CITY OF COSTA MESA
PROFESSIONAL SERVICES AGREEMENT
WITH ENDEMIC ENVIRONMENTAL SERVICES, INC.

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is made and entered into this 1st day of July 2025 ("Effective Date"), by and between the CITY OF COSTA MESA, a municipal corporation ("City"), and ENDEMIC ENVIRONMENTAL SERVICES, INC., a California Corporation ("Consultant").

RECITALS

A. City proposes to utilize the services of Consultant as an independent contractor to perform coastal sage and flower fields habitat restoration and monitoring plan implementation for the Fairview Park Mesa Restoration Project, as more fully described herein; and

B. Consultant represents that it has that degree of specialized expertise contemplated within California Government Code section 37103, and holds all necessary licenses to practice and perform the services herein contemplated; and

C. City and Consultant desire to contract for the specific services described in Exhibit "A" and desire to set forth their rights, duties and liabilities in connection with the services to be performed; and

D. No official or employee of City has a financial interest, within the provisions of sections 1090-1092 of the California Government Code, in the subject matter of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1.0. SERVICES PROVIDED BY CONSULTANT

1.1. Scope of Services. Consultant shall provide the professional services described in City's Request for Proposals, attached hereto as Exhibit "A," and Consultant's Proposal, attached hereto as Exhibit "B," both incorporated herein.

1.2. Professional Practices. All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. Consultant also warrants that it is familiar with all laws that may affect its performance of this Agreement and shall advise City of any changes in any laws that may affect Consultant's performance of this Agreement.

1.3. Performance to Satisfaction of City. Consultant agrees to perform all the work to the complete satisfaction of the City. Evaluations of the work will be done by the City Manager or his or her designee. If the quality of work is not satisfactory, City in its discretion has the right to:

(a) Meet with Consultant to review the quality of the work and resolve the matters of concern;

(b) Require Consultant to repeat the work at no additional fee until it is satisfactory; and/or

(c) Terminate the Agreement as hereinafter set forth.

1.4. Warranty. Consultant warrants that it shall perform the services required by this Agreement in compliance with all applicable Federal and California employment laws, including, but not limited to, those laws related to minimum hours and wages; occupational health and safety; fair employment and employment practices; workers' compensation insurance and safety in employment; and all other Federal, State and local laws and ordinances applicable to the services required under this Agreement. Consultant shall indemnify and hold harmless City from and against all claims, demands, payments, suits, actions, proceedings, and judgments of every nature and description including attorneys' fees and costs, presented, brought, or recovered against City for, or on account of any liability under any of the above-mentioned laws, which may be incurred by reason of Consultant's performance under this Agreement.

1.5. Non-Discrimination. In performing this Agreement, Consultant shall not engage in, nor permit its agents to engage in, discrimination in employment of persons because of their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military or veteran status, except as permitted pursuant to section 12940 of the Government Code.

1.6. Non-Exclusive Agreement. Consultant acknowledges that City may enter into agreements with other consultants for services similar to the services that are subject to this Agreement or may have its own employees perform services similar to those services contemplated by this Agreement.

1.7. Delegation and Assignment. This is a personal service contract, and the duties set forth herein shall not be delegated or assigned to any person or entity without the prior written consent of City. Consultant may engage a subcontractor(s) as permitted by law and may employ other personnel to perform services contemplated by this Agreement at Consultant's sole cost and expense.

1.8. Confidentiality. Employees of Consultant in the course of their duties may have access to financial, accounting, statistical, and personnel data of private individuals and employees of City. Consultant covenants that all data, documents, discussion, or other information developed or received by Consultant or provided for performance of this Agreement are deemed confidential and shall not be disclosed by Consultant without written authorization by City. City shall grant such authorization if disclosure is required by law. All City data shall be returned to City upon the termination of this Agreement. Consultant's covenant under this Section shall survive the termination of this Agreement.

2.0. COMPENSATION AND BILLING

2.1. Compensation. Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C," attached hereto and made a part of this Agreement. Consultant's total compensation shall not exceed One Million Three Hundred Eleven Thousand Sixty-Two Dollars ($1,311,062.00).

2.2. Additional Services. Consultant shall not receive compensation for any services provided outside the scope of services specified in the Consultant's Proposal unless the City Manager or designee, prior to Consultant performing the additional services, approves such additional services in writing. It is specifically understood that oral requests and/or approvals of such additional services or additional compensation shall be barred and are unenforceable.

2.3. Method of Billing. Consultant may submit invoices to the City for approval on a progress basis, but no more often than two times a month. Said invoice shall be based on the total of all Consultant's services which have been completed to City's sole satisfaction. City shall pay Consultant's invoice within forty-five (45) days from the date City receives said invoice. Each invoice shall describe in detail, the services performed, the date of performance, and the associated time for completion. Any additional services approved and performed pursuant to this Agreement shall be designated as "Additional Services" and shall identify the number of the authorized change order, where applicable, on all invoices.

2.4. Records and Audits. Records of Consultant's services relating to this Agreement shall be maintained in accordance with generally recognized accounting principles and shall be made available to City or its Project Manager for inspection and/or audit at mutually convenient times from the Effective Date until three (3) years after termination of this Agreement.

3.0. TIME OF PERFORMANCE

3.1. Commencement and Completion of Work. Unless otherwise agreed to in writing by the parties, the professional services to be performed pursuant to this Agreement shall commence within five (5) days from the Effective Date of this Agreement. Said services shall be performed in strict compliance with the Project Schedule (Work Breakdown) approved by City as set forth on pages 10-11 of Exhibit "B," attached hereto and incorporated herein. The Project Schedule may be amended by mutual agreement of the parties. Failure to commence work in a timely manner and/or diligently pursue work to completion may be grounds for termination of this Agreement.

3.2. Excusable Delays. Neither party shall be responsible for delays or lack of performance resulting from acts beyond the reasonable control of the party or parties. Such acts shall include, but not be limited to, acts of God, fire, strikes, pandemics (excluding COVID-19), material shortages, compliance with laws or regulations, riots, acts of war, or any other conditions beyond the reasonable control of a party (each, a "Force Majeure Event"). If a party experiences a Force Majeure Event, the party shall, within five (5) days of the occurrence of the Force Majeure Event, give written notice to the other party stating the nature of the Force Majeure Event, its anticipated duration and any action being taken to avoid or minimize its effect. Any suspension of performance shall be of no greater scope and of no longer duration than is reasonably required and the party experiencing the Force Majeure Event shall use best efforts without being obligated to incur any material expenditure to remedy its inability to perform; provided, however, if the suspension of performance continues for sixty (60) days after the date of the occurrence and such failure to perform would constitute a material breach of this Agreement in the absence of such Force Majeure Event, the parties shall meet and discuss in good faith any amendments to this Agreement to permit the other party to exercise its rights under this Agreement. If the parties are not able to agree on such amendments within thirty (30) days and if suspension of performance continues, such other party may terminate this Agreement immediately by written notice to the party experiencing the Force Majeure Event, in which case neither party shall have any liability to

the other except for those rights and liabilities that accrued prior to the date of termination.

4.0. TERM AND TERMINATION

4.1. Term. This Agreement shall commence on the Effective Date and continue for a period of eighty-four (84) months, ending on June 30, 2032, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties.

4.2. Notice of Termination. The City reserves and has the right and privilege of canceling, suspending or abandoning the execution of all or any part of the work contemplated by this Agreement, with or without cause, at any time, by providing written notice to Consultant. The termination of this Agreement shall be deemed effective upon receipt of the notice of termination. In the event of such termination, Consultant shall immediately stop rendering services under this Agreement unless directed otherwise by the City.

4.3. Compensation. In the event of termination, City shall pay Consultant for reasonable costs incurred and professional services satisfactorily performed up to and including the date of City's written notice of termination. Compensation for work in progress shall be prorated based on the percentage of work completed as of the effective date of termination in accordance with the fees set forth herein. In ascertaining the professional services actually rendered hereunder up to the effective date of termination of this Agreement, consideration shall be given to both completed work and work in progress, to complete and incomplete drawings, and to other documents pertaining to the services contemplated herein whether delivered to the City or in the possession of the Consultant.

4.4. Documents. In the event of termination of this Agreement, all documents prepared by Consultant in its performance of this Agreement including, but not limited to, finished or unfinished design, development and construction documents, data studies, drawings, maps and reports, shall be delivered to the City within ten (10) days of delivery of termination notice to Consultant, at no cost to City. Any use of uncompleted documents without specific written authorization from Consultant shall be at City's sole risk and without liability or legal expense to Consultant.

5.0. INSURANCE

5.1. Minimum Scope and Limits of Insurance. Consultant shall obtain, maintain, and keep in full force and effect during the life of this Agreement all of the following minimum scope of insurance coverages with an insurance company admitted to do business in California, rated "A," Class X, or better in the most recent A.M. Best's Rating Guide, and approved by City:

(a) Commercial general liability, including premises-operations, products/completed operations, broad form property damage, blanket contractual liability, independent contractors, personal injury or bodily injury with a policy limit of not less than One Million Dollars ($1,000,000.00) per occurrence, Two Million Dollars ($2,000,000.00) general aggregate.

(b) Business automobile liability for owned vehicles, hired, and non-owned vehicles, with a policy limit of not less than One Million Dollars ($1,000,000.00) combined single limit per accident for bodily injury and property damage.

(c) Workers' compensation insurance as required by the State of California. Consultant agrees to waive, and to obtain endorsements from its workers' compensation insurer waiving subrogation rights under its workers' compensation insurance policy against the City, its officers, agents, employees, and volunteers arising from work performed by Consultant for the City and to require each of its subcontractors, if any, to do likewise under their workers' compensation insurance policies.

(d) Professional errors and omissions ("E&O") liability insurance with policy limits of not less than One Million Dollars ($1,000,000.00), combined single limits, per occurrence and aggregate. Architects' and engineers' coverage shall be endorsed to include contractual liability. If the policy is written as a "claims made" policy, the retro date shall be prior to the start of the contract work. Consultant shall obtain and maintain, said E&O liability insurance during the life of this Agreement and for three years after completion of the work hereunder.

5.2. Endorsements. The commercial general liability insurance policy and business automobile liability policy shall contain or be endorsed to contain the following provisions:

(a) Additional insureds: "The City of Costa Mesa and its elected and appointed boards, officers, officials, agents, employees, and volunteers are additional insureds with respect to: liability arising out of activities performed by or on behalf of the Consultant pursuant to its contract with the City; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; automobiles owned, leased, hired, or borrowed by the Consultant."

(b) Notice: "Said policy shall not terminate, be suspended, or voided, nor shall it be cancelled, nor the coverage or limits reduced, until thirty (30) days after written notice is given to City."

(c) Other insurance: "The Consultant's insurance coverage shall be primary insurance as respects the City of Costa Mesa, its officers, officials, agents, employees, and volunteers. Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy."

(d) Any failure to comply with the reporting provisions of the policies shall not affect coverage provided to the City of Costa Mesa, its officers, officials, agents, employees, and volunteers.

(e) The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5.3. Deductible or Self-Insured Retention. If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by City. No policy of insurance issued as to

which the City is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

5.4. Certificates of Insurance. Consultant shall provide to City certificates of insurance showing the insurance coverages and required endorsements described above, in a form and content approved by City, prior to performing any services under this Agreement.

5.5. Non-Limiting. Nothing in this Section shall be construed as limiting in any way, the indemnification provision contained in this Agreement, or the extent to which Consultant may be held responsible for payments of damages to persons or property.

6.0. GENERAL PROVISIONS

6.1. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.

6.2. Representatives. The City Manager or his or her designee shall be the representative of City for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the City, called for by this Agreement, except as otherwise expressly provided in this Agreement.

Consultant shall designate a representative for purposes of this Agreement who shall be authorized to issue all consents, approvals, directives and agreements on behalf of Consultant called for by this Agreement, except as otherwise expressly provided in this Agreement.

6.3. Project Managers. City shall designate a Project Manager to work directly with Consultant in the performance of this Agreement.

Consultant shall designate a Project Manager who shall represent it and be its agent in all consultations with City during the term of this Agreement. Consultant or its Project Manager shall attend and assist in all coordination meetings called by City.

6.4. Notices. Any notices, documents, correspondence or other communications concerning this Agreement or the work hereunder may be provided by personal delivery or mail and shall be addressed as set forth below. Such communication shall be deemed served or delivered: (a) at the time of delivery if such communication is sent by personal delivery, and (b) 48 hours after deposit in the U.S. Mail as reflected by the official U.S. postmark if such communication is sent through regular United States mail.

IF TO CONSULTANT:	IF TO CITY:
Endemic Environmental Svs, Inc. 110 East Wilshire Avenue, #305 Fullerton, CA 92832 Tel: (714) 869-6687	City of Costa Mesa 77 Fair Drive Costa Mesa, CA 92626 Tel: (714) 754-5135

Attn: Barry Nerhus, CEO

Attn: Kelly Dalton

Courtesy copy to:

City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626
Attn: Finance Dept. | Purchasing

6.5. Drug-Free Workplace Policy. Consultant shall provide a drug-free workplace by complying with all provisions set forth in City's Council Policy 100-5, attached hereto as Exhibit "D" and incorporated herein. Consultant's failure to conform to the requirements set forth in Council Policy 100-5 shall constitute a material breach of this Agreement and shall be cause for immediate termination of this Agreement by City.

6.6. Attorneys' Fees. If litigation is brought by any party in connection with this Agreement, the prevailing party shall be entitled to recover from the opposing party all costs and expenses, including reasonable attorneys' fees, incurred by the prevailing party in the exercise of any of its rights or remedies hereunder or the enforcement of any of the terms, conditions, or provisions hereof.

6.7. Governing Law. This Agreement shall be governed by and construed under the laws of the State of California without giving effect to that body of laws pertaining to conflict of laws. In the event of any legal action to enforce or interpret this Agreement, the parties hereto agree that the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California.

6.8. Assignment. Consultant shall not voluntarily or by operation of law assign, transfer, sublet or encumber all or any part of Consultant's interest in this Agreement without City's prior written consent. Any attempted assignment, transfer, subletting or encumbrance shall be void and shall constitute a breach of this Agreement and cause for termination of this Agreement. Regardless of City's consent, no subletting or assignment shall release Consultant of Consultant's obligation to perform all other obligations to be performed by Consultant hereunder for the term of this Agreement.

6.9. Indemnification and Hold Harmless. Consultant agrees to defend, indemnify, hold free and harmless the City, its elected officials, officers, agents and employees, at Consultant's sole expense, from and against any and all claims, actions, suits or other legal proceedings brought against the City, its elected officials, officers, agents and employees arising out of the negligent performance of the Consultant, its employees, and/or authorized subcontractors, of the work undertaken pursuant to this Agreement. The defense obligation provided for hereunder shall apply without any advance showing of negligence or wrongdoing by the Consultant, its employees, and/or authorized subcontractors, but shall be required whenever any claim, action, complaint, or suit asserts as its basis the negligence, errors, omissions or misconduct of the Consultant, its employees, and/or authorized subcontractors, and/or whenever any claim, action, complaint or suit asserts liability against the City, its elected officials, officers, agents and employees based upon the negligence of the work performed by the Consultant, its employees, and/or authorized subcontractors under this Agreement, whether or not the Consultant, its employees, and/or authorized subcontractors are specifically named or otherwise

asserted to be liable. Notwithstanding the foregoing, the Consultant shall not be liable for the defense or indemnification of the City for claims, actions, complaints or suits arising out of the sole active negligence or willful misconduct of the City. This provision shall supersede and replace all other indemnity provisions contained either in the City's specifications or Consultant's Proposal, which shall be of no force and effect.

6.10. Independent Contractor. Consultant is and shall be acting at all times as an independent contractor and not as an employee of City. Consultant shall have no power to incur any debt, obligation, or liability on behalf of City or otherwise act on behalf of City as an agent. Neither City nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as set forth in this Agreement. Consultant shall not, at any time, or in any manner, represent that it or any of its agents or employees are in any manner agents or employees of City. Consultant shall secure, at its sole expense, and be responsible for any and all payment of Income Tax, Social Security, State Disability Insurance Compensation, Unemployment Compensation, and other payroll deductions for Consultant and its officers, agents, and employees, and all business licenses, if any are required, in connection with the services to be performed hereunder. Consultant shall indemnify and hold City harmless from any and all taxes, assessments, penalties, and interest asserted against City by reason of the independent contractor relationship created by this Agreement. Consultant further agrees to indemnify and hold City harmless from any failure of Consultant to comply with the applicable worker's compensation laws. City shall have the right to offset against the amount of any fees due to Consultant under this Agreement any amount due to City from Consultant as a result of Consultant's failure to promptly pay to City any reimbursement or indemnification arising under this paragraph.

6.11 Conflicts with Independent Contractor. Contractor/consultant's duties and services under this Agreement shall not include preparing or assisting the public entity with any portion of the public entity's preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the public entity. The public entity entering into this Agreement shall at all times retain responsibility for public contracting, including with respect to any subsequent phase of this project. Contractor/consultant's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. Contractor/consultant shall cooperate with the public entity to ensure that all bidders for a subsequent contract on any subsequent phase of this project have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by contractor pursuant to this Agreement.

6.12. PERS Eligibility Indemnification. In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, Consultant and any of its employees, agents, and subcontractors providing service under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by City,

including but not limited to eligibility to enroll in PERS as an employee of City and entitlement to any contribution to be paid by City for employer contribution and/or employee contributions for PERS benefits.

6.13. Cooperation. In the event any claim or action is brought against City relating to Consultant's performance or services rendered under this Agreement, Consultant shall render any reasonable assistance and cooperation which City might require.

6.14. Ownership of Documents. All findings, reports, documents, information and data including, but not limited to, computer tapes or discs, files and tapes furnished or prepared by Consultant or any of its subcontractors in the course of performance of this Agreement, shall be and remain the sole property of City once payment has been received by Consultant. Consultant agrees that any such documents or information shall not be made available to any individual or organization without the prior consent of City. Any use of such documents for other projects not contemplated by this Agreement, and any use of incomplete documents, shall be at the sole risk of City and without liability or legal exposure to Consultant. City shall indemnify and hold harmless Consultant from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from City's use of such documents for other projects not contemplated by this Agreement or use of incomplete documents furnished by Consultant. Consultant shall deliver to City any findings, reports, documents, information, data, in any form, including but not limited to, computer tapes, discs, files audio tapes or any other Project related items as requested by City or its authorized representative, at no additional cost to the City.

6.15. Public Records Act Disclosure. Consultant has been advised and is aware that this Agreement and all reports, documents, information and data, including, but not limited to, computer tapes, discs or files furnished or prepared by Consultant, or any of its subcontractors, pursuant to this Agreement and provided to City may be subject to public disclosure as required by the California Public Records Act (California Government Code section 7920.000 *et seq*.). Exceptions to public disclosure may be those documents or information that qualify as trade secrets, as that term is defined in the California Government Code section 7924.510, and of which Consultant informs City of such trade secret. The City will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The City shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those records so marked if disclosure is deemed to be required by law or by order of the Court.

6.16. Conflict of Interest. Consultant and its officers, employees, associates and subconsultants, if any, will comply with all conflict of interest statutes of the State of California applicable to Consultant's services under this agreement, including, but not limited to, the Political Reform Act (Government Code sections 81000, *et seq*.) and Government Code section 1090. During the term of this Agreement, Consultant and its officers, employees, associates and subconsultants shall not, without the prior written approval of the City Representative, perform work for another person or entity for whom Consultant is not currently performing work that would require Consultant or one of its officers, employees, associates or subconsultants to abstain from a decision under this Agreement pursuant to a conflict of interest statute.

6.17. Responsibility for Errors. Consultant shall be responsible for its work and results under this Agreement. Consultant, when requested, shall furnish clarification and/or explanation as may be required by the City's representative, regarding any services rendered under this Agreement at no additional cost to City. In the event that an error or omission attributable to Consultant occurs, then Consultant shall, at no cost to City, provide all necessary design

drawings, estimates and other Consultant professional services necessary to rectify and correct the matter to the sole satisfaction of City and to participate in any meeting required with regard to the correction.

6.18. Prohibited Employment. Consultant will not employ any regular employee of City while this Agreement is in effect.

6.19. Order of Precedence. In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of any document, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over the document referenced.

6.20. Costs. Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

6.21. Binding Effect. This Agreement binds and benefits the parties and their respective permitted successors and assigns.

6.22. No Third Party Beneficiary Rights. This Agreement is entered into for the sole benefit of City and Consultant and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

6.23. Headings. Paragraphs and subparagraph headings contained in this Agreement are included solely for convenience and are not intended to modify, explain or to be a full or accurate description of the content thereof and shall not in any way affect the meaning or interpretation of this Agreement.

6.24. Construction. The parties have participated jointly in the negotiation and drafting of this Agreement and have had an adequate opportunity to review each and every provision of the Agreement and submit the same to counsel or other consultants for review and comment. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

6.25. Amendments. Only a writing executed by the parties hereto or their respective successors and assigns may amend this Agreement.

6.26. Waiver. The delay or failure of either party at any time to require performance or compliance by the other of any of its obligations or agreements shall in no way be deemed a waiver of those rights to require such performance or compliance. No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

6.27. Severability. If any provision of this Agreement is determined by a court of competent jurisdiction to be unenforceable in any circumstance, such determination shall not affect the validity or enforceability of the remaining terms and provisions hereof or of the offending provision in any other circumstance. Notwithstanding the foregoing, if the value of this Agreement, based upon the substantial benefit of the bargain for any party, is materially impaired, which determination made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

6.28. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

6.29. Corporate Authority. The persons executing this Agreement on behalf of the parties hereto warrant that they are duly authorized to execute this Agreement on behalf of said parties and that by doing so the parties hereto are formally bound to the provisions of this Agreement.

[Signatures appear on following page.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers, as of the date first above written.

CONSULTANT

_____ Date: _____
Signature

_____
Barry Nerhus, CEO & Principal Ecologist

CITY OF COSTA MESA

_____ Date: _____
Cecilia Gallardo-Daly
Interim City Manager

ATTEST:

_____
Brenda Green
City Clerk

APPROVED AS TO FORM:

_____ Date: _____
Kimberly Hall Barlow
City Attorney

APPROVED AS TO INSURANCE:

_____ Date: _____
Ruth Wang
Risk Management

APPROVED AS TO CONTENT:

_____ Date: _____

Kelly Dalton
Project Manager

DEPARTMENTAL APPROVAL:

_____ Date: _____

Brian Gruner
Parks and Community Services Director

APPROVED AS TO PURCHASING:

_____ Date: _____

Carol Molina
Finance Director

EXHIBIT A

REQUEST FOR PROPOSALS

REQUEST FOR PROPOSAL 25-06

FOR

Fairview Park Mesa Restoration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation

Costa Mesa

Parks and Community Services Department

CITY OF COSTA MESA

Released on September 10, 2024

REQUEST FOR PROPOSAL
FOR
Fairview Park Mesa Restoration: Coastal Sage and Flower Fields Habitat Restoration and Monitoring Plan Implementation

The City of Costa Mesa (hereinafter referred to as the "City") is requesting Proposals from qualified consultants for Fairview Park Landscape Maintenance Services for the Parks and Community Services Department. The awarded Contractor, (hereinafter referred to as "Contractor") shall be in accordance with the Sample Professional Service Agreement, **Appendix B** terms, conditions, and scope of work. Prior to submitting a Proposal, Proposers are advised to carefully read the instructions below, including the Sample Professional Service Agreement and any solicitation appendix/exhibits. The term is expected to be for 5 years with 3 one-year renewals. The City reserves the right to award one or more contracts for this service.

I. GENERAL INFORMATION

The City of Costa Mesa is a general law city, which operates under the council/manager form of government with an annual General Fund budget of over $189.9 million and a total budget of over $240.10 million for fiscal year 2023-2024.

The City of Costa Mesa, incorporated in 1953, has an estimated population of 115,000 and has a land area of 16.8 square miles. It is located in the northern coastal area of Orange County, California, and is bordered by the cities of Santa Ana, Newport Beach, Huntington Beach, Fountain Valley and Irvine.

The City is a "full service city" providing a wide range of services. These services include: police and fire protection; animal control; emergency medical aid; building safety regulation and inspection; street lighting; land use planning and zoning; housing and community development; maintenance and improvement of streets and related structures; traffic safety maintenance and improvement; and full range of recreational and cultural programs.

The City of Costa Mesa is home of the Segerstrom Center for the Arts, Orange County Fairgrounds, South Coast Repertory Theater and the South Coast Plaza Shopping Center, which is the single largest commercial activity center in the City. The volume of sales generated by South Coast Plaza secures its place as the highest volume regional shopping center in the nation.

The successful Proposer, shall have experience in similar types of services. All Proposers responding to this Request for Proposal (RFP) will be evaluated on the basis of their expertise, prior experience on similar projects, demonstrated competence, ability to meet the requested services, adequate staffing, reference check, understanding of services, cost and responsiveness to the needs and concerns of the City of Costa Mesa.

1. **Important Notice:** The City has attempted to provide all information available. It is the responsibility of each Proposer to review, evaluate, and, where necessary, request any clarification prior to submission of a Proposal. **Proposers are not to contact other City personnel with any questions or clarifications concerning this Request for Proposal (RFP).** The City's Purchasing Department contact set out in RFP, Section II, Subsection 2, Inquires, will provide all official communication concerning this RFP. Any City response relevant

to this RFP other than through or approved by City's Purchasing Department is unauthorized and will be considered invalid.

If clarification or interpretation of this solicitation is considered necessary by City, a written addendum shall be issued and the information will be posted on PlanetBids. Any interpretation of, or correction to, this solicitation will be made only by addendum issued by the City's Purchasing Department. It is the responsibility of each Proposer to periodically check PlanetBids website to ensure that it has received and reviewed any and all addenda to this solicitation. The City will not be responsible for any other explanations, corrections to, or interpretations of the documents, including any oral information.

2. **Schedule of Events:** This Request For Proposal shall be governed by the following schedule:

Release of RFP	**September 10, 2024 5:00pm**
Mandatory pre-proposal Conference	**September 17, 2024 11:00am**
Deadline for Written Questions	**September 19, 2024 by 5:00pm**
Responses to Questions Posted	**September 24, 2024 by 5:00pm**
Proposals are Due	**September 27, 2024 by 12:00 p.m.**
Interviews (if held)	**October 15-16, 2024**
Approval of Contract	**October/November 2024**

**All dates are subject to change at the discretion of the City.

Pre-Proposal Conference: A MANDATORY Pre-Proposal conference will be held on **September 17, 2024 at 11:00 a.m.** in City Hall Community Room at City Hall, 77 Fair Drive, Costa Mesa, CA 92626. A Pre-Proposal conference is held to allow for questions and clarification concerning the City's RFP process, scope of services and subsequent contract award.

3. **Proposer's Minimum Requirements:** Interested and qualified Proposers that can demonstrate their ability to successfully provide the required services outlined in Appendix A– Scope of Work, of this RFP are invited to submit a proposal, provided they meet the City's requirements as defined in Appendix A – Scope of Work, Section 1.4 Restoration Contractor Qualifications and Section 1.5 Restoration Specialist Qualifications. All requirements must be met at the time of the proposal due date. **If these requirements are not met, the proposal may not receive further consideration, as determined in the sole discretion of the City.**

II. GENERAL INSTRUCTIONS AND PROVISIONS

1. **Proposal Format Guidelines:** Interested entities or contractors are to provide the City of Costa Mesa with a thorough Proposal using the following guidelines: Proposal should be typed and should contain no more than 20 typed pages using a 12-point font size, including transmittal letter and resumes of key people, but excluding Index/Table of Contents, tables, charts, graphic exhibits and pricing forms. Each Proposal will adhere to the following order and content of sections. Proposal should be straightforward, concise and provide "layman" explanations of technical terms that are used. Emphasis should be concentrated on conforming to the RFP instructions, responding to the RFP requirements, and on providing a complete and clear

description of the offer. Proposals which appear unrealistic in terms of technical commitments, lack of technical competence or are indicative of failure to comprehend the complexity and risk of this contract may be rejected. The following Proposal sections are to be included in the Proposer's response:

- **Cover Letter:** A cover letter, not to exceed three pages in length, should summarize key elements of the Proposal. An individual authorized to bind the Contractor must sign the letter. Indicate the address and telephone number of the contractor's office located nearest to Costa Mesa, California, and the office from which the project will be managed. And include proposed working relationship among the offering agency and subcontractors, if applicable.

- **Background and Project Summary Section:** The Background and Project Summary Section should describe your understanding of the City, the work to be done, and the objectives to be accomplished. Refer to **Scope of Work**, **Appendix A** of this RFP.

- **Method of Approach:** Provide a detailed description of the approach and methodology that will be used to fulfill each requirement listed in the Scope of Work of this RFP. The section should include:

    1. An implementation plan that describes in detail (i) the methods, including controls by which your firm manages projects of the type sought by this RFP; (ii) methodology for soliciting and documenting views of internal and external stakeholders; (iii) and any other project management or implementation strategies or techniques that the respondent intends to employ in carrying out the work.

    2. Detailed description of efforts your firm will undertake to achieve client satisfaction and to satisfy the requirements of the "Scope of Work" section.

    3. Detailed project schedule, identifying all tasks and deliverables to be performed, durations for each task, and overall time of completion.

    4. Detailed description of specific tasks you will require from City staff. Explain what the respective roles of City staff and your staff would be to complete the tasks specified in the Scope of Work.

    5. Proposers are encouraged to provide additional innovative and/or creative approaches for providing the service that will maximize efficient, safe, and cost-effective operations or increased performance capabilities.

    6. Firms, individuals and entities wishing to be considered shall include in their submissions the steps they will, if selected, implement and adhere to for the recruitment, hiring and retention of former employees of the City who have been displaced due to layoff or outsourcing of functions and services formerly provided by the City.

    7. Fee schedule must include costs for each location and fee schedules for any hours outside of the proposed hours of operation at each location.

- **Qualifications & Experience of the Firm**: Describe the qualifications and experience of the organization or entity performing services/projects within the past eight years that are

similar in size and scope to demonstrate competence to perform these services. Information shall include:

1. If the owner is a corporation please provide: Name of corporation, corporate office street address, city, state, and zip code, state where incorporated, date of incorporation, first and last name of officers, local office address, city, state & zip, and the date local office opened its doors for business.

2. If the owner is a partnership or joint venture, please provide: Name of partnership or joint venture, principal office street address, city, state, and zip code, state of organization, date of organization, first and last name of general partner(s), local office address, city, state, and zip code, and date local office opened its doors for.

3. List all businesses owned or controlled by yourself (applicant) or business manager doing similar business in California under another name. List business name and address and specify who owns or controls the business (e.g., self, business manager, etc.).

4. List all businesses for which you or your business manager is or was an officer, director, or partner doing similar business in California under another name. List business name and address, title, date(s) in position; specify who was in position (e.g., self, business manager, etc.).

5. How many years have you been in business under your present business name?

6. Provide a list of current and previous contracts similar to the requirements for Costa Mesa, including all public agencies served (if any). For each, provide a brief description of the scope of work performed, the length of time you have been providing services, and the name, title, and telephone number of the person who may be contacted regarding your organization's service record. Provide a sample of each background investigation for each contract.

7. Submit a description of the organization's qualifications, experience and abilities that make it uniquely capable to provide the services specified in the Scope of Work.

8. The City of Costa Mesa is interested in knowing how Proposers support the communities that they serve. Please provide information on your organization's participation in local community, charitable and civic organizations and events, including membership in the Costa Mesa Chamber of Commerce, charitable contributions made by your organization, etc.

Any public entity which submits a Proposal should describe in detail how it currently performs services like those identified in the Scope of Work within its or other jurisdictions, including photographs, written policies and/or video of services provided. If you have performed these services under contract for another public entity, please provide references for those entities as set forth above for private Proposers.

- **Financial Capacity:** The City is concerned about proposers' financial capability to perform, and therefore, may request sufficient data to allow an evaluation of firm's financial capabilities.

- **Key Personnel:** It is essential that the Proposer provide adequate experienced personnel, capable of and devoted to the successful accomplishment of work to be performed under this contract. The Proposer must agree to assign specific individuals to the key positions.
    - Identify the members of the staff who would be assigned to act for Proposer's firm in key management and filed positions providing the services described in the Proposal, and the functions to be performed by each.

    - Include resumes or curriculum vitae of each such staff member, including name, position, telephone number, email address, education, and years and type of experience. Describe for each such person, the relevant transactions on which they have worked.

- **Cost Proposal:** Provide a fee schedule/pricing information for the project as referenced in the attached in Appendix C. Proposals shall be valid for a minimum of 180 days following submission.

- **Disclosure:** Please disclose any and all past or current business and personal relationships with any current Costa Mesa elected official, appointed official, City employee, or family member of any current Costa Mesa elected official, appointed official, or City employee. **Any past or current business relationship may not disqualify the firm from consideration.**

- **Sample Professional Service Agreement:** The firm selected by the City will be required to execute a Professional Service Agreement with the City. A sample of the Agreement is enclosed as **Appendix B,** but may be modified to suit the specific services and needs of the City. **If a Proposer has any exceptions or conditions to the Agreement, these must be submitted for consideration with the Proposal. Otherwise, the Proposer will be deemed to have accepted the form of Agreement**. See No. 12 of this RFP below.

- **Checklist of Forms to Accompany Proposal:** As a convenience to Proposers, following is a list of the forms, **Appendix C** included in this RFP, which should be included with Proposals:

    1. Vendor Application Form
    2. Company Profile & References
    3. Ex Parte Communications Certificate
    4. Disclosure of Government Positions
    5. Disqualifications Questionnaire
    6. Bidder/Applicant/Contractor Campaign Contribution
    7. Cost Proposal

2. Process for Submitting Proposals:

- **Content of Proposal:** The Proposal must be submitted using the format as indicated in the Proposal format guidelines.

- **Preparation of Proposal:** Each Proposal shall be prepared simply and economically, avoiding the use of elaborate promotional material beyond those sufficient to provide a complete, accurate and reliable presentation.

- **Cost for Preparing Proposal:** The cost for developing the Proposal is the sole responsibility of the Proposer. All Proposals submitted become the property of the City. Fee proposal shall be submitted in a **separate** file containing the following: **Fee schedule must include costs for each position with hourly rate (if applicable).**

- **Forms to Accompany Proposal:** Appendix C forms shall be attached at the end of the Proposal with the exception of the Cost Proposal which shall be submitted in a separate file.

- **Number of Proposals:** Submit one (1) PDF file format copy of your proposal in sufficient detail for thorough evaluation and comparative analysis.

- **Submission of Proposals:** Complete written Proposals must be submitted electronically in PDF file format via the planetbids.com website not later than ***12*:00 p.m. (P.S.T) on September 27, 2024*.*** Proposals will not be accepted after this deadline. Bids received after the scheduled closing time will not be accepted. It shall be the sole responsibility of the Bidder to see that the bid is received in proper time. Faxed or e-mailed Proposals will not be accepted. ***NO EXCEPTIONS.***

- **Inquiries:** Questions about this RFP must be posted in the Q & A tab on Planetbids no later than **September 19, 2024 by 5:00 P.M.** The City reserves the right not to answer all questions.

  The City reserves the right to amend or supplement this RFP prior to the Proposal due date. All addendum(s), responses to questions received, and additional information will be posted to the Costa Mesa Procurement Registry, Costa Mesa-Official City Web Site, Business-Bids & RFP's. Proposers should check this web page daily for new information.

  From the date that this RFP is issued until a firm or entity is selected and the selection is announced, firms or public entities are not allowed to communicate outside the process set forth in this RFP with any City employee other than the contracting officer listed above regarding this RFP. The City reserves the right to reject any Proposal for violation of this provision. No questions other than posted on Planetbids will be accepted, and no response other than written will be binding upon the City.

- **Conditions for Proposal Acceptance:** This RFP does not commit the City to award a contract or to pay any costs incurred for any services. The City, at its sole discretion, reserves the right to accept or reject any or all Proposals received as a result of this RFP, to negotiate with any qualified source(s), or to cancel this RFP in part or in its entirety. The City may waive any irregularity in any Proposal. All Proposals will become the property of the City of Costa Mesa, USA. If any proprietary information is contained in the Proposal, it should be clearly identified.

- **Insurance & W-9 Requirements:** Upon recommendation of contract award, Contractor will be required to submit the following documents with ten (10) days of City notification, unless otherwise specified in the solicitation:

    - **Insurance** - City requires that licensees, lessees, and vendors have an approved Certificate of Insurance (not a declaration or policy) or proof of legal self-insurance on file with the City for the issuance of a permit or contract. Within ten(10)

consecutive calendar days of award of contract, successful Bidder must furnish the City with the Certificates of Insurance proving coverage as specified in the sample contract.

- **W-9** – Current signed form W-9 (Taxpayer Identification Umber & Certification) which includes Contractor's legal business name(s).

3. Evaluation Criteria: The City's evaluation and selection process will be conducted in accordance with Chapter V, Article 2 of the City's Municipal Code (Code). In accordance with the Code, the responsive responsible proposer shall be determined based on evaluation of qualitative factors in addition to cost. At all times during the evaluation process, the following criteria will be used. Sub-criteria are not necessarily listed in order of importance. Additional sub-criteria that logically fit within a particular evaluation criteria may also be considered even if not specified below.

1. **Qualifications of Key Personnel—25%**
2. **Method of Approach—30%**
3. **Qualifications & Experience of Firm-- 25%**
4. **Cost Proposal-- 15%**
5. **References- 5%**

4. Evaluation of Proposals and Selection Process: In accordance with its Municipal Code, the City will adhere to the following procedures in evaluating Proposals. An Evaluation Committee, which may include members of the City's staff and possibly one or more outside experts, will screen and review all Proposals according to the weighted criteria set forth above. While price is one basic factor for award, it is not the sole consideration.

A. **<u>Responsiveness Screening</u>**: Proposals will first be screened to ensure responsiveness to the RFP. The City may reject as non-responsive any Proposal that does not include the documents required to be submitted by this RFP. At any time during the evaluation process, the City reserves the right to request clarifications or additional information from any or all Proposers regarding their Proposals.

B. **<u>Initial Proposal Review:</u>** The Committee will initially review and score all responsive written Proposals based upon the Evaluation Criteria set forth above. The Committee may also contact Proposer's references. Proposals that receive the highest evaluation scores may be invited to the next stage of the evaluation process. The City may reject any Proposal in which a Proposer's approach, qualifications, or price is not considered acceptable by the City. An unacceptable Proposal is one that would have to be substantially rewritten to make it acceptable. The City may conclude the evaluation process at this point and recommend award to the lowest responsible bidder. Alternatively, the City may elect to negotiate directly with one or more Proposers to obtain the best result for the City prior to making a recommendation or selection.

C. **Interviews, Reference Checks, Revised Proposals, Discussions:** Following the initial screening and review of Proposals, the Proposers included in this stage of the evaluation process may be invited to participate in an oral interview. Interviews, if held, are tentatively scheduled for the week of **October 15-16, 2024** and will be conducted at City of Costa Mesa City Hall, 77 Fair Drive, Costa Mesa, CA 92626 or via zoom. This date is subject to change. The individual(s) from Proposer's organization that will be directly responsible for carrying out the contract, if awarded, should be present at the oral interview. The oral interview may, but is not required to, use a written question/answer format for the purpose of clarifying the intent of any portions of the Proposal.

In addition to conducting an oral interview, the City may during this stage of the evaluation process also contact and evaluate the Proposer's references, contact any Proposer to clarify any response or request revised or additional information, contact any current users of a Proposer's services, solicit information from any available source concerning any aspect of a Proposal, and seek and review any other information deemed pertinent to the evaluation process.

Following conclusion of this stage of the evaluation process, the Committee will again rank all Proposers according to the evaluation criteria set forth above. The Committee may conclude the evaluation process at this point, and make a recommendation for award, or it may request Best and Final Offers from Proposers. The City may accept the Proposal or negotiate the terms and conditions of the agreement with the highest ranked organization. The City may recommend award without Best and Final Offers, so Proposers should include their best Proposal with their initial submission.

Recommendation for award is contingent upon the successful negotiation of final contract terms. Negotiations shall be confidential and not subject to disclosure to competing Proposers unless an agreement is reached. If contract negotiations cannot be concluded successfully within a time period determined by the City, the City may terminate negotiations and commence negotiations with the next highest scoring Proposer or withdraw the RFP.

6. **Protests:** Failure to comply with the rules set forth herein may result in rejection of the protest. Any proposals awarded pursuant to the formal procurement procedure set forth in the Proposal procedure may be appealed in accordance with the following procedure:

- The Proposer shall file the written notice of appeal with the purchasing officer at least ten (10) working days prior to proposal award date specified in the notice of recommendation to award.
- The written notice of appeal must include specifics as to the nature of the appeal.
- The Proposer must provide any and all documentation to support the appeal.
- The purchasing officer will respond in writing to the Proposer within five (5) working days.
- In the event the appeal is denied by the purchasing officer, the Proposer may appeal the purchasing officer's ruling to the city council at the next available council meeting.

6. **Accuracy of Proposals:** Proposers shall take all responsibility for any errors or omissions in their Proposals. Any discrepancies in numbers or calculations shall be interpreted to reflect the cost to the City.

If prior to contract award, a Proposer discovers a mistake in their Proposal which renders the Proposal unwilling to perform under any resulting contract, the Proposer must immediately notify the facilitator and request to withdraw the Proposal. It shall be solely within the City's discretion as to whether withdrawal will be permitted. If the solicitation contemplated evaluation and award of "all or none" of the items, then any withdrawal must be for the entire Proposal. If the solicitation provided for evaluation and award on a line item or combination of items basis, the City may consider permitting withdrawal of specific line item(s) or combination of items.

7. **Responsibility of Proposers:** The City shall not be liable for any expenses incurred by potential Contractors in the preparation or submission of their Proposals. Pre-contractual expenses are not to be included in the Contractor's Pricing Sheet. Pre-contractual expenses are defined as, including but not limited to, expenses incurred by Proposer in:

   - Preparing Proposal in response to this RFP;
   - Submitting that Proposal to the City;
   - Negotiating with the City any matter related to the Proposal; and,
   - Any other expenses incurred by the Proposer prior to the date of the award and execution, if any, of the contract.

8. **Confidentiality:** The California Public Records Act (Cal. Govt. Code Sections 6250 et seq.) mandates public access to government records. Therefore, unless information is exempt from disclosure by law, the content of any request for explanation, exception, or substitution, response to this RFP, protest, or any other written communication between the City and Proposer, shall be available to the public. The City intends to release all public portions of the Proposals following the evaluation process at such time as a recommendation is made to the City Council.

   If Proposer believes any communication contains trade secrets or other proprietary information that the Proposer believes would cause substantial injury to the Proposer's competitive position if disclosed, the Proposer shall request that the City withhold from disclosure the proprietary information by marking each page containing such proprietary information as confidential. Proposer may not designate its entire Proposal as confidential nor designate its Price Proposal as confidential.

   Submission of a Proposal shall indicate that, if Proposer requests that the City withhold from disclosure information identified as confidential, and the City complies with the Proposer's request, Proposer shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the City from and against all damages (including but not limited to attorney's fees and costs that may be awarded to the party requesting the Proposer information), and pay any and all costs and expenses related to the withholding of Proposer information. Proposer shall not make a claim, sue, or maintain any legal action against the City or its directors, officers, employees, or agents concerning the disclosure, or withholding from disclosure, of any Proposer information. If Proposer does not request that the City withhold from disclosure information identified as confidential, the City shall have no obligation to withhold the information from disclosure and may release the information sought without any liability to the City.

9. **Ex Parte Communications:** Proposers and Proposers' representatives should not communicate with the City Council members about this RFP. In addition, Proposers and Proposers' representatives should not communicate outside the procedures set forth in this RFP

with an officer, employee or agent of the City, including any member of the evaluation panel, with the exception of the RFP Facilitator, regarding this RFP until after Contract Award. Proposers and their representatives are not prohibited, however, from making oral statements or presentations in public to one or more representatives of the City during a public meeting.

A "Proposer" or "Proposer's representative" includes all of the Proposer's employees, officers, directors, consultants and agents, any subcontractors or suppliers listed in the Proposer's Proposal, and any individual or entity who has been requested by the Proposer to contact the City on the Proposer's behalf. Proposers shall include the Ex Parte Communications Form, **Appendix C** with their Proposals certifying that they have not had or directed prohibited communications as described in this section.

10. **Conflict of Interest:** The Proposer warrants and represents that it presently has no interest and agrees that it will not acquire any interest which would present a conflict of interest under California Government Code Sections 1090 et seq., or Sections 87100 et seq., during the performance of services under any Agreement awarded. The Proposer further covenants that it will not knowingly employ any person having such an interest in the performance of any Agreement awarded. Violation of this provision may result in any Agreement awarded being deemed void and unenforceable.

11. **Disclosure of Governmental Position**: In order to analyze possible conflicts that might prevent a Proposer from acting on behalf of the City, the City requires that all Proposers disclose in their Proposals any positions that they hold as directors, officers, or employees of any governmental entity. Additional disclosure may be required prior to contract award or during the term of the contract. Each Proposer shall disclose whether any owner or employee of the firm currently hold positions as elected or appointed officials, directors, officers, or employees of a governmental entity or held such positions in the past twelve months using the attached Disclosure of Government Positions Form, **Appendix C**.

12. **Conditions to Agreement:** The selected Proposer will execute a Professional Service Agreement for Services with the City describing the Scope of Services to be performed, the schedule for completion of the services, compensation, and other pertinent provisions. The contract shall follow the sample form of Agreement provided as **Appendix B** to this RFP, which may be modified by the City.

    All Proposers are directed to particularly review the indemnification and insurance requirements set forth in the sample Agreement. The terms of the agreement, including insurance requirements have been mandated by the City and can be modified only if extraordinary circumstances exist.

    Submittal of a Proposal shall be deemed acceptance of all the terms set forth in this RFP and the sample agreement for services unless the Proposer includes with its Proposal, in writing, any conditions or exceptions requested by the Proposer to the proposed Agreement.

13. **Disqualification Questionnaire:** Proposers shall complete and submit, under penalty of perjury, a standard form of questionnaire inquiring whether a Proposer, any officer of a proposer, or any employee of a Proposer who has a proprietary interest in the Proposer, has **ever** been disqualified, removed, or otherwise prevented from proposing on, or completing a federal, state, or local government project because of a violation of law or safety regulation and if so, to explain

the circumstances. A Proposal may be rejected on the basis of a Proposer, any officer or employee of such Proposer, having been disqualified, removed, or otherwise prevented from proposing on, or completing a federal, state, or local project because of a violation of law or a safety regulation, **Appendix C**.

14. **Standard Terms and Conditions:** The City reserves the right to amend or supplement this RFP prior to the Proposal due date. All addendum(s) and additional information will be posted via PlanetBids. Proposers should check this web page daily for new information.

APPENDIX A

Scope of Work

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EXECUTIVE SUMMARY

The Fairview Park Coastal Sage Scrub and Flower Fields Habitat Restoration and Enhancement Project (CSS and Flower Fields Restoration Project) is a collaborative effort between the City of Costa Mesa (City) and the Orange County Transportation Authority (OCTA) to fulfill an outstanding obligation of restoring approximately 4.5 acres of coastal sage scrub (CSS) and 5.0 acres of native grassland habitat. This project is part of the larger OCTA Fairview Park Wetlands and Riparian Habitat Project (OCTA Project), which initially committed to restoring 23 acres of habitat within Fairview Park in 2011.

Aligned with the goals set forth in the Fairview Park Master Plan, this project continues the City's commitment to restoring native habitats in the park. The OCTA Project began in 2012 as part of OCTA's Environmental Mitigation Program for the Measure 2 (M2) Freeway projects. To date, the City has successfully implemented
14.4 acres of habitat restoration, which is subject to review and final approval by the Wildlife Agencies (CDFW, USFWS), providing valuable habitats for various wildlife species, including two state and/or federally protected birds: the coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*). Review and approval of the City's habitat restoration

The CSS and Flower Fields Restoration Project aims to restore and enhance an additional 15.35 acres of habitat, comprising the following components:

- 11.91 acres of habitat restoration, including the 9.5 acres of remaining habitat restoration (4.5 acres of CSS and 5 acres of grassland) for the OCTA Project.
- 1.27 acres of voluntary habitat enhancement to further enrich the area's ecological value.
- 2.17 acres of voluntary native revegetation and weed management buffer areas to support the successful establishment of native plant communities while lessening the impacts of invasive species.

By executing the CSS and Flower Fields Restoration Project, the City of Costa Mesa and OCTA will contribute significantly to the conservation and restoration of important habitats in Fairview Park. This partnership will benefit local wildlife, maintain public access to the approved trail system, comply with the requirements of Measure AA, ensure the fulfillment of mitigation obligations, and demonstrate the City's ongoing commitment to the values outlined in the Fairview Park Master Plan.

1 INTRODUCTION

Fairview Park is located within the City of Costa Mesa (City) and is adjacent to Talbert Nature Preserve/Talbert Regional Park (Figure 1-1). One of the purposes of this project is to satisfy an outstanding habitat restoration obligation by the City and the Orange County Transportation Authority (OCTA) for approximately 4.5 acres of coastal sage scrub (CSS) and 5.0 acres of native grassland habitat for mitigation as part of the OCTA Fairview Park Wetlands and Riparian Habitat Project (OCTA Project). The OCTA Project committed to restoring approximately 23 acres of habitat within Fairview Park (City 2011).

In 1997, the City adopted a Mitigated Negative Declaration and the Fairview Park Master Plan. Revisions to the Master Plan were adopted in 2000, 2002, and 2008. This project continues to implement the goal of the Master Plan to restore native habitat in Fairview Park.

In 2011, the City was awarded funding from OCTA as part of OCTA's Environmental Mitigation Program for the Measure 2 (M2) Freeway projects. The OCTA Project was included in the OCTA M2 Natural Community Conservation Plan/Habitat Conservation Plan and began in 2012. The City has implemented 14.4 acres of the committed 23 acres (which excludes the trail system per mapping completed by Land IQ) of habitat restoration for the OCTA Project, including ponds and wetlands, surrounded by other native habitats (Figure 1-2). Final review and approval by the Wildlife Agencies (CDFW, USFWS) is required before the OCTA Project is deemed complete. The 2022 Annual Report for the OCTA Project, prepared by Endemic Environmental Services, describes the maintenance activities for the wetlands area, including the water delivery system for the constructed ponds; algae and cattail management to allow water movement as designed in the constructed wetland system, mosquito and vector control by the Orange County Mosquito and Vector Control District; weed management; vandalism, and trespassing deterrence activities. The OCTA Project provides valuable habitat for wildlife, including two state and/or federally protected birds that nest in the project area, coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*).

The City proposes to restore and enhance an additional 15.35 acres of habitat, called the Fairview Park Coastal Sage Scrub and Flower Fields Habitat Restoration and Enhancement Project (CSS and Flower Fields Restoration Project), which includes the approximately 9.5 acres of remaining habitat restoration (4.5 acres of CSS and 5 acres of grassland) required for the OCTA Project and 5.85 acres of voluntary habitat restoration, habitat enhancement, native revegetation, and establishment of a weed management buffer (Figure 1-3):

- 11.91 acres of habitat restoration, including 9.5 acres for the OCTA Project
- 1.27 acres of voluntary habitat enhancement
- 2.17 acres of voluntary native revegetation and weed management buffer areas

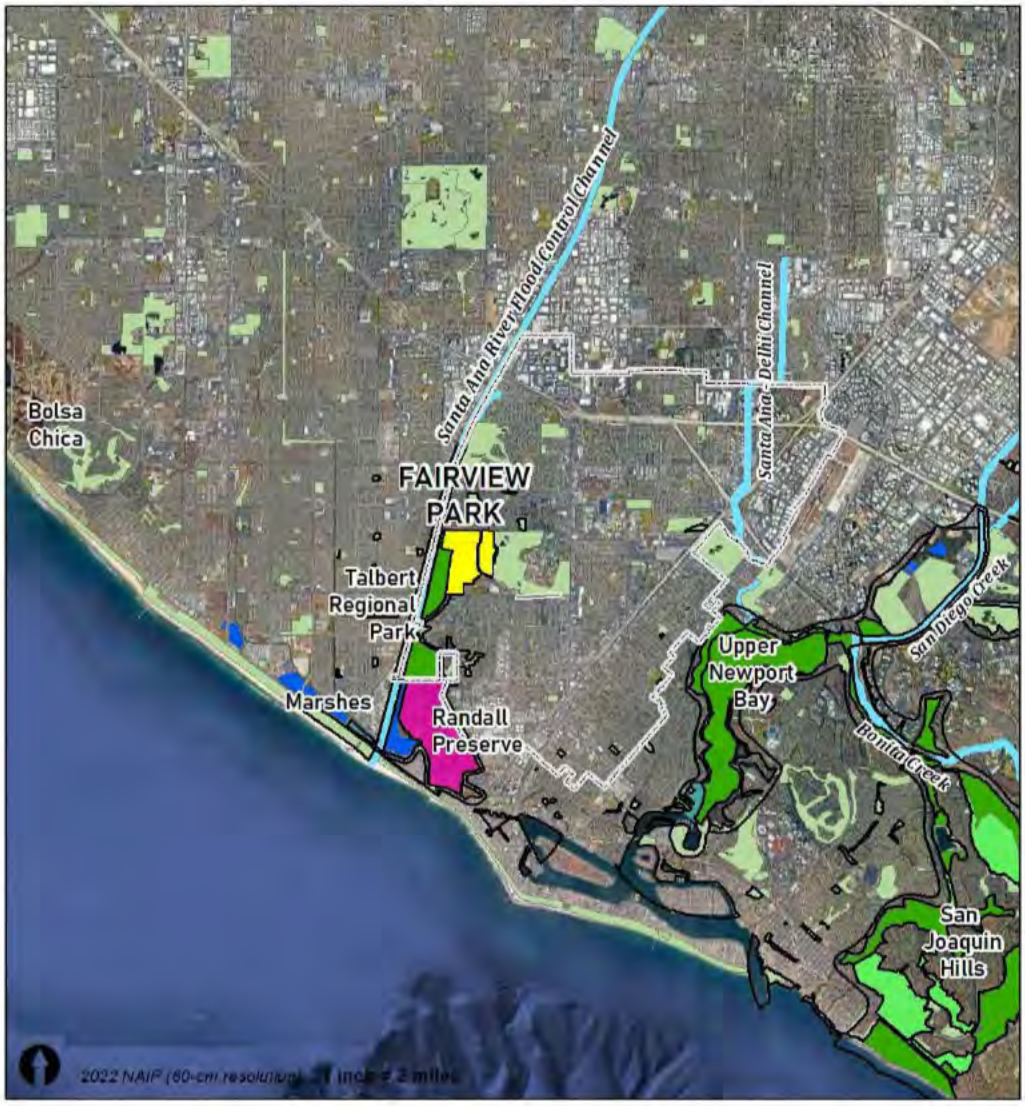
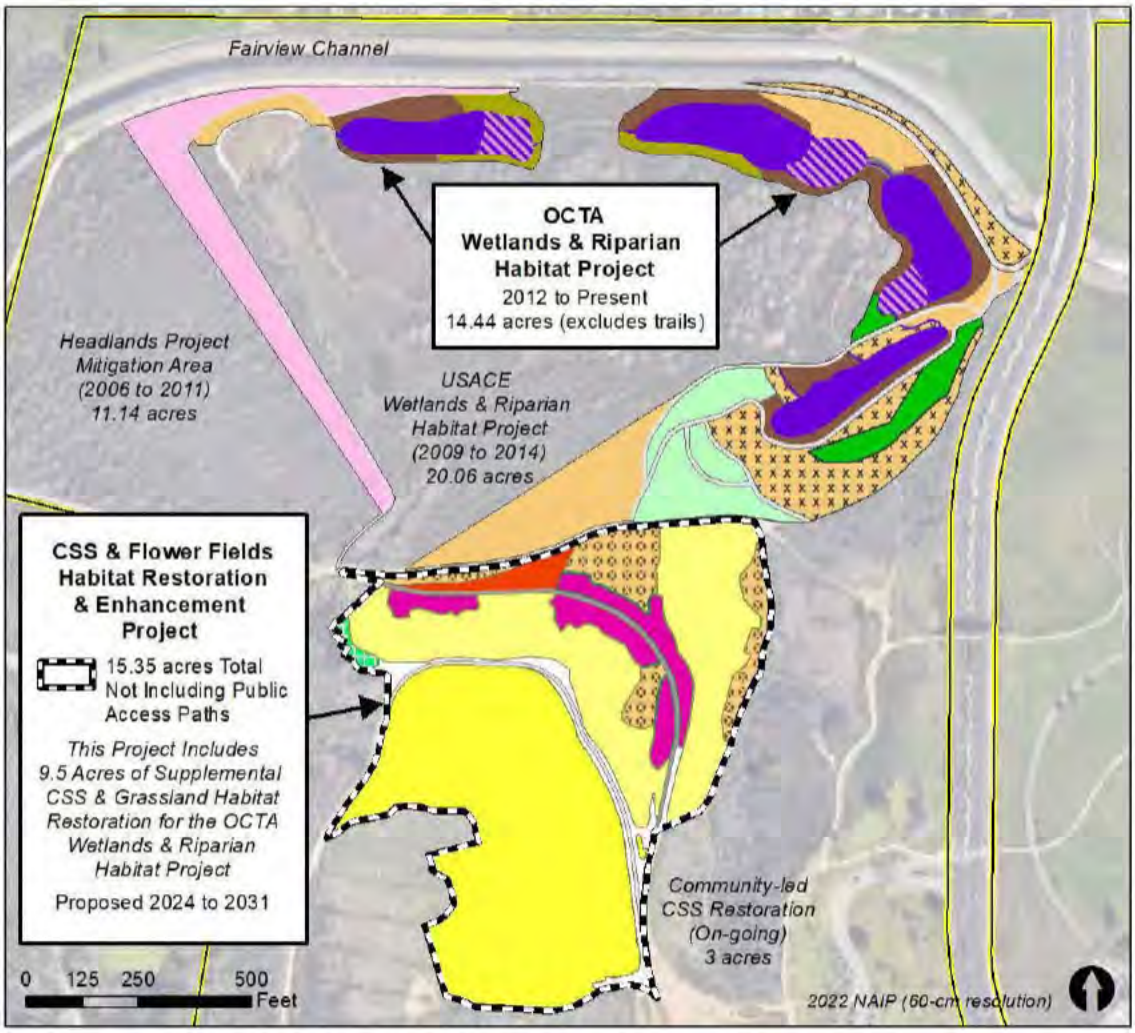


Figure 1-1 *Regional Location of Fairview Park in the City of Costa Mesa, Orange County, California.*



Existing Conditions (2023) in OCTA Wetlands & Riparian Habitat Project

MAP CODE | 2023 VEGETATION MAP UNIT COMMON NAME

- 1720 | Black Willow - Red Willow Riparian Woodland and Forest
- 1810 | Mulefat Thickets
- 1820 | Arroyo Willow Thickets
- 1840 | Sandbar Willow Thickets
- 2310 | Coyote Brush Scrub
- 2315 | Coyote Brush Scrub (Disturbed)
- 3110 | California Sagebrush Scrub
- 3125 | California Sagebrush – California Buckwheat Scrub (Restoration Area)
- 3195 | Purple Sage Scrub (Introduced Vegetation Community/Restoration Area)
- 3330 | Coast Goldenbush Scrub
- 4250 | Upland Black Mustard and Tocalote Fields
- 4255 | Upland Shortpod Mustard and Tocalote Fields
- 4270 | Poison Hemlock or Fennel Patches
- 6135 | California Bulrush – Cattail Marsh
- 9310 | Urban-Sidewalk/Bridge/Trail
- 9315 | Natural Soil or Decomposed Granite Trail
- 9330 | Anthropogenic Areas of Little or No Vegetation
- 9800 | Water Body
- 9810 | Rip-rap/Concrete Pond Liner

LAND IQ

Figure 1-2 *Existing OCTA Wetlands & Riparian Habitat Project Area and the Proposed CSS & Flower Fields Restoration and Enhancement Project Area, which Includes 9.5 Acres of Remaining Habitat Restoration for the OCTA Project.*

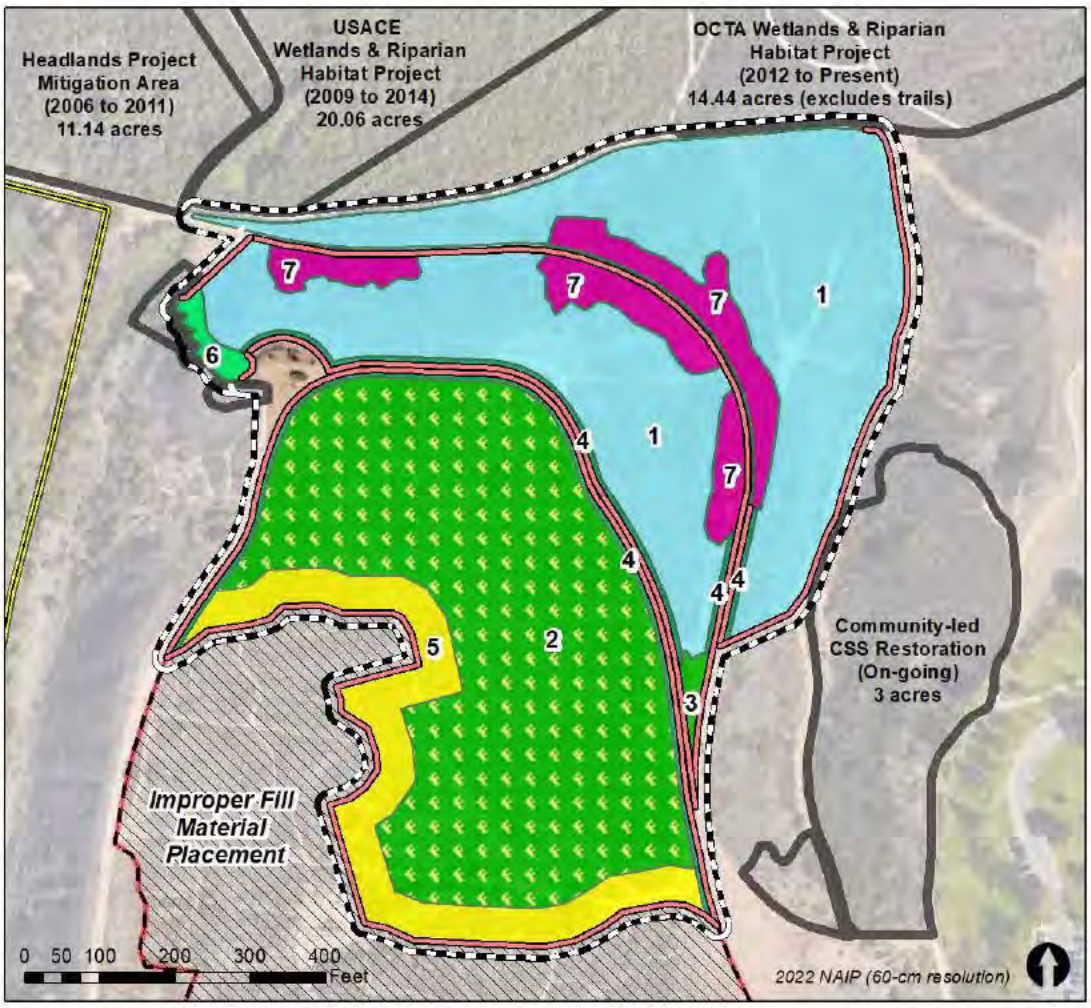


Figure 1-3 *Location of the CSS & Flower Fields Habitat Restoration Project Areas, Including a Net of 9.5 Acres in Areas 1 and 2 Required for the OCTA Wetlands and Riparian Habitat Project.*

The voluntary habitat improvements will complement and protect the mitigation areas while improving the overall quality of the habitat for native wildlife species and enhancing the park's natural recreational opportunities. The total project area of 15.35 acres does not include cover from the existing public access trails. The City will protect the restored habitat from recreational impacts with a permanent fence.

1.1 PROJECT GOALS AND OBJECTIVES

This Habitat Restoration and Monitoring Plan (HRMP) for the CSS and Flower Fields Restoration Project has three primary goals that are consistent with habitat recommendations made by Land IQ (2024) for the current Fairview Park Master Plan Update:

Goal 1. Restore a total of 9.5 acres of suitable habitat in Fairview Park (4.5 acres of CSS and 5 acres of native flower field habitat) to satisfy outstanding commitments of habitat restoration for the OCTA Project.

Objective 1.1: Restore a total of 11.91 acres of habitat in Fairview Park. The project will consist of 6.17 acres of Black Sage Scrub on the north-facing slopes below the mesa and 5.74 acres of flower fields (Fiddleneck – Phacelia Fields) on the northern portion of the mesa.

Goal 2. Voluntarily implement an additional 5.85 acres of habitat restoration, habitat enhancement, and weed management buffer.

Objective 2.1: Enhance 0.1 acres of California Sagebrush – California Buckwheat Scrub and 1.17 Purple Sage Scrub that is contiguous with the habitat restoration areas.

Objective 2.2: Along public pathways install temporary fencing and revegetate a 3- meter-wide buffer strip to help protect the habitat restoration areas from recreational impacts. Once the restoration is complete, the City will protect the restored habitat from recreational impacts with a permanent fence.

Objective 2.3: Maintain a 15-meter-wide weed management buffer between the improper fill material on the mesa and the Fiddleneck – Phacelia Fields habitat restoration area to reduce weed inputs into the restoration areas and to maintain access for future habitat restoration projects that include removal of the improperly placed fill material.

Goal 3. Protect biological and cultural resources during implementation of the project.

Objective 3.1: Implement species protection measures, as presented in Section 3.2 of this HRMP.

Objective 3.2: According to a separate cultural resource monitoring plan, to be prepared by the City, monitor for artifacts or culturally significant materials, during restoration activities that disturb the soil, including the following: the initial removal of weed thatch by wheeled and tracked equipment; digging of planting basins.

1.2 PROJECT LOCATION AND REGIONAL SIGNIFICANCE

Spanning more than 208 acres, 195 of which are dedicated to natural open space and wildlife habitat, Fairview Park ranks among the largest urban parks in Orange County. Moreover, several key factors establish Fairview Park as an ecological preserve of regional significance:

1. Habitat diversity: Fairview Park encompasses several distinct habitat types, including wetlands, riparian areas, coastal sage scrub, and flower fields. These habitats support a wide array of plant and animal species, many of which are rare or endangered, such as the Least Bell's Vireo (*Vireo bellii pusillus*; state and federally endangered) and Coastal California Gnatcatcher (*Polioptila californica californica*; federally threatened and a California Species of Special Concern).
2. Vernal pools: The park is home to vernal pools, which are ephemeral wetlands that provide critical habitat for a variety of unique and specialized organisms, including the San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*), both listed as endangered by the federal government.
3. Wildlife corridor: Fairview Park serves as a crucial wildlife corridor, connecting the Santa Ana River system of trails and parks to other open spaces in the region, including the Talbert Nature Preserve, the Randall Preserve (owned and managed by the Mountains and Rivers Conservation Authority) and the Huntington Beach Wetlands (owned and managed by the Huntington Beach Wetlands Conservancy). This connectivity facilitates the movement of species between habitats and promotes genetic diversity.
4. Cultural and historical significance: The park contains two nationally registered cultural resource historic sites, highlighting the area's rich human history and its connection to the natural environment.

It provides a valuable refuge for wildlife amidst the urban landscape and offers a space for people to connect with nature and learn about the importance of preserving biodiversity.

1.3 RESPONSIBLE PARTIES

LANDOWNER AND "PROJECT SPONSOR" OF THE OCTA PROJECT

City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

Kelly Dalton
Fairview Park Administrator
Parks and Community Services Department
714-754-5135
kelly.dalton@CostaMesaCA.gov

BENEFICIARY OF APPLICABLE MITIGATION CREDIT ASSOCIATED WITH THE OCTA PROJECT

Orange County Transportation Authority (OCTA)
550 S. Main Street
Orange, CA 92868

Lesley Hill
Environmental Mitigation Program Project Manager 714-560-5759
lhill@octa.net

REGULATORY AUTHORITIES

California Department of Fish and Wildlife (CDFW)
South Coast Region
3883 Ruffin Road San
Diego, CA 92123
(858) 467-4201

State regulatory authority for:

- ***Crotch's bumble bee (Bombus crotchii), candidate species for state endangered status***
- ***Burrowing owl (Athene cunicularia), state Species of Special Concern***
- ***Coastal California gnatcatcher (Polioptila californica californica), state Species of Special Concern***
- ***Least Bell's vireo (Vireo bellii pusillus), state endangered***

US Fish and Wildlife Service
(USFWS) Carlsbad Fish and Wildlife
Office 2177 Salk Ave., Suite 250
Carlsbad, CA 92008
(760) 431-9440

Federal regulatory authority for:

- ***Coastal California gnatcatcher (Polioptila californica californica), federally threatened***
- ***Least Bell's vireo (Vireo bellii pusillus), federally endangered***
- ***San Diego fairy shrimp (Branchinecta sandiegonensis), federally endangered***
- ***Riverside fairy shrimp (Streptocephalus woottoni), federally endangered***

1.4 RESTORATION CONTRACTOR QUALIFICATIONS

The Restoration Contractor will be responsible for restoring and enhancing native plant communities through site preparation, weed management, installation and operation of a temporary irrigation system, plant and seed installation, and maintenance including hand weeding and supplemental irrigation for installed seed and container plant material.

Implementation shall be conducted by a qualified native habitat Restoration Contractor under the oversight of a Restoration Specialist. To be considered as "qualified," the Restoration Contractor must demonstrate the following:

1. Demonstrate experience successfully restoring native habitat within southern California in coastal sage scrub (CSS) and native grassland habitat types, including flower fields or forblands.
2. Have successfully installed at least three CSS restoration projects of at least ten acres each, achieving the specified success criteria within a five-year establishment and maintenance period.
3. Have experience designing, constructing, operating, and maintaining an aboveground temporary irrigation system.
4. Have crews for habitat restoration site preparation and maintenance that have been trained to identify and distinguish between nonnative and native seedlings/plants.
5. Designate a project manager and site supervisor, each with a minimum of five years of experience in successful native coastal scrub habitat and native grassland habitat restoration.
6. Previous experience working within, and around coastal California gnatcatcher occupied habitat.
7. Previous experience working within and around habitat with rare and/or protected species in southern California.

1.5 RESTORATION SPECIALIST QUALIFICATIONS

The Restoration Specialist will be responsible for the oversight of the Restoration Contractor, horticultural monitoring, general biological monitoring, annual performance monitoring and reporting to the City.

To be considered as "qualified," the Restoration Specialist must demonstrate the following:

1. Minimum of a bachelor's degree in ecological restoration, ecology, biology, environmental science, or a related field.
2. Minimum of 5 years of experience in native habitat restoration, preferably with a focus on CSS and native California flora in Southern California.

3. Demonstrated experience providing oversight of restoration crews during site preparation, installation, and maintenance of at least three successfully completed CSS habitat mitigation projects in southern California.
4. Demonstrated experience with implementing monitoring protocols to evaluate project performance and success and proficiency in performance monitoring reporting of at least three successfully completed CSS habitat mitigation projects.
5. Demonstrated experience with oversight of special collection of native seed material and container plant propagation for habitat restoration projects.
6. Proficiency in invasive and nonnative plant management techniques and strategies.
7. Experience working with local, state, and federal regulatory agencies, and an understanding of relevant environmental policies and regulations.
8. Proficiency in Southern California native plant identification, propagation, and establishment.
9. Previous experience working on restoration projects with sensitive wildlife and plant species, including the California gnatcatcher.

1.6 COMPLIANCE

The 9.5 acres of habitat restoration (4.5 acres of coastal sage scrub and 5 acres of flower fields) within this Project involve various resource and regulatory agencies. The successful implementation of this HRMP will fulfill the outstanding habitat restoration obligation shared by the City and OCTA in relation to the OCTA Project. The original commitment was to restore approximately 23 acres of habitat within Fairview Park (City of Costa Mesa 2011).

Before proceeding with the implementation of this project, the City must obtain approval of this HRMP from OCTA, and CDFW and USFWS (collectively referred to as the Wildlife Agencies). The City will adhere to the EMP Restoration Funding Guidelines, reviewed and approved by OCTA and the Wildlife Agencies. The subsequent annual performance monitoring reports will be provided to OCTA. OCTA will be responsible for keeping the Wildlife Agencies informed on the progress toward achieving the HRMP goals and success criteria by providing them with the City's annual performance monitoring reports. The City is responsible for establishing a conservation easement that is mutually acceptable to OCTA, the Wildlife Agencies and the City, and which maintains the restoration intent of the project in perpetuity for the 23-acre OCTA funded restoration area. Sign-off for the project areas cannot be provided until the project has been approved and a conservation easement has been recorded.

This collaborative approach ensures that all parties involved in the restoration effort remain informed and engaged throughout the process, fostering transparency and cooperation in meeting the shared goal of habitat restoration.

2 EXISTING CONDITIONS, HABITAT RESTORATION STRATEGY, AND PROJECT SUCCESS CRITERIA

2.1 TOPOGRAPHY

Fairview Park is defined by four geomorphic features: the floodplain terrace, bluffs, mesa, and eroded slopes (Figure 2-1). Each of these features has been partially developed to either create wetland and riparian habitat, improve public access, or provide recreational opportunities (Land IQ 2024).

Floodplain Terrace: The floodplain terrace was formed as part of the historic active floodplain of the Santa Ana River and includes the portion of Fairview Park below the bluffs (~20-ft elevation above mean sea level), including the Headlands Dana Point Project Mitigation Area, USACE Wetlands and Riparian Habitat Project, and the OCTA Project (Figure 1-2). The County-owned Talbert Nature Preserve occupies the remainder of the floodplain terrace below the bluffs. See Figure 1-1 for the location of Talbert Nature Preserve in relation to Fairview Park.

Mesa: The mesa stands at an elevation ranging from approximately 70 to 80 feet above mean sea level (msl) in Fairview Park and includes a portion of the project area. Its formation dates to the Pleistocene epoch, about 2.58 million to 11,700 years ago (California Geological Survey 2024). This significant geological period played a crucial role in shaping the contemporary landscape of the Greater Los Angeles Basin, including the notable features found in Fairview Park. The northern portion of the mesa, to the north of the improper fill material is part of the project area.

Bluffs: The bluffs were carved by the Santa Ana River, prior to its confinement in a flood control channel following catastrophic 1938 floods, from an upper marine terrace referred to as the mesa. There is a west-facing bluff and a north-facing bluff. The north- facing bluff is part of the project area, which transitions to eroded slopes as the north bluff grades into the canyon.

Eroded Slopes: The eroded slopes formed in place by chemical and physical weathering of parent materials. Unlike the bluffs, which were formed largely by erosive river stormwater flows, the eroded slopes were formed by overland flow of precipitation creating gentle to moderately steep slopes.

2.2 SOILS

The soil types in Fairview Park were described in 1978 as part of the greater soil survey of Orange County by the Natural Resources Conservation Service (USDA 1978). The soil survey mapping units are not deterministic and often include the description of several other soil types that can occur within the map unit, but it provides excellent information about general soil conditions in the park.

There are two soil map units that occur within the CSS and Flower Fields Restoration Project area (Figure 2-2):

1. Myford Sandy Loam, 0 to 2 percent slopes on the mesa
2. Myford Sandy Loam, 9 to 30 percent slopes, eroded, on the north-facing eroded bluff slopes

The Myford Sandy Loam soil series (Alfisols Soil Order, which among other features typically includes a subsurface horizon with a significant amount of clay) is found on terraces below 1,500 feet. This moderately well-drained soil has medium to rapid runoff and very slow permeability. The solum (i.e., the layer of soil above the parent material that includes the A and B horizons) is 45 to 75 inches thick, and the soil temperature at 20 inches depth averages 60 to 63°F. Moisture levels vary seasonally, with consistent dry periods. Myford soil's composition includes various sandy loam types, with A and Bt (i.e., Bt is a soil horizon that contains a layer of lattice clays that were deposited from the A horizon above) horizons displaying different colors and clay contents.

Exchangeable sodium (i.e., measure of the amount of sodium ions that can be readily exchanged with other cations in the soil solution, which can influence infiltration rates, soil structure, plant growth and salinity) increases at depths beyond one meter.

2.3 VERNAL POOL WATERSHED

A subsurface soil hardpan allows for the hydrological conditions that result in seasonal ponding and formation of vernal pools and the corresponding vernal pool watershed that remains in present day Fairview Park on the mesa (Figure 2-3). However, most of the northern part of the mesa including in this project was not identified as part of the historic vernal pool watershed because the slopes gradually drain towards the north bluff, west bluff, and the "canyon" area to the east. This area was also historically farmed that included soil cultivation, which likely significantly disrupted at least some of the hardpan soils that may have existed, no longer allowing for seasonal ponding and the formation of vernal pool habitat (Land IQ 2024).

A portion of the project occurs within the historic vernal pool watershed (Figure 2-3) that currently no longer functions as part of the vernal pool watershed because it is disconnected by the presence of the improper fill placement. Restoration of the vernal pool watershed, including removal of the improper fill material, is identified in the existing Fairview Park Master Plan (City of Costa Mesa 2008) and remains a management goal identified by Land IQ (2024) as a habitat restoration opportunity.

While vernal pool indicator plants and fairy shrimp occur in Fairview Park vernal pools and areas that periodically pond in the vernal pool watershed, including in the basins created by openings in the improper fill material that are at natural grade—the project area is north of the areas that pond and does not have andy vernal pool features or ponding water. No ponding or rare plants were observed in the project area during 2023 surveys (Hamilton Biological 2023) and 2017 surveys (Glenn Lukos Associates 2017).

Glenn Lukos Associates (2017) examined ponded areas for fairy shrimp, and while fairy shrimp were detected in other areas within the improper fill area and south of that area in the vernal pools and vernal pool watershed, because there was no ponding in the project area north of the improper fill area, no fairy shrimp were detected.

ARCHAEOLOGICAL SITE AND IMPROPER FILL MATERIAL

Fairview Park has two nationally registered archaeological sites (CA-ORA-58; CA-ORA- 506) that comprise part of a larger village site referred to as Genga. Indigenous people occupied these areas from the 1800s back to at least 1500 B.C. In 1926, tilling of the soil for farming in the northern portion of the mesa, including within the mesa in the project area, exposed the first documented archaeological remains from this important site.
Formal archaeological excavations began in the 1930s (Dudek and Associates 2003). Keith Dixon studied the site from 1959 to 1966. The boundaries of the archaeological site were further defined by The Keith Companies in 1993 (City of Costa Mesa 2008).

With the intent of capping the archaeological site on the mesa (CA-ORA-58), prior to construction of new park amenities, fill material was placed on the mesa between 1987 and 1988 (Land IQ 2024). The fill material does not meet current standards for an archeological site cap and includes chemically active construction materials and concrete debris that can degrade archaeological artifacts instead of preserving them (City of Costa Mesa 2008).

Not only was the fill material improper for the protection of indigenous cultural resources, but it also created three new threats to biological resources on the mesa (Land IQ 2024):

1. The fill material covers and takes away habitat for native flower fields and fairy shrimp.
2. The fill material impairs the hydrologic function of the vernal pool watershed by reducing the amount of precipitation that would feed the vernal pool complex, which is especially critical in below-average rainfall years when the pools do not typically form.
3. The fill material creates an unnatural state of low soil microorganism and plant diversity, which sustains large infestations of invasive plants (e.g., black mustard, poison hemlock) that produce large quantities of seed, which is then transported into other locations in the park by wildlife and humans along trails and roads, threatening the diversity and function of native habitat.

Therefore, this HRMP will be implemented in coordination with a cultural resource monitoring plan to protect artifacts and culturally significant material that could be disturbed during significant soil disturbance activities, such as during the initial weed dethatching event, digging planting holes, or if substantial digging is required for the removal of perennial invasive plant species during weed management activities. The HRMP also includes a weed management buffer, which will be maintained to both: 1) help protect the habitat restoration areas from the invasive plants that persist on the improper fill material; and 2) maintain an area that is accessible for vehicular access to support a future habitat restoration project on the mesa that involves the careful removal of the improper fill material to expose the natural soils and reestablish the natural grade of the historic vernal pool watershed.

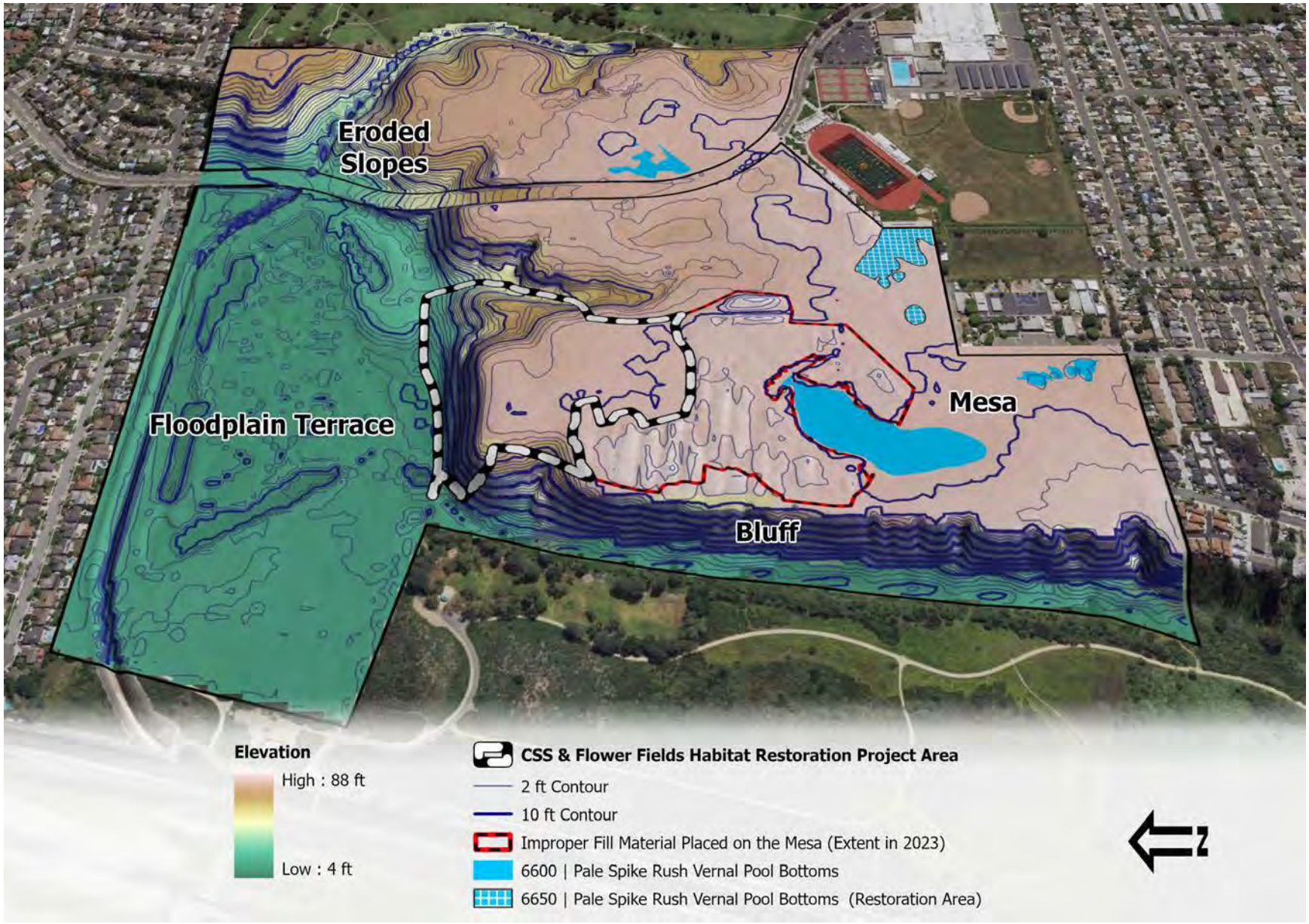


Figure 2-1 Geomorphic Features of Fairview Park.

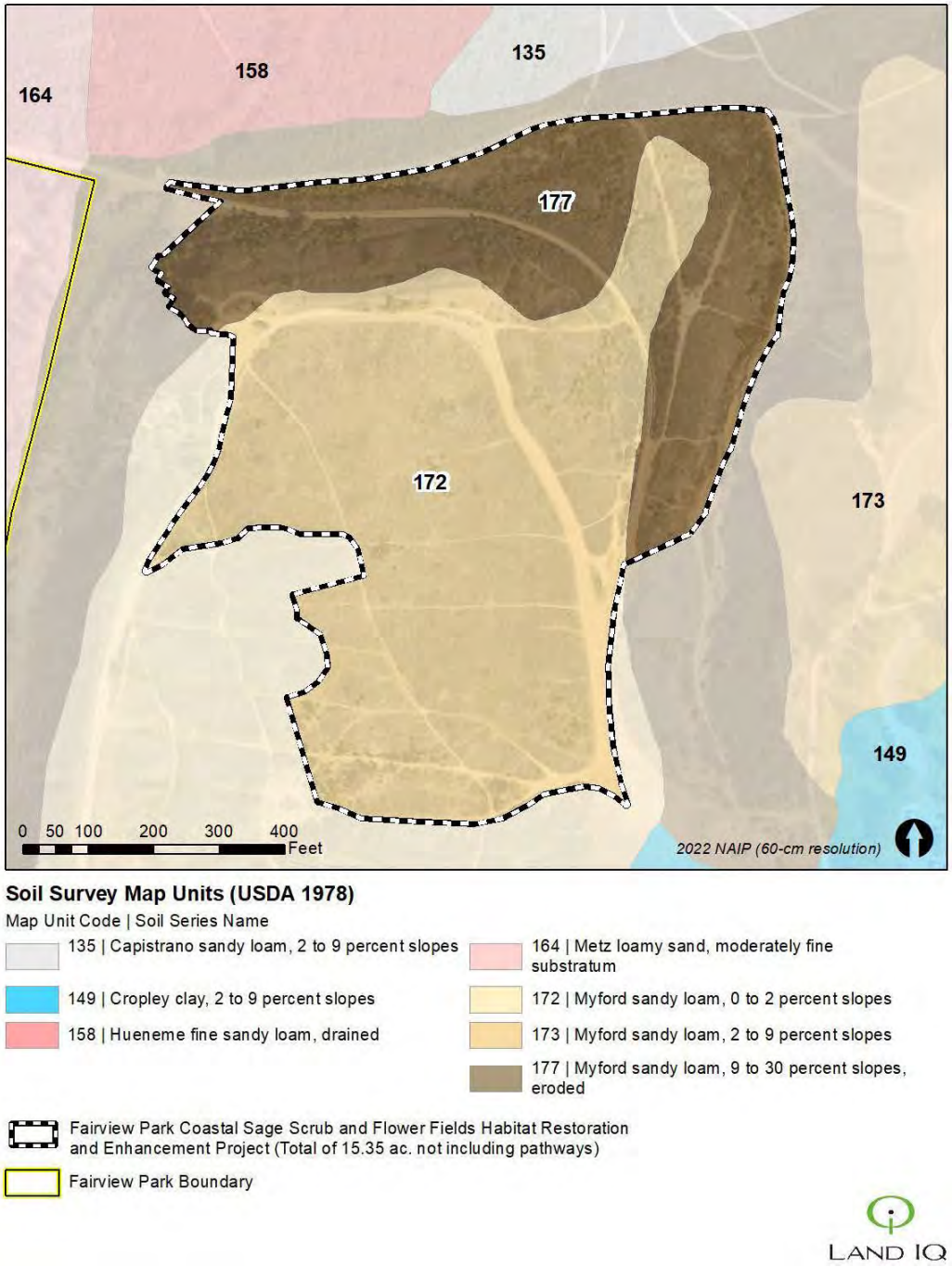


Figure 2-2 Soil Series Mapped in Fairview Park (USDA 1978).

Figure 2-3 Location of Vernal Pool Watershed and Vernal Pools in Relation to the Project Area and Improper Fill Material Extent in 2023.

2.4 EXISTING VEGETATION COMMUNITIES

The vegetation communities in Fairview Park were mapped in 2023 (Land IQ 2024) as part of the Fairview Park Master Plan Update, led by MIG. There are nine vegetation map units in the project area, including six vegetation communities and three urban or disturbed land cover classes (Figure 2-4, Table 2-1).

Two of the vegetation communities are suitable for habitat enhancement by controlling weeds and native seed addition:

1. California Sagebrush – California Buckwheat Scrub (Restoration Area)
2. Purple Sage Scrub (Introduced Vegetation Community/Restoration Area)

Four vegetation communities are suitable for habitat restoration as they have little to no native cover—or in the case of Coyote Brush Scrub (Disturbed), the native diversity is very low with almost all the native cover from coyote brush (*Baccharis pilularis*)—and a significant infestation of invasive mustards (e.g., *Brassica nigra, Hirschfeldia incana*), annual grasses (e.g.., *Bromus* spp., *Avena* spp., *Hordeum* spp.), thistles (e.g., *Carduus pycnocephalus, Centaurea melitensis*), and/or poison hemlock (*Conium maculatum*):

1. Upland Black Mustard and Tocalote Fields
2. Upland Shortpod Mustard and Tocalote Fields
3. Poison Hemlock or Fennel Patches
4. Coyote Brush Scrub (Disturbed)

The urban land cover class of "Anthropogenic Areas of Little or No Vegetation" identifies areas that have very high bare ground cover and have been denuded of vegetation by human use of informal, nonapproved trails and unnecessary expansion of approved pathways by recreational impacts or City maintenance crews. These areas are appropriate for habitat restoration, enhancement, or weed management buffer.

The existing asphalt pathway, which is used by pedestrians, bicycles and City maintenance vehicles is classified as "Urban-Sidewalk/Bridge/Trail" leads from the parking lot outside the project area and through the project area, providing access to the pathways in the Wetlands and Riparian Habitat Areas and Talbert Nature Preserve (OC Parks). This pathway will be maintained as an approved City pathway in Fairview Park and used for vehicular access by the Restoration Contractor for project activities.

The "Natural Soil Trail" is a City approved public pathway that branches off of the asphalt pathway and runs along the perimeter of the mesa in the project area, connecting to the staircase that leads from the mesa to Talbert Nature Preserve at the base of the bluff.

The six existing vegetation communities in the project area are described in more detail in the following sections. There are no wetland or riparian habitats within the project area.

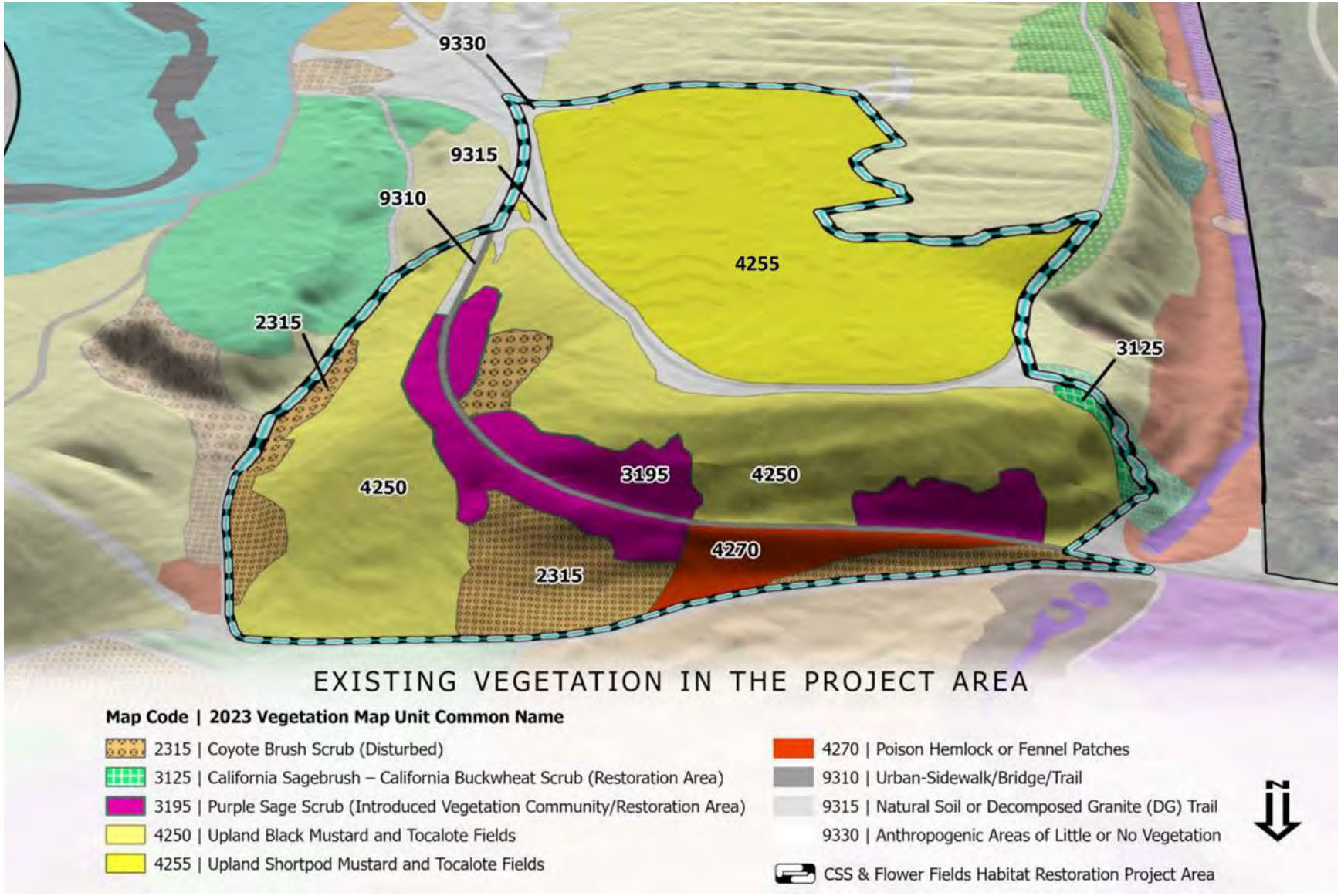


Figure 2-4 Existing Vegetation Communities in the Project Area.

Table 2-1 Summary of 2023 Vegetation Map Units in the CSS and Flower Fields Project Area in Fairview Park.

Scientific Vegetation Map Unit Name	Map Code	Common Map Unit Name
California Coastal Evergreen Bluff and Dune Scrub Group		
Baccharis pilularis Shrubland Alliance (Disturbed)	2315	Coyote Brush Scrub (Disturbed)
Central and South Coastal Californian Coastal Sage Scrub Group		
Artemisia californica – Eriogonum fasciculatum Association (Restoration Area)	3125	California Sagebrush – California Buckwheat Scrub (Restoration Area)
Salvia leucophylla Association (Introduced Vegetation Community/Restoration Area)	3195	Purple Sage Scrub (Introduced Vegetation Community/Restoration Area)
Mediterranean California Naturalized Annual and Perennial Grassland Group		
Brassica nigra – Centaurea melitensis Herbaceous Semi-Natural Association	4250	Upland Black Mustard and Tocalote Fields
Hirschfeldia incana – Centaurea melitensis Herbaceous Semi-Natural Association	4255	Upland Shortpod Mustard and Tocalote Fields
Conium maculatum – Foeniculum vulgare Herbaceous Semi-Natural Alliance	4270	Poison Hemlock or Fennel Patches
Urban/Disturbed/Other		
Urban-Sidewalk/Bridge/Trail	9310	Urban-Sidewalk/Bridge/Trail
Natural Soil Trail	9315	Natural Soil Trail
Anthropogenic Areas of Little or No Vegetation	9330	Anthropogenic Areas of Little or No Vegetation

2.4.1 COYOTE BRUSH SCRUB (DISTURBED)

This vegetation community is primarily the result of coyote brush and other native shrubs recruiting into areas that would otherwise be classified as mustard and tocalote (*Centaurea melitensis*) fields because the herbaceous layer is entirely dominated by nonnative weeds (Figure 2-5). The dominant shrub is coyote brush, which can be very dense in patches. Other native shrubs and subshrubs that occur at low frequency include coast goldenbush (*Isocoma menziesii*), tarragon (*Artemisia dracunculus*), and California bush sunflower (*Encelia californica*). The herbaceous layer is dominated by such nonnative species as shortpod mustard, tocalote, and various annual grasses (*Bromus* spp. and *Avena* spp.), with poison hemlock and black mustard forming more extensive stands in some areas.

Figure 2-5 *Example of Disturbed Coyote Brush Scrub.*
Photo Taken September 24, 2023

2.4.2 California Sagebrush – California Buckwheat Scrub (Restoration Area)

Areas adjacent to the staircase from the mesa to Talbert Nature Preserve (constructed in 2009) have been restored to California sagebrush – California Buckwheat Scrub (Figure 2-6). In addition to the co-dominants, California bush sunflower, coast prickly pear, coyote brush, and coast goldenbush occur. Patches of black mustard and tree tobacco (*Nicotiana glauca*) have invaded some of the spaces between the native shrubs.

Figure 2-6 *Example of California Sagebrush – California Buckwheat Scrub Restoration Adjacent to the Staircase.*

Photo Taken April 27, 2023

2.4.3 Purple Sage Scrub (Introduced Vegetation Community/Restoration Area)

In the 1990s, this area on the north bluff slope was hydroseeded with California buckwheat and purple sage (City of Costa Mesa 2008). Today purple sage is dominant, along with coyote brush and California bush sunflower (Figure 2-7). The natural range of purple sage in Orange County includes only the Santa Ana Mountains and associated foothills (Allen and Roberts 2013). Contemporary observations in the coastal region of Orange County are likely introductions and the result of native revegetation and landscaping projects. Nonnative cover in this vegetation community includes black mustard, fennel (*Foeniculum vulgare*), poison hemlock, and nonnative annual grass (e.g., *Bromus* spp. and *Avena* spp.).

Figure 2-7 *Example of Introduced Purple Sage Scrub in the Foreground.*
Photo Taken April 27, 2023

2.4.4 UPLAND BLACK MUSTARD AND TOCALOTE FIELDS

In the project area this vegetation community occurs on disturbed northerly-facing slopes and bluff slopes. The most common cover is from invasive annuals, tocalote and black mustard (Figure 2-8). Shortpod mustard (*Hirschfeldia incana*) also occurs but is not as dominant.

Some areas have high cover of nonnative annual grasses (*Bromus* spp. and *Avena* spp.) or wild radish (*Raphanus sativus*). Patches of fennel, castor bean (*Ricinus communis*), and tree tobacco occur more frequently in drainages. White horehound (*Marrubium vulgare*) occurs occasionally and typically on the edges of trails and in other frequently disturbed areas. Scattered individual native shrubs, including coast goldenbush, California sagebrush, California bush sunflower, and coyote brush, may be present, as well as the herbaceous natives clustered tarplant (*Deinandra fasciculata*), and tarragon. Denser patches of coyote brush occur, but typically in a monoculture and with an understory of nonnative grasses and forbs, limiting the habitat value of these stands for native wildlife species. Giant wild rye occurs (*Elymus condensatus*) occasionally in drainages. A few areas have planted coast prickly pear (*Opuntia littoralis*), although most of the north-facing slopes are unsuitable for cactus. These areas have highly disturbed soils resulting from past agriculture, construction of park facilities (e.g., fences, sidewalks), vegetation clearance, and erosion of topsoil.

Figure 2-8 *Example of Upland Black Mustard and Tocalote Fields on North Bluff Slope.*
Photo Taken April 27, 2023

2.4.5 UPLAND SHORTPOD MUSTARD AND TOCALOTE FIELDS

This community occurs on the northern portion of the Mesa that was historically cultivated for crops in the early 1900s, including plowing or tilling (Land IQ 2024). This area may have been selected for cultivation because it did not exhibit the clay hardpan soils, which have poor value for agricultural crops due in part to poor drainage (USDA 1978). Alternatively, farmers may have actively broken up the clay hardpan layer to improve drainage for farming. Because of this agricultural history and irrevocable change to the natural soil condition, it is less likely that this portion of the Mesa will support vegetation communities in the Californian Mixed Annual/Perennial Freshwater Vernal Pool/Swale Bottomland Group, such as Clustered Tarplant Fields. The low frequency of woody shrubs (nonnative or native) in this area, and the dominance by annual life-forms, such as the native common fiddleneck *(Amsinckia intermedia*) and popcorn flower (*Plagiobothrys* sp.) in the late winter and early spring (e.g., Figure 2-9), followed by high vegetative cover of shortpod mustard and tocalote in late spring and summer (Figure 2-10), indicate that the area is appropriately classified in the California Annual Herb/Grass Group as Upland Shortpod Mustard and Tocalote Fields (e.g., Figure 2-11). In areas with more bare ground on the northern Mesa, the native annual forb turkey-mullein (*Croton setiger*) can be common.

Herbaceous cover is also provided by nonnative annual grasses (primarily ripgut brome, *Bromus diandrus*). There is low cover of black mustard and fennel, but these species are more prevalent in the drainage swale in the northwest portion of the Mesa. There is scattered cover from occasional dense patches of coast goldenbush.

Scarcity of black mustard and general lack of native shrubs or perennial weeds are two factors that help to distinguish the Upland Shortpod Mustard and Tocalote Fields vegetation association from the Upland Mustards and Tocalote Fields vegetation association that occurs on the northerly-facing slopes in the project area. The exception to this rule is provided by the nonnative perennial weed curly dock (*Rumex crispus*), which is common in disturbed areas with poor drainage (DiTomaso et al. 2013).

Most of this vegetation type occurs in areas that are part of the registered archaeological site identified as CA-ORA-58.

Figure 2-9 *Example of Native Common Fiddleneck on the Northern Mesa in Late Winter 2023.*

Photo Taken March 8, 2023

Figure 2-10 *Example of Nonnative Shortpod Mustard, Black Mustard, and Tocalote on the Northern Mesa in Spring 2023.*

Photo Taken April 27, 2023

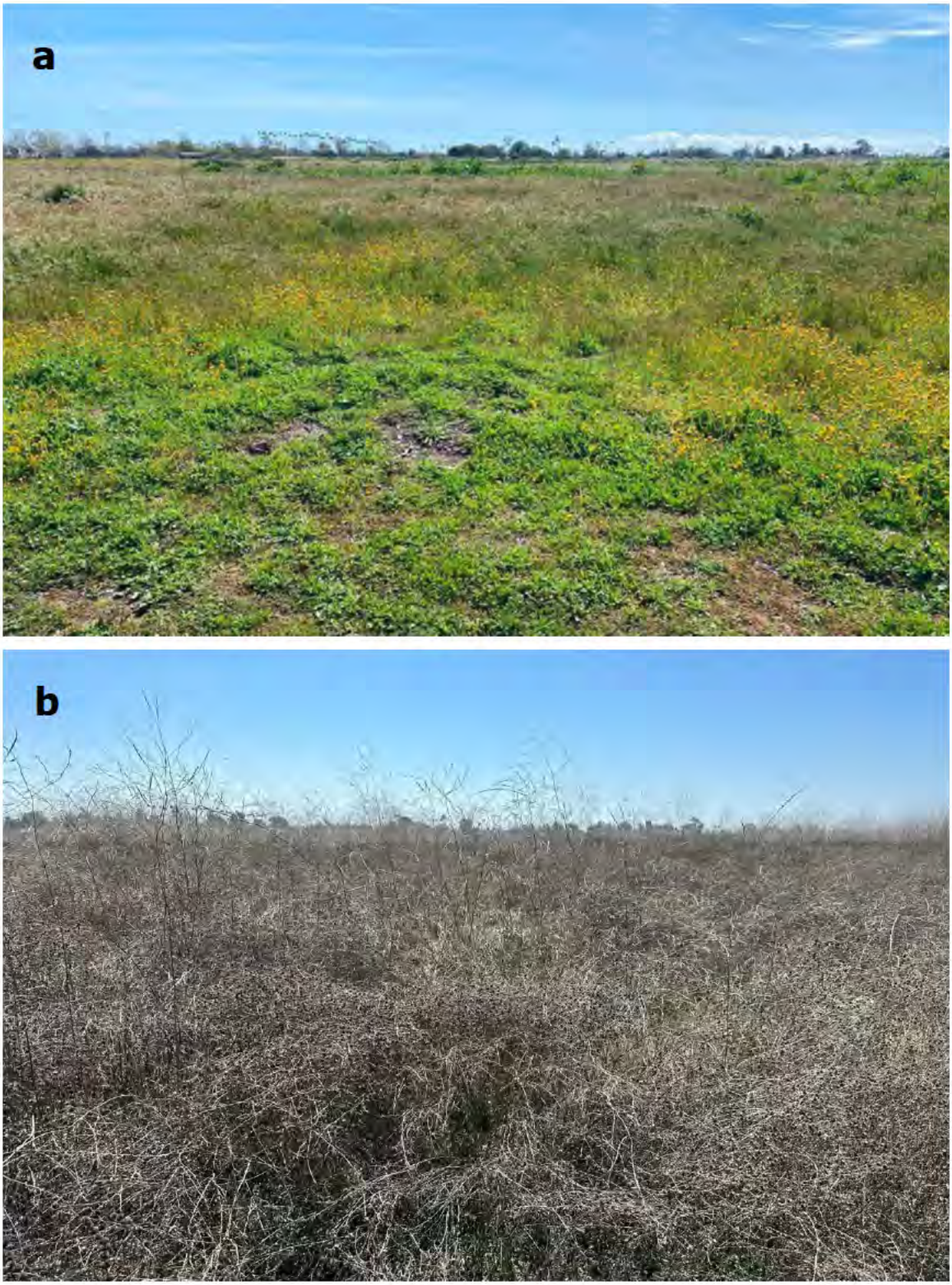


Figure 2-11 Example of Shortpod Mustard and Tocalote Fields on the Mesa in (a) Late Winter, March 8, 2023, and (b) Summer, September 24, 2023.

2.4.6 POISON HEMLOCK OR FENNEL PATCHES

The dense patches of poison hemlock at the base of the north-facing slope also include nonnative annual grasses (e.g., *Bromus* spp. and *Avena* spp.), black mustard, and scattered coyote brush.

2.5 WILDLIFE

The mesa, north bluff, and eroded slopes in the project area support mainly nonnative mustard fields and annual grassland. Wildlife found in these open, grassy, and weedy areas, include the West Coast Lady and Checkered White butterflies, Common Side- blotched Lizard, Mourning Dove, Northern Harrier, Red-tailed Hawk, Say's Phoebe, Western Kingbird, American Pipit, Savannah Sparrow, Red-winged Blackbird, Blue Grosbeak, Desert Cottontail, and Botta's Pocket Gopher. In the past, San Diego Black- tailed Jackrabbits could be found using open habitats in the park, but this species appears to have been extirpated from all the lower Santa Ana River ecosystem in recent decades (Land IQ 2024).

Upland scrub plant associations growing on the park's slopes support such wildlife species as California Kingsnake, Southern Pacific Rattlesnake, Western Skink, Allen's Hummingbird, Bewick's Wren, California Thrasher, White-crowned Sparrow, California Towhee, and Desert Cottontail.

2.5.1 SENSITIVE AND PROTECTED SPECIES

Fairview Park has been identified as a potential habitat for several species of conservation concern, including the Crotch's bumble bee (*Bombus crotchii*), a candidate species for state endangered status. This bee species has been observed foraging on native shrubs and annuals within the park (Hamilton 2023). It is assumed by entomologists that bumble bees likely forage within 1 to 2 km from their nest (CDFW 2023). Therefore, there is a high potential for occurrence in the project area. While Crotch's bumble bee nests have not been observed in Fairview Park, the project aims to significantly increase foraging habitat to support this species, including known food plants such as sages (e.g., *Salvia mellifera, S. apiana*), *Phacelia* spp., lupines (*Lupinus* spp.), and milkweed (e.g., *Asclepias fascicularis*) (Williams et al. 2014).

The federally threatened and state Species of Special Concern, coastal California gnatcatcher (*Polioptila californica californica*), may also benefit from the habitat restoration and enhancement efforts. Although no nesting has ever been observed immediately within the habitat restoration project area, resident coastal California gnatcatchers are present in scrub habitat in Fairview Park and in adjacent lower Santa Ana River scrub habitat (Hamilton Biological 2023). In the past Hamilton Biological (2023) has observed successful nesting in a community-led coastal sage scrub restoration area that is immediately to the east of the project site, referred to as the "canyon," although no nesting was observed during 2023 surveys (see Figure 1-2). Enhancing the habitat will provide valuable foraging opportunities and improve the overall quality of the potential nesting territory in the canyon and other scrub habitat for coastal California gnatcatcher in the lower Santa Ana River.

The federally and state endangered least Bell's vireo (*Vireo bellii pusillus*) has established nesting sites in the Wetlands and Riparian Habitat of Fairview Park, including the OCTA Project area (see Figure 1-2) located north of the current project area. The project area does not provide suitable nesting habitat for the vireo; however, there is a low potential for foraging activities.

In terms of aquatic species, no ponding was observed within the project area during the above-average rainfall year of 2023 (Land IQ 2024) or in 2017 (Glenn Lukos Associates 2017). Consequently, no fairy shrimp species, such as the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and the federally endangered Riverside fairy shrimp (*Streptocephalus woottoni*), were detected.

The proposed habitat enhancement efforts within Fairview Park will contribute to the conservation of these species by improving foraging opportunities and overall habitat quality. Regular monitoring and adaptive management will be important to avoid these species during implementation of this HRMP.

2.6 HABITAT RESTORATION STRATEGY

The CSS and Flower Fields Restoration Project will avoid and minimize impacts to biological and cultural resources with measures that are consistent with guidelines in the Fairview Park Master Plan and that comply with all applicable regulations. Existing native habitat, such as patches of CSS, will be avoided to the maximum extent practical. Woody native shrubs shall be identified by the crew and avoided when using mechanical approaches, mowing and line trimming. Mowing and line trimming shall be timed to the phenology of the flowering of invasive annual grasses and forbs, which typically germinate and flower earlier than the native herbaceous vegetation due to the adaptive traits that reinforce their invasive nature in disturbed areas. There will be no application of broad-spectrum herbicides except in areas that have been surveyed and don't have any sensitive, rare, or protected species. Crews will be trained to identify sensitive and rare plants to be avoided. All wetlands, including vernal pools, will be avoided. There are no vernal pool features in the project area.

This HRMP is consistent with the relevant guidelines from the OCTA (2012) Measure M2 Environmental Program Restoration Funding Guidelines and the habitat restoration goals of the original Habitat Restoration Plan (City of Costa Mesa 2011) for the OCTA Project.

2.6.1 ADAPTIVE MANAGEMENT

This project will be implemented with an adaptive management approach, which will allow the Restoration Specialist to adjust the level of restoration effort according to observations and analysis of site conditions, including establishment of the native seed mix.

An overview of the framework for the "Adaptive Management" approach is presented in the following six-step diagram (ERI 2009) (Figure 2-12).

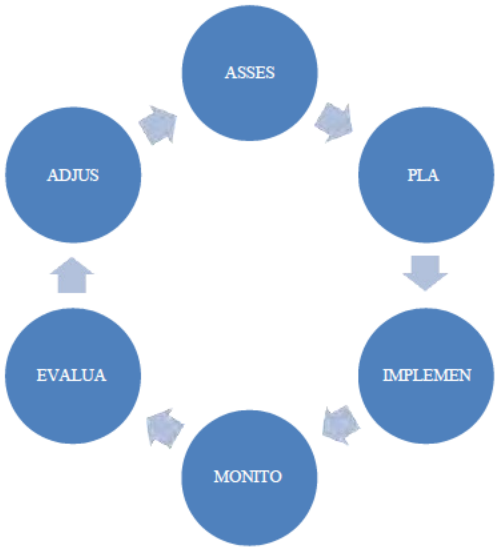


Figure 2-12 Adaptive management in 6-steps.

Habitat restoration is an inherently complex activity and adaptive management provides a framework that allows for flexible adjustments in management activities in response to the feedback provided by regular monitoring. Many fluctuating variables can influence the success of a restoration project, including weather conditions, fire events, intense rainfall events, the distribution and composition of nonnative species and adjacent land management activities. Monitoring is a key component of adaptive management and is necessary for tracking changes to a restoration project over time.

Prior knowledge and experience coupled with new observations can guide adjustments to management actions while still meeting restoration objectives and the broader goals of establishing ecologically suitable habitat within the habitat restoration area.

2.6.2 Habitat Restoration and Enhancement Targets

Land IQ (2024) identified suitable habitat restoration targets for the project area based on a thorough assessment of the following factors:

- Environmental characteristics (e.g., soil, landscape position, slope aspect, slope angle) in each location
- Physiological or ecological relationships of the dominant or co-dominant species in each map unit
- The identity of nearby vegetation communities
- Expert opinion based on habitat restoration experience
- A review of potential vegetation modeling outputs from the Nature Reserve of Orange County Habitat Restoration and Enhancement Plan Update (Brooks et al. 2019).

HABITAT RESTORATION AREA 1

The primary focus for Area 1, as identified in Figure 1-3, is the eradication of invasive mustards to establish suitable habitat restoration conditions. The target vegetation community for this area is Black Sage Scrub (*Salvia mellifera* Shrubland Alliance) featuring dominant cover from black sage, California sagebrush (*Artemisia californica*), and coyote brush (Land IQ 2024). Other native species to be incorporated in the seed mix include California bush sunflower (*Encelia californica*), California buckwheat (*Eriogonum fasciculatum*), deerweed (*Acmispon glaber*), and white sage (*Salvia apiana*). In the drainage areas, toyon (*Heteromeles arbutifolia*) and blue elderberry (*Sambucus mexicana*) can be planted and irrigated with the overhead irrigation system to be used for the grow-and-kill phase prior to seed installation.

HABITAT RESTORATION AREA 2

Area 2 is currently dominated by invasive mustards and grasses. The restoration target for this area is Fiddleneck-Phacelia Fields [*Amsinckia* (*menziesii, tessellata*) - *Phacelia* spp. Herbaceous Alliance] (Land IQ 2024). To achieve this goal, a combination of selective weeding and the introduction of a diverse native annual seed mix will be implemented. The mix will include a low diversity of select native woody shrubs, such as coastal goldenbush, deerweed, and California buckwheat, which are expected to occur at low frequencies. This approach will help restore the native flower fields to this portion of the mesa.

Due to the dominance of native annuals in this habitat type, there will be a risk of reinvasion by nonnative annual grasses and forbs. However, the establishment of a diverse and dense native seedbank, coupled with long-term management high-priority invasive plants (Appendix 1) by the City, will ensure the sustained value of this unique flower field/grassland habitat.

HABITAT ENHANCEMENT AREA 6

Area 6 was restored with native CSS as part of the construction of the staircase that connects the mesa to floodplain terrace in Fairview Park, as well as Talbert Nature Preserve. This area will be enhanced with weed management and native seed addition.

HABITAT ENHANCEMENT AREA 7

Area 7 was hydroseeded in the 1990s with purple sage and California buckwheat. Today it is dominated by purple sage and California sunflower bush with an understory of weeds, including mustard. This area will be enhanced with weed management and native seed addition.

NATIVE REVEGETATION BUFFER AREA 3

Area 3 is a relatively small area on the mesa between two pathways that will be managed with weed management and native seed addition.

NATIVE REVEGETATION BUFFER AREA 4

Area 4 is a 3-meter-wide native revegetation buffer between the habitat restoration areas and public pathways to deter recreational impacts. These areas will be planted with native CSS shrubs, managed for weeds, and will be seeded with a native seed mix.

WEED MANAGEMENT BUFFER AREA 5

Area 5 is a 15-meter-wide weed management buffer between habitat restoration area 1 and the improper fill material. This area will be mechanically cut, when needed, to prevent weed seed set. High-priority invasive plants shall be controlled according to Appendix 1, which includes the use of targeted herbicide application.

2.6.3 PROJECT DESCRIPTION

A qualified native habitat Restoration Contractor shall implement this Plan with oversight and biological monitoring from the Restoration Specialist. The project schedule is premised on the project beginning by fall 2024. If the project start is delayed, then in general, implementation of the project will need to be delayed by one calendar year due to the time sensitive nature of seed collection, time for plant propagation, and the timing of weed management events.

Before the first restoration activities occur, it is recommended that the temporary fencing and signage be installed as early as summer to notify the public that the project will begin in fall and that these areas are to be avoided.

The initial dethatching event to remove nonnative weed material will occur in late- October or November but before the onset of significant rainfall that will limit the use of wheeled or tracked equipment. A cultural resource monitor shall be onsite during the initial dethatching event to monitor the soil for any artifacts or culturally significant material.

Following the initial dethatching event, the temporary irrigation system and the nursery grown container plants shall be installed. The irrigation system shall be operated manually and have valves to isolate different irrigation zones. Bubblers shall provide supplemental irrigation for the transplanted nursery grown plants in Area 4 and overhead impact sprinklers shall be used for the irrigated grow-and-kill program in Areas 1 and 2. Any irrigation lines that cross approved pathways need to be trenched to avoid damage by vehicles and to avoid creating a tripping hazard for the public. If trenching is required, then the cultural resource monitor must be present.

The nursery grown container plants shall be installed in Area 4 and Area 2 before the end of January 2025. The plant material shall be grown by a nursery that specializes in native plants and sourced from material collected in the Orange County Seed Collection Zone as described in the Orange County Native Seed Partnership Strategic Plan (AECOM 2023). If the native plant nursery supplier for this project does not have sufficient material on hand, then the Restoration Specialist may make appropriate substitutions of plant species and/or amounts. A cultural resource monitor shall be on site during the digging of planting holes for the container plants.

The plants shall be irrigated to supplement natural rainfall and to establish the plants through the first year. A second year of supplemental irrigation may be required but no more than three years of irrigation shall be required unless drought conditions are severe. During irrigation events, the container planting basins shall be hand weeded to keep them free of all weeds.

The weed management buffer in Area 5 shall be mowed or line trimmed as necessary to prevent the buildup of excessive weed biomass and the development of viable seed from weeds, while avoiding native shrubs and native annuals to the extent feasible, as directed by the Restoration Specialist. Area 5 shall be maintained in this manner for the full term of the project.

In the habitat restoration Areas 1 and 2, the overhead irrigation system shall be used to "force" the growth of multiple crops of weeds throughout the year in a grow-and-kill program. The goal is to encourage germination of weed seed, then control the growth prior to viable seed set with a combination of mechanical and chemical weed control. Typically, one or two weeding events will be needed per season, for a total of four to eight weeding events per year, for two years (2025 and 2026). The habitat enhancement areas 6 and 7 and the native revegetation buffer areas 3 and 4 are adjacent to the irrigated grow-and-kill areas and shall be included in each grow-and-kill weeding event.

At the onset of the project, but no later than February 2025, the Restoration Contractor shall contract with a qualified native seed collector for the required seed material for the native seed mixes. This will allow the seed collector to have multiple opportunities to collect the requested seed material, from winter 2025 to fall 2026, thereby increasing the highest diversity and amount of seed possible for the project. The native seed mixes shall be installed in fall 2026, from mid-October to December but before the onset of significant winter rainfall that prohibit site access with equipment that is necessary for seed installation.

Area 1 shall be hydroseeded with a one-step installation method. The native seed mix will be installed in Areas 2 and 5 by broadcast seeding followed by a cultipacker to ensure good soil-to-seed contact. If any portions of these areas require additional soil stabilization, as determined during the weed management phase prior to seeding, then the hydroseed method may be used with the addition of a soil stabilizer (e.g., bonded fiber matrix). Areas with significant native cover, including Areas 4, 6, and 7, shall be hand seeded and then tamped for good soil-to-seed contact. Area 3 is relatively small and can be hand seeded, although hydroseeding or broadcast seeding followed by a cultipacker are also suitable methods.

The temporary irrigation system can be used, at the discretion of the Restoration Specialist to supplement natural rainfall for the first one to three years of seed establishment. Supplemental irrigation shall only be used in the fall, winter, and spring to augment natural rainfall. No irrigation shall be used in the final two years of maintenance and performance monitoring to demonstrate that the habitat restoration areas are self-sustaining. The temporary irrigation system may remain in place until the

end of the project in case it is needed for remedial actions, but it must be removed once the project is accepted by the agencies and is considered complete.

After seed installation, only hand weeding shall be allowed to control weeds in the project area, except for the weed management buffer Area 5, which is mowed, or line trimmed.

The Restoration Specialist shall regularly monitor the project to determine the timing and appropriate method of restoration activities, following the requirements, guidelines, and specifications in this HRMP. The Restoration Specialist shall be responsible for directing and providing oversight of work by the Restoration Contractor.

A Qualified Biologist, or Approved Biologist, as required by the species protection measures in Section 3.1, shall conduct pre-work surveys and provide biological monitoring as needed to avoid and minimize potential impacts from restoration activities.

The Restoration Specialist shall prepare annual reports documenting restoration and monitoring activities each year, including during the site preparation phase of the project. After seed installation (expected in fall 2026), there will five years of performance monitoring, including spring vegetation surveys to document progress towards meeting project goals and success criteria (expected to be calendar years 2027 to 2031; see Table 2-2). Annual reports will be reviewed by the City and submitted to OCTA.

If the project success criteria are not met in the fifth performance monitoring year, expected to be 2031, then the City shall continue to implement the project according to the HRMP, along with any ecologically appropriate contingency actions and/or alternative success criteria recommended by the Restoration Specialist in consultation with OCTA and the Wildlife Agencies, until the success criteria are met.

2.7 IMPLEMENTATION SCHEDULE

The implementation schedule for the project is presented in Table 2-2.

Table 2-2 HRMP Project Implementation Schedule.

Activity	**2025** Site Protection, Dethatch, Irrigation, & Planting			**2026** Weed Management & Container Plant Establishment Year 1				**2027** Weed Management & Container Plant Establishment Year 2				**2028** **Performance Monitoring Year 1** Maintenance & Monitoring				**2029** **Performance Monitoring Year 2** Maintenance & Monitoring				**2030** **Performance Monitoring Year 3** Maintenance & Monitoring				**2031** **Performance Monitoring Year 4** Maintenance & Monitoring				**2032** **Performance Monitoring Year 5** Maintenance & Monitoring			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Site Protection, Initial Dethatch, Cultural Resource Protection Monitoring, and Temporary Irrigation																																			
Install Temporary Post-and-Rope Fence & Signage		×	•																																
Weed Dethatching Event (Late Oct to Nov) & Cultural Resource Protection Monitoring			×																																
Install Temporary Irrigation System (Areas 1, 2 & 4)			×	•																															
Native Revegetation Buffer (Area 4) and Drainages in Area 1 Container Planting, Irrigation, & Maintenance																																			
Dig Container Planting Basins (Late Oct to Nov) & Cultural Resource Protection Monitoring			×	•																															
Install Nursery Grown Container Plants in Area 4 & Select Drainages in Area 1			×	•																															
Supplemental Irrigation of Container Plants			•	×	×	×	×	•	•	•	•																								
Hand Weeding of Container Planting Basins			•	×	×	×	×	×	×	×	×	•	•	•	•																					
Weed Management Buffer (Area 5) Weed Maintenance																																			
Manage Weed Management Buffer (Area 5): Mow or line trim, as needed to prevent seed set				×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•
High Priority Invasive Plant Control in All Areas, As Needed	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Activity	**2025** Site Protection, Dethatch, Irrigation, & Planting			**2026** Weed Management & Container Plant Establishment Year 1				**2027** Weed Management & Container Plant Establishment Year 2				**2028** **Performance Monitoring Year 1** Maintenance & Monitoring				**2029** **Performance Monitoring Year 2** Maintenance & Monitoring				**2030** **Performance Monitoring Year 3** Maintenance & Monitoring				**2031** **Performance Monitoring Year 4** Maintenance & Monitoring				**2032** **Performance Monitoring Year 5** Maintenance & Monitoring			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Pre-Seed Installation Adaptive Weed Management																															
Irrigated Grow-and-Kill in Areas 1 & 2, and in adjacent Areas 3, 4, 6 & 7: Typically, 1 or 2 Weeding Events per Season, for a total of 4 to 8 events per year, for 2 years				×	×	×	×	×	×	×	×																				
High Priority Invasive Plant Control in All Areas, As Needed	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Native Seed Collection & Installation																															
Special Collection of Native Seeds, Seed Bulking, & Commercial Seed Production				×	×	×	×	×	×	×	•																				
Hydroseed Installation in Area 1											×	•																			
Broadcast Seed and Cultipacker for Good Soil-to-Seed Contact in Areas 2 and 5											×	•																			
Hand Seed Installation in Areas 3, 4, 6, & 7											×	•																			
Maintenance After Seed Installation																															
Supplemental Irrigation, As Needed in Winter, and Spring for 1 to 3 Years (No Irrigation in the Final 2 Years)												×	×			×	×			•	•										
Hand Weed, As Needed: Areas 1, 2, 3, 4, 6, & 7												•	×	×	•	×	×	×	•	×	×	•	•	×	×	•	•	•	•	•	•
High Priority Invasive Plant Control in All Areas, As Needed												•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Activity	**2025** Site Protection, Dethatch, Irrigation, & Planting			**2026** Weed Management & Container Plant Establishment Year 1				**2027** Weed Management & Container Plant Establishment Year 2				**2028** **Performance Monitoring Year 1** Maintenance & Monitoring				**2029** **Performance Monitoring Year 2** Maintenance & Monitoring				**2030** **Performance Monitoring Year 3** Maintenance & Monitoring				**2031** **Performance Monitoring Year 4** Maintenance & Monitoring				**2032** **Performance Monitoring Year 5** Maintenance & Monitoring			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Remove All Temporary Irrigation (Late Oct to Nov)																															×
Remove Temporary Fencing if Permanent Fencing or Other Site Protection Measures are in Place																															×
Biological Monitoring and Reporting																															
Crotch's Bumble Pre-Work Survey		×																													
Biological Surveys prior to restoration activity, as needed (e.g., nesting birds, Dec 1 to Aug 31)			×	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	×	•	×	×	•	•	•	•	•	•
Horticultural Monitoring of Weed Phenology & Native Plant Material Establishment[1]			BW	BW	M	M	M	M	M	M	M	BW	BW	M	Q	M	M	Q	Q	M	M	Q	•	M	M	Q	•	Q	Q	•	•
Baseline Pre-Restoration Qualitative Monitoring (e.g., Photo Points, Veg Cover Estimates)		•	•																												
Spring Performance Qualitative Monitoring in All Areas (e.g., Photo Points, Veg Cover Estimates)					×				×				×				×				×				×				×		
Spring Performance Quantitative Monitoring in Areas 1 and 2 (Point-Intercept Line Transects)																													×		
Annual Habitat Restoration Monitoring Report (Due to OCTA by March 15 of Following Year; Final Report anticipated by March 15, 2032)				×				×				×				×				×				×				×			×

× = Required; • = If necessary; Winter = Jan-Mar; Spring = Apr-Jun; Summer = Jul-Sep; Fall = Oct-Dec; Recommended Monitoring Frequency: Q = monitoring once per quarter; M = monthly; BW = every two weeks; [1] Monitoring may occur more or less frequently, as needed based on project implementation timing, weather, and plant phenology.

2.8 PROJECT SUCCESS CRITERIA

The project success criteria for Habitat Restoration Areas 1 and 2, presented in Table 2-3, were developed based on Land IQ's experience with similar habitat restoration projects in coastal Orange County, the City's experience at Fairview Park, and the OCTA Restoration Funding Guidelines (OCTA 2012).

Voluntary habitat enhancement, native revegetation, and weed management buffer areas are not required, are not part of the habitat restoration areas for the OCTA project, and are not subject to project success criteria; however, these areas should follow the seed mix establishment guidelines in Section 8.4 and container plant replacement guidelines in Section 5.5 to help ensure the goals of the project are achieved.

Table 2-3 Project Success Criteria for Habitat Restoration Areas 1 and 2.

Project Success Criteria	Area 1	Area 2
1. In the third year of establishment of the native seed mix, the absolute native cover shall be at least:	25 to 50%	15 to 25%
2. In the third year of establishment of the native seed mix, the absolute native shrub absolute cover shall be at least:	15 to 25%	N/A
3. In the fifth year of establishment of the native seed mix, the absolute native cover shall be at least:	70%	50%
4. In the fifth year of establishment of the native seed mix, the absolute native shrub absolute cover shall be at least:	50%	N/A
5. The minimum cumulative number of native plant species documented within the restoration area during the five years of native seed mix establishment shall be at least:	15	15
6. In the final year of monitoring based on both qualitative and quantitative measurements, at least half of the native plant species set seed, and the number of native plant species seedlings shall be at least:	5	5
7. In the fifth year of establishment of the native seed mix and after two years of minimal weeding, the absolute nonnative cover shall be less than: *However, the control of high-priority invasive plants identified in the Fairview Park Long-Term Invasive Plant Management Plan (see Appendix 1) may be controlled in any year of the project.*	15%	25%
8. There shall be no supplemental irrigation in at least the final two years of performance monitoring.	Applicable	Applicable

2.8.1 REMEDIAL MEASURES

As part of the adaptive management of the project, if the Restoration Specialist determines that an area is not making sufficient progress toward attainment of the success criteria, then the Restoration Specialist shall investigate and provide recommendations for remedial measures. Remedial measures may include replacement planting, supplemental seeding, adjustments to supplemental watering, or increased weed management activities.

2.8.2 CONTINGENCY MEASURES

If the success criteria are not met in the fifth year of performance monitoring, then the Restoration Specialist shall determine if additional monitoring and maintenance are likely to achieve the success criteria.

If no reasonable and appropriate remedial measures are deemed likely to achieve the goals and success criteria of this plan, the Restoration Specialist—in consultation with the City, OCTA, and the Wildlife Agencies—shall recommend ecologically appropriate contingency actions and/or alternative success criteria.

2.8.3 NOTICE OF COMPLETION

When the project success criteria have been met, the City shall notify OCTA and submit the final performance monitoring report. OCTA is responsible for providing the final project report to the Wildlife Agencies. It is anticipated that the Wildlife Agencies will request the City to provide a tour of the restoration project site. The project will not be deemed complete (or signed off on) until OCTA and the Wildlife Agencies concur that the site has met the necessary success criteria.

2.8.4 LONG-TERM PROTECTION INSTRUMENT

Prior to sign off, the City will place a conservation easement, deed restriction, or other Wildlife Agencies-approved conservation mechanism, in favor of the Wildlife Agencies (or an approved third party), over the project site specifying that the area will be retained in perpetuity as open space for the sole purpose of native habitat conservation. The conservation easement or mechanism language should be approved by the Wildlife Agencies and OCTA prior to its execution. The conservation easement or mechanism shall disclose the obligations of future owners/tenants of the property (OCTA 2012).

3 RESOURCE PROTECTION MEASURES

3.1 QUALIFIED BIOLOGIST AND APPROVED BIOLOGIST QUALIFICATIONS

The following definitions describe a qualified biologist and an agency approved biologist:

Qualified Biologist: The minimum qualifications for the Qualified Biologist include a bachelor's degree in biological or environmental science, natural resources management, or related discipline; field experience in the habitat types that may occur at the project site; familiarity with the listed species (or closely related species) that may occur at the project site; and prior preconstruction survey, construction monitoring, or construction oversight experience.

Approved Biologist: For listed species, such as the coastal California gnatcatcher, least Bell's vireo, and Crotch's bumble bee, additional qualifications are required for biologists who would be responsible for species surveying. For this project, the Approved Biologist will have:

- A federal section 10(a)(1)(A) recovery permit for coastal California gnatcatcher surveys
- At least five years' direct experience with least Bell's vireo to survey for this species
- Approved by CDFW to survey for Crotch's bumble bee on the project site

Because the qualifications for the Approved Biologist exceed those for the Qualified Biologist, any activity indicated as appropriate for the Qualified Biologist below may also be completed by an Approved Biologist. Where sensitive species may be directly or indirectly impacted by project implementation, the following species protection measures shall be implemented, as appropriate.

3.2 SPECIES PROTECTION

Species surveys will include threatened, rare, or endangered species and breeding/nesting birds. The City will use survey guidelines provided below or agency- approved survey protocols. All existing resources to be protected will be identified by the City and flagged prior to any project disturbance. This habitat restoration project may have a short-term impact on resources, however there will be a long-term benefit.

3.2.1 COASTAL CALIFORNIA GNATCATCHER

BIO-1, *Habitat Avoidance*. Project impacts will be avoided or minimized in coastal sage scrub and other vegetation communities suitable for the coastal California gnatcatcher (CAGN). If the Project Proponent determines that the habitat is occupied or that impacts to these habitats cannot be avoided, any possible incidental "take" of CAGN individuals will be avoided or minimized through implementation of the measures listed below.

BIO-2, *Work Window*. To avoid or minimize impacts to nesting CAGN, all clearing of nonnative vegetation in CAGN suitable habitat will occur outside of the breeding season (February 15 to August 31). If the breeding season cannot be avoided, a USFWS- Approved Biologist will conduct prework nesting bird surveys no more than 5 days prior to vegetation removal. If no active CAGN nests are found, project activities may proceed.

BIO-3, *Work Restrictions Near Active Nests*. If an active CAGN nest is detected during the survey, work will be suspended until the end of the nesting season (August 31), or until the young have fledged; alternatively, the following conditions will apply:

a. A USFWS-Approved Biologist will establish a 100-foot disturbance buffer distance between noise-generating project activities and CAGN nest(s). Noise-buffer distances may be modified in coordination with the USFWS Field Office based on project-specific characteristics or a Project Proponent/Action Agency may choose to submit their own analysis and buffer recommendations for USFWS's consideration.

b. Once the buffer is established, a Qualified Biologist will monitor the nest during construction for signs of adverse effects, including distress/disturbance. If adverse effects are detected, the Qualified Biologist will have the authority to stop all construction activities in the vicinity of the nest and implement additional protection measures.

c. A Qualified Biologist will continue to monitor the nest and will determine when young have fledged (in coordination with a USFWS-Approved Biologist). Once the USFWS-Approved Biologist has confirmed that the young have left the nest, the buffer and exclusion zone may be removed, and construction activities within these areas may resume.

3.2.2 LEAST BELL'S VIREO

BIO-4, *Habitat Avoidance*. All staging and temporary construction areas shall be outside of suitable least Bell's vireo (LBV) habitat and use existing roads, trails, and developed areas to the maximum extent practicable. All riparian vegetation (e.g., mulefat, willows, and cottonwoods) will be avoided.

BIO-5, *Work Window*. To avoid or minimize impacts to nesting LBV, all clearing of vegetation in occupied habitat or suitable habitat will occur outside the breeding season (March 15 through September 15). If the breeding season cannot be avoided, a USFWS- Approved Biologist will conduct preconstruction nesting bird surveys no more than 5 days prior to vegetation disturbance. If no active nests are found in the project area, project activities may proceed.

BIO-6, *Work Restrictions Near Active Nests*. If an active LBV nest is detected during the survey, work will be suspended until the end of the nesting season (September 15), or until the young have fledged; alternatively, the same species-protection measures identified above in **BIO-3a-c** will apply.

3.2.3 CROTCH'S BUMBLE BEE

BIO-7, *Habitat Avoidance.* Impacts to burrows/nests occupied by Crotch's bumble bee (CBB) will be avoided. CBB has a moderate potential to occur on the project site, thus protocol presence/absence surveys shall be conducted during the flight season and prior to any ground disturbing activities.

BIO-8, *Surveys.* Presence/Absence Surveys shall be performed by a CDFW-Approved Biologist or entomologist familiar with CBB behavior and life history. Surveys shall be conducted during the flying season (late April through mid-October), when the species is most likely to be detected above ground. Per the CDFW Survey Considerations for Candidate Bumble Bee Species dated June 6, 2023, a minimum of 3 surveys with a 2 to
4-week space between surveys shall be conducted during the colony active period. If no CBB are found on the project site, a project survey report (including negative results) will be provided to CDFW prior to ground disturbing activities. If Crotch's bumble bee is found on the project site, proponents may propose site-specific measures in coordination with CDFW to avoid take or obtain an Incidental Take Permit.

3.2.4 BURROWING OWL

BIO-9, *Avoidance*. Burrowing owls (BUOW) are not known to nest at Fairview Park; but are known to occupy the Park in the winter. The restoration activities shall avoid impacts to nesting BUOW and known overwintering locations. If a BUOW is observed on the project site, work shall be suspended, and the Qualified Biologist shall immediately contact CDFW to develop a plan for avoidance prior to initiating any ground disturbance on the project site.

3.2.5 BREEDING / NESTING BIRDS

BIO-10*, Avoidance.* To the extent feasible, vegetation clearing activities should be scheduled to avoid the bird nesting season (February 15 through August 31). If it is not possible to schedule vegetation clearing activities between September 1 and February 14, then preconstruction surveys for nesting birds will be conducted by a Qualified Biologist to avoid impacts to nesting birds.

BIO-11*, Pre-work Breeding/Nesting Bird Surveys* will be conducted during the bird nesting season (February 15 through August 31) if vegetation removal or other activities are planned that could violate the California Fish and Game Code and/or the Migratory Bird Treaty Act (MBTA). A Qualified Biologist will conduct preconstruction breeding/nesting bird surveys no more than 5 days prior to the initiation of any site- disturbance activities that may impact nesting birds, such as vegetation removal, fence installation, and digging. During this survey, the biologist will inspect all vegetation and other potential nesting habitats in the project area for nests. Active nesting is present if a bird is building a nest or sitting in a nest, if a nest has eggs or chicks in it, or if adults are observed carrying food to the nest. If no breeding/nesting birds are observed, work activities may begin. If breeding/nesting birds are observed, the measures described below shall be implemented.

BIO-12, *Work Restrictions Near Active Nests*. If an active nest is detected, work will be suspended until the young have fledged or until the end of the nesting season (August 31); alternatively, the following conditions will apply:

a. A Qualified Biologist will establish a disturbance buffer distance between noise-generating project activities and the nest. Noise buffer distances (typically up to 300 feet for raptors and up to 100 feet for other species) will be determined by the Qualified Biologist based upon consideration of the bird species and the nature of the planned project activity.

b. If a buffer is established, a Qualified Biologist will monitor the nest during construction for signs of adverse effects, including distress/disturbance. If adverse effects are detected, the Qualified Biologist will have the authority to stop all construction activities in the vicinity of the nest and implement additional protection or avoidance measures.

c. A Qualified Biologist will continue to monitor the nest and will determine when the young have fledged. Once the Biologist has confirmed that the young have left the nest, the buffer and exclusion zone may be removed, and construction activities within these areas may resume.

3.3 CULTURAL RESOURCE PROTECTION

Most of Fairview Park contains sensitive resources, including protected archaeological resources (e.g., indigenous village use area, including CA-ORA-58, a nationally recognized cultural resource historic site), sensitive vegetation communities, and protected wildlife. The CSS & Flower Fields Restoration Project will benefit native plant and wildlife populations by restoring native flower fields and coastal sage scrub habitats, and the establishment of native plant cover will help to protect culturally significant resources by reclaiming informal trails and otherwise reducing soil disturbance.

Disturbance to existing native vegetation/wildlife habitat, and cultural resources will be minimal during project implementation. Nevertheless, actions required for site preparation, such as initial dethatch of nonnative weeds, digging planting basins for container plants, or substantial digging required for the removal of perennial invasive plant species during weed management activities could potentially disturb *in situ* culturally significant resources or disturb nesting birds in nearby areas. The CSS & Flower Fields Restoration Project will implement avoidance and minimization measures to protect sensitive biological resources through biological monitoring, activity buffers, and adjusting the timing of restoration activities.

Avoiding impacts to culturally significant resources is more complicated and therefore—following guidelines of a separate cultural resource monitoring plan being developed by the City—areas discovered to have artifacts or culturally significant materials at or near the surface will be buffered and excluded from CSS & Flower Fields Restoration Project activities until the appropriate actions can be taken. To provide leeway for this possibility, which could delay or disrupt the overall habitat restoration project, the City has identified a total of 11.91 acres suitable for restoration, so that up to 2.41 acres can

be temporarily set aside while still providing the outstanding 9.5 acres of mitigation in a timely manner.

3.3.1 Measures for Cultural Resource Avoidance Areas

If culturally significant materials are discovered within the project area, habitat restoration activities may need to be adjusted to protect and buffer these areas. In such cases, the restoration crew will avoid these locations until the City has determined that it is appropriate to proceed with the Habitat Restoration Management Plan (HRMP) in those areas.

While setting aside areas for cultural resource protection may lead to minor changes in the project's original layout, it is not anticipated to significantly impact the overall goals or the attainment of success criteria for the 9.5 acres of habitat restoration required for OCTA's mitigation credit.

To minimize potential fragmentation and maintain the overall quality of restored habitat areas for wildlife, if cultural resource avoidance affects more than 5 percent (0.6 acres) of the total 11.91 acres of habitat restoration, then the City and OCTA shall consult with the Wildlife Agencies for guidance on any additional measures that will be required to ensure success of the OCTA Project. This collaborative approach will help ensure any additional measures required for the project's success are properly identified and implemented, balancing the needs of both cultural resource preservation and habitat restoration.

4 General Protection Measures, Initial Dethatching Event, and Temporary Irrigation System

4.1 General Protection Measures

4.1.1 Equipment

Motorized equipment and hand tools will be used for the initial dethatching event to remove nonnative vegetation from the project area, while avoiding native vegetation. Equipment will include tractors and skidsteers that are mounted with mowers and other vegetation-management equipment. Walk-behind mowers and line trimmers will also be operated by crews to clear nonnative vegetation in areas inaccessible by equipment or have a higher density of native plant species.

Hand shovels and motorized augers will be used to dig planting holes for the container plants to a depth of twice the depth of the 1-gallon container and twice as wide. Prior to planting the hole should be backfilled so that the root crown sits at the height of the surrounding soil level. During the digging operation, a City approved cultural monitor shall be on site, according to guidelines of the cultural resource monitoring plan.

After the initial dethatching event, hand operated tools will be primarily used on the slopes (Areas 1, 6 and 7 on Figure 1-3) but there may be slope areas where it is safe and

appropriate to use wheeled or tracked mowing equipment. Tractors and skidsteers with mowing attachments will be used to manage weed growth in most of Area 2 during the initial phases of the project (site preparation and weed grow-and-kill). Most of Area 5 will be managed with tractors and skidsteers to maintain a weed management buffer during the entire term of the project. In those parts of Areas 2 and 5 where native vegetation or temporary irrigation lines cannot be avoided, however, weeds will be managed using hand operated equipment, such as line trimmers and walk behind mowers, and through targeted use of herbicide. Targeted herbicide applications will occur during the pre-seed installation weed management phase, using either low- pressure backpack spraying equipment or truck-mounted systems (e.g., low-pressure wand attached to a retractable hose mounted on a truck with an herbicide tank that is parked in either the weed management buffer or on an approved City pathway).

Upon completion of the grow-and-kill phase to reduce the nonnative soil seed bank, native seed mixes will be installed in the restoration, enhancement, and native revegetation areas. From this point forward mechanized equipment will no longer be used. Nearly all weed maintenance after seed installation will be completed by crews with hand tools. Line trimmers or herbicide may only be used in highly targeted circumstances, at the direction of the Restoration Specialist, to control major infestations of weeds that cannot feasibly be controlled by any other method.

Areas failing to meet the plant establishment guidelines, or the project success criteria may require remedial actions, including the use of equipment, at the discretion of the Restoration Specialist, within the scope of activities already described here.

4.1.2 PROJECT ACCESS AND STAGING

Vehicles will use existing disturbed and developed areas for access and staging equipment and materials. No new roads will be constructed, as existing pathways will be used for access. All rolling or tracked equipment, including pickup trucks for hauling equipment, crews, and waste material, will travel on the asphalt access road from the parking lot to access the project area (Figure 4-1). Only the equipment necessary to accomplish the tasks will be allowed into the restoration and buffer areas.

Construction equipment, vehicles, and materials will not be placed on planted or seeded areas, on existing native vegetation, or within sensitive habitat. To avoid unnecessary soil disturbance and compaction, no equipment shall access project areas with saturated or ponding soil.

All equipment will be removed from work sites at the end of each day. If equipment is stored at Fairview Park, it must be in a secured location, approved by the City. No equipment shall be stored on the natural areas of the mesa.

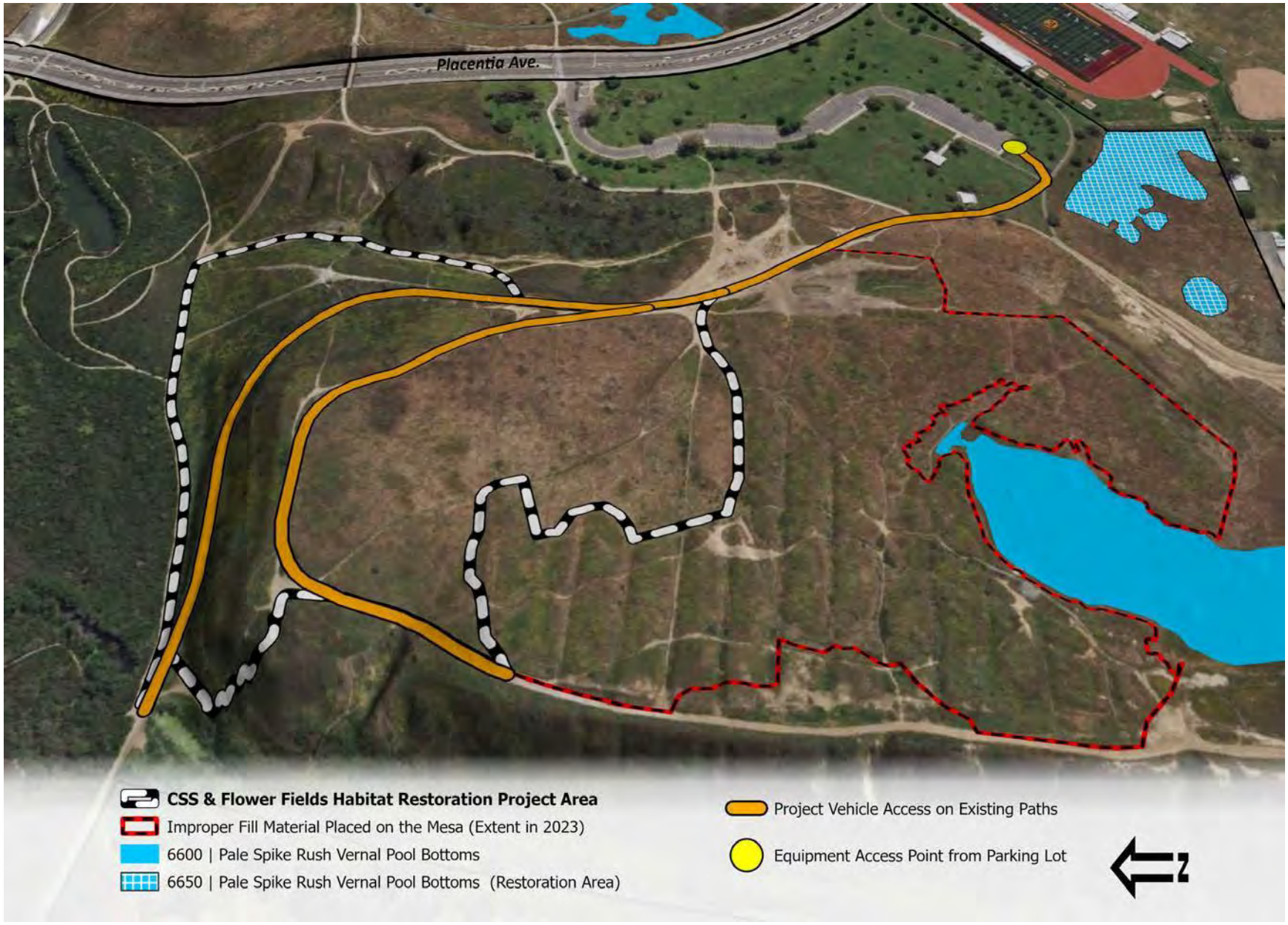


Figure 4-1 Vehicle Access Point and Pathways to Project Area.

4.1.3 GOOD HOUSEKEEPING PRACTICES

A. Restoration activities will be limited to daylight hours.

B. Restoration work and staging will be restricted to the smallest area practicable in designated work areas, routes, temporary interior access, or the limits of existing roadways/pathways. Prior to initiating restoration activities, fencing or flagging or other practical means will be erected to demarcate the limits of the project activities and exclusion zones, if present. Flagging or fencing will be maintained in good repair for the duration of project activities.

C. Where appropriate, fencing, flagging, or biological monitoring will be used to minimize or avoid disturbance to environmentally sensitive areas and listed species habitat which will include patches of CSS and other sensitive habitat.

D. The spread or introduction of nonnative, invasive species will be avoided. Invasive plant species (e.g., those rated as woody invasive by the Cal-IPC, or local problem species) will be removed from the project site as practicable, using locally and routinely accepted management practices. Invasive plant material will be removed using approved protocols and disposed of at an appropriate upland disposal or compost area in a manner that will not promote their spread. The project will use weed free erosion control materials such as burlap rice straw wattles and certified weed-free mulch, if needed.

E. Vehicle traffic will be confined to existing roads and the proposed access route(s). All machinery must be in good working condition, showing no signs of fuel or oil leaks. Oil, grease, or other fluids will be washed off at off-site designated wash stations prior to entering the site. Inspection and evaluation for the potential for fluid leakage will be performed daily prior to use. All fuel and chemical storage, servicing, and refueling will be done in an upland staging area or other suitable location with secondary containment to prevent spills from traveling to surface water or drainages.

F. All stockpiles and construction materials shall be covered, enclosed on all sides, shall be located as far away as possible from drain inlets and any waterway, and shall not be stored in contact with the soil.

G. No demolition or construction equipment, materials, or activity shall be placed in or occur in any location that would result in impacts to environmentally sensitive habitat areas, streams, wetlands, or their buffers.

H. All trash and debris shall be disposed in proper trash and recycling receptacles at the end of every workday.

I. Debris shall be disposed of at a legal disposal site or recycled at a recycling facility.

J. The discharge of any hazardous materials into any receiving waters shall be prohibited.

K. All herbicide mixing shall occur in designated work staging areas and conducted in such a manner as all potential spills shall be captured in containment bins. Herbicide

mixing shall not occur within 100 feet of an open body of water. Filling of spray backpacks shall be done in a containment bin to collect any potential spills. Park crews shall have spill kits in their vehicles and all spills shall be cleaned up immediately and all contaminated material properly disposed of off-site.

4.1.4 TEMPORARY FENCE AND SIGNAGE

To identify the CSS & Flower Fields Restoration Project area for the public, temporary perimeter fencing shall be installed by the Restoration Contractor. Yellow rope shall be strung on t-posts or pig-tail posts placed 30 feet on-center, as identified on Figure 1-3.

All-weather signs (preferably anti-graffiti red with white lettering) designating the sensitivity of the habitat shall be placed approximately every 100 feet on the yellow rope to discourage unauthorized entry (e.g., reading "DO NOT ENTER/HABITAT RESTORATION IN PROGRESS"). Educational signage on the environmental benefits of the project shall be placed at the entry to informal trails that are closed to discourage trespassing. The educational signage shall be prepared by the Restoration Contractor and approved by the City's Fairview Park Administrator prior to installation.

The temporary fencing and signage shall be maintained during the term of the project and shall be removed at the end of the project when it is no longer needed. Temporary fencing shall be maintained in place by the City until permanent fencing or other suitable protective barrier is installed to protect the restored habitat from recreational impacts.

4.1.5 REMOVAL OF TRASH AND DEBRIS

During the implementation of this plan, the Restoration Contractor shall keep the restoration areas free of trash and debris. If large trash items or hazardous items are dumped illegally in the project area, the City shall be responsible for removing the items, including all associated costs.

If a waste bin is placed on site for weed material, it will be in an existing developed area designated by the City, preferably in the parking lot area.

4.1.6 PEST CONTROL

Local wildlife such as rabbits, pocket gophers and other rodents are expected to browse on the plantings and seed material. If the Restoration Specialist determines that the plantings are being jeopardized by wildlife, corrective measures such as organic, non- toxic deterrents and protective fencing/plant cages may be used. Invertebrate pests are rarely a serious problem in this type of habitat restoration project, in which native vegetation appropriate to site conditions is being established.

4.1.7 EROSION CONTROL

To minimize erosion, appropriate control measures will be employed where necessary and may include silt fencing, straw wattles, or similar runoff barriers. Erosion control measures and repairs will be implemented as needed, subject to approval by the Restoration Specialist and the City.

STRAW WATTLES

Straw wattles are an effective erosion control measure to use on steep slopes that are lacking vegetation that will prevent erosion of bare soil surfaces. The wattles interrupt and slow down water flow on steep slopes and capture sediment that may be within the sheet flow. Biodegradable natural wattles of straw or coir rolls, if needed, should be used, and the netting of the wattles should be of non-plastic, biodegradable material that will break down in the environment over time, such as burlap wrap. Plastic netting can be an entanglement hazard for wildlife. General guidelines for straw wattle spacing are as follows:

- 50-feet apart on slopes flatter than 10:1
- 20 feet apart on slopes that are between 4:1 to 10:1
- 15 feet apart for slopes from 2:1 to 4:1
- 10 feet apart for slopes steeper than 2:1

The wattles should be trenched into the ground at a depth of 2 to 4 inches deep and aligned with slope contours. No daylight should be seen under the wattle if installed properly. Ends of the wattles shall be overlapped by 12 inches and not butted end to end to prevent rilling. Wood stakes that are at least 18 inches long and at least one inch in diameter should be placed at each end and every 4 feet on center, driven in the center of the wattle to anchor the wattle to the slope. Two to three inches of the stake should be left protruding above the wattle. Stakes should be driven perpendicular to the slope.

Straw wattles should be inspected regularly after significant rain events and maintained as needed to ensure adequate sediment holding capacity. Generally, removal of accumulated sediment should occur when the accumulated sediment reaches ¾ of the barrier height. Any damaged or missing wattles should be replaced.

4.2 INITIAL DETHATCHING EVENT

The initial dethatching event will remove the accumulated dead nonnative vegetation material and any new weed growth. Native vegetation will be avoided. The initial dethatching event will be performed in late-October or November to avoid the bird nesting season (February 15 to August 31) and the bumble bee flying season (late April through mid-October). However, if this event occurs during the breeding season an Approved Biologist must conduct species specific surveys according to Section 3.2.

The City shall conduct a Crotch's bumble bee protocol presence/absence survey according to Section 3.2.3 during the flying season (late April through mid-October) in 2024 prior to implementation of the project to determine if site-specific protection measures need to be developed in coordination with CDFW. If no Crotch's bumble bee nests are found, then the Qualified Biologist shall record and report incidental observations to CDFW.

The Restoration Specialist will layout project limits for the Restoration Contractor. The weed dethatching will be accomplished by a combination of equipment. Larger areas

without significant native perennial vegetation cover will be mowed with tractors or tracked skidsteers with mowing attachments and placed into windrows (lines of raked thatch) with the same equipment. In areas with more prevalent native perennial vegetation, crews will use hand-held line trimmers and walk behind mowers to avoid impacts to native vegetation during weeding activities. Cut weed material will be hand raked and removed from these areas.

All trash will be removed from the site to properly disposed of off-site either to a recycling facility or at a landfill. All care will be taken to preserve the existing native habitat, and species-protection measures will be followed to avoid and minimize impacts.

The goal of the initial dethatching event is to make the habitat restoration areas more accessible to restoration crews and to encourage germination of weed seed during the two years of irrigated grow-and-kill before seeding in fall 2026. The grow-and-kill method is used to treat (kill) seedlings and new growth before seed set to deplete the existing weed seed bank and to prevent new weed seed from entering the seed bank.

4.3 TEMPORARY IRRIGATION SYSTEM

After the initial dethatching event, and before the onset of significant winter rainfall, a temporary above-ground irrigation system shall be installed by the Restoration Contractor. The system will consist of overhead impact sprinklers arranged head-to- head to provide full coverage in the habitat restoration areas (Areas 1 and 2). In the native revegetation areas (Area 4), bubblers will be placed at each container planting basin.

The City will designate the irrigation water source and preferred alignment for the main supply line. Water used for irrigation must be of good quality with total dissolved solids (salts) at no greater concentration than 500 parts per million (ppm).

4.3.1 OVERHEAD IMPACT SPRINKLER IRRIGATION SYSTEM FOR AREAS 1 AND 2

A temporary above-ground irrigation system for Areas 1 and 2 should include the following features, as appropriate:

- The mainline will have lateral lines and gate-valves to separately manage the different areas or habitats, as necessary, depending on soils and landform.
- Sprinkler heads will be tested to accommodate the infiltration rate of the soil and landscape position. The size of the sprinkler heads and application rate will be determined after infiltration is evaluated in each area.
- The system will be laid out so that the wetted area from each sprinkler head has no more than a two- to three-foot overlap with adjacent sprinklers. The final layout design will depend on the system water pressure and the size of the sprinkler heads (based on the infiltration rate of the soil).

- Separate valves will be installed to manage overhead impact sprinklers. This is important because it may be required to turn off valves where nesting sensitive bird species are present.
- All impact sprinkler stems will be fitted with on/off ball valves to allow for hose connections and hand watering of container plants at installation and during establishment, as necessary. These valves will also allow specific areas to be shut off, as necessary.

The size of the sprinkler heads and application rate should be determined after infiltration is evaluated for the restoration area. An overhead irrigation system will also be used to germinate and establish seeded material, as appropriate.

4.3.2 AREA 4 BUBBLER IRRIGATION

The bubbler irrigation system in Area 4 will be used to supplement natural rainfall and to help establish nursery grown container plant material for one to two years.

The Restoration Specialist shall approve the irrigation design, layout, and schedules prior to installation of the system and implementation of water events by the Restoration Contractor. The temporary, above ground irrigation system shall have the following design:

- A mainline with lateral lines will be installed with gate-valves to separately manage the areas, as necessary depending on site soils and landforms.
- PVC lateral lines shall be laid out from the mainline to individual container plants.
- Full circle bubbler nozzles shall be installed at each planting location.
- Individual bubbler nozzles shall be pressure regulating.
- The irrigation system shall be fitted with on/off ball valves to allow for hose connections and hand watering of container plants, as necessary. These valves will also allow areas to be shut-off, as necessary.
- Operation of the system will require management by a person with demonstrated previous experience irrigating native vegetation.

4.3.3 IRRIGATION SYSTEM OPERATION

The temporary irrigation system will be manually operated with valve-controlled zones that allow for each area to be irrigated independently. The system in Area 4 will be used, as necessary, to help establish nursery-grown plant material. The system in Areas 1 and 2 will be used for an irrigated grow-and-kill program to reduce the weed soil seed bank for two to three years.

The timing of irrigation events in Area 4 and Area 2 for the container plants will depend on evapotranspiration between irrigation events and soil moisture. In general, the container plants will be irrigated weekly for the first two months and then monthly for the remainder of the first year of establishment with 15 gallons of water provided for

each container plant. Irrigation in the second year will be applied to mainly supplement or mimic natural rainfall patterns in the spring and fall in such a way that plants develop deep root systems to maximize survival and vigor after irrigation is removed.

Infrequent deep irrigations shall be used for applying the water as opposed to frequent shallow irrigations. Deep root systems will provide healthier and more sustainable plants while plants with shallow root systems are more susceptible to drought, disturbance, and erosion.

Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. A soil probe or shovel should be used to examine soil moisture and rooting depth directly. Once the weed soil seed bank is sufficiently controlled, the native seed mixes will be installed in Areas 1 and 2 and the overhead system will then be used to supplement natural rainfall between early fall and late spring for one to two years. The timing of irrigation events will depend on evapotranspiration between irrigation events and soil moisture. Once sufficient germination of the seed mix is achieved, deep irrigation will be implemented to promote development of a deep root system to maximize survival and vigor after irrigation is removed.

The irrigation system will be manually operated with valve-controlled zones that allow for each area to be operated independently. Under no circumstances will the irrigation system be operated with any type of automatic timer. The irrigation system will be run manually and only when at least one crew person is on site to check the system and prevent blowouts.

The Restoration Contractor shall be responsible for inspection and timely repair of the irrigation system. The Restoration Contractor shall consult with the Restoration Specialist to determine if extending or revising the irrigation schedule is necessary.

The temporary irrigation system will be removed at the end of the project.

5 NATIVE REVEGETATION BUFFER (AREA 4) AND DRAINAGE PLANTING IN AREA 1

5.1 CONTAINER PLANT PALETTE

The layout for container plants will be determined based on micro topographic features and planting sites will be marked on site using color-coded pin flags with each species having a different flag under the supervision of the Restoration Specialist. Area 4 is being planted to help create a visual barrier between the public pathway and the habitat restoration areas to discourage off trail activity, until the seed vegetation develops in future project years, in addition to the temporary fence. Plantings can be clustered with larger gaps where appropriate and the entire length of Area 4 does not need to be planted with container plants because it will be seeded as well.

Select drainages of Area 1 will be planted, as determined by the Restoration Specialist, to enhance the slope with toyon and blue elderberry food sources for wildlife. The spacing and quantity of plants will follow the specifications presented in Table 5-1.

In the drainage areas, toyon (*Heteromeles arbutifolia*) and blue elderberry (*Sambucus mexicana*) can be planted and irrigated with the overhead irrigation system to be used for the grow-and-kill phase prior to seed installation.

Table 5-1 Container Plant Palette for Native Revegetation Buffer Area 4.

Scientific Name	Common Name	Container Size	Typical Plant Spacing	Area 4 Total No. Plants	Area 1 Total No. Plants
Artemisia californica	California sagebrush	1-gallon	5 to 10'	75	---
Encelia californica	California bush sunflower	1-gallon	5 to 10'	75	---
Eriogonum fasciculatum	California buckwheat	1-gallon	5 to 10'	75	---
Heteromeles arbutifolia	toyon	1-gallon	12'	---	40
Isocoma menziesii	coastal goldenbush	1-gallon	5 to 10'	50	---
Salvia apiana	white sage	1-gallon	5 to 10'	50	---
Salvia mellifera	black sage	1-gallon	5 to 10'	50	---
Sambucus mexicana	blue elderberry	1-gallon	12'	---	40
			Total Plants	***375***	***80***

5.2 NURSERY PROPAGATION OF PLANT MATERIAL

Native shrubs shall be propagated for transplantation into the native revegetation Area 4. The container plants shall be contract grown by a qualified native plant nursery that has a minimum of five years of experience growing native plants using propagules collected from locations in the Orange County Seed Collection Zone (see Section 8.1.1 for more). The order shall be placed so that the container plants have a well-developed root system and are conditioned prior to installation in the fall/winter. All planting stock shall be grown in the nursery long enough to develop plant roots to the bottom of the specified container without becoming root bound.

The plant species shall be delivered for planting in the specified container (e.g., 1-gallon containers) in a healthy growing condition, with roots filling the container but showing no tendency toward being root-bound. Plant material will be inspected at the nursery twice, once early in the process to ensure that adequate material has been propagated, and once inspection scheduled approximately three weeks prior to plant delivery. Plants will be inspected again at the time of delivery, and any plant that does not meet the defined specifications will be rejected. The Restoration Specialist and the Restoration Contractor shall conduct plant inspections.

5.3 PREPARATION OF CONTAINER PLANTING BASINS

Planting holes shall be augured with the minimum disturbance and be no more than 1.5 times the diameter and 2 times the depth of the container species to be planted made to accommodate the root ball. A cultural resource monitor shall be onsite during any digging of planting basins.

5.4 INSTALLATION OF CONTAINER PLANTS

Upon plant delivery, container plants shall be properly stored in a designated temporary storage location. The Restoration Contractor shall be responsible for protection from herbivory, vandalism, theft, as well as maintenance (watering) of the container plants while they are in temporary storage.

All container plants are to be planted to the following specifications:

- Plants shall be planted with the roots untangled. Roots shall be protected from weather exposure during planting.
- Planting holes shall be backfilled 25 percent with excavated native soil, filled with water, and allowed to drain completely prior to planting. Container plants must never be installed in planting holes with standing water; all water shall be allowed to settle and infiltrate through the soil prior to plant installation.
- Plantings shall be set in well-drained planting holes with the crown of the root ball no more than 0.5 inches above grade. Under no circumstances shall the plant crown be buried. The soil around the planting shall be tamped down sufficiently to eliminate any air pockets in the soil.

- A basin around the planting shall be constructed by creating a berm above the existing grade approximately 24 inches in diameter around the planting.
- Each planting shall be sufficiently watered after installation so that water reaches the lower roots.

5.5 MAINTENANCE OF PLANTINGS

A temporary above-ground irrigation system with bubblers will be used to provide supplemental irrigation for each planting basin, for no more than two years, unless drought conditions are severe.

The container planting basins shall be hand weeded regularly by the Restoration Contractor as part of site maintenance throughout the project term, although the most intense weeding is expected during the first two years of establishment and supplemental irrigation.

5.5.1 SUPPLEMENTAL AMENDMENTS

During the establishment period of the installed container plants, supplemental amendments can be added if the plants appear stressed due to an imbalance of nutrients. In such cases, soil samples shall be collected by the Restoration Specialist. A standard agriculture suitability test shall be performed to determine the necessary amendments to add to provide optimal growth conditions for the native plants. In addition, plant tissue samples may be collected and tested to determine if there are any diseases, pests, pathogens or nutrient deficiencies, or toxicities present that could be impacting plant health.

5.5.2 CONTAINER PLANT REPLACEMENT

Survival of the container plants within the first growing season should be 80 percent. Plants shall be replaced if survivorship falls below 80 percent in years one and two of plant establishment, as determined by the Restoration Specialist. Replacements will be planted as previously specified and maintained for a minimum of one growing season, as necessary. Replacement planting after the first season shall only be specified if the visual estimate indicates substantial mortality and the function of these species has not been replaced by seeded material and natural recruitment.

6 WEED MANAGEMENT BUFFER (AREA 5)

Control in the weed management buffer is necessary to prevent the re-infestation of weedy plant species into the adjacent habitat areas. The weed management buffer shall be cleared of nonnative weed material during the initial dethatching of the project.
Adequate management of the weed seed bank may take several years to achieve, depending on the size of the weed seed population and the number of treatment events that occur each year, as determined by rainfall and weather conditions. There is no irrigation in Area 5.

The weed management buffer in Area 5 shall be mowed or line trimmed as necessary to prevent the buildup of excessive weed biomass and the development of viable seed from weeds, while avoiding native shrubs and native annuals to the extent feasible, as directed by the Restoration Specialist. Typically, there will be three to four treatment events per year in the weed management buffer.

Any high-priority invasive plants that occur in Area 5 shall be controlled according to methods described in the long-term method invasive plant management plan prepared by Land IQ (2024) and included as Appendix 1 in this report.

Area 5 shall be maintained in this manner for the full term of the project.

7 Pre-Seed Installation Adaptive Weed Management

Intensive weed management will be required prior to installation of the native seed material to ensure successful establishment of native habitat because the disturbance history has allowed for a significant weed soil seed bank to develop. Weed management will begin in fall 2024, after the initial dethatching event and the installation of the temporary overhead irrigation system in Areas 1 and 2. Consistent, irrigated grow-and- kill events shall be conducted for two years prior to installation of native seed mixes.
Typically, one or two weeding events will be needed per season, for a total of four to eight weeding events per year, for two years (2025 and 2026). The habitat enhancement areas 6 and 7 and the native revegetation buffer areas 3 and 4 are adjacent to the irrigated grow-and-kill areas and shall be included in each grow-and-kill weeding event.

The timing of treatment events shall be scheduled to target optimal weed control. Weed control shall be timed to be completed prior to seed set. Success of the grow-and- kill cycles will be evaluated by the Restoration Contractor and Restoration Specialist to determine the need for additional treatments.

The selection of weed management methods for Areas 1, 2, 3, 4, 6, and 7 will depend on the type and density of weed species present, the density of native species, and accessibility. Control methods will include the following, as appropriate:

- Mowing/Cutting – mechanical equipment or hand tools
- Raking/Windrowing – mechanical equipment or hand tools for removal of cut material
- Hand pulling/cutting seedlings/saplings where feasible
- Herbicide application

Selecting the appropriate weed control method is crucial for effective invasive and nonnative plant management. Each method has its advantages and disadvantages, and various factors must be considered, including the timing of application, equipment and trained staff availability, and site access limitations. To minimize contributions to the

weed seed bank, nonnative seedlings and flowering plants should be controlled before producing viable seeds. If weeding occurs after seed development, it is essential to remove, bag, and dispose of seed material off-site.

Keeping soil disruption to a minimum is vital to reduce the germination of new weed individuals, protect native species, and preserve biological soil crusts. During the weed management phase in areas with no biological crusts and low native cover, limited topsoil disturbance from mechanical equipment, such as mowers, can accelerate weed seed germination, increasing weed control efficiency. However, care should be taken to avoid disturbing deep soil layers, which may bring up buried weed seeds that would not otherwise germinate without disturbance.

In areas with significant native cover or sensitive species, careful weeding by trained crews is necessary to prevent damage to native plants and impacts to sensitive species. Adaptive management, including regular monitoring, is key to guiding the scheduling and selection of weed control methods.

Only post-emergent herbicides will be applied in accordance with the methods and recommendations described in this plan and the City's herbicide use policies. Timing is critical, so phenological monitoring by the Restoration Specialist will determine the appropriate timing and method for weed control events.

USFWS has identified potential threats from some herbicides that could be used in the restoration areas, which could migrate in storm water or irrigation runoff to the vernal pools and potentially cause toxic effects to fairy shrimp. The project areas on the mesa (Areas 2, 4, and 5) are not currently hydrologically connected to the vernal pool watershed that feeds the vernal pools because the grade is flat to gently sloping north, east, or west. The improper fill material further impedes and disconnects surface water from moving from the flat areas of the project on the mesa from connecting with the vernal pools to the south. And the restoration areas are more than 300 feet from the nearest vernal pool. Despite the very low risk of surface water that has been treated with herbicide from reaching the vernal pools, out of an abundance of caution, the City shall allow USFWS to review and approve all herbicides proposed for use in the project. USFWS may further require best management practices for certain herbicides that have potential to harm fairy shrimp.

Mowing will primarily be used in areas with few to no native plants at the time of application, timed to occur after flowering but before significant seed production by the weed population. Line trimming and backpack spot-spray herbicide application will generally be employed in areas with greater native cover, where larger wheeled or tracked equipment cannot be used. Hand equipment will minimize impacts on existing native plants in areas with higher densities.

In some instances, it may be necessary to tailor the treatment method to the focal weed species because of growth habit. For example, repeated cutting of Russian thistle (*Salsola tragus*) can cause subsequent growth to be of short stature making it more difficult to control with a rotary mower. In this instance, flail mowing could be a more

effective option because it allows cutting closer to the ground (except on rocky sites). In spring at post emergence to rapidly growing plants, prior to flowering, post-emergent herbicide application is the preferred treatment for Russian thistle.

When using targeted herbicide foliar application, weeds generally should be checked about one month after application to determine the success of the herbicide treatment. Any new seedlings and small saplings observed during follow-up treatments can be hand pulled, ensuring that the root system is removed. The pulled material should be removed from the project area and properly disposed of off-site.

Hand weeding will be limited during the initial grow-and-kill period, as it is resource- intensive but will be used selectively to remove flowering weeds before seed set. This is particularly important when a small area contains out-of-sync flowering weeds or for removing newly sprouted invasive woody species. Hand weeding will be the exclusive method around container plantings.

Regular monitoring during site preparation will be required for successful weed management. Monitoring is necessary to guide scheduling and control methods for the specified invasive species phenology (i.e., life stage, such as germination, bolting, flowering).

The Restoration Specialist shall have the authority to require a third year of irrigated grow-and-kill before seed installation and the beginning of the five-year maintenance and performance monitoring period if the Restoration Specialist reasonably determines that the weed seed soil seed bank has not been sufficiently controlled, such that it will impact the ability of the habitat restoration areas to achieve the project success criteria.

7.1 PHYSICAL CONTROL METHODS

7.1.1 MOWING/LINE TRIMMING

Mowing with mechanical equipment, such as a rotary mower, flail mower, or mulcher attached to a tractor or skid steer, or hand-operated motorized cutting tools such as line trimmers are generally the most efficient and least disruptive site preparation methods to use in areas dominated by annual grasses and weedy herbaceous species. Mowing is appropriate in larger areas that are flat to moderately sloped. Careful mowing should be implemented to limit injury to native species when cutting. In areas with a steeper slope or with a higher density of natives, walk behind, hand-operated mowers or line trimmers should be used. Line trimming can be accomplished with a gas-powered,
hand-operated line trimmer fitted with a string, brush blade, or similar instrument in areas inaccessible to larger equipment.

Like line trimming, a gas-powered, hand-operated, shafted hedge trimmer with an articulating blade can be used to trim weeds above the soil surface from a standing position. Shafted hedge trimmers can be effective for cutting denser patches of broadleaf weeds after they have flowered, such as nonnative filaree (*Erodium* spp.). Line trimmers are more effective for control of nonnative annual grasses than hedge trimmers. Hedge trimmers are most effective in areas that are inaccessible to larger

equipment, or when working around dense, existing native vegetation that excludes the use of larger equipment.

Fire prevention measures must also be taken to avoid accidental fires from sparks during machinery operation or line trimming with blades. These measures may include having a water truck on site near the mowing activity, shovels carried on the mower and water truck, and/or water fire extinguishers. The weed material should be cut as close to the ground as possible to limit re-sprouting of herbaceous species and ensure removal of bolting crowns of grasses. Care should be taken to not damage biological soil crusts where present.

7.1.2 HAND/MECHANICAL PULLING OR CUTTING

Hand-pulling or cutting of weeds is also one of the least disruptive methods of site preparation but is an inefficient method of weed control in dense stands of weed species. Hand-pulling or cutting should be reserved for controlling isolated individuals, targeted control of high priority invasive species, controlling small infestations in areas that are inaccessible to equipment, or where high densities of native or sensitive species are present. Hand-pulling is a very useful manual technique to use on young plants and small patches of weeds.

Hand-cutting can be used to remove the flowering stalks of weeds prior to seed development with tools such as sickles or vinyl knives. The cut material can be left in place if it does not build a significant layer of thatch or placed in a mulch pile. If cut material contains viable seed, then it should be disposed of off-site or placed in a mulch pile that is actively managed for germinating weed species. Target invasive species seed material should always be removed from the site and not left in mulch piles to stop the spread into new areas.

When hand-pulling weeds, the plants should be grasped near the base pulling in the direction the plant is growing to be able to better pull most of the roots out of the ground. Short tugs work better than one long pull to prevent breaking the plant before the main roots are removed. For larger plants, it may be helpful for multiple people to hand-pull simultaneously.

Isolated individuals of select invasive species can be pulled by hand or with a tool such as the Weed Wrench™. Using hand garden tools such as picks, cultivators, weeders, specialized hoes, mattocks, and trowels, can help to loosen the soil around the roots. After loosening the soil, pull vertically from the ground to remove as much of the root system as possible, especially weed species with a long tap root. When using a weed wrench, the clamp should be placed on the lowest point on the trunk as much as possible. The base of the weed wrench should be on the ground, but if it is not touching, rocks or branches can be placed underneath to improve leverage. Using your weight the weed wrench should be pulled toward you and not pushed away or injury could occur.

If digging is required to remove a perennial weed then the cultural resource monitoring plan should be consulted to determine the appropriate measures to protect artifacts or culturally significant materials that may be in the soil profile.

7.1.3 CUT-AND-DIG

Larger mature invasive species such as castor bean (*Ricinus communis*) can be controlled by cutting the upper foliage of the plant and digging out the root system. Plant foliage can be cut with a handsaw, loppers, axe, or similar tools and removed to allow for better access to the roots. The root material can be dug out and removed with a shovel, mattock, Pulaski, or similar tool. As much of the root material should be removed as possible for effective control. Many plants can readily resprout from remaining roots.
Removed plant material should be properly disposed of to prevent resprouting.

If digging is required to remove a perennial weed, then the cultural resource monitoring plan should be consulted to determine the appropriate measures to protect artifacts or culturally significant materials that may be in the soil profile.

7.1.4 MECHANICAL RAKING/WINDROWING

Following the initial mowing and clearing event of a site, the site should be dethatched by raking the cut material and removing it from the site. Raking and removal of cut material is not necessary in subsequent mowing events unless a significant amount of the weed species has set seed, or it is determined the thickness of the thatch will prevent germination of the next crop of weeds. Additionally, a final removal of thatch material may be necessary prior to seeding activities to ensure good seed-to-soil contact, depending on the seeding method used. For instance, drill seeding and hand- broadcast seeding can be accomplished over mowed plant stubble if the thatch is not too thick. For hydroseeding, it is best to have minimal thatch present on the ground.

Material should be mechanically raked into windrows and placed into mulch piles within the restoration area, placed in adjacent buffer areas, or removed from the site if necessary. After the dethatching event, there may be a significant amount of weed seed present, in which case, it would be preferable to remove the thatch from the restoration area, either off-site or in buffer areas where it can be further managed during implementation of the restoration project.

An exception to leaving cut biomass in place is when an herbicide that retains the active ingredient in the dead plant material (e.g., clopyralid) is used. In this case, collect and mulch the biomass in a buffer area or remove and properly dispose of the material from the site since this could inadvertently damage native species present.

7.2 CHEMICAL CONTROL METHODS

Herbicide treatment is specified mainly for dense weed areas with low densities of native species and for control of high priority invasive species that are perennial or may re-sprout from taproots and rhizomes. For effective control of weed populations, these weeds must be controlled before they produce viable seed. Most herbicides are not selective for weeds only (i.e., these herbicides must be applied with the least harmful effect to non-target native species). Only post-emergent herbicides, which kill plants after they have germinated and are actively growing, are recommended.

Only herbicides registered for use in California and in wildlands should be used judiciously for the control of target invasive species. Herbicides that are registered for use in California natural areas are recommended to be used at rates specified on the herbicide labels for the target invasive species. The recommended herbicides registered for use in California that are proposed in these guidelines are: glyphosate, a non-specific broad-spectrum herbicide registered for use on almost all weed species; fluazifop-p- butyl, for the control of weedy grasses; clopyralid, for the treatment of thistles in the rosette stage; and triclopyr, for the treatment of herbaceous invasive plant species.
Envoy (active ingredient clethodim) shall not be used per USFWS concerns about potential for negative effects on fairy shrimp in vernal pools in the Fairview Park.

A state licensed Pest Control Advisor (PCA) shall be consulted to provide written herbicide recommendations for species specific control methods for the Park. The herbicide applicator must have a pest control business license that requires at least one individual employed by the business to be in possession of a qualified applicator's license. All licenses must be issued by the State of California and be currently registered in the county of work. If a qualified applicator is not present during the herbicide treatment, all applicators must have undergone documented herbicide training.

Personnel must wear all Personal Protective Equipment (PPE) required by law and follow all herbicide label directions and precautions. PPE includes but is not limited to chemical-resistant nitrile gloves, eye protection, chemical protective suits, e.g., Tyvek®, and protective footwear. All re-entry times specified on an herbicide label must be observed and posted. Herbicide preparation must be conducted only in approved staging areas more than 100 feet from a stream course or any body of water. Only herbicides and surfactants approved for aquatic use should be used within 100 feet of a stream course or any body of water.

A colorant or marking dye is recommended to ensure even coverage of herbicide. The material should be a non-toxic material such as Blazon®, Turf Mark®, or equivalent. The dye should be mixed with the herbicide at no more than half the rate specified on the label as it can reduce product performance, especially at lower herbicide application rates.

Herbicide treatment should be conducted only when weather conditions are conducive to effective uptake of the herbicide by target species when plants are at the specified growth stage. Optimal weather includes sunny and dry conditions with ambient temperatures of at least 65 degrees Fahrenheit. Wind conditions should be five miles per hour or less for herbicide applications that can be subject to drift, e.g., foliar spray methods, to minimize herbicide drift for worker protection and to prevent damage to desirable vegetation. Treated plants shall not be disturbed until the applied herbicide has had time to take effect per the manufacturer's instruction.

7.2.1 FOLIAR SPRAY TREATMENT

Foliar spray treatment involves applying a select herbicide at a specified concentration directly to the exposed foliage of the plant to thoroughly wet all leaves. For the foliar

spray treatment to be effective, the exposed foliage needs a thorough coating of herbicide, and the plant should be actively growing. The green or photosynthesizing parts of the plant should be sprayed for uptake of the herbicide by the plant. Typically, the foliar spray treatment is best used on smaller plants to ensure adequate cover of the herbicide.

The disadvantage of the foliar spray treatment is the damage that may be caused to desirable species in the localized area where spraying occurs, especially if a non- selective herbicide like glyphosate is being used. Additionally, the foliar application method is generally ineffective on invasive plants with thick waxy cuticles.

Foliar spray shall be by low pressure hand operated sprayers only. For backpack or hand-held application of herbicide, a low-pressure regulated sprayer with a coarse droplet size and single-nozzle wand shall be used. For this type of application use either spray-to-wet applications, or low volume directed spray.

Prior to the use of hand-held herbicide applicators, the equipment should be checked to make sure it is fully functional and does not have any leaks. After filling the closure cap should be securely screwed on and not-cross threaded to prevent any spills or leakage. For backpack sprayers, the rubber gasket and nipple in the sprayer lid should be regularly lubricated for proper functioning. The applicator should not bend over or lean too far forward to prevent any spills onto their person or on to desirable vegetation.
Prior to use, the pump of the backpack sprayer should be primed with 10 to 20 pumps. When traveling between spraying points, the applicator shall keep their hand off the lever to avoid any inadvertent spraying of herbicide.

To decrease the chances of spraying nontarget plants, preparation before spraying may be needed in areas where weeds are mixed in with native plants. The target invasive plant for control should be separated from natives and if the plant is tall, the plant should be carefully bent downward, away from natives, and the herbicide solution applied. After spraying, the plant should be released slowly and carefully to avoid any herbicide drips or runoff. The herbicide applicator should be sure to observe what is behind and around the target invasive species for control and be mindful of wind speed and direction. Nozzle adjustments may be necessary to get the mist pattern for the best coverage of the target invasive plant. Larger plants should be sprayed from multiple angles to ensure adequate coverage of the plant with herbicide for effective control.

For application to small weeds (e.g., seedling stage) amongst dense native plants, if herbicide application is deemed necessary, the herbicide can be applied by backpack sprayer with a low-pressure regulated wand with the nozzle directed to the weed foliage, thereby avoiding overspray. However, nozzle-to-plant application is time intensive and requires highly trained applicators that can differentiate between native and nonnative plants at the seedling stage; and therefore, it is typically not the most cost-effective weed management method.

7.2.2 RECOMMENDED HERBICIDES FOR THE CONTROL OF NONNATIVE SPECIES

The following subsections provide information and application rates for specific herbicides recommended for use in the restoration and enhancement areas.

Categories of herbicides include pre-emergent and post-emergent. Pre-emergent herbicides are applied to the soil and work by either disrupting plant germination or kill newly germinated weed species and do not harm established plants. Post-emergent herbicides work on established and actively growing weed species. Only post-emergent herbicides are recommended for use in the restoration and enhancement areas. Pre- emergent herbicides should not be used for habitat restoration since they may also affect newly germinated native species preventing natural recruitment or establishment of an applied seed mix. The soil residual life of herbicides, or the amount of time it remains active in the soil, varies by herbicide and can be anywhere from several months to several years before breaking down into inert compounds.

Only herbicides registered for use in wildlands should be used judiciously within the restoration and enhancement areas. Herbicides that are registered for use in California for natural areas are recommended for weed species at specific rates noted on the labels. Pre-emergent chemicals are not recommended for use at any time during. The following herbicides are recommended herbicides to implement this plan:

- Fluazifop-P-butyl (e.g., Fusilade®; EPA Toxicity Class III, low toxicity) will be specified for foliar applications, at application rates recommended on the label, for grasses.
- Glyphosate (e.g., Round-up®; EPA Toxicity Class III, low toxicity) will be specified for foliar and stump cut applications, at application rates recommended on the label, for most target invasive and nonnative species.
- Clopyralid (e.g., Transline®; EPA Toxicity Class III, low toxicity), will be specified for foliar spray applications, at application rates recommended on the label, for thistle control.
- Triclopyr (e.g., Garlon 4 ultra®; EPA Toxicity Class III, low toxicity) will be specified for foliar spray applications and stump cut applications, at rates recommended on the label, for woody species, sweet fennel, and other target invasive herbaceous species.

Post-emergent herbicides are either selective (kills specific types of weeds such as grasses or broadleaves) or non-selective (works on all plants). Grass-selective herbicides include Fusilade® DX and Envoy®. Broadleaf-selective herbicides include clopyralid. Non- selective herbicides include glyphosate and triclopyr.

Post-emergent herbicides can be broadcast sprayed in areas with a low density of native species or applied with backpack sprayers in areas with a higher density of native species. Selective herbicides can be broadcast sprayed to control the desired weed type with little to no impact on natives of a different plant type. Non-selective herbicides can be more efficient in areas with a mix of grass and broadleaf weed species since they can

treat all the weed species present at the site. However, non-selective herbicides can cause the most harm to desirable native species and should only be broadcast sprayed in areas with a low density of natives.

Caution should be taken to prevent overspray and herbicide drift onto the foliage of native species as they can damage or kill the plant(s). Prior to selection and use, the label of each herbicide should be read to determine if the active ingredient can translocate through the soil and cause potential damage to the root system of native species.

Fluazifop (Fluazifop-p-butyl Fusilade® DX)

The active ingredient in Fusilade® DX is fluazifop-p-butyl. Fusilade® DX is a selective post-emergent herbicide used for the control of annual and perennial weed grasses. The herbicide is systemic i.e., it is absorbed and moves from the foliage to the roots, rhizomes, stolons, shoots, and meristematic regions of the grasses.

Application Rate

Fusilade® DX application rates for annual and perennial grasses are 16-24 ounces (oz) per acre (4 to 6 oz of active ingredient [a.i.] per acre). For control of seedlings the rate is 8 oz per acre (2 oz a.i. per acre). Add the following spray additives to the herbicide mixture for optimum effectiveness:

- Crop oil concentrate containing 15-20% approved emulsifier at 0.5-1% volume/volume (v/v) (0.5-1 gallon [gal]/100 gal)
- Nonionic surfactant containing at least 75% surface-active agent at 0.25-0.5% v/v (1-2 quarts/100 gal)
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

Weedy grass species should be treated at the appropriate growth stage for optimum effectiveness. Grasses that have tillered (sprouted a shoot from its base), formed seed heads, or exceeded the growth stages listed on the label should not be treated. Target weed grasses should not be under stress (e.g., from moisture, temperature, low soil fertility) for optimum control.

If the treatment area has a mix of weedy grasses, Fusilade application should be implemented when the first grass reaches the specified growth stage for treatment using the highest application rate for the grasses in the mixed population. The optimum growth stage for treatment of annual grasses is when grasses are 2–8 inches tall, but prior to tillering and/or seed head formation. It is important to note that in drought years when available water is limited, nonnative grasses can flower early when plants are less than 8 inches tall. Monitoring of flower production is critical to determine the optimum time for weed control. Thoroughly coat the foliage with herbicide during foliar application, but not to the point of runoff of the herbicide.

No more than 72 fluid ounces of Fusilade per acre a year should be applied to a treatment area. It should not be applied if rainfall is expected within 1 hour of application. Fusilade should not be applied directly to water, where surface water is present, or where runoff into water bodies could occur. To reduce herbicide runoff, avoid applications of herbicide within 48 hours of rainfall. Restrict entry into treated areas as specified on the label.

Visual observations of control can be seen within one week of treatment; however, it is dependent on the grass species and environmental conditions. Growth of treated grasses typically stops soon after application. Signs of herbicide control include loss of vigor, yellowing, reddening, and eventual death.

Glyphosate

Glyphosate (e.g., Roundup Pro® Concentrate or Roundup Pro® Max) is a broad-spectrum post-emergence herbicide for the control of annual, perennial, and woody weed

species. The herbicide is systemic and moves from the treated foliage to the root system.

Foliar application should be implemented when the target species are at the appropriate growth stage for optimum effectiveness. Target annual and perennial species should be actively growing. Application to annual species should be prior to seed head formation of grasses and before bud formation in broadleaf weeds. Perennial weeds should be treated after they reach the reproductive stage of growth (e.g., seed head formation in grasses and bud formation for broadleaf species). If treatment is necessary prior to perennials reaching the reproductive stage, the higher label application rate should be used.

Application Rate

Most annual and perennial weed species can be effectively treated with a 2% solution of glyphosate when applied during the appropriate growth stage. Follow label directions of the glyphosate product used to mix a 2% solution. Add colorant or marking dyes to the spray solution to aid the applicator in achieving good coverage of target species. The dye should be mixed with the herbicide at no more than half the rate specified on the label as the amount of dye can reduce product performance, especially at lower herbicide application rates.

Most glyphosate products contain a surfactant, and no additional surfactant is needed or recommended to add to the mix except for glyphosate products registered for aquatic use. Aquatic glyphosate formulations do not contain a surfactant in the herbicide product. If using an aquatic formulation and a surfactant is added to the mix, follow the directions on the herbicide label. However, it should be noted that in some cases, specific project permits and conditions may not allow use of a surfactant for aquatic applications.

Except where specified on the label, no more than 8 pounds (lbs) of glyphosate acid per acre per year should be applied to a treatment area in California. The total glyphosate acid amount is additive for all glyphosate products used in a given area, so it is important to keep a record of the amount of all glyphosate acid used in a given area per year. Glyphosate products have different acid concentrations and acid equivalents are provided on all product labels.

Herbicide application should not occur if heavy rainfall is expected soon after application. Herbicide should not be applied directly to water or to areas where surface water is present. Restrict entry into treated areas as specified on the label.

Visual observations of control on annual weeds can be seen within 2 to 4 days and 7 days or more for perennial weeds. Signs of herbicide control include wilting and yellowing of foliage advancing to complete browning of above-ground growth and deterioration of root material.

Glyphosate can also be used for the stump cut method. For the stump cut method, generally a 50% solution is used for treatment. Label directions should be followed for each method and for the species targeted for control.

Clopyralid

Clopyralid is a post-emergence selective broadleaf herbicide. It is particularly effective for the control of thistle and clover species and is considered safe to use with established native grass species. However, immature native grasses prior to tillering and development of a secondary root system may be negatively affected by clopyralid.
Clopyralid is the active ingredient in the herbicide Transline®.

Application Rate

Clopyralid should be applied at ¼ to ⅔ pint per acre, depending on the weed species being treated and associated growth stage. Add the following spray additives to the herbicide mixture for optimum effectiveness:

- A non-ionic surfactant at a rate of 1 to 2 gal/100 gal of herbicide mixture.
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

In general, the herbicide is most effective when weeds are small and actively growing. The lower rate should be used only during highly favorable growing conditions and when plants are 3 to 6 inches tall. The higher rates should be used if the plants are stressed or in areas with high weed density. The foliage should be thoroughly coated for effective control.

Application during extreme growing conditions such as drought, freezing conditions, or wet foliage at the time of application may reduce the effectiveness of the herbicide.
Herbicide is rainfast within 2 hours of application. Avoid injury to non-target plants by avoiding spray drift. Non-target plants can be affected by direct spray on plant foliage or indirectly by root uptake through the soil. The maximum application rate per year in California during the growing season is ⅔ pint per acre.

Clopyralid should not be applied directly to water, where surface water is present or where runoff into water bodies could occur. Clopyralid should not be used in areas where movement through the soil could contaminate ground water, such as loamy sand, sandy soils or in areas with a shallow water table.

Sprayed material should not be used for composting or mulch as clopyralid may remain for long periods in dead plant tissue and negatively affect future growth and development of non-target species in treated areas.

Triclopyr

Triclopyr (e.g., Garlon 3A, Garlon 4, or Pathfinder® II) is a systemic herbicide used for the control of broadleaf species and grasses. Triclopyr can be used at any time during the growing season and is most effective when used to treat actively growing plants.

Application Rate

For the control of broadleaf species triclopyr should be applied at 1 to 4.5 lbs acid equivalent (a.e.) per acre in a total volume of 20 to 100 gallons of water. The herbicide mixture can be applied at any time of the growing season. Add the following spray additives to the herbicide mixture for optimum effectiveness:

- A non-ionic surfactant at the rate specified on the label of the surfactant. Use the higher recommended concentrations of surfactant when applying lower spray volumes per acre.
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

The maximum application rate of triclopyr is 9 lbs a.e. per acre per year for Garlon 4 and 8 lbs a.e. per year for Pathfinder® II.

7.2.3 WEED SEED HANDLING, RESPROUT REDUCTION, AND PLANT MATTER DISPOSAL

While the physical removal and chemical treatment of invasive species is a key part of weed management, care must also be taken to reduce the chances of seed spreading, resprouting, and other undesirable consequences of weed control. Preventing the future propagation of weeds will increase the effectiveness of current practices and reduce the severity of later infestation. Section 7.2.4 provides biosecurity measures for preventing the spread of nonnative plant reproductive material during weed control events.

In many cases it is possible to leave treated plant matter on site to dry out and decompose. If no flowers or seeds are present, pull the plant and place it on the ground to dry out only if the species is not rhizomatous and there is no potential for re- sprouting. In such cases, it will be important to completely remove all root matter through digging out the roots when mechanical methods are being used, and properly removing and disposing of cut matter off-site. Thatch of plants treated with herbicides that remain in the dead plant material, such as clopyralid should not be used as mulch and if treating large areas, the material should be removed from the site.

If the plant thatch material is to be removed from the site and the conditions are met where there is not seed material present and weeded material is not able to resprout from root material, the thatch can be left to dry out on site for a few days to a week, making it easier for removal since the material will be lighter and easier to work with.

7.2.4 BIOSECURITY PROCEDURES TO PREVENT THE SPREAD OF INVASIVE AND G. OTHER NONNATIVE PLANT SPECIES

Implementing biosecurity procedures is essential to prevent the unintentional spread of target invasive plant species during control activities and to mitigate the introduction of new invasive species to the park. Biosecurity measures include cleaning clothing and equipment, ensuring that equipment used on-site is free of any invasive plant species reproductive material, and verifying materials used in the park, such as erosion control devices, are weed seed-free.

Preventing the spread of invasive species is the first line of defense and a cost-effective approach to controlling their impact. Consistent measures to ensure that seeds and reproductive material of invasive plant species are not spread to new areas will help avoid costly future efforts and potential ecological damage. By safeguarding sensitive habitats from infestation, their ecological functions can be preserved, promoting the overall health and resilience of the park's ecosystem.

BIOSECURITY MEASURES DURING CONTROL ACTIVITIES

Effective weed management not only involves the physical removal and chemical treatment of invasive species but also requires careful attention to minimizing seed dispersal, resprouting, and other unintended consequences of control measures. By taking steps to prevent the future propagation of weeds, the effectiveness of current practices can be enhanced while reducing the severity of subsequent infestations.

Although it is advisable to control weeds before seeds mature, this may not always be feasible, such as when a weed can seed year-round, and monitoring each life stage is challenging. In these situations, it is crucial to be aware of the presence of seeds during control sessions. Even if the plant itself is removed, seeds left behind at the site or on clothing, equipment, vehicles, or waste containers can undermine management efforts and spread the infestation to new areas.

To reduce seed spread, follow these practices:

1. Remove seeds found on plants before cutting, hand-pulling, or herbicide application, placing the material in appropriate disposal containers.
2. Collect seeds from the ground and place them in containers.
3. After each treatment, remove seeds from clothing and equipment, placing them in disposal containers before leaving the area.
4. Thoroughly inspect and clean clothing, equipment, bags, etc., using a brush or other tool, paying close attention to laces, socks, cuffs, pockets, etc.
5. Remove dirt from shoe treads to eliminate embedded seed material.

Vehicles should only be driven on approved pathways to limit contact with potential invasive weed species seed material. Despite minimal contact, vehicles should be inspected and cleaned of all weed seeds before leaving the site, focusing on tire treads, bumpers, radiators, and undercarriages. If waste disposal containers are brought on-site

from other locations, inspect, and remove any weed seeds before using them in the park.

Crews shall be trained by the qualified plant biologist on the Best Management Practices (BMP) for cleaning equipment and clothing to prevent the spread of invasive species. As an alternative, already developed sources for training crews is available online such as from Cal-IPC training video that can be found here: Training Video: Best Management Practices for Preventing the Spread of Invasive Plants – California Invasive Plant Council (cal-ipc.org).

By implementing these measures, the spread of invasive species can be mitigated, promoting a more effective and sustainable approach to weed management.

BIOSECURITY MEASURES FOR PROJECT MATERIALS

To minimize the introduction of invasive species, all materials used within the park should be certified weed-free. This includes, but is not limited to, mulch materials, erosion control products (e.g., straw wattles, hay bales), container plants, soil, and aggregate (topsoil, sand, gravel, fill), and landscape materials such as plants, seeds, sod, mulch, and soil amendments. Prior to use, all materials shall be inspected, and confirmation of their weed seed-free status shall be obtained from the vendor.

For seed material used in restoration projects, the seed must be tested for the presence of noxious weeds and the results provided to the City and the Restoration Specialist upon request. The seed vendor shall be guaranteed and be required to provide proof that the seed is free of noxious weeds. Any container plants used for a restoration project must be inspected at the nursery to observe the facility conditions and to ensure that the container plants are free of any noxious weeds and are kept in an environment where noxious weeds are unable to contaminate the container plants.

7.3 MANAGEMENT METHODS FOR HIGH-PRIORITY INVASIVE PLANTS

The Restoration Contractor is responsible for controlling high-priority invasive plants in the project area. Most of the high-priority invasive plants will be controlled by the irrigated grow-and-kill management program. If high-priority invasive plants need separately timed or targeted treatments, then the Restoration Contractor shall follow the methods described in the long-term method invasive plant management plan prepared by Land IQ (2024) and included as Appendix 1 in this report.

8 NATIVE SEED MIXES AND INSTALLATION

8.1 NATIVE SEED MIXES

The seed mixes for Habitat Restoration Areas 1 and 2, Native Enhancement Areas 6 and 7, Native Revegetation Buffer Areas 3 and 4, and the low-diversity native erosion control mix for Area 5 are presented in Table 8-1.

Table 8-1 Seed Mixes for Areas 1, 2, 3, 4, 5, 6 and 7.

Scientific Name	Common Name	Area 1 PLS/Acre	Area 2 PLS/Acre	Area 3 PLS/Acre	Area 4 PLS/Acre	Area 5 PLS/Acre	Area 6 PLS/Acre	Area 7 PLS/Acre	5% Extra PLS	Total PLS
Achillea millefolium	common yarrow		53,312						15,460	**324,670**
Acmispon glaber	deerweed	387,600	64,600	387,600	387,600	387,600	193,800	387,600	201,391	**4,229,201**
Amsinckia menziesii	common fiddleneck	2,760	55,200	55,200	55,200	55,200	13,800	13,800	23,660	**496,862**
Artemisia californica	California sagebrush	371,250			371,250			123,750	132,413	**2,780,663**
Asclepias fascicularis	narrow leaf milkweed		52,650	52,650					15,532	**326,167**
Baccharis pilularis	coyote bush	720						720	259	**5,443**
Calandrinia menziesii	red maids		89,600	8,960	8,960	8,960			26,970	**566,362**
Cucurbita foetidissima	Buffalo gourd	1,440	1,440	1,440	1,440		1,440	1,440	990	**20,790**
Datura wrightii	sacred datura	1,440	1,440	1,440			1,440	1,440	947	**19,883**
Deinandra fasciculata	clustered tarplant	54,000	54,000	54,000	54,000	54,000	54,000	54,000	41,175	**864,675**
Elymus condensatus	giant wild rye	27,200					16,320		8,473	**177,929**
Encelia californica	bush sunflower	54,000	54,000	54,000	54,000	54,000	18,000	54,000	41,085	**862,785**
Ericameria palmeri	Palmer's goldenbush		320,000	320,000	320,000				104,000	**2,184,000**
Eriogonum fasciculatum	California buckwheat	75,000	18,750		75,000			75,000	34,688	**728,438**
Eriophyllum confertiforum	golden yarrow	288,750		57,750			57,750	57,750	92,833	**1,949,496**
Festuca microstachys	small fescue	1,080,000	1,080,000	1,080,000	1,080,000	1,080,000	432,000	432,000	789,480	**16,579,080**
Grindelia camporum	common gumplant	393,750	393,750	393,750					238,219	**5,002,594**
Hordeum intercedens	vernal barley		1,371,420	1,371,420	1,371,420	1,371,420			548,568	**11,519,928**
Isocoma menziesii	coastal goldenbush	96,000	19,200	96,000	96,000				38,688	**812,448**
Lasthenia californica	California goldfields		1,400,000	1,400,000	1,400,000	1,400,000			560,000	**11,760,000**
Lupinus bicolor	minature lupine	83,300	83,300	83,300	83,300	83,300			59,143	**1,242,003**
Lupinus succulentus	arroyo lupine	24,990	24,990	24,990	24,990	24,990	24,990	24,990	19,055	**400,152**
Malacothamnus fasciculatus	chaparral bush mallow	18,000					18,000	18,000	6,525	**137,025**
Marah macrocarpus	wild cucumber	235					235	235	85	**1,790**
Phacelia cicutaria var. *hispida*	caterpillar scorpionweed	85,500	85,500	85,500	85,500				54,293	**1,140,143**
Phacelia distans	common scorpionweed	99,960	99,960	99,960	99,960				63,475	**1,332,967**

Scientific Name	Common Name	Area 1 PLS/Acre	Area 2 PLS/Acre	Area 3 PLS/Acre	Area 4 PLS/Acre	Area 5 PLS/Acre	Area 6 PLS/Acre	Area 7 PLS/Acre	5% Extra PLS	Total PLS
Phacelia ramosissima	branching scorpionweed	104,500	104,500	104,500	104,500				66,358	**1,393,508**
Phacelia tanacetifolia	lacy scorpionweed		44,100	44,100	44,100				14,333	**300,983**
Plagiobothrys acanthocarpus	adobe popcornflower		11,700	11,700	11,700				3,803	**79,853**
Plagiobothrys collinus	Cooper's popcornflower		17,550	17,550	17,550				5,704	**119,779**
Plantago erecta	California plantain	1,800,000	1,440,000	1,440,000	1,440,000	1,440,000	720,000	720,000	1,171,800	**24,607,800**
Pseudognaphalium californicum	ladies' tobacco	125,000					125,000	125,000	45,313	**951,563**
Salvia apiana	white sage	63,000					63,000	15,750	20,475	**429,975**
Salvia mellifera	black sage	182,000					182,000	45,500	59,150	**1,242,150**
Solanum douglasii	Douglas' nightshade	1,800					900	900	605	**12,710**
Stipa pulchra[1]	purple needle grass	1,188,000	1,188,000	1,188,000	1,188,000	1,188,000	396,000	792,000	884,070	**18,565,470**

[1] *Seed of Stipa spp. shall be de-awned*
PLS = Pure Live Seed

8.1.1 SEED SOURCE

The seed material shall be wild collected in Orange County Seed Collection Zone (Figure 8-1) as described in the Orange County Native Seed Partnership Strategic Plan (AECOM 2023). Native species that are not available for wild collection in sufficient quantities, and that the Restoration Specialist deems to be important for the functional diversity of the restored vegetation community, will be sourced from suppliers of native commercially bulked seed that can be verified as collected or sourced from a suitable bioclimatic zone in southern California.

Grass species that do not exist in large enough quantities can be sourced from southern California, including commercially bulked *Stipa* species. For those species that function as erosion control (lupines [*Lupinus* spp.] and California plantain [*Plantago erecta*]) or do not exist in large enough quantities within the specified seed collection area, it will be necessary to either (a) use seed stock from a seed collector/supplier that can be verified as collected within the Orange County Seed Collection Zone, or (b) extend the collection area on a species-by-species basis from appropriate sources in a similar microclimate regime. The seed collector shall certify seed collection locations. Sources for all species and any adjustments or substitutions shall be approved by the Restoration Specialist.
For seed that is sourced outside of the Orange County Seed Collection Zone, the City will obtain approval by the Wildlife Agencies.

The required seed material shall be collected by a qualified native seed collection firm that has a minimum of five years of experience and holds the necessary licenses/permits through the term of the project. The selected firm must be approved by the Restoration Specialist. Special local seed will be collected between fall 2024 and fall 2026.

The seed mixes shall be provided by species in pure live seed (PLS) amounts for ordering. The seed collector shall assure the PLS for each species will be documented with seed tests for individual seed lots. The individual lots must be tested for seed viability and purity by an independent seed-testing laboratory certified by the Association of Official Seed Analysts, or equivalent. Seed tests must be performed no greater than 12 months before seed application. Collected seed shall not contain any weed species listed as noxious or restricted in the state.

The specified PLS for each seed mix will be pre-mixed prior to shipping and supplied in 50-lbs. bags, or as requested by the Restoration Specialist. All bags will have seed tags with the following information for each species: botanical name, PLS lbs. per acre and total lbs, bulk lbs. per acre and total lbs, and percent total viability. The bag will also include the total net weight of the contents in PLS lbs. and bulk lbs.

Figure 8-1 Orange County Seed Collection Zone (AECOM 2023).

8.1.2 ADJUSTMENTS TO SEED MIXES PRIOR TO INSTALLATION

Adjustments will be made to the seed mixes based on the available material collected, including addition of suitable plant species, and subtraction of plant species that were not available for local collection. Experience with local seed collection in southern California has proven that it can be difficult to collect enough of all desired species for habitat restoration projects, even with two- to three-year lead times, due to the variable nature of weather, year-to-year including rainfall, and accessibility of collection areas.

The seed mixes can be augmented with desirable plants species from other suitable sources, including other wild collections in the Orange County Seed Collection Zone. The total number of native plant species in each final seed mix for Areas 1 to 7 shall be at least 75 percent of the number of plant species in the seed mixes presented in Table
8-1.

Employing an adaptive management strategy is crucial for optimizing seed mixes and achieving successful habitat restoration. The following revised version highlights the importance of site-specific adjustments and ongoing monitoring:

Adaptive management will play a vital role in fine-tuning seed mixes, allowing the Restoration Specialist to respond to observations made during the site preparation phase (fall 2024 to fall 2026). Specifically, vegetation responses to weeding treatments and the emergence of any existing native soil seed bank will inform these adjustments.

The diverse seed mix, encompassing various species found in both the flower field and coastal sage scrub (CSS) habitat restoration areas, is designed to account for microsite variation. This variability will facilitate the selection of site-specific assemblages of plant species within each area, promoting the development of ecologically appropriate vegetation communities.

Through this adaptive approach, the Restoration Specialist can optimize the seed mixes to support native plant establishment, improve overall habitat quality, and maximize the likelihood of meeting restoration objectives. Monitoring and assessing plant community responses will be an ongoing process, informing future management decisions and ensuring long-term project success.

Exceptions to these sourcing guidelines will be made on a species-by-species basis, balancing the value the functional value of the species (e.g., structural diversity, erosion control, wildlife value) with conservation of local genetics for special status plants or plants that provide a critical function in the lifecycle of special status wildlife.

For seed that is sourced outside of the Orange County Seed Collection Zone, the City will obtain approval by the Wildlife Agencies.

8.2 SEED MIX INSTALLATION

The seed mixes are anticipated to be applied in Fall 2026, but no later than January 31, 2027. Seed mixes will be applied by hydroseeding application, mechanical broadcast seeding followed by a cultipacker, or hand seeding. Seed application will be timed with

the start of the winter rains in late fall/early winter to germinate the seed mix soon after installation and to take advantage of the entire rainfall season.

Area 1 shall be hydroseeded with a one-step installation method. The native seed mix will be installed in Areas 2 and 5 by mechanical broadcast seeding followed by a cultipacker to ensure good soil-to-seed contact. If any portions of these areas require additional soil stabilization, then the hydroseed method may be used with the addition of a soil stabilizer (e.g., bonded fiber matrix). Areas with significant native cover, including Areas 4, 6, and 7, shall be hand seeded and then tamped for good soil-to-seed contact. Area 3 is relatively small and can be hand seeded, although hydroseeding or broadcast seeding followed by a cultipacker are also suitable methods.

8.2.1 HYDROSEEDING

Prior to hydroseed application, the site should be cleared of plant thatch to provide good seed-to-soil contact.

Hydroseed mixing should be done in a clean tank. The hydroseeder must be equipped with a continuous agitation recirculation system to produce a uniform slurry. Once the seed and (arbuscular mycorrhizal) AM fungi inoculum are added to the mixing tank, application must be within one hour of preparation. Commercially available *Rhizophagus intraradices* is recommended for the AM fungi amendment, as it is ubiquitous and will not impede the development of other native mycorrhizae species.

ONE-STEP HYDROSEEDING

The one-step application consists of the hydraulic application of a slurry mixture that contains water, cellulose wood fiber, seed, AM fungi (if needed), and organic soil stabilizer as follows:

- 2,000 lbs per acre of virgin cellulose wood fiber or recycled newsprint paper fiber (Enviro Fiber S-100 Hydroseeding Mulch or comparable product)
- 60 lbs per acre of AM fungi amendment (approximately 3,300,000 live propagules per acre of AM fungi based on the guarantee of the supplier)
- Specified seed mix
- 160 lbs per acre of organic M-binder (Ecology Control or comparable product).

8.2.2 MECHANICAL BROADCAST SEEDING IMPLEMENTATION

Prior to mechanical broadcast seeding, thatch material should be removed from the site because a well-prepared seedbed is critical for seed- to-soil contact (USDA 2009). Good seed-to-soil contact is key for successful germination of the seed mix.

Wheat bran should be added at ¼ the weight of the specified seed mix bulk weight to facilitate seeding. The bran helps to keep the seeds evenly dispersed in the seeder and produces uniform seeding of different sized seeds (St. John et al. 2012).

Materials to be applied during mechanical broadcast seeding include:

- Specified seed mix for each area
- 60 lbs per acre of AM fungi amendment (approximately 3,300,000 live propagules per acre of AM fungi based on the guarantee of the supplier)
- Bran at ¼ the weight of the specified bulk seed

Prior to broadcast seeding, the surface of the soil should be lightly scarified with a hand rake or a 6-foot wide cultipacker attached to an all-terrain vehicle, crawler type dozer, or tractor. Scarification of the ground before applying the seed mix is important to facilitate seed-to-soil contact.

The materials (seed mix, AM fungi, and wheat bran) should be divided into two equal parts. Half of the seed should be broadcast across the entire area in a linear orientation appropriate for the site to ensure even coverage. The remaining half of the seed should be broadcast across the site in a linear orientation perpendicular to the first application.

Following seed broadcast, the seed material should be incorporated into the soil at less than ½ inch deep with a cultipacker pulled by a tractor, ATV, or similar equipment. This will increase seed-to-soil contact to improve germination success and reduce loss of seed to wind, erosion, and seed predation.

MECHANICAL BROADCAST SEEDER CALIBRATION

Broadcast seeders require calibration prior to seed installation. Refer to the equipment manual for specific guidelines on calibration and how to perform seeder adjustments. The following are general guidelines for broadcast seeder calibration (USDA 2009).

Note: When calibrating the equipment, be sure to calibrate the broadcast seeder accordingly if applying the seed in two separate passes. The seeding rate for calibration should then be divided in half.

Step 1. Determine the bulk seeding rate per acre and convert to anticipated seed per square foot.

Step 2. Several tarps should be placed at different locations within the test area.

Step 3. Run the broadcast seeder within the test area over the tarps and determine bulk weight per square foot on the tarps.

Step 4. Increase or decrease the seed flow by adjusting the adjustable gate to achieve the desired seeding rate.

8.2.3 HAND SEEDING IMPLEMENTATION

Prior to hand seeding, thick plant thatch should be removed to accomplish incorporation of seed into the soil because a well-prepared seedbed is critical for seed- to-soil contact (USDA 2009). Good seed-to-soil contact is key for successful germination of the seed mix.

Hand seeding will be implemented using a small hand-held seed spreader to evenly broadcast the seed mix.

Wheat bran will be added at ¼ the weight of the specified seed mix bulk pounds to facilitate seeding. The bran helps to keep the seeds evenly dispersed in the seeder and produce uniform seeding of different sized seeds (St. John et al. 2012).

Materials to be applied during hand-broadcast seeding include:

- Specified seed mix for each area
- 60 lbs per acre of AM fungi amendment (approximately 3,300,000 live propagules per acre of AM fungi based on the guarantee of the supplier)
- Bran at ¼ the weight of the specified bulk seed

Prior to hand seeding, the surface of the soil should be lightly scarified with a hand rake. Scarification of the ground before applying the seed mix is important to facilitate seed- to-soil contact.

The materials (seed mix, AM fungi, and wheat bran) should be divided into two equal parts. Half of the seed should be hand broadcast by walking across the entire area in a linear orientation appropriate for the site making sure of even coverage. The remaining half of the seed should be hand-broadcast by walking across the site in a linear orientation perpendicular to the first application.

Following seeding, the seed shall be raked into the soil with hand-held rakes. Raking of the soil following seeding will aid in seed-to-soil contact and provide a thin covering of soil over the applied seed mix. Seeds should be incorporated into the topsoil no more than ¼ inch and less than ½ inch deep.

HAND BROADCAST SEEDER EQUIPMENT

A hand broadcast seeder is typically comprised of a seed hopper, agitator, flow gauge, “on-off” lever, hand crank for seed dispersal, and shoulder harness.

HAND BROADCAST SEEDER CALIBRATION

Prior to seeding, the equipment requires calibration to ensure uniform distribution of the seed mix if used in large areas. Calibration is not necessarily required if small areas, such as underneath shrub canopies of edges of existing native shrubs are being seeded.

Refer to the equipment manual for specific guidelines on calibration and how to perform seeder adjustments. The following describes general guidelines for seeder calibration and is based on the EarthWay® hand crank broadcast spreader.

Note: when calibrating the equipment, be sure to calibrate the hand-seeders accordingly if applying the seed in two separate passes. The seeding rate for calibration should then be divided in half.

Step 1. Mark the beginning and end of an area 50 feet in length.

Step 2. Calculate the amount of specified seed mix including the AM fungi and the wheat bran to be applied to a 1,000 square foot area.

Step 3. Weigh and record the weight of enough seed mix to fill the seeder at least half full.

Step 4. Select an appropriate Setting Rate position on the seeder for the seed material. In general, start with the setting in the middle if unsure of the appropriate setting rate.

Step 5. Start far enough behind the beginning of the 50-foot test area to achieve the desired walking speed. Use a normal pace and crank the handle so that the crank makes one revolution for each step then stop seeding at the end of the 50 feet.

Step 6. Measure the entire spread width of the broadcast seed.

Step 7. Record the weight of the remaining seed material in the seeder and calculate the amount of seed applied.

Step 8. Calculate the amount of seed mix required for test area.

$$Weight\ of\ seed\ mix\ per\ 1{,}000\ square\ feet \times \frac{Spread\ width\ x\ 50\ feet}{1{,}000\ square\ feet} = Seed\ mix\ required\ for\ test\ area$$

Step 9. Compare the results in Step 7 with the calculation in Step 8. If too little or too much seed was applied in the test area, adjust the rate setting accordingly and repeat the test again until the desired application rate is achieved.

All hand-seeders should be calibrated prior to seeding since variations can occur between equipment and the operator. The calibrated rate setting from one seeder can be used as a guide or starting point for calibration of other seeders.

8.3 SUPPLEMENTAL IRRIGATION

Temporary irrigation will be used in the first two seasons to extend the rainy season. The timing of irrigation events will depend on evapotranspiration between irrigation events and soil moisture. Once seeds have germinated, deep irrigation will be implemented to force the developing roots to grow down. The following management scheme is anticipated as a guideline for water management of native shrubs:

- Irrigate soil to full field capacity to the desired depth (approximately 18 inches after planting; and 18–24 inches during plant establishment).
- Once seedlings germinate, allow soil to dry down to approximately 50-60 percent of field capacity in the top 6-12 inches before the next irrigation cycle. Depth of soil dry down between irrigation events will depend on development of container plants.

Deep irrigations will promote deep root systems while shallow infrequent irrigations will promote shallow root systems. Deep root systems will provide healthier and more

sustainable plants while plants with shallow root systems are more susceptible to drought, disturbance, and erosion.

Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. A soil probe or shovel should be used to examine soil moisture and rooting depth directly.

8.4 SEED MIX ESTABLISHMENT

The health, development, and cover of native vegetative shall be estimated visually by site walk overs, performed regularly during the post seed addition maintenance period by the Restoration Contractor and verified during monitoring visits by the Restoration Specialist.

For purposes of evaluating whether remedial seeding or replacement planting may be required to achieve the project success criteria, the Restoration Specialist shall use the following guidance for establishment of native cover. Observations will typically be made in spring, but the actual timing of native cover estimates will depend on the phenology of plant growth each year with respect to factors such as weather.

The target values for absolute cover of the native vegetation will be as follows for Area 1, the CSS restoration areas:

Seed Mix Establishment Monitoring Year 1. At least 10 to 15% absolute native cover.
Seed Mix Establishment Monitoring Year 2. At least 15 to 25% absolute native cover.
Seed Mix Establishment Monitoring Year 3. At least 25 to 35% absolute native cover.
Seed Mix Establishment Monitoring Year 4. At least 50 to 70% absolute native cover.

The target values for absolute cover of the native vegetation will be as follows for Area 2, the Fiddleneck-Phacelia Fields:

Seed Mix Establishment Monitoring Year 1. At least 5 to 10% absolute native cover.
Seed Mix Establishment Monitoring Year 2. At least 10 to 15% absolute native cover.
Seed Mix Establishment Monitoring Year 3. At least 15 to 25% absolute native cover.
Seed Mix Establishment Monitoring Year 4. At least 25 to 50% absolute native cover.

Actual cover values will depend in part on growing conditions (e.g., soil nutrients, humidity, temperature, and rainfall) during the establishment and weed maintenance periods. The established vegetation cover and distribution will likely not be uniform, in response to microvariation in the project areas. Hence, some level of patchy distribution of vegetation cover is expected and natural. Consequently, the target native cover values shall apply to areas of homogenous vegetation cover and will exclude areas that develop conditions that prevent significant vegetative growth, such as extreme soil conditions that are not practical to amend to promote growth. Bare areas or seasonally bare areas although not vegetated, still provide microsite diversity to the habitat.
However, if large areas totaling more than 10 percent of the land cover of either restoration Area 1 or Area 2 are bare, then remedial measures are required following the guidance in Section 2.9.1.

8.5 REMEDIAL SEEDING

Areas of significant erosion shall be repaired and re-seeded in the first fall seasons after damage. Re-seeding will also occur in areas if coverage is less than 10 percent in the fiddleneck-phacelia fields or less than 15% of native species over any contiguous area of 200 square feet. As described previously, 5 percent extra seed shall be collected for the project which would provide enough seed for approximately half an acre of remedial seeding in the project. If more than a half an acre of seed is needed for remedial seeding, the Restoration Specialist shall prepare a remedial seed mix that is appropriate for the site conditions and consistent with the native seed mixes developed for this plan.

Seed shall be applied using the appropriate seeding method discussed in this section.

9 MAINTENANCE AFTER SEED INSTALLATION

One of the goals of this plan is to create native habitats that will be self-sustaining and long term. Initially, maintenance of the project will be necessary to establish the newly seeded areas. Maintenance will include any activities required to meet the goals and success criteria set forth in this Plan, in the estimation of the Restoration Specialist. For the project, maintenance includes the following:

- Weed control for nonnative plants, including annual grasses, mustards, and thistles in Areas 1, 2, 3, 4, 6, and 7
- Weed management in Weed Management Buffer Area 5
- Supplemental irrigation to help establish the native seed mix in the first one to two years
- Replacement hand seeding in areas of more than 200 square feet where germination of the specified seed mix failed after one good season of rainfall
- Pest and disease control, if necessary (no rodenticides may be used)
- Removal of trash, debris, and litter (Restoration Contractor is only responsible for trash produced as part of this project; Restoration Contractor is not responsible for illegal dumping, trash left by others on the public pathways)
- Erosion control related to project implementation, if necessary

After the seed material is installed, the five-year maintenance and monitoring period will begin. The site preparation and grow-and-kill phases will significantly reduce the weed soil seed bank, which will improve establishment rates of the native seed, increase the sustainability and quality of the restored habitat, and reduce post-seeding maintenance effort. Because of the project area's history of agriculture and other disturbances, maintenance weeding is expected to be required. All maintenance weeding shall be by hand weeding methods, and only limited selective use of chemical methods to treat target invasive species shall be used, under the direction of the Restoration Specialist.

The establishment maintenance period will be for five years, or until project success criteria have been met, with the first maintenance year beginning after installation of all plant material (seeds and container plants) are complete. The most intense maintenance will occur through the third year, and only seasonal spot-weeding activities in the fourth and fifth years if necessary, is anticipated during the establishment and maintenance period. Weed control shall be as needed to control weed species while minimizing disturbance to the restoration and enhancement areas and will be scheduled as determined by the Restoration Specialist.

The amount of maintenance each year will depend on weather conditions, development of the native habitat, and density/species composition of weed species in the restoration and enhancement areas. The following specifications for maintenance may require adjustments as determined by the Restoration Specialist over the five-year maintenance period. If the performance criteria of the HRMP are not met within the timeframe of the project, any maintenance, supplemental seeding/planting, or any other remedial measure necessary to achieve the performance criteria shall continue until compliance is achieved.

9.1 POST-SEEDING WEED MANAGEMENT

After seed installation the primary method of weed management will be hand weeding; however, under the direction of the Restoration Specialist, select use of other methods, including targeted spot spray application of herbicide using a low-pressure nozzle for high priority invasive species or perennial weeds, or line trimming of dense stands of weeds, may be allowed. The Restoration Specialist must weigh the relative cost-benefit of the effectiveness of weed control with either herbicide or line trimming compared to unavoidable collateral damage to the native plants in the treatment area. Only post- emergent herbicides will be used and applied according to methods and recommendations described in this Plan, and consistent with the City's herbicide use policies.

Timing is critical to successful weed management, so the Restoration Specialist will conduct phenological monitoring to determine the appropriate timing and method of weed control events.

Post-seeding weed management will be concentrated where nonnative plants inhibit native plant germination and/or growth, as well as to continue the control of high priority invasive species that can readily re-establish in the restoration area. The amount of post-seeding weeding required each year will depend on weather conditions, development of the native habitats, and the density and type of weed species in the restoration and enhancement areas. The objective of post-seeding weed management is to reduce nonnative plants to a threshold level that allows desirable native species to establish and thrive.

Careful weeding shall be done by trained crews to avoid damage to the establishment of the native vegetation. Weeds should be removed on a regular basis, as necessary and if possible, before they set seed and/or reach approximately 12 inches in height. All seed

material that has set prior to a weed control event should be carefully collected and removed from the site so as not to be introduced into the weed seed bank. All weeded material shall be raked, removed from the site, and properly disposed of.

Adaptive management is key to success and includes regular monitoring to guide the scheduling and selection of control methods. Care should be taken to limit the amount of soil disturbance and trampling of native seedlings from weeding activities. The management of weeds must be balanced with the negative side effects on native plant development (i.e., not all weeds in a site need to be treated). It is important to train the crews to weed by sweeping through a site and target weed control for the weeds that need to be weeded at the stage described above. Other weeds that have not reached the desired control stage should be left to weed later. This will limit the amount of disturbance in each area during a weed control event.

High priority invasives should be controlled according to the guidelines found in Appendix 1 and under the direction of the Restoration Specialist.

10 BIOLOGICAL MONITORING AND REPORTING

The Restoration Specialist will provide oversight of the Restoration Contractor, conduct horticultural and biological monitoring, and prepare annual reports on the status of the habitat restoration project for the City. The City will provide a copy of the annual report to the OCTA by March 31 of the following calendar year.

10.1 HORTICULTURAL MONITORING

Timing is critical to the success of the weed management program; the Restoration Specialist shall conduct horticultural monitoring to assess the establishment of the seeded and planted material and provided recommendations to the restoration contactor to guide implementation activity, including with respect to the timing of weeding species and remedial measures, as needed.

The Restoration Specialist will also keep track of annual spring survivorship of all planted container material.

10.2 PRE-VEGETATION CLEARING BIOLOGICAL CONSTRAINTS SURVEYS

Weeding events scheduled during the bird breeding season will be carefully managed to minimize potential impacts on nesting and foraging birds. After the initial weed thatch clearing event, the short-term suitable bird habitat will be limited, reducing the likelihood of significant impacts during the pre-seeding weed management phase.
However, after seed installation and native vegetation becomes more established, the potential for conflict may increase. To mitigate these risks, a strategic approach to weeding will be implemented, considering the needs of both nesting birds and the developing habitat. This may involve targeted weeding methods, such as hand-pulling or

spot-spraying, to minimize disturbance to native plants and reduce impacts on bird populations.

Because of the potential for coastal California gnatcatcher to occur, an Approved Biologist shall conduct a nesting bird survey no more than 5 days prior to weed management in the project area according to Section 3.2 during the breeding season (February 15 to August 31). If no breeding California gnatcatcher are detected, then a Qualified Biologist may continue to monitor the project area for other nesting birds according to Section 3.2. Least Bell's Vireo are not expected because there is not suitable nesting habitat in the project area.

Disrupting the active nest of nearly any native bird species is unlawful under both the federal Migratory Bird Treaty Act (MBTA) and Section 3503 of the California Fish and Game Code. Therefore, for any restoration activity conducted during the bird breeding season (February 15 to August 31), a Qualified Biologist shall conduct a nesting bird survey no more than 5 days before initial disturbance or removal of any vegetation.

The purpose of the pre-work surveys will be to document the location of any active nests and to determine if any buffers or mitigation measures are necessary to avoid potential violations. Around active CAGN nests, the Approved Biologist will establish a 100-foot disturbance buffer distance between noise-generating project activities and the nest. For active nests of other native bird species detected during surveys, a disturbance buffer shall be established by the qualified biologist. The width of the buffer will be determined by the Qualified Biologist, based upon the biologist's experience with the species involved. For species highly adapted to human activity, a relatively narrow buffer of 25 feet or less may be appropriate. For species easily disturbed by humans, a buffer of 100 feet or more may be required.

Work could take place within an established nest buffer (for any species) only if continually monitored by the Qualified Biologist to ensure against any actual disruption of nesting activities. The Qualified Biologist shall have the authority to halt any and all activities if they appear to be adversely affecting any nesting bird. Once established, the nest buffer shall remain in place until the young have fledged or the nest is no longer active, as determined by observation of bird behavior by the Qualified Biologist. For CAGN nests, once the Approved Biologist has confirmed that the young have left the nest, the buffer and exclusion zone may be removed, and maintenance activities within these areas may resume.

10.3 SPRING VEGETATION PERFORMANCE MONITORING

Qualitative monitoring methods, such as photo points, field walk overs, species lists and spring vegetation cover estimates, will be used to monitor the full extent of the project area in a cost-effective manner, while providing relevant feedback to guide management and restoration actions.

At least seven fixed photo points will be established, one for each area identified on Figure 1-3, where estimates of vegetation cover classes by plant functional group will be made annually to monitor the progress of the native revegetation and the trajectory of

the individual habitat restoration areas. If there is high variability within the restoration zones, additional photo and vegetation cover assessment points shall be added, if necessary, to ensure all conditions of the project area are represented to track the progress of each area and to guide any necessary remedial actions.

10.3.1 PHOTO POINTS AND COVER ESTIMATES

Permanent photo points will be established to conduct photographic documentation of restoration progress and development of the restoration habitat. Photo points shall be established prior to implementation to provide a representative overview before restoration for comparison to "after photos" taken annually during performance monitoring. The geographic coordinates will be recorded using a sub-meter precision global positioning (GPS) along with the general compass direction for each photo location.

Photo points will be taken in spring, timed to capture maximum native cover of live annuals and perennial growth. At each photo point location, relevé samples will be used to estimate cover in a plot of approximately 300 square meters (approximate 10-meter radius from the photo point) and assigned to one of the following modified Braun- Blanquet cover-abundance scale classes: <1%, 1- 5%, >5-15%, >15-25%, >25-50%, >50- 75%, or >75%. These methods are modeled after the current "California Native Plant Society – California Department of Fish and Wildlife Protocol for Combined Vegetation Rapid Assessment and Relevé," which was last updated in 2022.

If native annuals have senesced prior to sampling due to weather or timing, individual plants can be included in the cover estimate made at each photo point if it is clearly based on morphology and/or prior biological monitoring determines what species they are and that they are from the current growing year.

10.3.2 SPECIES LISTS

Annual plant species lists of native and nonnative species that occur in each project zone will be prepared based on field walkovers throughout the year, including spring. Observations of flowering by species will be noted during monitoring activities and documented in the species list generated for the project. Seedlings and juveniles of shrubs germinated in the same year will be recorded to document recruitment of the applied seed mixes.

Incidental observations of wildlife within the project will be recorded each year and maintained as a cumulative list. Of special note are any observations of OCTA Covered Species, including intermediate mariposa lily, many-stemmed dudleya, southern tarplant, coast horned lizard, orange-throated whiptail, cactus wren, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and bobcat.

10.3.3 CONTAINER PLANT SURVIVORSHIP

In the first two establishment years after planting, survivorship of container planted material in Area 4 will be visually assessed during spring monitoring and will be determined by counting the total number of dead container plants.

10.3.4 FINAL PROJECT YEAR VEGETATION TRANSECT SAMPLING

In spring of the final project year, anticipated to be the fifth year of performance monitoring (spring 2031), a quantitative measurement of vegetation cover will be made in Areas 1 and 2 to demonstrate successful achievement of the project success criteria for the habitat restoration areas (see Section 2.9). Three 50-meter, point intercept transects, read every 0.5-meter (total of 100 readings) will be used to quantify plant species cover, plant functional group cover (e.g., total native plant, total nonnative plant, total perennial invasive woody plant, native shrub, native tree, native herbaceous, nonnative annual grass, nonnative herbaceous) for each area for a total of 6 transects.

Transect locations will be determined randomly within the restoration area using a numbered grid system and the locations will be presented in the final annual monitoring report.

All live species that contact the bar, or in the case of overhanging vegetation, intercept the upward projection of the bar shall be counted and recorded. If no vascular plants are intercepted at a sample point, it is recorded as "bare ground" or "plant litter". Plant litter will be recorded in areas of no vegetative cover but with dead vegetative matter covering the ground. Total cover is based on the number of points for each plant species (native and nonnative) and unvegetated cover types (bare ground and plant litter) recorded along the transect. Absolute cover is then calculated by dividing the total number of points for each species or ground cover by the total number of points on the transect. Since multiple plant species can be recorded at each point, the total absolute percent cover may be greater than 100 percent because of overlap of plants at each sampling point.

Seedlings will be identified for shrubs and subshrubs and will be determined by being small, having a non-woody base, and usually the result of germination during the same years as the transect reading. Juveniles and adults will be identified as definitely woody at the base of the stem, with adults in flower, and/or with seed. Seedling and juveniles present along the transect line or within a 1-meter belt adjacent to the transect line will be recorded.

The results will be presented as the average absolute plant cover (n=3) for Area 1 and Area 2. The results for each transect including the raw data shall be included in the final report.

10.3.5 ANNUAL REPORTING

The Restoration Specialist shall prepare an annual report summarizing project activity to date since the last report, that will include the results of spring monitoring, and other required monitoring described in this section. Recommendations should be made for future management based on the results of horticultural and biological monitoring.

The annual report shall be submitted to the City. The City shall submit each annual report to OCTA by March 31 of the following year. The first annual report would be due March 31, 2025, covering project activities in 2024, assuming implementation begins by fall 2024.

10.3.6 FINAL REPORT

The final project annual report, prepared by the Restoration Specialist, will provide a comprehensive summary of project activities through 2031, encompassing the final year of performance monitoring. This report will serve as a critical evaluation tool, assessing the project's success based on the predetermined criteria outlined in Section 2.9.

If the final monitoring report indicates partial or complete failure to meet the established success standards, the City will be required to submit contingency measures within 90 days of OCTA's written notice. As detailed in Section 2.9.2, these measures may include contingency actions and/or alternate success criteria designed to address any identified issues and ensure the project's ultimate success.

11 REFERENCES

AECOM. 2023. Orange County Native Seed Partnership Strategic Plan. Prepared for the Natural Communities Coalition. May 2023.

Brooks, T, M. Griswold, T. Longcore, and M. Riedel-Lehrke. 2019. Habitat Restoration and Enhancement Plan Update, County of Orange Central and Coastal Subregion Natural Communities Coalition Conservation Plan/Habitat Conservation Plan. Prepared for Natural Communities Coalition. https://occonservation.org/wp-content/uploads/2019/03/HREPUpdate_DRAFT-2019.03.18lr.pdf

California Department of Fish and Wildlife (CDFW) 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6, 2023. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline

California Geological Survey, California Department of Conservation. 2024. Geologic Map of California. https://maps.conservation.ca.gov/cgs/gmc/ (Accessed Online on March 15, 2024).

City of Costa Mesa. 2008. Fairview Park Master Plan March 1998, Revised February 2001 and November 2002, Updated November 2008.

City of Costa Mesa. 2011. Final Restoration Plan for the Fairview Park Wetlands and Riparian Habitat Project. Submitted by the City by Letter Report dated February 2, 2011 to OCTA.

DiTomaso, J. M.; Kyser, G. B.; Oneto, S. R.; Wilson, R. G.; Orloff, S. B.; Anderson, L. W.; Wright, S. D.; Roncoroni, J. A.; Miller, T. L.; Prather, T. S.; Ransom, C.; Beck, K. G.; Duncan, C.; Wilson, K. A.; Mann, J. J., 2013. Weed control in natural areas in the Western United States. Weed Research and Information Center, University of California, 544 pp.

Ecological Restoration Institute (ERI). 2009. Northern Arizona University. Accessed February 2009. http://www.eri.nau.edu/joomla/content/view/223/148/lang,en/

Glenn Lukos Associates, Inc. 2017. Submittal Requirements for 2016-2017 Wet Season Survey for Listed Branchiopods Conducted for the Fairview Park Project, Located in the City of Costa Mesa, County of Orange, California. Letter Report submitted by Glenn Lukos Associates, Inc. to Stacey Love, USFWS. July 13, 2017.

Hamilton Biological 2023. Draft Biological Resources Technical Report, Fairview Park, City of Costa Mesa, October 13, 2023.

Land IQ. 2024. 2023 Vegetation Map and Habitat Restoration Opportunities for Fairview Park, Costa Mesa, California. Prepared for MIG to support the Fairview Park Master Plan Update for the City of Costa Mesa. March 22, 2024.

Orange County Transportation Authority (OCTA). 2012. Measure M2 Environmental Mitigation Program Restoration Funding Guidelines. February 2012.

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2009. Alexandria, LA. Conservation Planting Methods for Native and Introduced Species. Plant Materials Technical Note No 14. 6 pages. August 2009.

United States Department of Agriculture (USDA). 1978. Soil Survey of Orange County and Western Part of Riverside County, California.

Williams, P. H., R. W. Thorp, L. L. Richardson, and S. R. Colla. 2014. Bumble Bees of North America: An Identification Guide. Princeton University Press

APPENDIX 1

LONG-TERM INVASIVE PLANT MANAGEMENT PLAN FOR FAIRVIEW PARK

Appendix 1

Long-Term Invasive Plant Management Plan for Fairview Park

Prepared for

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1 LONG-TERM INVASIVE PLANT CONTROL PLAN

This Long-Term Invasive Plant Management Plan aims to provide the City of Costa Mesa with a strategic approach to controlling invasive plant species, ensuring the preservation of valuable biological resources within Fairview Park. Numerous nonnative species are present in Fairview Park, but this plan prioritizes the management of high-priority invasive species that pose substantial threats to native habitat functionality and biodiversity. Invasive plants were identified in the park during the 2023 biological surveys and assessments conducted for the development of the Fairview Park Master Plan Update.

Cultural artifacts of significance are present within the soil profile across various areas of the park. The invasive plant control methods outlined in this plan typically do not cause significant soil disturbance. However, in instances where substantial digging is necessary to remove a perennial high-priority invasive weed, the City should consult its records to determine the likelihood of encountering culturally significant materials in the affected area.

In cases where culturally significant materials are likely to be present, the City shall engage an appropriate cultural monitor during all ground-disturbing activities to ensure the protection of in-situ cultural resources. It is important to note that cutting or pulling roots of plants from the topsoil does not require the presence of a cultural monitor.

This approach ensures that our efforts to manage invasive plants are balanced with the preservation of culturally significant materials, promoting responsible stewardship of both natural and cultural resources within the park.

1.1 GOALS AND OBJECTIVES

The primary goal of this plan is to preserve the ecological balance within Fairview Park by focusing on invasive plant management.

Key objectives include:

1. Preventing excessive biomass production from invasive plants to protect native species and maintain biodiversity.
2. Controlling invasive plant populations before they produce viable seeds to ensure long-term control and reduce their negative impact on wildlife habitats and native plant recruitment.
3. Prioritizing management efforts for invasive species that pose the greatest threat to the park's biological resources, given limited resources available for annual control.

Specific goals for controlling high-priority invasive plants in sensitive habitat areas and fuel management zones (FMZ) include:

SENSITIVE HABITAT AREAS

1. In case of limited resources, first prioritize invasive weed control efforts in or near existing sensitive habitat areas.
2. Address smaller infestations of the most invasive weed species before controlling larger, more widespread, and ubiquitous weeds, especially if they risk spreading into high-quality habitats. In general, prioritize the removal of small populations of highly invasive species or species new to the area.
3. Implement management strategies to reduce disturbances (e.g., off-leash dogs, trash dumping, off-trail hiking) within the park.
4. Close unnecessary or unauthorized trails to minimize disturbance frequency and additional avenues for weed invasion into areas with sensitive native habitats.

FUEL MANAGEMENT ZONES

1. Apply weed abatement and fuel management techniques in areas that require wildfire risk reduction, ensuring they align with the protection of sensitive habitats and native-rich areas.
2. Utilize methods outlined in this plan to control target invasive species, taking care to prevent their spread within sensitive habitats and other natural areas of the park.
3. Employ weed abatement methods that do not disturb the soil, avoiding practices like tilling that maintain high disturbance regimes, promoting disturbance-adapted nonnative weeds, which act as dry, flashy fuel sources during summer and fall fire seasons.
4. Time weed abatement efforts to control fuel modification areas before weed seed set, managing fuel loads while simultaneously reducing nonnative weed seed contributions to the soil.

1.2 MANAGEMENT APPROACH

This plan is based on the framework presented in the invasive plant land management guide developed by the USFWS in collaboration with the California Invasive Plant Council (Cal-IPC) in the Land Manager's Guide to Developing and Invasive Plant Management Plan (USFWS, Cal-IPC, 2018). By focusing on high-priority invasive plants and implementing a strategic approach, the plan aims to maintain the park's ecological balance and promote the long-term control of invasive species. This plan consists of eight main steps:

1. Identify target invasive plants present in the park.
2. Prioritize the level of control based on invasive plant location and density to maximize protection of sensitive resources.
3. Follow biological resource protection measures to avoid impacts to sensitive and protected species.

4. Conduct annual invasive plant surveys to guide treatment timing and methods.
5. Time invasive plant control treatments to maximize control and avoid impacts to sensitive habitats and species.
6. Follow biosecurity procedures to prevent the spread of invasive plants.
7. Use the appropriate invasive plant control methods.
8. Conduct effectiveness monitoring and reporting to track invasive plant populations and guide recommendations for the following year.

1.2.1 Adaptive Management

Invasive plant control will be implemented using an adaptive management approach, which enables adjustments in response to observations, site conditions, best available treatment methods, efficacy of previous control measures, and annual weather variations. Adaptive management provides a flexible framework to address the complexities of invasive plant management and respond to feedback from regular monitoring.

Several fluctuating variables can impact the success of invasive plant control programs, including weather, fire events, intense rainfall, nonnative species distribution, and adjacent land management activities. Monitoring is a critical aspect of adaptive management and is necessary for tracking changes over time, assessing the effectiveness of control methods, and ensuring the protection of Fairview Park's sensitive biological resources.

Existing knowledge and experience, combined with new observations, will inform management adjustments while maintaining the plan's overall goals. Factors such as historic disturbance levels, invasive species density, soil complexity, and proximity to native habitats may require adapting strategies accordingly. The methods described in this plan will be used in various combinations, considering field conditions, weather, and monitoring results.

Adaptive management decisions will be based on experience from previous weed control treatments within the park or other relevant areas, new knowledge from reputable sources on alternative effective treatments, and new target invasive species discovered during early detection surveys. Additionally, any invasive plant control methods in this plan may be superseded by approved restoration plans for the park. For instance, opportunistic control species, such as five horn bassia (*Bassia hyssopifolia*), may be better controlled through a holistic weed management approach implemented as part of a restoration project.

The described invasive plant control methods can be amended as needed to accommodate improved methods or opportunities.

1.2.2 Access

The existing network of trails and fire roads can be used to access most of Fairview Park and shall be used for access to the invasive plant populations targeted for control. In

general, access within the invasive plant control areas for weed control shall be by foot. This is to protect sensitive resources to prevent harm to native plant and animal species, damaging impacts to the soil such as compaction, and to prevent the unintentional spread of invasive and nonnative weed seed that can be moved around by vehicles.

Some areas have difficult access due to steep terrain or dense vegetation. Park crews shall be used for invasive species control in these areas as well as during sensitive times of the year, such as the bird breeding season, to ensure that necessary biological protection measures are followed (Section 1.5). As opportunities arise for volunteer weeding events that may include control of the target invasive species recommended for control in this plan, areas for volunteer weeding efforts should be carefully selected to safeguard the safety of participants.

1.2.3 Volunteer Opportunities

Volunteer participation in mechanical control techniques that do not require heavy equipment, such as chainsaws or mowers, can be facilitated through organized events supervised by a trained "weed management leader." These leaders should be knowledgeable in identifying target weeds and common native species in the area, as well as experienced in effective mechanical treatment methods to demonstrate proper weeding techniques for volunteers.

To maximize the effectiveness of these events, selected sites should be easily accessible, located near existing trails or roads, and have manageable slopes. Focusing on a single target species per event can simplify identification, enabling volunteers to contribute more effectively to invasive plant control efforts.

1.3 HIGH-PRIORITY INVASIVE PLANTS

Due to limited resources, management efforts should focus on controlling invasive species that pose the greatest threat to the park's biological resources. Priority should be given to protecting sensitive habitat areas and high investment areas, such as restoration sites or locations where extensive efforts have already been made to control invasive species. Continued efforts in these areas will likely be necessary until invasive species are eradicated, and habitat restoration goals for the area are met.

Plant species list generated during surveys and assessments for the Fairview Park Master Plan Update were the basis for determining the high-priority invasive species targeted for control. The species are all Cal-IPC rated invasive plants species or locally invasive plants that are a threat to sensitive habitat areas in Fairview Park. Table 1-1 presents the high-priority invasive plants, Cal-IPC rating, and growth characteristics. Table 1-2 presents the general location where the high-priority invasive plants occur and the level of control targeted.

Table 1-1 High-Priority Invasive Plants for Long-Term Management

Scientific Name	Common Name	Cal-IPC Rating*	Bloom Period	Lifeform	Duration	Methods of Reproduction
Arundo donax	Giant reed	High	May to June	Grass	Perennial	Vegetative; roots, rhizomes, stems with nodes
Atriplex semibaccata	Australian saltbush	Moderate	April to Dec.	Subshrub	Perennial	Seed
Bassia hyssopifolia	Five horn bassia	Limited	June to July	Herbaceous	Annual	Seed
Brachypodium distachyon	Purple false brome	Moderate	April to July	Grass	Annual/Perennial	Seed
Brassica nigra	Black mustard	Moderate	April to July	Herbaceous	Annual	Seed
Bromus diandrus	Ripgut brome	Moderate	April to June	Grass	Annual	Seed
Carduus pycnocephalus	Italian thistle	Moderate	Feb. to July	Herbaceous	Annual	Seed
Carduus tenuiflorus	Slender flowered thistle	Limited	April to Aug.	Herbaceous	Annual	Seed
Cirsium vulgare	Bull thistle	Moderate	July to Sep.	Herbaceous	Perennial	Seed
Conium maculatum	Poison hemlock	Moderate	April to Se.	Herbaceous	Biennial	Seed
Cynara cardunculus	Artichoke thistle	Moderate	April to July	Herbaceous	Perennial	Seed
Echium candicans	Pride of Madeira	Limited	Feb. to Oct.	Shrub	Perennial	Seed
Foeniculum vulgare	Sweet fennel	Moderate	May to Sep.	Herbaceous	Perennial	Primarily seed; occasionally vegetatively from root and crown fragments
Glebionis coronaria	Crown daisy	Limited	March to July	Herbaceous	Annual	Seed
Hirschfeldia incana	Shortpod mustard	Moderate	Year Round	Herbaceous	Perennial	Seed
Oncosiphon pilulifer	Stinknet	High	March to July	Herbaceous	Annual	Seed
Pennisetum setaceum	Fountaingrass	Moderate	July to Aug.	Grass	Perennial	Seed
Raphanus sativus	Wild radish	Limited	Feb. to July	Herbaceous	Annual/Biennial	Seed
Ricinus communis	Castor bean	Limited	Year Round	Shrub	Perennial	Primarily seed; occasionally vegetatively from root and stem fragments
Rumex crispus	Curly dock	Limited	Year Round	Herbaceous	Perennial	Seed
Salsola australis	Russian thistle	Locally Invasive	March to Jan.	Herbaceous	Annual	Seed
Silybum marianum	Milk thistle	Limited	April to July	Herbaceous	Annual/Biennial	Seed
Sisymbrium irio	London rocket	Limited	Jan. to April	Herbaceous	Annual	Seed
Solanum rostratum	Buffalobur	Locally Invasive	May to Sep.	Herbaceous	Annual	Seed

** "Locally Invasive" is not a Cal-IPC rating, but Land IQ has identified these species as locally invasive with ecological impacts on sensitive biological resources in Fairview Park.*

Table 1-2 High-Priority Invasive Plant Eradication or Containment Priorities Parkwide or in Sensitive Habitat Areas: Vernal Pool Watershed (VPW) and Wetlands, Coastal Sage Scrub (CSS), and Riparian Habitat Areas (WRA).

Scientific Name	Common Name	General Location in Fairview Park	ERADICATE			CONTAIN	
			VPW	WRA/CSS	Parkwide	VPW	Parkwide
Arundo donax	Giant reed	Drainages on the west bluff		X	X		
Atriplex semibaccata	Australian saltbush	Nonnative annual grasslands and trail edges	X				X
Bassia hyssopifolia	Five horn smotherweed	Vernal pool watershed, moist disturbed soils				X	
Brachypodium distachyon	Purple false brome	Vernal pool watershed, nonnative annual grasslands	X	X	X		
Brassica nigra	Black mustard	Common on slopes and on imported fill material	X				X
Bromus diandrus	Ripgut brome	Nonnative annual grassland, disturbed areas	X				
Carduus pycnocephalus	Italian thistle	Poison hemlock patches, riparian and wetland areas	X	X	X		
Carduus tenuiflorus	Slender flowered thistle	Poison hemlock patches, riparian and wetland areas	X	X	X		
Cirsium vulgare	Bull thistle	Riparian and wetland areas, disturbed areas	X	X	X		
Conium maculatum	Poison hemlock	North facing bluff slopes and west bluff drain		X	X		
Cynara cardunculus	Artichoke thistle	Nonnative annual grassland with clayey soils			X		
Echium candicans	Pride of Madeira	Landscaped areas			X		
Foeniculum vulgare	Sweet fennel	Throughout Park	X	X	X		
Glebionis coronaria	Crown daisy	Vernal pool watershed, fuel modification zones	X				X
Hirschfeldia incana	Shortpod mustard	Occurs on mesa	X				X
Oncosiphon pilulifer	Stinknet	Occurs on mesa and along trails	X				X
Pennisetum setaceum	Fountaingrass	Disturbed areas, Fairview Park Channel			X		
Raphanus sativus	Wild radish	Common in disturbed soils	X				X
Ricinus communis	Castor bean	Base of the earthen drain west bluff area			X		
Rumex crispus	Curly dock	Vernal pool watershed	X				X
Salsola australis	Tumbleweed	Vernal pool watershed	X				X
Silybum marianum	Milk thistle	Throughout Park			X		
Sisymbrium irio	London rocket	Common in disturbed soils	X				X
Solanum rostratum	Buffalobur	Vernal pool watershed	X				

ERADICATE = Complete removal of the invasive plant population and monitoring to ensure that is does not reestablish.
CONTAIN = Eradication is not practical, feasible, or necessary but the invasive plant population should be managed to contain its current population size until the habitat can be restored or otherwise enhanced, and to prevent the spread of the invasive plant to another sensitive habitat in Fairview Park.
Sensitive Habitat Areas = CSS Areas that have potential for nesting coastal California gnatcatcher nesting, and all riparian and wetland areas, including vernal pools.

1.3.1 Level of Control

The key to effective management is consistent and structured approaches for prioritizing monitoring, control, and eradication of invasive species. The approach for invasive species control presented in this plan is based on the knowledge that not all invasive species can be eradicated from the Park but may only be controllable in portions of the Park, such as sensitive habitats, or localized small populations, and larger more established populations may only feasibly be controlled to stop their spread.

The plan identifies three levels of control effort for target invasive species to ensure efficient management and protection of sensitive habitats and species. These levels include:

- **Parkwide Eradication**: High-priority invasive species with the most significant potential to harm sensitive habitats and species are targeted for complete eradication from the park. Feasibility assessments consider the extent of the species' spread, and the costs associated with control efforts.
- **Containment Control**: For well-established and ubiquitous invasive species, complete eradication may be challenging and cost prohibitive. Control efforts should focus on areas susceptible to species spread, such as access trails, roads, and locations subject to annual disturbances like fuel modification zones or grassy areas near Placentia Avenue.
- **Opportunistic Control**: Invasive species rated by Cal-IPC that are present within the park but may be costly to eradicate or contain fall under opportunistic control. Control measures for these species should be implemented when populations overlap with treatment areas for other high-priority species and resources permit.

1.4 PRIORITIZATION OF INVASIVE PLANT CONTROL AREAS

Control of high-priority invasive plants will be carried out in a phased approach, with the highest priority given to sensitive habitat areas (Priority 1 Control Areas). As time and resources permit, control efforts will expand to all other natural areas within the park, designated as Priority 2 Control Areas (Figure 1-1).

Figure 1-1 High-Priority Invasive Plant Control Priority Areas.

1.4.1 Priority 1 Control Areas

Priority 1 Control Areas encompass the following sensitive habitat areas:

1. Vernal pool watersheds, including vernal pools, which support rare plants and sensitive aquatic resources like the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*)
2. Suitable coastal sage scrub habitat for the federally threatened and state Species of Special Concern, coastal California gnatcatcher (*Polioptila californica californica)* (CAGN)
3. Suitable riparian habitat for the state and federally endangered, Least Bell's vireo (*Vireo bellii pusillus*) (LBV)

1.4.2 Priority 2 Control Areas

Priority 2 Control Areas include:

1. Fuel Modification Zones
2. Areas within the historic vernal pool watershed that are covered by improper fill material or disconnected hydrologically from the vernal pools by the improper fill material; these areas are identified for future habitat restoration, including removal of the fill material to restore the historic vernal pool watershed
3. All other natural areas within the park

Control efforts should initially target Priority 1 Control Areas, with the primary goal of eradicating specified target invasive plant species. Once treatment in Priority 1 areas is complete, remaining resources should be allocated to managing invasive species in Priority 2 Control Areas.

In cases where target invasive species populations are small or pose a significant threat to the park's natural areas and sensitive biological resources, parkwide eradication is the goal. If eradication is not feasible or necessary, such as when populations are widespread within the park and surrounding areas, containment and long-term control are the primary objectives.

FUEL MODIFICATION ZONES

Fuel Modification Zones (FMZ) are managed to minimize fire risk to buildings and provide firefighters with a defensible space during fire events. The 100-ft FMZ requirement set by OCFA is primarily maintained along the park's property line adjacent to habitable structures. Currently, these areas are dominated by nonnative annual grasses and forbs, with annual mowing during the summer season to manage fire risk while preserving nonnative plant dominance.

Several high-priority invasive plants are present within the FMZs, including black mustard (*Brassica nigra*), short pod mustard (*Hirschfeldia incana*), and crown daisy (*Glebionis coronaria*). These species should be controlled at the appropriate time of the

year, as outlined in Section 1.7, to ensure effective management. This may necessitate conducting control efforts at different times than fuel modification activities. If control is not feasible during the optimal treatment periods due to resource constraints, the seed and vegetative reproductive material of invasive species should be carefully bagged and removed from the FMZs to prevent their spread into adjacent natural areas of the park.

Annual surveys conducted by a qualified plant biologist during treatment, monitoring, or early detection efforts should include FMZs to identify any new invasive species requiring control or known invasive species that are encroaching on the FMZs.

Opportunities may arise to collaborate with OCFA on alternative fuel modification strategies that fulfill fuel reduction objectives, such as horizontal and vertical fuel breaks or trimming of dead standing vegetation. These strategies could incorporate desirable native species to replace current nonnative species, thereby enhancing wildlife habitat quality and reducing the spread of undesirable invasive species within the park.

1.5 BIOLOGICAL RESOURCE PROTECTION

The primary goal of the invasive plant control plan is to protect the natural resources within the park. This section outlines measures to minimize potential adverse impacts on:

1. Protected, sensitive, or locally rare plant and wildlife species
2. Nesting birds in or near treatment areas

When feasible, conduct invasive species control, including physical and chemical methods, outside the avian breeding season to limit impacts on sensitive species and biological resources in Fairview Park.

Although it is recommended to implement control measures outside the nesting season whenever possible, certain high-priority invasive plants may require control during the nesting season for effective management. The following resource protection measures should be implemented during the nesting season:

1. Schedule vegetation removal outside the nesting season (nesting seasons are as follows: February 15 to August 15 for songbirds; January 15 to August 15 for raptors; February 15 to August 31 for CAGN; and March 1 to September 15 for LBV) when possible.
2. If vegetation removal must occur during the nesting season, conduct thorough surveys for nesting birds in all suitable habitats prior to vegetation clearing activities. Surveys should be performed by a permitted and approved biologist. Raptor nesting surveys are only necessary in potential raptor nesting habitats, such as the park's existing riparian areas.

Successful implementation of the invasive plant management plan will enhance the quality and availability of nesting habitat for native and migratory birds. However, precautions must be taken to protect nesting birds throughout the process.

1.5.1 General Protective Measures

The following are general protective measures that shall be implemented during invasive weed control activities.

Weed Control Hours: Weed control activities will be limited to daylight hours.

Work Area and Staging: Equipment staging, such as for vehicle parking, equipment storage, or waste bin storage, will be restricted to the smallest area practicable in designated work areas, routes, temporary interior access, or the limits of existing roadways/pathways.

Environmentally Sensitive Areas and/or Exclusion: Where appropriate, fencing, flagging, or biological monitoring will be used to minimize or avoid disturbance to environmentally sensitive areas and listed species habitat which will include patches of coastal sage scrub, the vernal pool watershed, riparian, and other sensitive habitats.

Invasive Species: The spread or introduction of nonnative, invasive species will be avoided. Invasive plant material will be removed using approved protocols and disposed of at an appropriate upland disposal or compost area in a manner that will not promote their spread. The project will use weed free erosion control materials such as burlap rice straw wattles and certified weed-free mulch, if needed.

Equipment Maintenance and Materials Storage: Vehicle traffic will be confined to existing roads and trailways. All machinery must be in good working condition, showing no signs of fuel or oil leaks. Oil, grease, or other fluids will be washed off at off-site designated wash stations prior to entering the site. Inspection and evaluation for the potential for fluid leakage will be performed daily prior to use. All fuel and chemical storage, servicing, and refueling will be done in the designated staging area or other suitable location with secondary containment to prevent spills from traveling to surface water or drainages.

Herbicide Handling: All herbicide mixing shall occur in designated work staging areas and conducted in such a manner as all potential spills shall be captured in containment bins. Herbicide mixing shall not occur within 100 feet of an open body of water. Filling of spray backpacks shall be done in containment bin to collect any potential spills. Park crews shall have spill kits in their vehicles and all spills shall be cleaned up immediately and all contaminated material properly disposed of off-site.

Trash Removed Daily: All trash, especially food-related refuse that may attract potential predators or scavengers, will be properly contained in sealed containers or bags, removed from the work site, and disposed of daily.

1.5.2 Qualifications for Biologist

The following definitions describe a qualified biologist and an agency approved biologist for purposes of conducting surveys and biological monitoring:

Qualified Biologist: The minimum qualifications for the Qualified Biologist include a bachelor's degree in biological or environmental science, natural resources

management, or related discipline; field experience in the habitat types that occur at the project site; familiarity with the listed species (or closely related species) that may occur at the project site; and prior preconstruction survey, construction monitoring, or construction oversight experience.

Approved Biologist: For listed species, such as the coastal California gnatcatcher, least Bell's vireo, and Crotch's bumble bee, additional qualifications are required for biologists who would be responsible for species surveying. For this plan, the Approved Biologist will have the following qualifications:

- A federal section 10(a)(1)(A) recovery permit for coastal California gnatcatcher surveys
- At least five years' direct experience with least Bell's vireo to survey for this species
- Approved by CDFW to survey for Crotch's bumble bee on the project site

Because the qualifications for the Approved Biologist exceed those for the Qualified Biologist, any activity indicated as appropriate for the Qualified Biologist below may also be completed by an Approved Biologist. Where sensitive species may be directly or indirectly impacted by project implementation, the following species protection measures shall be implemented, as appropriate.

1.5.3 Environmental Training

Prior to involving new or existing personnel in restoration activities, all new restoration personnel will undergo environmental awareness training led by a Qualified Biologist. This training will cover the identification, habitat requirements, legal protections, avoidance and minimization measures, and applicable protection measures for special- status species and nesting birds that may be present in or near the project site.
Personnel will be informed of the procedures to follow if a special-status species or nesting bird is encountered during project activities.

Training may be conducted in an online or virtual meeting format. For extended projects requiring multiple training events, a training video developed under the supervision of the Qualified Biologist may be used to educate new personnel, provided that a Qualified Biologist is available by phone to address questions about the training or any concerns that may arise during project activities.

1.5.4 Sensitive Species Protection

Surveys shall be conducted for the following threatened, rare, or endangered species that are known to or have the potential to occur at Fairview Park. The following are recommended survey guidelines. All existing resources to be protected will be identified by the required biologist and flagged prior to any project disturbance.

COASTAL CALIFORNIA GNATCATCHER

Habitat Avoidance: Invasive plant treatment impacts will be avoided or minimized in coastal sage scrub and other vegetation communities suitable for the coastal California

gnatcatcher (CAGN) during the breeding season. If surveys determine that the habitat is occupied or that impacts to these habitats cannot be avoided, any possible incidental "take" of CAGN individuals will be avoided or minimized through implementation of the measures listed below.

Work Window: To avoid or minimize impacts to nesting CAGN, all clearing of vegetation in CAGN suitable habitat will occur outside of the breeding season (September 1 through February 14). If the breeding season cannot be avoided, a United States Fish and Wildlife Service (USFWS) Approved Biologist will conduct pre-work nesting bird surveys prior to weed treatments. A minimum of 3 surveys are recommended to be conducted during the nesting season prior to the start of work activities with the third and final survey within 5 days of initiating the start of work. If no active CAGN nests are found, project activities may proceed.

Work Restrictions Near Active Nests: If an active CAGN nest is detected during the surveys, work will be suspended until the end of the nesting season (August 31), or until the young have fledged; alternatively, the following conditions will apply:

- A USFWS-Approved Biologist will establish a 100-foot disturbance buffer distance between noise-generating project activities and CAGN nest(s). Noise-buffer distances may be modified in coordination with the USFWS Field Office based on project-specific characteristics or the City may choose to submit their own analysis and buffer recommendations for USFWS's consideration.
- Once the buffer is established, a Qualified Biologist will monitor the nest during treatment activities for signs of adverse effects, including distress/disturbance. If adverse effects are detected, the Qualified Biologist will have the authority to stop all treatment activities in the vicinity of the nest and implement additional protection measures. If no work is to occur within or near the buffer, and no adverse impacts were detected during any previous monitoring activities, work can proceed outside the buffer without the need for a monitor being present.
- A Qualified Biologist will continue to monitor the nest and will determine when young have fledged (in coordination with a USFWS-Approved Biologist). Once the USFWS-Approved Biologist has confirmed that the young have left the nest, the protective buffer may be removed, and treatment activities within these areas may resume.

LEAST BELL'S VIREO

Habitat Avoidance: Invasive plant treatment impacts will be avoided or minimized in areas suitable for least Bell's vireo (LBV) habitat during the breeding season (March 15 through September 15). If surveys determine that the habitat is occupied or that impacts to these habitats cannot be avoided, any possible incidental "take" of LBV individuals will be avoided or minimized through implementation of the measures listed below.

Work Window: To avoid or minimize impacts to nesting LBV, all clearing of vegetation in occupied habitat or suitable habitat will occur outside the breeding season (September 16 through March 14). If the breeding season cannot be avoided, a USFWS-Approved Biologist will conduct pre-work nesting bird surveys prior to weed treatments. A minimum of 3 surveys are recommended to be conducted during the nesting season prior to the start of work activities with the third and final survey within 5 days of the start of work. If no active LBV nests are found, project activities may proceed.

Work Restrictions Near Active Nests: If an active LBV nest is detected during the survey, work will be suspended until the end of the nesting season (September 15), or until the young have fledged; alternatively, the following conditions will apply:

- A USFWS-Approved Biologist will establish a 100-foot disturbance buffer distance between noise-generating project activities and LBV nest(s). Noise-buffer distances may be modified in coordination with the USFWS Field Office based on project-specific characteristics or the City may choose to submit their own analysis and buffer recommendations for USFWS's consideration.
- Once the buffer is established, a Qualified Biologist will monitor the nest during treatment activities for signs of adverse effects, including distress/disturbance. If adverse effects are detected, the Qualified Biologist will have the authority to stop all treatment activities in the vicinity of the nest and implement additional protection measures. If no work is to occur within or near the buffer, and no adverse impacts were detected during any previous monitoring activities, work can proceed outside the buffer without the need for a monitor being present.
- A Qualified Biologist will continue to monitor the nest and will determine when young have fledged (in coordination with a USFWS-Approved Biologist). Once the USFWS-Approved Biologist has confirmed that the young have left the nest, the protective buffer may be removed, and treatment activities within these areas may resume.

CROTCH'S BUMBLE BEE

Habitat Avoidance: Impacts to burrows/nests occupied by Crotch's bumble bee (CRBB) (*Bombus crotchii*), candidate species for state endangered status, will be avoided. If CRBB are observed, the area shall be considered occupied, and work shall not occur until the end of the flight season.

Surveys shall be performed by a CDFW-Approved Biologist or entomologist familiar with CRBB behavior and life history. Surveys shall be conducted during the flying season (April through mid-October), when the species is most likely to be detected above ground and include a minimum of 3 surveys with a 3-week space between surveys. If no CRBB are found within the work area, project activities may proceed. If Crotch's bumble bee is found within the work area, the City may propose site-specific measures in coordination with CDFW to avoid take or obtain an Incidental Take Permit.

BURROWING OWL

Avoidance: Burrowing owls (*Athene cunicularia*) (BUOW), state Species of Special Concern, are not known to nest at Fairview Park but are known to occupy the Park in the winter. The restoration activities shall avoid impacts to nesting BUOW and known overwintering locations. If a BUOW is observed on the project site, work shall be suspended, and the Qualified Biologist shall immediately contact CDFW to develop a plan for avoidance prior to initiating any ground disturbance on the project site.

BREEDING / NESTING BIRDS

Avoidance: To the extent feasible, weed control activities should be scheduled to avoid the bird nesting season (February 15 through August 31 for songbirds; January 15 to August 15 for raptors). If it is not possible to schedule weed control activities between September 1 and February 14, or January 14 in suitable raptor nesting areas, then pre- work surveys for nesting birds will be conducted by a Qualified Biologist to avoid impacts to nesting birds.

Pre-work breeding/nesting bird surveys will be conducted during the bird nesting season (February 15 through August 31 for songbirds; January 15 to August 15 for raptors) if vegetation removal or other activities are planned that could violate the California Fish and Game Code and/or the Migratory Bird Treaty Act (MBTA). A Qualified Biologist will conduct pre-work breeding/nesting bird surveys no more than 5 days prior to the initiation of any site-disturbance activities that may impact nesting birds. During this survey, the biologist will inspect all vegetation and other potential nesting habitats in the work area for nests. Active nesting is present if a bird is building a nest or sitting in a nest, if a nest has eggs or chicks in it, or if adults are observed carrying food to the nest. If no breeding/nesting birds are observed, work activities may begin. If breeding/nesting birds are observed, the measures described below shall be implemented.

Work Restrictions Near Active Nests: If an active nest is detected, work will be suspended until the young have fledged or until the end of the nesting season (August 31); alternatively, the following conditions will apply:

- A Qualified Biologist will establish a disturbance buffer distance between noise-generating project activities and the nest. Noise buffer distances (typically up to 300 feet for raptors and up to 100 feet for other species) will be determined by the Qualified Biologist based upon consideration of the bird species and the nature of the planned project activity.
- If a buffer is established, a Qualified Biologist will monitor the nest during weed control activities for signs of adverse effects, including distress/disturbance. If adverse effects are detected, the Qualified Biologist will have the authority to stop all weed control activities in the vicinity of the nest and implement additional protection or avoidance measures. If no work is to occur within or near the buffer, and no adverse impacts were detected during any previous

monitoring activities, work can proceed outside the buffer without the need for a monitor being present.

- A Qualified Biologist will continue to monitor the nest and will determine when the young have fledged. Once the Biologist has confirmed that the young have left the nest, the buffer and exclusion zone may be removed, and weed control activities within these areas may resume.

1.5.5 Protective Buffers

All buffers shall be clearly marked in the field sufficiently to prevent the crew from entering the buffers with the minimal amount of flagging to prevent drawing the attention of the nest to predators. The buffer locations shall be shown in the field to the crews that will be working in the area along with a map provided of all nest locations and associated buffers. The crew shall be informed of all restrictions to work activities within the buffer as well as any access information that may be required for avoidance of the buffer. For instance, access points shall be determined to prevent repeated travel near a buffer during the workday.

1.6 INVASIVE PLANT SURVEYS AND EDRR

A brief high-priority invasive plant control plan will be developed annually by a qualified biologist possessing the necessary expertise in native and nonnative plants of California. The minimum qualifications for the qualified biologist include:

1. A bachelor's degree in biological or environmental science, natural resources management, botany, or a related discipline.
2. Field experience in the park's habitat types.
3. Familiarity with sensitive or rare plant species that are present or may occur at the park.
4. Knowledge of invasive plant species found in the park.

The qualified biologist will survey the park at the appropriate time to identify and assess the location, density, and phenology of target invasive species. Survey data should encompass the following:

1. Invasive plant population coordinates.
2. Invasive plant species.
3. Population size.
4. Phenology or life stage of most of the invasive plant population.
5. General location description.

Based on the most up-to-date best practices, the qualified biologist will provide the park maintenance crews with recommended treatment methods for each target invasive species. The plan should include:

1. The phenological stage of the target invasive plants for treatment.
2. Recommended treatment methods.
3. Necessary follow-up treatments and their anticipated timing.
4. A map of the location, including information on population size.
5. The number and timing of treatments throughout the year.
6. Protective measures for sensitive species or habitats to be implemented before treatments.

By following these guidelines, the park's invasive weed management plan will be effectively developed and implemented, ensuring the preservation of the park's diverse ecosystems.

1.6.1 Invasive Plant Surveys

To determine appropriate timing and control methods, initial weed surveys for annual treatment should be conducted during winter, ensuring that weed treatment can take place before the start of the earliest bird nesting season, which begins on January 15 for raptor species. If additional weed control is required during the growing season, subsequent surveys by the qualified plant biologist will identify optimal timing and methods for follow-up treatments. Surveys should be timed to prevent significant seed set, ensuring that treatment can effectively control the population before viable seeds are produced.

Follow-up surveys may be needed at appropriate times depending on the weed treatment method used. For example, after stump cut treatments, populations should generally be checked about one month after treatment to address any emerging resprouts or seedlings that may have germinated around the treated mature plant.

For invasive species that can sustain their life cycle throughout the year and emerge under favorable conditions, species-specific surveys may be necessary to determine multiple follow-up treatments. An example of such a species is castor bean (*Ricinus communis*), which can flower and germinate year-round when adequate soil moisture is available, including during summer months.

1.6.2 Early Detection and Rapid Response

Alongside managing known high-priority invasive species populations, it is crucial to continually assess the park for newly introduced invasive species or populations in previously undetected areas. Implementing an Early Detection and Rapid Response (EDRR) management approach is the most cost-effective method for detecting invasive plants before they become a widespread problem.

EDRR efforts should focus on:

- Detecting new invasive plants requiring control
- Identifying new populations of known invasive species for inclusion in subsequent treatment events

Annual focused surveys, conducted by a qualified plant biologist, should be supplemented by documenting incidental findings during other park activities. Surveys should prioritize areas susceptible to new infestations, such as trails, landscaped areas, fuel modification zones, or potential vector corridors.

Preventing invasive species introduction is the primary and most cost-effective long- term defense. Prevention measures include restricting invasive plant installation in landscaped park areas. Promptly treating new infestations while eradication remains feasible is the next line of defense. If eradication is not possible due to cost or feasibility constraints, containment efforts may be necessary to protect sensitive park resources. Containment typically requires long-term or indefinite control.

By systematically surveying for new populations of known invasive plants and detecting new invasive species annually, the goal is to eradicate these species before they cause ecological harm or become uncontrollable (USFWS 2015). Early control is key, as the chances of successful eradication diminish, and control efforts increase once the species are established and mature.

SURVEYS FOR NEW INVASIVE SPECIES

Detection of new invasive species can be integrated with other invasive plant surveys conducted throughout the year. However, it is recommended to perform at least one targeted early detection survey during the optimal time for detecting most invasive species within the park. Spring is the most suitable season for this survey, as most plants are actively growing, allowing for treatment of newly detected invasive species during subsequent control events.

Prior to early detection surveys, gather and review background information to guide detection and control prioritization:

- Review invasive plant species occurrences in the surrounding area (e.g., within 50 miles). Information on invasive plant species in the area can be obtained from many web-based sources including CalWeedMapper, Calflora, Biodiversity Serving Our Nation (BISON), EDDMapS, and iNaturalist.
- Consult with local invasive plant experts and land managers to see if there are any additional species that should be considered for early detection.
- Lists of invasive plant species from other available sources including the U. S. Department of Agriculture, from the local Santa Ana River and Orange Weed Management Area (WMA), or other conservation management partnerships or collectives.

Surveys for detecting new invasive species populations should be conducted annually, using a systematic and repeatable approach. Focus on areas with a higher likelihood of invasion, such as trails, roads, access points, and areas subject to regular disturbance like fuel modification zones and annually mowed nonnative grasslands. Additionally, assess areas adjacent to residential properties for invasive plants potentially introduced from yards and escaped landscaping plants.

The City could collaborate with residents and property owners to educate the public on avoiding the use of invasive target plant species in their yards, minimizing the potential for degradation of native park habitats. By working together and implementing these strategies, the park's ecosystem can be better protected from the harmful effects of invasive species.

1.7 TIMING OF INVASIVE PLANT CONTROL TREATMENTS

Successful control and protection of native habitats rely on consistent and well-timed invasive plant treatments. Annual control efforts should be adjusted to each species' requirements, such as the number of treatments needed, and consider any constraints like avoiding herbicide use in sensitive areas (e.g., vernal pools and vernal pool watershed).

The treatments shall be primarily focused outside of any sensitive times for sensitive species, such as when there is standing water in the vernal pools, the breeding season for bird species that are sensitive or protected under the MBTA, or during the flight season of Crotch's bumble bee. If work outside these sensitive periods cannot be avoided, the appropriate protective measures, including biological surveying and monitoring needs to be conducted during the breeding season to detect breeding activity. If breeding activity is observed, appropriate protective buffers shall be placed around sensitive areas, such as an active bird nest, and no work shall occur in these areas until the nests are no longer active. Monitoring by a biologist with appropriate requirements, approvals, and permits may be necessary. Protective measures are described in more detail in Section 1.5.

Multiple control events using the most effective control strategies for the target invasive species shall be anticipated during a control year for effective control. Table 1-3 shows the control timing and strategies for the target invasive species.

The following provides timing for the different habitat areas of the Park along with important management notes for control activities.

Table 1-3 Timing and Method of Treatment for High-Priority Invasive Plants Parkwide or in Sensitive Habitat Areas: Vernal Pool Watershed (VPW) and Wetlands, Coastal Sage Scrub (CSS), and Riparian Habitat Areas (WRA).

Scientific Name	Common Name	Physical/Mechanical Treatment Method (P)	Chemical Treatment Method (C)	Control Event 1 (Jan. to Feb. 15)			Control Event 2 (Spring to Early Summer)			Control Event 3 (Summer to Fall)		
				VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid
Arundo donax	Giant reed	Cut and dig out plant removing all plant material	Foliar herbicide application – glyphosate	--	P/C	P/C	--	P/C	P/C	--	P/C	P/C
Atriplex semibaccata	Australian saltbush	Hand-pull removing all rooting material	Foliar herbicide application - glyphosate	-	P/C	P/C	-	P/C	P/C	-	P/C	P/C
Bassia hyssopifolia	Five horn bassia	Hand-pull removing all rooting material	N/A	P	---	---	P	---	---	P	---	--
Brachypodium distachyon	Purple false brome	Hand-pull small patches; or mow before viable seed production but after soil moisture depleted	Foliar herbicide application - fluazifop	P	P/C	P/C	P	P/C	P/C	P	P	-
Brassica nigra	Black mustard	Hand-pull removing all rooting material; or mow after flowering but before viable seed production cutting close to the ground to prevent resprouting (this may require removal of thick plant thatch in sensitive habitat areas); remove viable seeds from mature plants	Foliar herbicide application - glyphosate	P	P/C	P/C	P	P/C	P/C	P	P	P
Bromus diandrus	Ripgut brome	Hand-pull small patches; or mow before viable seed production close to the ground removing bolting stems (this may require removal of thick plant thatch in sensitive habitat areas)	Foliar herbicide application - fluazifop	P	---	---	P	---	---	P	---	---
Carduus pycnocephalus	Italian thistle	Hand-pull removing all rooting material; remove viable seeds from mature plants	Foliar herbicide application – glyphosate or clopyralid	P	P/C	P/C	P	P/C	P/C	P	P	P
Carduus tenuiflorus	Slender flowered thistle	Hand-pull removing all rooting material; remove viable seeds from mature plants	Foliar herbicide application – glyphosate or clopyralid	P			P			P		P

Scientific Name	Common Name	Physical/Mechanical Treatment Method (P)	Chemical Treatment Method (C)	Control Event 1 (Jan. to Feb. 15)			Control Event 2 (Spring to Early Summer)			Control Event 3 (Summer to Fall)		
				VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid
Cirsium vulgare	Bull thistle	Hand-pull removing as much of the tap root as possible; remove viable seeds from mature plants	Foliar herbicide application - clopyralid	most effective in the bolting stage	P	P/C	P/C	P/C	P	P/C	P/C	P/C
Conium maculatum	Poison hemlock	Hand-pull removing all rooting material; remove viable seeds from mature plants	Foliar herbicide application - glyphosate		P	P/	C	P/C	P	P/	P/C	P/C
Cynara cardunculus	Artichoke thistle	Hand-pull removing as much of the tap root as possible; remove viable seeds from mature plants	Foliar herbicide application - clopyralid		P	C	P/C	P/C	P	C		P/C
Echium candicans	Pride of Madeira	Cut and dig out plant removing all plant material	Foliar herbicide application; or Stump cut herbicide application (requires follow-up treatment of resprouts)		---	P/C		P/C	---	P/C		P/C
Foeniculum vulgare	Sweet fennel	Cut and dig out plant removing at least 3 to 6" of the root crown; remove viable seeds from mature plants	Foliar herbicide application – triclopyr in winter; glyphosate all other times most effective before flowering		P	P/C		P/C	P	P/C		P/C
	Crown daisy				P			P/C	P			P/C
Glebionis coronaria	Shortpod mustard	Hand-pull removing all rooting material including any viable seed	Foliar herbicide application - glyphosate		P	P/C		P/C	P	P/C		P/C
Hirschfeldia incana		Hand-pull removing all rooting material; or mow after flowering but before viable seed production cutting close to the ground to prevent resprouting; remove viable seeds from mature plants	Foliar herbicide application - glyphosate									
Oncosiphon pilulifer	Stinknet	Hand-pull removing all rooting material; remove viable seeds from mature plants	Foliar herbicide application – glyphosate		P	P/C		P/C	P	P/C		P/C

Scientific Name	Common Name	Physical/Mechanical Treatment Method (P)	Chemical Treatment Method (C)	Control Event 1 (Jan. to Feb. 15)			Control Event 2 (Spring to Early Summer)			Control Event 3 (Summer to Fall)		
				VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid
Pennisetum setaceum	Fountaingrass	Hand-pull seedlings; Cut and dig out mature plants removing all plant material; remove viable seeds from mature plants	Hand-pull removing all rooting material; or mow after flowering but before viable seed production cutting close to the	all	Foliar herbicide P application – fluazifop; or glyphosate best control when applied	flowering stage Foliar herbicide P application - glyphosate		ication (requires follow-up treatments to	Foliar spray any resprouts) Foliar herbicide P application – glyphosate or clopyralid Foliar herbicide P application – glyphosate before		seed set; triclopyr most effective on young plants Foliar herbicide P application – clopyralid from seed	dling to bud stage Foliar herbicide P application - glyphosate
Raphanus sativus	Wild radish	Hand-pull removing all rooting material; mow after flowering but before viable seed production cutting close to the ground to prevent resprouting										
Ricinus communis	Castor bean	Hand-pull seedlings; cut and dig out mature plants removing all plant material; remove viable seeds from mature plants										
Rumex crispus	Curly dock	Hand-pull removing as much as the tap root (minimum of 2 inches) as possible to prevent resprouting										
Salsola australis	Russian thistle	Hand-pull removing as much of the root as possible before seed set										
Silybum marianum	Milk thistle	Hand-pull removing as much of the root as possible; remove viable seeds from mature plants										
Sisymbrium irio	London rocket											

Scientific Name	Common	Physical/Mechanical Treatment Method	Chemical Treatment	Control Event 1 (Jan. to Feb. 15)			Control Event 2 (Spring to Early Summer)			Control Event 3 (Summer to Fall)		
				VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid	VP	WRA/CS	Parkwid
		ground to prevent resprouting; remove viable seeds from mature plants										
Solanum rostratum	Buffalobur	Hand-pull removing as much of the root as possible	Foliar herbicide application - glyphosate	P	---	---	P	---	---	P	---	---

Notes:

1. *Sensitive Habitat Areas = CSS Areas that have potential for nesting coastal California gnatcatcher nesting, and all riparian and wetland areas, including vernal pools.*
2. *P = Physical or mechanical control method appropriate for the life stage of the invasive plant. C = Chemical control method. "---" = Species does not currently or is not expected to occur in an area, or species is not a target for control in this portion of the Park, and no control method is provided.*
3. *The number of weed control events per year will be dependent on weed growth throughout the season, annual weather conditions, incidence of standing water and saturated soil conditions in the vernal pool areas, and ability to do nesting bird surveys during the bird nesting season.*
4. *Treatments during the nesting seasons will require pre-work biological surveys and monitoring around active nests: CAGN nesting season 2/15 to 8/31; LBV 3/15 to 9/15; Raptors 1/15 to 8/15; CRBB 4/1 to Oct 15; MBTA Protected Birds 2/15 to 8/31.*
5. *The City shall provide a cultural monitor to protect culturally significant materials if significant digging is required in areas with protected cultural resources. Cutting or pulling out the roots of the plant from the topsoil does not require a cultural monitor.*
6. *All treatments shall occur before viable seed production when possible; if control cannot occur before viable seed production all seed material shall be cut, bagged, removed, and properly disposed of off-site.*
7. *No weed control treatments shall occur in the vernal pool watershed when there is standing water or while the soil is saturated—until the surface is dry enough to walk on without disturbing the soil surface.*
8. *No herbicide treatment of any kind shall be conducted in the vernal pool watershed—except for the improper fill material soil that was placed on the mesa.*
9. *No mowing with mechanical equipment shall occur in the vernal pool watershed*
10. *Only aquatic approved herbicides shall be used within 100 feet of water.*
11. *A state licensed Pest Control Advisor (PCA) shall be consulted to provide written herbicide recommendations for species specific herbicide control methods for the Park.*

1.7.1 Vernal Pool Watershed

No weed control shall be implemented in areas with standing water or saturated soils that occurs during the rainy season October through April. No herbicides shall be used within the vernal pool watershed at any time of the year. The use of mechanical equipment including mowers shall not be used in the vernal pool watershed to prevent negative impacts to the soil, such as ruts, and the potential crushing of fairy shrimp cysts (i.e., eggs).

- **Control Event 1** timed to be in the winter prior to standing water in the pools and prior to nesting bird season. Only physical methods allowed, such as hand weeding or line trimming. No mowing with equipment or herbicides is allowed.
- **Control Event 2** timed to be during the late spring early summer when there is no longer standing water in the vernal pools or saturated soil conditions. The timing should coincide with the most effective treatment time with the target invasives species. Pre-work surveys are required prior to implementing this control event. Only physical methods allowed. No mowing with equipment or herbicides is allowed.
- **Control Event 3** timed in the fall after the bird nesting season has ended. Actively growing or senesced perennial species shall be hand-pulled and removed. Senesced annuals need not be pulled unless the standing biomass would degrade bird habitat or impact the function of vernal pool, only remaining intact and viable seed material need be cut and removed from the site. Care shall be taken so as not to shatter seed pods so as not to contribute weed seed to the seed bank.

1.7.2 Sensitive Habitat Areas (Potential CAGN and LBV Habitat)

- **Control Event 1** timed to be in the winter prior to bird nesting season February 15 in coastal sage scrub areas that are potential habitat for CAGN and prior to raptor nesting season January 15 in riparian areas that are potential LBV habitat as there is suitable habitat for raptor nests in the riparian habitat within the Park. Methods can be either physical or chemical.
- **Control Event 2** timed to be in mid-spring. The timing should coincide with the most effective treatment time with the target invasives species. Pre-work surveys are required prior to implementing this control event. Control can be either physical or chemical methods.
- **Control Event 3** timed to be after the nesting season has ended August 31 in CAGN potential habitat and September 15 in LBV potential habitat areas. Actively growing or senesced perennial species shall be hand-pulled and removed. Senesced annuals need not be pulled unless the standing biomass would degrade bird habitat only remaining intact and viable seed material need be cut and removed from the site. Care shall be taken so as not to shatter seed pods so as not to contribute weed seed to the seed bank.

1.7.3 All Other Natural Areas

- **Control Event 1** timed to be in the winter prior to bird nesting season February 15. If suitable raptor nesting habitat is present, the control should be timed prior to January 15. Methods can be either physical or chemical.
- **Control Event 2** timed in spring to be at the optimum time for most target invasive species to be treated. Requires a pre-project survey by a qualified bird biologist within one week of work.
- **Control Event 3** timed to be in the summer at the optimum time for most target invasive species to be treated. Requires a pre-project survey by a qualified bird biologist within one week of work if it occurs prior to August 31.

1.8 BIOSECURITY PROCEDURES TO PREVENT THE SPREAD OF INVASIVE PLANTS

Implementing biosecurity procedures is essential to prevent the unintentional spread of target invasive plant species during control activities and to mitigate the introduction of new invasive species to the park. Biosecurity measures include cleaning clothing and equipment, ensuring that equipment used on-site is free of any invasive plant species reproductive material, and verifying materials used in the park, such as erosion control devices, are weed seed-free.

Preventing the spread of invasive species is the first line of defense and a cost-effective approach to controlling their impact. Consistent measures to ensure that seeds and reproductive material of invasive plant species are not spread to new areas will help avoid costly future efforts and potential ecological damage. By safeguarding sensitive habitats from infestation, their ecological functions can be preserved, promoting the overall health and resilience of the park's ecosystem.

1.8.1 Biosecurity Measures During Control Activities

Effective weed management not only involves the physical removal and chemical treatment of invasive species but also requires careful attention to minimizing seed dispersal, resprouting, and other unintended consequences of control measures. By taking steps to prevent the future propagation of weeds, the effectiveness of current practices can be enhanced while reducing the severity of subsequent infestations.

Although it is advisable to control weeds before seeds mature, this may not always be feasible, such as when a weed can seed year-round, and monitoring each life stage is challenging. In these situations, it is crucial to be aware of the presence of seeds during control sessions. Even if the plant itself is removed, seeds left behind at the site or on clothing, equipment, vehicles, or waste containers can undermine management efforts and spread the infestation to new areas.

To reduce seed spread, follow these practices:

1. Remove seeds found on plants before cutting, hand-pulling, or herbicide application, placing the material in appropriate disposal containers.

2. Collect seeds from the ground and place them in containers.
3. After each treatment, remove seeds from clothing and equipment, placing them in disposal containers before leaving the area.
4. Thoroughly inspect and clean clothing, equipment, bags, etc., using a brush or other tool, paying close attention to laces, socks, cuffs, pockets, etc.
5. Remove dirt from shoe treads to eliminate embedded seed material.

Vehicles should only be driven on approved pathways to limit contact with potential invasive weed species seed material. Despite minimal contact, vehicles should be inspected and cleaned of all weed seeds before leaving the site, focusing on tire treads, bumpers, radiators, and undercarriages. If waste disposal containers are brought on-site from other locations, inspect, and remove any weed seeds before using them in the park.

Crews shall be trained by the qualified plant biologist on the Best Management Practices (BMP) for cleaning equipment and clothing to prevent the spread of invasive species. As an alternative, already developed sources for training crews is available online such as from Cal-IPC video that can be found here Training Video: Best Management Practices for Preventing the Spread of Invasive Plants – California Invasive Plant Council (cal- ipc.org).

By implementing these measures, the spread of invasive species can be mitigated, promoting a more effective and sustainable approach to weed management.

BIOSECURITY MEASURES FOR PROJECT MATERIALS USED IN THE PARK

To minimize the introduction of invasive species, all materials used within the park should be certified weed-free. This includes, but is not limited to, mulch materials, erosion control products (e.g., straw wattles, hay bales), container plants, soil, and aggregate (topsoil, sand, gravel, fill), and landscape materials such as plants, seeds, sod, mulch, and soil amendments. Prior to use, all materials shall be inspected, and confirmation of their weed seed-free status shall be obtained from the vendor.

In landscape areas, it is recommended to not plant any invasive plants including trees to prevent the infestation of these invasive plants into natural areas of the park, particularly in the sensitive habitat areas. Resources to check when making landscaping plant palettes includes Don't Plant a Pest! – California Invasive Plant Council (cal- ipc.org) and The Cal-IPC Inventory – California Invasive Plant Council which is a list of invasive plants in California that either are rated as an invasive plant or are on the watch or alert list.

1.9 HIGH-PRIORITY INVASIVE PLANT CONTROL METHODS

These guidelines for physical and chemical control methods are based on Land IQ's experience in Southern California, with a focus on treating the target invasive species recommended for control in this plan. Control methods have been cross-referenced

using "Invasive Plants of California's Wildlands" (Bossard et al., 2000) and "Weed Control in Natural Areas in the Western United States" (DiTomaso et al., 2013).

Nonnative plants identified as highly invasive in Fairview Park are designated as "High- Priority Invasive Plants" and targeted for focused control efforts. Repeated treatments over multiple years will likely be necessary for effective control of these invasive plants. A minimum of five years may be needed to eradicate some species, while others may require long-term management with containment as the primary goal when eradication is not feasible.

Recommended control methods consider site conditions, population density of invasive plants, biological constraints (e.g., avian breeding season, rare vegetation presence), regional management experience, and published weed control methods. Ideally, weeds should be controlled before seed production to limit soil seed bank accumulation. Care should be taken to avoid damaging native plants during weed control activities.

Methods for control include physical and chemical approaches. Before initiating herbicide treatment, a written herbicide application recommendation from a California Licensed Pest Control Advisor should be obtained, confirming appropriate dosage, timing, and application method. All herbicides used for the project require approval from the City before use.

Effective invasive plant species control involves managing the existing weed seed bank and implementing timely control measures to prevent additional seed or propagule input from target invasive species. Successful control may take several years, depending on population size and annual treatment frequency. Invasive species reproducing from seed should be controlled before seed set to deplete the existing weed seed bank and minimize new seed entry. Species that reproduce vegetatively should be controlled at the optimal time during their growing season.

Table 1-1 presents key phenological information for the target invasive species along with their reproductive strategies to help guide timing for scheduling survey events by the qualified plant biologist and control events.

The density and vigor of invasive plant species in any given season or year is highly dependent on annual weather patterns, including the timing and amount of rainfall, as well as diurnal temperature variations. This necessitates an adaptive weed management approach that allows flexibility in the timing and intensity of treatment events each year. Adaptive management is also crucial due to the difficulty and impracticality of quantifying the nonnative seed bank of target invasive species in the park. Instead, weed management efforts can only be estimated based on prior biological monitoring and experience with similar treatment efforts.

Invasive weed management is vital for the successful establishment and maintenance of native habitats within the park. Special care must be taken when weeding around native plants and within high-quality native habitats, requiring additional labor and expertise. Working around native species often necessitates increased use of manual methods

(e.g., hand-cutting or pulling) and reduces opportunities for time-saving mechanized equipment like mowers and line trimmers.

The number of years required for invasive species eradication through annual weed treatment events will depend on site-specific factors such as weed density, type of weed species, annual weather patterns, and variables like landscape position and soil type.

Weed management methods will be selected based on the type and density of target invasive species present, the density of native species, accessibility, and location within the park. Several control methods can be employed to manage invasive species at Fairview Park:

1. **Mechanical Methods:** Manual hand-pulling or cutting; taproot extraction with tools, such as weed extractors or shovels; mowing or line trimming
2. **Chemical Methods:** Targeted low-pressure foliar herbicide application; stump-cut and herbicide application

Each weed control method has advantages and disadvantages, with considerations including implementation timing, equipment and trained staff availability, biological resource protection, and site access limitations for equipment. Nonnative seedlings and flowering plants should be controlled before producing viable weed seeds to minimize contributions to the weed seed bank. If weeding is delayed until after seed development, seed material should be cut, bagged, and disposed of off-site.

Soil disruption should be minimized to reduce the germination of new weed individuals, injury to native species, and disturbance to biological soil crusts. Care should be taken not to disturb deep soil layers that could bring up buried weed seeds that would not otherwise germinate without disturbance.

Careful weeding by trained crews is necessary to avoid damage to native species in areas with significant native cover or sensitive species. Adaptive management, including regular monitoring to guide the scheduling and selection of weed control methods, is key to success. General guidelines for control methods are presented in Table 1-3.

1.9.1 Physical Control Methods

Physical control methods recommended include hand-pulling, cutting, or removal with digging equipment. These methods are best used for isolated individuals or small patches for the most efficient control. Digging with a shovel, pick or mattock can be labor intensive especially for larger mature individuals. Hand-pulling is best suited for seedlings or smaller plants that can be easily pulled. In many instances removal of all or most of the invasive species is necessary for effective control to limit resprouting from the roots or root crown. Using hand garden tools such as picks, cultivators, weeders, specialized hoes, mattocks, and trowels, can help to loosen the soil around the roots.
After loosening the soil, pull vertically from the ground to remove as much of the root system as possible, especially weed species with a long tap root.

MOWING/LINE TRIMMING

Mowing with mechanical equipment, such as a rotary mower, flail mower, or mulcher attached to a tractor or skid steer, or hand-operated motorized cutting tools such as line trimmers are generally an efficient method to use in areas with a high density of target invasive grasses and herbaceous species in areas with little to no native vegetation present. Mowing is appropriate in larger areas that are flat to moderately sloped.
Careful mowing should be implemented to limit injury to native species when cutting. The use of mechanical equipment including mowers shall not be used in the vernal pool watershed to prevent negative impacts to the soil, such as ruts, and the potential crushing of fairy shrimp cysts (i.e., eggs). In areas with a steeper slope or with a higher density of natives, walk behind, hand-operated mowers or line trimmers should be used.

Line trimming can be accomplished with a gas-powered, hand-operated line trimmer fitted with a string, brush blade, or similar instrument in areas inaccessible to larger equipment. Like line trimming, a gas-powered, hand-operated, shafted hedge trimmer with an articulating blade can be used to trim target invasive weeds above the soil surface from a standing position. Shafted hedge trimmers can be effective for cutting denser patches of broadleaf weeds after they have flowered, such as mustard species (*Brassica*, *Sisymbrium*, and *Hirschfeldia*). Line and hedge trimmers are most effective in areas that are inaccessible to larger equipment, or when working around dense, existing native vegetation that excludes the use of larger equipment.

Fire prevention measures must be taken to avoid accidental fires from sparks during machinery operation or line trimming with blades. These measures may include always having a water truck on site near the mowing activity, shovels carried on the mower and water truck, and water fire extinguishers. The weed material should be cut as close to the ground as possible to limit re-sprouting of herbaceous species and ensure removal of bolting crowns of grasses. Care should be taken to not damage biological soil crusts where present.

HAND/MECHANICAL PULLING OR CUTTING

Hand-pulling or cutting of target invasive weeds is one of the least disruptive methods but is an inefficient method of weed control in dense stands. Hand-pulling or cutting should be reserved for controlling isolated individuals, controlling small infestations in areas that are inaccessible to equipment, or where high densities of native or sensitive species are present. Hand-pulling is a very useful manual technique to use on young plants and small patches of weeds.

Hand-cutting can be used to remove the flowering stalks of target invasive weeds prior to seed development with tools such as sickles or vinyl knives. If cut material contains viable seed, then it should be properly disposed of off-site.

When hand-pulling target invasive weeds, the plants should be grasped near the base pulling in the direction the plant is growing to be able to better extract most of the roots

out of the ground. Short tugs work better than one long pull to prevent breaking the plant before the main roots are removed.

Isolated individuals of select invasive species can be pulled by hand or with a tool such as the Weed Wrench™. Using hand garden tools such as picks, cultivators, weeders, specialized hoes, mattocks, and trowels, can help to loosen the soil around the roots. After loosening the soil, pull vertically from the ground to remove as much of the root system as possible, especially weed species with a long tap root. When using a weed wrench, the clamp should be placed on the lowest point on the trunk of the plant as much as possible. The base of the weed wrench should be on the ground, but if it is not touching, rocks or branches can be placed underneath to improve leverage. Using your weight the weed wrench should be pulled toward you and not pushed away or injury could occur.

CUT-AND-DIG

Larger mature invasive species can be controlled by cutting the upper foliage of the plant and digging out the root system. Plant foliage can be cut with a handsaw, loppers, axe, or similar tools and removed to allow for better access to the roots. The root material can be dug out and removed with a shovel, mattock, Pulaski, or similar tool. As much of the root material should be removed as possible for effective control since many of the target invasive weed species can readily resprout from remaining roots.

Removed root material should be properly disposed of to prevent resprouting. For example, the removed roots and rhizomes of giant reed (*Arundo donax*) or even cut stems with nodes can resprout if they are touching wet soil.

RAKING AND REMOVAL OF WEEDED BIOMASS

Plant biomass of weeded invasive species shall be removed from the vernal pool watershed and other sensitive habitat areas since plant thatch degrades the quality of bird habitat and the functioning of the vernal pool habitats. Thick pant thatch also inhibits germination and recruitment of desirable native species and would hinder the natural.

Raking of the cut material can be done with handheld rakes and collected on burlap bags to be removed from the Park.

1.9.2 Chemical Control Methods

Herbicide treatment is specified mainly for dense areas of the target invasive species with low densities of native species and are invasive species that are perennial or that may re-sprout from taproots and rhizomes. Limited use of selected herbicides is specified when no other effective alternative is feasible for effective control. Most herbicides are not selective for weeds only; in other words, herbicides must be applied with the least harmful effect to non-target native species.

For effective control of target invasive species populations, they must be controlled before they produce viable seed. Most herbicides are not selective for weeds only (i.e., these herbicides must be applied with the least harmful effect to non-target native

species). In general, only post-emergent herbicides, which kill plants after they have germinated and are actively growing, are recommended.

Herbicides shall not be used in the vernal pool watershed at any time of year, except for area on the mesa with improper fill material. Herbicides use in all other natural areas during the breeding season can be used if a pre-work survey by a qualified biologist is conducted prior to treatment. Herbicides may be used in the fuel modification zones outside the breeding season and during the breeding season if prework surveys for nesting birds is conducted.

Only herbicides registered for use in California and in wildlands should be used judiciously for the control of target invasive species. Herbicides that are registered for use in California natural areas are recommended to be used at rates specified on the herbicide labels for the target invasive species. The recommended herbicides registered for use in California that are proposed in these guidelines are glyphosate, a non-specific broad-spectrum herbicide registered for use on almost all weed species, fluazifop-p- butyl for the control of weedy grasses, clopyralid for the treatment of thistles in the rosette stage, and triclopyr for the treatment of woody invasive plant species.

A state licensed Pest Control Advisor (PCA) shall be consulted to provide written herbicide recommendations for species specific control methods for the Park. The herbicide applicator must have a pest control business license that requires at least one individual employed by the business be in possession of a qualified applicator's license. All licenses must be issued by the State of California and be currently registered in the county of work. If a qualified applicator is not present during the herbicide treatment, all applicators must have undergone documented herbicide training.

Personnel must wear all Personal Protective Equipment (PPE) required by law and follow all herbicide label directions and precautions. PPE includes but is not limited to chemical-resistant nitrile gloves, eye protection, chemical protective suits, e.g., Tyvek®, and protective footwear. All re-entry times specified on an herbicide label must be observed and posted. Herbicide preparation must be conducted only in approved staging areas more than 100 feet from a stream course or any body of water. Only herbicides and surfactants approved for aquatic use should be used within 100 feet of a stream course or any body of water.

A colorant or marking dye is recommended to ensure even coverage of herbicide. The material should be a non-toxic material such as Blazon®, Turf Mark®, or equivalent. The dye should be mixed with the herbicide at no more than half the rate specified on the label as it can reduce product performance of the active ingredient of the select herbicide, especially at lower herbicide application rates.

Herbicide treatment should be conducted only when weather conditions are conducive to effective uptake of the herbicide by target species when plants are at the specified growth stage. Optimal weather includes sunny and dry conditions with ambient temperatures of at least 65 degrees Fahrenheit. Wind conditions should be five miles per hour or less for herbicide applications that can be subject to drift, e.g., foliar spray

methods, to minimize herbicide drift for worker protection and to prevent damage to desirable vegetation. Treated plants shall not be disturbed until the applied herbicide has had time to take effect per the manufacturer's instruction.

FOLIAR SPRAY TREATMENT

Foliar spray treatment involves applying a select herbicide at a specified concentration directly to the exposed foliage of the plant to thoroughly wet all leaves. For the foliar spray treatment to be effective, the exposed foliage needs a thorough coating of herbicide, and the plant should be actively growing. The green or photosynthesizing parts of the plant should be sprayed for uptake of the herbicide by the plant. Typically, the foliar spray treatment is best used on smaller plants to ensure adequate cover of the herbicide.

The disadvantage of the foliar spray treatment is the damage that may be caused to desirable species in the localized area where spraying occurs, especially if a non- selective herbicide like glyphosate is being used. Additionally, the foliar application method is generally ineffective on invasive plants with thick waxy cuticles.

Foliar spray shall be by low pressure hand operated sprayers only and broadcast herbicide shall not be done anywhere in the Park. For backpack or hand-held application of herbicide, a low-pressure regulated sprayer with a coarse droplet size and single- nozzle wand shall be used. For this type of application use either spray-to-wet applications, or low volume directed spray.

Prior to use of hand-held herbicide applicators, the equipment should be checked to make sure it is fully functional and does not have any leaks. After filling the closure cap should be securely screwed on and not-cross threaded to prevent any spills or leakage. For backpack sprayers, the rubber gasket and nipple in the sprayer lid should be regularly lubricated for proper functioning. The applicator should not bend over or lean too far forward to prevent any spills onto their person or on to desirable vegetation.
Prior to use, the pump of the backpack sprayer should be primed with 10 to 20 pumps. When traveling between spraying points, the applicator shall keep their hand off the lever to avoid any inadvertent spraying of herbicide.

To decrease the chances of spraying nontarget plants, preparation before spraying may be needed in areas where weeds are mixed in with native plants. The target invasive plant for control should be separated from natives and if the plant is tall, the plant should be carefully bent downward, away from natives, and the herbicide solution applied. After spraying, the plant should be released slowly and carefully to avoid any herbicide drips or runoff. The herbicide applicator should be sure to observe what is behind and around the target invasive species for control and be mindful of wind speed and direction. Nozzle adjustments may be necessary to get the mist pattern for best coverage of the target invasive plant. Larger plants should be sprayed from multiple angles to ensure adequate coverage of the plant with herbicide for effective control.

For application to small weeds (e.g., seedling stage) amongst dense native plants, if herbicide application is deemed necessary, the herbicide can be applied by backpack

sprayer with a low-pressure regulated wand with the nozzle directed to the weed foliage, thereby avoiding overspray. However, nozzle-to-plant application is time intensive and requires highly trained applicators that can differentiate between native and nonnative plants at the seedling stage; and therefore, it is typically not the most cost-effective weed management method. However, this treatment method may be needed since it is recommended to conduct herbicide treatment outside of the bird nesting season (January 15 to September 15) in sensitive habitat areas.

STUMP CUT AND HERBICIDE TREATMENT

Treatment of larger and well-established individuals, including high priority invasive species that may re-sprout from taproots or rhizomes, is best accomplished by using the stump cut and herbicide application method. Advantages of the stump-cut treatment compared with foliar application for larger individuals, includes the following:

- Lower quantity of herbicides required to treat the invasive species; and
- Localized application of the herbicides reduces the likelihood of herbicide contact with non-target native species, during application.

Typically, the stump cut and herbicide treatment is used in late summer and early fall when plants are translocating energy reserves to the rootstock and when seed dispersal is not enhanced by weeding activities optimal timing though is dependent on the weed species being treated.

The stump cut treatment method process involves cutting the stump of an invasive species flat at about 8 to 10 inches in height, then immediately (within 2 minutes or less) treating the exposed cambium of the cut stump with a select herbicide at a specified concentration. The stump cut treatment should be implemented in the following steps:

Step 1. Plants will be cleanly cut, horizontally, close to the ground (using a saw, rotary brush cutter or similar tool).

- If the weed species has already set seed, seed material shall be immediately collected, bagged, and removed from the project area prior to cutting
- The cut vegetation will be removed from the project area the same day it is cut and properly disposed of off-site or in a designated buffer area.

Step 2. The stumps or stems will be re-cut, cleared of sawdust and immediately painted with the specified herbicide within two minutes of cutting, before the cut surface begins to congeal, to ensure penetration of the herbicide. The herbicide should be applied to the cambium in 60 seconds or less after cutting.

- Apply the herbicide on the cut stump (the percent solution will be dependent on the weed species treated and herbicide used). Apply carefully to avoid any drips or damage to surrounding native species.

Plants generally should be checked about one month after initial stum cut treatment to determine the success of the herbicide treatment. Any re-growth from the treated

stumps should be treated with the foliar herbicide application method in the same growing season or as re-growth appears in the next growing season. Any new seedlings and small saplings observed during follow-up treatments can be hand-pulled, ensuring that the root system is removed. The pulled material should be removed from the project area or chipped and stockpiled for composting, as some species can regenerate when moisture is available.

If it is not possible for the herbicide applicator to work alongside the crew who is cutting the plants for treatment, then the herbicide treatment Step 2 may be applied within one week of the initial cutting. However, the cut stump must be re-cut to expose fresh cambium for effective herbicide treatment. If the stump cannot be re-cut, then herbicide application is not recommended as it will no longer be effective since the surface would be congealed and the herbicide would not be taken up by the plant.

RECOMMENDED HERBICIDES FOR USE IN FAIRVIEW PARK

The following sections provide information and application rates for specific herbicides recommended for use in the restoration areas.

Categories of herbicides include pre-emergent and post-emergent. Pre-emergent herbicides work on newly germinated weed species. They prevent them from developing and do not harm established plants. Post-emergent herbicides work on established and actively growing weed species. Only post-emergent herbicides are recommended for use. Pre-emergent herbicides should not be used for habitat restoration since they may also affect newly germinated native species.

Only herbicides registered for use in wildlands should be used judiciously within the Conservation Easement. Herbicides that are registered for use in California for natural areas are recommended for weed species at specific rates noted on the labels. Pre- emergent chemicals are not recommended for use at any time during. The following herbicides are recommended herbicides to implement this plan:

- Fluazifop-P-butyl (e.g., Fusilade®; EPA Toxicity Class III, low toxicity) will be specified for foliar applications, at application rates recommended on the label, for grasses.
- Glyphosate (e.g., Round-up®; EPA Toxicity Class III, low toxicity) will be specified for foliar and stump cut applications, at application rates recommended on the label, for most target invasive species.
- Clopyralid (e.g., Transline®; EPA Toxicity Class III, low toxicity), will be specified for foliar spray applications, at application rates recommended on the label, for thistle control.
- Triclopyr (e.g., Garlon 4 ultra®; EPA Toxicity Class III, low toxicity) will be specified for foliar spray applications and stump-cut application, at rates recommended on the label, for woody species, sweet fennel, and other target invasive herbaceous species.

Post-emergent herbicides are either selective (kills specific types of weeds such as grasses or broadleaves) or non-selective (works on all plants). Grass-selective herbicides include Fusilade® DX and Envoy®. Broadleaf-selective herbicides include Clopyralid. Non- selective herbicides include glyphosate and triclopyr.

Post-emergent herbicides can be broadcast sprayed in areas with a low density of native species or applied with backpack sprayers in areas with a higher density of native species. Selective herbicides can be broadcast sprayed to control the desired weed type with little to no impact on natives of a different plant type. Non-selective herbicides can be more efficient in areas with a mix of grass and broadleaf weed species since they can treat all the weed species present at the site. However, non-selective herbicides can cause the most harm to desirable native species and should only be broadcast sprayed in areas with a low density of natives.

Caution should be taken to prevent overspray and herbicide drift onto the foliage of native species as they can damage or kill the plant(s). Prior to selection and use, the label of each herbicide should be read to determine if the active ingredient can translocate through the soil and cause potential damage to the root system of native species. For example, imazapyr translocates through the soil and its use should be limited to the stump cut treatment method to reduce the amount of herbicide introduced into the soil and prevent herbicide drift.

Fluazifop (Fluazifop-p-butyl Fusilade® DX)

The active ingredient in Fusilade® DX is fluazifop-p-butyl. Fusilade® DX is a selective post-emergent herbicide used for the control of annual and perennial weed grasses. The herbicide is systemic i.e., it is absorbed and moves from the foliage to the roots, rhizomes, stolons, shoots, and meristematic regions of the grasses.

Application Rate

Fusilade® DX application rates for annual and perennial grasses are 16-24 ounces (oz) per acre (4 to 6 oz of active ingredient [a.i.] per acre). For control of seedlings the rate is 8 oz per acre (2 oz a.i. per acre). Add the following spray additives to the herbicide mixture for optimum effectiveness:

- Crop oil concentrate containing 15-20% approved emulsifier at 0.5-1% volume/volume (v/v) (0.5-1 gallon [gal]/100 gal)
- Nonionic surfactant containing at least 75% surface-active agent at 0.25-0.5% v/v (1-2 quarts/100 gal)
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

Weedy grass species should be treated at the appropriate growth stage for optimum effectiveness. Grasses that have tillered (sprouted a shoot from its base), formed seed heads, or exceeded the growth stages listed on the label should not be treated. Target

weed grasses should not be under stress (e.g., from moisture, temperature, low soil fertility) for optimum control.

If the treatment area has a mix of weedy grasses, Fusilade application should be implemented when the first grass reaches the specified growth stage for treatment using the highest application rate for the grasses in the mixed population. The optimum growth stage for treatment of annual grasses is when grasses are 2–8 inches tall, but prior to tillering and/or seed head formation. It is important to note that in drought years when available water is limited, nonnative grasses can flower early when plants are less than 8 inches tall. Monitoring of flower production is critical to determine the optimum time for weed control. Thoroughly coat the foliage with herbicide during foliar application, but not to the point of runoff of the herbicide.

No more than 72 fluid ounces of Fusilade per acre a year should be applied to a treatment area. It should not be applied if rainfall is expected within 1 hour of application. Fusilade should not be applied directly to water, where surface water is present, or where runoff into water bodies could occur. To reduce herbicide runoff, avoid applications of herbicide within 48 hours of rainfall. Restrict entry into treated areas as specified on the label.

Visual observations of control can be seen within one week of treatment; however, it is dependent on the grass species and environmental conditions. Growth of treated grasses typically stops soon after application. Signs of herbicide control include loss of vigor, yellowing, reddening, and eventual death.

Glyphosate

Glyphosate (e.g., Roundup Pro® Concentrate or Roundup Pro® Max) is a broad-spectrum post-emergence herbicide for the control of annual, perennial, and woody weed species. The herbicide is systemic and moves from the treated foliage to the root system.

Foliar application should be implemented when the target species are at the appropriate growth stage for optimum effectiveness. Target annual and perennial species should be actively growing. Application to annual species should be prior to seed head formation of grasses and before bud formation in broadleaf weeds. Perennial weeds should be treated after they reach the reproductive stage of growth, seed head formation in grasses and bud formation for broadleaf species. If treatment is necessary prior to perennials reaching the reproductive stage, the higher label application rate should be used.

Application Rate

Most annual and perennial weed species can be effectively treated with a 2% solution of glyphosate when applied during the appropriate growth stage. Follow label directions of the glyphosate product used to mix a 2% solution. Add colorant or marking dyes to the spray solution to aid the applicator in achieving good coverage of target species. The dye should be mixed with the herbicide at no more than half the rate specified on the

label as the amount of dye can reduce product performance, especially at lower herbicide application rates.

Most glyphosate products contain a surfactant, and no additional surfactant is needed or recommended to add to the mix except for glyphosate products registered for aquatic use. Aquatic glyphosate formulations do not contain a surfactant in the herbicide product. If using an aquatic formulation and a surfactant is added to the mix, follow the directions on the herbicide label. However, it should be noted that in some cases, specific project permits and conditions may not allow use of a surfactant for aquatic applications.

Except where specified on the label, no more than 8 pounds (lbs) of glyphosate acid per acre per year should be applied to a treatment area in California. The total glyphosate acid amount is additive for all glyphosate products used in a given area, so it is important to keep a record of the amount of all glyphosate acid used in a given area per year. Glyphosate products have different acid concentrations and acid equivalents are provided on all product labels.

Herbicide application should not occur if heavy rainfall is expected soon after application. Herbicide should not be applied directly to water or to areas where surface water is present. Restrict entry into treated areas as specified on the label.

Visual observations of control on annual weeds can be seen within 2 to 4 days and 7 days or more for perennial weeds. Signs of herbicide control include wilting and yellowing of foliage advancing to complete browning of above-ground growth and deterioration of root material.

Clopyralid

Clopyralid is a post-emergence selective broadleaf herbicide. It is particularly effective for the control of thistle and clover species and is considered safe to use with established native grass species. However, immature native grasses prior to tillering and development of a secondary root system may be negatively affected by clopyralid.
Clopyralid is the active ingredient in the herbicide Transline®.

Application Rate

Clopyralid should be applied at ¼ to ⅔ pint per acre, depending on the weed species being treated and associated growth stage. Add the following spray additives to the herbicide mixture for optimum effectiveness:

- A non-ionic surfactant at a rate of 1 to 2 gal/100 gal of herbicide mixture.
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

In general, the herbicide is most effective when weeds are small and actively growing. The lower rate should be used only during highly favorable growing conditions and

when plants are 3 to 6 inches tall. The higher rates should be used if the plants are stressed or in areas with high weed density. The foliage should be thoroughly coated for effective control.

Application during extreme growing conditions such as drought, freezing conditions, or wet foliage at the time of application may reduce the effectiveness of the herbicide.
Herbicide is rainfast within 2 hours of application. Avoid injury to non-target plants by avoiding spray drift. Non-target plants can be affected by direct spray on plant foliage or indirectly by root uptake through the soil. The maximum application rate per year in California during the growing season is ⅔ pint per acre.

Clopyralid should not be applied directly to water, where surface water is present or where runoff into water bodies could occur. Clopyralid should not be used in areas where movement through the soil could contaminate ground water, such as loamy sand, sandy soils or in areas with a shallow water table.

Sprayed material should not be used for composting or mulch as clopyralid may remain for long periods in dead plant tissue and negatively affect future growth and development of non-target species in treated areas.

Triclopyr

Triclopyr (e.g., Garlon 3A, Renovate® 3) is a systemic herbicide used for the control of broadleaf species and grasses. Triclopyr can be used at any time during the growing season and is most effective when used to treat actively growing plants.

Application Rate

For the control of broadleaf species triclopyr should be applied at 1 to 4.5 lbs acid equivalent (a.e.) per acre in a total volume of 20 to 100 gallons of water. The herbicide mixture can be applied at any time of the growing season. Add the following spray additives to the herbicide mixture for optimum effectiveness:

- A non-ionic surfactant at the rate specified on the label of the surfactant. Use the higher recommended concentrations of surfactant when applying lower spray volumes per acre.
- A non-toxic colorant or marking dye to insure even coverage of herbicide. The dye should be mixed with the herbicide at no more than half the rate specified on the label of the dye as it can reduce product performance, especially at lower herbicide application rates.

The maximum application rate of triclopyr is 9 lbs a.e. per acre per year.

Herbicides Approved for Aquatic Use

Only herbicides and surfactants approved for aquatic use should be used in riparian habitats for treatment of weed species. It is important to note that permits may not allow the use of a surfactant in riparian habitats. The purpose of a surfactant is to provide more uniform coverage and penetration of the herbicide into the plant.
Approved aquatic herbicides include Round-up® Custom (active ingredient glyphosate)

and Renovate® 3 (active ingredient triclopyr). Non-ionic surfactants approved for aquatic use include Liberate® and Rainier®.

1.10 TARGET INVASIVE SPECIES CONTROL METHODS

The following are specific control methods for the target invasive species presented in this plan. As stated previously, no herbicides or mechanical mowing shall be done in the vernal pool watersheds and only physical control methods presented below shall be implemented for the target invasive species in the vernal pool watershed.

1.10.1 Artichoke Thistle

The type of herbicide used for artichoke thistle (*Cynara cardunculus*) control is dependent on its growth stage. In the seedling to rosette stage in winter to early spring, clopyralid (e.g., Transline®) should be applied at 1.5 to 4 oz a.e. per acre. Foliage should be thoroughly coated for effective control. The higher rates should be used if the plants are stressed or in areas with high weed density. Physical control methods include hand pulling seedlings and cutting plants in the rosette stage. When using physical methods, as much of the root system should be removed as possible to limit resprouting (DiTomaso et al. 2013). It should be noted that while physical control methods can effectively control artichoke thistle, it may take longer than chemical control methods with more treatments per year and more years of control.

For mature, bolting artichoke thistle plants, a foliar application of 2% glyphosate should be used. Glyphosate treatments should be done after bolting when the plants are actively translocating fluids to the root system. If sprayed before bolting, the above- ground material may die back, but many of the plants will resprout from the roots later in the season (Bossard et al. 2000).

Physical methods include cutting the mature plant and removing as much of the upper taproot as possible to prevent resprouting. Plants can be cut with a mower, line trimmer or hoe. The most effective cutting method is the use of a hoe to cut down below the soil to remove part of the upper tap root system. Mowers and brush cutters can be used to deplete mature plants of their resources. Repeat mowing will be necessary during the growing season prior to seed set over multiple seasons for effective control.

1.10.2 Australian Saltbush

Australian saltbush (*Atriplex semibaccata*) is a perennial subshrub that can be controlled by hand-pulling, removing as much of the root material as possible. While plants are easy to hand-pull, they are brittle, and care should be taken not to break the mainstem when pulling to ensure as much of the root material is removed as possible. Chemical methods of control include foliar application of glyphosate that can be used from postemergence to mature plants that are rapidly growing. If seeds are present before treatment, seeds should be carefully cut and removed from the plant and properly disposed of off-site.

1.10.3 Crown Daisy

Crown daisy (*Glebionis coronaria*) is an annual herb that reproduces from seed that can be controlled by hand-pulling removing as much of the root material as possible. Line trimming is most effective after the plant has flowered or produced fruits, cutting the plants as close to the base as possible. Follow-up treatments will likely be required if line trimming is the method used. Foliar application of glyphosate is most effective when the plant is mature but prior to seed set. If seed set has already occurred, line trimming should be the method used. If seeds are present before treatment, seeds should be carefully cut and removed from the plant and properly disposed of off-site.

1.10.4 Castor Bean

Castor bean (*Ricinus communis*) can be either a summer annual, perennial, shrub, or even a small tree up to 10 feet tall. The seeds are highly poisonous as well as to a lesser degree the foliage. Protective gloves should be worn during hand-pulling activities since all plant parts are toxic to humans. Hands should be thoroughly washed after working with castor bean.

Seedlings and smaller castor bean individuals should be hand-pulled, removing as much of the root system as possible to prevent resprouting. Medium sized individuals can be pulled with hand-held tools such as a weed wrench. Hand-pulling can be best accomplished in soils that are wet and even larger individuals can be hand-pulled in wet sandy soils. Hand-pulling is more difficult when soil conditions are dry and should not be the method used if most of the root system cannot be removed. If plants are broken during hand-pulling, they will readily resprout with multiple shoots from the root crown.

Mature plants should be treated with a foliar herbicide application of a 2% solution of glyphosate. Foliar herbicide application can occur at any life stage of the castor bean from seedlings to large mature plants. Control is optimum between seedling to bloom stage and is most effective at flower bud and flowering stage. Herbicide control should be done before seed production has started.

For larger individuals, the stump cut method as described above can be used. The cut stumps should be treated with a 25% solution of glyphosate applied to the cut stump. The stump cut treatment can be done on mature plants at any time of the year. Smaller plants can be cut with loppers while hand saws or chain saws may be required for larger plants.

If seed production has occurred prior to any treatment, seeds should be cut from the plant, bagged, and removed from the site to prevent the seeds from entering the weed seed bank.

1.10.5 Fountaingrass

Fountaingrass (*Pennisetum setaceum*) is a perennial grass that reproduces by seed. Small populations can be effectively controlled by digging up the plant removing as much of the root system as possible. Roots of mature plants can be dug out of the ground with a pick, shovel, or mattock. Flowers shall be cut and removed prior to

digging out the plant and the material bagged and removed from the site. Mowing is not an effective control method for fountaingrass.

Herbicide control methods included foliar application. Plants can be treated with fluazifop from postemergence to rapidly growing plants. Foliar application of glyphosate with a 1 to 2% solution is effective from postemergence to rapidly growing plants from mid-summer to fall. The most effective treatment timing for foliar application of glyphosate is during the flowering stage in the summer.

1.10.6 Giant Reed

Giant reed (*Arundo donax*) is a perennial grass that is bamboo-like with hollow cane-like stems that can grow upwards to 25 feet tall. Giant reed does not produce by seed but can readily reproduce from roots, rhizomes, and stem material.

Foliar herbicide spray should consist of spraying giant reed with an 8% solution of Roundup Custom™ (a glyphosate herbicide approved for aquatic use), and the surfactant Liberate® (approved for aquatic use) directly to exposed green foliage. The green foliage should be thoroughly wetted with herbicide with a minimum of 75% of the plant treated. Since the root and rhizomes of giant reed are so substantial sufficient herbicide needs to be translocated to the roots for effective control. Tall stalks shall be carefully bent downward, and herbicide solution applied, being careful to avoid spraying any adjacent native species. Similarly, giant reed in that is in or near standing water should be carefully bent so that the foliage is over land and not water for spraying.

Treatment shall occur when giant reed is actively growing starting early spring and is most effective at the end of summer or beginning of the fall season when it is actively translocating resources to its root system. Herbicide control is least effective during the winter months when temperatures are colder and giant reed is primarily dormant.
Control of mature well-established stands of giant reed can take between 3 and 7 years to control where hydrologic conditions favor the regrowth of giant reed.

For large, dense giant reed stands with a lot of standing biomass, it may be necessary to cut the canes prior to herbicide treatments. When cutting is done, all cut cane material should be removed from the Park or mulched in place. Mulched in place canes should be thoroughly shredded to prevent potential resprouting from stem nodes. The initial cutting should be in the late fall/early winter. Follow-up herbicide treatment of giant reed resprouts as described above during the growing season will be necessary. It is recommended the resprouts are a minimum of three feet tall for there to be sufficient foliage to treat.

Giant reed can be removed by cutting the canes and digging up the roots, culms, and rhizomes. As much of the roots and rhizomes need to be removed as possible to prevent resprouting. Hand-removal is most efficient and effective for smaller infestations or in areas previously treated with herbicides and only a few viable giant reed canes remain. All plant material should be collected and properly disposed of off-site.

1.10.7 Milk Thistle and Italian Thistle

Milk thistle (*Silybum marianum*) is an annual or biennial species and typically emerges during the fall after first rains. Italian thistle (*Carduus pycnocephalus*) and slender flowered thistle (*Carduus tenuiflorus*) are annual species and seedlings emerge after the first rains.

Physical control methods include hand pulling seedlings, cutting with hand tools, or mowing. When using hand tools such as grubbing hoes, plants should be cut a minimum of 2 to 4 inches below the ground to prevent resprouting. Mowing is most effective when done after the plants have bolted and are about to flower, as plants will regrow if plants are cut before fully bolted. Plants should be cut or mowed prior to seed production.

The type of herbicide used for control is dependent on their growth stages. In the seedling to bud stage, clopyralid (e.g., Transline®) should be applied at 1.5 to 6 oz a.e. per acre for control of milk thistle and 1.5 to 8 oz a.e. per acre for Italian thistle and slender flowered thistle (DiTomaso et al. 2013). However, it should be noted that the maximum application rate for clopyralid in California is ⅔ pint per acre per annual growing season. Foliage should be thoroughly coated for effective control. The higher rates should be used if the plants are stressed or in areas with high weed density. A foliar application of 2% glyphosate for milk thistle and glyphosate at a rate of 1.5 to 3 lbs
a.e. per acre for Italian thistle and slender flowered thistle can be used at any time during the growth stage for effective control.

1.10.8 Pride of Madeira

Pride of Madeira (*Echium candicans*) can be controlled by hand-pulling seedlings and younger plants. Larger mature plants can be controlled by cutting the upper foliage of the plant and digging out the root system. Plant foliage can be cut with a handsaw, loppers, axe, or similar tools and removed to allow for better access to the roots. The root material can be dug out and removed with a shovel, mattock, Pulaski, or similar tool. As much of the root material should be removed as possible for effective control since Pride of Madeira can readily resprout from remaining roots.

Foliar herbicide application of a 1 to 2% solution of glyphosate is most effective from late spring to summer and should be timed before seed production. Stump cut treatments can also be effective using glyphosate. If seed production has occurred prior to any treatment, seeds should be cut from the plant, bagged, and removed from the site to prevent the seeds from entering the weed seed bank.

1.10.9 Purple False Brome

Purple false brome (*Brachypodium distachyon*) is a fast growing annual or perennial grass with a short life cycle that allows for multiple life cycles during a growing season (Bakker et al. 2009). First emergence is typically during the fall after the first rains however, emergence can occur any time following a rain event. Purple false brome produces a dense thatch that inhibits germination of many native species and the first step for control is to eliminate the dense thatch in a restoration area. Initial mowing and

dethatching will allow for natural recruitment of natives; however, other nonnative herbaceous species can invade after clearing.

Treatment methods for the control of purple false brome include mowing, mechanized or line trimming and foliar herbicide application. When mowing, the plants should be cut as close to the ground as possible. Effective herbicide treatments include fluazifop at 4 to 6 oz a.i./acre from post-emergence to prior to the boot stage or 0.56 to 1.1 lb a.i. per acre of glyphosate from post-emergence application to rapidly growing, non- stressed plants (DiTomaso et al. 2013). Given the fast-growing nature of purple false brome and its ability to have multiple life cycles in a growing season, multiple treatments during a growing season are optimal for increased control. Treatments must be implemented prior to seed set to limit seed banking. Typical timing for treatments is to implement the first control event in winter after emergence with follow-up treatment(s) in spring for later germinating populations and resprouts.

Growth and flower production are dependent on annual rainfall and subsequent soil moisture availability. Monitoring growth and development is important particularly during drought years to plan treatment accordingly for effective control. For example, the flowering height of purple false brome in treatment areas was observed at only a height of 1 to 2 inches in response to the 2015 drought conditions. As a result, physical control methods, such as mowing required more time than usual to ensure that the tractor, or skid steer, mounted mower stayed close enough to the ground to cut the flowering parts of the grass. The low flowering height required the use of a flail mower, instead of a rotary mower, mounted to a hydraulically driven skid steer so the grass could be mowed at the soil surface. The additional time and equipment for the physical control of purple false brome control in dry years increases the cost of control. An alternative option for treating low stature plants is broadcast herbicide application of fluazifop or glyphosate.

1.10.10 Mustard Species

Control methods for mustard species such as black mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), and London rocket (*Sisymbrium irio*) consist of mowing, hand pulling, and foliar herbicide application. Mowing or hand cutting treatments are most effective for actively growing plants that have flowered but prior to setting seed to limit contributions back to the weed seed bank. Cutting is most effective for the annual mustard species black mustard and London rocket compared to the perennial shortpod mustard; however, follow-up treatments will likely be necessary for all the mustard species since resprouting can occur. Foliar herbicide application of a 2% solution of glyphosate is most effective when plants are younger prior to flowering, particularly for black mustard. When hand pulling, as much of the taproot as possible should be removed (DiTomaso et al. 2013).

Treatment times depend on annual weather, but typical treatment times are in the winter after emergence from rainfall and a follow-up treatment(s) in spring before seed set. Shortpod mustard can germinate and grow at any time of the year conditions are

right and follow-up treatments may be needed in the summer. Several years of control are necessary to eliminate mustard species.

1.10.11 Nonnative Grass Control

Ripgut brome (*Bromus diandrus*) is a nonnative annual grass that typically emerges after the first rains. Growth and development are dependent upon rainfall events, with flower production earlier in the season during drought years along with a decrease in biomass and height of the plants. Nonnative annual grasses are typically the first nonnative species to germinate after rains. Control methods include, hand pulling, cutting, mowing, and herbicide application. Timing for control of nonnative grasses is typically in winter with follow-up treatments in spring for later-germinating individuals.

Smaller infestations can be controlled with hand pulling before seed development. Mowing can reduce seed production when timed right after flowering but before seeds mature. Plants cut earlier than this stage will grow back. When mowing, the material should be cut to about 2 inches to remove the bolting stems (DiTomaso et al. 2013). If mowing is the only option for control, mowing should be repeated every 3 weeks, as needed.

Ripgut brome can be controlled with a 0.375 to 1.1 lbs a.e. per acre of glyphosate at postemergence in early spring to rapidly growing plants that are not stressed. Fluazifop at a rate of 4 to 6 oz a.i. per acre for mature plants and 2 oz a.i. per acre for seedlings can also be used with the most effective treatment time before the boot stage.

1.10.12 Poison Hemlock

Poison hemlock (*Conium maculatum*) is a biennial species that reproduces by seed. For small infestations, hand-pulling is the recommended method for control. When hand- pulling, the entire taproot should be removed to prevent resprouting. Care should be taken when handling poison hemlock as all plant parts are toxic to humans. Gloves should be worn during control activities and hands should be thoroughly washed after working with poison hemlock. This includes handling of dried material since it takes several years for the toxins present to dissipate. Foliar application of a 1 to 1.5% glyphosate solution is most effective from postemergence to rapidly growing plants prior to bolting. Higher rates of glyphosate can be used for control of plants from bud to full bloom stage. If seed production has occurred prior to any treatment, seeds should be cut from the plant, bagged, and removed from the site to prevent the seeds from entering the weed seed bank.

1.10.13 Stinknet

Stinknet (*Oncosiphon pilulifer*) is an annual species that reproduces from seed that can be controlled by physical methods or chemical methods. Hand-pulling removing all the root material is the best method and is recommended for smaller infestations. Larger populations can be controlled with line trimming once plants reach the bud stage. If viable seed has already formed, line trimming is not recommended since the seed can be easily dispersed, unless the seed material can be removed before cutting. Follow-up control will be needed if cutting is the method used. Care should be taken when

handling stinknet as it can cause contact dermatitis for some individuals. Protective gear includes long sleeve shirts, pants, and gloves to prevent skin contact. Chemical control methods include foliar application of glyphosate. Timing of chemical control methods is critical, and plants should be treated in the rosette stage up to bolting stage but before flowering. Once the plants have flowered, chemical control efficacy diminishes (McDonald, 2023).

1.10.14 Sweet Fennel

Sweet fennel (*Foeniculum vulgare*) is a perennial species that typically emerges in mid- winter to early spring. Control methods include slashing, hand pulling, and herbicide application. Slashing is best used just before the flowering stage of fennel plants, but repeated slashing of new growth is likely required to kill the plant. Hand pulling is best for seedlings and younger, smaller plants as the root system needs to be removed for effective control. When cutting or digging out plants a minimum of 3 to 6 inches of the taproot should be removed for effective control. Physical methods for control of sweet fennel are very labor intensive. It is important to note that digging up plants causes soil disturbance that can lead to increased germination of exposed seeds therefore, digging should be limited to less dense populations (DiTomaso et al. 2013).

Foliar herbicide application of a 2 to 5% solution of glyphosate is most effective from post-emergence to prior to flowering stage. Control with glyphosate is less effective after fennel has bolted (DiTomaso et al. 2013). A 0.5 to 1% solution of triclopyr is most effective during the wet season from late February to early March (DiTomaso. et al.
2013) but can be used from post emergence but prior to flowering. The stump cut method can be used for larger mature plants using a 100% solution of glyphosate.

Timing for treatments is dependent on weather with the first treatment typically in late winter with follow-up treatments in spring. Populations should be checked after using any treatment method to check for resprouts and new seedlings.

1.10.15 Target Annual Invasive Control in the Vernal Pool Watershed

Specific target invasive species to be controlled in the vernal pool watershed include five horn bassia (*Bassia hyssopifolia*), curly dock (*Rumex crispus*), Russian thistle (*Salsola australis*), and buffalobur (*Solanum rostratum*). Control shall be by hand-pulling or line- trimming methods. When hand-pulling, as much of the root material shall be removed as possible. For curly dock, a perennial species, as much of the tap root, at least to a depth of 2 inches, shall be removed to prevent resprouting. Mowing should be done before seed production. Multiple mowing events should be planned to treat subsequent resprouts, including for annual species.

1.11 EFFECTIVENESS MONITORING AND REPORTING

In addition to annual invasive plant surveys by a qualified biologist (see Section 1.6) to determine the appropriate method and timing of control events, and sensitive species surveys (see Section 1.5) before work in sensitive habitat areas during the bird breeding

season, control effectiveness monitoring should also be performed. Effectiveness monitoring involves an annual survey of invasive plant control effectiveness, conducted at least one month after the last annual invasive plant treatment. This survey assesses treated invasive plant populations' estimated size and new locations to guide recommendations for the following year.

The Qualified Biologist should confirm treatments are executed during the year and record key information for a running treatment log, including treatment location, species treated, treatment timing, and treatment method. Treatment areas' spatial locations can be tracked using the 2023 vegetation cover map, recording the polygon in which treatment occurred based on the vegetation map geodatabase. Alternatively, GPS locations can be collected at control locations and entered into a geodatabase for archiving treatment locations.

Recording control treatments is essential for invasive plant management, demonstrating treatment effectiveness and facilitating adaptive management when necessary. More detailed information allows for better management practice adjustments as needed. If resources and time for monitoring and reporting are limited, a minimum amount of basic information should be collected to inform decision-making.

All eradicated populations should be monitored for at least three years to ensure no new recruits emerge from the weed seed bank. Continued surveying is necessary for target invasive species that have been eradicated but are present in the surrounding area and have a high probability of reinvading the park, focusing on areas with the highest potential for recurrence.

Comparing year-to-year monitoring results can yield analytical insights, such as:

- Increase or decrease in target invasive cover within mapped populations and parkwide.
- New occurrences or spread of currently targeted invasive species.
- Eradication of a target invasive weed species.

These quantitative results can document the weed management program's success, help secure future funding sources, and guide adaptive management recommendations to improve future invasive weed management efforts.

2 REFERENCES

Bossard, C.C., J.M. Randall, and M.C. Hoshovsky. 2000. Invasive Plants of California's Wildlands. California, University of California Press.

DiTomaso, J.M. G.B. Kyser, et al. 2013. Weed Control in natural areas in the Western United States. University of California Weed Research and Information Center, University of California Davis. 544 pp.

McDonald CJ, Larios L, Rodriguez C. 2023. *UC IPM Natural Area Pests: Stinknet*. UC ANR Publication 7601. Oakland, CA.

U.S. Fish and Wildlife Service and California Invasive Plant Council. 2018. Land Manager's Guide to Developing an Invasive Plant Management Plan. Cal-IPC Publication 2018-01. National Wildlife Refuge System, Pacific Southwest Region, Inventory and Monitoring Initiative, Sacramento, CA. California Invasive Plant Council, Berkeley, CA. Available at www.cal-ipc.org and data.gov.

U.S. Fish and Wildlife Service and Utah State University. 2015. Invasive plant inventory and early detection prioritization tool: a user's guide, version 4.0, February 2018. USFWS, National Wildlife Refuge System, Pacific Southwest Region, Inventory and Monitoring Program, Sacramento, CA. 136pp.

Fairview Park Master Plan IS/MND (1997) Addendum to the File

Fairview Park Mesa Restoration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Project – Crotch's Bumble Bee and Western Burrowing Owl

An initial study/mitigated negative declaration (IS/MND) was prepared for the originally proposed Fairview Park Master Plan (FPMP) in 1997. Pursuant to California Regs. Tit. 14, §15162(b), if changes to a project or its circumstances occur or new information become available after adoption of a negative declaration, the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation.

As the lead agency, the City of Costa Mesa determined, based on the habitat restoration plan for the project and guidance from the California Department of Fish and Wildlife, an addendum to the originally adopted IS/MND should be prepared. This Addendum to the IS/MND addresses new information pertaining to the Crotch's bumble bee (CBB, *Bombus crotchii*) and Western Burrowing Owl (BUOW, *Athene cunicularia hypugaea*), both candidate species for listing under the California Endangered Species Act (CESA). Pursuant to this Addendum also discusses the project's avoidance and minimization measures (AMMs) that achieve a long-term net uplift for CBB, BUOW present at the project site.

The FPMP was the subject of an IS/MND adopted by the City of Costa Mesa in 1997. In that document the City determined that the master plan for the 208-acre park is mostly passive with habitat restoration, trails, picnic areas, new parking west of Placentia Avenue, and an expanded model train station and museum area, trails, and picnic areas on the east side.

The IS/MND identifies that the park contains sensitive natural resources as identified in the FPMP. At the time, the list of species of concern did not include CBB, or the fact that BUOW is a candidate for listing under CESA, because the CBB was not a species of concern in 1997, and BUOW was recently listed. The 1997 FPMP includes a discussion of BUOW, which is updated here due to its recent change in listing status.

This Addendum provides a description of the species, the benefits of the project, and the measures to be included in the FPMP activities, including the Coastal Sage Scrub and Flower Fields Habitat Restoration Project to protect the species during restoration actions.

1997 IS/MND Assessment Regarding Impacts to Biological Resources. The IS/MND found that the FPMP was designed with sensitive resources in mind and that no significant adverse impacts are associated with the master plan if the following mitigation measures, which are recommended in the master plan, are kept a part of the project:

> B-1. Any habitat restoration activities shall be carefully planned and implemented according to the Fairview Park Master Plan and in consultation with a biologist familiar with the park's native plant and animal communities.
>
> B-2. To avoid potential impacts to sensitive species present or potentially present in the alluvial scrub community depicted on the FPMP, weed control activities (e.g., disking) shall be terminated until a resource management plan has been undertaken.
>
> B-3. Upon approval of the Fairview Park Master Plan, the City shall review current management practices (e.g., weed control, vector control; mowing within vernal pools) to avoid potential impacts to biological resources identified in the master plan as being highly or moderately sensitive.
>
> B-4. Development of the park west of Placentia Avenue including trenching for utilities, shall minimize impacts to highly or moderately sensitive resources, retain the natural topography to the extent feasible, and use only locally native plants in restoration and in other landscaping where appropriate. Activities on this side of the park shall be consistent with the NCCP Implementation Agreement if signed by the City of Costa Mesa.

Updated Species Information

Crotch's Bumble Bee

The Crotch's bumble bee (CBB, *Bombus crotchii*) is a candidate for listing under CESA. The CBB occurs in grassland and scrub habitats containing nesting and/or overwintering habitat, and abundant floral resources that provide nectar and pollen during the active flight period (early-February to late-October). The species nests underground in abandoned holes created by small mammals (e.g., ground squirrels, mice, and rats), or occasionally in bird nests, but may also nest under logs and other woody debris; above ground under perennial bunch grasses, brush piles, and thatched annual grasses, and in dead trees or hollow logs (Williams et al. 2014, Xerces Society 2018). Overwintering habitat is largely unknown, but bumble bees have been documented overwintering in burrows of other animals, and in shallow excavations in soft soil, leaf litter, and other debris such as compost piles (Goulson 2010, Williams et al. 2014). Colonies are annual and only newly mated bumble bee queens overwinter

(Thorp et al. 1983). In early spring, queens emerge from their overwintering site to forage on nectar and pollen, and search for suitable nest sites. In general, bumble bee colonies can support anywhere from 50 to 1,000 female workers, as well as males and the queen (Xerces Society 2018).

Based on recent focused surveys, nesting habitat and overwintering habitat are present on the Fairview Park restoration site, and CBB has been observed foraging on-site on native and non-native floral species including native phacelia (*Phacelia* spp.) and salvia species (*Salvia* spp.), and non-native black mustard (*Brassica nigra; synonyms are Rhamphospermum nigrum, Mutarda nigra,* and *Sinapis nigra*) (Endemic Environmental Services 2024).

Burrowing Owl

The burrowing owl (BUOW, *Athene cunicularia*) is a candidate for listing under CESA and a California species of special concern. The burrowing owl nests and roosts in open grasslands and open habitats with suitable burrows, usually those made by California ground squirrels (*Otospermophilus beecheyi*). BUOW use abandoned ground squirrel burrows for shelter and nesting. The breeding season in California is March to August (Shuford et al. 2008). Burrowing owls are not known to nest at Fairview Park; but are known to occupy the Park in the winter.

Proposed Habitat Restoration Project

The Fairview Park Coastal Sage Scrub and Flower Fields Habitat Restoration and Enhancement Project (Project) is a collaborative effort between the City of Costa Mesa (City) and the Orange County Transportation Authority (OCTA) to fulfill an outstanding obligation of restoring approximately 4.5 acres of coastal sage scrub and 5.0 acres of native grassland habitat. In January 2024, the City contracted with MIG (consultant) to prepare a habitat restoration plan for the Project, which was prepared by their subconsultant, Land IQ (2024). The Project is intended, in part, to fulfill outstanding mitigation commitments to OCTA for a total of 23 acres of restoration consisting of various habitat communities in the wetlands and riparian habitat restoration area. As of November 2024, the City has completed 13.5 acres of habitat restoration towards its 23-acre commitment. The Project was designed to accomplish an additional 11.9 acres of habitat restoration, with 9.5 of these acres being in credit to the OCTA Environmental Mitigation Program. In addition, the Project will implement voluntary habitat restoration and enhancement initiatives to augment the conservation value of the site. These measures will not only contribute to the overall success of the Project but also help fulfill the long-term conservation and preservation commitments outlined in the City's adopted FPMP.

Habitat Restoration Project Beneficial Ecological Uplift for CESA-Protected Species

Crotch's Bumble Bee

The Project will improve many environmental factors affecting CESA-protected species, thereby providing ecological uplift. Like all bumble bees, Crotch's bumble bee requires foraging habitat, a place to nest, and a place to overwinter (Hatfield et al. 2012). For CBB, the Project will improve the ability of the site to support all the needs of the bumble bee.

First, the Project will increase the diversity of native flowering species. Increased plant diversity is positively correlated with bumble bee abundance (Mand et al. 2002, Hines and Hendrix 2005) and has been shown to reduce competition for nectar sources with other species that may be better adapted to pollinate one species versus another (Balfour et al. 2021).

Second, the increased plant diversity will also extend the native flower blooming period to encompass the entire CBB flight season, providing critical floral resources (nectar and pollen) during the queen flight season (February to March) as queens emerge from a state of diapause (i.e., a form of hibernation), during the colony active period (April to August), and during the gyne flight season (September to October) when newly-mated queens are building fat reserves to prepare for winter hibernation. The life cycle of CBB begins when queen bees emerge from hibernation each spring (queen flight season), playing a critical role in maintaining the colony's continuity. For the colony's survival and successful reproduction, the availability of sufficient floral resources is essential during the entire flight season. For instance, newly mated queens must build fat reserves before hibernation (gyne flight season) to ensure the emergence of a new generation the following spring (CDFW 2023).

The plant palette for the Project reflects current understanding about the plant species commonly visited by CBB (Exhibit A). For example, of the 14 plant families that are represented in the plant palette, six families are the most commonly visited by CBB, including Apocynaceae, Asteraceae, Boraginaceae, Fabaceae, Hydrophyllaceae, and Lamiaceae (The Xerces Society 2018); and of these families, 24 plant species are represented. Likewise, the palette includes narrow leaf milkweed (*Asclepias fascicularis*), which is an important nectar source for males, and lupines *(Lupinus* spp.), which is an important pollen and nectar source for females *(*CBBA 2025). The pallete also includes plants in the genera *Salvia, Acmispon, and Phacelia*, which have also been shown to be important for the species (CBBA 2025).

Third, the Project will improve and increase nesting and overwintering habitat resources on the site by planting native bunch grasses, which are known to provide bumble bee

nest habitat and the increased diversity of plants is expected to attract a greater abundance of small mammals to the area.

Burrowing Owl

The Project will also have benefits for the BUOW. The removal of the tall-stature non-native species (e.g., mustards, thistles, fennel) and replacement with shorter-statured native species will be beneficial for owls because it will provide more visibility to watch for approaching predators and more easily hunt for prey (CDFW 2024). The diversity of plant food resources and shorter-stature vegetation will also attract California ground squirrels, which are a keystone species in California grassland habitats, upon which BUOW are highly dependent for their burrows. The diversity of plants will provide more diverse food resources that California ground squirrels consume including seeds, fruits, stems, and leaves, and the shorter stature vegetation will provide good visibility of predators. Additionally, the diversity of plants will provide a nearly year-round source of food for BUOW prey species, including in the winter when owls have been observed as present. The increased structural diversity of native shrub and herb life forms will also attract a wider variety of prey species such as insects and small lizards (Curran 2022, Owen et al. 2024).

Avoidance and Minimization Measures for Crotch's Bumble Bee and Burrowing Owl

AMM-1. Qualified Biologist. The City shall ensure that the Qualified Biologist(s) are knowledgeable and experienced in the biology, natural history, and habitat requirements of CBB, including co-occurring bumble bee species, and/or BUOW, with at least two season of experience.

AMM-2. Qualified Biologist Authority. The Qualified Biologist shall immediately stop any activity that does not comply with the AMMs or order any reasonable additional protection measures, in consultation with the City and CDFW, to avoid the unauthorized take of CESA-protected species. The City shall provide unfettered access to the Project Area and otherwise facilitate the Qualified Biologist in the performance of their duties. If the Qualified Biologist is unable to comply with these measures, then they shall notify the City and CDFW immediately.

AMM-3. Education Program. The City shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Qualified Biologist reviewing the sensitive species/resources that could potentially occur in work areas, including but not limited to CBB and BUOW. The program shall include a general discussion of the life history, field identification, habitat requirements, and the legal status for each species.

The Qualified Biologist shall also explain the relevant AMMs as they relate to sensitive biological resources on/around the Project Area and disclose the specific resources that will be monitored. The City shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new individuals before they are authorized to perform work in the Project Area. Upon completion of the program, they shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.

Avoidance and Minimization Measures for Crotch's Bumble Bee

Based on the confirmed presence of CBB on the site, initial dethatching activities and ongoing weed maintenance activities have the potential to destroy active nests and overwintering queens, and result in the temporary loss of foraging habitat. Recognizing that complete avoidance of take is likely not possible, especially in the fall and winter months when overwintering bumble bee queens are undetectable, the following measures will be implemented to minimize Project impacts to CBB and their habitat.

AMM-4. Pre-work Surveys. Pre-work surveys for CBB shall be conducted during the queen flight season, colony active period, and gyne flight season (cumulatively, February 1 through October 31) for various habitat restoration activities with different impact potential. If CBB are found to be present, the Qualified Biologist shall attempt to determine if there is an active nest in the Project Area that necessitates the establishment of a protective avoidance nest buffer.

a. Minimal to No Impact Activities. One pre-work survey shall be conducted when the potential to impact CBB or their habitat is minimal to none. These habitat restoration activities include (i) hand weed control techniques when the weeding event is timed to occur prior to predominantly synchronous flowering (i.e., individual plants in a population may flower earlier but typically most of the plants in a population flower in the same time period) of known CBB floral resources, or (ii) the targeted foliar application of grass-specific herbicides that are approved for use in the habitat restoration plan. Hand weed control techniques include hand-pulling of individual plants and the use of hand picks for cutting weeds at or above the soil surface.

b. Ground Disturbance or Flowering Food Source Removal Activities. Two pre-work surveys shall be conducted prior to Project activities involving ground disturbance (e.g., digging out perennial plants to remove the root system for effective control), the use of motorized mechanical equipment (e.g., line trimmers), the use of vehicles or mechanical tracked equipment, the use of herbicides applied according to a CDFW approved Pesticide Use Plan developed for the Project, or

control of weeds that are in predominantly synchronous flowering that are known CBB floral resources.

c. Survey Guidelines. Surveys shall focus on areas with blooming native and nonnative nectar and pollen sources, including a 50-foot buffer around the work area. Conduct surveys between 8:00 am and 4:00 pm on sunny days with temperatures ranging from 55 to 90°F and wind speeds below 10 mph. Conduct presence/absence detection surveys for a minimum of 1 person-hour for each 3 acres of suitable habitat. For one pre-work survey requirements, conduct surveys no more than 2 days before starting work activities. For two pre-work survey requirements, conduct surveys no more than 10 days before work begins, at least 4 days apart, and with the second survey no more than 2 days before starting work activities.

d. Alternative Monitoring Method for Unfavorable Weather Conditions. The incidence of coastal fog and high prevailing on-shore wind speeds at Fairview Park, can, at times, limit the ability of the Qualified Biologist to complete surveys according to the guidelines before scheduled weed management activities. If weather conditions hinder surveys before Project activities, the Qualified Biologist shall monitor work on the first day of Project activities to detect CBB and nests. This alternative monitoring approach aims to facilitate timely weed control while protecting CBB and their habitat. If CBB is detected while monitoring, the Qualified Biologist shall make every effort to detect a nest in the work area and establish a protective avoidance buffer around the nest. The Qualified Biologist has authority to recommend additional monitoring of Project activities when a survey was unable to be completed prior to start of work. The Qualified Biologist shall collaborate with the Project implementation team to determine optimal timing for maintenance weeding based on CBB activity and relevant AMMs.

e. Locating Nests. If CBB are detected during pre-work surveys or monitoring, then the Qualified Biologist shall make every effort to locate nests in the Project Area.

f. Nest Buffer. If active CBB nests are detected, the Qualified Biologist shall establish protective avoidance buffers around the nest(s). The buffer shall ensure protection of any existing floral resources around the nest and observed flight corridors as determined by the Qualified Biologist. At a minimum, the buffer should provide at least (i) 50 feet of clearance around nest entrances for hand weed control techniques with non-motorized hand tools, or for the targeted foliar application of grass-specific herbicides that are approved for use in the habitat restoration plan, and (ii) 100 feet of clearance around nest entrances for habitat restoration activities that involve motorized tools, ground disturbance, the use of

vehicles or mechanical tracked equipment, or the use of herbicides applied according to a CDFW approved Pesticide Use Plan. The protective avoidance nest buffer may be adjusted as determined by the Qualified Biologist depending on the locations of the floral resources and flight corridors and using the most current and commonly accepted science and published guidance. Work shall not occur within the protective avoidance nest buffers until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three consecutive days), as determined by the Qualified Biologist. Restoration activities may occur within the 50 to 100-ft nest buffer only if actively monitored by the Qualified Biologist. The Qualified Biologist will observe and assess the behavior of the CBB, including the frequency of entering and exiting the nest, both before and during work. If CBB exhibits significant changes in behavior indicating stress or avoidance during work, then the Qualified Biologist shall stop all work within the buffer zone and consult with CDFW on how to proceed.

g. Reporting. All survey and monitoring findings shall be included in the annual performance monitoring reports for the Project.

AMM-5. Timing of Weed Control. To avoid potential impacts to CBB, weed control shall be timed prior to flowering of weed species that are potential food sources during project weed management activities to the extent possible. And after at least two full years of site preparation and the installation of the native seed mix in a restoration area has occurred per the habitat restoration plan (Land IQ 2024), weeding shall be done primarily by hand pulling or cutting and be timed to occur prior to flowering of the species to be weeded, when feasible.

AMM-6. Use of Grass-Specific Herbicide. The use of post-emergent, grass-specific, bee safe herbicides identified in the habitat restoration plan (Land IQ 2024) are allowed to control nonnative grasses during the site preparation phase (i.e., consistent weed management following the grow-and-kill techniques prior to installation of the native seed mix). Pre-emergent herbicides are not allowed because they may also impact newly germinated native species, hindering natural recruitment or seed mix establishment. This selective approach ensures that herbicides target only intended nonnative grass species while preserving non-target plants, minimizing potential harm to CBB, and safeguarding other pollinator species. Additionally, this approach avoids adverse impacts on plants that offer floral resources to CBB. Only one grass-specific herbicide is allowed, active ingredient fluazifop-p-butyl (e.g., Fusilade®) for foliar applications, following label-recommended rates, to treat nonnative grasses. This herbicide is listed as Green Level III on the University of California's Division of Agriculture and Natural Resources statewide Integrated Pest Management (UC IPM) database, indicating minimal toxicity to bees and requiring no bee-related precautions

(UC IPM database; accessed on January 14, 2025). The residual life of herbicides in soil varies by product and can persist from several months to several years before breaking down into inert compounds. Fluazifop-p-butyl exhibits no soil activity (DiTomaso et al. 2013). Other herbicides for nonnative broadleaf weeds (e.g., thistles and mustards) may be controlled according to a CDFW approved Pesticide Use Plan.

AMM-7. Pesticide Use Plan. The grass-specific herbicide, active ingredient fluazifop-p-butyl, is approved for use during the site preparation phase of the Project prior to installation of the native seed mix. If alternative herbicide products are recommended for weed control during the site preparation phase, the City shall submit a "Pesticide Use Plan to Avoid and Minimize Impacts to Crotch's Bumble Bee" (Pesticide Use Plan) to CDFW for approval before use within the Project area. The Pesticide Use Plan will outline best management practices to avoid and minimize negative impacts to CBB and their habitat, following guidance provided by the Xerces Society, the California Department of Pesticide Regulation, and the UC IPM practices to protect bees. Chemicals known to be toxic to bees shall be avoided (e.g., glyphosate), and applications will be conducted outside the flowering periods of known CBB floral resources and CBB active periods (February 1 through October 31) as much as possible. The Pesticide Use Plan shall include a requirement for the City to maintain records of herbicide applications, including invasive plant species treated, location and area treated, products used, application rate, application volume, and application method.

AMM-8. Insecticide and Soil Fumigant Restriction. The use of insecticides or soil fumigants are prohibited in Fairview Park to avoid the harm caused to non-target wildlife, including CBB. Only insecticides or soil fumigants approved for use in writing by CDFW, with minimal impact on non-target wildlife, may be used.

Avoidance and Minimization Measures for Burrowing Owl

BUOW are not known to nest at Fairview Park; therefore, no impacts to active nests of this species are anticipated. Per Species Protection Measure BIO-11 in the Habitat Restoration Plan, pre-work breeding/nesting bird surveys will be conducted by a Qualified Biologist during the bird nesting season (February 15 to August 31). In the unlikely event that nesting BUOW are discovered, the City shall immediately notify and consult with CDFW and adhere to recommendations for active nest buffers as specified by CDFW, and follow Measure BIO-12, Work Restrictions Near Active Nests, to ensure their protection.

For any overwintering BUOW that may be affected by Project activities near occupied winter burrows, the following Avoidance and Minimization Measures (AMMs) will be put in place to prevent potential impacts.

AMM-9. Pre-work Surveys. To avoid disturbance to BUOW during their non-breeding season, the following pre-work survey and avoidance measures shall be implemented from October 1 to March 31.

a. Survey Guidelines. Two pre-work surveys shall be conducted by the Qualified Biologist within 14 days before work begins, at least 4 days apart, and with the second survey no more than 2 days prior to starting work activities. Surveys shall cover all work areas containing suitable BUOW habitat. In the event of a delay in Project activities leaving the site undisturbed for over 14 days, pre-work surveys must be repeated to confirm that BUOW have not established themselves in the Project Area. If pre-work surveys indicate BUOW absence, Project activities may proceed without additional measures.

b. Burrow Buffer. Upon BUOW detection, a protective avoidance buffer shall be established around their burrow in consultation with CDFW: 100 feet for low disturbance activities (e.g., hand tool use) or 300 feet for high disturbance activities (e.g., heavy equipment operation). Once the Qualified Biologist has confirmed that the BUOW has left the burrow for the season, then Project activities within the buffer area may resume.

c. Monitoring. Once the buffer is established, the Qualified Biologist will monitor Project activities occurring near the avoidance buffer for signs of adverse effects, including distress/disturbance, as needed. If adverse effects are detected, the Qualified Biologist will have the authority to stop any activity per AMM-2.

d. Reporting. All survey and monitoring findings shall be included in the annual performance monitoring reports for the Project.

AMM-10. Rodenticide Restriction. The use of rodenticides is prohibited in Fairview Park to avoid the harm caused to non-target wildlife, including BUOW. Only rodenticides approved for use in writing by CDFW, with minimal impact on non-target wildlife, may be used.

Conclusion

The measures included in the IS/MND, as further elucidated in this addendum, will minimize impacts to CBB and BUOW, and no significant impacts to these species are expected as a result of the implementation of the proposed Coastal Sage Scrub and Flower Fields Habitat Restoration Project, which will ultimately provide ecological uplift to habitat for these species in Fairview Park.

References

Balfour, N.J., K. Shackleton, N.A. Arscott, K. Roll-Baldwin, A. Bracuti, G. Toselli, F.L.W. Ratnieks. 2021. Energetic efficiency of foraging mediates bee niche partitioning. Ecology 102(4).[CBBA] California Bumble Bee Atlas. 2025. Results 2022-2023. Accessed January 2025 from https://www.cabumblebeeatlas.org/project-highlights-2023.html

[CDFW] California Department of Fish and Wildlife. 2019. Evaluation of the petition from the Xerces Society, Defenders of wildlife, and the Center for Food Safety to list four species of bumble bees as endangered under the California Endangered Species Act.

[CDFW] California Department of Fish and Wildlife. 2023. CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. Published June 6, 2023. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline

[CDFW] California Department of Fish and Wildlife. 2024. Petition Evaluation for Western Burrowing Owl (*Athene cunicularia hypugaea*). Report to the Fish and Game Commission. California Department of Fish and Wildlife, P.O. Box 944209, Sacramento CA 94244-2090. 19 pp.

Curran, M.F., J.R. Sorenson, Z.A. Craft, T.M. Crow, T.J. Robinson, amd P.D. Stahl. 2022. Early seral vegetation communities increase insect abundance and diversity in a semiarid natural gas field during early and late growing season. Accessed January 2025 from https://doi.org/10.1101/2022.06.28.494893

DiTomaso, J.M. G.B. Kyser, *et al.* 2013. Weed Control in natural areas in the Western United States. University of California Weed Research and Information Center, University of California Davis. 544 pp.

Endemic Environmental Services. 2024. Crotch's Bumble Bee Photo-Only Survey Report for the Fairview Park Wetland and Riparian Habitat Project – Phase 2 Project Located in the City of Costa Mesa, California.

Goulson, D. 2010. Bumblebees: Behavior, Ecology, and Conservation. Oxford University Press, Oxford, UK.

Hatfield, R., S. Jepsen, E. Mader, S.H. Black, and M. Shepherd. 2012. Conserving Bumble Bees. Guidelines for Creating and Managing Habitat for America's Declining Pollinators. 32 pp. Portland, OR: The Xerces Society for Invertebrate Conservation.

Hines, H.M., and S.D. Hendrix. 2005. Bumble Bee (Hymenoptera: Apidae) Diversity and Abundance in Tallgrass Prairie Patches: Effect of Local and Landscape Floral Resources. Environmental Entomology 34(6): 1477-1484.

Land IQ. 2024. Fairview Park Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan. Prepared for the City of Costa Mesa. July 23, 2024.

Mänd, M., R. Mänd, and I.H. Williams. 2002. Bumblebees in the Agricultural landscape of Estonia. Agriculture Ecosystems & Environment. 89:69-76.

Owen, E. M. Zuliani, M. Goldgisser, and C.J. Lortie. 2024. The Importance of Native Shrubs on the Distribution and Diversity of Reptiles and Amphibians in the Central Drylands of Southwestern USA. Accessed January 2025 at https://doi.org/10.1007/s10531-024-02851-8

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Thorp, R. W., D. S., Horning Jr., and L. L. Dunning. 1983. Bumble Bees and Cuckoo Bumble Bees of California (Hymenoptera: Apidae) *In* Bulletin of The California Insect Survey. Volume 23.

The Xerces Society. 2018. A petition to the state of California fish and Game Commission to list the crotch bumble bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley cuckoo bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act.

Williams, P. H., Thorp, R. W., Richardson, L. L., & Colla, S. R. (2014). *The bumble bees of North America: An identification guide*. Princeton University Press.

APPENDIX B

SAMPLE PROFESSIONAL SERVICES AGREEMENT

APPENDIX C

FORMS

Vendor Application Form
Ex Parte Communications Certification
Disclosure of Government Positions
Disqualification Questionnaire
Company Profile & References
Bidder/Applicant/Contractor Campaign Contribution
Cost Proposal

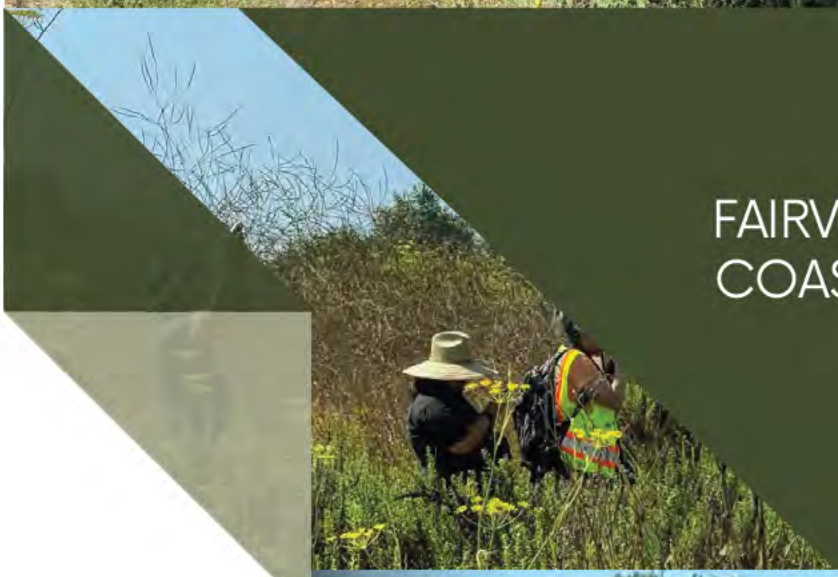
EXHIBIT B

CONSULTANT'S PROPOSAL

Endemic Environmental Services

Oct. 8th, 2024

Ph: **714.869.6687**
www.endemicenvironmental.net



CITY OF COSTA MESA

FAIRVIEW PARK MESA RESTORATION: COASTAL SAGE AND FLOWER FIELDS HABITAT RESTORATION AND MONITORING PLAN IMPLEMENTATION

SUBMITTED TO:
City of Costa Mesa

SUBMITTED BY:
Endemic Environmental Services Inc.

Table of Contents

Cover Transmittal Letter

110 East Wilshire Avenue, Suite 305, Fullerton, CA 92832
Tel: 714.869.6687

October 8th, 2024

City of Costa Mesa

Subject: Fairview Park Mesa Restoration: Coastal Sage and Flower Fields Habitat Restoration and Monitoring Plan Implementation

Endemic Environmental Services (Endemic) is a certified Disadvantaged Business Enterprise (DBE) and is pleased to submit this proposal to be your biological maintenance, monitoring, and management services consultant. Our habitat restoration office is located at 3001 Redhill Ave., Suite 107, Costa Mesa, CA 92626, with our /HQ office located at 110 E. Wilshire Ave., Suite 305, Fullerton, CA 92832. We bring a high level of in-depth understanding and decadal-long experience to offer the City of Costa Mesa (City) the following advantages and benefits:

Understanding the Scope of Work.
Endemic understands and can provide the required services outlined in this proposal. Endemic has served for the past 15 years as an on-call consultant, habitat restoration, and principal conservation research entity for Fairview Park (FVP). We have developed a keen understanding of the tasks, deliverables, and expectations associated with this RFP. We have built an integrated team of professionals dedicated to specifically addressing the unique needs and services of Fairview Park. We stay current on local environmental issues and address any community concerns through outreach, documentation, and compliance. We support the City's environmental compliance with local, state, and federal regulations regarding the protection of endangered species, threatened species, species of special concern, and other habitats.

On-Call Biologists with Local Experience.
We will work seamlessly with the City Parks staff to produce the required biological monitoring/oversight of general environmental conditions at FVP, coordinate with City staff, and take care of FVP sensitive and native habitat areas. We have performed services identified in the Scope of Work that include:

- Sensitive/Protected Habitat and Species Assessment
- Irrigation design and installation
- Habitat restoration strategy, management, and monitoring
- Special Species Protection Plan
- Pest control, herbicide recommendations, and application
- Maintenance services for invasive species
- Restoration plan, plant palette, and vegetation mapping
- Design and implementation of an Integrated Pest Management including all restoration techniques and strategies
- Wildlife and Habitat Educational Training, including the development of FVP wetlands database
- Habitat Restoration and Plantings through hydroseeding, broadcast and container plants.
- Landscape Maintenance and Tree Protection Services
- Mitigation measures compliance, including surveillance for vandalism and trespassing
- Data Collection/evaluation and preparation of special reports to be submitted to regulatory agencies and council members

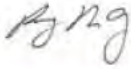
Highly Qualified Project Team.
We have evaluated your project needs and have assembled a team of in-house biologists, trained restoration specialists, and permitting staff to address the needs of FVP. Our staff has worked at FVP for many years and has worked with all sensitive species that are known to occur there. We also have the state and federal permits and approvals to work with these species. We have partnered with Cogstone Resource Management, which has served as your on-call Archaeological and Native American monitor for several projects. We also utilize new technologies, including drones (UAV), to support the surveillance of vandalism and trespassing at FVP. We feel that our team can address the complex issues through the analysis of your project and by developing practical solutions to address the current issues of concern.

Cost-effective and Efficient staff.
We have extensive local and regional experience in similar projects to the scope of your project. Given that our staff has worked at FVP for 15 years, we have developed long-standing relationships with local stakeholders, city staff, and vendors, allowing us to obtain resources quickly and efficiently. Moreover, we are a local business in the City of Costa Mesa with an office within 5 miles of FVP. Bringing our institutional knowledge and network.

The Expertise to Develop Innovative Solutions. We have the in-house knowledge and expertise to complete your project, provide clear deliverables and restoration results, develop recommendations, create innovative solutions, and prescribe appropriate remedial measures to address the current site conditions. We understand your goal to restore 15.35 acres of habitat, called the Fairview Park Coastal Sage Scrub and Flower Fields Habitat Restoration and Enhancement Project. At Fairview Park, I, Barry Nerhus, have spearheaded two large-scale habitat mitigation projects covering over 20 acres, successfully restoring ecological function and bringing back key species such as the California gnatcatcher (CAGN) and the least Bell's vireo (LBVI). Additionally, I have led community-based restoration efforts covering 4 to 5 acres, furthering the park's ecological recovery. Over the past 15 years, I have developed deep institutional knowledge of Fairview Park, overseeing the restoration of 25% of its habitat, managing various components like vernal pools and native bunchgrass, and supporting the city through emergency projects. We have implemented innovative technology, such as a drone program equipped with a thermal camera, to enhance park monitoring, improve safety for law enforcement, and protect the area from vandalism and environmental hazards. I have also led multiple emergency projects, including bluff erosion control, vernal pool restoration, and mosquito abatement efforts. As the Founder and President of Endemic, I hold an MS in Biology and teach at the University of California, Irvine. I also have several certificates and licenses from the California Department of Fish and Wildlife (CDFW) and US Fish and Wildlife Services (USFWS). I am a Certified Ecological Restoration Practitioner (CERP) from the Society for Ecological Restoration. I am certified as a Qualified Stormwater Protection Designer/Practitioner (QSD/P). I have managed numerous biological monitoring and habitat restoration projects, conducted biological surveys, and produced reports for more than 15 years of my career. I am authorized to negotiate with the City on Endemic's behalf and submit this proposal on its behalf. If you have any questions, please contact me at 714-393-6294 or bnerhus@Endemicenvironmental.net.

We have submitted a cost proposal as a separate file. Our cost will be valid for a minimum of 180 days following submission.

Sincerely,
Barry Nerhus, M.S., CERP, QSD
President/CEO



Background and Project Summary

Fairview Park is the City's largest park, hosting 195 acres of natural open space area and 13 acres of passive parkland for a total of 208 acres. Within the 195 acres of open space, there are two Native American Nationally Registered Historic Sites and five different habitat ecosystems, which are home to many rare and endangered plant and animal species. These sensitive habitats require local, state, and federal regulatory compliance for protection and preservation. FVP also offers users multiple passive recreational opportunities such as picnicking, wildlife viewing, and more than seven miles of trails for walking or bicycling. The City's management of Fairview Park requires finding a balance between the protected habitats and public uses.

Endemic understands that the Parks & Community Services Department of the City has three primary goals consistent with habitat recommendations for the current Fairview Park Master Plan Update to satisfy outstanding commitments of habitat restoration for the OCTA Project.

- **Goal 1:** Restore a total of 9.5 acres of suitable habitat in Fairview Park.
- **Goal 2:** Voluntarily implement an additional 5.85 acres of habitat restoration, habitat enhancement, and weed management buffer.
- **Goal 3:** Protect biological and cultural resources during the project implementation.

We understand the need for Restoration Ecologists to oversee the project and implement monitoring protocols to evaluate project performance and success. Our team has successfully installed, monitored, and achieved success criteria requirements for CSS, wildflower (forb land), and wetland restoration projects of several acres within Orange County. The Endemic Biological and Restoration team has experience designing, constructing, operating, and maintaining an above-ground temporary irrigation system and an operator to provide hydroseeding services. The combination of our in-house services will be beneficial for the timely delivery of this project.

Other essential components of the project include an understanding of the biological resources, an evaluation of archeological values, the vegetation composition, and an understanding of the habitat mitigation/revegetation components of the project.

Endemic has a strong background in open space and native habitat park management and maintenance. The management requires strong knowledge of the various habitat types and experience/qualifications with biological regulations for species of special concern (including San Diego and Riverside fairy shrimp, Crotch's bumblebee, Burrowing Owl, California gnatcatcher, least Bells' Vireo, and numerous protected plant species).

We understand that achieving project goals and objectives is very important to demonstrate success and sustainability to the stakeholders and agencies that participated and helped fund this project. Our analysis and design solutions will consider all site and environmental conditions so that the solutions reached are the least environmentally impactful and will comply with the jurisdictional and resource agency permit requirements and expectations.

Method of Approach

Implementation Plan

Over the last 15 years, the Endemic Project Team has developed a successful implementation plan for managing the natural resources at Fairview Park. These methods include a streamlined chain of command with our internal team that quickly and frequently communicates with the City staff through the appropriate channels so that pertinent information is distributed effectively to ensure that the Park is managed in a responsible and effective manner. Due to the environmental sensitivity of FVP, Endemic uses staff with 4-12 years of experience working at Fairview Park with City staff and the community. Our approach integrates Project Management Plans (PMPs), detailed schedules, budget controls, and a frequently updated Priority Task List that delegates the specific work tasks outlined to complete the Scope of Work. The Gantt Chart provided in Section 3 breaks down our work methodology into tasks, task owner, duration, and timeline to ensure that each objective is met.

Our Project Management Team conducts bi-weekly Site Inspections, coordinates with the Endemic Field Crew, and documents the progress of these restoration areas and the biological services described in this RFP. Endemic is aware and capable of delivering the requirements for this project, such as annual reports for OCTA, Biological Constraint surveys, and monitoring reports. These reports include biological surveys, photo points, species lists, container plant survivorship, vegetation management and maintenance, trespassing surveillance, and overall habitat health and assessment. Photo documentation and two-way communications ensure that services such as the cattail and algae removal, weir clearing, and wetland inspections are documented on a daily basis. Endemic has a strong team of Biologists with experience in data collection, mapping and vegetation transects, which will be included in Annual reports in order to track progress for the Final project year report.

Endemic appreciates the multiplicity of stakeholders that utilize Fairview Park, from casual hikers and bike riders to active organizations like the Sea & Sage Audubon Society. We manage stakeholder priorities to maintain a balance between stakeholder interests and ensure that all parties' needs are met.

The Endemic Field Crew understands that they act as representatives of the City and greater Costa Mesa community, and accordingly, while in the field, we maintain friendly communal interactions with all stakeholders. Endemic treats all public concerns as a top priority. We work hard to ensure that park stakeholders feel heard and supported. Endemic also attends the Fairview Park Steering Committee Meetings, when requested, and delivers presentations to committees, staff, and the community on the overall health and general information about Fairview Park. Endemic also works in conjunction with the Institute for Conservation Research and Education (ICRE) to host environmental outreach events and provide accessible environmental education for volunteers, community members, and participants of all ages.

Endemic will provide clear and timely deliverables, attend necessary committee meetings (upon request), and ensure that all pertinent City staff are updated and aware of any challenges that may be foreseen for Fairview Park. The Project Management Team monitors the progress of all biological services and tasks and understands the complex seasonal shifts in priorities throughout the park for any given year. Endemic intends to use our highly experienced and knowledgeable team to manage the Park with the intimate detail that has been developed over the many years of work at the park.

By training our team in a variety of fields, from irrigation installation to native plant identification and nesting bird surveying, we internally build the skills of our field crews to support all services that are required for the biological responsibilities at Fairview Park. Our team integrates cutting-edge technologies to facilitate real-time communications and high-quality documentation. For example, the Endemic Environmental Drone Team can now use its drone technology for wildlife surveillance (i.e., bird nests, coyotes), vegetation mapping, and trespassing (i.e., illegal fishing, trespassing encampments) to gather and report information that allows the Park and City to manage wildlife and maintain public safety for the Public use of the park and compliance with environmental laws and regulations.

Scope of Work

a. ***Meeting and Mapping*** - Prior to any habitat restoration work being implemented, the Endemic team will meet with the City on site and verify the exact site boundaries to ensure that the acreages are accounted for that satisfy the OCTA's mitigation requirement for both coastal sage scrub and flowerfield (grassland) habitats. Once this is verified, Endemic will demarcate the boundaries so that temporary project fencing is installed at the appropriate location. Endemic will provide a GIS Map and shapefile data with boundaries and acreage. We will use this map as a living map to document biological and cultural resources that the City will have access to throughout the duration of the project. Endemic will also coordinate and confirm the work plan schedule with the City (i.e., planting schedule, avoiding City event schedule, etc.)

b. ***Biological Surveys*** - Prior to implementation, biological surveys will be conducted to determine the current presence or absence of wildlife (i.e., burrowing owl, Crotch's bumblebee, California gnatcatcher, etc.). During these surveys, native habitats will also be mapped and documented within the project area. Endemic will also map small mammal burrows as they are essential habitat for burrowing owls and Crotch's bumblebee. The data will be added as a layer on the Project GIS Map and be updated over the duration of the Project. A report of findings will be prepared and delivered to the City with recommendations to maintain compliance with sensitive species regulations (if any).

c. ***Fence and Sign Installation*** - After the biological surveys have been conducted and reports delivered, the restoration field crew will install the temporary fence and temporary signs describing the Project. The field crew will install fencing using the exact method and material that was previously used on-site by the City and our field team. Once the fence is installed, Endemic will verify with the City that all acreages are encompassed and accounted for. All ground disturbance will be monitored by our approved archaeologist, Native American monitor, and wildlife biologist.

d. ***De-thatchment*** - Once the project site is delineated, resources are flagged, and biological surveys have been submitted, Endemic will de-thatch the site using the appropriate mowing equipment based on the biological survey results. Our team is experienced working at Fairview Park with sensitive species and has several methods of removing thatch while minimizing impacts to native species and habitat. The thatch material will be removed offsite. Our sub-consultant cultural resource monitor will be onsite during the initial dethatching event to monitor the soil for any artifacts or culturally significant material.

e. ***Irrigation Installation*** - Once the site is de-thatched, Endemic will install temporary above-ground irrigation. Endemic has used the existing water from the eagle scout project and the parking lot grass area. If this water is inaccessible or has pressure issues, Endemic will ensure that the site is designed for remote irrigation as a contingent plan. Endemic will perform a coverage test to ensure that 100% of the area is receiving water.

f. ***Grow-kill Cycle*** - Based on the current conditions and biological resources, Endemic may perform a grow-kill cycle to reduce any high-dense weed areas, if needed.

g. ***Native Plant Container Stock Inspection and Implementation*** - The ecologist will inspect any and all native plants delivered to ensure the quality of the container stock is healthy, and species/quantities match the plant palette and order. Container stock will be planted by excavating holes appropriate to the container's size (depth and width) (i.e., 1 gallon, 5 gallon). Our biologist will be onsite to ensure that all plants are installed appropriately and that any sensitive wildlife is monitored during this activity. Our sub-consultant cultural resource monitor will be onsite during planting to monitor the soil for artifacts or culturally significant material.

h. ***Hydroseed implementation.*** Once all the native plant container stock is installed, Endemic will use our T120 Finn Hydrospreader that meets the specifications for "Green Book" Standard Specifications of hydroseeding to apply the approved hydroseed mix from the habitat restoration plan. Endemic will ensure that 100% coverage of hydroseed is applied to the site.

i. **Maintenance (Watering and Weeding) Schedule** - Once the site has been planted and sprayed. The Endemic field crew will initiate watering the following day of planting completion. No persons will walk on the site for 1 week (to the maximum extent practicable) so that the seed can be watered into the soil and germinate. Watering will initially be scheduled 3 days per week and be adjusted based on soil moisture and weather conditions (i.e., rain or drought). During the watering visits, the field team will inspect the site for any sign of germination. Once plant germination occurs, our team, led by our ecologist, will identify any native or weed species and begin weeding activities. Endemic has already authored a weed plant guide for Fairview Park that our team will reference. The weeding schedule will be based on the weed conditions with the aim of removing weeds before flowering to prevent further seed bank additions.

j. **Biological Monitoring and Reporting Schedule -** Our restoration ecologist will monitor the site monthly for the first year and quarterly for years 2-8 (if necessary). These monitor visits will track the progress of the plant community, establishing and meeting the success criteria described in the habitat restoration plan. The monitoring will consist of taking photos at specific photo points, inspecting the site for weed coverage, vandalism, trespassing, wildlife usage, native plant establishment, and coverage. A report will be prepared and submitted to the City to document progress and any recommended adaptations. An annual report will be prepared and delivered with a summary of activities, annual progress, and data to assess that the site meets the appropriate success criteria.

k. **Report Deliverables and Schedule** - Endemic will provide monthly, quarterly, and annual reports to the City based on the schedule of the habitat restoration plan. The annual reports will contain quantitatively analyzed data to compare to current success criteria milestones.

SCOPE OF WORK

Task 1. Task Management and Communication

- Task Management and Communication with Client.
- Cogstone's key staff will attend one 1-hour virtual project kick-off meeting, if requested.

Task 2. Pre-Construction Tasks

- Cogstone will draft Native American Monitoring agreements with a maximum of six Tribes. We assume the Kizh Nation will contract directly with the City.

Task 3. Fieldwork

- Cogstone will provide an archaeologist to monitor during ground disturbing activities for the Project. We have included an initial estimate of 20 8-hour days of monitoring for the Project. Should additional monitoring be needed, it will be billed at the Daily Rate which is $943.40 for a full day (8 hours) or $498.50 for a half day (4 hours). California law requires a 4-hour minimum. Cogstone will charge the 4-hour minimum for all cancellations with less than 24 hours' notice.
- Cogstone will coordinate and schedule Native American monitoring on a rotating basis with six Tribes. We assume the Kizh Nation will contract directly with the City. We have included an initial estimate of 20 8-hour days of Native American monitoring for the Project. Should additional Native American monitoring be needed, a change order will be required. Cogstone will collect and review the Native American monitoring dailies and submit them to the Client/City.
- We assume a maximum of two previously recorded archaeological sites (CA-ORA-58, CA-ORA-506) will require updating on California Department of Parks and Recreation 523 (DPR 523) forms.

Task 4. Deliverables

- Cogstone's key staff will prepare a Cultural Resources Monitoring Compliance Report. The report will summarize the construction work completed, monitoring procedures, site protection efforts, all cultural resource findings, provide recommendations as applicable, and name archaeological staff.
- Cogstone will respond to two rounds of comments and prepare the final report.
- The final report and shapefiles will be sent to the South Central Coastal Information Center (SCCIC).

NOTES AND ASSUMPTIONS

Cogstone's key staff will attend one 1-hour virtual project kick-off meeting, if requested. If attendance at additional meetings is required, then it will be billed separately at a time-and-materials rate plus expenses. We assume Cogstone will subcontract with a maximum of six Tribes to provide Native American monitoring. Further, we assume the Kizh Nation will contract directly with the City. If Cogstone subcontracts Native American monitoring the payment terms will be Net 30. We have included an initial estimate of 20 8-hour days of cultural resources and Native American monitoring for the Project. Should additional cultural resources monitoring be needed, it will be billed at the Daily Rate which is $943.40 for a full day (8 hours) or $498.50 for a half day (4 hours). If additional Native American monitoring is needed, a change order will be required. California law requires a 4-hour minimum. Cogstone will charge the 4-hour minimum for all cancellations with less than 24 hours' notice. We assume a maximum of two archaeological sites will require updating on DPR 523 forms. If artifacts are identified during monitoring a change order will be required. Two rounds of response to comments and final report are included. Changes in scope will require a change order.

Endemic Environmental Services

WORK BREAKDOWN STRUCTURE WITH GANTT CHART: Project Management Plan

Legend

R = Required

O = Optional

BW = Every Two Weeks

M = Monthly

PROJECT TITLE	Fairview Park Coastal Sage and Flower Fields Habitat Restoration and Monitoring Plan Implementation
PROJECT MANAGERS	Barry Nerhus (Principal), Luma Fowler (Director), Josh Ball (Restoration Manager)
COMPANY NAME	Endemic Environmental Services (EES)

		2025				2026				2027				2028				2029				2030				2031				2032			
WBS NUMBER	**Activity**	Weed Mgmt & Container Plant Establishment Year 1				Weed Mgmt & Container Plant Establishment Year 2				Performance Monitoring Year 1				Performance Monitoring Year 2				Performance Monitoring Year 3				Performance Monitoring Year 4				Performance Monitoring Year 5				Performance Monitoring Year 6 (if needed)			
		W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F
1	**Site Protection, Initial Dispatch, Cultural Resource Protection Monitoring, and Temporary Irriaation**																																
1.1	Install Temporary Post and Rope Fence & Signage	R																															
1.2	Weed Detaching Event & Cultural Resource Protection Monitorina	R																															
1.3	Install Temporary Irrigation System (Areas 1,2 &4)	R																															
2	**Native Revegation Buffer (Area 4) and Drainin Area 1 Container Planting, Irrigaion, & Maintenance**																																
2.1	Dig Container Planting Basins & Cultural Resource Protection Monitorina	R																															
2.2	Install Nursery Grown Container Plants in Area 4 & Select Drainages in Area 1	R																															
2.3	Supplental Irrigation of Container Plants	R	R	R	R	O	O	O	O																								
2.4	Hand Weeding of Container Planting Basins	R	R	R	R	R	R	R	R	O	O	O	O																				
3	**Weed Management Buffer (Area 5) Weed Maintenance**																																
3.1	Manage Weed Management Buffer (Area 5): Mow or line trim, as needed to prevent seed set	R	R	R	O	R	R	R	O	R	R	R	O	R	R	R	O	R	R	R	O	R	R	R	O					R	R	R	O
3.2	High Priority Invasive Plant Control in All Areas, as Needed	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O					O	O	O	O
4	**Pre-Seed Installation Adaptive Weed Management**																																
4.1	Irrigated Grow-and-Kill in Areas 1 &2, and in adjacent Areas 3,4,6&7: Typically 1 or 2 Weeding Events per season, for a total of 4 to 8 events per year, for 2 years	R	R	R	R	R	R	R	R																								
4.2	High Priority Invasive Plant Control in All Areas, as Needed	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O					O	O	O	O

Endemic Environmental Services

WORK BREAKDOWN STRUCTURE WITH GANTT CHART: Project Management Plan

5	**Native Seed Collection & Installtation**																																			
5.1	Special Collection of Native Seeds, Seed Bulking, & Commericial Seed Production	R	R	R	R	R	R	R	O																											
5.2	Hydroseed Installation in Area 1								R	O																										
5.3	Broadcast Seed and Cultipaccker for Good Soil-to-Seed Contact in Areas 2 & 5								R	O																										
5.4	Hand Seed Installation in Areas 3, 4, 6 & 7								R	O																										
6	**Maintenance After Seed Installation**																																			
6.1	Supplemental Irrigation, As Needed in Winter, and Spring for 1 to 3 Years (No Irrigation in the Final 2 Years)								R	R			R	R																						
6.2	Hand Weed, As Needed: Areas 1, 2, 3, 4, 6 & 7																																			
6.3	High Priority Invasive Plant Control in All Areas, as Needed								O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O					O	O	O	O	O
6.4	Remove All Temporary Irrigation (late Oct to Nov)																																			R
6.5	Remove Temporary Fencing if Permanent Fencing or Other Site Protection Measures are in Place																																			R
7	**Biological Monitoring and Reporting**																																			
7.1	Crotch's Bumble Pre-Work Survey	R	R																																	
7.2	Biological Surveys prior to restoration activity, as needed (e.g. nesting birds, Dec 1 and Aug 31)			R	R	O	R	R	O	R	R	R	O	R	R	R	O	R	R	R	R	O	R	R	O	R					O	O	O	O	O
7.3	Horticultural Monitoring of Weed Phenology & Native Plant Material Establishment			BW	BW	M	M	M	M	M	M	M	BW	BW	BW	BW	M	Q	M	M	Q	M	M	Q	Q	O					Q	Q	O	O	
7.4	Baseline Pre-Restoration Qualitative Monitoring (e.g. Photo Points, Veg Cover Estimates)	R	O	O																																
7.5	Spring Performance Qualitative Monitoring in All Areas (e.g. Photo Points, Veg Cover Estimates)						R				R				R				R				R									R			
7.6	Spring Performance Quantitive Monitoring in Areas 1 and 2 (Point-intercept Line Transects)																																R			
7.7	Annual Habitat Restoration Monitoring Report (Due to OCTA by March 15 of Following Year; Final Report (Due to OCTA by March 15 of Following Yearl Final Report aticipated by March 15, 2032				R				R				R				R				R				R										R

Specific Tasks with City Staff

Endemic will consult with City staff in order to ensure environmental compliance, establish maintenance priorities and community involvement. We will work with the City for specific task orders, budgets, and approvals as needed to properly complete all tasks listed in the Scope of Work.

Additional Innovative Services

As an experienced land management company, Endemic understands that special issues and challenges can arise when managing large open spaces. There are many known land management challenges, such as trespassing, litter, encampments, fires, and flooding. In order to effectively monitor and manage this, Endemic has an established Drone Aerial Surveillance Program that provides maximum efficiency, safety, and performance capabilities while increasing operation cost efficiency.

The Endemic Drone Team can provide continuous aerial imagery monitoring through pond surveys, channel inspections, trespasser reporting, and nesting bird updates. The drone surveillance documents seasonal changes in native vegetation establishment and nesting activity for migratory birds such as the white-faced ibis. Aerial vernal pool surveys and thermal surveys report any encampment activity, trespassers, graffiti, littering, fish die-offs, habitat destruction, and potential erosion concerns for areas that are not accessible by foot. The drone services can also provide aerial overwatch with thermal technology to allow first responders and maintenance crews to approach these areas safely and securely.

Flight logs, encampment mapping, and photo documentation synthesize this data will be sent to the City and local municipalities to coordinate clean-up efforts, vegetation maintenance, and wildlife protections throughout the wetlands. The drone surveys also provide coyote monitoring and management in order to keep the public safe while allowing this species to provide important top-down regulation for the surrounding ecosystem.

Endemic is also aware of emerging challenges with new species regulations that are developing within the resource agencies. The Crotch's bumblebee, for example, is becoming listed on the California State Endangered Species List. Our team proactively trained our staff and have received approvals to have Fairview Park become a designated survey area in order to prepare the City for future inquiries on the Crotch's Bumblebee issue. Given our statewide experience with this species and its presence on the project site, Endemic is prepared to navigate the City through the steps required to deliver the Project on time without delays and within budget.

City of Costa Mesa Hiring and Recruitment

Endemic is dedicated to supporting former City employees. Endemic and providing work for continued City services amidst these uncertain times. Endemic Staff come from a variety of diverse backgrounds and future recruitment or hiring will prioritize former City employees. We will happily consider any former City employees who have experience in the environmental field and interest in furthering their career with managing Fairview Park and its special biodiversity. Endemic values the internal experience and knowledge that City workers provide as part of our team. We are always receptive to new partnerships with the hiring process. We have hired City of Costa Mesa employees in the past and provided them with training and environmental education to strengthen the foundation of skills for our team. There are many ways to build these skills for those who express interest but do not have experience in the trade. Endemic hosts City and Community Outreach Events with ICRE such as Community Habitat Restoration Events, Wildlife Education Programs, and Park Tours for all aspiring biologists and restoration ecologists and for participants of all ages. Our CEO also teaches a Natural History of California Course at Saddleback Community College, which several City employees have attended.

Qualifications and Experience

Endemic is a renowned multidisciplinary environmental services firm that serves public and private sector clients. Endemic is a California S-Corporation established in 2011. Our main office is located at 110 E Wilshire Ave., Suite 305, Fullerton, CA 92832. Our restoration office is located at 3001 Red Hill Avenue. Building 6, Suite 107, Costa Mesa, CA 92656.

We have the following licenses and certifications:

> Endemic Environmental Services, INC.: Costa Mesa Business License: 55948, Federal ID: 45-2486277, California # C3382992, Certified DBE/Caltrans CUCP #46698, DGS SBE- Micro #1756634, DIR #1000035237, C-27 License #1048090, Pest Control Business License #46849

Endemic team members consistently apply their extensive scientific expertise, experience, initiative, and innovation to find practical solutions to natural resource management issues. We are specialized in Habitat Restoration, Mitigation, and Maintenance tasks and have worked within different ecosystems, including wetlands, riparian, creeks, waterways, and coastal sage scrub.

Barry Nerhus is the President of Endemic Environmental Services and founded the environmental consulting business in 2009. His vision is to conserve biological diversity, while providing innovative solutions for clients' projects. Endemic has been steadily building a reputation as a trusted, strong and versatile firm with team members who are highly qualified plus responsive to effective studies and reports in the environmental sector. For more than 15 years, Endemic has provided environmental consulting services for infrastructure development and habitat conservation projects. Our goal is to maintain a streamlined approach that focuses on natural resources and compliance with all environmental laws and regulations by both public agencies and private sector clients. Endemic's Biological Resource Team conducts wildlife surveys throughout each year to ensure that clients are compliant with regulations issued by CA DFWS, US FWS, and USACE to comply with CEQA and NEPA requirements.

Current and Previous Contracts

Fairview Park Wetlands Biological Monitoring and Riparian Habitat Restoration Project (2017-Ongoing)

Fairview Park (FVP) is the City of Costa Mesa's largest park, hosting 195 acres of natural open space area and 13 acres of passive parkland for a total of 208 acres. Within the 195 acres of open space, there are two Native American registered historic sites and five different habitat ecosystems, which are home to many rare and endangered plant and animal species. These sensitive habitats require local, state, and federal regulatory compliance for protection and preservation. The 50 acres of Fairview Park Wetlands and Riparian Habitat area includes a pond system, sensitive habitats, and endangered species that the City of Costa Mesa is contractually committed to maintaining in perpetuity. This site included the restoration of different habitats, i.e., wetlands, riparian, grassland, oak woodland, and coastal sage scrub communities. This combination of high biodiversity, fervent attention to detail, and the ability to maintain productive and open communication has led to a successful habitat where raptors, southern tarplant, California gnatcatchers, and other noteworthy species have begun to flourish.

Endemic has provided year-round biological oversight and maintenance for the Fairview Park Wetlands and Riparian Habitat. We wrote and submitted quarterly and annual reports on their work and the habitat conditions as part of the mitigation agreements for the City. We were responsible for this park's restoration design and implementation, plus maintenance and repairs through hydroseeding of three acres of grasslands and oak and two acres of tarplant. We have undertaken nesting birds' surveys, vernal pool restoration, and monitoring of pump station and channel flows for vector control.

Endemic has monitored the construction and restoration of six ponds and adjacent wetland habitats, including cowbird trapping and protection for California gnatcatchers. We submitted reports on cowbird trapping and species protection for the past five years. We created habitat that now hosts California gnatcatchers and least Bell's vireo, which we continue to manage presently.

Period of Performance, Value of Services, and Reference:

City of Costa Mesa, 77 Fair Drive, Costa Mesa, California 92626 Reference: Kelly Dalton, kelly.dalton@costamesaca.gov, 714-754-5135
Phases I and II Task Order: Fairview Park Habitat Restoration project (2017-2019); Phase III Task Order: Fairview Park Habitat Restoration and Wetland Management (includes Hydroseeding) project (2020-21); Phase IV Task Order: 4/2022-6/2025); TOs from 2017 - 21: $1.2 million; TOs from 2022-24: $595,000.

Prado Basin Sediment Demonstration Project for Habitat Restoration (2021)

OCWD owns 2,150 acres behind the Prado Dam within unincorporated Riverside County and is referred to as the Prado Basin. The agency operates and manages the 465-acre Prado Wetlands within the basin. In compliance with the Streambed Alteration Agreement with the California Department of Fish and Wildlife (CDFW), it implemented a Sediment Demonstration Project on a 14-acre site on the Santa Ana River, located approximately 1.3 miles upstream of the Prado Dam. Part of the project is a 20-acre dewatering and storage site with four acres planted in native riparian habitat for the potential impacts associated with annual operations of the Prado Wetlands. The project consists of two separate parcels, Site 1 and Site 2. Site 1 is a 4-acre plot located in the northeastern corner of the Pheasant Field. Site 2 is a 4-acre plot located east of Site 1 and just outside the Pheasant Field boundary. Site 1 was cleared of vegetation prior to planting with container plants and an irrigation system installation.

For Phase 1, Endemic implemented a native plant restoration project in the Prado Basin. We installed deep pole cuttings of Fremont's cottonwood (Populus fremontii), black willow (Salix gooddingii), and mulfat (Baccharis salicifolia) scattered throughout the site. We designed and installed an above-ground filtered drip irrigation system at Site 1. The system will supply each of the 4000 plants with 1 gallon of water within 2 hours. The main line is connected to a 5000-gallon water storage supplied by and placed by OCWD staff along the site's southern edge prior to planting. Cam locks were installed at the tank to accommodate a small trash pump used to run the system. Brass ball valves are installed and used to control the flow to each station. Two in-line filters (Rainbird) are installed above ground to help reduce clogging of the emitters. Endemic was responsible for the purchase of all irrigation system materials.

Endemic will also provide a 90-day Site Maintenance Period for Site 1. This includes keeping the site free of weeds, repairing irrigation, and watering for the first 30 days.

For Phase 2:
Natural resources management in the Prado Basin is an ongoing, required activity due to District commitments associated with water conservation at Prado Dam and Prado Wetlands operations and maintenance. Those activities include annual monitoring of listed and sensitive species, particularly the endangered least bells vireo and southwestern willow flycatcher; analysis of the effects of water level management for water conservation on these species; a trapping program for brown-headed cowbirds; control of non-native aquatic species; measures specific to the conservation of and habitat restoration for threatened Santa Ana suckers and other native fish species; restoration and monitoring of specific mitigation sites; management of District lands in the Basin in cooperation with the US Army Corps of Engineers and US Fish and Wildlife Service to maximize wildlife values on those lands; and the annual planting and care of 10,000 native mostly riparian plants.

The annual plantings are required for ongoing water conservation in the Prado Basin, among other measures, as described in Biological Opinion No. 1-6-99-F-75, dated February 10, 2000. This Opinion resulted from a formal Section 7 consultation between the US Army Corps of Engineers and the US Fish and Wildlife Service on the Prado Basin Water Conservation project.

Period of Performance, Value of Services, and Reference:
Orange County Water District, 14980 River Road, Corona, CA 92880
David McMichael, dmcmichael@ocwd.com, 714-378-8211
Period: 4/2021-10/21
Total Fees for Phase 1: $65,000 , Budget for Phase 2 Task Orders: $225, 000

Huttopia Paradise Springs Properties: Mitigation Project for Campground

The Site comprises 0.44 acres of riparian/wetland habitat and waters re-establishment, 0.05 acres of riparian/wetland revegetation, and 0.89 acres of existing riparian/wetland and waters enhancement. The project is to enhance, reestablish, and revegetate the existing riparian/wetlands habitat for the on-site mitigation of jurisdictional areas proposed to be impacted during the construction of the Phase I Red Rock Campground Improvement Project. The revegetation proposed in this Plan is anticipated to fulfill permit application commitments associated with the Regional Water Quality Control Board (RWQCB) Water Quality Certification (in process) and the California Department of Fish and Wildlife (CDFW) streambed alteration agreement.

A Habitat Mitigation and Monitoring Plan was developed to accomplish the mitigation obligations. It also contained a detailed maintenance and monitoring plan to ensure the project's success, allowing it to be self-sustaining. Beginning in April 2023, brush, branches, and non-native plant species were removed from the Site in preparation for grading, planting, and seeding. Non-native grasses such as Italian ryegrass (*Festuca perennis*), brome grasses (Bromus spp.), hare barley (*Hordeum murinum*), and other non-native forbs such as tansy mustard (*Descurainia sophia*), white goosefoot (*Chenopodium album*), and Russian thistle (*Salsola tragus*) were hand-removed and mowed with hedge trimmers. All removed plant materials were disposed of off-site. Any naturally occurring individuals of endemic riparian/wetland species found in the Site were identified and flagged before weed removal.

Following weed removal, native plants were installed to begin the reestablishment and enhancement process. White alder (*Alnus rhombifolia*), tarragon (*Artemisia dracunculus*), Fremont cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), and cuttings of mulefat (*Baccharis salicifolia*) were installed through to handcast seeds.

The maintenance program includes the removal of trash, weed control, irrigation system maintenance, irrigation application rates, and schedules, and any remedial measures deemed necessary for the success of the mitigation effort (e.g., re-seeding and re-planting). These maintenance activities were conducted by a Restoration Specialist or under the guidance of a Restoration Specialist. A Restoration Specialist conducted annual technical monitoring by walking the entire revegetation area and making a qualitative, i.e., visual, assessment of the site. The qualitative assessments included: (1) photo documentation; (2) visual estimates of container planting survivorship and cover by native and non-native plants; (3) a complete list of plant and animal species observed; (4) general observations of plant health; and (5) observations of site hydrology.

Period of Performance, Value of Services, and Reference:

Huttopia Canada - USA

» Reference: Freddy Py, West Coast Regional Manager, (518) 694-1391

» Period: 10/2022 - 09/2023, Value of Services: $100,000.00

Southern Tarplant Enhancement Plan Solar Development Project - Joint Forces Training Base (JRTB) Los Alamitos - Orange County, California (July 2023 - present)

Endemic acted as the restoration manager, implementing, monitoring, and reporting on the southern tarplant enhancement project at the Joint Forces Training Base. The project's goal was to mitigate the original tarplant area impacted by the solar field construction project on the Base. Our scope included surveying the population of the rare and threatened tarplant species, communicating with the Training Base personnel, and proposing best management practices.

Endemic conducted nesting bird surveys at Los Alamitos Airfield Base to protect bird species and active nests from Installation construction and maintenance activities. In addition to conducting field surveys, we wrote and reviewed reports that summarize species observed, general construction activities, active nest locations, and management recommendations.

Endemic also participated in a variety of restoration activities, such as preparing plots for hydroseeding and hand casting, installing irrigation systems, and performing general weeding and maintenance activities. Additionally, we identified tarplant and determined appropriate restoration and management techniques to promote tarplant growth and population stability. Furthermore, Emma has experience conducting point-intercept transect surveys in tarplant restoration plots to gather data for further analysis.
Endemic also conducted breeding and nonbreeding surveys and habitat assessments for the burrowing owl at Los Alamitos Airfield Base. These surveys were conducted to identify and protect burrowing owl individuals and potential habitats impacted by construction activities associated with the Solar Development project.

Period of Performance, Value of Services, and Reference:

Wildlife Innovations

» Reference: Steven Jake Manley; 334-703-2946

» Period: 2022-2025 Value of Services: $121,350

PROJECT EXAMPLES

Fairview Park Master Plan Amendment Project, City of Costa Mesa, Orange County, CA. Cogstone conducted a cultural and paleontological resources assessment to determine the potential impacts to cultural and paleontological resources during the project. The City of Costa Mesa proposed to expand the Fairview Park Master Plan to include restoration of the 208-acre park for continued passive use by the community and the natural habitats, as well as protect the cultural sites within the park boundaries. Cogstone's services included cultural and paleontological records searches, background research, a Sacred Lands File search from the Native American Heritage Commission (NAHC), and intensive pedestrian survey. A total of four cultural resources have been previously recorded within the park. These consist of two prehistoric archaeological sites, one multi-component archaeological site, and one historical archaeological site. The sites were revisited to assess damage to the resources caused by runoff, unauthorized "social" walking trails, vegetation clearing, and other disturbances. California Department of Parks and Recreation 523 (DPR 523) series site record updates were completed for the resources. Cogstone prepared a Cultural and Paleontological Resources Assessment report to document the findings. All work for the project was completed in compliance with the mitigation measures for the project and City of Costa Mesa General Plan policies. The City of Costa Mesa was the lead agency under the California Environmental Quality Act (CEQA). Sub to MIG. 2023-*ongoing*

Fairview Park West Bluff Investigation Project, City of Costa Mesa, Orange County, CA. Cogstone provided cultural resources services for the project which consisted of a geological investigation within the park. Exploratory test pits in ten separate locations were excavated to evaluate existing soil conditions and erosional features. Cogstone conducted cultural resources monitoring and facilitated Native American monitoring during excavation and prepared a Cultural Resources Monitoring Compliance Report at the conclusion of the project. The City of Costa Mesa was the lead agency under the California Environmental Quality Act (CEQA). Prime. 2024

Experience and Abilities

The Endemic team is committed to performing services that the City of Costa Mesa will procure through the task orders. For 15 years, we have served the City of Costa Mesa as a vendor, consultant, and contractor to meet necessary goals, requirements, and overall vision of managing natural resources throughout the City. During our current tenure, Endemic has managed over 30 acres of habitat restoration projects at Fairview Park, navigated the City through four successful emergency projects, and managed the natural resources with City, State, and Federal agency compliance with many stakeholders utilizing the park. Endemic has an industry-renowned strength in implementing field projects from planning, design, and permitting to implementation and final reporting. We ensure that the City of Costa Mesa projects progress forward through the complexities of regulatory compliance, budgetary and schedule constraints, and conflicting stakeholder interests while achieving attainable goals. The Endemic Team is proud to be a part of the Fairview Park habitat restoration process, and it is an honor and privilege to be part of a larger solution of conserving and protecting biodiversity.

Habitat Restoration

Using our experience within Fairview Park and from regional restoration projects, Endemic will provide all the necessary tasks to meet the goals of establishing coastal sage scrub and forb land flower fields that meet the OCTA and habitat restoration plan. Our Principal Ecologist and CEO has worked at Fairview Park for 15 years on nearly all aspects of the natural resources management program, and the Endemic habitat restoration team has worked at Fairview Park for 14 years, including one of a few contractors to have previously hydroseeding onsite, our permitted wildlife biology team has worked there conducting California gnatcatcher and least Bell's vireo surveys, since they discovered the populations in 2014. We are also the first team to conduct CDFW-approved Crotch's bumblebee surveys. We have pioneered innovative approaches to managing the park, such as drone technologies and creating community-based habitat restoration events. Furthermore, our staff has all been previously approved by the resource agency to conduct all wildlife surveys and discuss any challenges that may arise with the agencies. Our cultural sub-consultant has also been a long-standing City of Costa Mesa consultant who will provide quality services to ensure the cultural resources are managed in compliance with environmental regulations.

Nesting Birds

Endemic Environmental Services conducts routine nesting bird surveys at Fairview Park to support habitat restoration and ensure compliance with the Migratory Bird Treaty Act and Fish and Game codes. Our biologists monitor nests of local, migratory, and sensitive species like yellow warblers, yellow-breasted chats, and least Bell's vireos, providing monthly reports to the City. We establish nest buffers, implement tree swallow nest boxes to aid species recovery and operate brown-headed cowbird traps to support endangered bird populations. Our permitted staff also conduct protocol surveys for California gnatcatchers, documenting the success of coastal sage scrub restoration efforts.

Crotch Bumblebees

In 2024, Endemic Environmental Services conducted Crotch's bumble bee photo-only surveys for 16.5 acres at Fairview Park during the colony's active period, following California Department of Fish and Wildlife (CDFW) guidelines for endangered bumble bee species. Our CDFW-approved biologists, alongside City personnel, carried out the surveys, supported by expert taxonomist Doug Yanega to ensure accurate species identification. Endemic documented five bumble bee species, including the Crotch's bumble bee and the vulnerable Sonoran bumble bee. The surveys included habitat assessments, and all data were compiled in a Report of Findings submitted to the City and CDFW.

Burrowing Owls

Burrowing owls are a key area of expertise for Endemic Environmental Services, with key staff members Barry Nerhus, Karly Moore, and Alex Eagleton bringing over 40 years of combined experience surveying various Southern California habitats. Endemic has conducted breeding and wintering burrowing owl surveys across multiple counties, including Orange County, where the wintering population faces significant challenges. Barry Nerhus holds a permit to capture and mark burrowing owls as part of an ongoing research study, using color bands and GPS transmitters to track their breeding locations. At Fairview Park, Endemic has been conducting wintering burrowing owl surveys for over nine years, mapping suitable burrows using ArcGIS and following CDFW Burrowing Owl Survey Protocols to assist with habitat management and minimization efforts.

Community Involvement and Contributions

At Endemic Environmental Services, our success is closely linked to the well-being of the communities we serve. Since our inception, we have been committed to community-based environmental initiatives in Costa Mesa, focusing on education, habitat restoration, and collaborative research. Our involvement in the Costa Mesa community has been reinforced through our support of a nonprofit organization, ICRE, established by our CEO, Barry Nerhus.

ICRE, the Institute for Conservation Research and Education, is a non-profit organization dedicated to environmental research and education, focusing on involving local communities in conservation efforts. Endemic has proudly sponsored ICRE since its inception, the main goal of which is the establishment of a long-term partnership with the City of Costa Mesa, specifically to engage the community in the management and restoration of Fairview Park. Through this partnership, Endemic and ICRE co-created the "2nd Saturdays" initiative, a monthly event featuring guided tours, natural history walks, and hands-on habitat restoration activities. This event draws residents from across Costa Mesa and surrounding areas, encouraging them to take an active role in restoring and preserving the natural beauty of Fairview Park. Through ICRE, Endemic Environmental has also worked closely with local schools to engage students in environmental science and field research. The program's expansion brought students from Estancia High School, Costa Mesa High School, and Huntington Beach High School to participate in fieldwork at Fairview Park as part of their AP Environmental Science curriculum. In recognition of our contributions, the Mesa Water District has partnered with us to sponsor an annual poster session where students present the results of their fieldwork. This event, held at the end of each school year, provides a platform for students to showcase their research and highlights the importance of community-driven conservation. This collaboration has increased environmental awareness among students and strengthened the link between education and conservation.

Our involvement in the community and the City of Costa Mesa extends to significant research initiatives that benefit both the community and the environment. For the past 10 years, Endemic Environmental has studied the wintering burrowing owl population at Fairview Park. Last year, we attached a transmitter to a burrowing owl in Fairview Park, which revealed that they breed in Oregon, marking the first known location of a breeding burrowing owl in Orange County history. Endemic has also collaborated with the California Native Plant Society to map rare plant populations in Fairview Park, further contributing to informed park management. We take pride in sponsoring and actively participating in professional societies such as the Southern California chapter of The Wildlife Society, helping to foster research and community engagement at a broader level. Through our support of local organizations, educational partnerships, and conservation research, we aim to promote environmental stewardship and contribute to the betterment of the community. Our initiatives in Fairview Park and beyond are a testament to our dedication to making a lasting, positive impact in Costa Mesa.

Financial Capacity

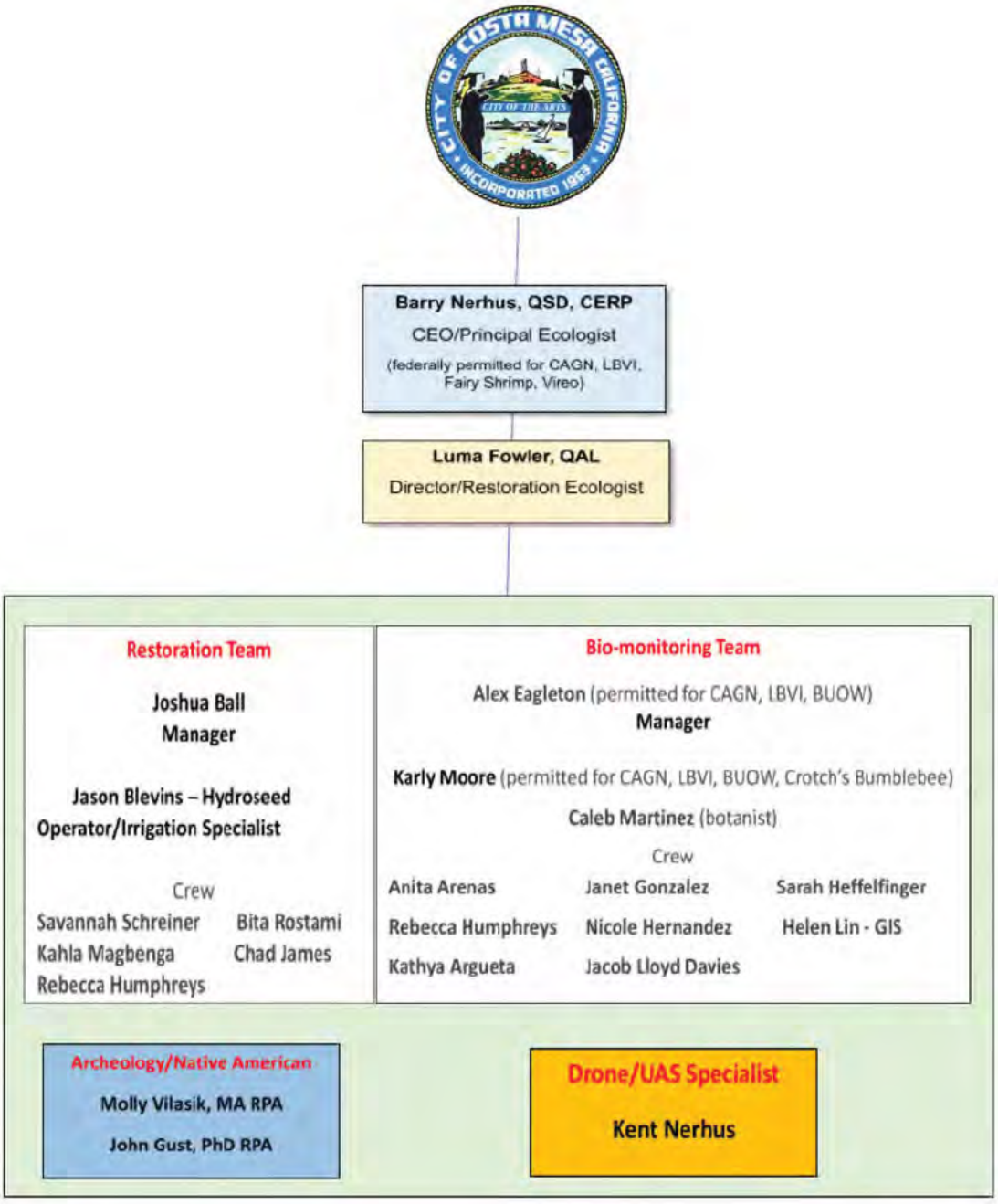
Endemic has the financial capability to perform the task orders to be released by the City under this contract. As shown by the Certificate of Insurance below, we are also fully insured, with the City of Costa Mesa listed as the owner.

Certificate of Liability Insurance is Provided on the Next Page

Key Personnel

The Endemic team consists of specialized experts in their respective fields. Our team members' full resumes are included in Appendix—Resumes.

Organization Chart



Appendices

Appendix A - Staff and Subconsultant Resumes

Appendix B - Sample Professional Service Agreement

Appendix C - Required Forms

BARRY NERHUS, CPESC, QSD/P, CERP

Principal Ecologist

Professional Summary

Barry Nerhus is a trusted and renowned Ecologist with over 19 years of experience in habitat restoration, wildlife studies, biological research, environmental assessment, contract management, and interagency coordination. Barry is trained in a broad range of natural resource disciplines, including biological surveys and monitoring, habitat restoration ecology, wetland science, botany, herpetology, and ornithology. He has been a trusted consultant and contractor for the City of Costa Mesa and the resource agencies for 15 years. As the CEO of Endemic, he leads the company's team in providing services that conserve biological diversity and restore habitat. Through his trusted work and career, Mr. Nerhus has developed an immense network of professionals that allows him to navigate through solutions many people would not have access to.

Relevant Experience

Education

» M.S., Biology, California State University, Long Beach, CA

» B.S., Biology, University of California, Irvine, CA

Certificates/Licenses

» Certified Stormwater Protection Practitioner and designer (QSP/D) #27735

» Certified Professional in erosion and Sediment Control #9658

» USFWS 10(a)(1)(A) Recovery Permit, TE74785A-2 for various species

» CDFW Scientific Collecting Permit, SC-010434, issued 3/2020 for various species

» Certified Ecological Restoration Practitioner #0742

» USACE Wetland Delineation Training Certificate Program

» C27 California Contractor's License for Landscape Contract Services #1087090

He holds a CDFW Scientific Collecting Permit (SC-010434) for a number of sensitive species. He also holds a USFWS Recovery Permit (TE 74785A-2). These permits give him independent authorization to work with **California gnatcatcher, burrowing owl, least Bell's vireo, fairy shrimp, southwestern pond turtle and birds of prey, all species pertinent to Fairview Park management.**

Professional Experience

On-call and Contracted Ecological Services for Fairview Park and Canyon Park, Costa Mesa (2009-present)

Principal Manager for contracted and on-call environmental services at the 208 acre Fairview Park and Canyon Park for the past 15 years. Mr. Nerhus conducts habitat restoration consulting, implementation, maintenance and reporting; wildlife surveys including California gnatcatcher, least Bell's vireo, avian nest surveys, vernal pool restoration; public meeting coordination; plant surveys, and plant guides. Mr. Nerhus has also managed the planting and hydroseeding on parts of Fairview Park to complete habitat restoration tasks. Barry designed, implemented, and now manages a restoration plan for a site at Fairview Park, Costa Mesa, CA, which was approved by the USFWS, CDFW, and OCTA. These projects include coastal sage scrub, needle bunch grassland, riparian, and wetland habitats. It includes a monitoring program to evaluate the project's overall health and success

Wildlife Innovations - Los Alamitos Joint Forces Training Base - Southern tarplant Mitigation (2022 - Present)

As Principal Ecologist, Mr. Nerhus is responsible for the design, implementation, and oversite related to the restoration project focused on the southern tarplant (*Centromadia parryi ssp. australis*). This project, which covers an area of approximately 2 acres with 63,100 Southern tarplants, involves multiple critical tasks to ensure the successful mitigation of this endangered species. Mr. Nerhus was hired to lead this effort based on his previous successful recovery of this species at 4 other populations, including Fairview Park in Costa Mesa and the LAX Airfield.

Irvine Ranch Water District, On-Call for Landscape/Habitat Restoration for San Joaquin Marsh and other sites (2019-ongoing)

Principal in charge for the Endemic restoration and biological team that supports the habitat restoration efforts and maintenance with ecological consulting services to Irvine Ranch Water District and Land Care (prime) for work areas including San Joaquin Marsh and 50 additional site locations. These services are performed on a daily basis. Mr. Nerhus provides insight on the design, consulting, and oversight of these sites that are primarily forb-land (wildflowers), grassland and wetland habitats. He has led design to implementation such as planting and hydroseeding to improve the function of these sites. These services also involve inspections to monitor management of invasive species and training Land Care personnel and prepare reports as deliverables.

Orange County Water District, Prado Basin Sediment Demonstration Riparian Restoration Project (2021-2022)

Mr. Nerhus led the design of irrigation, plant palette design and layout and quality control of the restoration of 8 acres of riparian habitat for the Orange County Water District (OCWD). The site had no access to a main water source. Mr. Nerhus designed and provided an onsite layout of a remote temporary irrigation system that provided adequate water within the Santa Ana River Flood Plain. This project successfully established 8 acres of riparian habitat that now has nesting federally listed least Bell's vireo nesting within the site.

City of Irvine, On-Call Environmental Services Open Space Management Project (2013-ongoing)

Project Manager to support the management of 50,000 acres of sensitive open space that has been conserved through conservation easements, endowments, and reserve space. The services have included avian nest surveys, non-native plant species mapping, invasive species management and agency coordination.

Ascon Southern Tarplant Restoration Project (2013-2015)

Barry managed, monitored, and maintained a 7-acre restoration project dedicated to the southern tarplant, an effort that addressed the environmental impact on a local natural population. His responsibilities included overseeing all aspects of the project, from planting and nurturing the southern tarplants to monitoring their growth and health. The primary goal of this initiative was to establish a thriving population of 200,000 southern tarplants, and Barry was committed to sustaining this population for at least three years. This effort not only contributed to the conservation of the species but also helped restore ecological balance in the area.

Project Manager, Paradise Springs Campground Project (2021-2023)

CDFW designated and Los Angeles County approved Biologist to implement all avoidance and minimization measures for bats, oaks, short-jointed beaver-tailed cactus, sensitive herpetofauna, mountain yellow-legged frogs, golden eagle, riparian mitigation, and nesting birds. Mr. Nerhus conducted the required pre construction surveys, Habitat mitigation and monitoring plan for short- jointed beavertail cactus, and riparian mitigation implementation and monitoring.

Luma Fowler, QAL

Restoration Director/Ecologist

Professional Summary

Luma Fowler is a Restoration Ecologist with 14 years of expertise in biological research, environmental assessment, wildlife studies, and construction monitoring. She excels in herbicide application, mitigation implementation, and inter-agency coordination. Over the past decade, Ms. Fowler has led and executed restoration projects across diverse habitats throughout the state. Her role includes conducting rare plant surveys, overseeing maintenance and monitoring, writing mitigation and restoration plans, and managing the restoration department at Endemic Environmental Services. She holds a Qualified Applicator License (QAL) for herbicide application and teaches Restoration Ecology at Chapman University, as well as the Bat Ecology and Sampling section in the UC Irvine Master's program in Conservation and Restoration Sciences.

Relevant Experience

Education

» MS, Environmetnal Science, Curtin University, Australia

» B.S., Biology, Centro Universatario Nove de Julho, Brazil

» Professor at Chapman University currently teaching Introduction to Restoration Ecology

Institute for Conservation, Research and Education Education Director

» Luma Fowler is the Education Director with ICRE, she oversees the Ecological Field Research Program with local High Schools in Orange County, provides Biological consulting services, gives Bat walks and talks to the community in several location within Orange County and supervises administrative tasks within the organization.

Professional Experience

City of Costa Mesa - Field supervisor and Project Manager - On-call Consulting Services, Task Order for Fairview Park Restoration Project (2017-2023)

Project Manager for on-call environmental services for the past 6 years for Fairview Park Project. Luma has managed the landscaping and hydroseeding on parts of Fairview Park to complete habitat restoration tasks. Coordination with the field technician to complete tasks. Provide training for tools, equipment and invasive plant removal. Luma also wrote and reviewed annual reports for monitoring of Southern tarplant (*Centromadia parryi subsp. australis*), which is ranked 1B.1 rare plant by the California rare plant bank. While managing Fairview Park, Luma surveyed and trained Field Biologists while monitoring endangered species such as California Gnatcatchers and Least bell's vireo.

City of Irvine- Environmental Constraints Matrix and Vegetation Management- Irvine CA (2017- 2022)

Lead Biologist during preconstruction and vegetation removal monitoring. Field supervisor and manager during invasive plants survey and mapping. A matrix was reported to define environmentally sensitive areas around Irvine, California. Reports and geospatial mapping were then conducted to inform the City of Irvine for vegetation management.

Newport Bay Conservancy, Vegetation Management Project 2018-2022)

As the Restoration Director for on-call environmental services over the past 6 years, Luma has overseen a range of restoration projects at Newport Back Bay, ensuring that each project aligns with environmental best practices and conservation goals. Luma's responsibilities include coordinating closely with field technicians to manage daily operations, track progress, and address any on-site challenges that arise. This role requires meticulous attention to detail and effective communication to maintain workflow efficiency and project timelines. In addition to project management, Luma plays a crucial role in training and development. Luma provides comprehensive training sessions on the use and maintenance of specialized tools and equipment, ensuring that all team members are well-equipped to perform their tasks safely and effectively. Furthermore, Luma offers expert guidance on invasive plant removal techniques, sharing best practices to minimize environmental impact and promote native species restoration.

Huttopia Paradise Springs- Phase I Red Rock Campground Improvement Project - Valyermo, Mojave Desert - Los Angeles County. (2021-present)

Principal restoration Ecologist for mitigation site, oak tree permit and biological services within the project area. Overall supervision of the installation, maintenance, and monitoring of a mitigation site.

Landcare Landscape - Vegetation mapping and monitoring (2019-Present)

Restoration Ecologist for overseeing over 50 Natural Treatment systems sites in Orange County. Supervision and site inspections at wetlands, Coastal Sagre Scrub and grassland habitats during grow kill cycles, irrigation test inspections, writing restoration plans, plant palettes and planting design. Luma Fowler is responsible for writing memorandums of understanding for herbicide applications when working with the following species: Herb of Grace (*Bacopa monnieri*), artichoke thistle (*Cynaran cardunculus*), cattail (*Typha spp.*), bulrush (*Schoenoplectus californicus*), pampas grass (*Cortaderia selloana*), stinknet (*Oncosiphon pilulifer*).

Wildlife Innovations - Los Alamitos - Southern tarplant Mitigation (2022 - Present)

As the Restoration Director, Luma is responsible for the comprehensive management and supervision of all aspects related to the restoration project focused on the southern tarplant (Centromadia parryi ssp. australis). This project, which covers an area of approximately 2 acres with 63,100 Southern tarplants, involves multiple critical tasks to ensure the successful mitigation of this endangered species. Luma oversees site preparation, which includes clearing and preparing the land to create an optimal environment for the southern tarplants. Additionally, Luma manages the seed collection process, ensuring that high-quality seeds are gathered and stored properly. Luma is also in charge of the installation of plant materials, ensuring that the southern tarplants are planted in a manner that promotes their healthy growth and establishment. Temporary irrigation systems are set up and monitored under Luma's guidance to provide adequate water supply during critical periods of plant development. Throughout the project, Luma conducts continuous monitoring and assessment to track the progress and health of the southern tarplants. This involves regular site visits, data collection, and adjustments to management practices as needed to address any challenges that arise.

Irvine Ranch Water District- On-call Environmental services (2021 - Present)

Restoration Ecologist for On-call consulting services. Supervises and coordinates services including habitat restoration (maintenance, hydroseeding, planting, bird boxes monitoring, and training), biological monitoring, and nesting bird surveys in non-woody grass and forbland habitat.

Riverside County Department of Water Resources - Corona and Pedley (2023- Present) Principal Restoration Ecologist for mitigation site and biological services within the project area. Qualified Applicator License (QAL) in charge of any herbicide applications. The restoration team was trained by Luma on herbicide application and safety on species such as Arundo (*Arundo donax*), pampas grass (*Cortaderia selloana*), stinknet (*Oncosiphon pilulifer*) and Tamarisk (*Tamarix ramosissima)*. Overall supervision of the installation, maintenance, and monitoring of on site activities. While overseeing this project, Luma surveyed and trained Field Biologists while monitoring endangered species such as Least bell's vireo.

Professional Trainings and Certifications

CA QAL/QAC, Including Category B - Landscape Maintenance and Category F – Aquatic
Department of Pesticide Regulation - Calibration Techniques for Herbicide Application in Wildland and Non-Row Crop Applications (June 2024)
Bat Acoustics Workshop - The Wildlife Society 2019 (3 nights mist netting - 11 hours total handling bats)
Bat Ecology and Field Techniques – The Wildlife Society 2019 (2 nights mist netting - 7 hours total handling bats) Advanced Bat Acoustics: Master Class - The Western Section Expert Series - 2022 (3 nights mist netting - 11 hours total handling bats)
Bat Acoustics Identification Workshop - Vesper Bat detection services February 19-20,2022 Southwestern Desert Bats Workshop - Desert Studies center - September 25-27, 2023 (2 nights mist netting - 8 hours total handling bats)
Los Angeles National Forest Mist netting for NA Bat Monitoring Program - October 12th,2023 (4 hours handling bats) Cal IPC/ Department of Pesticide Regulation - Calibration training June 12, 2024. 8 hours. UC IPM PSEP (Pesticide Safety Education Program) - 8 hours - updated June 2024

KARLY MOORE

Biological Consultant

Professional Summary

Karly Moore has over 25 years' of experience conducting species specific surveys, wildlife inventories and research. She has worked on construction monitoring jobs for Southern California Edison, various cell tower companies, emergency road repairs, dredging, residential developments, Caltrans highway improvement and base wide infrastructure projects (housing, sewage treatment plants, water and sewer pipelines) for Marine Corps Camp Pendleton. Karly has extensive nest searching and nest monitoring experience. She is permitted to undertake surveys and handle **California Gnatcatcher, Burrowing Owl and Least Bell's Vireo, and Crotch's Bumblebee Survey.**

Relevant Experience

Education

» B.S., Wildlife Management, Humboldt State University, Arcata, CA

Certificates/Licenses

» Federal Bird Marking and Salvage subpermittee 20431

» Federal 10(a)(1)(A) permit 02484A-3

» Scientific Collector Permit 1904400001

» Southwestern Willow Flycatcher Training (2005)

» Yellow-billed Cuckoo Training (2013)

» Burrow Construction Certificate (2010)

» Desert Tortoise Workshop Training (2010)

» Crotch Bumble Bee Training and Certificate (2023)

Professional Experience

Fairview Park Photographic Bumble Bee Surveys-City of Costa Mesa-Costa Mesa- Endemic Environmental Services, Inc. - (2024)

CDFW approved the biologist to conduct Crotch's bumble bee surveys at Fairview Park. The biologist took photo documentation of all bees encountered. The photos were submitted to an approved expert for identification. Positive findings for Crotch's bumble bees. Data was also taken on the percent of floral resources blooming, plant species present, and whether there was a suitable nesting habitat and features.

Fairview Park Protocol Breeding and Nonbreeding Season Coastal California Gnatcatcher Surveys- City of Costa Mesa- Costa Mesa- Endemic Environmental Services, Inc. - (2023)

Biologist conducted protocol breeding and nonbreeding season coastal California gnatcatcher (*Polioptila californica californica*) surveys at the Fairview Park where habitat restoration is occurring. There are two breeding territories and dispersing juveniles. Documented California sensitive species and T&E species which were entered into the California Natural Diversity Database. As the Project Manager the duties entailed field coordination with trainees and submission of the 45 Day Report of Findings to CDFW.

Raptor Biologist Manzana- Antelope Valley- Bloom Biological, Inc.- (2014 and 2023)

Biologist responsible for calling in golden eagle and California condor curtailments to the wind farm when the birds were approaching or inside the turbine array. The biologist used a yagi and receiver to listen and pin point signal locations for California condors. The biologist recorded condor stud book #s, signal strength, mapped flight paths for condors and eagles located within a certain distance of the wind farm.

Caltrans 08-1H0604 Highway Improvement Project- Griffith - Hemet- Endemic Environmental Services - (2023)

Biologists conducted pre-construction surveys for nesting birds and hawks, burrowing owls (*Athene cunicularia*), and smooth tar plants (*Centromadia pungent laevis*). The smooth tar plant was identified inside the project work limits and flagged according to the Caltrans Special Provisions. The biologist also conducted nesting bird updates and filled out monitoring reports of the findings.

Canyon Loop Trail Improvement Project, City of Diamond Bar, Los Angeles County, CA (2023)

The City of Diamond Bar initiated this project to enhance a popular hiking trail in the hills by widening the trail, compacting the soil, and implementing erosion control measures. Biologists contributed by conducting pre-construction surveys, developing a worker environmental awareness program, monitoring biological activity, and mapping vegetation disturbances throughout the construction period. The site featured several habitat types, including oak woodland, coastal sage scrub, and coast prickly pear scrub. Endemic biologists were responsible for ensuring the protection and compliance of listed species such as the Coastal California gnatcatcher, Cactus wren, and Coast horned lizard.

Inglewood Oil Fields Protocol Nonbreeding Season California Gnatcatcher Surveys- Ladera Heights Endemic Environmental Services, Inc. - (2023)

Biologist conducted protocol nonbreeding season coastal California gnatcatcher (*Polioptila californica californica*) surveys at the Inglewood Oil Fields. There are numerous breeding territories and dispersing juveniles. Documented California-sensitive species and T&E species. As the Project Manager, the duties entailed filed coordination with the client, survey report submittals, reviewing the 45 Day Report of Findings, and invoicing.

Haiwee Shoulder Improvement Project- - Haiwee - Endemic Environmental Services, Inc. - (2023)

Biologist conducted pre-construction surveys for nesting birds and hawks, burrowing owls (*Athene cunicularia*), desert tortoise (*Gopherus agassizzii*), kit fox (*Vulpes macrotis*), Mohave ground squirrel (*Xerospemophilus mohavensis*), and Joshua trees (*Yucca brevifolia*). A potential desert tortoise burrow was identified, as well as old bleached shell fragments. Joshua trees and a CNDDB identified sensitive plant Booth's evening primrose (*Eremothera boothii*) were all identified inside the project work limits and were flagged according to the Caltrans Special Provisions. The biologist assisted with the preconstruction report.

Santa Rosa Plateau Southwestern Pond Turtle Survey- Santa Rosa Plateau- Endemic Environmental Services, Inc. - (2023)

Biologist assisted in checking traps for southwestern pond turtles. The biologist checked marked floating traps, observed the permitted biologists as they took measurements, notched the scutes, used a pit tag reader, felt for eggs in gravid females, and counted developmental rings. A total of 16 turtles were trapped. The biologist followed decontamination protocol for waders and boots.

Big Canyon Protocol Breeding California Gnatcatcher Surveys- Newport Beach Back Bay- Newport Beach Conservancy- Endemic Environmental Services, Inc. - (2023)

Biologist conducted protocol breeding season California gnatcatcher (*Polioptila californica californica*) surveys. These surveys did detect two breeding territories. Documented California sensitive species and T&E species such as salt marsh bird's beak (*Chloropyron maritimum maritimum*) which were submitted to California Natural Diversity Database. As the Project Manager the duties included coordination with trainees, communication with the client, the 45 Day Report of Findings submittal, and invoicing.

Coastal California Gnatcatcher Juvenile Dispersal Research Project- Newport Beach Back Bay- San Joaquin Marsh- Institute for Conservation, Research and Education - (2023)

Biologist participated in the pilot year of monitoring and banding breeding coastal California gnatcatchers (*Polioptila californica californica*) and their nestlings. The study site has 10 breeding territories. The biologist from a distance identified and monitored CAGN nests. The biologist assisted primary bander Dana Kamada with recording nestling banding information and with target netting adults. Collected information was entered into FieldMaps. Confirmation of color-banded fledglings and documentation of banded juveniles was recorded. Documented California-sensitive species and T&E species.

Agua Dulce Residential Development Project-RTG Invest- Agua Dulce, CA (2021-2023)

Biologist conducted biological monitoring to identify sensitive herps such as coast horned lizard and California legless lizard. She also removed California Slender Mariposa Lily bulbs for relocation, and oversaw vegetation removal within grading limits. An Environmental Education Program and Movement out of Harm's Way Plan was delivered to establish the protection measures for the species.

Alex Eagleton

Biologist/Project Manager

Professional Summary

Alex Eagleton has 9 years of avian fieldwork experience trapping raptors and passerines, and has handled the following listed species: **California Gnatcatcher, burrowing owl, Swainson's hawk, and golden eagle, and Least Bells vireo**. Her Master's research focused on Avian ecotoxicology, where she captured and sampled 50 turkey vultures. Additionally. she is an environmental professional who managed and conducted biological surveys for numerous projects. Alex has experience with biological monitoring, conducting biological resource surveys, and writing technical reports.

Mrs. Eagleton also has excellent visual recognition of California bird species and is capable in the identification of a diversity of reptiles, amphibians, and mammal species native to California. She has 5 years of field research experience with a heavy focus on birds of prey and is excellent with mist netting and the capture and banding of birds of prey, and has experience with pitfall trapping, small mammal trapping, snorkeling surveys, bat surveys, and herpetological surveys. Mrs. Eagleton has excellent technical writing skills, and has experience with RStudio, GPS, and the Survey123 app.

Relevant Experience

Education

» M.S, Biology, California State Polytechnic University, Pomona

» B.S., Biology - Zoology, California State Polytechnic University, Pomona

Certificates/Licenses

» Federal Bird Banding sub permit

» USFWS 10(a)(1)(A) Recovery Permit, TE74785A-2 for California gnatcatcher

» Subpermitted for CAGN Protocol Surveys (since 2024)

» Subpermitted for TUVU Tagging (since 2019)

Port of LA Experience

Fairview Park California Gnatcatcher Protocol Surveys - City of Costa Mesa (2022, 2023)

Mrs. Eagleton participated in 12 hours (4 days) of protocol-level surveys for wintering coastal California gnatcatcher at the park, under biologist Karly Moore. Surveys were conducted for research purposes. She encountered male, female and juvenile CAGN as well as blue-gray gnatcatchers during the surveys. Mrs. Eagleton also conducted a breeding protocol survey in 2022, but the result was negative.

Palos Verdes Conservancy California Gnatcatcher Protocol Surveys - Orange County, CA (2024)

Mrs. Eagleton independently conducted 10 hours (2 days) of protocol-level surveys for breeding coastal California gnatcatcher at UCI Marsh, under biologist Barry Nerhus. Surveys were conducted for research purposes. She encountered approximately 10 territories of CAGN during both surveys.

Tijuana Slough Ridgway's Rail Surveys. San Diego County, CA (2023)

Mrs. Eagleton conducted a survey for Light-footed Ridgway's Rail. Audio-playback and visual surveys were employed in order to identify rail territories and nesting locations and data was collected using ArcGIS Fieldmaps. Several pairs were detected. Surveys were conducted under supervision of permitted biologist Richard Zembal.

SR-71/91 Interchange Improvement Project - Riverside County (2021- Present)

Mrs. Eagleton manages the biological consulting needs of the project. She performed preconstruction nesting bird survey and burrowing owl habitat assessment and assisted with rare plant survey and bat habitat assessment. She conducts and oversees biological monitoring to ensure the protection of sensitive species onsite such as California gnatcatcher, Least Bell's vireo, Santa Ana sucker, and roosting bat colonies. She conducted bat emergence surveys, and contributed to the drafting and implementation of a bat avoidance and minimization plan including the installation of exclusion devices underneath two bridges.

UCI Marsh Ridgway's Rail Surveys. Orange County, CA (2023)

Mrs. Eagleton conducted audio-playback and visual surveys for Light-footed Ridgway's Rail under supervision of permitted biologist Barry Nerhus. Nesting locations and data was collected using ArcGIS Fieldmaps. Several pairs were detected.

Point Mugu Naval Air Station Ridgway's Rail Surveys. Ventura County, CA (2022)

Mrs. Eagleton conducted surveys for Light-footed Ridgway's Rail in order to monitor the distribution and survivorship of the species in the marsh lands at Point Mugu Naval Air Station. Audio-playback and visual surveys were employed in order to identify rail territories and nesting locations and data was collected using ArcGIS Fieldmaps. Surveys were conducted under supervision of permitted biologist Barry Nerhus.

UCI Marsh California Gnatcatcher Protocol Surveys - Orange County, CA (2022)

Mrs. Eagleton participated in 10 hours (2 days) of protocol-level surveys for breeding coastal California gnatcatcher at UCI Marsh, under biologist Barry Nerhus. Surveys were conducted for research purposes. She encountered approximately 10 territories of CAGN during both surveys.

Big Canyon California Gnatcatcher Protocol Surveys - Orange County, CA (2023)

Mrs. Eagleton participated in 7 hours (3 days) of protocol-level surveys for breeding coastal California gnatcatcher at the park, under biologist Karly Moore. Surveys were conducted to inform management for Newport Bay Conservancy. She encountered a pair of CAGN during each of the three surveys

Caleb Martinez

Botanist

Professional Summary

Caleb has a wide skill set regarding management and restoration of ecological systems as well as in monitoring California wildlife. Caleb is proficient in both vascular and non-vascular plant identification and plant monitoring, but also has experience with mammals, insects, and herpetofauna. As well, Caleb is focused and dedicated to improving his knowledge on local avian species.

Mr. Martinez has extensive experience with the flora and fauna of various habitats in Southern California, including but not limited to: coastal sage scrub, deserts, saltwater marshes, beach dune habitat, vernal pools, grasslands, riparian woodlands, and coniferous forests. Biologist is currently focusing on study at the UCI Herbarium, drafting a project based on phenological scoring of herbarium specimens located in Orange County California and mapping based on past plant data. They are efficient in data collection and processing using ArcGIS, R-Studio, Excel, and FieldMaps. As well, Caleb is proficient in the use of dichotomous keys and technical textbooks including the Jepson Manual 2nd ed., Flora of North America, and the Manual of California Vegetation.

Relevant Experience

Education

» B.S., Ecology and Evolutionary Biology, University of California Irvine, Irvine, California (2025)

Licenses, Certifications, and Trainings:

» Herbicide Application Training (2021)

» Chainsaw Operation Training (2021)

» Fishing License CDFW (2023)

» Scientific Collecting for Bumble Bee Species CDFW (2024)

Professional Experience

Invasive Plant Management - Irvine Ranch Water District - Irvine, CA (February 2024 - Present)

Mr. Martinez supports the Irvine Ranch Water District's resource management by performing weekly invasive plant surveys and offering detailed restoration recommendations for both native and non-native species across approximately 40 sites. He has established protocols and created training materials to educate employees on restoration techniques, plant identification (invasive and native), mapping, and the management of these ecosystems. These sites are mapped using ArcGIS Field Maps to track and document changes in plant communities over time. Through these efforts, Mr. Martinez has aided in establishing further work in the restoration sector of Endemic Environmental at IRWD sites. While performing surveys, the biologist also actively identified special status species territories and individuals including Least Bell's Vireo, Coastal California Gnatcatcher, Yellow Breasted Chat (*Icteria virens*), and Yellow Warbler (*Setophaga petechia*).

Caltrans 08-1J2604 Pre-Construction Survey on Highway 215 in Riverside County from 1.0 Mile North of Clinton Keith Road to 1.0 Mile North of Newport Road - Caltrans - Menifee and Murrieta, CA (March 2024)

Biologist aided in performing preconstruction surveys for nesting birds, rare plants, and burrowing owls. Mr. Martinez located, delineated, and reported rare plants on site (*Juglans californica* & *Deinandra paniculata*), totalling approximately 10 populations. Biologist was primarily responsible for species compendium compilation in Coastal Sage Scrub, ruderal riparian swales, Purple Needlegrass grasslands, and invasive annual grasslands.

SR 71/91 Highway Interchange Improvement Project - SKANSKA - Corona, CA (July 2023-Present)

Biologist participated in bat surveys for the purpose of exclusion, population monitoring, and maternity season delineation throughout the construction of a new extension. Surveys confirmed the presence of bat species including but not limited to: Yuma Myotis, California Myotis, Canyon Bat, Mexican Free Tailed Bat, and Pallid Bat. Surveys were conducted utilizing sight identification for population counts, acoustic equipment, and day/evening bat box monitoring.

Floristic Surveys and Collections - Southern California (June 2023- Present)

Biologist, under the affiliation of the UC Irvine Herbarium, has performed numerous floristic surveys and collections in order to expand current botanical understanding in Southern California. Mr. Martinez has surveyed for both vascular and nonvascular flora from San Bernardino to San Diego Counties. Biologist identified and collected a high volume of special status species, including but not limited to: *Brodiaea filifolia, Asplenium vespertinum, Lilium humboldtii ocellatum, Quercus engelmannii, Dudleya viscida, Clinopodium chandleri, Geothallus tuberosus, and Astragalus leucolobus*.

Joshua Ball

Restoration Project Manager

Professional Summary

Joshua Ball has over three and a half years of experience in environmental consulting, specializing in restoration and wetland ecology. His expertise includes conducting habitat restoration projects, performing wetland and jurisdictional delineations, managing tree inventories, and conducting rare plant surveys. Additionally, he has experience with biological, archaeological, and paleontological surveys and monitoring. Joshua is skilled in writing and publishing reports, processing permits, and conducting nesting bird surveys. He holds a bachelor's degree in Geography and Environmental Sciences from Cal State Fullerton and a certification in Geographic Information Systems (GIS). His technical skills include using GPS, Trimble devices, Survey123, and ArcGIS Field Maps.

Relevant Experience

Education

» B.S., Geography and Environmental Sciences, California State university Fullerton, Fullerton (2022)

Certificates and Trainings

» USACOE Wetland Delineation and Regional Supplement Training (2023), USACOE Hydric Soils Indicators (2023)

» Geographic Information Systems Certification and Training (2022)

Professional Experience

Fairview Park Restoration Project – Endemic Environmental, City of Costa Mesa (Spring 2024-Present)

Mr. Ball manages the restoration maintenance and biological consulting needs of the park, and oversees invasive vegetation management, wetland water quality testing, and coastal sage scrub and wetland habitat restoration throughout the park. With assistance from Endemic bird Biologists, helping to direct the brown-headed cowbird trapping program, and provides general biological consulting for the city, including on nesting birds, wintering BUOW, erosion, new restoration opportunities, rare plants, and any other services requested. He produces review documents and maps to track restoration success and changes over time.

Los Alamitos JFTB Airfield Solar Installation - Endemic Environmental, Orange County, CA (Spring 2024-Present)

Mr. Ball acts as the project manager overseeing the Los Alamitos JFTB Airfield Tar plant restoration site where the Endemic Environmental restoration team works to preserve, improve, and maintain the population of southern tarplant that exists onsite. Mr. Ball writes technical documents for submittal to the client on the health and condition of the site and offers recommendations to reach the goal number for the southern tarplant within the site.

Aliso Creek Southwestern Pond Turtle Surveys - Orange County, CA (Spring 2024- Present)

Mr. Ball assisted in turtle trapping to conduct surveys for southwestern pond turtle populations across sites throughout Aliso Creek. He assisted in the deployment of turtle traps, collecting captured turtles, and data collection which included population demographic metrics.

Newport Back Bay Coastal Sage Scrub and Salt Marsh Restoration/Huntington Beach Wetlands and Wildlife Conservancy, OC Habitats Project

Mr. Ball managed scheduling, procurement of plant and native seeds, and daily task delegation for a team of interns and volunteers focused on habitat restoration. His work included invasive plant management, active planting and seeding of Coastal Sage Scrub and Salt Marsh species, public outreach, education, and habitat monitoring. As the acting restoration lead, Mr. Ball guided groups of up to 40 volunteers and interns in using tools, employing proper planting and seeding techniques, following safety procedures, and understanding the natural systems and species in the habitat, including the Ridgeway Rail, Snowy Plover, and Osprey.

Hidden Canyon Restoration Site, Riverside County, CA Project

Mr. Ball played a pivotal role in the restoration and management of coastal sage scrub and wetland vegetation. His responsibilities included overseeing invasive vegetation management, which involved devising and implementing strategies to control and remove non-native plant species. Mr. Ball's role extended beyond just managing vegetation; he also provided valuable mentorship and education to staff interns, imparting his expertise and ensuring the team was well-equipped to handle various tasks. He meticulously organized and scheduled invasive plant removal days, hand-casting of seeds to promote native plant growth, and comprehensive site cleanups to maintain and improve the ecological health of the areas under his care. In addition to these hands-on tasks, Mr. Ball conducted in-field biological transect surveys to monitor and assess site conditions. The data gathered from these surveys were meticulously recorded and utilized in the preparation of detailed annual site condition reports. He also submitted daily biological reports, ensuring that the ongoing status and progress of the restoration efforts were consistently documented and communicated.

Jason Blevins

Hydroseed Operator/Irrigation Specialist

Professional Summary

Mr. Blevins has accumulated five years of experience serving as a site supervisor at Fairview Park, where he has honed his skills in the management of diverse ecological systems, including wetlands, riparian habitats, and coastal sage scrub. His role involves overseeing a range of habitat restoration projects, which includes designing and implementing strategies for rehabilitating natural environments. Mr. Blevins is adept at identifying and removing invasive plant species, a crucial task for maintaining the health and balance of the park's ecosystems. In addition to these technical duties, he conducts thorough nesting bird surveys to monitor avian populations and ensure their protection. Beyond his ecological responsibilities, Mr. Blevins plays a key role in team development by onboarding and training new employees, ensuring they are well-versed in park protocols and restoration techniques.

Relevant Experience

Certificates and Trainings

» SNPL and LETE OC Surveys (2024)

» Trailer Safety and Handling Training (2018)

» Chainsaw Operation and Maintenance Training (2018)

» Hydroseeder Operation and Maintenance Training (2018)

» OSHA/HAZWOPER 40 Hour Training (2022)

» Sea and Sage Birding Audubon Society Birding Course (2022)

» BSNF Railroad Safety Certification (2022)

» Xerces Society Bumblebee Collecting Permit (2023)

Professional Experience

City of Costa Mesa, Fairview Park Riparian and Wetlands Restoration Project

As a restoration specialist, Jason plays a crucial role in managing and maintaining a diverse 52-acre wetland area, which features 5 ponds, 3 channels, and a complex outflow system. His primary responsibilities include restoring and enhancing the natural habitats within this wetland by meticulously removing invasive species that threaten the ecosystem, planting a variety of native plants to support local wildlife, and implementing efficient irrigation systems to promote healthy plant growth. Additionally, Jason is skilled in the installation of 3-wire fencing to protect sensitive areas and manage wildlife.

Beyond habitat restoration, Jason also oversees the maintenance and repair of essential power tools and equipment used in these tasks. This includes performing regular diagnostics to identify potential issues and executing necessary repairs to ensure all equipment operates at peak efficiency.

Orange County Water District, Prado Basin Restoration Project

Jason played a pivotal role in the habitat restoration efforts for the Arundo abatement project with the Orange County Water District. He took on the challenge of improving poor soil conditions by installing an advanced irrigation system designed to enhance soil fertility and support plant growth. Utilizing a skid skiff, Jason meticulously planted 4,550 riparian plants and trees, including mulefat, various species of alder, and sycamores, carefully selecting each species to ensure ecological balance and promote biodiversity. His hands on approach extended beyond planting; Jason was also responsible for the ongoing maintenance of the restoration site. This included managing invasive species through targeted control measures and overseeing the irrigation system to ensure that all newly planted vegetation received adequate water. His dedication and attention to detail were instrumental in the project's success, contributing significantly to the restoration of the habitat and the overall health of the ecosystem.

City of Victorville, Green Tree Erosion Control Project

Jason spearheaded Southern California's largest erosion control project, a massive undertaking that spanned over a year. His leadership was instrumental in ensuring the project was completed on time and exceeded client expectations, garnering high levels of customer satisfaction. Jason's role was multifaceted and included managing all aspects of hydroseeding operations, from planning to execution. He also played a crucial role in overseeing hydromulching activities and was responsible for the installation of erosion control blankets. His hands on approach and expertise in these areas not only facilitated smooth operations but also ensured the project's success in effectively mitigating erosion across the extensive site. Jason's ability to coordinate various teams and resources while maintaining rigorous quality standards was key to the project's successful completion.

Newport Bay Conversancy, Newport Back Bay Big Canyon Restoration Project

Jason demonstrated exceptional leadership and expertise throughout. He meticulously managed the removal of invasive tree species, a critical task involving both the physical cutting of trees and the strategic application of herbicide to ensure effective prevention of regrowth. Jason's adept use of heavy machinery, including a Bobcat, along with chainsaws and a chipper, was pivotal in streamlining the removal process. His attention to detail and commitment to efficiency not only ensured that the project was completed on time but also met all the environmental objectives. Under Jason's guidance, the team achieved outstanding results, leading to high client satisfaction and a successful restoration of the area.

Irvine Ranch Water District, Irvine Ranch Water District Hydroseeding Project

Jason played a central role in the hydroseeding project for the Irvine Ranch Water District (IRWD). His responsibilities were multifaceted, encompassing both the operation and maintenance of the hydroseeder. Jason's meticulous approach ensured the equipment remained in optimal condition, which was critical for the project's success. He was also in charge of applying native plant seeds, a task that required careful attention to detail and precision. Through his dedicated efforts, Jason significantly contributed to the project's aim of fostering local vegetation and supporting environmental sustainability.

JOHN GUST
Principal Investigator for Archaeology
714-974-8300
jgust@cogstone.com

EDUCATION

2016 Ph.D., Anthropology, University of California, Riverside (UCR)
2011 M.A., Anthropology, UCR
2007 M.A., Applied Geography, University of Colorado, Colorado Springs (UCCS)
2002 B.A., Anthropology, minor in Geography/Environmental Studies, UCCS

SUMMARY QUALIFICATIONS

Dr. Gust is a Registered Professional Archaeologist (RPA) with over 11 years of experience in field archaeology. His field expertise includes pedestrian surveys, excavation monitoring, resource recording, and historic artifact analysis. Dr. Gust has extensive experience in California cultural resources. He has managed a variety of projects at Cogstone in the water, transportation, energy, development, and federal sectors. Dr. Gust meets the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and is knowledgeable of the compliance requirements of the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and Section 106 of the National Historic Preservation Act (NHPA). He meets the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation.* Dr. Gust is a member of the Society for California Archaeology, Society for American Archaeology, and the American Anthropological Association. He is listed as a Field Director on Cogstone's Bureau of Land Management Cultural Resources Use Permit.

SELECTED EXPERIENCE

Fairview Park Master Plan Amendment Project, City of Costa Mesa, Orange County, CA. As Task Manager and Principal Investigator for Archaeology, Dr. Gust ensured the cultural resources work for the project was completed in compliance with CEQA. He also co-authored portions of the reports and reviewed the cultural resources deliverables for the project. Cogstone conducted a cultural and paleontological resources assessment to determine the potential impacts to cultural and paleontological resources during the project. The City of Costa Mesa proposed to expand the Fairview Park Master Plan to include restoration of the 208-acre park for continued passive use by the community and the natural habitats, as well as protect the cultural sites within the park boundaries. The City of Costa Mesa was the lead agency under CEQA. Sub to MIG. 2023-*ongoing*

Fairview Park West Bluff Investigation Project, City of Costa Mesa, Orange County, CA. As Task Manager and Principal Investigator for Archaeology, Dr. Gust ensured the cultural resources work for the project was completed in compliance with the mitigation measures for the project and CEQA. He oversaw monitoring work, coordinated Native American monitoring, and reviewed the report. Cogstone provided cultural resources services for the project which consisted of a geological investigation within the park. Exploratory test pits in ten separate locations were excavated to evaluate existing soil conditions and erosional features. Cogstone conducted cultural resources monitoring and facilitated Native American monitoring during excavation and prepared a Cultural Resources Monitoring Compliance Report at the conclusion of the project. The City of Costa Mesa was the lead agency under CEQA. Prime. 2024

MOLLY VALASIK
Project Manager, Principal Archaeologist
714-974-8300
mvalasik@cogstone.com

EDUCATION

2009 M.A., Anthropology, Kent State University, Kent, Ohio
2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

SUMMARY QUALIFICATIONS

Ms. Valasik is a Registered Professional Archaeologist (RPA) with more than 15 years of experience. She is a skilled professional who is well-versed in the compliance procedures of the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) and regularly prepares cultural resources assessment reports for a variety of federal, state, and local agencies throughout California. Ms. Valasik has managed a variety of projects at Cogstone in the water, transportation, energy, development, and federal sectors. Ms. Valasik meets the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. She is accepted as a principal investigator for prehistoric archaeology by the State Office of Historic Preservation and is listed as a Principal Investigator on Cogstone's Bureau of Land Management Cultural Resources Use Permit.

SELECTED EXPERIENCE

Fairview Park Master Plan Amendment Project, City of Costa Mesa, Orange County, CA. As Project Manager and Principal Archaeologist, Ms. Valasik managed the cultural resources work for the project and ensured that it was completed in compliance with CEQA and reviewed the report. Cogstone conducted a cultural and paleontological resources assessment to determine the potential impacts to cultural and paleontological resources during the project. The City of Costa Mesa proposed to expand the Fairview Park Master Plan to include restoration of the 208-acre park for continued passive use by the community and the natural habitats, as well as protect the cultural sites within the park boundaries. The City of Costa Mesa was the lead agency under CEQA. Sub to MIG. 2023-*ongoing*

Fairview Park West Bluff Investigation Project, City of Costa Mesa, Orange County, CA. As Project Manager and Principal Archaeologist, Ms. Valasik managed the cultural resources work for the project and ensured that it was completed in compliance with CEQA and reviewed the report. Cogstone provided cultural resources services for the project which consisted of a geological investigation within the park. Exploratory test pits in ten separate locations were excavated to evaluate existing soil conditions and erosional features. Cogstone conducted cultural resources monitoring and facilitated Native American monitoring during excavation and prepared a Cultural Resources Monitoring Compliance Report at the conclusion of the project. The City of Costa Mesa was the lead agency under CEQA. Prime. 2024

Anaheim Groundwater Treatment Plants Phase B Project, City of Anaheim, Orange County, CA. As Project Manager and Principal Archaeologist, Ms. Valasik ensured that all work was completed in compliance with CEQA and reviewed the report. Cogstone provided cultural resources monitoring and managing and scheduling Native American monitoring for the construction of five City of Anaheim Public Utilities groundwater treatment plants. Sub to CDM Smith. 2023-2024

Appendix B

Endemic has reviewed the Sample Agreement and has *no exceptions or conditions* to the Agreement.

APPENDIX C

FORMS

Vendor Application Form
Ex Parte Communications Certification
Disclosure of Government Positions
Disqualification Questionnaire
Company Profile & References
Bidder/Applicant/Contractor Campaign Contribution
Cost Proposal

VENDOR APPLICATION FORM
FOR
RFP No. 25-06 for Fairview Park Mesa Restoration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation

TYPE OF APPLICANT: ☐ NEW ☒ CURRENT VENDOR

Legal Contractual Name of Corporation: Endemic Environmental Services, Inc.

Contact Person for Agreement: Barry S. Nerhus

Title: President E-Mail Address: bnerhus@endemicenvironmental.net

Business Telephone: 714-869-6687 Business Fax: NA

Corporate Mailing Address: 110 E Wilshire Ave., Suite 305

City, State and Zip Code: Fullerton, CA 92832

Contact Person for Proposals: Luma Fowler

Title: Restoration Director E-Mail Address: luma@endemicenvironmental.net

Business Telephone: 714-869-6687 Business Fax: NA

Is your business: (check one)

☐ NON PROFIT CORPORATION ☒ FOR PROFIT CORPORATION

Is your business: (check one)

☒ CORPORATION ☐ LIMITED LIABILITY PARTNERSHIP

☐ INDIVIDUAL ☐ SOLE PROPRIETORSHIP

☐ PARTNERSHIP ☐ UNINCORPORATED ASSOCIATION

Names & Titles of Corporate Board Members

(Also list Names & Titles of persons with written authorization/resolution to sign contracts)

Names	Title	Phone
Barry S. Nerhus	President/Secretary	714-393-6249

Federal Tax Identification Number: [redacted]

City of Costa Mesa Business License Number: [redacted]

(If none, you must obtain a Costa Mesa Business License upon award of contract.)

City of Costa Mesa Business License Expiration Date: 8-24-2027

EX PARTE COMMUNICATIONS CERTIFICATION

Please indicate by signing below one of the following two statements. **Only sign one statement.**

I certify that Proposer and Proposer's representatives have not had any communication with a City Councilmember concerning informal **RFP No. 25-06 for Fairview Park Mesa Restoiration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation** at any time after **September 10, 2024.**

[redacted] **Date**: 10/1/2024

S

Barry S. Nerhus

Print

OR

I certify that Proposer or Proposer's representatives have communicated after **September 10, 2024.** with a City Councilmember concerning informal **RFP 25-06 for Fairview Park Mesa Restoriation: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation**. A copy of all such communications is attached to this form for public distribution.

_____ **Date**: _____

Signature

_____

Print

DISQUALIFICATION QUESTIONNAIRE

The Contractor shall complete the following questionnaire:

Has the Contractor, any officer of the Contractor, or any employee of the Contractor who has proprietary interest in the Contractor, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or safety regulation?

Yes _____ No x____

If the answer is yes, explain the circumstances in the following space.

DISCLOSURE OF GOVERNMENT POSITIONS

Each Proposer shall disclose below whether any owner or employee of Contractor currently hold positions as elected or appointed officials, directors, officers, or employees of a governmental entity or held such positions in the past twelve months. List below or state "None."

NONE

COMPANY PROFILE & REFERENCES

Company Legal Name: Endemic Environmental Services, Inc.

Company Legal Status (corporation, partnership, sole proprietor etc.): Corporation

Active licenses issued by the California State Contractor's License Board: C-27

Business Address: 110 E Wilshire Ave., Suite 305, Fullerton, CA 92832

Website Address: www.endemicenvironmental.net

Telephone Number: 714-869-6687 Facsimile Number: NA

Email Address: bnerhus@endemicenvironmental.net

Length of time the firm has been in business: 15 years

Length of time at current location: 10 months

Is your firm a sole proprietorship doing business under a different name: ___Yes X No

If yes, please indicate sole proprietor's name and the name you are doing business under:

Federal Taxpayer ID Number: [redacted]

Regular Business Hours: Mondays to Friday; 8 AM to 5 PM

Regular holidays and hours when business is closed: Federal holidays

Contact person in reference to this solicitation: Luma Fowler

Telephone Number: 714-869-6687 Facsimile Number: NA

Email Address: luma@endemicenvironmental.net

Contact person for accounts payable: Tracy Montgomery

Telephone Number: (714) 588-2837 Facsimile Number: NA

Email Address: accounting@endemicenvironmental.net

Name of Project Manager: Luma Fowler

Telephone Number 714-869-6687 Facsimile Number: NA

Email Address: luma@endemicenvironmental.net

COMPANY PROFILE & REFERENCES (Continued)

Submit the company names, addresses, telephone numbers, email, contact names, and brief contract descriptions of at least three clients, preferably other municipalities for whom comparable projects have been completed or submit letters from your references which include the requested information.

Company Name: City of Irvine

Telephone Number: 949-633-0325
Contact Name: Casey Gnadt
Contract Amount: $850,000
Email: cgnadt@cityofirvine.org
Address: 1 Civic Center Plaza, Irvine 92606
Brief Contract Description: On-Call Environmental Services for Open Space Management Project

Company Name: Irvine Ranch Water District

Telephone Number: 949-525-7234
Contact Name: Ian Swift
Contract Amount: $860,000
Email: swift@irwd.com
Address: 15600 Sand Canyon Ave, Irvine, CA 92618
Brief Contract Description: Natural Treatment System Habitat Restoration and Biomonitoring

Company Name: Orange County Water District

Telephone Number: 714-378-8211
Contact Name: David McMichael
Contract Amount: $48,000
Email: mailto:dmcmichael@ocwd.com
Address: 14980 River Road, Corona, CA 92880
Brief Contract Description: Prado Basin Sediment Demonstration Project for Habitat Restoration

Company Name: Wildlife Innovations

Telephone Number: (619) 966-5147
Contact Name: Daniel Biteman
Contract Amount: $121,360
Email: dbiteman@wildlifeinnovations.net
Address: 11629 Westridge Pl, Lakeside, CA 92040
Brief Contract Description: Southern Tarplant Enhancement for Solar Development Project

Company Name: Huttopia Canada - USA

Telephone Number: (518) 694-1391
Contact Name: Freddy Py
Contract Amount: $100,000
Email: (freddy@huttopia.com
Address: 297 Chem. Maple, Sutton, QC J0E 2K0, Canada
Brief Contract Description: Huttopia Paradise Springs Mitigation Project for Campground

BIDDER/APPLICANT/CONTRACTOR CAMPAIGN CONTRIBUTION

DISCLOSURE FORM

Proposer/Consultant/Applicant is required to identify any campaign contribution or cumulative contributions greater than $249 to any city council member in the twelve months prior to submitting an application, proposal, statement of qualifications or bid requiring approval by the City Council.

Date	Name of Donor	Company/Business Affiliation	Name of Recipient	Amount
NA	NA	NA	NA	NA

Except as described above, I/we have not made any campaign contribution in the amount of $250 or more to any Costa Mesa City Council Member in the twelve months preceding this Application/Proposal.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Barry Nerhus/Endemic Environmental Services, Inc.
Bidder/Applicant/Proposer

[redacted]

10/1/2024
Date

Fee Schedule Sample		
Position	Hourly Rate	Hourly rate for hours outside proposed hours of operation
Biologist Principal	$165.00	$247.50
Biologist Associate	$115.00	$172.50
Biologist Staff	$95.00	$142.50
GIS Specialist: Senior	$135.00	$202.00
GIS Specialist: Associate	$110.00	$165.00
Archeologist	$125.00	$187.50
Native American	$160.00	$240.00
Field Technicians	$80.00	$120.00
Irrigation Specialist	$110.00	$165.00
Irrigation Technician	$80.00	$120.00
Hydroseeder Operator	$95.00	$142.50
Herbicide Applicator	$80.00	$120.00
Botanist	$130.00	$195.00
Intern	$61.60	$92.40
*Prevailing Wages Applies		

APPENDIX C

FORMS

Vendor Application Form
Ex Parte Communications Certification
Disclosure of Government Positions
Disqualification Questionnaire
Company Profile & References
Bidder/Applicant/Contractor Campaign Contribution
Cost Proposal

VENDOR APPLICATION FORM
FOR
RFP No. 25-06 for Fairview Park Mesa Restoration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation

TYPE OF APPLICANT: ☐ NEW ☐ CURRENT VENDOR

Legal Contractual Name of Corporation: _____

Contact Person for Agreement: _____

Title: _____ E-Mail Address: _____

Business Telephone: _____ Business Fax: _____

Corporate Mailing Address: _____

City, State and Zip Code:_____

Contact Person for Proposals: _____

Title: _____ E-Mail Address: _____

Business Telephone: _____ Business Fax: _____

Is your business: (check one)

☐ NON PROFIT CORPORATION ☐ FOR PROFIT CORPORATION

Is your business: (check one)

☐ CORPORATION ☐ LIMITED LIABILITY PARTNERSHIP

☐ INDIVIDUAL ☐ SOLE PROPRIETORSHIP

☐ PARTNERSHIP ☐ UNINCORPORATED ASSOCIATION

Names & Titles of Corporate Board Members
(Also list Names & Titles of persons with written authorization/resolution to sign contracts)

Names	Title	Phone
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	

Federal Tax Identification Number: [redacted]_____

City of Costa Mesa Business License Number: _____

(If none, you must obtain a Costa Mesa Business License upon award of contract.)

City of Costa Mesa Business License Expiration Date: _____

EX PARTE COMMUNICATIONS CERTIFICATION

Please indicate by signing below one of the following two statements. **Only sign one statement.**

I certify that Proposer and Proposer's representatives have not had any communication with a City Councilmember concerning informal **RFP No. 25-06 for Fairview Park Mesa Restoiration: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation** at any time after **September 10, 2024.**

[redacted] **Date**: _____

Signature

_____

Print

OR

I certify that Proposer or Proposer's representatives have communicated after **September 10, 2024.** with a City Councilmember concerning informal **RFP 25-06 for Fairview Park Mesa Restoriation: Coastal Sage Scrub and Flower Fields Habitat Restoration and Monitoring Plan Implementation**. A copy of all such communications is attached to this form for public distribution.

_____ **Date**: _____

Signature

_____

Print

DISQUALIFICATION QUESTIONNAIRE

The Contractor shall complete the following questionnaire:

Has the Contractor, any officer of the Contractor, or any employee of the Contractor who has proprietary interest in the Contractor, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

[redacted]

DISCLOSURE OF GOVERNMENT POSITIONS

Each Proposer shall disclose below whether any owner or employee of Contractor currently hold positions as elected or appointed officials, directors, officers, or employees of a governmental entity or held such positions in the past twelve months. List below or state "None."

COMPANY PROFILE & REFERENCES

Company Legal Name:

Company Legal Status (corporation, partnership, sole proprietor etc.):

Active licenses issued by the California State Contractor's License Board:

Business Address:

Website Address:

Telephone Number: Facsimile Number:

Email Address:

Length of time the firm has been in business:

Length of time at current location:

Is your firm a sole proprietorship doing business under a different name: ___Yes ___No

If yes, please indicate sole proprietor's name and the name you are doing business under:

Federal Taxpayer ID Number: [redacted]

Regular Business Hours:

Regular holidays and hours when business is closed:

Contact person in reference to this solicitation:

Telephone Number: Facsimile Number:

Email Address:

Contact person for accounts payable:

Telephone Number: Facsimile Number:

Email Address:

Name of Project Manager:

Telephone Number: Facsimile Number:

Email Address:

COMPANY PROFILE & REFERENCES (Continued)

Submit the company names, addresses, telephone numbers, email, contact names, and brief contract descriptions of at least three clients, preferably other municipalities for whom comparable projects have been completed or submit letters from your references which include the requested information.

Company Name:

Telephone Number:
Contact Name:
Contract Amount:
Email:
Address:
Brief Contract Description:

Company Name:

Telephone Number:
Contact Name:
Contract Amount:
Email:
Address:
Brief Contract Description:

Company Name:

Telephone Number:
Contact Name:
Contract Amount:
Email:
Address:
Brief Contract Description:

Company Name:

Telephone Number:
Contact Name:
Contract Amount:
Email:
Address:
Brief Contract Description:

Company Name:

Telephone Number:
Contact Name:
Contract Amount:
Email:
Address:
Brief Contract Description:

BIDDER/APPLICANT/CONTRACTOR CAMPAIGN CONTRIBUTION

DISCLOSURE FORM

Proposer/Consultant/Applicant is required to identify any campaign contribution or cumulative contributions greater than $249 to any city council member in the twelve months prior to submitting an application, proposal, statement of qualifications or bid requiring approval by the City Council.

Date	Name of Donor	Company/Business Affiliation	Name of Recipient	Amount

Except as described above, I/we have not made any campaign contribution in the amount of $250 or more to any Costa Mesa City Council Member in the twelve months preceding this Application/Proposal.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

[redacted]

Bidder/Applicant/Proposer

Date

Cost Proposal

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

COGSTONE 2024-2025 FULL FEE SCHEDULE

LABOR CLASSIFICATION	HOURLY RATE	OT*	DT*
Technician/Monitor I	$87.50	$131.25	$175.00
Technician/Monitor II	$97.50	$146.25	$195.00
Administrative Assistant	$103.00	$154.50	$206.00
Night Monitor	$113.00	$169.50	$226.00
SOI Monitor**	$113.00	$169.50	$226.00
SOI Night Monitor**	$123.00	$184.50	$246.00
Supervisor I	$113.00	$169.50	$226.00
Supervisor II	$123.00	$184.50	$246.00
GIS Manager	$123.00	$184.50	$246.00
Field Director	$133.00	$199.50	$266.00
Technical Editor	$123.00	Exempt	Exempt
Senior Administrator	$154.00	Exempt	Exempt
Architectural Historian	$134.00	$201.00	$268.00
Principal Investigator I/ Task Manager	$134.00	$201.00	$268.00
Principal Investigator II/ Task Manager	$154.00	$231.00	$308.00
Principal Investigator III/ Task Manager	$180.00	Exempt	Exempt
Program Director	$205.00	Exempt	Exempt

OTHER DIRECT COSTS	UNIT
Mileage	Current IRS Rate
Expendable Supplies	Actual Cost
Outside Services	Actual Cost

* Hours 9-12 per day are Overtime (x1.5), Hours over 12 per day are Double Time (x2)
** SOI monitor meets the guidelines set forth by the Secretary of the Interior's (SOI) *Standards and Guidelines for Archaeology and Historic Preservation* (36 CFR Part 61).

1518 West Taft Avenue
Orange, CA 92865
Office (714) 974-8300

Field Offices
San Diego • Riverside • Morro Bay • Sacramento

Federal Certifications WOSB, EDWOSB, SDB
State Certifications DBE, WBE, UDBE

cogstone.com
Toll free 888-333-3212

Thank you for your consideration.

Endemic
Environmental Services

EXHIBIT C

FEE SCHEDULE

	2025	2026	2027	2028	2029	2030	2031	2032
1. Site Protection, Initial Dethatch, Cultural Resource Monitoring, and Temporary Irrigation	$117,900.00							
2. Native Revegetation Buffer (Area 4) and Drainages in Area 1 Container Planting, Irrigation, and Maintenance	$54,120.00	$54,120.00						
3. Weed Management Buffer (Area 5) Weed Maintenance	$32,400.00	$32,400.00	$32,400.00	$32,400.00	$32,400.00	$32,400.00	$32,400.00	$32,400.00
4. Pre-Seed Installation Adaptive Weed Management	$62,400.00	$62,400.00						
5. Native Seed Collection and Installation	$48,078.00	$48,078.00						
6. Maintenance After Seed Installation			$31,200.00	$31,200.00	$31,200.00	$31,200.00	$31,200.00	$31,200.00
7. Biological Monitoring and Reporting	$77,200.00	$44,800.00	$44,800.00	$44,800.00	$44,800.00	$44,800.00	$44,800.00	$44,800.00
ANNUAL TOTAL:	$392,098.00	$249,052.00	$111,652.00	$111,652.00	$111,652.00	$111,652.00	$111,652.00	$111,652.00
GRAND TOTAL:								**$1,311,062.00**

Thank you again for inviting us to team – our response is attached. Our daily rate for cultural resources monitoring is $943.40 for a full day (8 hours) or $498.50 for a half day (4 hours). Native American Monitoring is billed at a daily rate of $1,200. I've included an initial estimate of 20 8-hour days to keep our bid in line with what we've submitted to other firms but please let me know if you'd like me to adjust this.

EXHIBIT D

CITY COUNCIL POLICY 100-5