key elements for supporting urban biodiversity, and provides guidance for how to integrate nature into urban areas.

SFEI has more than 20 years of experience managing state contracts. The organization uses Deltek accounting software which includes a time keeping component that allows staff to bill

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hours directly to specific restricted project codes. New projects are established in Deltek with unique codes, and the system provides for the ability to budget at task and subtask levels within a project. The Finance Director, Contracts Associate II, Bookkeeper and Accounting Manager comprise the finance team at SFEI.

Project History: The Coastal Conservancy approved the Santa Ana River Parkway and Open Space Plan (SARP&OSP) on May 24, 2018. The SARP&OSP builds on the success of the Santa Ana River Trail by defining a vision for expanding the river’s reach beyond the existing trail. The SARP&OSP identifies opportunities for recreation, education, greening, aesthetic improvement, and wildlife habitat along the corridor of the river and in parts of the river channel that can be improved without infringing on water quality, water supply, or necessary flood control. This planning process involved regional stakeholders and the public in developing a shared vision for the Santa Ana River Trail and Parkway. The SARP&OSP identifies more than 150 potential projects throughout the Parkway including a suite of projects in the City of Riverside.

Conservancy staff working within the Santa Ana River watershed held numerous discussions with SFEI staff over the course of development of the SARP&OSP on how best to approach a historical and urban ecology study for the Parkway region. The immense size of the watershed makes a whole region approach cost prohibitive and impractical. Through narrowing the scope of the study to focus on a suite of projects in one reach of the river, the proposed case study approach was identified as having the greatest potential to provide useful, science-based data for a manageable subregion of the watershed. Additionally, as mentioned previously, the case study approach could be readily scaled up or transferred to other areas of the watershed based on the success of this project.

PROJECT FINANCING

Coastal Conservancy	\$205,000
Project Total	\$205,000

The anticipated source of Conservancy funding for this project is a \$5 million FY 2018/2019 appropriation from the General Fund specifically for the Santa Ana River Conservancy Program.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed authorization will help to accomplish the objectives of the Santa Ana River Conservancy Program, Chapter 4.6 (Sections 31173-31174) of Division 21 of the Public Resources Code, by facilitating achievement of the goals of: wildlife habitat and species restoration, enhancement and protection; public access to, enjoyment of, and enhancement of the recreational and educational experience on program lands in a manner consistent with the protection of land and natural resources and economic resources in the area; and giving priority

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to river-related projects that create expanded opportunities for recreation, greening, aesthetic improvement, and wildlife habitat along the corridor of the river.

Pursuant to section 31173 (a) the proposed project will award a grant to a nonprofit organization to help achieve the goal of providing recreational opportunities and wildlife habitat and species restoration by developing a series of guidelines for restoration planning and design within the study area that are informed by a holistic, place-based understanding of landscape setting, physical process, and historical context.

Consistent with section 31173 (b) the proposed project will recommend project design guidelines that will help support the development of projects that provide public access to and an enjoyment of Santa Ana River resources in a manner consistent with the protection of land and natural resources in the area.

Consistent with section 31174 (b) (2) the proposed project will help identify underused, existing public open spaces and recommend ways to provide better public use and enjoyment of those areas. Further, consistent with section 31174 (b) (3) the proposed project will help identify and prioritize additional low-impact recreational and open space needs.

Consistent with section 31174 (c) the proposed project gives priority to river-related projects that create expanded opportunities for recreation, greening, aesthetic improvement, and wildlife habitat along the river corridor.

CONSISTENCY WITH CONSERVANCY'S [2018-2022 STRATEGIC PLAN](#) GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 10, Objective B** of the Conservancy's 2018-2022 Strategic Plan, the proposed project helps plan for the enhancement of natural habitats and connecting corridors, watersheds, scenic areas, and other open-space resources.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

Required Criteria

- 1. Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
- 2. Consistency with purposes of the funding source:** See the "Project Financing" section above.
- 3. Promotion and implementation of state plans and policies:** California @ 50 Million: The Environmental Goals and Policy Report: This project will support government agencies and

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non-governmental organizations as they pursue the report's fifth pillar for the state's future: stewarding and protecting natural resources and working landscapes. Historical and urban ecological data will support landscape-scale approaches to conservation and mitigation that account for multiple benefits (Goal 1) by highlighting areas of particular conservation value or restoration potential. This data may also assist organizations as they seek to build resilience into natural systems and prioritize natural and green infrastructure solutions (Goal 6) by illuminating areas best suited for increasing carbon sequestration or adding green infrastructure to lessen flood risks along the upper Santa Ana River.

CA Climate Adaptation Strategy/Safeguarding California: Reducing Climate Risk Plan: Findings and products from this project can assist various actions to safeguard biodiversity and habitats (Focus Area 2). Restoration guidelines derived from the historical ecology and urban ecology research can, for example, support environmental stewardship across sectors (Recommendation 3) by helping the community of resource managers in the study area focus and coordinate their conservation activities. Historical ecological data can also improve understanding of climate risks to biodiversity and habitats (Recommendation 4) by providing a baseline against which to compare future ecological changes.

California Water Action Plan: The proposed project will further the California Water Action Plan's broad objective of restoring important species and habitat in California's waterways. The upper Santa Ana River supports a diversity of flora and fauna, including numerous threatened and endangered species, which will benefit from habitat restoration efforts. Understanding the current urban ecology and the historical ecology of the landscape will help organizations tailor their restoration efforts to best recover the region's former ecosystem functions within the now urbanized landscape.

CA Wildlife Action Plan: Products from the project will help resource managers maintain and increase ecosystem and native species distributions (Statewide Goal 1) by identifying appropriate locations to restore each habitat type in the upper Santa Ana River based on historical occurrences. Within the South Coast Province, data from the project will inform resource managers as they establish baseline inventories of habitats for species of greatest conservation need (Conservation Strategy 2 for American Southwest Riparian Forest and Woodland).

4. **Support of the public:** The proposed project has the support of numerous organizations and agencies including Inland Empire Waterkeeper, The Wildlands Conservancy, City of Riverside, Riverside County Parks and Open Space District, Riverside-Corona Resource Conservation District, and Santa Ana Watershed Project Authority (See Exhibit 2: Project Letters).
5. **Location:** The proposed project is located along 4.2 miles of the Santa Ana River within and adjacent to the City of Riverside. The project area extends from Fairmount Park at the north to Martha McClean Anza Narrows Park at the downstream extent of the project study area (See Exhibit 1: Project Location Maps).
6. **Need:** Conservancy funding is the sole source of project funding and the project will not occur without Conservancy participation.

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7. **Greater-than-local interest:** The Santa Ana River Parkway, when completed, will span approximately 100 miles from the crest of the San Bernardino Mountains to the coast at Huntington Beach. The Parkway and associated Santa Ana River Trail serves as a local, regional, and state recreational and natural open space resource for people from throughout California and beyond. Parts of the trail have been designated a National Recreation Trail. The river runs through wild lands, agriculture, parks, towns, and cities, touching the lives of millions of Californians.
8. **Sea level rise vulnerability:** The proposed project area is inland from the coast and is not subject to sea level rise.

Additional Criteria

9. **Urgency:** Planning for projects throughout the Santa Ana River Parkway is underway and the information to be provided through this case study is urgently needed to maximize the incorporation of urban and historical ecology data into those planning initiatives.
10. **Resolution of more than one issue:** The data from this study will help identify the best opportunities for recreational projects, habitat and wildlife restoration and climate change resiliency.
11. **Innovation:** The proposed project is one of the first of its kind to integrate urban ecology and historical ecology data to identify opportunities for integrating nature into the urban environment. This innovative approach, incorporating cutting-edge science on urban greening and urban biodiversity support, can be scaled up or transported to other locations throughout California.
12. **Readiness:** The grantee is ready to proceed with the project immediately once funding is secured.
13. **Realization of prior Conservancy goals:** See “Project History” above.

CEQA COMPLIANCE:

The proposed Study is statutorily exempt pursuant to Title 14 California Code of Regulations, Article 18 Statutory Exemptions, Section 15262 which states that a project involving only feasibility or planning studies for possible future actions that have not yet been approved does not require the preparation of an environmental document under the California Environmental Quality Act (CEQA), but does require the consideration of environmental factors. The proposed Study consists of synthesizing diverse historical and urban ecology data about the Santa Ana River, analyzing natural conditions and modification history, and producing an illustrated technical report describing the findings and potential implications for restoration planning that have not been funded by the Conservancy (or approved by any other public entity). Furthermore, any restoration plans and studies generated will consider environmental factors

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and will be subject to CEQA review and analysis prior to implementation. Upon approval, staff will file a Notice of Exemption for the project.