REQUEST FOR PROPOSALS

for

Environmental Evaluation and Permitting Services for the Citywide Creeks Maintenance Plan Update; Phase II (Opt): Permitting Services for Near-Term Priority Creek Flood Reduction/Enhancement Projects

CITY OF PETALUMA

PUBLIC WORKS & UTILITIES DEPARTMENT

Issued: February 23, 2024

Proposal Deadline: 4:00 PM, March 22, 2024

Josh Minshall, Senior Civil Engineer
jminshall@cityofpetaluma.org

CITY OF PETALUMA
REQUEST FOR PROPOSALS

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CITY OF PETALUMA
REQUEST FOR PROPOSALS

The City of Petaluma (the "**City**") requests proposals from Environmental firms (individually, the "**Respondent**" and collectively, the "**Respondents**") to provide the following services: Assist the City in obtaining State and Federal permits for implementation of the City's Creek Maintenance Program.; Optional: Permitting, and Construction support for Near-Term Priority Creek Enhancement Projects in Petaluma, California;

1. PROJECT BACKGROUND AND INTENT

The City of Petaluma is a charter city located in Sonoma County, with an estimated population of 60,000. Approximately 10.85 miles (57,300 linear feet) of open channels and natural creeks exist within the City of Petaluma. The Petaluma River separately consists of approximately 7.14 miles (37,700 feet) of natural and trapezoidal channel inside the City limits (See Attachment F). The City of Petaluma currently maintains creeks and streams on a case-by-case basis and works collaboratively with Sonoma Water (formerly Sonoma County Water Agency), and Sonoma Public Infrastructure (formerly Sonoma County Transportation and Public Works Dept.) for maintenance of the regional flood conveyance systems.

A Surface Water Master Plan was prepared in 2003 as part of the General Plan 2025 work effort, which included an inventory of creeks and assessed natural waterways, piped sections, biotechnical and bioengineered banks, riprap banks, floodwalls, and structures. In 2017 the City adopted a Citywide Creeks Maintenance Plan (CMP) to guide the ongoing maintenance and management of creeks citywide (Attachment H). The CMP proposes the routine and ongoing management of creeks citywide through vegetation, sediment and debris removal, bank stabilization, infrastructure maintenance, and invasive species management. The City is conducting minor updates to the CMP

The ultimate goal of the Citywide Creeks Maintenance Plan is to maintain surface waters within the City for conveyance of peak storm flows while maintaining and enhancing beneficial uses including habitat for species, groundwater recharge, and water quality protection and improvement. The objective is to achieve a balanced state where urban creeks require minimal annual maintenance and maintain healthy riverine habitat.

At the time the CMP was adopted by the City in 2017, CEQA was completed, and a Notice of Determination of a Mitigated Negative Declaration was issued (See Attachment I). However, Routine Maintenance Agreements and permits with regulatory and permitting agencies were not obtained. The City seeks to enter into Routine Maintenance Agreements with the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board, and all appropriate regulatory agencies to implement the Citywide Creeks Maintenance Plan, as updated under this project, and facilitate the ongoing management of creeks within the City of Petaluma's jurisdiction.

While the City has conducted emergency creek maintenance to manage flooding response activities, it has not had the permits necessary to conduct ongoing routine annual maintenance or implement environmental enhancement and flood reduction projects within the creek channels. Therefore, City creeks have varying degrees of maintenance needs and potential flood risks.

Under the Scope of Services (Attachment B), the selected consultant will partner with the City as the City finalizes the updates to the Creek Maintenance Program. The consultant may be asked to assist in field checking the biological evaluations made in the 2017 program. The consultant will assist the City in obtaining the applicable State and Federal permits that would be required for implementation. In Phase II, if authorized by the City the consultant may be asked to assist with the permitting needs and/or construction support for near-term larger creek enhancement or flood management project.

2. OVERVIEW OF SERVICES

A. Summary. The City is seeking environmental services from qualified and experienced firms, or a team of firms, with expertise and experience in all scopes of work contained within this RFP for completion of the City's goal of updating the CMP and commencing implementation of identified projects within the updated document.

B. Form of Agreement. A copy of the City's standard Professional Services Agreement (the "**Agreement**") is attached hereto as **Attachment A** and incorporated herein. By submitting a proposal, the Respondent agrees to enter into the Agreement using the attached form with no exceptions to the form of the Agreement.

Scope of Services. The required Scope of Services is attached hereto as **Attachment B** and incorporated herein. By submitting a PROPOSAL, the Respondent represents that it is fully qualified and available to provide the Services as set forthin the Scope of Services, and that it agrees to provide those Services as specified if it is awarded the Agreement, which will attach and incorporate the Scope of Services.

3. REQUEST FOR PROPOSAL PROCEDURES

A. Requests for Information. Questions or objections relating to the Request for Proposals (the "RFP"), the attachments hereto, the RFP procedures, or the required Services may only be submitted via email to Josh Minshall at jminshall@cityofpetaluma.org by **4:00 PM,** March 15, 2024 (the "**Request for Information Deadline**"). Any questions or objections that are not submitted in the manner specified and by the Request for Information Deadline will be deemed waived. City will not be bound by the oral representations of any City officials, employees, or representatives.

B. Pre-Submittal Meeting. Will not be held. However, all prospective firms are encouraged to review the Citywide Creeks Maintenance Manual and Plan,

attached hereto as Attachment H.

C. Submittal Instructions. PROPOSALs must be ***received*** by the City by or before **4:00 PM, March 22, 2024 (**the "**PROPOSAL Deadline**"). The Respondent must submit one (1) electronic copy of the PROPOSAL via email, with subject line "PROPOSAL for Citywide Creek Maintenance Plan Update." The email must plainly include the Respondent's name, address and phone number and attach one electronic copy of the Proposal. Email PROPOSAL to:

Josh Minshall, Senior Civil Engineer at jminshall@cityofpetaluma.org

Note that the maximum receivable email size to the City servers is approximately **20 MB.** Proposals exceeding the maximum size shall be emailed via a downloadable link.

The Respondent shall be responsible for ensuring that the City has received the PROPOSAL no later than the PROPOSAL Deadline.

D. Planned RFP Schedule. The following schedule is provided for planning purposes based on current information. However, all dates are subject to revision, including the PROPOSAL Deadline, and may be amended by addenda to this RFP:

ACTIVITY	PLANNED DATES/TIME
RFP Issued	February 23, 2024
Pre-Submittal Meeting	N/A
Request for Information Deadline	March 15, 2024, 4:00 PM
PROPOSAL Deadline	March 22, 2024, 4:00 PM
Interviews (if requested by City)	April 3, 2024
Notice of Selection	April 10, 2024
Notice to Proceed	April 22, 2024
Consultant Services	April 2024 June 2026

E. Addenda. City reserves the right to issue addenda to modify the terms and conditions of this PROPOSAL, including modifications to the PROPOSAL Deadline or to the Attachments to this PROPOSAL. Addenda will be posted on the City's website at https://cityofpetaluma.org/bid-opportunities-2/. Each Respondent is responsible for requesting to be added to the plan holder's list, checking the City's website for addenda, and for reviewing all addenda before submitting its PROPOSAL.

4. PROPOSAL REQUIREMENTS

Each PROPOSAL must be submitted in compliance with the requirements of this RFP. Each PROPOSAL must respond to the items listed below. *Clarity and brevity are preferable to volume*. Do not attach brochures or promotional materials to the PROPOSAL. PROPOSAL should not exceed 15 one-sided pages, excluding any

tabs or dividers. However, resumes may be included in an appendix and not counted in the total page count. By submitting a PROPOSAL, the Respondent agrees that the pricing and proposed approach to providing the Services, including staffing, constitutes a firm offer to enter into the Agreement with the City, and that the offer will remain open for 90 days following the PROPOSAL Deadline.

A. Cover Letter. Provide a brief cover letter that includes all the following information:

(1) Respondent's name, address, phone number, and website address;
(2) type of organization (e.g., corporation, partnership, etc.);
(3) a summary of general information about Respondent and the types of services it provides in relation to the Services required by the City;
(4) contact information, including name, title, address, phone number, and email, of Respondent's primary representative for purposes of this RFP; and
(5) Respondent has read and understood the insurance requirements outlined in Attachment C, Section 24 and hereby affirms (1) the cost of providing such insurance has been incorporated in the Respondent's Proposal, and (2) Respondent will be able to obtain the required insurance coverage if awarded the contract.

The cover letter must be signed by a representative that is authorized to bind Respondent by contract and must state his or her name, title, and email address.

B. General Qualifications. Provide a brief description of the Respondent's business, including the number of years in business under the current name. Describe the size of the business, including the total number of employees and offices,and identify the local office that will provide the Services if awarded the Agreement. Describe how and why Respondent is qualified to provide the Services.

Additionally, this section shall include a listing of any lawsuit and the result of that action resulting from (a) any public project undertaken by the Firm where litigation is still pending or has occurred within the last five years or (b) any type of project where claims or settlements were paid by the Firm or its insurers within the last five years.

C. Experience. Provide at least three examples of work comparable to the services requested by this RFP, particularly with respect to services provided to other cities or public agencies. For each example provide (1) a brief description of the services provided, (2) the total project cost, (3) time period in which the services were provided, and (4) a brief statement of the Firm's adherence to the schedule and budget for each project, and (5) the name and address of the contracting agency, including contact information for a reference check (name, title, phone number, and email address).

Additional consideration will be given to firms who demonstrate expertise and experience successful inter-agency coordination and response to flood emergencies.

Additional consideration will be given to firms who demonstrate past coordination of existing biological resources assessments from nearby locations to supplement and minimize field surveys.

D. Project Team Staffing and Organization. Identify proposed team members and work they have completed on similar projects; include an organizational chart. List all applicable license numbers for any license required to perform the Services. List all subconsultants including contact information and areas of expertise. Briefly describe the roles of the prime Consultant and subconsultants. Identify by name, address, and website, each subconsultant or subcontractor, if any, that will be involved with providing the Services, including the proposed role for each such subconsultant or subcontractor.

Identify by name and title Respondent's Key Personnel, including the proposed principal-in-charge and project manager(s) who will be assigned to provide the Services. Include a resume for each Key Personnel identified, with his or her education, training, and experience.

E. Proposed Scope of Work and Approach. A scope of work shall be provided responding to and expanding on the general scope of services provided in Exhibit A, including a narrative description for each task identified in the scope of work. A description of the subtasks, which must be performed to complete the task, shall be included. All descriptions shall be of sufficient length to clearly convey that the proposer fully understands the scope of work and conveys how they intend to approach the work.

F. Schedule. Schedule for delivery of each element including milestones. The schedule will include at a minimum the following with start and completion dates:

- **Phase 1**
  - Kickoff Meeting
  - Site Visits
  - Deliver Draft RMA application materials to City.
  - Acquisition of Routine Maintenance Agreements (from CDFW, RWQCB, and others as needed) for implementation of (CMP). –

- **Phase** 2
  - At the City's discretion an optional task of to assist with permitting need and/or construction support for priority stream enhancement projects, design of which may run subsequent to or concurrently with Phase 1 efforts.

G. Cost Proposal. The Consultant will perform the services stated in the contract based on the final negotiated scope of work. For this RFP, provide a cost proposal consistent with the Scope of Services, including any additional tasks or subtasks the Consultant deems important and appropriate to include. The Consultant shall provide a 2024 rate table for themselves as well as their subconsultants. The cost proposal shall include:

- A listing of tasks required to accomplish the proposed scope of services;
- An estimate of the labor hours for each position classification and task including level of effort;
- The proposed hourly fee schedule for calendar year 2024;
- All other reimbursable fees and expenses (noting that the City does not pay for lodging, vehicles, and travel time);
- Assumptions upon which the estimate is based; and
- Mark-up on other direct costs (ODC), not to exceed five (5) percent

5. EVALUATION

The factors that the City will consider in evaluating the Proposals are as follows:

Responsiveness to RFP, Completeness and Comprehensiveness	1-20 points
Understanding of Scope of Work to be Done	1-20 points
Experience of the firm and key personnel designated on team providing similar services to other public agencies and municipalities	1-20 points
Quality of proposed staff for work to be done	1-20 points
Proposed Approach	1-20 points
Interview (If requested)	1-100 points

6. SELECTION AND AWARD

A. Review. PROPOSALs will be reviewed for responsiveness and evaluated and ranked based on the factors listed in Section 5, above. When the evaluation is complete, the PROPOSALs will be ranked based on total scores to identify the PROPOSAL that is the most advantageous to the City. Acting in its sole discretion, the City may elect to conduct interviews, either in person or remotely, with shortlisted Respondents.

B. Award. The City will award the Agreement, if at all, to the Respondent(s) that are determined by the City, acting in its sole discretion, to offer the most advantageous PROPOSAL to the City based on the City's review, as outlined above. Citystaff will submit its recommendation to the City Council or the awarding

officer, as applicable, for award of the Agreement to the Respondents that it determines to offer the most advantageous PROPOSAL. The Respondents will be notified of staff's intended recommendation by a Notice of Selection which will be posted on the City's website at https://cityofpetaluma.org/bid-opportunities-2/ and which may also be emailed to each Respondent that submits a PROPOSAL.

7. MISCELLANEOUS

A. Disclaimers and Reservation of Rights. Upon receipt, each PROPOSAL becomes the sole property of City and will not be returned to the Respondent. Each Respondent is solely responsible for the costs it incurs to prepare and submit its PROPOSAL. The City reserves, in its sole discretion, the right to reject all PROPOSALs,including the right to cancel or postpone the RFP or the Services at any time, or to decline to award the Agreement to any of the Respondents. The City reserves the right to waive any immaterial irregularities in a PROPOSAL or submission of a PROPOSAL.The City reserves the right to reject any PROPOSAL that is determined to contain false or misleading information, or material omissions.

B. Conflict of Interest. Respondents must disclose to the City any actual, apparent, direct, or indirect, or potential conflicts of interest that may exist with respect to Respondent, any employees of Respondent, or any other person relative to the Services to be provided pursuant to this RFP. This RFP process will be conducted in compliance with all laws regarding political contributions, conflicts of interest, or unlawful activities. City employees are prohibited from participating in the selection process for this RFP if they have any financial or business relationship with any Respondent.

C. Public Records. The City is subject to the provisions of the California Public Records Act (Govt. Code § 6250 et seq.) (the "**Act**"), and each PROPOSAL submitted to the City is subject to disclosure as a public record, unless the PROPOSAL orany portion thereof is exempt under the Act. If a Respondent believes that any portion of its PROPOSAL is exempt from disclosure under the Act, it must clearly identifythe portion(s) it believes to be exempt and identify the basis for the exemption. Each Respondent bears the burden of proving any claimed exemption under the Act, and by submitting a PROPOSAL, a Respondent agrees to indemnify, defend, and hold harmless the City against any third-party claim seeking disclosure of the PROPOSALor any portions thereof.

Attachments:

Attachment A: Form of Agreement
Attachment B: Scope of Services—Exhibit A
Attachment C: Insurance Requirements –Exhibit B
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Attachment A: Form of Agreement

PROFESSIONAL SERVICES AGREEMENT

_____
(Title of Project)

FY _____ Fund # _____ Cost Center _____ Object Code _____ Project # _____ Amount $_____

For multi-year contracts or contracts with multiple accounts:

FY _____ Fund # _____ Cost Center _____ Object Code _____ Project # _____ Amount $_____
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THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is entered into and effective as of _____, 20____ ("Effective Date"), by and between the City of Petaluma, a
(city use only)
municipal corporation and a charter city ("City") and _____, a _____ ("Contractor") (collectively, the "Parties").

WHEREAS, the Parties enter into this Agreement for the purpose of Contractor providing professional services to City under the terms and conditions set forth herein.

THEREFORE, in consideration of the mutual covenants contained in this Agreement, the Parties agree as follows:

1. **Services.**

A. Contractor shall provide the services as described in and in accordance with the schedule set forth in Exhibit "A" attached hereto and incorporated herein ("Services"). Except as otherwise expressly provided in this Agreement, this Agreement does not authorize the Contractor to perform any services in addition to those specified in Exhibit A. The City has no obligation to award any additional Services to the Contractor. Any additional Services awarded to the Contractor pursuant to this Agreement will be in the sole discretion of authorized representatives of the City and shall be added to Exhibit A in accordance with Section 25, Amendment, of this Agreement.

B. The Services under this Agreement shall not include preparing or assisting the City with any portion of the City's preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the City. The City shall at all times retain responsibility for City contracting, including with respect to any subsequent phase of the Services or this Agreement. The Contractor's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. The Contractor shall cooperate with the City to ensure that all contractors submitting proposals for a contract for any subsequent phase of the Services, or this Agreement have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by the Contractor pursuant to this Agreement.

2. **Compensation; Business Tax Certificate.**

A. For the full performance of the Services as described herein, City shall compensate Contractor in accordance with the rates specified in Exhibit A.

B. Contractor shall submit detailed monthly invoices reflecting all services performed during the preceding month and including a revised schedule for performance and additional documentation requested by City, as applicable.

C. Contractor shall be compensated for services in addition to those described in Exhibit A, only if Contractor and City execute a written amendment to this Agreement describing the additional services to be performed and the compensation to be paid for such services. In no case shall the total compensation under this Agreement exceed $_____ without prior written authorization of the City Manager. Further, no compensation for a section or work program component attached with a specific budget shall be exceeded without prior written authorization of the City Manager.

D. Notwithstanding any provision herein, Contractor shall not be paid any compensation until such time as Contractor has on file with the City Finance Department a current W-9 form available from the IRS website (www.irs.gov) and has obtained a currently valid Petaluma business tax certificate.

E. City's obligation to pay compensation to Contractor as provided herein is contingent upon Contractor's performance of the Services pursuant to the terms and conditions of this Agreement and any amendments thereto.

3. **Term.** The term of this Agreement commences on the Effective Date and terminates on _____, unless sooner terminated in accordance with Section 4. Upon termination, any and all of City's documents or materials provided to Contractor and any and all of the documents or materials prepared for City or relating to the performance of the Services, shall be delivered to the City as soon as possible, but not later than fourteen (14) days after termination of the Agreement.

4. **Termination.** City may terminate this Agreement without cause upon ten (10) days' written notice. City may immediately terminate or suspend this Agreement for cause. Cause for immediate termination or suspension shall include, but not be limited to, any breach of this Agreement by Contractor or Contractor's bankruptcy or insolvency. Upon receipt of notice of termination or suspension for cause, Contractor shall immediately stop all work in progress under this Agreement. In the event of early termination of this Agreement by City, Contractor shall be entitled to payment for all Services performed to the date of termination to the extent such Services were performed to the satisfaction of City in accordance with the terms and conditions of this Agreement. If City terminates this Agreement for cause, Contractor shall be liable to City for any excess cost City incurs for completion of the Services.

5. **Contractor's Representation; Independent Contractor.** Contractor represents that Contractor possesses distinct professional skills in performing the Services. City has relied upon said representation as a material inducement to enter into this Agreement. Contractor shall, therefore, provide properly skilled professional and technical personnel to perform all Services under this Agreement. It is expressly understood that Contractor and its agents and employees, shall act in an independent capacity and as an independent

contractor and not as officers, employees or agents of City. This Agreement shall not be construed as an agreement for employment.

6. **Facilities and Equipment.** Contractor shall, at its sole cost and expense, furnish all facilities and equipment that may be required for furnishing Services pursuant to this Agreement. City shall furnish to Contractor no facilities or equipment, unless the City otherwise agrees in writing to provide the same.

7. **Licenses, Permits, Etc.** Contractor shall, at Contractor's sole cost and expense, keep in effect at all times during the term of this Agreement any licenses, permits or other such approvals which are legally required for performing the Services.

8. **Time.** Contractor shall devote such time to the performance of the Services as may be reasonably necessary for satisfactory performance of Contractor's obligations pursuant to this Agreement.

9. **Inspection.** Contractor shall provide the City every reasonable opportunity to ascertain that the Services are being performed in accordance with the requirements and intentions of this Agreement. All work done, and materials furnished, if any, shall be subject to inspection and approval by the City. The inspection of such work shall not relieve Contractor of any of its obligations pursuant to this Agreement.

10. **Progress Reports.** Upon the City's request, Contractor shall provide, in a form acceptable to City, written progress reports of all oral and written observations, opinions, recommendations, analyses, progress and conclusions related to Contractor's performance of the Services.

11. **Confidentiality.** In the course of Contractor's employment, Contractor may have access to trade secrets and confidential information, disclosure of which is protected or limited by law. Contractor shall not directly or indirectly disclose or use any such confidential information, except as required for the performance of the Services.

12. **Conflict of Interest.**

A. Contractor represents that it presently has no interest, and covenants that it shall not acquire any interest, direct or indirect, financial or otherwise, which would conflict in any manner or degree with the performance of the Services hereunder. Contractor further covenants that, in the performance of this Agreement, it shall not employ any subcontractor or person having such a conflict of interest. Contractor represents that no one who has or will have any financial interest under the Agreement is an officer or employee of City. If such conflict of interest arises during this Agreement or any extension, Contractor will immediately advise City and City may, at its sole discretion, immediately terminate this Agreement. Certain Contractors are subject to the requirements, including the disclosure and reporting requirements, of the City's Conflict of Interest Code adopted pursuant to the Political Reform Act. Such Contractors subject to the City's Conflict of Interest Code include those whose work may involve: making government decisions regarding approval or adoption of rates, rules, or regulations, action on permits or other applications, authorization to enter into or modify contracts, or approval of plans, designs, reports, or studies. Contractor

agrees to comply fully with all such requirements to the extent they apply to Contractor's performance of the Services.

B. Certain contractors, in addition to being subject to the City's Conflict of Interest Code, may be subject to other conflict of interest prohibitions, including those in the Political Reform Act, Government Code Section 81000 and following, and Section 1090 and following of the Government Code. The Political Reform Act prohibits public officials, employees and certain contractors from participating in making governmental decisions that the official, employee or consultant knows or has reason to know will result in a material financial effect on their economic interests. Government Code Section 1090 and following prohibits government officials, employees, and certain contractors from participating in making government contracts in which the official, employee or contractor has a financial interest. As a result of the financial interest City contractors have in their City contracts, the Section 1090 prohibition regarding City contractors focuses on whether a contractor is or would be "making a government contract" in a quasi-governmental capacity for purposes of Section 1090. Section 1090 prohibits City contractors from using their role as a contractor to influence how the City spends the public's funds in a way that benefits the contractor. As a result, Section 1090 may in certain circumstances prohibit the Contractor from responding to solicitations for, or being awarded, subsequent contracts that result from or relate to the Services performed pursuant to this Agreement. . Penalties for violating Section 1090 are severe, and may include felony criminal penalties, permanent disqualification from holding public office in California, disgorgement of any benefit received by the financially interested contractor, civil and administrative penalties, and voiding of the prohibited contract.

13. **Contractor No Agent.** Except as the City may otherwise expressly specify in writing, the Contractor shall have no authority, express or implied, to act or transact on behalf of City in any capacity whatsoever, including advising or representing the City concerning City public contracts as an agent of the City. Contractor shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.

14. **Standard of Performance.** Contractor shall perform all the Services in a manner consistent with the standards of Contractor's profession. All instruments of service of whatsoever nature, which Contractor delivers to City pursuant to this Agreement, shall be prepared in a substantial, workmanlike manner and conform to the standards of Contractor's profession. All such instruments of service shall become the sole and exclusive property of City upon delivery of the same.

15. **Assignment/Transfer.** No assignment or transfer in whole or in part of this Agreement shall be made without the prior written consent of City.

16. **Subcontractors.** Contractor shall directly perform all Services, and shall not subcontract any portion of performance of the Services without the prior written consent of City. Any such subcontractors shall be required to comply, to the full extent applicable, with the terms and conditions of this Agreement, including but not limited to, procuring and maintaining insurance coverage as required herein and which shall name City as an additional insured.

17. **Compliance With All Laws.** Contractor shall fully comply with all applicable local, state and federal rules, laws, regulations and ordinances pertaining to the performance of the Services required hereunder, including but not limited to, the federal laws and regulations set forth in Exhibit E, which is attached hereto and incorporated herein by reference, the California Building Standards Code as in effect in the City, the Americans with Disabilities Act, and any laws and regulations related to any copyright, patent, trademark or other intellectual property right involved in performance of the Services. Contractor's failure to comply with any law(s) or regulation(s) applicable to the performance of the Services hereunder shall constitute a material breach of this Agreement. To the extent that any other government agency or entity provides compensation for any Services, Contractor shall comply with all rules and regulations applicable to such fiscal assistance.

18. **Living Wage Ordinance.** Without limiting the foregoing Section 17, Contractor shall comply fully with all applicable requirements of Petaluma Municipal Code, Chapter 8.36, Living Wage (the "Living Wage Ordinance"), as the same may be amended from time to time. Upon the City's request Contractor shall promptly provide to the City documents and information verifying Contractor's compliance with the requirements of the Living Wage Ordinance, and shall within fifteen (15) calendar days of the Effective Date of this Agreement, notify each of its affected employees as to the amount of wages and time off that are required to be provided to them pursuant to the Living Wage Ordinance. The Acknowledgement and Certification Pursuant to City of Petaluma Living Wage Ordinance, attached to this Agreement as Exhibit _____, shall be a part of this Agreement for all purposes, and Contractors that are subject to Living Wage Ordinance requirements, as determined by the City, must provide a properly completed Exhibit _____ in accordance with the requirements of the Living Wage Ordinance. Contractor's noncompliance with the applicable requirements of the Living Wage Ordinance shall constitute cause for City's termination of this Agreement pursuant to Section 4 hereof.

19. **Discrimination.** During the performance of this Agreement, Contractor shall not discriminate against any employee or applicant for employment because of race, religion, creed, color, national origin, ancestry, gender, sexual orientation, age or physical or mental disability in violation of any applicable law.

20. **Notice.** Except as otherwise specified in this Agreement, all notices to be sent pursuant to this Agreement shall be made in writing and sent to the Parties at their respective addresses specified below or to such other address as a Party may designate by written notice delivered to the other Party in accordance with this Section. All such notices shall be sent by:

    (i) personal delivery, in which case notice is effective upon delivery;

    (ii) certified or registered mail, return receipt requested, in which case notice shall be deemed delivered on receipt if delivery is confirmed by a return receipt;

    (iii) nationally recognized overnight courier, with charges prepaid or charged to the sender's account, in which case notice is effective on delivery if delivery is confirmed by the delivery service; or

    (iv) facsimile transmission, in which case notice shall be deemed delivered upon

transmittal, provided that (a) a duplicate copy of the notice is promptly delivered by first-class or certified mail or by overnight delivery, or (b) a transmission report is generated reflecting the accurate transmission thereof. Any notice given by facsimile shall be considered to have been received on the next business day if it is received after 5:00 p.m. recipient's time or on a nonbusiness day.

City:
City Clerk
City of Petaluma
Post Office Box 61
Petaluma, California 94953
Phone: (707) 778-4360
Fax: (707) 778-4554
Email: cityclerk@cityofpetaluma.org

And:

_____
_____
_____
_____
Phone: _____
Fax: _____
Email: _____

Contractor:
_____
_____
_____
_____
Phone: _____
Fax: _____
Email: _____

21. **Ownership of Documents.**

All original papers, documents or computer material on disk or microfilm, and copies thereof, produced as a result of this Agreement, shall be the property of City and may not be used by Contractor without the written consent of City. Copies of such documents or papers shall not be disclosed to others without the written consent of the City Manager or his or her designated representative. Notwithstanding this provision or any other provision in this Agreement to the contrary, the City and the Contractor shall each own all right, title and interest in and to any intellectual property authored by or on behalf of the City or the Contractor related to the Services. The City shall have an irrevocable, royalty-free, world-wide, fully-paid-up, non-exclusive license to use and authorize others to use any intellectual property of the Contractor included in the work products produced as part of the performance of the Services pursuant to this Agreement.

22. **Indemnification.**

A. With respect to commercial general liability, to the maximum extent permitted by law, Contractor shall, at its own expense, indemnify, defend with counsel acceptable

to the City, (which acceptance will not be unreasonably withheld), and hold harmless City and its officers, officials, employees, agents and volunteers ("Indemnitees") from and against any and all liability, loss, damage, claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, civil penalties and fines, expenses and costs (including, without limitation, claims expenses, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature, whether actual, alleged or threatened, arising out of or in connection with the Contractor's performance of the Services or Contractor's failure to comply with any of the terms of this Agreement, regardless of any fault or alleged fault of the Indemnitees.

B. With respect to professional liability, notwithstanding the foregoing or any other provision in this Agreement, to the maximum extent permitted by law, Contractor shall indemnify defend and hold harmless the Indemnitees from Liability arising out of or in connection with the negligence, recklessness, or willful misconduct of Contractor.

C. The Contractor must respond within 30 calendar days to any tender of defense and indemnity by the City unless the time for responding has been extended by an authorized representative of the City in writing. If the Contractor fails to accept tender of defense and indemnity within 30 calendar days regarding a matter subject to tender pursuant to this Agreement, in addition any other remedies authorized by law, so much of the money due or that may become due the Contractor under this Agreement as shall reasonably be considered necessary by the City may be retained by the City until disposition has been made of the matter subject to tender, or until the Contractor accepts the tender, whichever occurs first. In the event that the City must file responsive documents in a matter tendered to Contractor prior to Contractor's acceptance of tender, where such matter is subject to tender pursuant to this Agreement, Contractor agrees to fully reimburse all costs, including but not limited to attorney's fees and costs and fees of litigation, incurred by the City in filing such responsive documents.

D. Notwithstanding the foregoing, to the extent this Agreement is a "construction contract" as defined by California Civil Code Section 2783, as may be amended from time to time, Contractor's duty to indemnify under this provision shall not apply when to do so would be prohibited by California Civil Code Section 2782, as may be amended from time to time.

E. Notwithstanding the foregoing, to the extent that the Services include design professional services subject to California Civil Code Section 2782.8, as may be amended from time to time, Contractor's duty to indemnify shall only be to the maximum extent permitted by California Civil Code Section 2782.8.

23. **Insurance.** Contractor shall comply with the "Insurance Requirements for Contractors" in Exhibit B, attached hereto and incorporated herein by reference.

City reserves the right to review any and all of the required insurance policies and/or endorsements, but has no obligation to do so. City's failure to demand evidence of full compliance with the insurance requirements set forth in this Agreement or City's failure

to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

24. **Amendment.** This Agreement may be amended only by a written instrument executed by both Parties.

25. **Litigation.** If litigation ensues which pertains to the subject matter of Contractor's services hereunder, Contractor, upon request from City, agrees to testify therein at a reasonable and customary fee.

26. **Construction.** This Agreement is the product of negotiation and compromise on the part of both Parties and that the Parties agree that, notwithstanding Civil Code Section 1654, any uncertainty in the Agreement shall not be construed against the drafter of the Agreement.

27. **Governing Law; Venue.** This Agreement shall be enforced and interpreted under the laws of the State of California and the City of Petaluma. Any action arising from or brought in connection with this Agreement shall be venued in a court of competent jurisdiction in the County of Sonoma, State of California.

28. **Non-Waiver.** The City's failure to enforce any provision of this Agreement or the waiver thereof in a particular instance shall not be construed as a general waiver of any part of such provision. The provision shall remain in full force and effect.

29. **Severability.** If any term or portion of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.

30. **No Third-Party Beneficiaries.** The Parties do not intend to create, and nothing in this Agreement shall be construed to create any benefit or right in any third party.

31. **Mediation.** The Parties agree to make a good faith attempt to resolve any dispute arising out of this Agreement through mediation prior to commencing litigation. The Parties shall mutually agree upon the mediator and shall divide the costs of mediation equally.

32. **Contractor's Books and Records.**

    A. Contractor shall maintain any and all ledgers, books of accounts, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services, or expenditures and disbursements charged to the City for a minimum period of three (3) years or for any longer period required by law, from the date of final payment to Contractor pursuant to this Agreement.

    B. Contractor shall maintain all documents and records which demonstrate performance under this Agreement for a minimum period of three (3) years or for any longer period required by law, from the date of termination or completion of this Agreement.

    C. Any records or documents required to be maintained pursuant to this Agreement shall be made available for inspection or audit, at any time during regular business

hours, upon written request by the City Manager, City Attorney, City Finance Director, or a designated representative of these officers. Copies of such documents shall be provided to the City for inspection at Petaluma City Hall when it is practical to do so. Otherwise, unless an alternative is mutually agreed upon, the records shall be available at Contractor's address indicated for receipt of notices in this Agreement.

D. Where City has reason to believe that such records or documents may be lost or discarded due to dissolution, disbandment or termination of Contractor's business, City may, by written request by any of the above-named officers, require that custody of the records be given to the City and that the records and documents be maintained in Petaluma City Hall. Access to such records and documents shall be granted to any party authorized by Contractor, Contractor's representatives, or Contractor's successor in interest.

33. **Headings.** The headings used in this Agreement are for convenience only and are not intended to affect the interpretation or construction of any provisions herein.

34. **Survival.** All obligations arising prior to the termination or expiration of this Agreement and all provisions of this Agreement allocating liability between City and Contractor shall survive the termination or expiration of this Agreement.

35. **Entire Agreement.** This Agreement, including the exhibits attached hereto and incorporated herein, constitutes the entire agreement between the Parties with respect to the Services, and supersedes all prior agreements or understandings, oral or written, between the Parties in this regard.

IN WITNESS WHEREOF, the parties hereto have executed this document the day, month and year first above written.

CITY OF PETALUMA

_____
City Manager

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

CONTRACTOR

By_____
Name

_____
Title

_____
Address

_____
City State Zip

_____
Taxpayer I.D. Number

_____
Petaluma Business Tax Certificate Number

Attachment B: Scope of Services—Exhibit A

Exhibit A:

SCOPE OF SERVICES

I. PROJECT DESCRIPTION

The City is seeking Environmental Planning and Regulatory Permitting services from a well-qualified firm or firms to provide the City with services for updating its Citywide Creeks Maintenance Plan (CMP). These services are intended to obtain all applicable Routine Maintenance Agreements and permits with regulatory agencies for the implementation of the updated CMP. In conjunction with the City conduct spot checks to update site surveys environmental and biological site evaluations as needed, and support the City in conducting community engagement. At later phases, as authorized by the City, assistance maybe required for preparation of further permitting, and construction management services for selected priority creek enhancement projects.

II. SCOPE OF SERVICES –The following list includes a brief description of the tasks to be performed by the consultant. **This list is not intended to be all-inclusive or limiting**. Per the RFP Section 4. Proposal Requirements, Item E. Proposed Scope of Work and Approach, Proposers shall provide a scope of work submittal that expands upon the RFP Scope of Services outlined below and provides additional scope detail with identified deliverables to demonstrate their understanding of the project requirements, including identifying any supplemental tasks necessary, and to recommend any alternatives, which may enhance the project or reduce costs. The technical approach must include the planned means to incorporate public and regulatory agency comment into the CMP update process.

The Consultant shall perform the following tasks:

A. Project Management

Provide project management services for quality control and administration of the work to include agendas and minutes for bi-weekly progress meetings, monthly invoices, progress reports, and budget tracking. The Consultant shall manage its team and overall project activities consistent with the direction from the City in order to meet the project schedule and budget. The Consultant shall manage sub-consultants, maintain schedule and budget, anticipate and mitigate potential issues and delays, and coordinate updates to the City on the overall progress of the Project.

1. Organize and attend project bi-weekly progress meetings with the City to discuss project progress, decisions, direction, and to coordinate activities. Additional meetings shall be held at key project milestones and may include, but are not limited to:
    a. Kick-off Meeting
    b. Community Meetings
    c. Draft Deliverables Evaluation Meetings
    d. City Council Meetings
2. Coordinate with the City, stakeholders, community groups, and other affected parties as required throughout the duration of the project, as well as the Quality Assurance/Quality Control (QA/QC) activities for project deliverables.

B. Preliminary Evaluation

The City is in the process of updating the existing Citywide Creeks Maintenance Plan (CMP) (2017). In consultation with City staff, update as needed, and assist in the permitting of the program.

C. Biological Resources Assessment / Wetland Delineations

In partnership with the City advise on the City made updates to the Citywide Creek Maintenance Program (CMP). As need, conduct spot check survey's of the creeks to confirm 2017 assessments. In partnership with the City assist as need to complete revisions to CMP need to begin Regulatory permitting process.

D. Cultural Resources Review of Past Reports and Consultations, and Tribal Consultation for CMP Plan Update & for Recommended Identified Priority Stream Enhancement Projects

The Consultant will lead the archaeological cultural resources evaluation for the project. The cultural resources investigation will comply with Section 106 of the National Historic Preservation Act, as required for Section 404 permitting from the Corps. The Consultant will define the Area of Potential Effect (APE) for all project sites covered under the Citywide Creeks Maintenance Plan for maintenance activities including all areas subject to ground disturbance, and at the project sites identified for specific priority stream enhancement projects.

E. Community, Stakeholder Outreach and Engagement

For each creek basin tributary to the Petaluma River, the consultant shall support community outreach and stakeholder engagement activities appropriate to the context of the watershed and surrounding land uses. Outreach activities such as communications, website, social media, and events will be led by the City with technical, graphical, and advisory input provided by the Consultant. The Consultant will be responsible for attending community workshops and City Council meetings. The level of effort will be determined during scoping negotiations with the City.

F. Project Permitting and Environmental Services

The Consultant shall assist the City in obtaining the permits and Routine Maintenance Agreements needed for implementation. The Consultant shall conduct outreach to regulatory agencies with jurisdiction, lead meetings with the regulatory agency staff to communicate the project intent, and support implementation of permit applications.

The Consultant shall support the City with outreach and coordination with all public agencies whose approval is required (e.g. permits, financial approval, or participation agreements) include but are not limited to Sonoma County Water Agency (SCWA) for mutual agreement of maintenance activities; California Department of Fish & Wildlife (CDFW) (1600 Lake and Streambed Alteration Agreement: Routine Maintenance Agreement); Regional Water Quality Control Board (RWQCB) 401 Water Quality Certificate; U.S. Army Corps of Engineers 404 Dredge and Fill Permit; and consultation with U.S. Fish & Wildlife Service (USFWS)/National Marina Fisheries Service (NMFS) under Section 7.

PHASE II (Future Phase to be Determined and Authorized by the City)

G. Preliminary and Final Environmental and Permitting Services for Identified Priority Stream Enhancement Projects, as well as construction services support for individual projects.

(Scope to be determined by the City and as authorized by the City per an amendment to the consultant agreement. The City reserves the right not to proceed with this phase and/or to seek other consulting services to perform later phases.)

City has no expectation of hour estimates within this phase, other than unit rates.

III. SCHEDULE

Time is of the essence for this project. The City intends to contract with the consultant in **Spring 2024**. The consultant shall begin the work as soon as the Agreement with the City is executed.

Estimated Project Schedule:

Milestone/Deliverable	**Due Date**
Project Kick-Off Meeting	April 2024
Citywide Creeks Maintenance Plan Update Completed	September 2024
Permitting and Maintenance Agreements Finalized for Citywide CMP	February 2025
Phase II	TBD

Attachment C: Insurance Requirements—Exhibit B

EXHIBIT B
INSURANCE REQUIREMENTS
FOR ALL AGREEMENTS

Contractor's performance of the Services under this Agreement shall not commence until Contractor shall have obtained all insurance required under this paragraph and such insurance shall have been approved by the City Attorney as to form and the Risk Manager as to carrier and sufficiency. All requirements herein provided shall appear either in the body of the insurance policies or as endorsements and shall specifically bind the insurance carrier.

Contractor shall procure and maintain for the duration of the contract all necessary insurance against claims now and in the future for injuries to persons or damages to property which may arise from or in connection with the performance of the Services by the Contractor, the Contractor's agents, representatives, employees and subcontractors.

A. Required Minimum Scope of Insurance

- ☐ Coverage shall be at least as broad as:
  Insurance Services Office Commercial General Liability coverage:
  a. Personal injury;
  b. Contractual liability.
- ☐ Insurance Services Office form covering Automobile Liability (any auto), if no company owned autos, non-owned and hired auto applies.
- ☐ Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.
- ☐ Professional Liability/Errors and Omissions
- ☐ Crime/Employee Blanket Fidelity Bond
- ☐ Property Insurance against all risks of loss to any tenant improvements or betterments.
- ☐ Pollution Liability Insurance
- ☐ Garage Liability
- ☐ Garagekeepers Insurance
- ☐ Technology Professional Liability Errors and Omissions Insurance (IT Consultant)/Cyber Liability
- ☐ Abuse or Molestation Liability Coverage

A.1 Required for All Contracts

- ☒ Policy Endorsements or Excerpts from the Policy Pursuant to Section D
- ☒ Copy of the Declarations and Policy Endorsements Page for the CGL Policy

B. Minimum Limits of Insurance

Consultant shall maintain limits no less than:

- ☐ General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate liability is used, either the general aggregate limit shall apply separately to this Agreement or the general aggregate limit shall be twice the required occurrence limit.
- ☐ Products/Completed Operations: $1,000,000 per occurrence/aggregate.
- ☐ Automobile Liability: $1,000,000 per accident for bodily injury and property damage.
- ☐ Employer's Liability: Bodily Injury by Accident - $1,000,000 each accident.

Bodily Injury by Disease - $1,000,000 policy limit.
Bodily Injury by Disease - $1,000,000 each employee.

☐ Professional Liability/Errors and Omissions: $1,000,000 per occurrence or claim. If the policy provides coverage on a claims-made basis, the retroactive date must be shown and must be before the date of the Agreement or the beginning of the contract work.

☐ Crime/Employee Blanket Fidelity Bond - $1,000,000: Contractor, at its own cost and expense, must maintain a Crime/Employee Blanket Fidelity Bond in the amount of $1,000,000 per employee covering dishonesty, forgery, alteration, theft, disappearance, destruction (inside or outside).

☐ All Risk Property Insurance: Full replacement cost.

☐ Pollution legal liability with limits no less than $1,000,000 per occurrence or claim and $2,000,000 policy aggregate. If the policy provides coverage on a claims-made basis, the retroactive date must be shown and must be before the date of the Agreement or the beginning of the contract work.

☐ Garage Liability: $1,000,000 per occurrence.

☐ Garagekeepers Insurance: $1,000,000 per occurrence.

☐ Technology Professional Liability Errors and Omissions Insurance appropriate to the Consultant's profession and work hereunder, with limits not less than $1,000,000 per occurrence. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by the Vendor in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, copyright, trademark, invasion of privacy violations, information theft, release of private information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

1. The Policy shall include, or be endorsed to include, **property damage liability coverage** for damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the City in the care, custody, or control of the Consultant. If not covered under the Consultant's liability policy, such "property" coverage of the City may be endorsed onto the Consultant's Cyber Liability as covered property as follows:

2. **Cyber Liability coverage** in an amount sufficient to cover the full replacement value of damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the City that will be in the care, custody, or control of the Consultant.

3. The Insurance obligations under this agreement shall be the greater of 1) all the Insurance coverage and limits carried by or available to the Consultant; or 2) the minimum Insurance requirements shown in this Agreement. Any insurance proceeds in excess of the specified limits and coverage required, which are applicable to a given loss, shall be available to the City. No representation is made that the minimum Insurance requirements of this Agreement are sufficient to cover the indemnity or other obligations of the Consultant under this agreement.

☐ Abuse or Molestation Liability Coverage: $1,000,000 per occurrence; $2,000,000 aggregate.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees, and volunteers; or the Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured (Contractor) or the City.

City reserves the right to review any and all of the required insurance policies, declaration pages, and/or endorsements, but has no obligation to do so. City's failure to demand evidence of full compliance with the insurance requirements set forth in this Agreement or City's failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

D. Other Insurance Provisions

The required general liability and automobile policies are to contain, or be endorsed to contain the following provisions:

1. Additional Insured: The City, its officers, officials, employees, agents and volunteers are to be covered as Additional Insureds as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees, agents or volunteers.
2. Primary and Non-Contributory: For any claims related to this project, the Consultant's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City, its officers, officials, employees, agents or volunteers.
4. 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. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.
6. Waiver of Subrogation: Consultant agrees to waive subrogation rights for commercial general liability, automobile liability and worker's compensation against City regardless of the applicability of any insurance proceeds, and to require all contractors, subcontractors or others involved in any way with the Services to do likewise.
7. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirement and/or limits shall be available to the additional insured. Furthermore, the requirement for coverage and limits shall be (1) the minimum coverage and limits specified in this

Agreement, or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured; whichever is greater.

8. The limits of insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the City of Petaluma before the City of Petaluma's own insurance or self-insurance shall be called upon to protect it as a named insured.

E. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

F. Verification of Coverage

NOTE: The City of Petaluma is now using an online insurance program, PINS Advantage. Once you have been awarded a contract with the City of Petaluma, you will receive an e-mail from PINS Advantage/City of Petaluma requesting that you forward the e-mail to your insurance agent(s). Consultant shall furnish the City with Certificate of Insurance along with Declarations and Endorsements effecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received and approved by the City before the Services commence.

Attachment D: Prevailing Wage Information—
Exhibit C

PREVAILING WAGE EXHIBIT C

HOURS OF WORK:

A. In accordance with California Labor Code Section 1810, eight (8) hours of labor in performance of the Services shall constitute a legal day's work under this Agreement.

B. In accordance with California Labor Code Section 1811, the time of service of any worker employed in performance of the Services is limited to eight hours during any one calendar day, and forty hours during any one calendar week, except in accordance with California Labor Code Section 1815; which provides that work in excess of eight hours during any one calendar day and forty hours during any one calendar week is permitted upon compensation for all hours worked in excess of eight hours during any one calendar day and forty hours during any one calendar week at not less than one-and-one-half times the basic rate of pay.

C. The Consultant and its subconsultants shall forfeit as a penalty to the City $25 for each worker employed in the performance of the Services for each calendar day during which the worker is required or permitted to work more than eight (8) hours in any one calendar day, or more than forty (40) hours in any one calendar week, in violation of the provisions of California Labor Code Section 1810 and following.

WAGES:

A. In accordance with California Labor Code Section 1773.2, the City has determined the general prevailing wages in the locality in which the Services are to be performed for each craft or type of work needed to be as published by the State of California Department of Industrial Relations, Division of Labor Statistics and Research, a copy of which is on file with the City and shall be made available on request. The Consultant and subconsultants engaged in the performance of the Services shall pay no less than these rates to all persons engaged in performance of the Services.

B. In accordance with Labor Code Section 1775, the Consultant and any subconsultants engaged in performance of the Services shall comply Labor Code Section 1775 which establishes a penalty of up to $50 per day for each worker engaged in the performance of the Services that the Consultant or any subconsultant pays less than the specified prevailing wage. The amount of such penalty shall be determined by the Labor Commissioner and shall be based on consideration of the mistake, inadvertence, or neglect of the Consultant or subconsultant in failing to pay the correct rate of prevailing wages, or the previous record of the Consultant or subconsultant in meeting applicable prevailing wage obligations, or the willful failure by the Consultant or subconsultant to pay the correct rates of prevailing wages. A mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages is not excusable if the Consultant or subconsultant had knowledge of their obligations under the California Labor Code. The Consultant or subconsultant shall pay

the difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate. If a subconsultant worker engaged in performance of the Services is not paid the general prevailing per diem wages by the subconsultant, the Consultant is not liable for any penalties therefore unless the Consultant had knowledge of that failure or unless the Consultant fails to comply with all of the following requirements:

1. The Agreement executed between the Consultant and the subconsultant for the performance of part of the Services shall include a copy of the provisions of California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.
2. The Consultant shall monitor payment of the specified general prevailing rate of per diem wages by the subconsultant by periodic review of the subconsultant's certified payroll records.
3. Upon becoming aware of a subconsultant's failure to pay the specified prevailing rate of wages, the Consultant shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subconsultant for performance of the Services.
4. Prior to making final payment to the subconsultant, the Consultant shall obtain an affidavit signed under penalty of perjury from the subconsultant that the subconsultant has paid the specified general prevailing rate of per diem wages employees engaged in the performance of the Services and any amounts due pursuant to California Labor Code Section 1813.

C. In accordance with California Labor Code Section 1776, the Consultant and each subconsultant engaged in performance of the Services, shall keep accurate payroll records showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in performance of the Services. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

1. The information contained in the payroll record is true and correct.
2. The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any Services performed by the employer's employees on the public works project.

The payroll records required pursuant to California Labor Code Section 1776 shall be certified and shall be available for inspection by the Owner and its authorized representatives, the Division of Labor Standards Enforcement, the Division of Apprenticeship Standards of the Department of Industrial Relations and shall otherwise be available for inspection in accordance with California Labor Code Section 1776. In addition, Consultant and sub-consultant shall be required to be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. Consultant and

any sub-consultant shall submit certified payroll records to the Department of Industrial Relations Labor Commissioner online:

https://apps.dir.ca.gov/ecpr/DAS/AltLogin.

The Consultant is responsible for ensuring compliance with this section.

D. In accordance with California Labor Code Section 1777.5, the Consultant, on behalf of the Consultant and any subconsultants engaged in performance of the Services, shall be responsible for ensuring compliance with California Labor Code Section 1777.5 governing employment and payment of apprentices on public works contracts.

E. In case it becomes necessary for the Consultant or any subconsultant engaged in performance of the Services to employ on the Services any person in a trade or occupation (except executive, supervisory, administrative, clerical, or other non manual workers as such) for which no minimum wage rate has been determined by the Director of the Department of Industrial Relations, the Consultant shall pay the minimum rate of wages specified therein for the classification which most nearly corresponds to Services to be performed by that person. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

Attachment E: Living Wage Acknowledgement and Certification Form—Exhibit D

EXHIBIT D

ACKNOWLEDGEMENT AND CERTIFICATION PURSUANT TO CITY OF PETALUMA LIVING WAGE ORDINANCE PETALUMA MUNICIPAL CODE CHAPTER 8.36

The City of Petaluma Living Wage Ordinance ("Ordinance"), Petaluma Municipal Code Chapter 8.36, applies to certain service contracts, leases, franchises and other agreements or funding mechanisms providing financial assistance (referred to hereafter as an "Agreement") between the City of Petaluma ("City") and/or the Petaluma Community Development Commission ("PCDC") and contractors, lessees, franchisees, and/or recipients of City and/or PCDC funding or financial benefits ("covered entities").

Pursuant to Petaluma Municipal Code Section 8.36.120, as part of any bid, application or proposal for any Agreement subject to the Ordinance, the covered entity shall:

- Acknowledge that the covered entity is aware of the Ordinance and intends to comply with its provisions.

- Complete the Report of Charges, Complaints, Citations and/or Findings contained in this Acknowledgement and Certification by providing information, including the date, subject matter and manner of resolution, if any, of all wage, hour, collective bargaining, workplace safety, environmental or consumer protection charges, complaints, citations, and/or findings of violation of law or regulation by any regulatory agency or court including but not limited to the California Department of Fair Employment and Housing, Division of Occupational Safety and Health (OSHA), California Department of Industrial Relations (Labor Commissioner), Environmental Protection Agency and/or National Labor Relations Board, which have been filed or presented to the covered entity within the ten years immediately prior to the bid, proposal, submission or request.

Pursuant to Petaluma Municipal Code Section 8.36.120, before the beginning of the term of any covered Agreement, or prior to the execution of said Agreement by the City or the PCDC, each covered entity shall certify that its employees are paid a living wage that is consistent with Petaluma Municipal Code Chapter 8.36.

By executing this Acknowledgement and Certification, the covered entity (i) acknowledges that it is aware of the Ordinance and intends to comply with its provisions, (ii) attests to the accuracy and completeness of information provided in the Report of Charges, Complaints, Citations and/or Findings contained herein, (iii) certifies that it pays its covered employees a Living Wage as defined in Petaluma Municipal Code Chapter 8.36 and (iv) attests that the person executing this Acknowledgement and Certification is authorized to bind the covered entity as to the matters covered in this Acknowledgment and Certification.

SO ACKNOWLEDGED and CERTIFIED:

Project or Contract I.D: _____

_____ Date: _____
(Print Name of Covered Entity/Business Capacity)

By _____
(Print Name)

/s/_____
(Signature)

Its _____
(Title /Capacity of Authorized Signer)

REPORT OF CHARGES, COMPLAINTS, CITATIONS AND/OR FINDINGS PURSUANT TO PETALUMA MUNICIPAL CODE SECTION 8.36.120

FOR EACH WAGE, HOUR, COLLECTIVE BARGAINING, WORKPLACE SAFETY, ENVIRONMENTAL OR CONSUMER PROTECTION CHARGE, COMPLAINT, CITATION, AND/OR FINDING OF VIOLATION OF LAW OR REGULATION BY ANY REGULATORY AGENCY OR COURT, INCLUDING BUT NOT LIMITED TO THE CALIFORNIA DEPARTMENT OF FAIR EMPLOYMENT AND HOUSING, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (OSHA), CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS (LABOR COMMISSIONER), ENVIRONMENTAL PROTECTION AGENCY AND/OR NATIONAL LABOR RELATIONS BOARD, WHICH:

- AFFECTS YOU AS A PROSPECTIVE CONTRACTOR, SUBCONTRACTOR, LESSEE, FRANCHISEE AND/OR PARTY TO ANY CITY OF PETALUMA AND/OR PETALUMA COMMUNITY DEVELOPMENT COMMISSION-FUNDED AGREEMENT OR BENEFIT SUBJECT TO PETALUMA MUNICIPAL CODE CHAPTER 8.36 (LIVING WAGE ORDINANCE), AND
- HAS BEEN FILED OR PRESENTED TO YOU WITHIN THE TEN YEARS IMMEDIATELY PRIOR TO THE BID, PROPOSAL, SUBMISSION OR REQUEST FOR WHICH THIS ACKNOWLEDGEMENT AND CERTIFICATION IS MADE.

PLEASE PROVIDE THE DATE, THE REGULATORY AGENCY OR COURT MAKING THE CHARGE COMPLAINT, CITATION OR FINDING, THE SUBJECT MATTER AND THE MANNER OF RESOLUTION, IF ANY, FOR EACH SUCH CHARGE COMPLAINT, CITATION OR FINDING.

IF NONE, PLEASE STATE "NONE": _____

ATTACH ADDITIONAL PAGES IF NEEDED.

Date: _____

Regulatory Agency or Court: _____

Subject Matter: _____

_____

Resolution, if any: _____

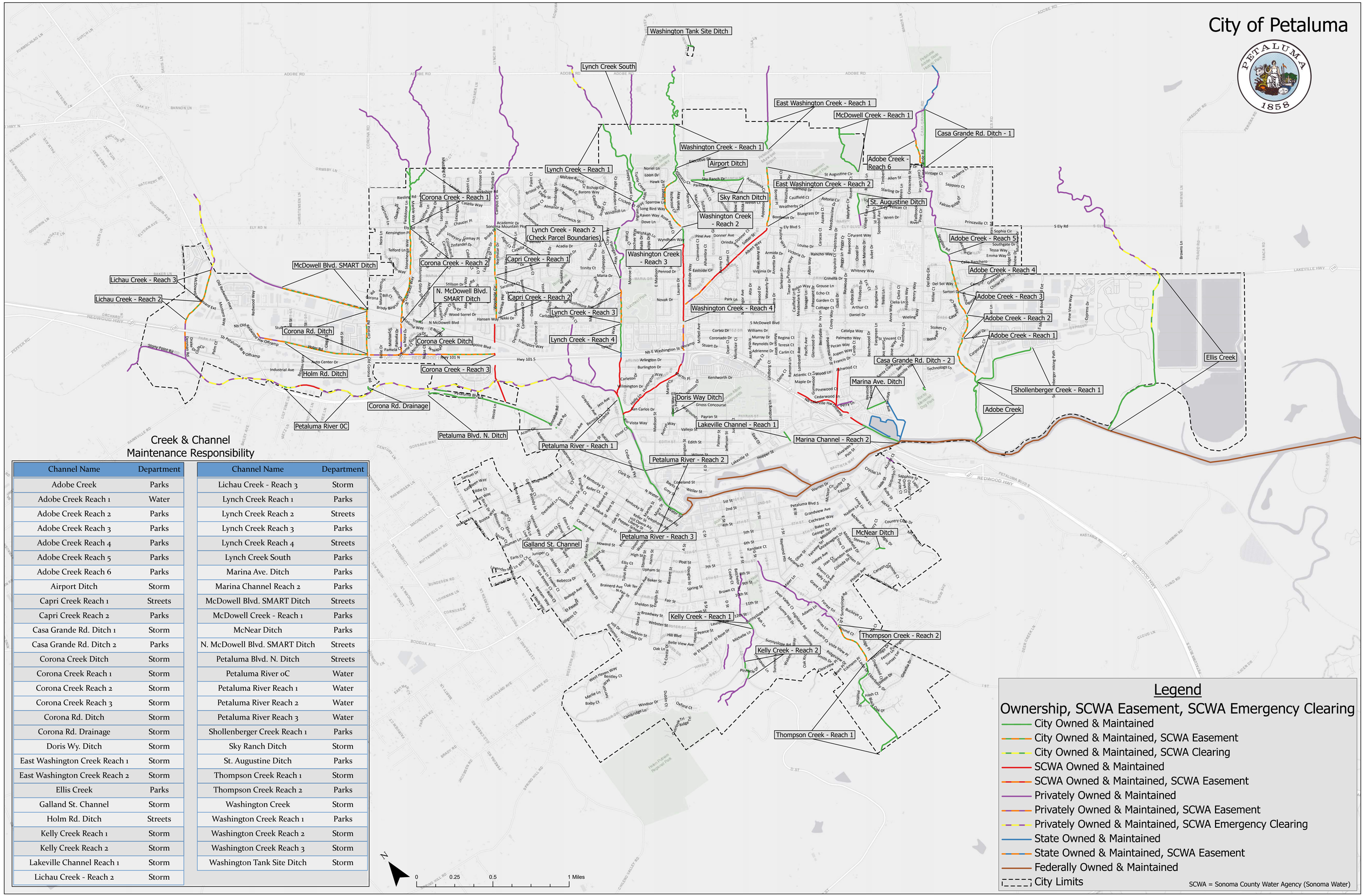
_____

Expected resolution, if known: _____

_____

Attachment F:

City of Petaluma



Creek & Channel Maintenance Responsibility

Channel Name	Department
Adobe Creek	Parks
Adobe Creek Reach 1	Water
Adobe Creek Reach 2	Parks
Adobe Creek Reach 3	Parks
Adobe Creek Reach 4	Parks
Adobe Creek Reach 5	Parks
Adobe Creek Reach 6	Parks
Airport Ditch	Storm
Capri Creek Reach 1	Streets
Capri Creek Reach 2	Parks
Casa Grande Rd. Ditch 1	Storm
Casa Grande Rd. Ditch 2	Parks
Corona Creek Ditch	Storm
Corona Creek Reach 1	Storm
Corona Creek Reach 2	Storm
Corona Creek Reach 3	Storm
Corona Rd. Ditch	Storm
Corona Rd. Drainage	Storm
Doris Wy. Ditch	Storm
East Washington Creek Reach 1	Storm
East Washington Creek Reach 2	Storm
Ellis Creek	Parks
Galland St. Channel	Storm
Holm Rd. Ditch	Streets
Kelly Creek Reach 1	Storm
Kelly Creek Reach 2	Storm
Lakeville Channel Reach 1	Storm
Lichau Creek - Reach 2	Storm

Channel Name	Department
Lichau Creek - Reach 3	Storm
Lynch Creek Reach 1	Parks
Lynch Creek Reach 2	Streets
Lynch Creek Reach 3	Parks
Lynch Creek Reach 4	Streets
Lynch Creek South	Parks
Marina Ave. Ditch	Parks
Marina Channel Reach 2	Parks
McDowell Blvd. SMART Ditch	Streets
McDowell Creek - Reach 1	Parks
McNear Ditch	Parks
N. McDowell Blvd. SMART Ditch	Streets
Petaluma Blvd. N. Ditch	Streets
Petaluma River Reach 1	Water
Petaluma River Reach 2	Water
Petaluma River Reach 3	Water
Shollenberger Creek Reach 1	Parks
Sky Ranch Ditch	Storm
St. Augustine Ditch	Parks
Thompson Creek Reach 1	Storm
Thompson Creek Reach 2	Parks
Washington Creek	Storm
Washington Creek Reach 1	Parks
Washington Creek Reach 2	Storm
Washington Creek Reach 3	Storm
Washington Tank Site Ditch	Storm

Legend

Ownership, SCWA Easement, SCWA Emergency Clearing

- City Owned & Maintained
- City Owned & Maintained, SCWA Easement
- City Owned & Maintained, SCWA Clearing
- SCWA Owned & Maintained
- SCWA Owned & Maintained, SCWA Easement
- Privately Owned & Maintained
- Privately Owned & Maintained, SCWA Easement
- Privately Owned & Maintained, SCWA Emergency Clearing
- State Owned & Maintained
- State Owned & Maintained, SCWA Easement
- Federally Owned & Maintained
- City Limits

SCWA = Sonoma County Water Agency (Sonoma Water)

Printed: 4/26/2023

Attachment G:

#	Reach	Ownership	Maintenance
1	**Corona Reach 1** (City limits west to Ely Boulevard N.)	City	City PW&U
2	**Corona Reach 2** (Ely Blvd. N. west to SMART rail corridor)	City	City PW&U
3	**Corona Reach 2** (SMART rail corridor west to N. McDowell Boulevard)	Private / City	City DPW&U
4	**Corona Reach 3** (Southpoint Business Park edge along H101)	City	City PW&U
5	**Capri Creek Reach 1** (Sonoma Mountain Parkway west to Maria Drive)	City	City PW&U
6	**Capri Creek Reach 2** (Maria Drive to N. McDowell)	City	City PW&U
7	**Lynch Creek Reach 1** (western half, part of Turtle Creek)	City	City PW&U
8	**Lynch Creek Reach 1** (eastern part of Turtle Creek) to Sonoma Mtn. Parkway	Private	City Parks
9	**Lynch Creek Reach 2** (Sonoma Mtn. Parkway to Maria) - City segments	City	City PW&U
10	**Lynch Creek** (Sonoma Mtn. Parkway to Maria) - Private segments	Private	private/City
11	**Lynch Creek Reach 4** (Maria west along medical offices and Petaluma Valley Hospital	private/City	private/City
12	**Washington Creek Reach 1** (City limits west through Rooster Run)	City	City Parks
13	**Washington Creek Reach 2**	City	City DPW&U
14	**Washington Creek Reach 3** (Sonoma Mtn. Parkway west for short stretch next to St. John's)	City	City PW&U
15	**East Washington Creek Reach 1**	City	City

#	Reach	Ownership	Maintenance
16	**East Washington Creek Reach 2**	City	City DPW&U
17	Casa Grande Rd. Ditch 1	private	City
18	*Adobe Creek Reach 5*	City	City
19	*Adobe Reach 4*	City	City
20	*Adobe Reach 3*	City	City
21	*Adobe Reach 2*	private	City
22	*Adobe Reach 1*	City	City
23	*Adobe Creek (lowest reach through wetlands)*	City	City
24	Thompson Creek Reach 1	City	City PW&U
25	Thompson Creek Reach 2	City	City Parks
26	Kelly Creek Reach 1	City	City PW&U
27	Kelly Creek Reach 2	City	City PW&U

** Note: Adobe Creek reaches are numbered from the River upstream, different from the other creeks*

Attachment H:

PETALUMA CITYWIDE CREEKS MAINTENANCE MANUAL

FOR IMPLEMENTATION OF THE CITYWIDE CREEKS MAINTENANCE PLAN

PREPARED BY:

CITY OF PETALUMA
11 ENGLISH STREET
PETALUMA, CA 94952

January 2017

PETALUMA CITYWIDE CREEKS MAINTENANCE MANUAL

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Table of Contents Continued

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APPENDICES

1. Introduction

1.1. Mission, Purpose, & Need

The City of Petaluma (the City) seeks to enter into Routine Maintenance Agreements with the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board, and all appropriate regulatory agencies in order to implement the Citywide Creeks Maintenance Plan (CMP) and facilitate the ongoing management of creeks within the City of Petaluma's jurisdiction. The CMP consists of the routine maintenance activities to be undertaken along identified creek segments by the City of Petaluma Public Works Department or authorized personnel. The CMP activities are broadly defined in Appendix B and will be refined on an annual basis as part of the Annual Reporting. This document, the Citywide Creeks Maintenance Manual (CMM) provides the organizational framework through which to systematically carry out routine stream and channel maintenance activities in a manner that achieves flood control objectives while minimizing environmental impacts. The CMM is the means by which to implement the CMP.

Ongoing urban development, overgrowth of vegetation, and an increase of impervious surfaces within the City of Petaluma have affected the ability of creeks and streams to convey stormwater, resulting in flooding, sedimentation, and degradation of habitat in some reaches. Routine maintenance of channels in a manner that focuses on preservation and enhancement provides an opportunity to improve the flood conveyance capacity while maximizing hydrological function and habitat value of habitat.

This Manual is informed by the City's General Plan (2025), the River Access and Enhancement Plan (1986), and the Petaluma Watershed Enhancement Plan (1999), as well as various studies and reports as referenced herein. The intent of this Manual is to provide guidance for maintenance activities to ensure the protection of the natural environment and preservation of water quality, while meeting flood flow capacity needs.

This Manual has been prepared in order to provide clear and concise descriptions of the tasks discussed in the CMP for reference by City staff administering maintenance activities. In addition to flood protection management, the City also strives to maintain the stability of waterways natural resources. As such, this manual provides direction on maintenance practices that either avoid or minimize environmental impacts and encourage habitat enhancement, resource protection, and environmental stability. Finally, this manual serves as a regulatory compliance guide by describing maintenance activities that are consistent with local, state, and federal policies and may serve as a program description to assist in acquiring permits necessary to carryout maintenance activities.

1.2. Objectives

The five main objectives to be accomplished by the Citywide Creaks Maintenance Plan are:

1. Provide surface drainage and flood protection services to reduce flood hazards and potential property damage

2. Conserve and enhance existing riparian habitat

3. Preserve the design conveyance capacity of the surface water drainage system.

4. Improve natural hydrologic functions including groundwater recharge and water quality by implementing best management practices, and;

5. Establish a mechanism that streamlines permitting, approvals and regulatory compliance.

1.3. Background

Approximately 10.85 miles (57,300 linear feet) of open channels and natural creeks exist within the City of Petaluma. The Petaluma River separately consists of approximately 7.14 miles (37,700 feet) of channel inside the City limits (**See Figure 1**).

The City of Petaluma currently maintains creeks and streams on a case by case basis and works collaboratively with the Sonoma County Water Agency (SCWA), the Sonoma County Department Transportation, and Sonoma County Public Works Department for regional flood conveyance (**see Figure 2**).

A Surface Water Master Plan was prepared in 2003, which included an inventory of creeks and assessed natural waterways, piped sections, biotechnical and bioengineered banks, riprap banks, floodwalls, and structures[1]. This CMM builds off of the Surface Water Master Plan to guide the ongoing maintenance and management of creeks Citywide.

The City's 2025 General Plan[2] sets forth a number of broad policies and programs aimed at protecting the City's surface waters and maximizing beneficial uses. The CMP proposes the routine and ongoing management of creeks citywide through vegetation, sediment and debris removal, bank stabilization, infrastructure maintenance, and invasive species management.

[1] "*The City of Petaluma's Surface Water Master Plan – Technical Memorandum 3 - Biological Resources Review*," prepared by Environmental Science and Assessment, 2003.
[2] "*City of Petaluma General Plan 2025*," prepared by the City of Petaluma, 2008.

1.4. Executive Summary

1.4.1. Overview of Maintenance Activities

The CMP has three primary activities that include sediment, vegetation and tree management, and trash removal. Other related activities including bank stabilization, restoration, dewatering, and channel access road maintenance may occur periodically. All activities proposed by the CMP will be subject to best management practices that include appropriate timing for avoidance, employment of silt protection, and implementation of erosion control measures, among others. Equipment to be used for maintenance activities includes hand tools, service vehicles, mowers, chippers, tractors, backhoes, excavators, water trucks, and loaders. All construction equipment will enter and exit through the same area to minimize impacts. To the extent feasible, all project activities will be performed using the least invasive means possible.

Sonoma County Water Agency

The Sonoma County Water Agency (SCWA) already maintains channels in many of the reaches proposed for maintenance by the City and/or immediately contiguous to those listed in the City's CMP. In those instances where overlap occurs, the City will generally limit activities to vegetation and debris removal outside of the low flow channel, as the SCWA holds permits for maintenance work within the stream channel.

Several reaches described in the CMP will be sharing maintenance responsibilities with the SCWA through varying easements. These include Natural Channel Permissive Cleaning, Hydraulic Capacity Maintenance, and Engineered Channel Maintenance Easements. Reaches co-maintained with the SCWA will defer stream channel maintenance activities to the SCWA while activities outside of the stream channel (i.e. Banks and top of bank) will be carried out by the City. Reaches with overlapping maintenance responsibility include the following:

- Corona Road Channel Reach #1
- Corona Creek Reach #1-3
- Capri Creek Reach #1-2
- Washington Creek Reach #2
- East Washington Creek Reach #1

In January 2009, the SCWA adopted a Stream Maintenance Program (SMP) Manual that acts to improve and define management and maintenance of flood control activities within channels and streams under SCWA authority.

An Environmental Impact Report (SCH No. 2005082131) was certified in June of 2009, which identified the potential environmental effects that may occur as a result of the Program's implementation[3]. This includes an assessment of several overlapping reaches as depicted in Figure 3 (Figure 1-3 Zone 2A).

The City of Petaluma's CMP aims to perform maintenance responsibilities in several reaches Citywide including those that overlap with SCWA jurisdiction. Accordingly, the SCWA's Stream Maintenance Program Manual and EIR were used as a resource to inform the City's Creek Maintenance Manual.

Riparian Corridor

The CMP will result in the routine management of creeks citywide including activities within the riparian corridor. The riparian corridor is generally defined as the area on either side of a creek, stream or channel extending from top of bank to top of bank and includes vegetation and trees that extend beyond the top of bank.

Channel Zones

A stream corridor consists of unique zones where vegetation composition varies greatly from the in stream channel, lower bank, upper bank, and top of bank locations. The section of the corridor in which maintenance activities are taking place influences specific management activities. Each of the portions of the stream corridor is described in more detail below:

- In Stream Channel / Channel Bottom: The portion of the channel that contains water flows, during at least part of the year, but may occasionally be dry. Plant communities generally consist of aquatic vegetation. This portion of the channel is considered to be most sensitive to disturbance and maintenance activities. Equipment will be limited to hand tools whenever possible and when heavy equipment is necessary it will be positioned at top of bank. All activities within this portion of the channel will occur only during the dry season.

- Lower Bank: Boundaries of the lower bank are limited to the lower half of a stream bank extending to the low flow water flow line. During high flow events this portion of the channel will be inundated. The lower bank typically supports a mix of vegetation that is adapted to both wet and dry conditions and includes trees, grasses, shrubs and groundcover. Equipment used for maintenance will be limited to hand tools as feasible. Pruning and trimming of vegetation will be conducted to manage overgrowth. When downed trees or branches obstruct flows they will be repositioned.

[3] "*Sonoma County Water Agency: Stream Maintenance Program Environmental Impact Report*," Prepared by Horizon Water and Environment, June 2009.

- Upper Bank: Characterized as the upper half of the stream bank. This portion of the channel periodically becomes inundated during high flow events. Vegetation communities consist of grasses, trees, shrubs and a variety of groundcovers. Maintenance activities in the upper bank portion consist mostly of large quantities of vegetation removal, primarily through mowing or other heavy equipment. Trees under 6 inches in diameter at breast height (DBH) may be removed to promote understory growth provided that there is sufficient canopy cover.

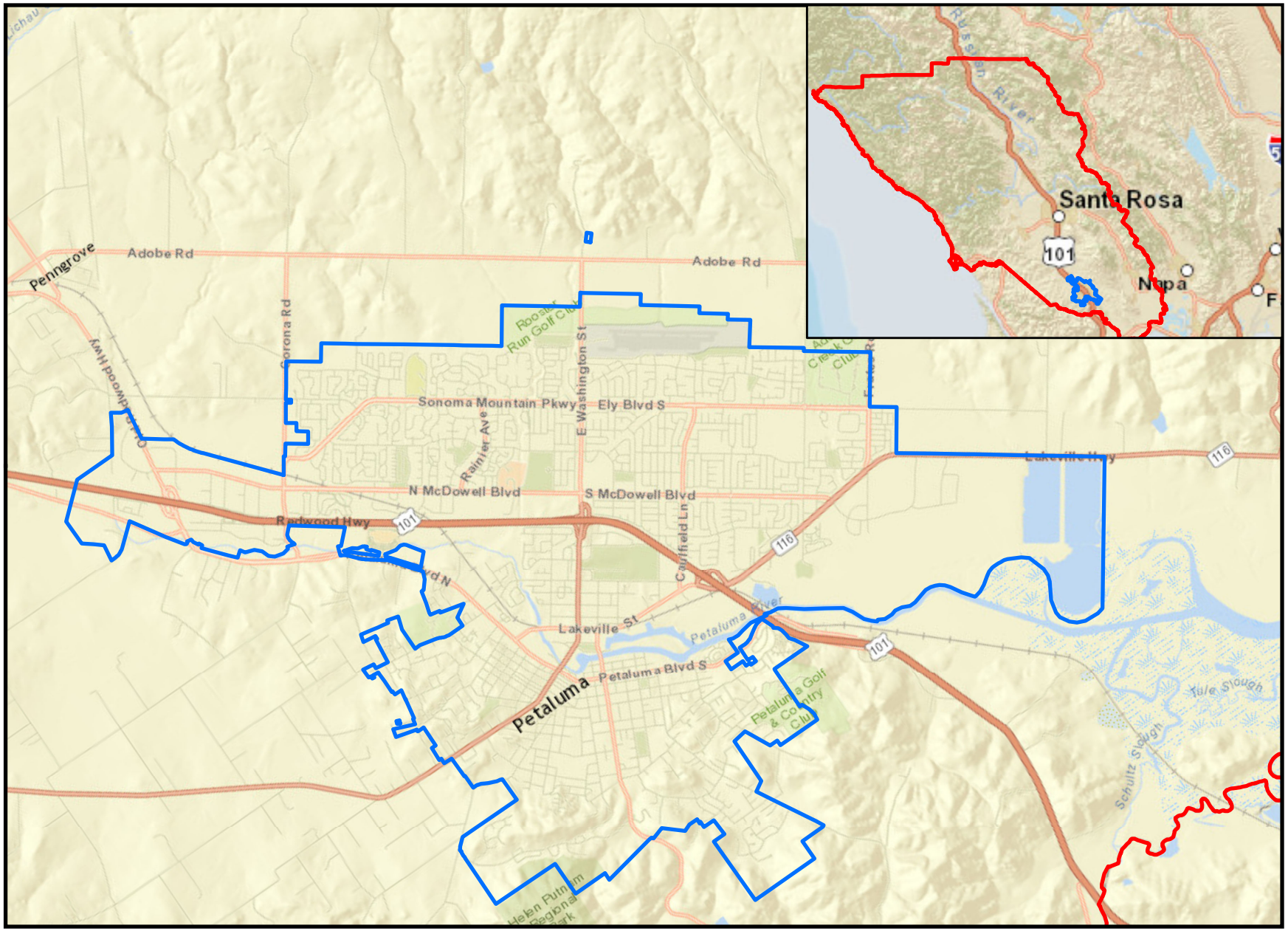
- Top of Bank: This consists of the area immediately adjacent to the Upper bank, but located outside of the defined channel. The City of Petaluma maintains a top of bank set back of at least 50 feet in order to preserve the stream corridor (General Plan Policy 4-P-1). The uses within the top of bank may include multi-use trails for recreation and public enjoyment as well as maintenance access roads and fire control. Vegetation transitions from riparian species to more ornamental. Along engineered channels the top of bank within the City may consists of Bermuda grass or turf. The more natural channels support a mix of vegetation including willow and oak trees. Maintenance activities in this area will consist of mowing, tree trimming, vegetation removal and trash removal.

Various activities will occur under the CMP that will require work within each of the above segments of the channel. The general types of routine maintenance activities including sediment removal, vegetation management, and debris and trash removal are further defined below in Chapter 2.

1.4.2. Activities Not Covered

The types of activities that are not covered by the City's Routine Maintenance Plan include the following:

- Capitol Improvement Projects (CIP)
- Repair of bridges, footings and piles and other bridge support structures outside of segements definined under the CMP
- Extensive Channel recontouring, terracing or other substantial channel design modification
- Project specific improvements to channels including modifications to drainage outfalls, restoration and enhancement, or introduction of culverts, bridges, and other structures; and
- Emergency Activities



Miles
0 0.5 1 1.5 2

Regional Location

Creeks Maintenance Plan Manual

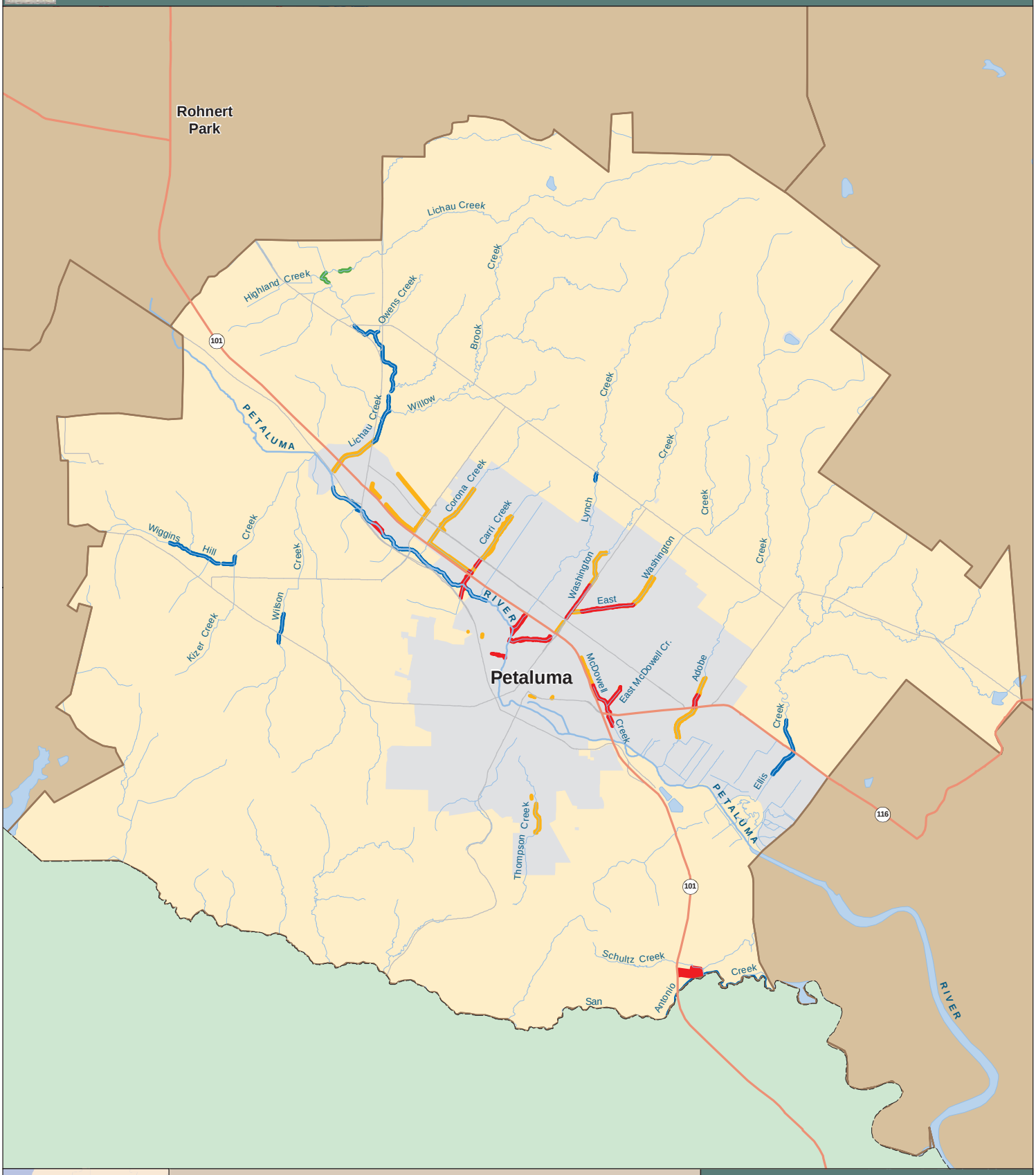
Petaluma, California

City Limit
Sonoma County

Figure 1

Sonoma County Water Agency

Stream Maintenance Program



SCWA Easements

- Owned in Fee-Engineered Channel
- Easement Engineered Channel
- Easement Modified Channel
- Easement Natural Channel
- Easement Natural Channel, Not Maintained Under SMP *

- Streams
- Highways
- Roads
- Water Bodies
- Incorporated Area

* Following guidance provided by NMFS and FWS regarding sensitive species habitat, certain natural channels were removed from maintenance activities and coverage of the SMP. These creeks and reaches are indicated in Figure 1-12.

Figure 1-3

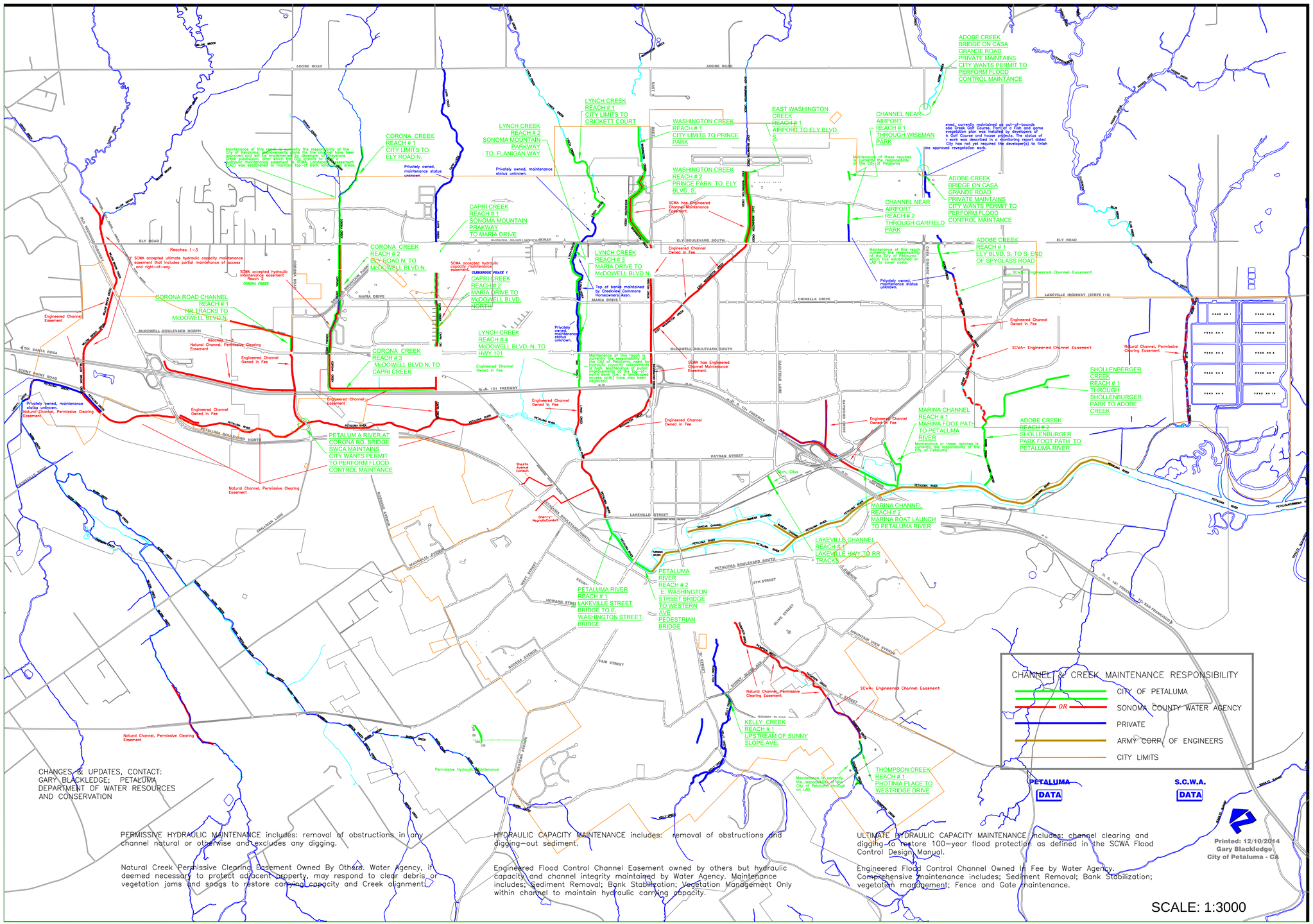
Zone 2A

0 0.6 1.2 1.8 2.4

Miles

Sources:
Sonoma County Water Agency
County of Sonoma
California Spatial Information Library

Horizon WATER and ENVIRONMENT



CHANGES & UPDATES, CONTACT:
GARY BLACKLEDGE; PETALUMA DEPARTMENT OF WATER RESOURCES AND CONSERVATION

PERMISSIVE HYDRAULIC MAINTENANCE includes: removal of obstructions in any channel natural or otherwise and excludes any digging.

Natural Creek Permissive Clearing Easement Owned By Others. Water Agency, if deemed necessary to protect adjacent property, may respond to clear debris or vegetation jams and snags to restore carrying capacity and Creek alignment.

HYDRAULIC CAPACITY MAINTENANCE includes: removal of obstructions and digging-out sediment.

Engineered Flood Control Channel Easement owned by others but hydraulic capacity and channel integrity maintained by Water Agency. Maintenance includes; Sediment Removal; Bank Stabilization; Vegetation Management Only within channel to maintain hydraulic carrying capacity.

ULTIMATE HYDRAULIC CAPACITY MAINTENANCE includes: channel clearing and digging to restore 100-year flood protection as defined in the SCWA Flood Control Design Manual.

Engineered Flood Control Channel Owned in Fee by Water Agency. Comprehensive maintenance includes; Sediment Removal; Bank Stabilization; vegetation management; Fence and Gate maintenance.

DATE: APRIL 2015
PROJECT NO.
DESIGNED BY: JG
DRAWN BY: JG
CHECKED BY: EA

REGISTERED PROFESSIONAL ENGINEER
NO. C40724
CIVIL
STATE OF CALIFORNIA

CITY OF PETALUMA
WATER RESOURCES AND CONSERVATION
202 N. McDOWELL BLVD, PETALUMA, CA. 94954
PH. 707-778-4546 FAX. 707-778-4508

WR&C

CITY OF PETALUMA CREEK MAINTENANCE LOCATION MAP

SHEET
C1
1 OF 1

2 Proposed CMP Activities

2.1. Overview

The ultimate goal of the Citywide Creeks Maintenance Plan is to maintain surface waters within the City for flood control conveyance of stormwater while maintaining beneficial uses including habitat for species, groundwater recharge, and water quality protection and enhancement. The objective is to achieve a balanced state where urban creeks require minimal maintenance.

Presently, there is an identified need to correct drainage conveyance and enhance biological resources along many reaches of Petaluma's Creeks and Streams. Activities outlined to meet this objective will be conducted using the least impactful methods by limiting ground disturbance, minimizing removal of vegetation, and avoiding re-contouring and otherwise altering channel bottoms and banks.

For a spatial representation of each tributary mentioned in the CMP, please refer to Figure 3 above, or see Appendix B, Sheet 1-C, City of Petaluma Creek Maintenance Location Map.

2.2. CMP Routine Activities

2.2.1. Sediment Management/ Removal

The CMP provides for the removal of accumulated sediment in stream channels, around bridge pilings, storm drain outfalls, and culverts. Also included in sediment management activities is erosion control and bank stabilization along creek segments that demonstrate instability. Heavy equipment may be utilized from outside top of bank (via a long arm excavator) to remove sediment within stream channels. Hand tools will be used to remove minor sediment accumulated around undercrossing, stormdrains and outfalls. Sediment management activities within stream channels will be conducted from June 15th to October 31st, when stream flows are at their driest. The scope and amount of sediment removal undertaken annually will depend upon recent weather and hydrologic conditions and will further be contingent upon the frequency of previous maintenance activities undertaken and permits issued by regulatory agencies. It is expected that a majority of the sediment removal will occur during the first two years of maintenance, with subsequent years requiring much less removal. See also Chapter 5 Sediment Management Activities below.

2.2.2. Vegetation Management/ Removal

Vegetation growth in creeks may inhibit or block flows, potentially contributing to channel overtopping and flooding. Vegetation management is performed in order to maintain conveyance capacity, establish a canopy of riparian trees and understory vegetation, and to control the spread of invasive or non-native species. Vegetation management includes pruning, trimming, clipping, mowing, and/or removal of overgrown vegetation and trees, and may involve chemical treatment. Removal or relocation of fallen trees, dead or dying trees and/or trees that are diseased may require the use of heavy-duty equipment, which will be positioned outside of top of bank or on access roads. Vegetation management may also include planting of new trees or native vegetation in order to enhance riparian habitat and as part of bank repair/stabilization. All vegetation management will be conducted outside of the bird-nesting season between September 1 and January 31. Invasive plant species will also be managed in order to promote a more sustainable riparian ecology. See Chapter 4 Vegetation Management Activities below.

2.2.3. Trash and Debris Removal

Non-sedimentary materials found within channels that may potentially impair hydrological functions or water conveyance have been routinely monitored and removed by the City. Items include tires, boxes, furniture, clothing, trash, and other materials usually introduced to systems through human activity or high flow events. Similar to downed trees, accumulations of these substances are particularly prone to blocking natural flows, thereby diverting water to stream banks and increasing erosion. Buildup of debris near crossings, culverts, or bridges often leads to elevated surface water levels and/or flooding.

Removal of objects will be conducted by crews using hand tools whenever possible, occasionally employing a wench for heavy objects, as needed. Debris recovered will be removed and transported to a solid waste landfill by way of dump trucks. Hazardous items, such as chemicals, paints, or motor oil, will be taken to an appropriate disposal facility authorized to accept such materials. Republic Services of Sonoma County, Inc. operates a large Central Disposal Site approximately 7 miles east and accepts industrial, agricultural, mixed municipal, wood waste, biosolids, and other designated waste at a maximum permitted rate of 2,500 tons a day with a remaining capacity of approximately 9,470,000 cubic yards. The Redwood Landfill and Recycling Center operates about 6 miles southeast of the Petaluma city center and offers construction, demolition, yard, and municipal debris, reuse, and disposal services at a permitted rate of 2,310 tons of material a day.

2.2.4. Related Activities

In addition to those specific activities identified above, the proposed CMP will result in related activities including maintenance of access roads, dewatering, and culvert maintenance as described below.

Access Road Maintenance

Access Road Maintenance will occasionally be required in order to retain easy access to stream areas. Activities will be conducted on a case by case basis that may include minor grading to restore original forms of access roads; vegetation pruning, trimming, and removal to ease access; road compaction; and adding layers of gravel to stabilize soils and protect road integrity. Equipment used for grading operations will include graders, rollers, and trucks. Handsaws, loppers, and chainsaws will be used when tree limbs impede access to these areas. Vegetation removal for access road maintenance will be conducted according to the guidelines discussed in Chapter 4 and will be limited to access roads and the area between the access road and City right-of-way boundaries.

Dewatering

Dewatering describes the temporary diversion of water of a stream away from a work site so that maintenance activities may occur. Creeks within the CMP that are not dry during the June 15th to October 31st maintenance season but carry water year round, either flowing or resting, may need to be dewatered before maintenance activities can ensue. In the event that water is present and unavoidable during an activity period, a minor temporary bypass will be constructed. Stream flow will be diverted downstream of the work area by construction of a temporary cofferdam, gravity flow (or as required water pumps that are properly screened), and routing pipeline over short sections of the channel.

In the event that dewatering requires the use of pumps, pump intakes will be screened with a wire mesh five millimeters or less to ensure that aquatic species and/or their larvae will not be suctioned into the pumping system. A qualified biologist will be present onsite to observe, describe, and relocate aquatic wildlife on stream reaches that warrant monitoring including portions of Corona Creek, Lynch Creek, Adobe Creek, as well as Shollenberger Park Creek Reach.

Culvert Maintenance

The City is responsible for the management of culverts in order to ensure continued functionality. Culvert failure may greatly reduce water conveyance and hydraulic capacity due to collapse, obstruction, or other reductions of effectiveness. Increased flooding potential, water pooling, and downstream erosion are common consequences of faulty culverts. Culvert facilities are located throughout the stream segments identified under the CMP and require cleaning, maintenance, or replacement on a case by case basis. The City may also maintain private culverts, outfalls and drainages along each reach segment identified in the CMP in order to meet flood alleviation objectives.

Culverts may be undersized and required upsizing in order to accommodate flood control objectives. Minor maintenance to culverts and outfalls would consist of sediment removal, removal of trash or other debris from culvert aprons, and minor repairs. Activities will be conducted by two man crews, equipped with hand tools when possible. In instances where large amounts of sediments require removal, an excavator working above the channel from the top-of-bank may be used as described in Section 5. In instances where standing water is present during the maintenance schedule, dewatering may be required.

2.3. Work Cycle

Activities proposed as part of the CMP will be conducted on a periodic and reoccurring basis. Certain activities may be conducted once a year, twice a year, more frequently, or not at all. An annual assessment consisting of a field based stream reconnaissance and evaluation will be conducted by qualified professional[4] in late winter to inform the following year's work plan. It is expected that routine maintenance activities including vegetation management, localized sediment removal in stream channels, culverted crossings and outfalls, and minor bank repairs will not typically necessitate the preparation of engineered drawings or design consideration. Alternately, larger scale projects and activities that involve greater quantities of sediment removal will be required to prepare engineered drawings that appropriately reflect the physical site conditions. The annual work plan will then be further refined and implemented in the summer (dry season) and as necessary outside of the breeding period of most terrestrial and aquatic species.

Activities will primarily occur during the spring, summer, and fall months when creeks are at their driest. Maintenance tasks and scheduling for each year will be presented to the

[4] A qualified professional is any public works staff member or contactor with a sufficient level of experience, as determined by the Public Works Director, to carryout activities identified under the CMP.

appropriate regulatory agencies prior to initiating work. Representatives of those agencies will have an opportunity to request a site tour at this time or identify the need for focused biological resource studies, as warranted. Following completion of work at the end of the work cycle, the City will prepare an annual summary report of all activities completed which will be distributed to the permitting agencies.

CMP activities, including sediment removal, vegetation management, and trash removal will be classified as either having the potential to cause ground disturbance or not. All ground disturbing activities proposed for a given channel will be conducted during the low flow period (from June 15 to October 31) whereas non-ground disturbing activities may be conducted outside of the primary work window of June 15 to October 31 provided that the subject channel is dry and pre-maintenance surveys determine that no nesting birds will be impacted. In the event of extenuating circumstances or on a case by case basis exceptions may be made with the advance approval of appropriate federal and state regulatory agencies.

2.4. Annual Reporting

In order to carry out the objectives of the CMP, the City will create and maintain a comprehensive data management system that provides an efficient way to monitor all plan activities, permitting compliance, and restoration activities. The City will capture and record data throughout the CMP work cycle, including information on stream assessments, reach conditions, sensitive habitat areas, descriptions of maintenance needs per channel, invasive species occurrences and abundance, implemented maintenance tasks, evidence of regulatory reporting requirements, and other relevant information. This database will also contain pertinent information such as reach assessment sheets, aerial photographs of project areas, spatial analysis, and habitat assessment sheets.

The maintenance season will conclude with an annual report that will be developed and submitted to the appropriate regulatory agencies. The annual report will describe the year's completed maintenance activities, where work occurred, restoration activities accomplished, any updates on on-going mitigation activities undertaken during previous years, and other relevant information as warranted. This will also serve as an opportunity to report on the effectiveness of maintenance and mitigation activities, specific conditions of project areas, and recommendations or suggestions to improve on future project endeavors. Following the submittal of the annual maintenance report, regulatory agency representatives will be invited to a review meeting to discuss the events, maintenance activities, and lessons learned over the past work cycle.

The CMP may also be updated and amended (as necessary) at the conclusion of the annual work cycle. These meetings and data updates help adaptively manage the CMP and improve its effectiveness.

The Citywide Creeks Maintenance Plan will be administered over a five-year term. Towards the end of the five-year cycle the CMP will be evaluated and updated to ensure relevancy and efficacy of approach. As need be, the CMP will be modified as conditions change and/or as environmental regulations evolve.

The Manual establishes a framework that provides regulatory oversight and guidance as it relates to location, extent and implementation of maintenance activities, and outlines best management practices. The Manual encourages a balanced approach that recognizes the functional flood conveyance of creeks as well as the inherent value as natural habitat.

2.5. Stream Characterizations

The following discussion provides a characterization of the stream segments that are proposed to be included under the CMP.

2.5.1. Corona Creek (Reach 1-3)

All of Corona Creek's three reaches feature gradual banks with narrow, shallow channels and are generally accessible.

Each of the Corona Creek Reaches require vegetation and trash removal from the upper and lower banks, and sediment management in channels, culverts, and pilings. Reaches 2 and 3 have stream channels that are maintained by the SCWA.

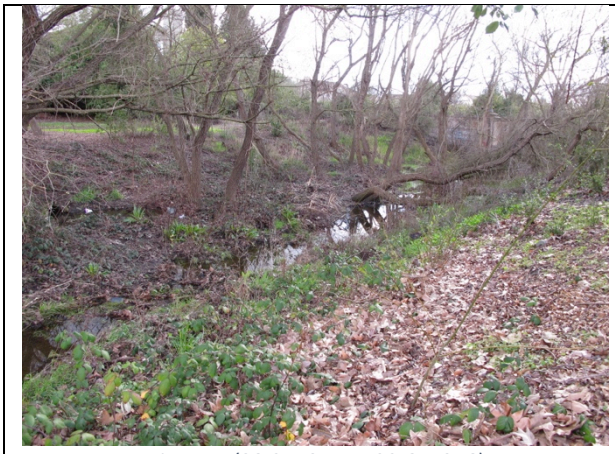


Figure 4 (38.271944, -122.645946)

Corona Reach 1, south of Riesling Road features a pedestrian trail on the west, with a pedestrian bridge crossing. Vegetation is concentrated in the creek channel and consists of shrubs, oaks and a variety of ornamental species. Reach 1 periodically experiences sediment build up within the channel and around bridge pilings that may need removal will both hand tools and heavy equipment.

Figure 5 (38.271422, -122.646386)

Corona Reach 2 is characterized generally by riparian habitat with moderate vegetation on banks and willows in the channel. Reach 2 features a narrower strip of riparian habitat and vegetation becomes increasingly more sparse farther south of Ely Road. SCWA maintains the hydraulic capacity along this segment including all maintenance within the low flow channel. Periodic vegetation, trash, and sediment removal is proposal along the stream channel and lower and upper banks.

Figure 6 (38.264515, -122.653993)

Corona Reach 3 consists of an L-Shaped segment with a narrow channel between residential development on either side, which transitions to an engineered channel on the portion alongside Highway 101, with top of bank dominated by invasive grass and roadside weeds. Periodic vegetation, trash, and sediment removal is proposal along lower and upper banks.

2.5.2. Corona Road Channel

Figure 7 (38.267377, -122.656435)

The **Corona Road Channel** (**Reach 1**) extends along the western edge of Corona Road from North of McDowell Boulevard north to the railroad corridor. The channel features gradual banks with a wide channel. The Channel exhibits minimal vegetative cover on the east bank and more moderate vegetative coverage in the channel. Habitat on site is comprised primarily of low shrubs with a few isolated oaks on the top of bank. The site is readily accessible from the adjacent right of way. This is an engineered channel with characteristics of a roadside ditch. Sediment vegetation and trash removal is required. This reach is periodically mowed for vegetation control.

2.5.3. Capri Creek (Reach 1-2)

Capri creek is a linear trapezoidal earthen channel that runs between residential subdivisions south of Sonoma Mountain Parkway before entering a 230-foot concrete culvert at N. McDowell Boulevard. The channel width extends approximately 5 feet across on average and varies from 4 to 5 feet in depth at the lowest bank. The channel width from top of bank extends approximately 40 to 60 feet across. Maria Drive separates Reach 1 from Reach 2.

The Capri Creek corridor has been manipulated and exhibits pockets of invasive and non-native plant species. Tops of bank are regularly maintained and mowed to control for overgrowth and fire suppression. Both reaches have stream channels that are currently maintained by the SCWA. Sediment, trash and vegetation removal is proposed by the City.

 *Figure 8 (38.263679, -122.641028)*	**Capri Creek Reach 1**, north of Maria Drive, consists of a semi-modified channel with sporadic canopy cover with minimal vegetation, and overgrown tules. Maintenance activities require sediment removal from in channel, and vegetation and trash removal from upper bank.
 *Figure 9 (38.262457, -122.641554)*	**Capri Creek Reach 2**, extends south of Maria Drive and north of N. McDowell Blvd. lacks mature trees and has minimal vegetation. Maintenance activities require sediment removal from in channel, and vegetation and trash removal from upper bank.

2.5.4. Lynch Creek (Reaches 1-4)

Lynch Creek is located in the central portion of Petaluma and provides drainage through the Rooster Run Golf Course and Prince Park. It is designated critical habitat for the Central California Coast Steelhead DPS.

The riparian area along Lynch Creek from the Urban Growth Boundary (UGB) downstream to approximately midway in Luchessi Park (Reaches 1, 2, and 3) exhibits gullied land consisting of gentle to steep sloping rounded hills that have been subject to degradation as result of gullying, which occurs when excess runoff has cut into natural water courses on the hillsides.

Lynch Creek and its riparian buffer is considered high to medium quality in the upper reaches (Reach 1 and 2). From Luchessi Park downstream (Reaches 3 and 4), the riparian buffer deteriorates to low to medium quality since areas have been manipulated or impacted by human disturbance. The lower reaches also exhibit a greater presence of non-native plant species, decreased diversity and a high degree of bank erosion.

Minor sediment buildup has occurred near bridge foundations along each of the Lynch Creek Reaches. Routine limb trimming, trash and vegetation removal, and culvert clearing is proposed in these Reaches. The Lynch Creek Reaches also contain fallen trees that are obstructing flows and require trimming or removal. Following instances of strong storms or heavy wind, fallen trees and debris may require removal as needed.

Figure 10 (38.261694, -122.621936)

Lynch Creek Reach 1 extends from city limits at Rooster Run Golf Course south to Cricket Court. The northern portion of this reach exhibits erosion, incision, and presence of non-native plant species and transitions to a wide riparian corridor with mature trees, thick canopy cover and dense vegetation. High flows regularly pass through this reach as evidenced by the presence of debris in trees, exposed tree roots, and periodic bank erosion.

Figure 11 (38.260052, -122.626067)

Lynch Creek Reach 2 extends from Sonoma Mountain Parkway to just north of Maria Drive (Flannigan Way). Where the creek flows through a box culvert under Sonoma Mountain Parkway the riparian corridor is wide, but lacks protection. A portion of the reach has undergone stream bank stabilization. Downstream the creek exhibits denuded understory resultant of human disturbance. The eastern top of bank in this reach is maintained by a private landowner, the Creekview Commons Homeowners Association. The western bank, outside top of bank, features a paved pedestrian path along the entire segment. This reach is defined by a meandering channel that is abutted by residential land uses on both sides. It is partially enclosed by fencing with occasional access points and exhibits diverse over and understory.

Figure 12 (38.253009, -122.631721)

Lynch Reach 3 extends from Maria Drive to N. McDowell Boulevard and exhibits a narrow straight channel configuration. The character of the vegetation becomes less diverse with a greater presence of invasive species and an increased level of human disturbance. Downstream from the box culvert at crossing at Maria Drive, Lynch Creek flows between Luchessi Park and medical offices/ hospital development. Adjacent to Luchessi Park the creek has been subject to a high degree of human disturbance such that the riparian corridor is narrow and outside the top of bank is denuded of native trees and understory vegetation.

Figure 13 (38.252327, -122.632697)

Lynch Creek Reach 4, between North McDowell Boulevard and Highway 101 consists of a narrow, straight channel between medical office and high-density residential (senior housing) development. Reach 4 features mature trees with an understory dominated by English Ivy. Bank erosion and indicators of flashy flows are visible throughout this reach.

2.5.5. Washington Creek (Reaches 1-2)

The Washington Creek stream channel meanders through County land before entering City limits and passing through the eastern portion of the Rooster Run Golf Club. From there, the creek becomes well defined as it passes through residential subdivisions. The riparian corridor contains moderate to low vegetative structure. The Creek's vegetative cover features an upper reach dominated by willow scrub along the channel and ruderal vegetation throughout the upper banks. Blackberry dominates the in-channel vegetation. Culvert outfalls within the area are maintained by the SCWA.

The upper bank (outside top of bank) is routinely mowed for vegetation maintenance and fire control purposes. The CMP proposes trash and vegetation removal and minor limb trimming.

Figure 14 (38.262128, -122.615287)

Washington Creek Reach 1 begins at city limits and runs parallel to East Washington Street through Rooster Run Golf Club and extends to a covered culvert on the border of Prince Park. Reach 1 requires sediment removal around storm drain outfalls, pilings, and within the channel. Vegetation and trash removal is also proposed.

Figure 15 (38.259129, -122.619697)

Washington Creek Reach 2 extends from Prince Park Bridge to Ely Boulevard South. The reach features a gradual bank and generally large and shallow channel which becomes increasingly narrow and deep as it extends towards Ely Boulevard. Oaks, alders, and cottonwoods have been planted along the reach that will eventually provide stable canopy cover but will require occasional trimming. The channel bottom of Reach 2 is maintained by the SCWA.

2.5.6. East Washington Creek (Reach 1)

East Washington Creek and its riparian corridor are characterized with low quality vegetative structure. The Creek has been subject to a high degree of human disturbance to such an extent that much of the creek exhibits primarily non-native plant species.

Vegetation and trash removal and limb trimming along the upper and lower banks is proposed. The SCWA maintains the stream channel for the length of Reach 1.

Figure 16 (38.252406, -122.610577)

East Washington Creek (**Reach 1**) is contained in a double pipe system under Rooster Run Golf Course and the Petaluma Municipal Airport inside of the UGB. The Creek daylights into a wide, unprotected corridor with residential development on both sides between the airport and S. Ely Boulevard. Reach 1 contains predominantly non-native herbaceous understory vegetation with a few scattered mature trees. The creek enters into a culvert where it passes beneath Garfield Drive. There is a pedestrian path along the eastern edge of the creek that ties into the Wiseman Park trail system. A pedestrian footbridge immediately south of the airport provides access over the creek and connectivity to the trail system at the nearby Wiseman Park.

2.5.7. Channel Near Airport (Reach 1-2)

This channel is comprised of an unnamed drainage feature that carries excess runoff from the upstream Rooster Run Golf Course in a southeastern direction. This drainage channel does not support a riparian corridor and is characterized by a narrow width, shallow depth and ephemeral flows (part of the year it is dry). The CMP proposes sediment, vegetation clearing (mowing) and trash removal along banks.

Figure 17 (38.251251, -122.598219)

Channel Near Airport Reach 1 occupies a short stretch within Wiseman Park flanked on each side by baseball fields. A footpath has cut through the channel stream on the north side near a fence separating the park from Petaluma Airport property, where the land beyond drains into the channel by way of three small storm outlets. The Reach exhibits heavily eroded banks, a modified unprotected channel, trees, and little native vegetation. Flows drain south towards two medium sized covered storm inlets that will require periodic maintenance. The channel underground beneath a residential subdivision before reemerging near Arroyo Park roughly one block to the south.

Figure 18 (38.249295, -122.600003)

Channel Near Airport Reach 2 is comprised of a shallow and narrow drainage ditch that daylights near Arroyo Park, just south of Garfield Drive. A community playground and lawn area is located to the east, with open space to the west. The drainage lacks an established corridor, features limited habitat value and is dominated by grass adjacent to and along top of bank. Reach 2 warrants sediment, trash, and debris removal.

2.5.8. Adobe Creek (Reaches 1-2) and Adobe Creek Bridges

Upstream portions of Adobe Creek, outside of the UGB and under Casa Grande Road, is characterized as degraded and lacks adequate bank stabilization. Land use in this area is generally devoted to agricultural, rural residential and City and County open space. Upon entering the City's UGB Adobe Creek meanders through open space and the Adobe Creek Golf and Country Club. At this point, the Adobe Creek exhibits limited native understory with some native overstory vegetation. A segment of Adobe Creek south of Ely Boulevard (proximate to the Casa Grande High School) has undergone enhancement including the placement of several notched weirs and a number of large boulders; both the overstory and understory vegetation is primarily native.

Figure 19 (38.241905, -122.594950)

Adobe Creek Reach 1 extends south of Ely Boulevard to the southern extent of Spyglass Road. Due to the restoration effort this reach exhibits a healthy riparian corridor comprised of overstory canopy and a diverse understory. The CMP proposes trash removal, relocating or removing a currently fallen tree (and future downed branches, and trunks) and vegetation clearing.

Figure 20 (38.228155, -122.602504)

Adobe Creek Reach 2 is comprised of the segment of Adobe Creek that extends from its confluence with Shollenberger Creek to the Petaluma River. Schollenberger Park provides pedestrian pathway along Adobe Creek and the Petaluma River that surround the City's dredge spoils disposal site and contains salt marsh habitat. Here Adobe Creek transitions from brackish emergent marsh to tidally influenced salt marsh habitats.

Adobe Creek is identified as critical habitat for Steelhead-Central Coast Evolutionary Significant Unit (ESU). Downstream from the weir structure the creek flows adjacent to commercial development and Schollenberger Park. Native northwestern pond turtles and non-native red-eared slider turtles were observed in one of the sloughs in Shollenberger Park. Adobe Creek downstream of Reach 1 is maintained by the SCWA. This segment transitions from a riparian corridor abutting residential land uses on both sides to commercial development south of Lakeville Highway. South of the commercial land uses, Adobe Creek flows along the western edge of Shollenberger Park.

Figure 21 (38.250296, -122.589804)

Figure 22 (38.252588, -122.587497)

Adobe Creek Bridges are comprised of culverts to accommodate undercrossings. Sediment and vegetation accumulation around these culverts will be cleared out and removed to restore function. Minor sediment and removal, as well as some tree and brush trimming is proposed.

There are two bridges located towards the upper portion of Adobe Creek, outside of the City's UGB, that are proposed for maintenance under the CMP. These are located where Adobe Creek crosses beneath Casa Grande Road.

Vegetation, trash, and limb removal is proposed along both reaches of Adobe Creek and at the Bridge Crossings.

2.5.9. Shollenberger Park Creek

Shollenberger Park is comprised of 165 acres, which, together with Alman Marsh and Ellis Creek, is referred to as the Petaluma Wetlands. This area is renowned for its bird watching opportunities and, as such, serves as an important habitat for many special status species including the salt marsh harvest mouse.

The Shollenberger Creek Reach is not ephemeral and therefor may require dewatering before vegetation and sediment may be cleared around culvert pipes and within the channel. Trash and vegetation removal along creek banks is also proposed.

Figure 23 (38.228080, -122.599087)

Shollenberger Creek (**Reach 1**) flows along the northern and eastern border of the Park where it joins with Reach 2 of Adobe Creek. Reach 1 of Shollenberger Creek is bordered by commercial development to the north and a footpath separating the reach from Shollenberger Park to the south. The channel exhibits dense vegetation and sediment accumulation that inhibit flows, and may result in flood events if it is not properly maintained. Trees along the northern edges require periodic trimming to avoid blocking flows and heavy concentrations of grasses outside top of bank are proposed for periodic mowing along this Reach.

2.5.10. Marina Channel (Reaches 1-2)

The Petaluma Marina provides private docking facilities and public launching into the Petaluma River. The Marina Channel is comprised of two reaches that encompass the Marina and connect to the Petaluma River. Both Marina Channel Reaches are tidally influences and contain brackish marsh habitat.

Both Reaches are tidal and will therefore require dewatering before in stream maintenance may occur. Upper and lower channels banks are proposed for tree and brush trimming in addition to minor vegetation and trash removal.

Figure 24 (38.230237, -122.611911)

Marina Channel Reach 1 is adjacent to Marina Avenue, east of the Petaluma Marina, and follows a pedestrian trail through Alman Park before empting into the Petaluma River at the mouth of the Marina. A parking area for the Marina is separated by a line of trees lies west of the channel and the Alman Marsh segment of Petaluma's public wetland is to the east. Several footbridges along a scenic pathway through the wetlands cross over Reach 1. Vegetation and trash removal by hand is proposed in the upper half of bank.

Figure 25 (38.230168, -122.614521)

Marina Channel Reach 2 is located to the west of the Petaluma Marina, which is separated by a narrow strip of land that contains a public footpath. Brackish marsh habitat is located along the fringes of the channel. Sediment removal from culverts and drains outlets and vegetation removal on upper half of bank and trash removal is proposed.

2.5.11. Lakeville Channel

The Lakeville Channel is located in an urbanized region of Petaluma. The entire reach is bordered to the east by the Discount Frame Store, and bordered to the west by an industrial storage yard with a ~10' tall solid metal fence abutting the top of bank on both sides. The riparian corridor is very narrow, less than 25 feet, with no buffer zone between the bank tops and surrounding businesses. There is almost no canopy coverage, with scattered willows along the west bank. In late summer 2015, the channel was cleared of vegetation and sediment was removed from in and around culvert pipes. Ongoing soil, debris, and vegetation clearing in channel, and around the culvert outfall is proposed as part of the CMP.

2.5.12. Thompson Creek

Thompson Creek meanders into the Thompson Creek Reservoir on a hillside southwest of the City of Petaluma. The reservoir was constructed to serve as a detention pond for peak storm flows as part of the Westridge Residential Project. The Westridge Residential Project's EIR was certified by the City of Petaluma on December 12, 1988 through Resolution No. 88-388. The reservoir was designed in consultation with the Department of Fish and Wildlife (formerly Fish and Game) to retain a natural stream and habitat along Thompson Creek. The regular removal of debris and sediment from the reservoir was identified as a long-term term maintenance strategy as part of the Westridge Residential EIR.

The reservoir is controlled by a concrete weir at the downstream end in order to reduce downstream flooding impacts. The portion of Thompson Creek inside of the UGB consists of mainly herbaceous native and non-native vegetation. The reservoir area transitions stormwater through the weir, narrows, and meanders through residential development.

South of Lavio Drive, the creek enters a pipe system. Within the confined area near the pipe, the creek is incised and lacks sufficient diverse vegetative structure needed to stabilize the bank. The pipe outfall is located to the north of Westridge Drive, where Thompson Creek meanders through residential development in a wide unprotected corridor that contains enhancement plantings. This area features a diverse mix of native vegetation.

Downstream the creek flows through the Sunnyslope Road box culvert and narrows as it is constrained by residential developed on all sides and is dominated by non-natives species. These characteristics are maintained from Sunnyslope road until the pipe empties into a

piped system at G Street. It remains piped until it reaches its outfall at F and 1st Streets. There are numerous areas within this reach where the creek is dominated by English ivy and Eucalyptus and where the channel is severely incised and exposed.

Thompson Creek and its riparian buffer are considered to have high quality habitat within the upper reach, to Sunnyslope Road based on the robust mix of native vegetation. The reaches located below Sunnyslope Road are considered low quality in that they contain minimal vegetative structure. Further, the creek in the lower reaches is not especially protected from development. The corridor has been continuously impacted by human activities such that non-native invasive species have largely taken over the riparian corridor in that area. In addition, there are numerous areas of bank erosion and channel manipulation within the lower reach. There are no opportunities for flood mitigation below Sunnyslope Road. The area would, however, benefit from enhancement and bank stabilization efforts. Opportunities for restoration and stabilization will be reviewed during the annual assessment and included in the annual work plan as appropriate.

Figure 26 (38.212121, -122.632357)

Thompson Creek Reach 1 is comprised of the segment between Photonia Place where the detention basin begins, to Westridge Drive, where the piped channel daylights. Sediment removal from channel, culvert, drains and vegetation and trash removal is proposed. The CMP proposed routine maintenance along Reach 1 of Thompson Creek including vegetation and sediment removal around culverts within the channel. Trash and vegetation removal is also proposed along upper and lower parts of its bank.

2.5.13. Kelly Creek

Kelly Creek is surrounded by low density housing in the central-southern portion of Petaluma. Kelly Creek supports an oak/bay riparian woodland consisting of coast live oak (*Quercus agrifolia*) and California bay (*Umbellularia californica*) with an understory of grassland and scattered shrubs. There are rock pools with sticks and branches in upper reaches of Kelly Creek that may provide suitable breeding habitat and the springs, seeps, and intermittent drainages may provide dispersal habitat for the endangered California red-legged frog.

Figure 27 (38.221808, -122.640696)

The City is proposing to maintain a small privately owned segment (**Reach 1) of Kelly Creek** adjacent to Sunny Slope Road, near the intersection with Sunny Slope Avenue. Reach 1 is located upstream of Sunnyslope Avenue and runs on the western edge of Sunnyslope Road for about 400 feet. The area exhibits extremely dense vegetation and a nearly full canopy cover. Culverts within this reach of Kelly Creek require regular maintenance including clearing out downed debris, removing accumulated sediment and trash. The City proposes minor sediment and vegetation removal around culverts within Reach 1 of Kelly Creek's Channel.

2.5.14. Petaluma River Downtown (Reaches 1-2)

The Petaluma River is the primary waterway to which all creeks and tributaries ultimately drain. The head waters of the Petaluma River begin at the confluence of Willowbrook and Petaluma Creeks and convey flows in a southeasterly direction where it empties into San Pablo Bay. A weir structure and floodwall are located near the confluence with Lynch Creek. The River becomes increasingly incised as it approaches and flows through the downtown area. Downstream of downtown the river broadens and gradually becomes more connected with adjacent marshland. The Petaluma River is tidal in the downstream segments and exhibits tidal influenced up to Corona Creek. Although the character of the Petaluma River varies as it flows from north to south, the downtown segment is defined by surrounding urban development and a narrow and impacted corridor.

The Petaluma River is identified as critical habitat for both Central California Coast Steelhead and the Southern Green Sturgeon. Central Valley Fall /Late fall-run Chinook Salmon and longfin smelt may also be present in the Petaluma River. Several sensitive bird species have the potential of occurring along these downtown reaches as well, including great egret (*Ardea alba*), California Brown Pelican (*Pelecanus occidentalis californicus*), California Clapper rail (*Rallus longirostris obsoletus*), and California black rail (*Laterallus jamaicensis conturniculus*). Sacramento splittail (*Pogonichthys macrolepidotus*) also has occurrence probability near the downtown reaches.

Figure 28 (38.236713, -122.640382)

Petaluma River Reach 1 spans from Lakeville Street Bridge to the E. Washington Street Bridge. Upstream of Reach 1, the Petaluma River is maintained by the SCWA. Reach 1 of the Petaluma River features ruderal habitat and ornamental species on top of bank, and a fringe of coastal brackish marsh and open waters of the Petaluma River. Sediment removal, bridge piling repair/painting may be necessary. Moderate trash and vegetation removal by both hand tools and heavy equipment is also proposed.

Figure 29 (38.235255, -122.639921)

Petaluma River Reach 2 is located south of E. Washington Bridge to the pedestrian bridge at Western Ave. Sediemnt, trash and vegetation removal by both hand tools and heavy equipment is proposed.

2.5.15. Petaluma River at Corona Bridge

The Petaluma River at Corona Bridge is a channel segment that is maintained by the SCWA. This reach features riparian habitat and is heavily overgrown along the banks and within the channel. The vegetative cover is largely dominated by blackberry and willow.

Sediment removal and vegetation trimming is needed at the culvert where Petaluma River passes beneath Corona Road. Although the stream channel is currently maintained by the SCWA, the City would like to acquire authorization for routine maintenance activities. This will be accomplished through a memorandum of understanding between the City of Petaluma Public Works Department and the SCWA.

2.6 Current City Projects (Not Part of CMP)

The following provides a description of recent flood control improvement activities that have received approval or are in various stages of planning. These projects are considered separate and independent from the Citywide Creeks Maintenance Plan and have been or will be reviewed as individual projects.

2.6.1 Capri Creek Terracing

The City of Petaluma is currently in the process of preparing the design for the Capri Creek Flood Reduction and Habitat Enhancement Project. On May 19, 2014 an MND[5] was adopted by the City Council that analyzed the impacts associated with developing a flood terrace along Reach 2 of Capri Creek. The City continues to coordinate with the regulatory agencies to secure permits for the flood terrace.

This project is located in the section of Capri Creek between Maria Drive and North McDowell Boulevard, within a portion of Reach 2 of the CMP, and includes overlapping objectives such as increasing riparian resiliency and alleviation of flood levels to adjacent communities. Because the project requires different major elements, such as channel realignment, bio-swale construction, and extensive revegetation, it is out of the scope of this maintenance agreement. However, routine maintenance activities will still occur within the area described within this document in order to maintain the facilities produced by the Capri Creek Flood Reduction and Habitat Enhancement Project.

[5] "*Capri Creek - Revised Initial Study Document supporting the approval of a Mitigated Negative Declaration, including a Hydraulic Evaluation Report*," prepared by the City of Petaluma, April 2014.

2.6.2. Denman Reach Phase 3 (Terracing)

A Terracing project is currently underway within the lower Denman Reach portion of the Petaluma River. The project consists of flood protection, restoration and enhancement activities. The environmental review for this project was approved by City Council (Resolution No. 2012-138 N.C.S) on September 10, 2012[6]. City staff has been working in close coordination with regulatory agencies in order to secure necessary permits and approvals. Ongoing maintenance of the Denman Reach Phase 3 improvements are covered under the project specific review and permits. The Citywide Creeks Maintenance Plan does not include activities within the Denman Reach portions of the Petaluma River.

[6] "*Denman Reach Phase 3 – Revised Initial Study*," prepared by the City of Petaluma, 2012.

3. Environmental Setting

The following discussion provides the context of the Petaluma waterways including the geographic setting, climate and precipitation conditions, water quality, soil, and vegetation communities. The City's approach to maintenance of waterways is informed an understanding of the environmental setting.

3.1. Geographic Setting

The Petaluma River Watershed is located in southern Sonoma County and northeastern Marin County. The watershed spans approximately 19 miles long and 13 miles wide and encompasses a 146 square mile basin that drains into the Petaluma River. The highest point of elevation in the watershed is Sonoma Mountain at nearly 2,500 feet above sea level, while the lowest point is at sea level in the northwestern portion of San Pablo Bay. Penngrove, parts of Novato, and the city of Petaluma are situated within the watershed. The majority of land uses in the Petaluma River watershed consist of agriculture, rural residential, and the city of Petaluma urban center. Mountainous and hilly upland areas account for more than half of the total land type, followed by one-third characterized as valley and the rest as salt marshes. The Petaluma Marsh, largest of the remaining tidal brackish marshlands in California, contains the lower 12 miles of Petaluma River flow[7].

The Petaluma River begins at the confluence of Willow Brook and Petaluma Creeks where it flows southeasterly for approximately 19 miles. The area immediately downstream of the River's confluence is characterized by agricultural lands, which transitions into more urbanized land uses consisting of residential, commercial, and industrial development. The tidal influence transitions to non-tidally affected flows within the Corona Reach segment of the Petaluma River[8].

Tributaries are defined as rivers, streams, channels, or other flowing bodies of water that eventually empty into a larger river or lake. All reaches outlined in the CMP are tributary to the Petaluma River. These streams are seasonal in the upper channel reaches, though several reaches in the flat valley landscape will flow year round in areas near Downtown Petaluma, where freshwater mixes with tidal salt water from the bay.

[7] Sonoma County Resource Conservation District (SCRCD).
[8] City of Petaluma General Plan 2025.

The Petaluma River becomes increasingly incised as it flows past the confluences of Corona and Capri Creeks towards downtown Petaluma. A weir structure and floodwall are located just upstream of the Lynch Creek confluence. The waterway incision decreases downstream from the weir structure where the riparian corridor has been manipulated as a result of a floodwall. The Petaluma River becomes more confined as it flows through Downtown Petaluma as the bordering land becomes increasingly characterized by river dependent commercial and industrial land uses. Immediately downstream from the Turning Basin the River increasingly broadens and gradually becomes more connected to the Marsh areas up and downstream from the confluence with Adobe Creek and eventually discharges into the San Pablo Bay.

The City of Petaluma's surface water system is comprised of ditches, natural and improved (mechanized) channels, pipes, and culverts in addition to a number of drainage areas located outside of and within the City limits. All drainage features eventually discharge into the Petaluma River, which flows from the northwest to the southeast and, as previously mentioned, out to San Pablo Bay.

There are a number of creeks within the jurisdiction of the City including Adobe Creek, Capri Creek, Corona Creek, Kelly Creek, Lynch Creek, Thompson Creek, and Washington Creek. The balance of flows within the City's drainage areas are seasonal in nature and are periodically dry or exhibit minimal flows during the dry season. There are also a number of unnamed channels throughout the City that are maintained either by the City of Petaluma, Sonoma County Water Agency, or private property owners. During the rainy season from October to April the surface water drainage system is instrumental in conveying stormwater runoff and providing flood protection.

3.2. Environmental Conditions

3.2.1. Climate

The City of Petaluma experiences a Mediterranean climate with warm, dry summers and cool, wet winters. The region's diverse topography often influences local climates, resulting in wide variations of climatic conditions separated by only a few miles. Petaluma is found within Petaluma Valley, just south of Cotati Valley, and is defined as a wide basin that stretches from Santa Rosa to San Pablo Bay. To the valley's east is the Sonoma Mountains and to the west is a series of low hills and a relatively flat area known as the Estero Lowlands. A low-level gap in the coastal hills found between the Estero Lowlands and San Pablo Bay, known as the Petaluma Gap, acts as a significant source of marine airflow.

As marine air moves into the Petaluma Gap it splits into northward and southward currents, resulting in a prevailing northwest wind direction. The Petaluma Gap, coupled with proximity to San Pablo Bay conveys a significant coastal influence to the area, causing cooler temperatures near the water and early morning fog cover. The months of November through April characterize the region's wet season, when over 90 percent of the 26.6 inches of annual average rainfall is deposited. Yearly rainfall averages vary from about 20 inches at the mouth of the Petaluma River to as much as 50 inches in the surrounding areas of higher elevation. Annual temperatures fluctuate from a maximum of 70.8° F to a 45.7° F minimum, with an average annual temperature of 58.3° F[9].

3.2.2. Water Quality

The Petaluma River watershed drains roughly 146 square miles into San Pablo Bay. The river is tidally influenced and is used for navigation and recreational vessels. The Petaluma river is listed as a 2002 303 (d) impaired waterway. Stormwater runoff accumulates pollutants, sediment, trash and other compounds that impact water quality. Nonpoint Source inputs from agriculture, rural land use, and urban use throughout the basin have had considerable impact on the River's water quality. Elevated nutrient contents from vineyard fertilizers, metals from urban runoff, and pathogen loads from livestock operations contribute to the impaired status of the Petaluma River.

The Petaluma River was designated as "water quality limited" segment of the Region 2 Basin in 1975 due to low dissolved oxygen concentrations. In 1982 the Regional Water Quality Control Board (RWQCB) observed dissolved oxygen and nutrient problems and documented concerns related to fecal coliform levels[10]. Tidal action and insufficient fresh water inflow during the dry summer and fall months (May to November) can prevent the Petaluma River from cycling water, resulting in higher water temperatures and salinity while decreasing oxygen content. This may create particularly harmful environments for aquatic life and pungent odors due to anaerobic decomposition. For this reason, effluent entering into the Petaluma River is closely monitored by the State Water Resources Control Board (SWRCB) during these months especially during periods of low rainfall[11].

[9] Western Regional Climate Center 2012.

[10] "*Amended Water Quality Control Plan for the San Francisco Basin*," prepared by the San Francisco Bay Regional Water Quality Control Board, 1995.

[11] "*Petaluma Watershed Enhancement Plan*," prepared by The Southern Sonoma County Resource Conservation District, 1999.

The State Water Resources Control Board adopted the most recent amendments to the Water Quality Control Plan for the San Francisco Bay Basin, known as the Basin Plan, in March 2015. Chapter 7 of the Basin Plan addresses Total Maximum Daily Loads (TMDLs) for individual water bodies meeting 303(d) list criteria that include identifying sources of pollutants, defining how much of a pollutant a water body can tolerate while still meeting water quality standards, and specifying actions that improve water quality. The ultimate objective of developing TMDLs is to determine the loading capacity of a water body and to allocate that load among identified pollutant sources so that control actions can be implemented and water quality standards achieved.

TMDLs for nutrients and pathogens for the Petaluma River have not yet been established, but are underdevelopment as part of the ongoing watershed management effort and are expected to be released by 2019. The RWQCB is conducting research to inform the TMDLs for the Petaluma River including the *Petaluma River Impairment Assessment for Nutrients, Sediment/Siltation, and Pathogens*, prepared by Aquatic Science Center, March 31, 2010[12]. Additional monitoring and assessment will be conducted as needed.

Pursuant to the San Francisco Bay Regional Water Quality Control Board's 2010 303(d) listing, and the Environmental Protection Agency Water Body Quality Assessment Report the Petaluma River is cited as impaired due to the following pollutants: Diazinon, Nickel, Nutrients, Pathogens, Sediment, and Trash. As such, TMDLs will be developed for each of these[13]. In an effort to improve water quality, the City implements the National Pollutant Discharge Elimination System. The Floodplain Management Plan 2015 reduces pollutants in stormwater discharges to the maximum extent practicable and by prohibiting non-stormwater discharges to the city's municipal separate storm sewer system (MS4)[14].

3.2.3. Soils

Soils along Petaluma River are of the Clear Lake soil series which is defined by the presence of clays and clay loams formed under poorly drained conditions. The Clear Lake soil series occurs on floodplains and is underlain by alluvium from basic and sedimentary rock[15]. Deposits of alluvium occur prior to the Petaluma River's confluence with Lynch Creek and are found on the eastern area downstream of McNear Peninsula. Alluvial land is generally characterized by sandy and gravelly deposits along streams.

[12] "*Petaluma River Impairment Assessment for Nutrients, Sediment/Siltation, and Pathogens Part 1: Existing Information and TMDL Comparison*," prepared by The Aquatic Science Center for The San Francisco Bay Regional Water Quality Control Board, 2010.
[13] "*Final California 2010 Integrated Report (303(d)) List/305(b) Report)*," prepared by San Francisco Bay Regional Water Quality Control Board, 2013.
[14] "*City of Petaluma Floodplain Management Plan*," prepared by the City of Petaluma, 2015.
[15] City of Petaluma 2025 General Plan.

The area downstream of the confluence with Lynch Creek is dominated by the Yolo soil series, consisting of well drained loams, which occur on floodplains and alluvial fans. These soils are generally underlain by recent alluvium generated from sandstone and shale. Further downstream, past the Highway 101 crossing of the Petaluma River, is Goulding and Reyes soil series and areas of tidal marsh. The Goulding series exhibits well-drained clay loams, whereas the soil adjacent to the Petaluma River contains 10 to 25 percent cobblestones and stones. The Goulding series is exhibited on slopes of approximately 5 to 15 percent. The Reyes series is typically found in salt marshes and is comprised of poorly drained silty clays that formed in mixed bay and stream alluvium. Tributaries generally exhibit late Holocene to modern (<150 years) stream channel deposits of loose alluvial sand, gravel, and silt. The areas immediately surrounding streams usually contain undifferentiated Holocene alluvium. Franciscan greywacke, consisting of thick-bedded greywacke with minor interbedded shale, is found beyond the southern City limits and is interspersed with landslide deposits[16]. Tidal marsh consists of nearly level marshlands that are partially or continuously inundated.

3.2.4. Plant Communities

Relative to historic conditions, limited native plant communities in and around the Petaluma River and its tributaries remain. There are limited areas of natural riparian woodland, often featuring oaks and willows. Oak savannas, native grasslands, seasonal wetlands and fresh and saltwater marshes have been greatly reduced.

The majority of the Petaluma River and its tributaries are considered medium quality habitat; in that they exhibit favorable vegetative structure and are partially separated from human development. The Petaluma River Corridor, riparian areas in particular, exhibit invasive, non-native plant species (i.e. eucalyptus and poplar trees, English ivy, periwinkle, Himalayan blackberry, amongst others), which are indicative of human disturbance. There remains abundant opportunity for riparian enhancement particularly in those areas that exhibit a great deal of bank erosion/incision and are dominated by invasive, non-native plant species.

In general, plant communities typically associated with riverine ecosystems in Petaluma include riparian habitat with limited seasonal wetland components. Typical tree species found in and around Petaluma River and its tributaries include coast live oak (*Quercus agrifolia*), willow (*Salix lasiandra, S. lasiolepis*, and *S. hindsiana*), box elder *(Aser negundo spp. Californium*), Oregon ash (*Fraxinus latifolia*) and black walnut (*juglans hindsii*).

[16] "*Geologic Map of the Petaluma 7.5' Quadrangle*" prepared by the California Geological Survey, 2002.

Non-native plant species including Himalaya blackberry (*Rubus*), sweet fennel (*Foeniculum*), and cocklebur (*Xanthium*) have become increasingly dominant in certain locations.

Natural vegetation within the City of Petaluma is fragmented and confined to designated open space lands and swaths of remaining riparian corridors along City creeks and tributaries. The lack of a substantial variety of native tree and shrub species within the riparian zone (which would normally provide seasonal and varied food sources, cover, and shelter) also diminishes the overall habitat value in many of the remnant riparian areas.

The habitat in and around Petaluma's Rivers and Creeks varies, contain few areas exhibiting high habitat quality while most others, based on vegetative structure, amount of non-native and invasive species, and size of buffer etc., may be categorized as having medium or low quality habitat structure.

Generally, high quality habitat is defined by diversity, dense riparian vegetation and native species; whereas medium quality habitat exhibit good vegetative structure, but non-native plant species are present. Low quality habitat lacks natural vegetative structure and has been inadvertently or deliberately manipulated. Low quality habitat is often dominated by invasive species. Both low and moderate quality habitats hold potential to evolve into high quality sites through appropriate remediation activities that may include invasive species removal, planting of native vegetation, and maintenance/monitoring.

3.2.5. Aquatic Habitat

Aquatic resources include the Petaluma River and its tributaries, vernal pools/seasonal wetlands, fresh emergent wetlands, northern coastal salt marshes, coastal brackish marshes, and freshwater marshes. Riparian habitats are found in proximity to these aquatic areas, and act as a transition from the upland communities, providing habitat and cover for many aquatic and semi-aquatic species. The City's General Plan seeks to protect aquatic and riparian habitats as they support special status species and provide important hydrologic function.

3.2.6. Special Status Species

Sensitive or special status species are those plant and animal species that are designated by Federal or State regulatory agencies as needing protection due to rarity or threats to individuals, populations or habitat. Many special status plant and animal species or their habitat are potentially present along the Petaluma River and associated tributaries. Species that have a probability of occurrence include the following:

- Pallid Bat (SSC)
- Salt Marsh Harvest Mouse (E)
- California Black Rail (T)
- California Ridgeway's rail (E)
- Samuel's Song Sparrow (SSC)
- Salt Marsh Common Yellowthroat (SSC)
- Central California Coastal Steelhead (T)
- Green Sturgen (E)/(SSC)
- Sacramento Splittail (SSC)
- Longfin Smelt (C)/(E)
- Chinook Salmon (SSC)
- Foothill Yellow-Legged Frog (SSC)
- California giant salamander (SSC)
- California Red-Legged Frog (T)
- Western Pond Turtle (SSC)
- Sonoma Alopecurus (CRPR 1B.1)
- Soft bird's-beak (CRPR 1B.2)
- Congested-headed hayfield tarplant (CRPR 1B.2)

The California Native Plant Society (CNPS) has created a California Rare Plant Rank (CRPR) system in order to categorize rarity of native Californian flora. Species listed as 1A or 1B are classified as either no longer being present in California (extirpated or otherwise extinct) or are rare, threatened, or endangered in California, respectively. Plants within these categories therefore meet the definitions of Rare or Endangered under CEQA guidelines §15125; (c) and/or §15380[17].

E = Endangered; T = Threatened; SSC = Species of Special Concern; CRPR = Listed in California Rare Plant Record

3.3. Regulatory Setting

3.3.1. Overview

Policies and regulations that are pertinent to the proposed Creek Maintenance Plan are identified below. The proposed Plan is considered to be consistent and compatible with these policies and regulations.

[17] "Rare Plant Program" - *California Native Plant Society*.

Regulatory Agency	Law/Regulation	Purpose	Permit/ Authorization
U.S. Army Corps of Engineer	Clean Water Act (CWA) Section 404	Regulates placement of dredge and fill materials into water of the U.S.	Regional General Permit
Regional Water Quality Control Board (San Francisco Region)	Clean Water Act Section 401	Regulates placement of materials into water of the U.S./State	401 Water Quality Certification
	Porter-Cologne Water Quality Control Act	Regulates discharge of materials to land and protection of beneficial uses of water of the State.	Waste Discharge Requirements
California Department of Fish and Wildlife	Fish and Game Code Section 1600	Regulates activities that involve modification to river, stream or lake.	Routine Maintenance Agreement
	CA Endangered Species Act	Applies to activities that would result in "Take" of state listed species.	Incidental Take Permit
U.S. Fish and Wildlife Service	Federal Endangered Species Act	Corps must consult with USFWS if listed species may be affected.	Biological Opinion
National Marine Fisheries Service	Federal Endangered Species Act	Corps must consult with NMFS if listed species may be affected.	Biological Opinion

3.3.2. Federal

Federal Endangered Species Act (FESA)

The FESA of 1973 provides legal protection for plant and animal species in danger of extinction, and requires definitions of critical habitat and development of recovery plans for specific species. Section 3 of the FESA defines an endangered species as "any species, including subspecies, in danger of extinction throughout all or a significant portion of its range"; and a threatened species as any species "likely to become endangered within the foreseeable future throughout all or a significant portion of its range." "Federally listed" or "listed" indicates that a species has been designated as endangered or threatened through publication of a final rule in the Federal Register. Endangered and threatened species listed under Section 4 of the FESA receive the full protection.

Proposed endangered and threatened species are those for which a proposed regulation, but not a final rule, has been published in the Federal Register. Proposed species are granted limited protection, while candidate species and species of special concern are afforded no protection under the FESA.

Activities that would result in adverse effects on federally-listed threatened or endangered species are required to consult with, and mitigate through consultation with, the U.S. Fish and Wildlife Service (USFWS). The objective of consultation is to determine whether the project would adversely affect a protected species or its designated critical habitat, and to identify mitigation measures to avoid or minimize impacts to the species. This consultation can be pursuant to either Sections 7 or 10 of the FESA. Section 7 consultation is required when a federal agency is involved in project approval, funding, or permitting. Section 10 consultation is required when no federal agencies are involved with the project.

Section 7 of the FESA requires federal agencies to make a finding on the potential to jeopardize the continued existence of any listed species potentially impacted by all federal actions, including the approval of a public or private action, such as the issuance of a permit pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. Section 9 of the FESA prohibits the take of any member of an endangered species. Take is defined by the FESA as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Applicability to CMP

Some of the waterways within Petaluma's CMP support or have the potential to support endangered species protected under the FESA. Segments of the Petaluma River, Lynch Creek and Adobe Creek are designated critical habitat for steelhead and/or sturgeon, which fall under the regulatory authority of the National Marine Fisheries Service (NMFS).

Migratory Bird Treaty Act (MBTA) of 1918

The MBTA regulates or prohibits the taking, killing, possession of, or harm of migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. It is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). Six families of raptors occurring in North America were included in the amendment: 1) Accipitridae (kites, hawks, and eagles); 2) Cathartidae (New World vultures); 3) Falconidae (falcons and caracaras); 4) Pandionidae (ospreys); 5) Strigidae (typical owls); and 6) Tytonidae (barn owls). All species and subspecies listed protected as amended.

Applicability to CMP

Riparian corridors and mature trees within the City of Petaluma as well as bridges have the potential to support nests of species protected under the MBTA.

Federal Clean Water Act (CWA)

Section 404

The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Section 404 of the CWA regulates activities that result in discharge of dredged or fill material into waters of the United States. The United States Army Corps of Engineers (Corps) is responsible for permitting certain types of activities affecting wetlands and "other waters of the United States." Under Section 404 of the CWA, the Corps has the authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the U.S. The Corps implements the federal policy embodied in Executive Order 11990, which, is intended to result in no net loss of wetland values or acres.

Applicability to Project

Activities under the CMP have the potential to result in limited removal of accumulated sediment within the low flow channel of creeks. Activities requiring removal from waters of the U.S. will be subject to a 404 permit issued by the Corps. The regulatory division permit for Sonoma County Water Agency issued by the Corps was referenced as portions of the City's CMP overlap with the area covered by File no. 2009-00136N.

Section 401

The State Water Resources Control Board (SWRCB) has authority over wetlands and waterbodies through Section 401 of the CWA, as well as the Porter-Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain a CWA, Section 401 water quality certification from the State Water Resources Control Board (SWRCB) or one of the nine Regional Water Quality Control Boards (RWQCB). A request for certification or waiver is submitted to the State or regional board at the same time that an application is filed with the Corps. The water board has 60 days to review the application and act on it. Because no Corps permit is valid under the CWA unless "certified" by the State, these boards may effectively veto or add conditions to any Corps permit.

Applicability to Project

Activities under the CMP have the potential to result in ground disturbance, which could affect water quality. Activities that involve ground disturbance will be subject to a 401 permit issued by the RWQCB. The waste discharge requirements and water quality certification for Sonoma County Water Agency was referenced as portions of the City's CMP overlap with the area covered by order No. R2-2011-0020.

3.3.3. State of California

California Endangered Species Act (CESA)

The California Department of Fish and Wildlife (CDFW) administer a number of laws and programs designed to protect fish and wildlife resources. Principal among these is the California Endangered Species Act of 1984 (Fish and Wildlife Code Section 2050), which regulates the listing and take of State-endangered and State-threatened species. CESA declares that certain species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA establishes legislation for the conservation, protection, restoration, and enhancement of endangered species and their habitats.

Species listed under CESA cannot be "taken" without adequate mitigation and compensation. The definition of "take" under CESA is the same as described above for the federal ESA. However, based on findings of the California Attorney General's Office, "take" under CESA does not prohibit indirect harm by way of habitat modification. Typically the CDFW implements endangered species protection and take determinations by entering into management agreements (Section 2081 Management Agreements) with project applicants.

CDFW maintains lists of Species of Special Concern, based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Species of Special Concern do not receive protection under the CESA or any section of the California Fish and Wildlife Code, and do not necessarily meet CEQA Guidelines Section 15380 criteria as rare, threatened, endangered, or of other public concern. Like federal Species of Concern, the determination of significance for California Species of Special Concern must be made on a case-by-case basis. Designation of Species of Special Concern is intended by CDFW to be used as a management tool for consideration in future land use decisions.

Applicability to CMP

Activities under the CMP have the potential to result in impacts to species covered under CESA. The consistency determination that was issued for Sonoma County Water Agency was referenced as portions of the City's CMP overlap with the area covered by order no. 2080-2010-029-03.

CDFW Lake and Streambed Alteration Agreements (SAA)

Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the . . . "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit…" (Section 1601). This broad definition gives the CDFW great flexibility in deciding what constitutes a river, stream, or lake. In practice, the CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

Applicability to CMP

The City of Petaluma is pursuing a routine maintenance agreement to conduct ongoing management of streams including maintenance activities within bed, bank and stream channels. The CDFW regulates activities within riparian corridors through the issuance of 1600 Streambed Alteration Agreement (SAA). Adherence to the provisions of the 1600 SAA will ensure compliance with this regulation. Activities under the CMP will be subject to a routine maintenance agreement (Lake and Streambed Alteration Agreement) issued by the CDFW. The Master Agreement for Sonoma County Water Agency was referenced as portions of the City's CMP overlap with the area covered by notification no. 1600-2009-0399-R3.

California Environmental Quality Act

Although threatened and endangered species are protected by specific federal and State statutes, CEQA Guidelines Section 15380(b) provides that a species not federally- or State-listed may still be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after definitions in the FESA and the section of the California Fish and Wildlife Code dealing with rare or endangered plants and animals. Section 15380(b) requires public agencies to undertake reviews to determine if projects would result in significant effects on species not listed by either the USFWS or CDFW (i.e., candidate species).

Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Applicability to CMP

The project is subject to review under CEQA. The City of Petaluma, as the lead agency, has prepared and circulated a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program. The MND is scheduled to released on January 12, 2017 for a 30-day public review period. The environmental document will go before the Planning Commission for public review and comment. A separate public hearing will be held before the City Council. As the decision making body for the dedication of funds to implement the Manual, prior to making a decision on the project, the City Council will take action on the IS/MND and MMRP.

Assembly Bill 52 Tribal Cultural Resources

AB 52 went into effect on July 1, 2015 and requires that lead agencies undergo a consultation process with Tribes that have requested to consult. The Federated Indians of Graton Rancheria have requested that the City of Petaluma provide the Tribe with notice of projects that are subject to CEQA review. Once notification is provided, which must occur prior to release of the environmental document, the Tribe has 30 days to request consultation. The consultation process must begin within 30 days of the request from the Tribe. Consultation ends when both parties agree on appropriate mitigation to protect tribal cultural resources or avoid significant effects.

Applicability to CMP

The City of Petaluma sent a notice to the Federated Indians of Graton Rancheria on March 4, 2016. The notice informed the Tribe of the Citywide Creek Maintenance Project and requested that the Tribe consider if formal consultation would be requested for the Project. On April 25, 2016, after the allowed 30-day response window, the City received notification from the Tribe requesting consultation. Although the Tribe failed to response within the 30-day period, the City agreed to meet with the Tribe to hear concerns. On May 10, 2016 a meeting was held between Tribal representatives of the Federated Indians of Graton Rancheria and City staff. The Tribe requested that the City acquire a qualified archeologist to prepare a Cultural Resources Report. The City retained Evan & De Shazo Archaeology and Historic Preservation LLC to conduct the analysis.

A Confidential Cultural Resources Report (August 5, 2016) that evaluates the CMP and included a records search, sensitivity analysis and review of management recommendations was provided to the Tribe. On October 5, 2016 the Tribe issued a letter in response to the Cultural Report. The letter stated that the tribe agrees with the sensitivity determination for each creek and channel and made the following requests:

- That the Tribe continue to be apprised of archeological survey work performed under the CMP
- That survey methods include options for non-destructive techniques such as ground penetrating radar or canine investigation services, and
- That Tribal Treatment Plans be prepared for projects that impact cultural resources

On November 3, 2016, the City issued a response letter to the Tribe confirming acceptance of these recommendations, which have been added herein (see Section 6.3.3 below), and acknowledging that consultation under AB 52 was completed to the satisfaction of both parties.

3.3.4. City of Petaluma

In addition to applicable federal and state regulations, the City of Petaluma has adopted several plans and policies that provide guidance on the management of local waterways, riparian habitat and biological resources. An overview of the particularly relevant City documents are summarized below.

General Plan 2025

The City's General Plan, adopted in 2008 sets forth policies and programs that guide the long-range development strategy for the City including balancing the often competing demand of urban development with the protection of natural resources. General Plan Chapter 4, The Natural Environment contains a section on Biology and Natural Resources where River environs and aquatic and riparian resources are identified as playing a significant role in defining the character of Petaluma. Chapter 8, Water Quality, sets forth policies regarding the protection and enhancement of surface waters citywide.

Petaluma River Access Enhancement Plan (River Plan)[18]

The River Plan was adopted in 1996 and sets forth the community's vision for the Petaluma River including riverfront uses, activities, and strategies for the integration of the natural and build environments.

[18] "*Petaluma River Access and Enhancement Plan*," prepared by City of Petaluma, May 1996.

The River Plan recognizes that public access must be balanced with the need to protect especially sensitive habitat communities local along the river corridor. Since its adoption, the River Plan has been incrementally implemented including the development of riverside trail segments and acquisition of riverfront open space, for flood reduction, habitat enhancement, and restoration projects. The River Plan is a proven and effective tool for use in ensuring that the Petaluma River Corridor is protected and enhanced in accordance with the Community's vision.

Storm Water Management Plan (SWMP)[19]

Due to its population size, the City of Petaluma is automatically required to comply with the Phase II Rule of the Clean Water Act and must therefore adhere to National Pollutant Discharge Elimination System (NPDES) regulations. To be in compliance with and to obtain an NPDES permit from the San Francisco Bay Regional Water Quality Control Board, the City prepared and submitted a SWMP on March 6, 2003. The SWMP acts as the City's permit and describes actions including Best Management Practices, measureable goals, and timelines for implementing six Minimum Control Measures (MCMs) that address the "medium" priority pollutants in the Petaluma River water body. The City must submit annual reports to the Control Board conveying the progress of each of the MCMs. They are:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management
- Pollution Prevention for Municipal Operations

Floodplain Management Plan[20]

Over the past few decades, the City of Petaluma has experienced several significant flood events about once every five years. In order to combat frequent flooding severity, the City of Petaluma adopted a Floodplain Management Plan (FMP) in 1995 and has since re-adopted the plan in October 2001 and again in October 2010. The most recent update was approved by City Council on September 2015. Updates of the FMP provide implementation status of goals as well as new goals developed since the previous update. These include community outreach efforts, training city staff on floodplain management requirements, and annual stream and maintenance in accordance with regulatory requirements. The FMP also includes an Action Plan, review of activities, flood hazard assessments, and potential impact assessment of flooding on the surrounding community.

[19] "*City of Petaluma Phase II NPDES Storm Water Management Plan*," prepared by Winzler and Kelly Consulting Engineers, 2003.
[20] *City of Petaluma Floodplain Management Plan*, prepared by the City of Petaluma, October 2015.

4. Vegetation Management Activities

4.1. Overview / Goals

The intent of this section is to outline management strategies that protect against flooding while maintaining and enhancing riparian corridors through the management of vegetation. This objective is primarily met through clearing dense vegetative growth, protecting the riparian tree canopy, removal of invasive species and reestablishment of native species. The following represent the primary goals for the management of vegetation:

- Minimize flow obstruction from overgrowth
- Stabilize stream banks
- Re-establish a predominantly native riparian corridor
- Develop a mature riparian corridor

Removal of overgrown vegetation in and around stream channels represents the majority of the activities proposed in the CMP. Management of vegetative growth along banks and within channels is appropriate when vegetation constricts flow capacity, increases sediment deposition, or degrades habitat value (when invasive species dominate).

Vegetation management techniques will focus on thinning, pruning and removal of invasive species. This will be accomplished through the use of hand tools, mowers and in certain instances may require heavy equipment. A winch and cable system or long arm excavator will be used from top of bank when necessary to removal large debris.

Vegetation management will be conducted outside of the bird-nesting season, between September 1 and January 31, as feasible or shall require pre-construction surveys to identify any nesting birds before maintenance may occur. In the event that maintenance activities and nesting dates coincide, a qualified biologist must conduct a survey to ensure no nesting birds are impacted. Nesting birds found within the nesting cycle (February 1 to August 31) will then be clearly marked and a buffer established.

4.2. Vegetation Maintenance

Proper maintenance of trees located within the channel zones is essential in achieving the City's goals of preserving healthy native riparian vegetation while managing stream systems for flood risks. The role vegetation plays, the benefit it provides a channel, and the decision to thin, prune, or remove vegetation depends on the specific zone it occupies along the channel cross section.

Native trees occupying the Upper Bank are generally retained under the condition that their presence does not threaten alterations to flows, increase the potential for erosion, or destabilize stream banks. In the interest of channel shade retention, lower limbs of trees will be targeted when trimming. Areas characterized with a mature riparian canopy generally reflect a healthy riparian zone and usually require less vegetation maintenance on the ground, making canopy preservation a high priority.

Trees and shrubs located in the Lower Bank are not generally removed unless they accumulate significant amount of debris, impede access, cause erosion, or elevate flood risks. Trees and shrubs within this zone provide valuable bank stabilization mechanisms through their root systems.

Instream Channel (Channel bottom) will be managed with special consideration given to vegetation that impedes flow, constricts channel capacity, traps debris excessively, or cause bank scour. Species growing horizontally within the lower stream channel are also prone to block flows and gather debris, requiring pruning and vertical training. Species in this zone may be targeted for removal if thinning, pruning, or training cannot remedy these issues.

Vegetation clearing and tree trimming activities will be limited to hand tools such as sheers, trimmers, and saws, whenever possible. This assures minimal disturbances and offers the least impactful option to the stream ecology.

4.2.1. Downed Tree Maintenance

As part of an effort to minimize stream flow obstructions and maintain channel capacity, the City manages large trees and branches that fall into stream channels. Large woody debris (especially root mass) are naturally occurring features in healthy riparian environments, whose presence often creates suitable habitat for many instream species. However, in the event that a downed tree threatens stream conveyance or stability, the City will trim down branches, cut the tree into smaller sections or reposition the tree within the channel in order to alleviate blockage. If relocating or modifying the tree is infeasible, then it will be removed entirely.

Downed tree maintenance will be conducted during the low flow period between June 15th and October 31st as feasible. Non-ground disturbing maintenance may occur outside of the primary work window, provided that the channel is dry or the downed tree is outside of the flow channel. Maintenance may also be required outside of the primary work window if a downed tree could threaten safety, increase erosion potential, result in flooding, or other compromise the conveyance capacity of the channel.

4.2.2. Tree Removal and Pruning

In general native trees within the riparian corridor that are greater than 6 inches in diameter at breast height (DBH) will be retained. However, several conditions can occur that may require the removal of a mature tree. Dead or dying trees may pose a significant threat to public safety and infrastructure, block stream flow and inhibit water conveyance, or increase erosion by transferring water velocity towards banks. Tree removal may be necessary when these or similar events threatening harm, flood, or erosion are present. If tree removal is to be performed during the nesting season (February 1 to August 31), then a nesting bird survey must first be conducted by a qualified biologist.

In certain instances tree removal can be avoided by implementing tree pruning. Tree branches, snags, or coarse woody debris, carry high potential for providing habitat to a variety of species within riparian environments. For this reason, snags and branches should be left in place if it is determined not to be threatening the integrity of the stream flow capacity.

Chapter 7 of Petaluma's Implementing Zoning Ordinance (IZO) defines tree preservation objectives set forth by the City. Under Section 17.040 - Protected Trees, "Trees located in riparian corridors" are considered a protected tree except in "Cases of emergency where the City of Petaluma arborist determines that a protected tree poses an imminent threat to the public safety or general welfare or when private property or persons are threatened by a tree it may be removed without City review or approval."[21]

In the event that tree removal is warranted then replanting shall occur at an appropriate ratio. Replanting shall occur along the upper banks to ensure that the riparian canopy is retained and enhanced. Any new planting areas will be identified in the annual reports submitted to regulatory agencies.

Established non-native tree species may also provide essential positive effects to the riparian corridor depending on health, the degree of invasiveness, and other vegetation found nearby. Managing non-native vegetation will therefore be conducted on a case by case basis after full consideration of its value to the channel.

[21] "*Chapter 17 - Tree Preservation. Implementing Zoning Ordinance,"* prepared by the City of Petaluma Community Development Department, June, 2008.

4.3. Invasive Species Plant Management

The intent of this section is to provide guidelines for the removal of exotic trees, shrubs, and groundcover found within the areas covered by the Citywide Creeks Maintenance Plan. The objectives are to establish, maintain, and promote healthy, mature, and naturally regenerating native riparian vegetation along stream corridors.

Exotic plants and noxious weeds can invade natural areas and grow to dominate the vegetative community, often crowding out native species that have greater habitat value, thereby diminishing the quality of habitat. Exotic or invasive species are defined for purposes of these guidelines as all woody plants and non-herbaceous weedy growth not native to California.

Unrestrained vegetative growth is a major contributor to channel capacity reduction. Invasive and non-native species tend to be fast growing and can rapidly accumulate resulting in stream obstruction, restricted access, and degraded habitat value. A profile and removal strategy of the most prevalent problematic species within the designated channels is found below.

4.3.1. Cattail

Cattails (*Typha Spp*) tend to dominate in stream channels that lack adequate canopy coverage and have perennial or near perennial stream flows. Cattails establish in low-gradient channels, where water flows are slow-moving or stagnant. Presence of this species tends to coincide with sediment accumulation as fine sediment settles out and becomes trapped. Without management of Cattails, vegetation accumulates and produces dense stands of living and dead plants.

Cattails can be temporarily removed using a bladed weed-eater or, where access permits, using an excavator with a flail mower extension positioned at top of bank. Cattail removal is most effective when coupled with sediment removal, such that Cattail roots are extracted. This approach can successful reduce Cattail regrowth for several years. Replanting a riparian corridor to achieve canopy cover and shading within the channel is also an effective means to reduce cattail growth.

4.3.2. Blackberry

Himalayan blackberry (*Rubus Armeniacus*) is a highly invasive species that quickly displaces native vegetation. Blackberry can occupy upper and lower banks and during low flow conditions and in ephemeral streams rapidly moves into the stream channel.

Management of blackberry is conducted by removal using a bladed weed-eater or heavy equipment, where appropriate.

4.4. Vegetation Management Techniques

All ground disturbing activities proposed for a given channel will be conducted during the low flow period (from June 15 to October 31) whereas non-ground disturbing activities may be conducted outside of the primary work window of June 15 to October 31, provided that the subject channel is dry. On an as need basis, exceptions may be made with the advance approval of appropriate regulatory agencies.

In sensitive habitat areas and within the stream channel, vegetation management techniques will employ small crews using hand-held tools (saws, clippers, sheers, etc.).

Several reaches within the CMP will require the use of heavy equipment, particularly through debris transportation and mowing the upper bank. Heavy equipment used for vegetation removal may include chippers, service vehicles, mowers, water trucks, excavator or Bobcat with a flail mower attachment for cutting cattails or blackberries, and a backhoe or rubber-tracked excavator that is used for removing material from the channel. Heavy equipment will be operated from the top-of-bank in order to avoid damage to the banks and streambeds.

It is anticipated that there will be a higher quantity of removal within the first two years of the CMP implementation whereas subsequent years will warrant a reduced quantity of vegetation removal and maintenance.

4.5. Vegetation Disposal

Debris generated by the removal of invasive and exotic species will either be left on site in order to redistribute nutrients or, if potential for regrowth in possible, will be carefully removed by City crews and brought to an appropriate disposal site. Grasses cut by flail mowers or handheld tools, such as weed whackers, will be removed from the channel and left on the upper banks to be reused as mulch. Trees marked for removal will be removed, chipped, and either used as mulch at other locations and projects throughout the City or brought to a disposal site accepting woody debris.

4.6. Herbicides and Chemical Application

Chemical application of herbicide is proposed as part of the vegetation management strategy, specifically for controlling invasive and exotic plants. Herbicides will only be used on a case by case basis as necessary, particularly when other manual or mechanical removal methods have been ineffective.

All herbicide applied by the City will be done so in accordance with federal, state, and local regulations. As improper use of herbicides may be toxic to people and wildlife, application will be limited to the dry season while wind is low and when rain is not forecasted the following day. Herbicides are generally applied by targeted spot spraying and hand painting of cut stumps. Herbicides, approved for aquatic use (Post-emergent herbicide spray with RoundUp or AquaMaster) would only be used in areas with dense invasive vegetation, if necessary, and left for a week prior to removal. For BMPs the City will utilize while deploying herbicides, refer to Section 6.

5. Sediment Management Activities

Sediment removal proposed under the CMP would primarily result in clearing out of accumulated deposits in and around culverts, stormdrains, bridge pilings, and at stream crossings. Where sediment accumulation has occurred removal may also be necessary from within stream channels and banks.

Sediment and debris buildup, both natural and man-made, will eventually deter a channel's ability to convey water flow. Removing accumulated sediment benefits waterways by increasing water conveyance and flow capacity, decreasing flooding potential, improving water quality, and reestablishing habitat potential.

Sediment buildup is most often found along bridge pilings and structures, culverted crossings, and near vegetation obstructions or debris accumulations. To alleviate flood risks and restore hydraulic function, the City proposes the removal of sediment in focused areas. Sediment removal will be limited to recovering the channel's design capacity.

Sediment removal activities will occur in reaches where there is a bridge overcrossing present. Buildup in these areas significantly increases flooding risks, and could cause floodwaters to overtop channel and spill into roadways or adjacent lands. Culverts found in the Channel near Airport Reach 2, Shollenberger Creek Reach, Lakeville Channel Reach, and Kelly Creek Reach as well as build up near the storm drain outfall at Washington Creek Reach have accumulated a moderate amount of sediment that need to be removed.

Removal of accumulated sediments will be conducted at a time when streams are driest, from June 15 through October 31, in order to minimize impacts to riparian species and water quality. The amount of sediment buildup and quantity removed is partially dependent on weather conditions, storm occurrences, and previous sediment removal efforts. The time required to service these areas may therefore increase as a result of increased runoff from rain-laden seasons or decrease following particularly dry winters. If the City requires additional time to complete authorized activities outside of the permitted operation period, the City will request an extension from appropriate regulatory entities.

Dewatering will be needed for the proposed maintenance activities for certain reaches within Lynch Creek, Corona Creek, Adobe Creek and the Shollenberger Park Creek. These stream reaches empty directly into the Petaluma River and some are tidally influenced such that water is always present. A detailed description on dewatering may be found in Section 2.6.2.

5.1. Sediment Sources

Sediments are naturally occurring materials that are broken down by weathering and erosive forces, then transported by way of wind, water, ice, or gravity. The watershed expanse that feeds into the Petaluma River holds many opportunities to accumulate sediments that eventually deposit themselves into channel systems. The hilly areas north and west of Petaluma significantly contribute sediment loads from erosive areas, especially through steeply exposed hillsides. Agriculture development up-valley also plays a crucial role in sediment deposition. Within the City, erosion from weakened banks, channel incision, road-related sediment delivery, urban stormwater runoff, land development, and land use practices introduce significant amounts of sediments into stream.

Sediments continuously introduced through erosion of the upper watershed cause blockages throughout the stormwater conveyance system, thereby impacting species present in the water column. High concentrations of sediment, both fine and coarse, in water columns can negatively affect fish eggs, larvae, foraging ability, physiology, and behavior of aquatic species[22]. Accumulations of fine sediments within potential spawning gravels of steelhead trout makes it increasingly difficult to establish a spawning nest due to gradual embeddedness.

5.2. Sediment Removal

Areas identified for sediment removal generally contain culverts, dense vegetation, outfalls, or bridge pilings that have accumulated sediments due to their obstruction. In general, a higher quantity of sediments will be removed within the first two years of the plan while subsequent years will require a reduced quantity of removal and maintenance.

Depending on channel access and the quantity of sediments that need to be removed, different types of equipment may be employed. Hand-held tools, shovels, and small Bobcats may be used in small scale sediment removal or culvert clearing projects. Excavators may be used near the top-of-bank while removing larger quantities of sediment in order to avoid direct channel impacts such as disturbances to instream habitat, water quality reduction, and vegetation disturbances. Sediment removed from the channels will be placed in 10-20 cubic yard dumb trucks located on adjacent access roads for off-site hauling and disposal, or reuse as appropriate (See section 5.3 below).

In order to meet objectives concerning habitat preservation and enhancement, the City will seek to create long term improved stream water quality through sediment management.

[22] San Francisco Estuary Institute 2010.

Removal at specified sites will occur gradually, to the extent possible, in order to manage inherent streambed forms and maintain natural features that promote better sediment conveyance, water quality, and habitat.

In order to preserve channel integrity and limit damage to instream habitat, all heavy equipment will be staged at the top of bank. Sediment removal would occur using a long arm excavator located outside of top of bank or via use of an access road. To minimize impacts to stream channels sediment removal will be limited to the dry season when ephemeral streams are dry and perennial stream are at their lowest flows. In some reaches water may be present, but would be of low enough flows to enable maintenance work without disturbing the channel bottom. In limited reaches water flows year round and maintenance activities may require limited instream dewatering.

5.3. Sediment Disposal

Sediment removed from streams as part of the CMP will be hauled in covered trucks to the City's Corp Yard for drying. Once soils have dried, they may either be reused as part of other projects, such as bank stabilization, wetland surface or foundation material, levee or construction fill, or landfill cover provided that they are properly screened[23], or will otherwise be transported to an appropriate landfill site for disposal as described in Section 2.6.3.

[23] "*Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines,*" prepared by the San Francisco Bay Regional Water Quality Control Board, 2000.

6. Best Management Practices & Impact Avoidance

- All ground disturbing maintenance activities occurring in the channel will take place between June 15 and October 15 during the typical dry season.

- Seventy-two-hour weather forecasts obtained from the NOAA Web Site shall be obtained prior to start-up of any maintenance activity that may result in sediment runoff to the stream. No maintenance work would be scheduled within 72-hours of a storm event that has a 70 percent chance or greater of occurring. Similarly, no maintenance activities would be scheduled (unless under emergency conditions) for 48 hours after any storm event.

- All activities shall strive to minimize the amount of disturbance to native riparian vegetation.

- Construction fencing backed by silt fencing shall be installed along the upper banks of creeks and drainages adjacent to the work area to prevent equipment and side-cast material from entering the creeks and drainages. This measure would not be required for proposed dewatered work areas where there would be silt removal since such areas would be dewatered and cleared of silt deposits. Dewatered work areas will be isolated from tributary flows until equipment use in isolated work areas is completed.

- A qualified biologist shall conduct preconstruction surveys for nesting birds and other sensitive species prior to implementing creek maintenance work during the bird nesting season (February 1 through August 31).

- A biological monitor shall be present during work in channels that require dewatering and have potetnail to support special status species.

- At completion of any CMP activities, all disturbed soils shall be stabilized by compaction of soils and re-contouring to pre-existing grades.

- A tackified hydromulch erosion control mixture shall be applied to all disturbed areas above active flow zones, and an herbaceous, native California seed mix shall be included in the hydromulch mixture.

- All maintenance activities shall be performed in accordance with industry standard Best Management Practices, permits and approval issued by regulatory agencies, and in ccordance with all local policies and programs.

6.1. Habitat Preservation and Enhancement

The City emphasizes the need to conserve natural resources and habitat within the identified creek reaches while simultaneously combating flood risks. To meet this objective, the City seeks to; restore vegetation along channel corridors and preserve or enhance canopy cover; improve instream habitat for aquatic species; protect instream landforms that produce variation in flows; enhance water quality conditions; and incorporate best management practices to minimize impacts on sensitive species while improving reach conditions proceeding maintenance activities.

Maintenance activities will be conducted during the summer and fall seasons, outside of the breeding period of most terrestrial and aquatic species and during the dry season when stream flows are at their lowest. All activities will occur during daylight hours and at least an hour after sunrise and an hour before sunset.

6.2. Erosion Protection and Bank Stabilization

Moderate bank instability problems exist throughout the CMP area, and in the upper portions of the watershed. In many areas, banks are in danger of becoming increasingly incised, which results in low bank resiliency in instances of high flows. Bank erosion and inability of native vegetation to naturally establish often occur in areas containing a fluctuating tidal zone, stormwater discharge points, or altered flow conditions.

If left untreated, weakened banks may lead to damage to adjacent properties, threats to public safety, infrastructure impairment, and are susceptible to failure under high velocity flood events.

Bank stabilization techniques will be necessary during maintenance of Reaches if it is evident that bank failure has occurred, infrastructure or nearby land uses are threatened, or frequent erosion is occurring.

The bank stabilization process will consider the function of each particular reach to the immediate area as well as how the reach functions as part of the watershed. The City will draw upon a wide variety of bioengineering techniques in order to address bank stabilization issues. This includes introducing erosion control fabrics to vulnerable areas; compacted back filled soils; and planting native riparian trees at the top-of-bank and toe-of-slope to stabilize slopes, or strengthening the areas around culvert outfalls. The biotechnical engineering approach is preferred over other alternatives due to the substantial environmental advantages, in terms of habitat preservation and enhancement, and economic viability. These techniques rely on plant materials to provide stabilization.

In the event that biotechnical engineering proves to be ineffective in meeting project objectives, hardscape engineering approaches may be considered and may require subsequent consideration by the regulatory agencies.

During all maintenance activities, the following Best Management Practices (BMPs) shall be employed to ensure that siltation and erosion do not occur:

1. All maintenance activities shall take place in the dry season between June 15 and October 31 to minimize erosion/siltation. Exceptions to this requirement may be provided if compelling circumstances exist (e.g., favorable weather conditions).

2. Sediment controls such as straw mulch, silt fences, sediment basins or traps and/or other measures shall be employed during maintenance activities.

3. Tracking dirt or other materials shall be avoided and paved areas and sidewalks shall be cleaned regularly using dry sweeping methods.

4. Activities shall avoid damage to or loss of native vegetation to the maximum extent feasible.

5. Soil disturbance shall not exceed the minimum area necessary to complete the operations as described.

6.3. Impact Avoidance

The impact avoidance and minimization strategies consists of limiting the area of disturbance, conducting the least amount of maintenance work to achieve objectives, using hand held equipment, protecting riparian habitat and managing stream resources for long-term sustainability.

6.3.1. Maintenance Equipment

Activities shall utilize hand held equipment in lieu of heavy-duty equipment as much as possible. Small maintenance crews on foot have a much smaller impact on riparian habitat relative to heavy equipment. City workers will preferentially employ the use of hand held tools such as sheers, loppers, handsaws, mowers, and chainsaws, rather than relying on larger construction equipment. Where heavy-duty equipment is necessary, staging areas shall be located outside top of bank, at nearby roadways or crossings, or established access roads. Construction equipment, when needed, will enter and exit through the same area in order to minimize the impacts on the surrounding vegetation.

6.3.2. Exhaust Emissions and Dust Control

The City's General Plan sets forth policies and programs to maintain and enhance air quality. Policy 4-P-16 establishes best management practices for the operation of construction equipment. All maintenance activities shall incorporate the following provisions:

1. Water all active maintenance areas as necessary to reduce dust emissions. In dry areas, this may be twice daily or more, while in already wet areas, no watering may be needed.

2. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain sufficient freeboard as necessary to prevent transported material from blowing out of truck beds.

3. Sweep as necessary (with water sweepers) all paved access roads, streets, parking areas and staging areas when soil is carried onto public areas.

4. Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of maintenance activities.

5. Minimize idling time of construction related equipment, including heavy-duty equipment, motor vehicles, and portable equipment.

6. Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline).

7. Use add-on control devices such as diesel oxidation catalysts or particulate filters.

8. Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines.

6.3.3. Archeological Tribal and Cultural Resources

The City shall recognize and protect cultural resources including, but not limited to, the following:

Prehistoric Archaeological Materials: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool making debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, hand stones, or milling slabs); battered stone tools, such as hammer stones and pitted stones; or Native American human remains.

Historic-Era Materials: all by-products of human land use greater than 50 years of age, including alignments of stone or brick, foundation elements from previous structures, earthworks, filled wells or privies, surface scatters of farming or domestic type material, and subsurface deposits of domestic type material (e.g., deposits of metal, glass, or ceramic refuse), or Native American human remains:

Training

At the beginning of each maintenance season and before conducting ground disturbing activities, all untrained personnel who may encounter cultural resources during the course of their work assignment shall attend a cultural resource educational session conducted by a Secretary of the Interior qualified archaeologist as defined under Code of Federal Regulations, 36 CFR Part 61.

This training will include instruction on how to identify historic and prehistoric resources that may be encountered, and the appropriate protocol if any resources are discovered during maintenance work. The training will familiarize the staff with the cultural resources that are located within the Project Area, the laws that protect them, and the discovery protocol for both cultural resources and human remains.

The training shall instruct personnel in the identification of historic and prehistoric resources and inform personnel of the appropriate protocol if resources are discovered. The training will familiarize personnel with:

1. Types of cultural resources
2. Rules and Regulations governing cultural resources
3. Discovery protocol for cultural resources and human remains

Training materials shall be made available in one of the following ways:

- Electronically and accessible for independent viewing
- Verbally, as part of a spoken presentation indoors, or
- In hard copy as a paper pamphlet to accompany training at each job site

Background Research and Consultation

Prior to undertaking activities involving ground disturbance, e.g., excavation, sediment removal, or other subgrade maintenance activities, along creek/channel segments, the City shall perform background research to identify the level of sensitivity exhibited by the proposed area of work. Background research shall begin with a review of the Cultural Resource Sensitivity Map and GIS layer of known site locations to determine whether the proposed activity will occur within a previously-known culturally sensitive area or within 100-feet of a previously recorded cultural resource. A Northwest Information Center (NWIC) records search, as well as local library, museum, assessor, and other appropriate research, will be performed as necessary to review previous survey reports and to determine if any newly identified cultural resources have been recorded.

In conjunction with the background research, the appropriate Native American Tribes will be contacted to provide comments or concerns about a maintenance activity location. The Native American Heritage Commission (NAHC) will also be contacted for a Sacred Lands File Check.

Qualified Archeologist

The City shall acquire an on-call Secretary of the Interior qualified archaeologist as defined under 36 CFR Part 61, to evaluate, consult and advise the City on cultural resources.

The minimum professional qualifications in archaeology are a graduate degree in archaeology, anthropology, or closely related field plus the following:

1. At least on year of full-time professional experience or equivalent specialized training in archeological research, administration or management
2. At least four moths of supervised field and analytic experience in general North American archeology, and
3. Demonstrated ability to carry out research to completion

In addition to these minimum qualifications, a professional prehistoric archeologist shall have a least one year full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

In areas where buried cultural resources or human remains are suspected based on an evaluation of the Cultural Resources Sensitivity Map and GIS layer of known cultural resources, additional treatment may include a subsurface survey in an effort to identify buried cultural resources and human remains prior to construction activities. This is an appropriate strategy for larger construction projects when it is more cost effective to make discoveries and mitigate adverse effects of the project before work has begun.

The City shall comply with Public Resources Code 21074, including initiation of consultation with California Native American Tribe(s) traditionally and culturally affiliated with the geographic area of a proposed work. The Native American Heritage Commission (NAHC) shall also be contacted for a Sacred Lands File Check.

Cultural Resource Survey

If background research indicates that the area of work is located in an area exhibiting a moderate or high level of sensitivity *and* a survey has not been completed within a ten-year period from the date of scheduled maintenance, a pedestrian survey performed by a Secretary of the Interior qualified archaeologist as defined under Code of Federal Regulations, 36 CFR Part 61 shall be required.

All areas of exposed ground shall be closely inspected for the presence of cultural materials. Areas of dense vegetation should be inspected as closely as possible and any exposed channel banks shall be carefully examined for the presence of buried cultural resources. A hand auger or similar tool shall be used when necessary to inspect for sub-surface archaeological deposits. Non-destructive survey methods such as ground penetrating radar or canine investigation services shall be utilized as appropriate.

If an archaeological deposit is encountered, a preliminary assessment of site boundaries and historical significance following the CRHR criteria should be made in consultation with the appropriate affiliated tribe(s). A map shall be prepared depicting site boundaries in relation to the work area and the site shall be recorded on Department of Parks and Recreation (DPR) 523 forms.

All information regarding site location, Native American human remains, and associated funerary objects shall be kept confidential and will not be made available for public disclosure. The final report shall be submitted within 30 days of the pedestrian survey. All approved Final reports shall be submitted to the NWIC within 30 days of completion.

Low potential

For maintenance activities (e.g., bank stabilization, sediment removal, etc.) that require excavation into native soils along creek and channel segments that have been identified as having a low potential for containing buried archaeological resources, the City personnel conducting the work shall participate in the educational training session conducted by a Secretary of the Interior qualified archaeologist as defined under Code of Federal Regulations, 36 CFR Part 61, and learn how to identify historic and prehistoric resources that may be encountered.

Moderate Potential

For smaller projects with minimal ground disturbance, or when the disturbance will be located in areas of moderate archaeological sensitivity, ground disturbing activities shall be supervised by a Secretary of the Interior qualified archaeologist, as defined under Code of Federal Regulations, 36 CFR Part 61. Archaeological monitors shall be empowered to halt construction activities at the location of a discovery to review possible archaeological material and to protect the resource while the finds are being evaluated. Monitoring shall continue until, cultural resources are not likely to be encountered.

High Potential

If the proposed activity falls within an area of high archaeological sensitivity and/or will come within 100 feet of a mapped cultural resource, a cultural resources survey shall be conducted by a qualified professional archaeologist prior to performing the maintenance activity. The cultural resource consultant shall recommend strategies pursuant of CEQA for the avoidance, minimization, or mitigation of adverse effects caused by the activity on a case by case basis. Mitigation options can only be determined once the potential for adverse effects is established, and the location of the activity has been deemed sensitive. Possible strategies include the use of pre□construction survey and/or testing in an effort to discover any buried resources prior to the initiation of the activity; construction crew training and archaeological monitoring of the activity; or data recovery of cultural resources that will be impacted by the activity.

Inadvertent Discovery of Resources

If an archaeological deposit is encountered during project activities, all work within 50-feet of the discovery shall be halted until a qualified archaeologist is retained to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. A cultural resources investigation shall be prepared and CEQA Section 21083.2 and Section 15064.5 shall be complied with. All discoveries shall be protected in situ for evaluation by a Secretary of the Interior qualified archaeologist as defined under 36 CFR Part 61. If avoidance of the archaeological deposit is not feasible, the archaeological deposits shall be evaluated for their eligibility for listing in the CRHR. If the deposit is not eligible, mitigation is not necessary. If the deposit is eligible, adverse effects on the deposits shall be mitigated. Mitigation may include excavation of the archaeological deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4(b)(3)(C)) or Tribal Treatment Plan and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility.

All discoveries shall be protected and left where they are found for a qualified archaeologist to examine. The location may be marked with flagging and should be protected, as necessary, from further disturbance until a qualified archaeologist can evaluate the find in context.

Where practical and feasible, areas of disturbance will be re-configured to avoid the resource and an appropriate buffer area introduced to prevent inadvertent disturbance. As appropriate, under the supervision of a Secretary of the Interior qualified archaeologist as defined in 36 CFR Part 61, the City shall install a temporary exclusion fence around the identified cultural resources during the use of heavy equipment within 100-feet of the resource.

Inadvertent Discovery of Human Remains

If potential human remains are encountered, the City shall halt work within 25-feet of the discovery and contact the county coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If an archeologist is not present during the discovery, a qualified archeologist shall be retained to inspect the discovery. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission (NAHC). As provided in Public Resources Code Section 5097.98, the NAHC will identify the person or persons believed to be most likely descended from the deceased Native American. The Most Likely Descendent makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Best Management Practices

If avoidance of the archaeological deposit is not feasible, the archaeological deposits shall be evaluated for their eligibility for listing in the CRHR. If the deposit is not eligible, mitigation is not necessary. If the deposit is eligible, adverse effects on the deposits shall be mitigated in accordance with one of the following and as approved by a qualified archeologist:

- Stop work and avoid disturbance at the identified location.
- Excavation of the archaeological deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures;
- Laboratory and technical analyses of recovered archaeological materials;
- Preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; or
- Accessioning of archaeological materials and a technical data recovery report at a curation facility.

Reporting

Positive findings shall be reported in accordance with the Secretary of the Interior's Guidelines for Archaeological Documentation.[24] Reporting of positive findings shall include:

1. A cover letter detailing management recommendations (e.g., site avoidance measures, or recommendations for further evaluation to determine site significance, data recovery, and/or archaeological and Native American monitoring)
2. Results of background research
3. Descriptions of field work
4. Findings
5. Maps and photos
6. A record of Native American consultation and recommendations, and
7. DPR 523 forms for the resource(s)

**Negative findings need only be presented in the annual notification package.*

Confidentiality

The City shall keep all information about cultural resource location and site characteristics confidential, with access only to those with a need to know. The legal authority to restrict cultural resource location information is in the National Historic Preservation Act of 1966, as amended, Section 304, and California Government Code 6254.1. Confidential records to be maintained include a complete set of up to date cultural resource site records, the Cultural Resources Sensitivity Map, and GIS layers depicting the locations of cultural resources and areas of archaeological sensitivity.

6.3.4. Vegetation Removal

Only vegetation that is noxious, invasive, hazardous, or could obstruct channel flows will be removed. Herbaceous layers that provide erosion protection and habitat value will be left in place. Invasive plant species that inhibit the health and/or growth of native riparian trees will be targeted for removal.

Where a choice between species that may be removed to maintain flood conveyance is feasible, slower-growing species such as oaks (*Quercus spp*.) that develop large canopies will be preferentially preserved, because these species take longer to establish, and provide essential habitat for cavity nesters and food sources for a variety of resident and migratory wildlife species. Faster growing species such as alders (*Alnus spp*.) and cottonwoods (*Populus spp*.) are the second priority for preservation; these single-trunked species offer the benefit of improved flood conveyance and reduced roughness in comparison to multi-trunked species.

[24] https://www.nps.gov/history/local-law/arch_stnds_7.htm

Vegetation will be removed and/or pruned in such a manner that channel roughness is reduced while allowing the maximum amount of vegetation to remain in place. Trees will be trimmed or pruned to reduce impedance of flood flows while allowing the canopy to develop. Specifics for each site will differ, but typical options include limbing up to remove lower branches that have interfere with flood flows, and pruning into a "fan" roughly parallel to flow direction.

Vegetation management will emphasize the preservation of large mature trees that provide well developed overstory for bird habitat, canopy cover for stream shading, and add vertical complexity to the riparian corridor. Vegetation management will be conducted in such a manner that maximizes shading over the active channel. Larger trees will be retained on both sides of north-south flowing streams and on the south side of east-west flowing streams. Where vegetation is removed from the active channel, removal will target nonnative species and removal of native species that are stiff and/or multi-trunked such as arroyo willow (*Salix lasiolepis*). Trees will never be topped as this encourages shrubby growth and weak branch attachments.

Large woody debris, stumps, or root wads that are fully or partially buried and do not present a flood hazard shall be allowed to remain in place to provide habitat and to maintain bank stability.

If vegetation removal is required for access, non-native species and/or quick growing species shall be targeted first for removal. Removal of native, mature trees will be avoided whenever possible.

To the extent feasible, removed native vegetation shall be replanted after maintenance or for use in other nearby sites. This includes the reuse of mulch and willow sprigs where possible.

When practicable, invasive exotic plants in work areas shall be removed. Any removed exotic plants should be immediately bagged and appropriately disposed of at a permitted facility.

Removal of standing trees shall be avoided between February 1 and August 31 to avoid impacts to nesting birds. In the event that a standing tree must be removed during the nesting season (due to the presence of hazardous conditions), then a pre-disturbance nesting bird survey and bat survey would be conducted by a qualified biologist according to standard protocols. Results of any nesting bird survey will be included in the annual summary maintenance report.

Pruning shall be performed according to the most recently published National ANSI A300 Pruning Standards and International Society of Arboriculture (ISA) BMPs for Tree Pruning,

which include guidance on pruning practices, pruning objectives, pruning methods (types), palm pruning, and utility pruning.

Pruning activities shall follow National ANSI Z133.1 2006 Standards for safe operation of tree care machinery, and safety equipment such as carabineers, helmets, and arborist ropes to ensure the safety of the tree climbers.

The City of Petaluma contains both native and non-native tree species. Trees are an especially important element of the riparian corridor. The City has identifies the following trees within City limits as Protected Trees:

- Black Oak (*Quercus kelloggii*) four inches DBH* or greater
- Valley Oak (*Quercus lobata*) four inches DBH or greater
- Blue Oak (*Quercus douglasii*) four inches DBH or greater
- Interior Live Oak (*Quercus wislizenii*) four inches DBH or greater
- Coast Live Oak (*Quercus agrifolia*) four inches DBH or greater
- Oracle Oak (*Quercus x morehus*) four inches DBH or greater
- Oregon Oak (*Quercus garryana*) four inches DBH or greater
- Other native California Oak four inches DBH or greater
- California Buckeye (*Aesculus, californica*) six inch DBH or greater
- California Bay (*Umbellularia, californica*) twelve inch DBH or greater
- California or Coast Redwood (*Sequoia*) eighteen inches DBH or greater
- Heritage trees as approved by Council resolution per Title 8 of the Petaluma Municipal Code
- Significant groves or stands of trees
- Trees located in riparian corridors
- Any tree required to be planted or preserved as environmental mitigation or condition of approval for a discretionary development application or other development permit
- Trees in the public rights of way

*Size is trunk diameter measured at a height of 4.5 feet or diameter at breast height (DBH) from surrounding grade. Multiple trunk trees must possess at least one trunk with the above diameter (based on species) to be considered protected. Smaller trees may also be protected under special circumstances and shall be considered on a case by case basis.

When protected trees are identified for removal, they shall be replaced with in-kind plantings. Replacement plantings shall occur along the upper banks of creeks in areas identified for enhancement or where canopy is marginal. The following establishes the required replacement ratios for tree removal required to carry out maintenance activities.

In the event that there are no viable and/or practical alternatives except to remove a protected tree, the City will replace trees at the following ratios:

1. All protected trees, determined by the City arborist to be in good (4) or excellent (5) health, and/or with moderate (3) to good (4) structure, shall be replaced on a one-to-one trunk diameter basis. (Example: A 24-inch protected tree in good or excellent condition must be replaced with new trees totaling 24 inches in trunk diameters.)
2. All protected trees, determined by the City arborist to have fair (3) or marginal (2) health, and/or with marginal (2) structure, shall be replaced on a two-to-one trunk diameter basis. (Example: A 24-inch protected tree in fair-to-marginal condition must be replaced with new trees totaling 12 inches in trunk diameter.
3. All protected trees, determined by the project arborist to have poor (1) health or poor (1) structure, are not required to be replaced.

Tree removal of protected trees and replacement plantings shall be identified in the City's annual report.

6.3.5. On-call Biologist

A qualified biologist will be on-call in Petaluma and available to visit a project site at any point during maintenance activities in the event a special status species is encountered and/ or an onsite biological monitor in required.

6.3.6. Special Status Species

Federal listed and special-status species, such as the California red-legged frog, yellow-legged frog, California giant salamander, western pond turtle, as well as fish species may be present in stream reaches maintained under the CMP. Prior to conducting activities, the City will obtain certificates and permits from the California Department of Fish and Wildlife, the NMFS, and USFWS, who administer the state and federal endangered species acts. Accordingly all maintenance activities shall comply with permit conditions.

Avoidance and minimization measures generally prescribed by the resource agencies to protect special status species include conducting pre-maintenance surveys, following dewatering protocols, restricting work window to avoid critical life stage periods, monitoring during maintenance and restoring the area once activities are complete.

Special-status animal species near the project site will be protected from temporary disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing) around sensitive habitat. Protective fencing will be installed under the direction of the biologist as necessary to protect animals and habitat; where feasible, the environmentally sensitive area fencing will be installed at least 50 ft. from the edge of the sensitive habitat.

If a maintenance activity is within designated Critical Habitat for a listed species, a qualified biologist will evaluate the suitability of the habitat for the species. Maintenance activities will not be implemented if the activity would impact the primary constituent habitat elements for a listed species.

Activities conducted under the CMP will comply with applicable federal, state, and local laws and policies that protect biological resources, including but not limited to the federal Endangered Species Act, federal Migratory Bird Treaty Act, the California Endangered Species Act, the California Environmental Quality Act, and the California Fish and Game Code.

6.3.7. Education and Training

At the beginning of each maintenance season and before conducting stream maintenance activities, all personnel will participate in an educational training session conducted by a qualified biologist. This training will include instruction on how to identify bird nests, recognize special-status species that may occur in the work areas, and the appropriate protocol if any nests or listed species are found during project implementation.

Personnel who miss the first training session or are hired later in the season must participate in a make-up session before conducting maintenance activities.

6.3.8. Use of Herbicides

The City occasionally applies herbicides to invasive plants in upland areas (vegetation growing adjacent to and on the top of stream banks). The introduction of herbicides into riparian areas must be done in a safe and thoughtfully manner and only in limited quantities as absolutely necessary to control invasive and exotic plants. Use of herbicides shall be conducted in a manner that is consistent federal, state, and local regulations, and per labeling instructions. The City will only use herbicides that are approved for use in an aquatic environment (e.g. Rodeo or AquaMaster). Application of herbicides will only occur on calm days when winds are less than 5 miles an hour to prevent airborne transfer of herbicide and when rain is not in the forecast.

Prior to herbicide applications, a qualified federally permitted California red-legged frog biologist will conduct surveys for this frog to document the absence of this federally threatened species. The results of the surveys will be provided to the USFWS and the Department stating that the surveys were completed in advance of herbicide use.

6.3.9. Dewatering

As feasible all work within the instream channel shall be conducted during the dry season when water levels are at their lowest. In certain instances dewatering may be required and shall be conducted in the following manner.

The work area will be dewatered in advance of sediment removal activities. A temporary cofferdam comprised of clean sandbags, rubber bladders, clean gravel or other suitable material, will be installed 50 feet upstream of the work area (preferable on hardscape substrate such as at undercrossings). Any water in the creek channel will be diverted via flexible pipes around the work area and will resume normal flow 50 feet downstream of the work area where another cofferdam will be installed to ensure there are no backflows into the work area. In the event that groundwater seepage occurs in the work area, hay bales covered with filter fabric will be temporarily installed across the creek bed downstream of the sediment removal activities to prevent silt-laden water flowing downstream.

In the event that dewatering requires pumping, a sump pit will be excavated just upstream of the work area and downstream of the upper cofferdam. Pump intakes will be completely screened with wire mesh not larger than five millimeters (mm) to prevent fish and amphibians and/or their larvae, from being sucked into the pump system.

A qualified biologist with appropriate permits will be on site during all dewatering projects. The biologist will relocate all stranded aquatic wildlife downstream.

The period of dewatering will extend for the minimum amount of time needed to perform the maintenance activity. As soon as dewatering activities are complete, the impounded water shall be released at a reduced flow rate. The area disturbed by flow bypass mechanisms will be restored at the completion of CMP activities including, but is not limited to, recontouring the area and planting of riparian vegetation as appropriate.

7. Appendices and References

7.1. Appendices

The following is a list of Appendices used in the preparation of this document. Copies of these documents are on file with the City of Petaluma Department of Community Development or on the City's website.

Appendix A	Initial Study/Mitigated Negative Declaration
Appendix B	Creeks Maintenance Mapbook
Appendix C	Sonoma County Water Agency Stream Maintenance Program, Petaluma River Watershed, Zone 2A

7.2. References

The following is a list of references used in the preparation of this document. Copies of these documents are on file with the City of Petaluma Department of Community Development or on the City's website.

City of Petaluma Documents

1. *The City of Petaluma's Surface Water Master Plan – Technical Memorandum 3 - Biological Resources Review*, prepared by Environmental Science and Assessment, 2003.

2. *Petaluma General Plan 2025*, prepared by the City of Petaluma, May 2008.

3. *Petaluma General Plan 2025 Draft Environmental Impact Report,* prepared by Dyett and Bhatia, 2006.

4. *City of Petaluma Floodplain Management Plan*, prepared by the City of Petaluma, 2015.

5. *Chapter 17 - Tree Preservation. Implementing Zoning Ordinance,* City of Petaluma, June, 2008.

6. *Denman Reach Phase 3 – Revised Initial Study*, prepared by the City of Petaluma, June 2012.

7. *Capri Creek Revised Initial Study Document supporting the approval of a Mitigated Negative Declaration, including a Hydraulic Evaluation Report*, prepared by the City of Petaluma, April 2014.

8. *City of Petaluma Phase II NPDES Storm Water Management Plan*, prepared by Winzler and Kelly Consulting Engineers for the City of Petaluma, November 2003.

9. *Petaluma River Access and Enhancement Plan*, prepared by City of Petaluma, May 1996.

Other Referenced Documents

10. *Amended Water Quality Control Plan for the San Francisco Basin*, prepared by the San Francisco Bay Regional Water Quality Control Board, 1995.

11. *Sonoma County Water Agency: Stream Maintenance Program Environmental Impact Report*, prepared by Horizon Water and Environment, June 2009.

12. *Petaluma Watershed Enhancement Plan*, prepared by The Southern Sonoma County Resource Conservation District, 1999.

13. *Petaluma River Impairment Assessment for Nutrients, Sediment/Siltation, and Pathogens Part 1: Existing Information and TMDL Comparison*, prepared by The Aquatic Science Center for The San Francisco Bay Regional Water Quality Control Board, 2010.

14. *Final California 2010 Integrated Report (303(d)) List/305(b) Report)*, prepared by San Francisco Bay Regional Water Quality Control Board, 2013.

15. *Geologic Map of the Petaluma 7.5' Quadrangle,* prepared by the California Geological Survey, 2002.

16. *Stream Maintenance Program*, prepared by Horizon Water and Environment for The Sonoma County Water Agency, 2009.

17. *Resolution No 88-388 for the certification of the Environmental Impact Report prepared for the Westridge Units 4 and 5 Residential Project*, December 12, 1988.

18. *Petaluma Watershed Steelhead Monitoring Report – 2013-2014 Spawning Surveys,* prepared by National Marine Fisheries Service, December 2014.

19. *City of Petaluma Capri Creek Flood Reduction and Habitat Enhancement Project*, prepared by ESA, November 2015.

Attachment I:

PETALUMA CITYWIDE CREEKS MAINTENANCE PLAN

ENVIRONMENTAL CHECKLIST/INITIAL STUDY
MITIGATED NEGATIVE DECLARATION

PREPARED BY:

CITY OF PETALUMA
11 ENGLISH STREET
PETALUMA, CA 94952

January 2017

CITY OF PETALUMA
CITYWIDE CREEKS MAINTENANCE PLAN
CEQA ENVIRONMENTAL CHECKLIST AND INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

OVERVIEW AND BACKGROUND

Project Title:	Citywide Creeks Maintenance Plan
Lead agency name and address:	City of Petaluma 11 English Street Petaluma, CA 94952
Contact person and phone number:	Olivia Ervin, Environmental Planner (707) 778-4556
Project Location:	Citywide - on various segments of the following creeks: Corona Creek, Corona Road Channel, Capri Creek, Lynch Creek, Washington Creek, East Washington Creek, Channel near Airport, Adobe Creek Bridge, Adobe Creek, Shollenberger /Adobe Creek, Marina Channel, Lakeville Channel, Thompson Creek, Kelly Creek, Petaluma River Downtown, and Petaluma River at Corona Bridge.
Project sponsor's name and address:	City of Petaluma Public Works & Utilities Department
Property Owners:	City of Petaluma
General Plan designation:	Rivers and Creeks
Zoning:	N/A
Description of project:	The Citywide Creeks Maintenance Plan ("project") provides for the routine maintenance of creeks including sediment and trash removal, and vegetation management. The project is intended to provide flood control management while concurrently maintaining the value and function of the creek system by preserving habitat and protecting the creek riparian corridor.
Surrounding land uses and setting; briefly describe the project's surroundings:	Maintenance activities will occur within narrow riparian corridors located adjacent to a mix of urban parklands, residential development, commercial and office space, and other urban uses.
Other public agencies whose approval is required (e.g. permits, financial approval, or participation agreements):	Sonoma County Water Agency (SCWA) for mutual agreement of maintenance activities; California Department of Fish & Wildlife (CDFW) (1600 Lake and Streambed Alteration Agreement: Routine Maintenance Agreement); Regional Water Quality Control Board (RWQCB) 401 Water Quality Certificate; U.S. Army Corps of Engineers 404 Dredge and Fill Permit; and consultation with U.S. Fish & Wildlife Service (USFWS)/National Marina Fisheries Service (NMFS) under Section 7.

CITYWIDE CREEKS MAINTENANCE

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1. OVERVIEW AND BACKGROUND

City of Petaluma General Plan

The Petaluma General Plan 2025, adopted in 2008, serves the following purposes:

- Reflects a commitment on the part of the City Council and their appointed representatives and staff to carry out the Plan;
- Outlines a vision for Petaluma's long-range physical and economic development and resource conservation; enhances the quality of life for all residents and visitors; recognizes that human activity takes place within the limits of the natural environment; and reflects the aspirations of the community;
- Provides strategies and specific implementing policies and programs that will allow this vision to be accomplished;
- Establishes a basis for judging whether specific development proposals and public projects are in harmony with Plan policies and standards;
- Allows City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize impacts and hazards; and
- Provides the basis for establishing and setting priorities for detailed plans and implementing programs, such as Development Codes, the Capital Improvement Program (CIP), facilities and Master Plans, redevelopment projects, and the Urban Growth Boundary (UGB).

City of Petaluma General Plan EIR

Because CEQA discourages "repetitive discussions of the same issues" (CEQA Guidelines section 15152b) and allows limiting discussion of a later project that is consistent with a prior plan to impacts which were not examined as significant effects in a prior EIR or to significant effects which could be reduced by revisions in the later project (CEQA Guidelines section 15152d), no additional benefit to the environment or public purpose would be served by preparing an EIR merely to restate the analysis and the significant and unavoidable effects found to remain after adoption of all General Plan policies/mitigation measures. All General Plan policies adopted as mitigation apply to the subject Project.

The EIR reviewed all potentially significant environmental impacts and developed measures and policies to mitigate impacts. Nonetheless, significant and unavoidable impacts were determined to occur under the General Plan. Therefore, the City adopted a statement of overriding considerations, which balances the merits of approving the project despite the potential environmental impacts. The impacts identified as significant and unavoidable in the General Plan EIR are:

- Increased motor vehicle traffic which would result in unacceptable level of service (LOS) at six intersections covered in the Master Plan:
    - McDowell Boulevard North/Corona Road, Lakeville Street/Caulfield Lane, Lakeville Street/East D Street, Petaluma Boulevard South/D Street, Sonoma Mt. Parkway/Ely Boulevard South/East Washington Street, and McDowell Boulevard North/Rainier Avenue.
- Traffic related noise at General Plan buildout, which would result in a substantial increase in existing exterior noise levels that are currently above City standards.
- Cumulative noise from proposed resumption of freight and passenger rail operations and possible resumption of intra-city trolley service, which would increase noise impacts.

- Air quality impacts resulting from General Plan buildout to population levels that could conflict with the Bay Area 2005 Ozone Strategy. (This regional air quality plan has since been replaced by the 2010 Clean Air Plan, which is further discussed in Sections 3.3 Air Quality and 3.7 Greenhouse Gases.)

- A possible cumulatively considerable incremental contribution from General Plan development to the significant impact of global climate change.

Because CEQA discourages "repetitive discussions of the same issues," this environmental document tiers off of the General Plan EIR (SCH NO.: 2004082065), which was certified on April 7, 2008, to examine site-specific impacts of the proposed Citywide Creeks Maintenance Plan, as described below. A copy of the City of Petaluma's General Plan and EIR are available at the Community Development Department, 11 English Street, Petaluma, California 94952, during normal business hours and online at http://cityofpetaluma.net/cdd/plan-general-plan.html.

Sonoma County Water Agency: Stream Maintenance Manual and Program EIR

Sonoma County Water Agency (SCWA) serves as the agency responsible for the regional oversight of surface waters including flood control management. The SCWA and the City of Petaluma have overlapping jurisdiction of creeks within the Petaluma River watershed (identified as Zone 2A under SCWA's Program Area).

In January 2009, the SCWA adopted a Stream Maintenance Program (SMP) Manual that acts to improve and define management and maintenance and flood control activities within channels and streams under SCWA authority. A Program Environmental Impact Report (PEIR) was certified in June of 2009 (SCH # 2005082131), and identifies the potential environmental effects that may occur as a result of the SMP's implementation. This includes an assessment of several creek segments that are under consideration for the City's proposed maintenance activities. The City of Petaluma and the SCWA jointly manage creeks with overlapping areas of jurisdiction through mutual easement agreements.

The PEIR reviewed all potentially significant environmental impacts and developed measures and policies to mitigate impacts. Nonetheless, significant and unavoidable impacts were determined to occur. Therefore, the SCWA adopted a statement of overriding considerations, which balances the short-term impacts with the long-term benefits despite the potential environmental impacts. The impacts identified as significant and unavoidable in the PEIR include the following:

- Aesthetics due to maintenance activities and sediment disposal; and
- Cumulative Emissions of PM_{10} and Ozone Precursors.

Because CEQA discourages "repetitive discussions of the same issues," this environmental document tiers off of the SCWA Program EIR (SCH NO.: 2005082131), which was certified in June 2009, to examine site-specific impacts of the proposed Citywide Creeks Maintenance Plan, as described below and for the creek segments not addressed by the SMP. SCWA's Stream Maintenance Program Manual and PEIR are available online at http://www.scwa.ca.gov/environmental-documents/.

Citywide Creeks Maintenance Manual

The City of Petaluma has prepared the Citywide Creeks Maintenance Manual (Manual), which is an implementation tool to carry out the Citywide Creeks Maintenance Plan (CMP). The Manual provides the organizational framework to oversee routine maintenance activities for creek citywide. This environmental

document references or summarizes information (including figures and tables) presented in the Manual to avoid repeating information. The reader is encouraged to review the Manual while reviewing this environmental document. A copy of the Citywide Creeks Maintenance Manual is available at Public Works Department, 202 North McDowell Blvd., Petaluma, California 94954 and at the Community Development Department, 11 English Street, Petaluma, California 94952, during normal business hours and online at http://cityofpetaluma.net/cdd/major-projects.html.

1.1. PROJECT DESCRIPTION

The City of Petaluma Public Works & Utilities Department proposes to implement a Citywide Creeks Maintenance Plan, which facilitates the ongoing management of specific creek segments within the City of Petaluma's jurisdiction. The proposed maintenance activities will be carried out as detailed in the Citywide Creeks Maintenance Manual (Manual). The Manual allows for periodic creek maintenance activities by providing an organizational framework through which to systematically carry out routine stream and channel maintenance. The Manual is intended to provide flood control management while concurrently maintaining the value and function of the creek system.

The CMP will be administered over a five-year term with an option for an additional 5-year extension. Towards the end of the five-year cycle the CMP and Manual will be evaluated and updated, as necessary, to ensure relevancy and efficacy of approach. The Manual provides guidance as it relates to implementation of maintenance activities. The Citywide Creeks Maintenance Manual establishes a balanced approach to routine maintenance activities that recognizes the functional flood conveyance of creeks as well as the inherent value creek corridors hold as natural habitat. This integrated approach is reflected in the methodology, timing, best management practices and reporting activities as detailed in the Manual.

CMP Activities and Methods

The primary activities include sediment removal, vegetation management/removal, bank stabilization, and trash removal. All activities proposed by the CMP will be undertaken in accordance with best management practices that include appropriate timing, employment of silt protection, and implementation of erosion control measures. Equipment to be used for maintenance activities includes hand tools, service vehicles, mowers, chippers, tractors, backhoes, excavators, water trucks, and loaders. To the extent possible paths of travel and staging areas will be confined to areas that are paved and/or have been previously disturbed so as to minimize disturbance. All construction equipment will enter and exit through the same area to minimize impacts to adjacent areas. All maintenance activities will be performed using the least invasive means possible. In sensitive areas, all work activities will be conducted by two man crews using hand tools. The primary activities and methodology are described in more detail below:

I. Sediment Removal

Accumulated sediment reduces flow capacity and increases potential for flooding. The CMP provides for the removal of accumulated sediment in stream channels, around bridge pilings, storm drain outfalls, and culverts. Heavy equipment may be utilized from outside top of bank (via a long arm excavator) to remove sediment within stream channels. Hand tools will be used to remove minor sediment accumulated around undercrossing, stormdrains and outfalls. Sediment management activities will be conducted from June 15th to October 31st, when stream flows are at their driest. The scope and amount of sediment removal undertaken annually will depend upon recent weather and hydrologic conditions and will further be contingent upon the frequency of previous maintenance activities undertaken. It is expected that a majority of the sediment removal will occur during the first two years of maintenance, with subsequent years requiring much less removal.

II. Vegetation Management/Removal

Vegetation growth in creeks may inhibit or block flows, potentially contributing to floods. Vegetation management is performed in order to maintain flow conveyance capacity, establish a canopy of riparian trees and understory vegetation, and to control the spread of invasive or non-native species. Vegetation management includes pruning, trimming, clipping, mowing, and/or removal of overgrown vegetation and trees and chemical treatment. Removal or relocation of fallen trees, dead or dying trees and or trees that are diseased may include the use heavy-duty equipment located outside of top of bank or on existing access roads. Vegetation management may also include planting of new trees or native vegetation in order to enhance riparian habitat and bank repair/stabilization. All vegetation management will be conducted outside of the bird-nesting season between September 1 and January 31.

III. Trash Removal

In order to facilitate sufficient flows, promote habitat, and enhance water quality the CMP includes the removal of debris, trash, and waste that obstruct and/or inhibit water flow, reduce channel capacity, or accelerate erosion. Small items will be collected by hand, whereas larger items such as appliances, tires and other urban waste may require heavy equipment including a winch. Heavy-duty equipment will be located outside of top of bank or on existing access road. Trash will be disposed of at local and regional waste facilities.

IV. Related Activities

As part of the CMP related activities include maintenance of access roads, dewatering, and culvert repair within the reaches identified. **Table 1** below provides a summary of the various creek reaches, work to be conducted on an annual basis and various details on the activities proposed.

Routine maintenance activities including vegetation management, localized sediment removal at culverts, outfalls, and undercrossing, as well as trash removal and minor bank repairs will not necessitate the preparation of engineered drawings. However, activities that involve substantive sediment removal, bank recontouring, and extensive vegetation removal, may warrant engineered drawings at the request of the permitting agencies.

CMP Work Cycle

Activities proposed as part of the CMP will be conducted on an annual basis with some activities occurring more frequently as conditions necessitate. A qualified professional (Public Works staff member or contactor authorized to carry out activities) will conduct an annual assessment consisting of a field based stream reconnaissance in late winter to inform that cycle's work plan. The annual work plan will identify the creek segments where work will occur and detail the location of activities, quantities of sediment, vegetation and trash expected to be removed. It will also identify any opportunities for the management of invasive species, replanting of natives, or bank stabilization. The annual work plan will be submitted to regulatory agencies for review and comment prior to the start of each year's work cycle. The annual work plan will then be refined, as appropriate and implemented in the summer/fall (dry season) and outside of the breeding period of most terrestrial and aquatic species. There will be a higher quantity of removal within the first two years of implementation, and subsequent years will warrant a reduced quantity of removal and maintenance.

In general all maintenance activities will be conducted during the low flow period (from June 15 to October 31). Activities within engineered channels with low habitat value may be conducted outside of the primary

work window. On a case-by-case basis, exceptions may be made with the advance approval of appropriate regulatory agencies to shift the work window.

Table 1-1: Creek Maintenance Plan Matrix below provides a summary of the anticipated extent of sediment, vegetation and trash removal.

Description Of Creeks

The CMP consists of targeted activities along select segments of the Petaluma River and its tributaries. The SCWA PEIR and subsequent routine maintenance documents also provide detailed descriptions of the City's creeks where jurisdiction overlaps. A brief characterization of the creek reaches where activities will be performed is provided below. For the location of each reach, please see Attachment B:

1. Corona Creek (Reach 1-3)

All of Corona Creek's three reaches feature gradual banks with wide, shallow channels and are generally accessible.

Corona Reach 1 is located south of Riesling Road and features a pedestrian trail on the west of the creek with a pedestrian bridge crossing. Vegetation is concentrated in the creek channel and consists of shrubs, oaks and a variety of ornamental species. Corona Reach 1 periodically experiences sediment build up within the channel and around bridge pilings that may need removal will both hand tools and heavy equipment.

Corona Reach 2 is characterized generally by riparian habitat with moderate vegetation on banks and willows in the channel. Corona Reach 2 features a narrower strip of riparian habitat and vegetation becomes increasingly more sparse farther south of Ely Road. SCWA maintains the hydraulic capacity along this segment including all maintenance within the low flow channel. Periodic vegetation and sediment removal is proposal along the lower and upper banks.

Corona Reach 3 consists of an L-Shaped segment with a narrow channel between residential development on either side, which transitions to an engineered channel on the portion alongside Highway 101, with top of bank dominated by invasive grass and roadside weeds.

2. Corona Road Channel

The Corona Road channel (Reach 1) extends along the western edge of Corona Road from North of McDowell Boulevard north to the railroad corridor. The channel features gradual banks with a wide channel. The channel exhibits minimal vegetative cover on the bank and more moderate vegetative coverage in the channel. Habitat on site is comprised primarily of low shrubs with a few isolated oaks on the top of bank. The site is readily accessible from the adjacent right of way. This is an engineered channel with characteristics of a roadside ditch.

3. Capri Creek

Capri creek is a linear trapezoidal earthen channel that runs between residential subdivisions south of Sonoma Mountain Parkway before entering a 230-foot concrete culvert at N. McDowell Boulevard. The channel width extends approximately 5 feet across on average and varies from 4 to 5 feet in depth at the lowest bank. The top of bank extends approximately 40 to 60 across. Maria Drive separates Reach 1 from Reach 2.

Capri Creek Reach 1 is located north of Maria Drive and south of Sonoma Mountain Parkway. This reach consists of sporadic canopy cover with minimal vegetation; predominantly overgrown tulles.

Capri Creek Reach 2 is located south of Maria Drive and north of N. McDowell, lacks mature trees and has minimal vegetation. A flood terrace along this reach has been under consideration for several years and several studies have been completed to date. On May 19, 2014 an MND was adopted by the City Council that analyzed the impacts associated with developing a flood terrace along this segment. The City is currently working with the regulatory agencies to secure permits for the flood terrace. (Capri Creek Flood Terrace Hydrologic Analysis Report, prepared by City of Petaluma, November 2011). The flood terrace is not part of the CMP; rather it is considered a separate project.

4. Lynch Creek (Reaches 1 to 4)

Lynch Creek is located in the central portion of Petaluma and provides drainage through the Rooster Run Golf Course and Prince Park. All reaches of Lynch Creek are designated critical habitat[1] for the Central California Coast Steelhead DPS by the National Marine Fisheries Service (NMF)/National Oceanic and Atmospheric Administration (NOAA).

Lynch Creek Reach 1 extends from city limits at Rooster Run Golf Course south to Cricket Court. The northern portion of this reach exhibits erosion, incision, and presence of non-native plant species and transitions to a wide riparian corridor with mature trees, thick canopy cover and dense vegetation. High volume flows regularly pass through this reach as evidenced by the presence of debris in trees, exposed tree roots, and bank erosion.

Lynch Creek Reach 2 extends from Sonoma Mountain Parkway to just north of Maria Drive (Flannigan Way). Where the creek flows through a box culvert under Sonoma Mountain Parkway, the riparian corridor is wide but lacks protection. A portion of the reach has undergone stream bank stabilization. Downstream the creek exhibits denuded understory resultant of human disturbance. The eastern top of bank in this reach is maintained by a private landowner, the Creekview Commons Homeowners Association. The western bank, outside top of bank, features a paved pedestrian path along the entire segment. This reach is defined by a meandering channel that is abutted by residential land uses on both sides. It is partially enclosed by fencing with occasional access points and exhibits diverse over and understory.

Lynch Creek Reach 3 extends from Maria Drive to N. McDowell Boulevard and exhibits a narrow straight channel configuration. The character of the vegetation becomes less diverse with a greater presence of invasive species and an increased level of human disturbance. Downstream from the box culvert at crossing at Maria Drive, Lynch Creek flows between Luchessi Park and a medical offices/hospital development. Adjacent to Luchessi Park the creek has been subject to a high degree of human disturbance such that the riparian corridor is narrow and outside the top of bank is denuded of native trees and understory vegetation.

Lynch Creek Reach 4 located between North McDowell Boulevard and Highway 101, consists of a narrow, straight channel between medical office and high-density residential (senior housing) development. Reach 4 features mature trees with an understory dominated by English Ivy. Bank erosion and indicators of high volume flows are visible throughout this reach.

5. Washington Creek (Reaches 1-2)

[1] Department of Commerce, National Oceanic and Atmospheric Administration, Federal Register Volume 70, No. 170, issued September 2, 2005.

The Washington Creek stream channel meanders through County land before entering City limits and passing through the eastern portion of the Rooster Run Golf Club. From there, the creek becomes well defined as it passes through residential subdivisions. The riparian corridor contains moderate to low vegetative structure. The Creek's vegetative cover features an upper reach dominated by willow scrub along the channel and ruderal vegetation throughout the upper banks. Blackberry dominates the in-channel vegetation. Culvert outfalls within the creek are maintained by the SCWA. The CMP proposes trash and vegetation removal and minor limb trimming.

Washington Creek Reach 1 begins at city limits and runs parallel to East Washington Street through Rooster Run Golf Club and extends to a covered culvert on the border of Prince Park. Reach 1 proposes minor sediment removal around storm drain outfalls within the channel.

Washington Creek Reach 2 extends from Prince Park Bridge to Ely Boulevard South. The reach features a gradual bank and generally large and shallow channel which becomes increasingly narrow and deep as it extends towards Ely Boulevard. Oaks, alders, and cottonwoods have been planted along the reach that will eventually provide stable canopy closure but will require occasional trimming. The channel bottom of Reach 2 is maintained by the SCWA.

6. East Washington Creek (Reach 1)

East Washington Creek and its riparian corridor are characterizes with low quality vegetative structure. The creek has been subject to a high degree of human disturbance to such an extent that much of it exhibits primarily non-native plant species. East Washington Creek (Reach 1) is contained in a double pipe system under Rooster Run Golf Course and the Petaluma Municipal Airport inside of the City of Petaluma Urban Growth Boundary (UGB). The creek daylights into a wide unprotected corridor, with residential development on both sides between the airport and S. Ely Boulevard. Reach 1 contains predominantly non-native herbaceous understory vegetation with a few scattered mature trees. Reach 1 of East Washington Creek is channelized and straightened. The creek enters into a culvert where it passes beneath Garfield Drive. There is a pedestrian path along the eastern edge of the creek that ties into the Wiseman Park trail system. A pedestrian footbridge immediately south of the airport provides access over the creek and connectivity to the trail system at the nearby Wiseman Park. Vegetation and trash removal and limb trimming along the upper and lower banks is proposed. The SCWA maintains the stream channel for the length of Reach 1.

7. Channel near Airport (Reach 1-2)

This feature is comprised of an unnamed drainage feature that carries excess runoff from the upstream Rooster Run Golf Course in a southeastern direction. This drainage channel does not support a riparian corridor and is characterized by a narrow width, shallow depth and ephemeral flows (part of the year it is dry).

Channel Near Airport Reach 1 occupies a short stretch within Wiseman Park flanked on each side by baseball fields. A footpath has cut through the channel stream on the north side near a fence separating the park from Petaluma Airport property, where the land beyond drains into the channel by way of three small storm outlets. This reach exhibits heavily eroded banks, a modified unprotected channel, two trees, and little native vegetation that accumulates into an overall easily accessible but low quality site. Flows are then directed south towards two medium sized covered storm inlets that will require periodic maintenance. The channel undergrounds beneath a residential subdivision before reemerging near Arroyo Park roughly one block to the south. Reach 1 requires basic maintenance along storm drain inlets and outfalls.

Channel Near Airport Reach 2 is comprised of a shallow and narrow drainage ditch that daylights near Arroyo Park, just south of Garfield Drive. A community playground and lawn area is located to the east of the reach and an open space area to the west. The drainage ditch lacks an established corridor, features limited habitat value and is dominated by grass adjacent to and along top of bank. This reach warrants sediment, trash, and debris removal from culverts.

8. Adobe Creek (Reach 1-2)

Upstream portions of Adobe Creek, outside of the City of Petaluma UGB and under Casa Grande Road, is characterized as degraded and lacks adequate bank stabilization. Adobe Creek is identified as critical habitat[2] for Steelhead-Central Coast Evolutionary Significant Unit (ESU) by the National Marine Fisheries Service (NMF)/National Oceanic and Atmospheric Administration (NOAA). In addition, native northwestern pond turtles and non-native red-eared slider turtles were observed in one of the sloughs in Shollenberger Park.

Adobe Creek Reach 1 extends south of Ely Boulevard to the southern extent of Spyglass Road. Due to prior restoration efforts this reach exhibits a healthy riparian corridor comprised of overstory canopy and a diverse understory. The CMP proposes trash removal, relocating or removing a currently fallen tree (and future downed branches, and trunks) and vegetation clearing.

Adobe Creek Reach 2 is comprised of the segment of Adobe Creek that extends from its confluence with Shollenberger Creek to the Petaluma River. Shollenberger Park provides pedestrian pathway along Adobe Creek and the Petaluma River that surround the City's dredge spoils disposal site and contains salt marsh habitat. Here Adobe Creek transitions from brackish emergent marsh to tidally influenced salt marsh habitats.

Adobe Creek Bridges are comprised of culverts to accommodate under-crossings of Casa Grande Road. Sediment and vegetation accumulation around these culverts will be cleared out and removed to restore function. Minor sediment and removal, as well as some tree and brush trimming are proposed.

9. Shollenberger Park Creek

Shollenberger Park is comprised of 165 acres, which, together with Alman Marsh and Ellis Creek, is referred to as the Petaluma Wetlands. This area is renowned for its bird watching opportunities and, as such, serves as an important habitat for many special status species including the salt marsh harvest mouse. The Shollenberger Creek Reach is not ephemeral and therefor may require dewatering before vegetation and sediment may be cleared around culvert pipes and within the channel. Trash and vegetation removal along creek banks is also proposed.

Shollenberger Creek (Reach 1) flows along the northern and eastern border of Shollenberger Park where it joins with Reach 2 of Adobe Creek. Reach 1 of Shollenberger Creek is bordered by commercial development to the north and a footpath separating the reach from Shollenberger Park to the south. The channel exhibits dense vegetation and sediment accumulation that inhibit flows, and may result in flood events if it is not properly maintained. Trees along the northern edges require periodic trimming to avoid blocking flows and heavy concentrations of grasses outside top of bank are proposed for periodic mowing along this reach.

10. Marina Channel

The Petaluma Marina provides private docking facilities and public launching into the Petaluma River. The Marina Channel is comprised of two reaches that encompass the Marina and connect to the Petaluma River. Both Marina Channel Reaches are tidally influenced and contain brackish marsh habitat.

Marina Channel Reach 1 is located adjacent to Marina Avenue, east of the Petaluma Marina, and follows a pedestrian trail through Alman Park before empting into the Petaluma River at the mouth of the Marina. A parking area for the Marina is separated by a line of trees that lie west of the channel and the Alman Marsh segment of Petaluma's public wetland to the east. Several footbridges along a scenic pathway through the wetlands cross over this reach. Vegetation and trash removal by hand is proposed through the CMP.

Marina Channel Reach 2 is located to the west of the Petaluma Marina, which is separated by a narrow strip of land that contains a public footpath. Brackish marsh habitat is located along the fringes of the channel.

11. Lakeville Channel

The Lakeville Channel is located in an urbanized region of Petaluma between Lakeville Street and Hopper Street, approximately 400 feet west of the intersection of Lakeville Street and Caulfield Lane. The entire reach is bordered to the east by the Discount Frame Store, and bordered to the west by an industrial storage yard with an approximate 10-foot tall metal fence abutting the top of bank on both sides. The riparian corridor is very narrow, less than 25 feet in width, with no buffer zone between the bank tops and surrounding businesses. There is almost no canopy coverage, with scattered willows along the west bank. In late summer 2015, the channel was cleared of vegetation and sediment was removed within and around culvert pipes. Routine soil, debris, and vegetation clearing in and around the culvert outfall are proposed as part of the CMP.

12. Thompson Creek Reach 1

Thompson Creek meanders into the Thompson Creek reservoir on a hillside southwest of the City of Petaluma. The reservoir was constructed as part of the Westridge Residential Project to serve as a detention pond for peak storm flows.[3] Thompson Creek Reach 1 is comprised of the segment between Photonia Place where the detention basin begins, to Westridge Drive, where the piped channel daylights. Thompson Creek will require vegetation and sediment removal around culverts within its channel. Trash and vegetation removal is also needed along upper and lower parts of its bank.

13. Kelly Creek Reach 1

Kelly Creek is surrounded by low density housing in the central-southern portion of Petaluma. Kelly Creek supports a riparian woodland consisting of coast live oak (*Quercus agrifolia*) and California bay (*Umbellularia californica*) with an understory of grassland and scattered shrubs. There are rock pools with sticks and branches in upper reaches of Kelly Creek that may provide suitable breeding habitat. There are also springs, seeps, and intermittent drainages may provide dispersal habitat for the endangered California red-legged frog.

[3] The Westridge Residential Project's EIR was certified by the City of Petaluma on December 12, 1988 through resolution No 88-388. The reservoir was designed in consultation with the Department of Fish and Game (now Fish and Wildlife) to retain a natural stream and habitat along Thompson Creek. The regular removal of debris and sediment from the reservoir was identified as a long-term term maintenance strategy.

The CMP proposes to maintain a small privately owned segment (Reach 1) of Kelly Creek adjacent to Sunny Slope Road, near the intersection with Sunny Slope Avenue. Reach 1 is located upstream of Sunnyslope Avenue and along the western edge of Sunnyslope Road for about 400 feet. The area exhibits extremely dense vegetation and a complete canopy cover.

Several culverts are located within Kelly Creek that require regular maintenance. The CMP proposes minor sediment and vegetation removal around culverts within Kelly Creek's Channel in addition to vegetation, trash, and some non-native ivy removal.

14. Petaluma River Downtown

The Petaluma River is the primary waterway to which all creeks and tributaries ultimately drain. The headwaters of the Petaluma River begin at the confluence of Willowbrook and Petaluma Creeks. Within the city as a whole, the Petaluma River conveys flows in a southeasterly direction where it empties into San Pablo Bay. A weir structure and floodwall are located near the confluence with Lynch Creek. The river becomes increasingly incised as it approaches and flows through the downtown area. The Petaluma River is identified as critical habitat for both Central California Coast Steelhead and the Southern Green Sturgeon. Central Valley Fall/Late fall-run Chinook salmon and longfin smelt may also be present in the Petaluma River.

Petaluma River Reach 1 spans from Lakeville Street Bridge to the East Washington Street Bridge. Upstream of Reach 1, the Petaluma River is maintained by the SCWA. Reach 1 of the Petaluma River features ruderal habitat and ornamental species on top of bank, and a fringe of coastal brackish marsh and open waters of the Petaluma River.

Petaluma River Reach 2 is located south of E. Washington Bridge to the pedestrian bridge at Western Ave.

15. Petaluma River at Corona Bridge

This reach features riparian habitat and is heavily overgrown along the banks and within the channel. The vegetative cover is largely dominated by blackberry and willow. Sediment removal and vegetation trimming is needed at the culvert where Petaluma River passes beneath Corona Road. Although the stream channel is currently maintained by the SCWA, the CMP contemplates the City acquiring authorization for routine maintenance activities. This could be accomplished through a memorandum of understanding between the City of Petaluma Public Works Department and the SCWA.

Sonoma County Water Agency

As previously mentioned, several reaches included in the CMP have overlapping maintenance responsibilities. The City of Petaluma and the SCWA jointly maintain certain reaches through various easements and agreements. Reaches co-maintained with the SCWA will defer in-channel maintenance activities to the SCWA while all other maintenance activities will be conducted by the City. Reaches with overlapping jurisdiction consist of the following:

- Corona Road Channel Reach #1
- Corona Creek Reach #1-3
- Capri Creek Reach #1-2
- Washington Creek Reach #2
- East Washington Creek Reach #1

The SCWA prepared a Program EIR for the ongoing maintenance of creeks including those listed above. The SCWA currently conducts activities in accordance with the Routine Maintenance Agreement (RMA) issued by the California Department of Fish and Wildlife (CDFW)[4], the 401 Water Quality Certification issued by the Regional Water Quality Control Board (RWQCB)[5], and the 10-year 404 Individual Permit issued by the U.S. Army Corps of Engineers (Corps)[6].

[4] Final Lake or Streambed Alteration Agreement Notification No. 1600-2009-0399-R3, Stream Maintenance Program, Sonoma County, issued May 20, 2010.
[5] Waste Discharge Requirements and 401 Water Quality Certification for Sonoma County Water Agency Stream Maintenance Program, Order No. R1-2009-0049, issued July 23, 2009.
[6] Sonoma County Water Agency Stream Maintenance Program for the Petaluma River and Sonoma Creek Watersheds, Sonoma County, California 10-year Individual Permits (Corps File No. 2009-00136N), issued April 5, 2010.

Table 1: Citywide Creek Maintenance Plan Matrix

	Creek Segment Detail				Sediment Removal					Vegetation Removal				Maintainance Technique			Construction Detail		
	CREEK	REACH	LOCATION	Channel Type	Soil Disturbance (Linear Feet)	Around Bridge Piling (Amount Cubic Yards/Year)	In Culverts/Drain Outlets (Amount Cubic Yards/Year)	Stream Channel Bottom (Amount Cubic Yards/Year)	Requires Dewatering (YES/NO)	Upper Half of Bank (Amount Cubic Yards/Year)	Lower Half of Bank (Amount Cubic Yards/Year)	In Stream (Amount Cubic Yards/Year)	Tree Removal (Yes/No)	Hand Tools / Small Equipment	Heavy Equipment (Backhoe, Excavator, Haul Truck, Other)	Mowing	Duration of Activity	Staging Area (Location)	Trash Removal
4	**Corona Creek**	Reach 1	City limits to Ely Road North	Semi-Modified	600	X	5-10 cy/yr	10-20 cy/yr	Yes	2-4cy/yr	5-10cy/yr	5-10cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
5	**Corona Creek**	Reach 2	Ely Road North to McDowell Blvd. North	Semi-Modified	2000	5-10 cy/yr	5-10 cy/yr	10-20 cy/yr	Yes	2-4cy/yr	5-10cy/yr	5-10cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
6	**Corona Creek**	Reach 3	McDowell Blvd. North to Capri creek	Semi-Modified	1200	X	2-4 cy/yr	2-4 cy/yr	Yes	2-6 cy/yr	2-6 cy/yr	N/A	Yes	Yes	No	Yes	2-4 weeks	Access Road	2-4 cy/yr
7	**Corona Road Channel**	Reach 1	North of McDowell Blvd. N	Modified	100	2-4 cy/yr	2-4 cy/yr	2-4 cy/yr	No	2-4cy/yr	2-4 cy/yr	2-4cy/yr	No	Yes	No	Yes	2-4 weeks	On Road	1-2 cy/yr
8	**Capri Creek**	Reach 1	Sonoma Mountain Parkway to Maria Drive	Semi-Modified	600	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	No	2-6 cy/yr	N/A	N/A	Yes	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
9	**Capri Creek**	Reach 2	Maria Drive to McDowell Blvd. N	Modified	600	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	No	2-6 cy/yr	N/A	N/A	No	Yes	No	Yes	2-4 weeks	On Road / Park	2-4 cy/yr
10	**Lynch Creek**	Reach 1	City limits to Crickett Court	Natural	800	2-4 cy/yr	2-4 cy/yr	5-10 cy/yr	No	2-4cy/yr	2-4 cy/yr	2-4cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road / Park	1-2 cy/yr
11	**Lynch Creek**	Reach 2	Sonoma Mountain Parkway to Flanigan Way	Semi-Modified	600	2-4 cy/yr	2-4 cy/yr	5-10 cy/yr	No	2-4cy/yr	2-4 cy/yr	2-4cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road / Path	2-4 cy/yr
12	**Lynch Creek**	Reach 3	Maria Drive to McDowell Blvd. N	Semi-Modified	1200	2-4 cy/yr	2-4 cy/yr	5-10 cy/yr	Yes	2-4cy/yr	2-4 cy/yr	2-4cy/yr	Yes	Yes	No	Yes	2-4 weeks	PAthway	2-4 cy/yr
13	**Lynch Creek**	Reach 4	McDowell Blvd. N. to Hwy 101	Semi-Modified	400	5-10 cy/yr	2-4 cy/yr	5-10 cy/yr	Yes	2-4cy/yr	2-4 cy/yr	2-4cy/yr	Yes	Yes	No	Yes	2-4 weeks	Pathway	2-4 cy/yr
14	**Washington Creek**	Reach 1	City Limits to Prince park footbridge	Semi-Modified	400	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	No	4-6 cy/yr	4-6 cy/yr	2--4 cy/yr	Yes	Yes	No	Yes	2-4 weeks	Park / Pathway	1-2 cy/yr
15	**Washington Creek**	Reach 2	Prince park footbridge to Ely Road S.	Modified	800	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	No	4-6 cy/yr	4-6 cy/yr	2--4 cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
16	**East Washington Creek**	Reach 1	Airport Culvert Outfall to Ely Road S.	Modified	1000	X	X	2-4 cy/yr	No	2-4cy/yr	N/A	N/A	Yes	Yes	No	Yes	2-4 weeks	Pathway	1-2 cy/yr
17	**Channel Near Airport**	Reach 1	Airport culvert outfall to Saint Augustine Drive	Semi-Modified	100	X	2-4 cy/yr	2-4 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	No	Yes	No	Yes	2-4 weeks	On Road / pathway	1-2 cy/yr
18	**Channel Near Airport**	Reach 2	Through Arroyo Park	Semi-Modified	200	X	2-4 cy/yr	2-4 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	No	Yes	No	Yes	2-4 weeks	On Road / pathway	1-2 cy/yr
19	**Adobe Creek Bridges**	Adobe Creek Bridges	Adobe Road to Ely Road South	Natural	100	5-10 cy/yr	5-10 cy/yr	5-10 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	1-2 cy/yr
20	**Adobe Creek**	Reach 1	Ely Blvd South to end of Spyglass Road	Semi-Modified	400	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	Yes	Yes	No	Yes	2-4 weeks	Pathway	1-2 cy/yr
21	**Adobe Creek**	Reach 2	Shollenberger Creek To Petaluma River	Semi-Modified	800	2-5 cy/yr	2-5 cy/yr	5-10 cy/yr	Yes	2-6 cy/yr	1-2 cy/yr	1-2 cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
22	**Schollenberger Park Creek**	Reach 1	Through Shollenburger Park toAdobe Creek	Modified	1000	X	2-4 cy/yr	2-4 cy/yr	Yes	1-2 cy/yr	1-2 cy/yr	N/A	No	Yes	No	Yes	2-4 weeks	Park	1-2 cy/yr
23	**Marina Channel**	Reach 1	Footbridge at Marina to Petaluma River	Natural	500	X	X	X	No	1-2 cy/yr	N/A	N/A	No	Yes	No	Yes	2-4 weeks	Levee Walkway	2-4 cy/yr
24	**Marina Channel**	Reach 2	Marina boat launch to Petaluma River	Modified	500	X	2-5 cy/yr	X	No	1-2 cy/yr	N/A	N/A	No	Yes	No	Yes	2-4 weeks	Parking Lot	1-2 cy/yr
25	**Lakeville Channel**	Reach 1	Lakeville Street to Rail Road Tracks	Modified	200	X	2-4 cy/yr	5-10 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	No	Yes	No	Yes	2-4 weeks	Public ROW	1-2 cy/yr
26	**Thompson Creek**	Reach 1	Photinia Place to Westridge Drive	Modified	500	C	2-5 cy/yr	2-5 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	Yes	Yes	No	Yes	2-4 weeks	Park / Existing Access Rd.	1-2 cy/yr
27	**Kelly Creek**	Reach 1	Upstream of Sunny Slope Ave	Semi-Modified	100	X	1-2cy/yr	1-2 cy/yr	No	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	Yes	Yes	No	Yes	2-4 weeks	On Road	1-2 cy/yr
28	**Petaluma River**	Reach 1	Lakeville Street bridge to E. Washington StreetBridge	Semi-Modified	500	5-10 cy/yr	5-10 cy/yr	N/A	No	1-2 cy/yr	1-2 cy/yr	N/A	No	Yes	No	Yes	2-4 weeks	On Road	1-2 cy/yr
29	**Petaluma River**	Reach 2	E. Washington Street Bridge to Western Ave footbridge	Semi-Modified	500	5-10 cy/yr	5-10 cy/yr	N/A	No	1-2 cy/yr	1-2 cy/yr	N/A	No	Yes	No	Yes	2-4 weeks	On Road	2-4 cy/yr
30	**Petaluma River @ Corona Bridge**	Petaluma River Bridge	Corona Road Bridge	Semi-Modified	200	5-10 cy/yr	X	10-20 cy/yr	Yes	1-2 cy/yr	1-2 cy/yr	1-2 cy/yr	No	Yes	No	Yes	2-4 weeks	On Road / City Park	5-10 cy/yr

1.2. PROJECT LOCATION

The City of Petaluma is located approximately 35 miles northwest of San Francisco, in southwestern Sonoma County, along the Highway 101 corridor (see **Figure 1: Regional Location Map**). The creek segments identified in the Creeks Maintenance Plan are confined to the Petaluma River and its tributaries. The Petaluma River is part of the larger Petaluma River watershed, which is approximately 32 square miles and located in Southern Sonoma and Marin Counties with elevations ranging from sea level at San Pablo Bay to approximately 3,000 feet above mean sea level (MSL) at Sonoma Mountain. The Petaluma watershed is drained by the Petaluma River and its tributaries.

The Petaluma River begins at the confluence of Willow Brook and Petaluma Creeks where it flows southeasterly for approximately 19 miles where it empties into San Pablo Bay. The area immediately downstream of the river's confluence is characterized by agricultural lands, which quickly transition into more urbanized land uses consisting of residential, commercial, and industrial development. Tributary streams associated with the river are seasonal in the upper reaches of the watershed, but intercept groundwater in some of the flat valley segments and at times will flow year round.

The Petaluma River is tidally influenced near Downtown Petaluma where freshwater mixes with the salt water that flows upstream with the tide. The Petaluma River transitions to non-tidal within the Corona Reach of the Petaluma River.

Petaluma's surface water system is comprised of ditches, natural and improved (mechanized) channels, pipes, and culverts in addition to a number of drainage areas located outside of and within the City limits. All drainage areas eventually discharge into the Petaluma River. Creeks and streams that are tributary to the Petaluma River demonstrate both perennial and ephemeral flow patterns. Some creeks are seasonal in nature and are periodically dry or exhibit negligible flows during the dry season, but support heavy flows during the wet season, generally between the months of October to April. There are also a number of unnamed channels throughout the City that are maintained either by the City of Petaluma, Sonoma County Water Agency (SCWA), or private property owners.

The City's various creeks that will be maintained under the CMP are shown in **Figure 2: Project Vicinity**. Appendix B, to the Creeks Maintenance Manual, provides the Creek Maintenance Plan Mapbook, which includes a key map of creeks Citywide and identifies each reach proposed for inclusion within the CMP on a separate map page.

1.3. ENVIRONMENTAL SETTING

Petaluma is located in southwestern Sonoma County along the US 101 corridor approximately 15 miles south of Santa Rosa and 20 miles north of San Rafael. It is situated at the northernmost navigable end of the Petaluma River, a tidal estuary that meanders southward to San Pablo Bay. The city originated along the banks of the Petaluma River, spreading outward over the floor of the Petaluma River Valley as it developed. The valley itself is defined by Sonoma Mountain on the northeast and by the hills extending northward from Burdell Mountain on the west. To the south are the Petaluma Marshlands and the San Pablo Bay beyond.

Petaluma's Urban Growth Boundary (UGB) defines the limits within which urban development may occur and encompasses approximately 9,911 acres. The UGB was implemented in 1987 (as the Urban Limit Line), formally adopted as the UGB in 1998 via Measure I, and will expire in 2025 without prior action. The General

Plan and EIR evaluated potential impacts associated with existing and proposed development within the UGB.

The City of Petaluma is characterized as a predominantly urban environment. The Petaluma River and its tributaries contain the majority of the remaining natural habitat and wildlife species with the City's Planning Area. Special status species that may be present in and around Petaluma waterways and riparian corridors include: bats, salt-marsh harvest mouse, California Black rail, California Ridgway Rail, Samuel's song sparrow, salt marsh common yellowthroat, Steelhead, Sacramento Splittail, longfin smelt, green sturgeon, foothill yellow-legged frog, California giant salamander, California red-legged frog, western pond turtle, Sonoma alopecurus, soft bird's beak, and congested-headed hayfield tarplant.

In general, plant communities typically associated with rivers corridor include upland oak woodlands, riparian shrub thickets of willow, native blackberry, and wild rose, freshwater and tidal salt marshes, as well as grassland with limited seasonal wetland components. Riparian tree species found in and around Petaluma River and its tributaries include coast live oak (*Quercus agrifolia*), willows (*Salix lasiandra, S. lasiolepis, and S. hindsiana*), box elder (*Aser negundo spp. Californium*), Oregon ash (*Fraxinus latifolia*) and black walnut (*juglans hindsii*).

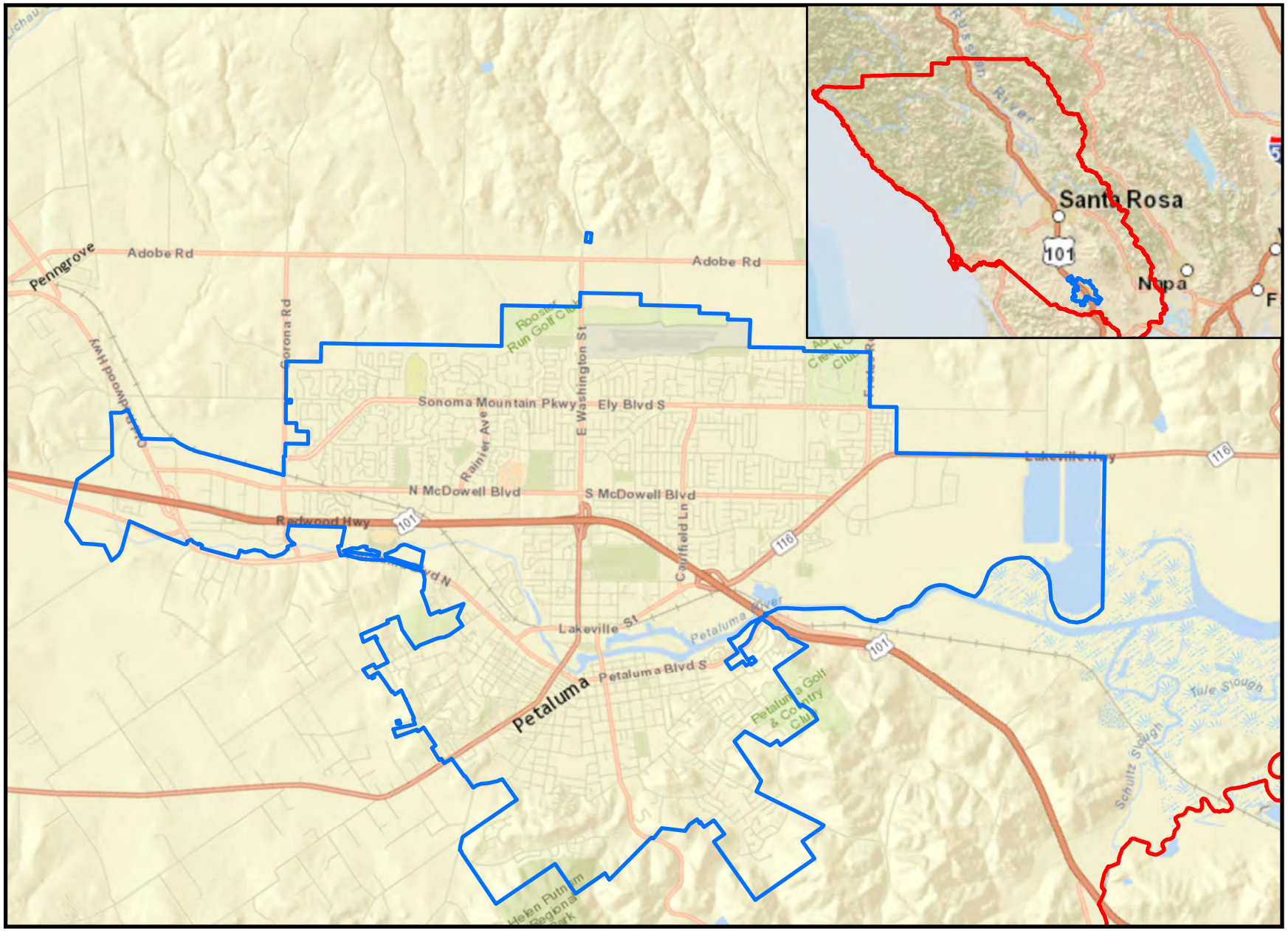
Relative to historic conditions limited native plant communities in and around Petaluma River and its tributaries remain. The presence of invasive vegetation has increased in severity. Exotic plant species including Himalaya blackberry (*Rubus*), sweet fennel (*Foeniculum*), and cocklebur (*Xanthium*) have become increasingly dominant in certain locations. The fragmented patterns of vegetation and lack of extensive and/or continuous habitat with diverse vegetative areas has contributed to the diminished habitat value along Petaluma's waterways. The lack of a substantial variety of native tree and shrub species within the riparian zone (which would normally provide seasonal and varied food sources, cover, and shelter) also diminished the overall habitat value in many of the remnant riparian areas.

Creeks within the city limits are located adjacent to urban development and have been degraded relative to their historic condition. The Petaluma River and tributaries exhibit invasive and non-native plant species (i.e. eucalyptus and poplar trees, English ivy, periwinkle, Himalayan blackberry, amongst others). There is an opportunity to enhance the riparian corridor through the removal of invasive and non-native plant species by replanting and management of native species.

1.4. APPROVALS FROM OTHER REGULATORY AGENCIES

The proposed Citywide Creeks Maintenance Plan requires approval from the California Department of Fish and Wildlife for a Routine Maintenance Agreement (Lake and Streambed Alteration Agreement pursuant to Section 1600 of the Fish and Game Code), the Regional Water Quality Control Board for a Clean Water Certificate (401 Certificate) and possibly a 404 permit from the Army Corps of Engineers for a dredge and fill permit to waters of the United States and/or consultation/permitting with the Fish and Wildlife Service or National Marine Fisheries under the Endangered Species Act.

Additionally, the City of Petaluma proposes to enter into a memorandum of understanding with the Sonoma County Water Agency (SCWA) to carry out certain activities under the SCWA jurisdiction.

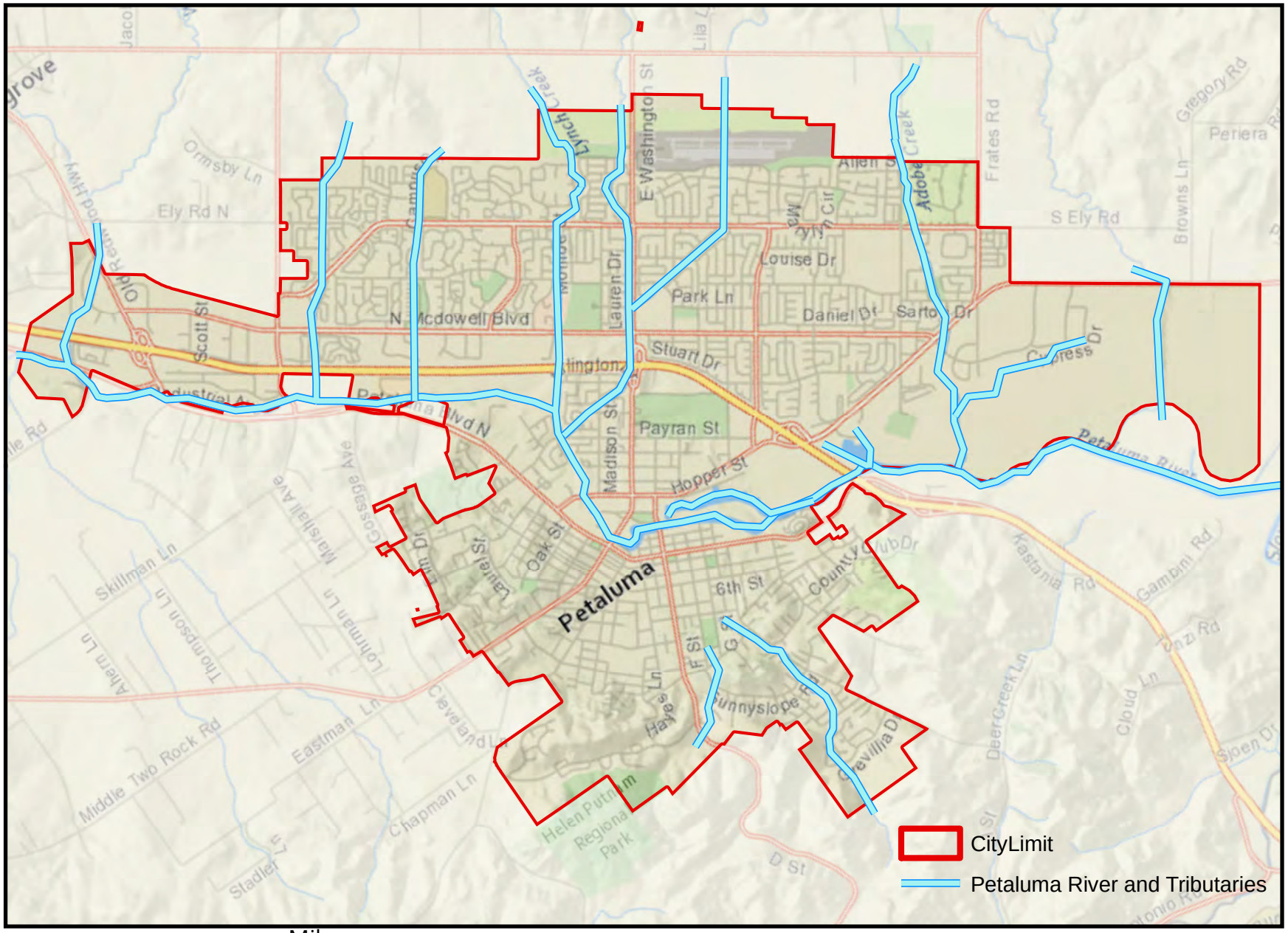


Regional Location

Creeks Maintenance Plan

Petaluma, California

Figure 1



Project Vicinity

Creeks Maintenance Plan

Petaluma, California

Figure 2

2. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact Unless Mitigation is Incorporated" as indicated by the checklist on the following pages.

I	Aesthetics		VII	Greenhouse Gas Emissions		XIII	Population / Housing	
II	Agricultural & Forestry Resources		VIII	Hazards & Hazardous Materials	✔	XIV	Public Services	
III	Air Quality		IX	Hydrology / Water Quality	✔	XV	Recreation	
IV	Biological Resources	✔	X	Land Use / Planning		XVI	Transportation / Traffic	
V	Cultural Resources		XI	Mineral Resources		XVII	Utilities / Service Systems	
VI	Geology / Soils		XII	Noise	✔	XVIII	Mandatory Findings of Significance	

3. DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment. A **NEGATIVE DECLARATION** will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. **A MITIGATED NEGATIVE DECLARATION** will be prepared.	X
I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.	
I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Olivia Ervin 1.9.17

Signature: Olivia Ervin, Environmental Planner, Planning Division **Date**

1-9-17

Signature: Kent Carothers, Operations Manager, Public Works **Date**

4. EVALUATION OF ENVIRONMENTAL IMPACTS

The following discussion addresses the potential level of impact relating to each environmental category.

4.1. AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Sources: City of Petaluma General Plan and EIR; and Sonoma County Water Agency Stream Maintenance Manual and Program EIR.

Aesthetics Setting: The natural features that characterize Petaluma and its surroundings provide for a visually rich setting. The City of Petaluma is located in the Petaluma River Valley, which is a northwest-southeast trending valley between Sonoma Mountain and Mount Burdell. The city is flanked by the foothills and peaks associated with these mountain ranges which provide for views of rolling hills and agricultural landscapes. The Petaluma River and tributaries traversing the planning area further contribute to the aesthetic quality of the city. A long established urban form within the city limits contrasts with the surrounding open space and agricultural land uses and provides for a distinct visual character.

The activities proposed under the CMP will take place within specific reaches of fourteen rivers, creeks and channels. Existing visual and aesthetic resources within the project boundaries include intermittent views of the Sonoma Mountains, prominent Riparian vegetation, and the creeks and waterways themselves.

Aesthetics Impact Discussion:

3.1(a) (Scenic Vista) Less than Significant Impact: The proposed maintenance activities may temporarily introduce equipment that could partially obstruct a scenic vista. However, the staging of materials and equipment will be confined to roadway right-of-way abutting the respective work area. Maintenance crew trucks and construction equipment will be sited in locations that are removed from public scenic vista areas. In general, it is expected that equipment at any given reach will only be present for a week or two before

moving on the next location. Given that construction equipment staging will be of short duration and temporary, impacts to scenic vistas will be less than significant.

3.1(b) (Scenic Resources) No Impact: No State Scenic Roadways traverse the planning area, therefore no scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings visible from a State Scenic Highway, would be impacted. No Impacts associated with views from a State Scenic Roadway would result from the CMP.

3.1(c) (Visual Character and Quality) Less than Significant Impact: Aesthetic resources in the City of Petaluma include creeks, rivers, hillsides, and ridgelines. Activities include the ongoing management of vegetation including removal of overgrown vegetation, downed trees, and invasive and non-native species. Maintenance activities have the potential to result in the appearance of clearing out and thinning vegetation within and adjacent to the heavily vegetative portions of riparian corridors. The Manual sets forth methodology and procedures for ongoing vegetation management including minimizing removal activities to trimming and pruning and replanting with natives when large volumes of invasive or non-natives species are removed. The CMP does not propose extensive vegetation removal or clearing, rather, vegetation management calls for the focused removal in areas that are overcrowded with growth and obstructing flows. Vegetation management will not substantially alter the visual character of the Petaluma River or its tributaries. Therefore impacts from the CMP would be less than significant.

3.1(d) (Light and Glare) No Impact: No new sources of light or glare are proposed as part of the CMP. While vegetation management will result in removal of vegetation, thinning and pruning activities will not substantially alter the riparian corridor buffer in a manner that would change the intrusion from existing lights sources such as nearby urban development and streetlights. Therefore, there would be no impact due to light and glare from implementation of the CMP.

Mitigation Measures: None Required.

4.2. AGRICULTURAL AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Sources: City of Petaluma General Plan and EIR.

Agricultural Resources Impact Discussion:

3.2(a-e) (Farmland Conversion, Williamson Act, Forestland/Timberland Conflict) No Impact: The project area is limited to within and adjacent to creek waterways, channels, and banks and is located outside of all agricultural or forested land. As such, the project will not impact prime farmland, unique farmland or farmland of statewide importance. The project will not interfere with Williamson Act contracts or any existing agricultural uses. As the project is limited to creek maintenance activities within the UGB, it will not provide an impetus for the loss or conversion of farmland or forest to any alternative use. Therefore, the project will have no impact to agricultural and forestry resources.

Mitigation Measures: None Required.

4.3. AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Exposure of sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Sources: City of Petaluma General Plan and EIR; SCWA Stream Maintenance Plan PEIR; and Bay Area Air Quality Management District.

Air Quality Setting: The City of Petaluma is located within the San Francisco Bay Area Air Basin, which is regulated by the Bay Area Air Quality Management District (BAAQMD). Air quality within the Bay Area Air Basin is affected by natural geographical and meteorological conditions as well as human activities such as construction and development, operation of vehicles, industry and manufacturing, and other anthropogenic emission sources. The Federal Clean Air Act and the California Clean Air Act establish national and state ambient air quality standards. The BAAQMD is responsible for planning, implementing, and enforcing air quality standards within the Bay Area Air Basin, including the City of Petaluma.

The BAAQMD operates several air quality monitoring stations, the closest to the City of Petaluma is located in eastern Sebastopol, approximately 16 miles to the northwest. The Sebastopol station records pollutant concentration levels for carbon monoxide (CO), Nitrogen Dioxide (NO_2), Ozone (O_3), and Particulate Matter ($PM_{2.5}$).

The Bay Area Air Basin is designated as non-attainment for both the one-hour and eight-hour state ozone standards; 0.09 parts per million (ppm) and 0.070 ppm, respectively. The Bay Area Air Basin is also in non-attainment for the PM_{10} and $PM_{2.5}$ state standards, which require an annual arithmetic mean (AAM) of less than 20 $\mu g/m^3$ for PM_{10} and less than 12 $\mu g/m^3$ for $PM_{2.5}$. In addition, the Basin is designated as non-attainment for the national 24-hour fine particulate matter ($PM_{2.5}$) standard and will be required to prepare a State Implementation Plan (SIP) for $PM_{2.5}$. All other national ambient air quality standards within the Bay Area Air Basin are in attainment.

Petaluma General Plan 2025
The City's General Plan sets forth policies and programs to maintain and enhance air quality. Policy 4-P-6 is particularly relevant as it seeks to improve air quality through retaining tree and plant resources along river and creek corridors. Additionally, Policy 4-P-16 establishes best management practices for the operation of construction equipment.

Air Quality Impact Discussion:

3.3(a) (Air Quality Plan) No Impact: The BAAQMD adopted the Bay Area 2010 Clean Air Plan (CAP) in September 2010 to comply with state air quality planning requirements set forth in the California Health & Safety Code. The 2010 CAP serves to update the 2005 Ozone Strategy and provides control strategies to address air quality pollutants including ozone (O_3), Particulate Matter (PM), toxic air contaminants (TACs), and greenhouse gases (GHGs). A total of 55 control strategies have been developed as part of the CAP for land use, energy and climate, stationary sources, transportation, and mobile sources. Control strategies are designed to reduce emissions of ozone precursors, PM, air toxics, greenhouse gases, and work towards attainment of state ozone standards, reduce transport of ozone to neighboring basins, and to protect public health and the climate. Measures to implement control strategies include the use of clean and efficient vehicles, Green Construction Fleets, enhanced bicycle and pedestrian access, energy efficiency, and others.

The Manual provides a mechanism for the ongoing management of vegetation within riparian corridors citywide. The Manual sets forth methodology for vegetation removal, preservation of native trees and replanting to enhance tree canopy and vegetative structure. The CMP is consistent with the City's General Plan and would not result in any conflicts in implementing the CAP. Therefore, the CMP would have no impacts due to a conflict with implementing the regional air quality plan.

3.3(b-c) (Air Quality Standards and Criteria Pollutants) Less than Significant Impact: The creek maintenance activities will involve the use of heavy equipment, such as excavators, trucks, and winches to accomplish maintenance objectives. However, the use of such equipment will be limited to instances where hand tools are determined to be insufficient or inadequate to a specific task. Given the scope and scale of the maintenance activities proposed, the use of heavy-duty equipment will largely be limited to one piece of equipment operating at any given time. The short-term duration and limited extent of construction equipment will result in minimal air quality emissions and the cumulative release of pollutants would be considered negligible. Additionally, the Creek Maintenance Manual sets forth best management practices including limiting the area of disturbance and applying BAAQMD recommendations such as limiting idling time, maintain equipment in optimal working order, and staging equipment as far as possible from sensitive receptors.

Creek maintenance will involve the removal of sediment, hauling and other ground disturbing activities that could generate dust. Since PM_{10} and $PM_{2.5}$ are in non-attainment, there is potential that contribution from the project's dust generation could degrade air quality if not properly controlled. In order to avoid excess generation of fugitive dust, best management practices for dust control shall be implemented during all maintenance activities. The Manual requires watering exposed surfaces in dry areas, covering haul trucks or achieving adequate freeboard in haul loads, and using a sweeper to keep access areas and roads free of dust. With activities carried out in accordance with the Manual, the project would not contribute to any air quality violations and impacts would be less than significant due to the generation of air quality emissions.

3.3(d-e) (Sensitive Receptors and Odors) No Impact: Air quality pollutants emitted from the project would only be generated from the use of heavy equipment. Best management practices, as identified in the

Manual will ensure that equipment is maintained in excellent working order and outfitted with exhaust control devices. Given the limited use of heavy equipment necessary for focused activities such a tree and sediment removal, nearby sensitive receptors are not expected to be substantially impacted from excessive air quality concentrations. Odors generated from maintenance activities will be restricted to exhaust fumes released from heavy equipment operation, which, as described above, will be limited. Therefore, the CMP will have no impacts to nearby sensitive receptors and will not result in exposure to odors affecting a substantial number of people.

Mitigation Measures: None Required.

4.4. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (Formerly Fish and Game) or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife (formerly Fish and Game) or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Sources**:** City of Petaluma General Plan and EIR; SCWA Stream Maintenance Program EIR; City of Petaluma River Access and Enhancement Plan; and Biological Resources Assessment for Citywide Creeks Maintenance Plan, prepared by WRA, February 2016.

Biological Resources Setting:

Biological resources are protected by statute including the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), and the Clean Water Act (CWA). CESA prohibits unauthorized take of a candidate species, just as it prohibits such take of threatened and endangered species. Therefore, if "take" or adverse impacts to any species listed under CESA cannot be avoided either during Project activities or over the life of the Project, a CESA permit must be obtained. The Migratory Bird Treaty Act (MBTA) affords protection to migratory bird species including birds of prey. These regulations provide the legal protection for plant and animal species of concern and their habitat.

As reported in the 2025 General Plan EIR several plant and animal species with special-status have been recorded or are suspected to occur within the Urban Growth Boundary of the City of Petaluma. The city also contains species that are identified in the California Natural Diversity Database (CNDDB) due to rarity and threats, and are considered sensitive resources.

Within the Urban Growth Boundary, biological resources are largely limited to the Petaluma River and its tributaries, which contain aquatic and riparian resources, as well as wetlands. The National Wetland inventory identifies fresh emergent wetlands in the southern portion of the Petaluma River and Northern coastal salt marsh wetland and brackish marsh wetland in the lower reaches of the Petaluma River.

The Petaluma River Access and Enhancement Plan, prepared in 1996, contains policies and guidelines to enhance waterways and develop recreational uses in conjunction with protecting biological resources. It is a tool to implement the vision for the Petaluma River corridor by maintaining setbacks; creating natural flood terraces where appropriate; and enhancing floodplain and habitat conservation areas and other open spaces along the river utilizing an ecologically- based design approach.

In order to determine the level of impact that may occur to biological resources from implementation of the Manual, WRA Inc, biological resources specialists, conducted a records search, reviewed past surveys, and accessed biological databases (see **Appendix A**). The report identifies vegetation communities, sensitive species and activities to be carried out under the CMP that are under the regulation of federal and state agencies with the function of protecting biological resources and their habitat.

Biological Resources Impact Discussion:

3.4(a-d) (Special Status Species, Riparian Habitat, Wetlands and Migration) Less Than Significant Impact with Mitigation: The CMP will involve periodic and routine maintenance activities within and adjacent to areas that contain riparian habitat and supports sensitive species. As such, the project has the potential to result in potentially significant impacts to riparian corridors and special status species including plants, bats, frogs, fish and birds that are regulated by the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service, and/or the National Marine Fisheries Service (NMFS).

Plant Species

Special status plant species may occur along the bank of channels and creeks within the CMP area (See **Figure 4** below). Activities proposed in the CMP may inadvertently result in the trampling, or removal of rare plants, which would be considered a potentially significant impact.

Special status plant species are not expected to be present citywide. Rather a few of the creeks have the potential to support special status plant species within the riparian corridor or low flow channel include:

- Lynch Creek (Reaches 1 through 4)
- Channel Near Airport (Reaches 1 and 2)
- Marina Channel (Reaches 1 and 2)
- Shollenberger Creek (Reach 1)
- Adobe Creek (Reach 2)

Soft bird's beak (*Chloropyron molle* ssp*. molle*) is an endangered plant protected by the USFWS and identified as California Rare Plant Rank (CRPR) 1B.2. It may be present adjacent to waterways that are tidally influenced including Adobe Reach 2, Marina Channel Reach 1, and in Shollenberger Creek Reach 1. The balance of the creeks under the City's maintenance area are unlikely to support this rare plant species due to unsuitable soils, elevation and salinity levels. In order to ensure that maintenance activities occurring within the creek segments do not adversely impact this plant species, Mitigation Measure BIO-1 shall be implemented. BIO-1 stipulates that prior to maintenance activities in those specific reaches where this plant may be present pre-maintenance protocol surveys shall be conducted during the blooming period (July-November). In the event that this species is identified, the location shall be flagged and avoided during work activities. Should the plant be identified within the immediate work area, then consultation with USFWS shall occur to modify the work plan in a fashion that protects this rare plant species.

Congested-headed hayfield tarplant (*Hemizonia congesta* ssp*. congesta*) is identified as a CRPR 1B.2 species. It may be present in vernal pool habitat or in less modified channels such as Reach 1 of Lynch Creek and Channel Near Airport Reach 1 and 2. The balance of the creeks under the City's maintenance area are unlikely to support this rare plant species due to unsuitable soils and saturation levels. In order to ensure that maintenance activities occurring within these creek segments do not adversely impact this plant species, Mitigation Measure BIO-1 shall be implemented.

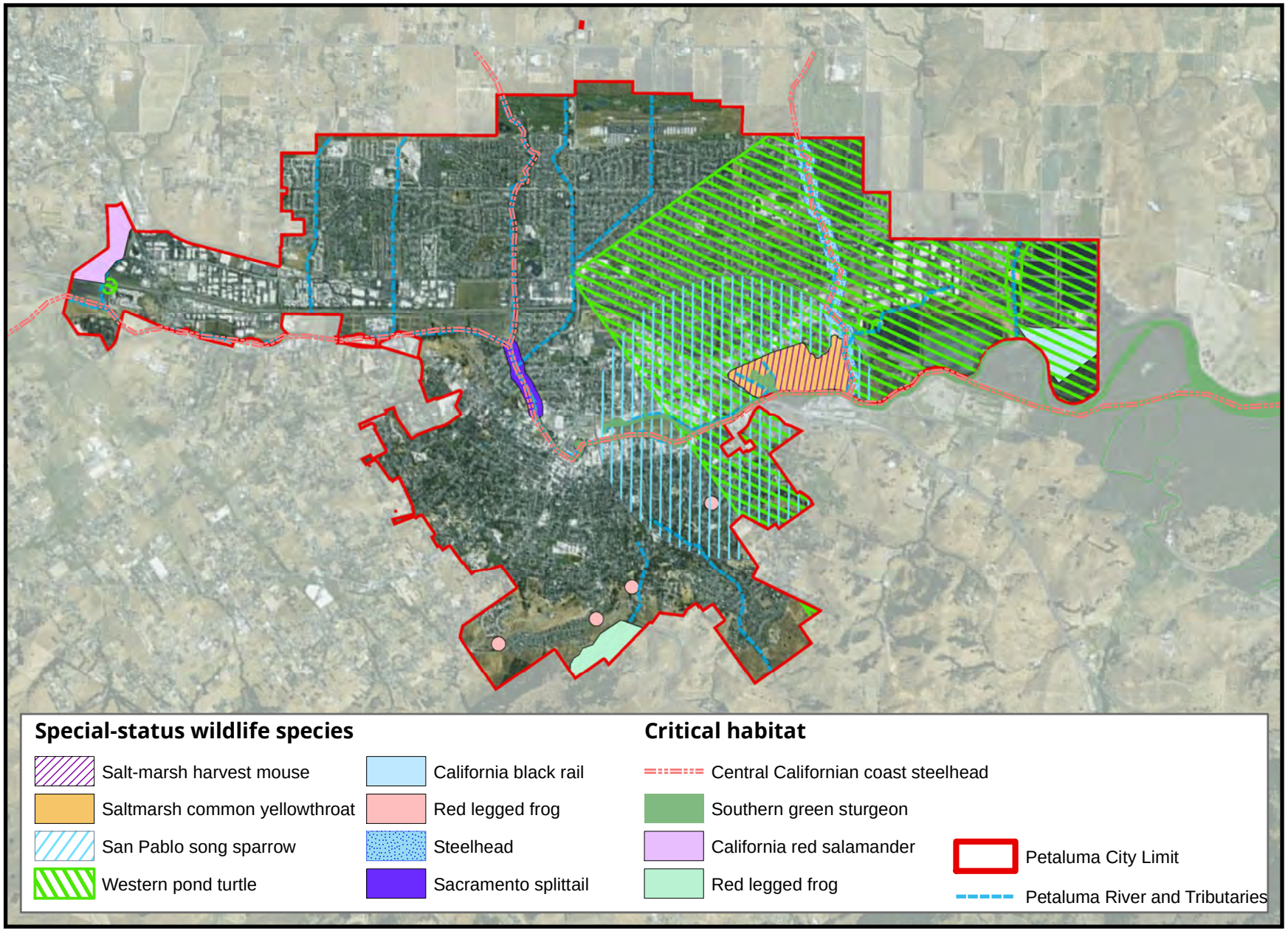
Sonoma Alopecurus (*Alopecurus aequalis* var. *sonomensis*) is an endangered plant protected by the USFWS and identified as a CRPR 1B.1 species. It may be present in fresh water marsh, mesic grasslands, seasonal pools, or riparian scrub habitat such as Lynch Creek (Reaches 1-4). The balance of the creeks under the City's maintenance area are unlikely to support this rare plant species due to unsuitable soils, fragmentation and level of disturbance. In order to ensure that maintenance activities occurring within Lynch Creek do not adversely impact this plant species, Mitigation Measure BIO-1 shall be implemented.

With implementation of Mitigation Measures BIO-1 the potential impacts to rare plant species would be avoided. Therefore, the proposed Creek Maintenance Activities would have less than significant impacts to rare plant species due to ongoing and periodic maintenance.

Wildlife Species

Special status wildlife species may occur within the riparian corridor including along the bed, banks or bottom of channels and creeks within the City's maintenance area (See **Figure 3** below). Creek maintenance activities proposed may inadvertently result in mortality or injury to wildlife species due to trimming, mowing, pruning (vegetation management), bank stabilization activities, sediment removal, and other related activities which would be considered a potentially significant impact.

California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), and western pond turtle (*Actinemys marmorata*) are all special status species that have been documented in various Petaluma creeks and could potentially be impacted by maintenance activities. The two frog species and the turtle are considered species of special concerns by the CDFW.



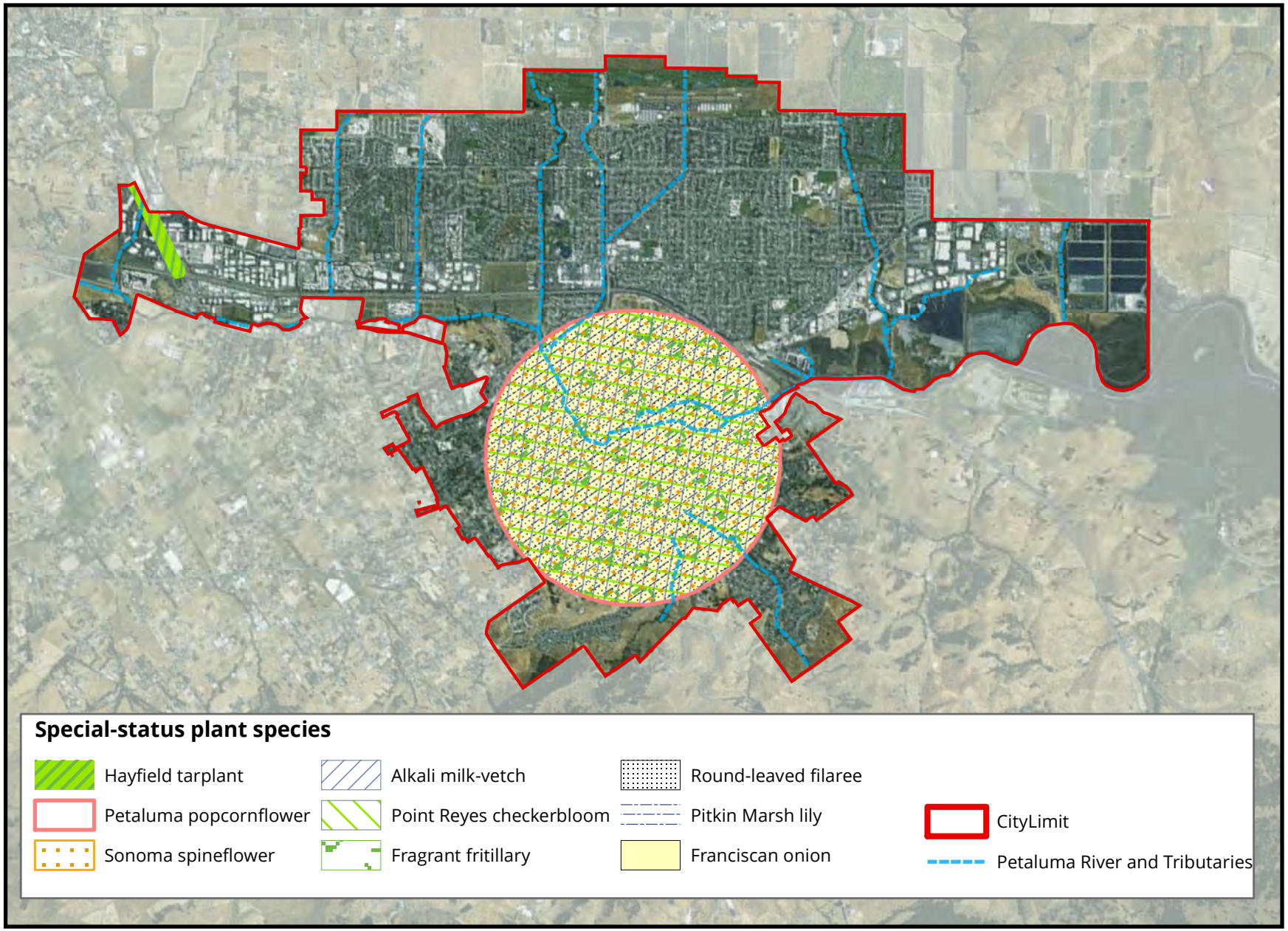
Special-Status Wildlife Species

Creeks Maintenance Plan

Petaluma, California

Figure 3

Base map source: ESRI 2015
Special-status species data source: California Natural Diversity Database (CNDDB), February 2016
Critical habitat data source: USFWS, January 2015



Special-Status Plant Species

Creeks Maintenance Plan

Petaluma, California

Base map source: ESRI 2015
Special-status species data source: California Natural Diversity Database (CNDDB), February 2016

Figure 4

The red-legged frog is a federally threatened species under the USFWS. The species may be present in aquatic and riparian habitats year round and may forage or disperse into upland habitats during the rainy season. Red-legged frog may be present along select streams including Lynch Creeks, Corona Reach 1, Washington Creek Reach 1, Adobe Bridges, and Adobe Creek Reach 1. In order to avoid impacts to red-legged frogs, mitigation measures BIO-2 and BIO-3, as set forth below, shall be implemented. These measures require that pre-maintenance surveys occur to identify potential red-legged frog habitat in advance of sediment removal, vegetation management, or other ground disturbing activity with potential to impact egg masses or larvae. In the event that suitable habitat is identified then presence will be assumed and the measures listed in BIO-2 and BIO-3 implemented. With implementation of avoidance and impact minimizations measures, impacts to red-legged frog will be reduced to less than significant levels.

The foothill yellow-legged frog occurs primarily in natural gradient streams and mountainous areas. There is a low potential that this species may be present in streams and along banks in the upper reaches of select creeks in Petaluma including at Adobe Creek Bridges, Adobe Creek Reaches 1 and 2, Washington Creek Reach 1, Lynch Creek and Corona Creek Reach 1. In order to avoid impacts to yellow-legged frogs, mitigation measures BIO-4 and BIO-5, as set forth below, shall be implemented. These measures require that pre-maintenance surveys occur to identify potential yellow-legged frog habitat in advance of sediment removal and vegetation management or other ground disturbing activity with potential to impact egg masses or larvae. In the event that suitable habitat is identified then presence will be assumed and the measures listed in BIO-4 and BIO-5 implemented. With implementation of avoidance and relocation measures, potential impacts to yellow-legged frogs will be reduced to less than significant levels.

The California giant salamander (*Dicamptodon ensatus*) was reclassified in 2016 and is now considered a species of special concern (SSC) by the CDFW. In general the giant salamander is restricted to cool, perennial streams and as such would be unlikely to occur in most creeks/channels within the CMP. However, there remains a potential that California giant salamander may be present in the upper reaches of perennial streams. As such Mitigation Measures BIO-4 and BIO-5 as set forth below shall be implemented. With implementation of avoidance and relocation measures, potential impacts to California giant salamander will be reduced to less than significant levels.

The western pond turtle (*Actinemys marmorata*) occurs in stream channel and along banks in various creeks within the maintenance area. There is a potential that habitat quality for the western pond turtle (WPT) could be reduced due to maintenance activities with potential to impact egg masses or larvae including sediment removal, and vegetation management. Maintenance techniques set forth in the manual are intended to avoid and minimize adverse effects to WPT. This species may be present in streams and along banks in a number of reaches including Corona Creek Reach 1, 2 and 3, Petaluma River at Corona Bridge, Capri Creek Reach 1 and 2, Lynch Creek Reach 1-4, Petaluma River Reach 1 and 2, Washington Creek Reach 1 and 2, East Washington Creek Reach 1, Adobe Creek Bridges, Adobe Creek Reaches 1 and 2, Shollenberger Creek Reach 1, Marina Channel Reach 1, Thompson Creek Reach 1 and Kelly Creek Reach 1.

In order to avoid impacts to western pond turtle, mitigation measure BIO-6 as set forth below shall be implemented. This measure requires that pre-maintenance surveys occur to identify potential western pond turtle habitat in advance of sediment removal and vegetation management. In the event that suitable habitat is identified then a biologist shall inspect the worksite each day to ensure that turtles are not present and restrict work to avoid the nesting season (May 1 to September 31) when hatchlings might be present. Additionally, during any dewatering activities a qualified biologist shall be present to capture and relocate any individuals stranded during dewatering efforts. With implementation of avoidance measures, impacts to WPT will be reduced to less than significant levels.

The salt-marsh harvest mouse (*Reithrodontomys raviventris*) occurs in brackish salt marsh habitat with dense plant coverage of pickleweed and fat hen adjacent to upland sites. It is an endangered species under both the federal and state endangered species acts, and it fully protected species under the CDFW. This species has occurrence potential in Marina Channel Reach 1, Shollenberger Reach 1, and Adobe Creek Reach 2.

In order to avoid impacts to salt-marsh harvest mouse mitigation measure BIO-7, as set forth below, shall be implemented. This measure requires that work in tidal areas where salt-marsh harvest mouse may be present, only occur with hand tools and preclude the use of heavy equipment. Work shall further be conducted with an onsite monitor (approved by USFWS and CDFW) present and shall halt work activities to prevent death or injury of mice. If mice are observed, work shall be halted within 50 feet of occurrence, and allow the animal to leave the area on its own. BIO-7 further requires that in the event that heavy equipment is necessary, then all vegetation shall be removed to bare ground under the supervision of a qualified biological monitor to ensure absence of SMHS nests. If occupied SMHS nests are observed then maintenance work shall cease until young are capable of leaving the area. At the appropriate time as determined by the monitor vegetation removal shall proceed using hand tools to allow mice to move away from the work area. Upon completion of the work, the fence shall be removed and the work area restored. An Incidental Take Permit and a Biological Opinion issued by the USFWS will be required for activities that have the potential to affect salt-marsh harvest mouse and any requirements therein shall also be implemented to avoid, minimize or offset impact to this protected species. Within implementation of measures and adherence to regulatory agency permitting requirements impacts to salt marsh harvest mouse will be reduced to less than significant levels.

Fish Species

The Petaluma River along with Lynch Creek and Adobe Creek are identified as critical habitat for California Central Coast Steelhead ESU (*Oncorhynchus mykiss*), a federal threatened species. Central California Coast Steelhead migrate up the Petaluma River in the fall and winter to spawn in the winter and spring. Though these reaches do not provide suitable gravel substrate for spawning, adults likely migrate through in search of spawning habitat, and juveniles may find suitable protective cover and foraging habitat.

The Petaluma River also has the potential to support Chinook Central Valley Fall/Late Fall-Run ESU (*Oncorhynchus tshawytscha*), a National Marine Fisheries Service (NMFS) Species of Concern and California Department of Fish and Wildlife (CDFW) Species of Special Concern.

Other fish species that may be present in the Petaluma River and its tributaries include long-fin smelt (*spirinchus thaleichthys*), Sacramento splittail (*pogonichthys macrolepidotus*) and green sturgeon (*acipenser medirostris*). The presence of Long-fin smelt has been recorded in the Petaluma River. However, the high water temperatures of the upper Petaluma River during the summer (last recorded as 73.2 degrees upstream of the study area) would be intolerable and, therefore, it is highly unlikely that such species would be present.

Some tidal areas of the Petaluma River serve as critical habitat for green sturgeon. However, green sturgeon has never been observed upstream of the mouth of the Petaluma River at San Pablo Bay, although juveniles may forage in such areas. A biological opinion published by NOAA in 2009 for Caltrans bridge construction work reinforced past findings by stating that green sturgeon were unlikely to be present in the reach between HWY 101 bridge crossing and Washington Street bridge. As such, impacts related to green sturgeon are expected to be less than significant.

The proposed maintenance activities including sediment removal and vegetation management have the potential to result in impacts to fish species within the Petaluma waterways. Impacts will vary depending on the specific fish species, life history and habitat requirements. For example, a majority of the channels maintained under the CMP provide little spawning and rearing habitat for steelhead, rather, reaches function as migration corridors. Increases in turbidity or sediment as a result of maintenance activities could result in feeding difficulties, displacement or adversely affect spawning. Additionally, removal of riparian vegetation could reduce shading and increase water temperatures. Furthermore, in-stream activities could result in direct impacts due to injury or mortality from equipment or dewatering.

Maintenance activities occurring in the Petaluma River Reaches 1 and 2, Lynch Creek Reaches 1-4, Adobe Creek reaches 1 and 2, Adobe Bridges, and Marina Channel Reaches 1 and 2 may affect fish species. In order to avoid impacts to critical habitat and protected fish species mitigation measure BIO-8, as set forth below, shall be implemented. This measure requires that all work shall be performed during the dry season between June 15 and October 31 and that equipment shall be positioned outside top of bank. Where dewatering is required a fish salvage plan shall be implemented. Implementation of these measures combined with any compensatory requirements by the NMFS through the Section 7 consultation process (as required) would reduce impacts to a less than significant level.

As part of the Sonoma County Water Agency's (SCWA) Stream Maintenance Program, a Biological Opinion (BO) (Corps File No. 2099-00136N) was issued by the NMFS (April 5, 2010), which included an assessment of impacts to creeks within Zone 2A. The BO has been referenced to inform the mitigation measures and anticipate the requirements of the regulatory agencies.

Avian Species

Riparian corridors along the Petaluma River and its tributaries has the potential to provide nesting habitat for special status birds including raptors protected under the California Fish and Game Code 3503 and other nesting birds covered by the Migratory Bird Treaty Act (MBTA). Maintenance activities have the potential to impact nesting birds if conducted during the bird nesting season, February 1 through August 31. Special status bird species that may be affected include the salt marsh common yellowthroat, Samuel's song sparrow, and native nesting birds. Activities such as vegetation removal, tree trimming, limb pruning, mowing and other active work within the riparian corridor may directly remove nesting habitat or indirectly result in nest abandonment or failure of a nest.

In order to avoid impacts to nesting birds and special status bird species, maintenance activities shall occur outside of the nesting season or be subject to pre-maintenance nest surveys as detailed under measure BIO-9. In the event that active nests are identified, then BIO-10 shall be implemented and which includes establishing a buffer zone to protect nests. With implementation of BIO-9 and BIO-10 potential impacts to nesting birds will be reduced to less than significant levels.

Two rail species also have the potential to be present in tidal marsh habitat. The California Ridgeway's Rail (*Rallus longirostris obsoletus*) and the California black rail (*laterallus jamaicensis coturniculus*) have potential for occurrence within tidal brackish marsh habitat. The Ridgway's rail is federally endangered and a fully protected species under the CDFW. The black rail is a state listed threatened species and fully protected under the CDFW. Impacts to these species may occur from proposed maintenance activities, particularly that of vegetation removal along banks of creeks and could result in harm to nests. In order to mitigate impacts to these species, mitigation measures BIO-9 and BIO-11 shall be implemented and which call for work to occur outside of the bird nesting season or be subject to protocol level surveys in advance of any work and the introduction of exclusionary buffers, if presence is identified. With implementation of BIO-9 and BIO-11, potential impacts to rail species will be reduced the levels below significance.

The activities conducted under the CMP also have the potential to impact bat species. Several of the riparian corridors within the City of Petaluma (Adobe Creek Bridges, Lynch Creek and the Petaluma River) have the potential to support habitat for various types of bats including the Pallid Bat (*Antrozous pallidus*), fringed myositis (*Myosotis thysanodes*) and Townsend's big-eared bat (*Corynorhinus pallidus*), which are CDFW Species of Special Concern, and could roost within trees and/or forage.

In the event that these bat species are present, removal of trees or vegetation management could result in destruction or injury, which would constitute a potentially significant impact. Indirect impacts from nest abandonment due to noise, increased lighting or other human disturbance during maintenance activities could also result in a potentially significant impact to these sensitive species. In order to ensure that potential impacts to these bat species are avoided, mitigation measure BIO-12 below is required and which provides for tree removal outside of the roosting season (allowed between September 1 and March 31), otherwise pre-construction surveys shall be performed by a qualified biologist. Mitigation measure BIO-12 further provides that felled trees shall be left on the ground overnight to allow any bats to leave the roost if present. Additionally, work activities shall not occur during sunrise or sunset to avoid potential impacts to emergent bats. Implementation of mitigation measure BIO-12 below ensures protection of these bat species and the reduction of a potentially significant impact to levels below significance.

Wetlands and Riparian Habitat

The proposed Creeks Maintenance Activities have the potential to result in temporary and permanent impacts to wetlands and riparian habitats. Temporary impacts will result from sediment, vegetation and trash removal. However as specified in the Manual, activities will occur in a manner that is sensitive the natural communities and avoids loss of wetland and habitat. Permanent impacts to seasonal or isolated wetland and riparian habitat may occur from bank stabilization efforts that require hardscape reinforcement, access into sensitive areas by heavy equipment, and other related activities that may result from ongoing maintenance and management of waterways. In order to minimize impacts all activities will occur in accordance with the methodology and impact minimization measures identified in the Citywide Creeks Maintenance Manual. In addition mitigation measures BIO-13 and BIO-14 as set forth below shall be implemented and require that permanent loss of wetlands and riparian habitat be replaced first through an effort for onsite or nearby restoration and enhancement as feasible and secondly through compensatory means at an appropriate ratio as determined by regulatory agencies. The City of Petaluma shall purchase mitigation credits from a suitable mitigation bank, consistent with permitting requirements. Credits shall be purchased in advance of maintenance activity that would result in the permanent loss of wetlands and/or riparian habitat.

3.4(e) (Tree Preservation) Less than Significant Impact with Mitigation: The Creeks Maintenance Manual Section 6.3.4 addresses tree preservation requirements and specifies which tree species and sizes are subject to review. When "protected trees" are potentially affected, an arborist report is required. Prior to the removal of any protected tree, the City's arborist will conduct an evaluation and make recommendations for avoidance if possible. When removal of a protected tree species is necessary replacement shall be required. In order to offset impact due to tree removal, mitigation measure BIO-15 requires that an arborist inspect any protected tree species identified for removal and develop a replanting plan at top of bank or appropriate location to preserve the integrity of the tree canopy and protect the riparian corridor. With mitigation measure BIO-15, maintenance activities would be consistent with the City's tree protection ordinance and impacts would be reduced to levels below significance.

3.4(f) (Habitat Conservation Plan) No Impact: There is no Habitat Conservation Plan, Natural Community

Conservation Plan, or other regional or state habitat conservation plan that exists for Petaluma. No impact would result under this criterion.

Mitigation Measures:

BIO-1: Prior to activities occurring within the specified Creek or Channel Reaches as identified in Table 3-1 below, pre-maintenance protocol surveys shall be conducted during the blooming period by a qualified specialist. In the event that listed rare plant species are identified, the literal extent shall be flagged and avoided during work activities. Should the plant be identified within the immediate work area, then consultation with USFWS shall occur to modify the work plan in a fashion that protects rare plant species. In the event that suitable habitat for rare plant is permanently impacted, and onsite restoration is infeasible then compensatory mitigation at an appropriate ratio as determined by the regulatory agencies shall be acquired.

Table 3- 1: Plant Protocol Survey Locations

Rare Plant Species Potentially Present	Creek or Channels Reaches where Potentially Present
Soft bird's beak (*Chloropyron molle ssp. molle*) (blooming period July-November)	Adobe Reach 2 Marina Channel Reach 1 Shollenberger Creek Reach 1
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp*. congesta*) (blooming period April-November)	Lynch Creek Reach 1 Channel Near Airport Reach 1 and 2
Sonoma Alopecurus (*Alopecurus aequalis* var. *sonomensis*) (blooming period May-July)	Lynch Creek (Reaches 1-4)

BIO-2: For all ground disturbance and sediment removal activities occurring within the specified Creek or Channel Reaches as identified in Table 3-2 below the following measures shall be implemented to protect red-legged frogs:

Table 3- 2: Red-Legged Frog Sensitivity

Sensitive Species Potentially Present	Creek or Channels Reaches where Potentially Present
California red-legged frog (*Rana draytonii*),	Corona Creek Reach 1 Lynch Creek Reach 1- 4 Washington Creek Reach 1 Adobe Creek Bridges Adobe Creek Reach 1 Thompson Creek Reach 1 Kelly Creek Reach 1

1. For ground-disturbing maintenance activities occurring in areas where California red-legged frog (CRLF) has been identified as potentially occurring (see Table 3-2), a qualified biologist will conduct pre-maintenance surveys to assess habitat within the proposed maintenance area.

2. If suitable breeding or foraging habitat is present then focused surveys using the USFWS CRLF survey protocol will be completed or CRLF presence will be assumed. The USFWS will be contacted and any site-specific recommendations will be implemented.

3. If CRLF are present or assumed present, a qualified biological monitor, or a biologist with a permit, will inspect the area daily before the start of work and will be present during maintenance activities in sensitive habitats. If appropriate, exclusionary fencing will be installed.

4. In the event that a CRLF is encountered within the maintenance area, the USFWS Sacramento Field Office will be contacted within 48 hours of any CRLF observations, and a qualified biologist will move the frog to a safe location outside of the project area. Actions taken to move CRLF will be consistent with applicable USFWS and CDFW regulations and permits. The biological monitor will have the authority to stop work if a CRLF is encountered until such a time as the frog may be moved to an area outside of the project area fencing.

5. If dewatering of a creek is required, dipnet and seine surveys for CRLF tadpoles will be completed prior to initiation of dewatering. Captured tadpoles will be moved to a safe location elsewhere in the creek.

BIO-3: For all vegetation maintenance activities occurring within the specified Creek or Channel Reaches as identified in Table 3-2 above the following measures shall be implemented to protect red-legged frogs:

1. For vegetation maintenance activities occurring in areas where CRLF frog has been identified as potentially occurring (see Table 3-2 above), a qualified biologist will conduct pre-maintenance surveys of aquatic habitats and identify potential CRLF breeding and foraging areas. These areas will be flagged and avoided by maintenance crews.

2. In areas where CRLF could potentially occur, field crews conducting hand trimming of vegetation will access channel banks by foot only and will avoid entering open water. Vehicles will be restricted to existing access roads.

3. In work sites where potential CRLF breeding and foraging areas were identified during the pre-maintenance survey, a qualified biological monitor or a biologist with an Incidental Take Permit, will be on-site during project activity in sensitive habitats. The biological monitor will have the authority to stop work if a CRLF (or any of its life stages) is encountered until such a time as the frog may be moved to an area away from the project site.

4. The USFWS Sacramento Field Office will be contacted within 48 hours of any CRLF observations.

BIO-4: For all ground disturbance and sediment removal maintenance activities occurring within the specified Creek or Channel Reaches as identified in Table 3-3 below the following measures shall be implemented to protect California giant salamander and yellow-legged frogs:

Table 3- 3: California Giant Salamander and Yellow-Legged Frog Sensitivity

Sensitive Species Potentially Present	Creek or Channels Reaches where Potentially Present
Foothill yellow-legged frog (*Rana boylii*) California giant salamander (*Dicamptodon ensatus)*	Adobe Creek Bridges Adobe Creek Reaches 1 and 2 Washington Creek Reach 1 Lynch Creek Reach 1-4 Corona Creek Reach 1

1. For ground-disturbing activities occurring in areas where foothill yellow-legged frog and California giant salamander have been identified as potentially occurring (see Table 3-3), a qualified biologist will conduct pre-maintenance surveys to assess habitat within the proposed maintenance area.

2. A qualified biologist will inspect the maintenance area daily before the start of work. If appropriate, exclusionary fencing will be installed. In the event that foothill yellow-legged frogs or California giant salamander are encountered within the maintenance area, a qualified biologist will move the observed species to a safe location outside of the maintenance area. Actions taken to relocate California giant salamander or foothill yellow-legged frog will be consistent with applicable CDFW regulations and permits.

3. If dewatering a creek segment is required, a qualified biologist will conduct visual and dipnet surveys and move captured salamanders, frogs and tadpoles to a safe location in the creek. Actions taken to move California giant salamander and foothill yellow-legged frog will be consistent with applicable CDFW regulations and permits.

4. CDFW will be notified within 48 hours of any California giant salamander or foothill yellow-legged frog observations.

BIO-5: For all vegetation maintenance activities occurring within the specified Creek or Channel Reaches as identified in Table 3-3 above the following measures shall be implemented to protect California giant salamander and yellow-legged frogs:

1. For vegetation maintenance activities occurring in areas where foothill California giant salamander and yellow-legged frog has been identified as potentially occurring (see Table 3-3), a qualified biologist will conduct pre-maintenance surveys of aquatic habitats and identify potential California giant salamander and foothill yellow-legged frog breeding and foraging areas. These areas will be flagged and avoided by maintenance crews.

2. Based on surveys, if California giant salamander or foothill yellow-legged frog are identified as potentially present, then field crews will access channel banks by foot only and will avoid entering open water. Vehicles will be restricted to existing access roads.

BIO-6: For all ground disturbance activities occurring within the specified Creek or Channel Reaches as identified in Table 3-4 the following measures shall be implemented to protect western pond turtles:

Table 3- 4: Western Pond Turtle Sensitivity

Sensitive Species Potentially Present	Creek or Channels Reaches where Potentially

	Present
western pond turtle (*Actinemys marmorata*)	Corona Creek Reach 1, 2 and 3 Petaluma River at Corona Bridge Capri Creek Reach 1 and 2 Lynch Creek Reach 1- 4 Petaluma River Reach 1 and 2 Washington Creek Reach 1 and 2 East Washington Creek Reach 1 Adobe Creek Bridges Adobe Creek Reach 1 and 2 Shollenberger Creek Reach 1 Marina Channel Reach 1 and 2 Thompson Creek Reach 1 Kelly Creek Reach 1

1. For activities located in areas where western pond turtle has been identified as potentially occurring (see Table 3-4 above), a qualified biologist shall conduct pre-maintenance surveys to assess habitat within the proposed maintenance area.

2. If suitable instream habitat for the western pond turtle is present in the maintenance area, a qualified biologist shall inspect the maintenance area daily before the start of work. In the event that a western pond turtle is encountered before or during the maintenance activity, a qualified biologist shall move the turtle to a safe location outside of the work area. Actions taken to move western pond turtle will be consistent with applicable CDFW regulations and permits.

3. If dewatering of a creek segment is required, a qualified biologist shall be present and shall relocate turtles – if found – to a safe location in the creek. Actions taken to move western pond turtle shall be consistent with applicable CDFW regulations and permits.

4. CDFW shall be notified within 48 hours of any western pond turtle observations.

BIO-7: For all vegetation management activities or sediment removal occurring within the specified Creek or Channel Reaches as identified in Table 3-5 the following measures shall be implemented to protect salt-marsh harvest mouse:

Table 3- 5: Salt-Marsh Harvest Mouse Sensitivity

Sensitive Species Potentially Present	**Creek or Channels Reaches where Potentially Present**
salt-marsh harvest mouse (*Reithrodontomys raviventris*)	Marina Channel Reach 1 Shollenberger Reach 1 and Adobe Creek Reach 2

1. For activities located in areas where salt-marsh harvest mouse (SMHM) has been identified as potentially occurring (see Table 3-5), maintenance activities shall utilize hand tools.

2. Work activity shall be limited to periods of low tide.

3. Where vegetation removal will occur, a qualified USFWS and/or CDFW approved biological monitor shall be present onsite during all activities to observe work and halt maintenance to prevent injury or death of mice. If mice are observed work shall be halted within 50 feet of the occurrence and suspended until the animal has vacated the area on its own.

4. All construction and staging areas where salt marsh habitat is to be disturbed shall clear vegetation to bare ground. Vegetation removal shall start at the edge farthest from the largest contiguous salt marsh area and work its way towards the salt marsh, providing cover for SMHM and allowing SMHM to move towards the salt marsh as vegetation is being removed.

5. The upper 6 inches of soil excavated within salt marsh habitat will be stockpiled separately and replaced on top of the backfilled material.

6. Vehicle access shall be limited to existing roads and pathways. No travel on or over vegetation shall be permitted.

7. In the event that heavy equipment is required, then all vegetation within the work area shall be removed to bare ground under the direction of the qualified biologist. Vegetation shall be stockpiled for re-use as ground cover following completion of maintenance activities. The qualified biologist shall inspect the vegetation prior to removal to determine if SMHM nests are present. If a nest with non-mobile young is present, then work shall cease until the qualified biologist determines the young are capable of leaving the area. Vegetation shall be cleared with hand tools (non-mechanical) starting from the center of the work area to allow mice to move away from the work area. Once the vegetation is removed, then the area shall be fenced off to prevent mice from reentering the area. The qualified biologist shall inspect the site prior to start of work each day to ensure there are no mice present and to confirm the fence is functioning as required. Upon completion of work, the fence shall be removed and stockpiled vegetation shall be redistributed over the disturbed area.

BIO-8: For all vegetation management activities or sediment removal occurring within the specified Creek or Channel Reaches as identified in Table 3-6 the following measures shall be implemented to protect fish species:

Table 3- 6: Fish Species Sensitivity

Sensitive Species Potentially Present	**Creek or Channels Reaches where Potentially Present**
Central California Coastal Steelhead (*Oncorhynchus mykiss*) Chinook Central Valley Fall/Late Fall-Run ESU (*Oncorhynchus tshawytscha*) long-fin smelt (*spirinchus thaleichthys*) green sturgeon (*acipenser medirostris*)	Petaluma River Reach 1 and 2 Marina Channel Reach 1 and 2 Lynch Creek Reach 1-4 Adobe Creek Reach 1 and 2 Adobe Creek Bridges

Sacramento splittail *(pogonichthys macrolepidotus)*	

1. All maintenance work shall be conducted during the dry season between June 15 and October 31.

2. When work is performed along banks where fish species may be present, a stormwater pollution prevention plan shall be enacted or best management practices used to protect waters and fish from spills, leaks or discharges from construction equipment. BMPs include good housekeeping, placement of fibber roles and mats to prevent erosion, and spill prevention and correction.

3. Prior to dewatering, the best means to bypass flow through the work area will be determined to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic vertebrates. The area to be dewatered will encompass the minimum area necessary to perform the maintenance activity. The period of dewatering will extend for the minimum amount of time needed to perform the maintenance activity. Where feasible and appropriate, dewatering will occur via gravity driven systems. Where feasible and appropriate, diversion structures shall be installed on concrete sections of the channels, such as concrete box culverts often used at road crossings.

4. If dewatering within a work area requires pumping, intakes shall be screened according to the current CDFW screening criteria for diversions within waterways containing salmonids.

5. When dewatering is required, a species relocation/salvage plan shall be implemented as a reasonable best effort to ensure that native fish are not stranded. As part of this, an Incidental Take Permit may be required to handle and relocate fish depending on the species affected.

6. Prior to use of any equipment within the in-stream portion of the channel, it shall be decontaminated following CDFW protocols to prevent the spread of invasive species and diseases within the waterway.

BIO-9: To avoid potential impacts to protected bird species covered by state and federal law (California Department of Fish and Game Code and the MBTA), all maintenance activities shall occur during the non-breeding bird season (September 1- January 31). If maintenance activities must occur during the nesting season (February 1 through August 31) a survey for active bird nests shall be conducted by qualified biologist and shall cover suitable habitat within one-quarter mile of activities to determine if nests are present.

BIO-10: In the event that an active nest is discovered, an appropriate buffer area, based on the specific bird species and their tolerance of the planned activity shall be established by the biologist. If a nest is identified during surveys, then the biologist shall evaluate baseline behavior and establish an appropriate buffer based on the bird's reaction to maintenance activities. An exclusion zone radius may be as small as 25 feet for common, disturbance adapted species or as large as 250 feet or more for raptors and/or rookery sites. The biologist shall monitor activities

to ensure that the buffer is sufficient. Work may continue in areas outside of the buffer zone and resume within the buffer zone once it has been determined that the young have fledged no longer dependent on the nest as determined by the biologist), the nest is vacated, and there is no evidence of second nesting attempts, whichever is later.

BIO-11: For all vegetation management activities or sediment removal occurring within the specified Creek or Channel Reaches as identified in Table 3-7 the following measures shall be implemented to protect rails:

Table 3- 7: Rail Sensitivity

Sensitive Species Potentially Present	Creek or Channels Reaches where Potentially Present
California Ridgeway's Rail (*Rallus longirostris obsoletus*) California black rail (*laterallus jamaicensis coturniculus*)	Marina Channel Reach 1 Shollenberger Reach 1 and Adobe Creek Reach 2

1. For activities located in areas where rails have been identified as potentially occurring (see Table 3-7 above), and where work must occur during the bird nesting season, a USFWS approved biological monitor shall be present to observe for these species and may halt work to prevent take if observed.

2. Construction in salt marsh habitat (See BIO-7 above) shall be timed to avoid the breeding season for California clapper rail and California black rail, typically February 1 through August 31 unless protocol level surveys are conducted to determine rail locations and avoidance of nesting territories.

3. If work must occur during the bird nesting season then a proposal for bird surveys shall be submitted to the USFWS. A minimum of 4 protocol surveys for rails shall be conducted for the work area to determine if rails are nesting onsite or in proximity. If rails are identified than a 700 foot exclusionary buffer shall be established to prevent disturbances to nesting rails.

BIO-12: For all tree removal and vegetation management activities occurring within the specified Creek or Channel Reaches as identified in Table 3-8 the following measures shall be implemented to protect bats:

Table 3- 8: Bat Species Sensitivity

Sensitive Species Potentially Present	Creek or Channels Reaches where Potentially Present
Pallid Bat (*Antrozous pallidus*) fringed myositis (*Myosotis thysanodes*) Townsend's big-eared bat (*Corynorhinus pallidus*),	Petaluma River Reaches 1 and 2 Lynch Creek Reaches 1-4 Adobe Creek Bridges

1. In order to avoid the bat maternity periods and ensure protection of bat species tree removal shall be conducted between September 1st and March 31st. Should maintenance activities necessitate tree removal during the maternity roosting season (April 1st – August 31st) then a qualified biologist shall first perform a bat roost survey of trees within 7 days to determine if roosts are present. If no evidence is found, activities may proceed. In the event that an active roost is observed within the work area than a work exclusion zone of 50 to 250 feet shall be established. Work within the exclusion zone shall not be permitted until the maternity roosting season has completed. The appropriate size of the exclusion zone shall be determined by a qualified biologist based upon the species and its susceptibility to disturbance.

2. Any tree removal with breast diameter height (dbh) greater than 12 inches or with complex bark structures or cavities shall be felled and allowed to rest on the ground overnight prior to removal.

3. Maintenance activities shall avoid the dust and dawn period to preclude impacts to emerging bats. Rather, activities shall occur between 1 hour after sunrise and one hour before sunset.

BIO-13: Prior to any permanent loss of riparian habitat the City of Petaluma shall identify opportunities for onsite or nearby restoration and enhancement to compensate for losses. In the event that in-kind mitigation is infeasible then mitigation shall be secured through compensatory means at an appropriate ratio as determined by the regulatory agency. The City of Petaluma shall purchase mitigation credits from a suitable mitigation bank, consistent with permitting requirements. Credits shall be purchased in advance of maintenance activity that would result in the permanent loss of habitat.

BIO-14: Prior to any permanent loss of jurisdictional water, seasonal wetland or isolated wetland the City of Petaluma shall identify opportunities onsite or nearby for restoration and enhancement to compensate for losses. In the event that in-kind mitigation is infeasible then mitigation shall be secured through compensatory means at an appropriate ratio as determined by the regulatory agency. The City of Petaluma shall purchase mitigation credits from a suitable mitigation bank, consistent with permitting requirements. Credits shall be purchased in advance of maintenance activity that would result in the permanent loss jurisdictional waters.

BIO-15: Prior to the removal of protected trees a qualified arborist shall inspect the tree identified for removal and determine if removal is necessary. Removal of trees within the riparian corridor shall be offset with replanting in-kind at appropriate locations in proximity to the removed tree to preserve and enhance the tree canopy.

4.5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Sources: Petaluma General Plan 2025 Chapter 3: Historic Preservation; 2025 General Plan EIR: CEQA Guidelines 15064.5.

Cultural Resources Setting: Historic resources are central to Petaluma culture and contribute greatly to the aesthetic quality and character of the City. During prehistoric times, drawn by the fertile soils and abundant wildlife, the Coast Miwok Indians settled in the Petaluma River Valley. European settlement began in the 1800s and increased after the discovery of gold. The California Historical Resources Information System identifies a number of Native American archaeological resource sites and historic era cultural resources within the City's UGB. Petaluma has three Historic Districts (Oakhill-Brewster, Downtown, and A-Street Historic Districts), which are located in and around the downtown area. Undisturbed lands within the Urban Growth Boundary, particularly lands in the vicinity of ridgetops, mid-slope terraces, alluvial flats, ecotones, and sources of water, have a greater possibility of containing prehistoric archaeological and tribal cultural resources.

Cultural Resources Impact Discussion:

3.5(a) (Historical Resource) No Impact: The CMP does not involve properties located within any of Petaluma's designated historic districts and does not include any building or feature that is a designated or eligible local, state or federal historic resource. Therefore, implementation of the CMP will have no impact upon the significance or integrity of historical resources.

3.5(b) (Archaeological and Tribal Cultural Resources) Less than Significant with Mitigation: Potentially significant archaeological and traditional cultural resources include, but are not limited to, the following: concentrations of artifacts or culturally modified soil deposits, modified stone, shell, bone, or other cultural materials such as charcoal, ash, and burned rock indicative of food procurement or processing activities, or prehistoric domestic features including hearths, fire pits, or house floor depressions or other such prehistoric artifacts.

The CMP includes activities involving ground disturbance near sources of water and as such, may occur in areas with an elevated potential for the occurrence of archeological resources. Ground disturbance would typically be limited to the removal of accumulated sediment in and around undercrossing, outfalls and culverts, as well as some vegetation removal.

The Manual includes strategies to avoid/prevent inadvertently impacting a potential resource through the development and implementation of best management practices (BMPs). BMPs require the training of all personal who may come into contact with a potential resource, performance of background research and/or consultation to obtain an understanding of the level of sensitivity exhibited by a given area, and methods to address accidental discovery of resources, amongst other things. To ensure the protection of archeological and traditional cultural resources and ensure the implementation of BMPS as set forth in the Manual, Mitigation Measures CUL-1 through CUL-5 will be required.

Given the broad area covered by the CMP, mitigation measures will be applied according to the level of sensitivity exhibited by a particular area. For areas exhibiting an elevated potential for containing resources or for areas known to contain mapped resources, Mitigation Measure CUL-1 will be imposed requiring a cultural resource survey to identify the specific location and depth of resources, avoid disturbance, and institute treatment recommendations in accordance with the outcome of the survey. For areas exhibiting a moderate sensitivity, monitoring during ground disturbing activities shall be conducted in accordance with Measure CUL-2. For all other areas of low or unknown potential for containing resources, Mitigation Measure CUL-3 and CUL-4 will be required which would halt work in the vicinity of any inadvertent discovery and provide for evaluation by a qualified archeologist and/or tribal representative. Measure CUL-5 requires training of crew and staff members and contractors that will be carrying CMP activities. With implementation of Mitigation Measures CUL-1 to CUL-5 and as supported by BMPs set forth in the Manual, activities are not expected to result in a substantial adverse effects to archaeological and/or tribal cultural resources. Thus, with mitigation the CMP would have less than significant impacts to archaeological resources.

3.5(c) (Unique Paleontological Resource) Less than Significant Impact: The City's UGB, including the Petaluma River and its tributaries, is not known to contain any paleontological resources. Maintenance activities are limited to near surface soils of channels, stream bottoms, banks, and access roads of natural, modified, or semi-modified waterways, which are not expected to contain paleontological resources. Furthermore, as specified in the Manual under BMPs, maintenance activities will halt in the unlikely event of accidental discovery. Should any features be identified during the implementation of the CMP, CEQA §21083.2 and CEQA Guidelines §15064.5 shall be adhered to. Given that ground disturbance will occur to near surface soils and that BMP regarding accidental discovery will be implemented, the CMP is not expected to result in a substantial adverse change to a paleontological resource. Therefore, the project will have no impact to unique paleontological or geologic resources.

3.5(d) (Human Remains) Less than Significant with Mitigation: The area of activity is not known to contain any human remains, including those interred outside of a cemetery. In the event that human remains are discovered during sediment, vegetation or trash removal or during any related activities, mandatory requirements of Public Resources Code §5097.98 and California Health and Safety Code §7050.5 apply and as required by Mitigation Measure CUL-6. If the remains are determined to be Native American, the County coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Adherence to Mitigation Measure CUL-6 and as identified as a BMP in the Manual, impacts to human remains would be less than significant.

Mitigation Measures:

CUL-1. High Sensitivity. If the proposed activity falls within an area of high archaeological sensitivity and/or will come within 100 feet of a mapped cultural resource, a cultural resources survey shall be conducted by a qualified professional archaeologist prior to performing the maintenance activity. All areas of exposed ground shall be closely inspected for the presence of cultural materials. Areas of dense vegetation should be inspected as closely as possible and any exposed channel banks shall be carefully examined for the presence of buried cultural resources. A hand auger or similar tool shall be used when necessary to inspect for sub-surface archaeological deposits. Non-destructive survey methods such as ground penetrating radar or canine investigation services shall be utilized as appropriate.

CUL-2. Moderate Sensitivity. For maintenance activities located in areas of moderate archaeological sensitivity, ground disturbing activities shall be supervised by a Secretary of the Interior qualified archaeologist, as defined under Code of Federal Regulations, 36 CFR Part 61 or tribal monitor. Archaeological and/or tribal monitors shall be empowered to halt construction activities at the location of a discovery to review possible archaeological material and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, cultural resources are not likely to be encountered.

CUL-3. Low Sensitivity. For maintenance activities (e.g., bank stabilization, sediment removal, etc.) that require excavation into native soils along creek and channel segments that have been identified as having a low potential for containing buried archaeological resources, the City personnel conducting the work shall participate in the educational training session conducted by a Secretary of the Interior qualified archaeologist as defined under Code of Federal Regulations, 36 CFR Part 61, and learn how to identify historic and prehistoric resources that may be encountered.

CUL-4. If an archaeological deposit is encountered during project activities, all work within 50-feet of the discovery shall be halted until a qualified archaeologist is retained to assess the find, consult with agencies as appropriate, and make recommendations for the treatment of the discovery.

CUL-5. The City shall acquire and retain an on-call cultural resource consultant to perform training, recommend avoidance strategies and treatment methodology and conduct monitoring as warranted. Treatment strategies may include, but are not limited to: the use of pre-construction survey and/or testing in an effort to discover any buried resources prior to the initiation of the activity; construction crew training and archaeological monitoring of the activity; and/or development of a data recovery plan for cultural resources. The cultural resources consultant shall be a Secretary of the Interior qualified archaeologist as defined under Code of Federal Regulations, 36 CFR Part 61.

CUL-6. If potential human remains are encountered, the City shall halt work within 25-feet of the discovery and contact the county coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If an archeologist is not present during the discovery, a qualified archeologist shall be retained to inspect the discovery. If the coroner determines the remains are Native American, the coroner will contact the Native

American Heritage Commission (NAHC). As provided in Public Resources Code Section 5097.98, the NAHC will identify the person or persons believed to be most likely descended from the deceased Native American. The Most Likely Descendent makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

4.6. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Publication 42.	☐	☐	☐	☒
ii. Strong Seismic ground shaking?	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Sources: Petaluma General Plan 2025: and Chapter 10.1 Natural Hazards.

Geology and Soils Setting: The Bay Area, including the City of Petaluma, is located in a seismically active region, primarily associated with the San Andreas Fault System. The City of Petaluma is susceptible to the effects of regional seismic activity that in the past have produced moderate to strong ground shaking, reaching intensity levels of V to VIII according to the modified Mercalli Scale. The only known active fault trace identified by the State, under the Alquist-Priolo Earthquake Fault Zoning Act of 1972, proximate to the City of Petaluma, is the Rodgers Creek Segment of the Hayward-Rodgers Creek Fault zone. Nonetheless, seismic events in the region have the potential to result in geologic hazards from ground shaking, such as ground failure and seismically induced instability.

Soils along Petaluma River are of the Clear Lake soil series which is defined by the presence of clays and clay loams formed under poorly drained conditions. The Clear Lake soil series occurs on floodplains and is underlain by alluvium from basic and sedimentary rock. Deposits of alluvial land occur prior to the Petaluma River's confluence with Lynch Creek and are found on the eastern area downstream of McNear Peninsula. Alluvial land is generally characterized by sandy and gravelly deposits along streams. The area downstream of the confluence with Lynch Creek is dominated by the Yolo soil series, consisting of well-drained loams that occur on floodplains and alluvial fans. These soils are generally underlain by recent alluvium generated from sandstone and shale.

Further downstream, past the Highway 101 crossing of the Petaluma River, are the Goulding and Reyes soil series and areas of tidal marsh. The Goulding series exhibits well drained clay loams, whereas the soil adjacent to the Petaluma River contains 10 to 25 percent cobblestones and stones. The Goulding series is exhibited on slopes of approximately 5 to 15 percent. The Reyes series is typically found in salt marshes and is comprised of poorly drained silty clays that formed in mixed bay and stream alluvium. Tidal marsh consists of nearly level marshlands that are either under water or saturated through most of the year.

Geology and Soils Impact Discussion:

3.6(a.i-iv) No Impact: The project would not expose people or structures to potential substantial adverse effects based on the following:

i. **(Faults) No Impact:** Pursuant to the updated version of Special Publication 42 (Fault-Rupture Hazard Zones in California, by William A. Bryant and Earl W. Hart) effective January 2010, the California Department of Conservation (CDC) California Geological Survey lists Sonoma County and the City of Petaluma as affected by the Alquist-Priolo Earthquake Fault Zone by means of the Hayward-Rodgers Creek Fault Zone. However, no Earthquake Fault Zones are located within the City's UGB. Therefore, there is no risk of fault-related ground rupture during earthquakes due to a known Alquist-Priolo Earthquake Fault Zone.

ii. **(Ground-Shaking) No Impact:** The proximity of the City's UGB to the Hayward-Rodger's Creek Fault Zone places it within Zone VIII-Violent of the Modified Mercalli Intensity Shaking Severity Level. An earthquake in the Hayward Rodgers-Creek fault zone with a 7.1 magnitude could create peak ground accelerations up to or greater than 0.6 g. The resulting vibrations would likely cause primary damage to buildings and infrastructure with secondary effects being ground failures in loose alluvium and poorly compacted fill. Both the primary and secondary effects of seismic activity pose a potential risk of loss of life or property.

The project includes routine maintenance within creeks and does not involve the construction of new structures intended to be occupied by people, thus exposure to seismic ground shaking will not occur. Therefore, there will be no impact from the CMP that expose people or structure to elevated risks associated with ground-shaking.

iii. **(Ground Failure) No Impact:** Liquefaction is the rapid transformation of saturated, loosely packed, fine-grained sediment to a fluid like state as a result of ground shaking. Potential for liquefaction is most pronounced when the groundwater table is shallow (typically less than 50 feet below the surface) and the liquefaction potential becomes increasingly heightened as the water table becomes shallower. The Petaluma water table is generally found 10-20 feet below the surface. Much of the UGB falls within a "Moderate Liquefaction Hazard Level" with the area abutting the Petaluma River exhibiting a "High to Very High Liquefaction Hazard Level".

Although areas of activity within the CMP contain elevated potential for liquefaction, the project does not introduce any new structures or otherwise expose people to increased risks from ground failure. The project will be limited to periodic maintenance of existing infrastructure and stream reaches. Therefore, the CMP would have no impacts due to ground failure from liquefaction.

iv. **(Landslide) No Impact:** The potential for a risk of landslide is dictated by several factors including precipitation conditions, soil types, steepness of slope, vegetation, seismic conditions and level of human disturbance. When certain conditions are present landslides can be triggered as a result of seismic activity. The Petaluma Planning Area has a history of landslides that have generally occurred on slopes steeper than 15% and are confined to areas underlain by geologic units that have demonstrated stability problems in the past. However, the project will not be incorporating activities with potentially intense disturbances as part of the routine maintenance and will therefore not create a substantial risk of landslides. The CMP does not introduce any new structures or elevate exposure level of people to landslides. Therefore, there will be no impacts related to landslides from implementation of the CMP.

3.6(b) (Erosion) Less than Significant Impact: Routine maintenance activities of City creeks may disturb land and result in soil erosion by way of sediment removal, vegetation management, tree maintenance, debris removal, and other activities. However, the Manual seeks to limit the erosion potential caused by maintenance activities by utilizing hand tools, minimizing the area of ground disturbance, and applying BMP such as placement of fiber rolls. The Manual specifies methods to enhance bank stabilization including, retaining tree roots in place, replanting with native species when invasive plant species are removed, and managing the low flow channel to improve water flow through sediment, vegetation and trash removal.

Disturbances will be further reduced by use of hand tools in sensitive areas and positioning construction equipment outside of top of bank on nearby roadway and access roads. All maintenance activities will be subject to best management practices as set forth in the Manual including silt protection measures, erosion control practices, and appropriate timing. Additionally, all heavy equipment and vehicles will enter and exit through the same area in order to minimize impacts to soils. Extensive excavation and soil disturbance is not proposed, nor is it necessary to carry out maintenance activities. With implementation of maintenance activities in accordance with provision set forth in the Manual, potential impacts due to soil erosion will be less than significant.

3.6(c-e): (Unstable Geologic Unit, Expansive Soils, and Septic Tanks) No Impact: Placement of permanent structures is not proposed as part of the CMP. Thus, the project will not subject any buildings to unstable soils, pose a risk to life and/or property, or require soils to support wastewater disposal systems. Therefore, there would be no impacts related to unstable soils, expansive soils or the introduction of septic tanks.

Mitigation Measures: None Required.

4.7. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Sources: BAAQMD CEQA Guidelines; and City of Petaluma General Plan and EIR.

Greenhouse Gas Setting: Greenhouse gases (GHGs) trap heat in the atmosphere, which results in elevated surface temperatures of the Earth. This effect contributes to changes in climate conditions, referred to as climate change or global warming. GHGs are generated both from natural geological and biological processes and through human activities including the combustion of fossil fuels, industry and agricultural. Other than water vapor, the GHGs contributing to global climate change include carbon dioxide (CO2), nitrous oxide (N_2O), methane (CH_3), chlorofluorocarbons, hydrofluorocarbons and perfluorocarbons. In the United States, carbon dioxide emissions account for about 85 percent of the GHG emissions.

To address GHG's at the State level, the California legislature passed Assembly Bill 32 in 2006, which requires that statewide GHG emissions be reduced to 1990 levels by 2020. Senate Bill 375 has also been adopted, which seeks to curb GHGs by reducing urban sprawl.

In June 2010, the Bay Area Air Quality Management District (BAAQMD) adopted revised CEQA Guidelines, which included thresholds of significance for greenhouse gas emissions. The Guidelines were subsequently updated in May 2011. The guidelines identified 1,100 metric tons (MT) of Carbon Dioxide equivalent per year (CO_2e/yr) or 4.6 MT/year per service population (residents/employees) as a numeric emissions level, below which a project's contribution to global climate change would be considered less than significant.

In 2007, the City prepared a revised Air Quality section for the General Plan EIR to address greenhouse gas emissions. Appendix A of the 2007 Revised EIR includes all of the applicable policies from the General Plan that reduce GHG emissions. The General Plan is not considered a "qualified" GHG reduction strategy by the BAAQMD. As such, BAAQMD's screening threshold of 1,100 metric tons (MT) of carbon dioxide equivalents per year (CO2e/yr) is used to evaluate project level significance.

Greenhouse Gas Emissions Impact Discussion:

3.7(a-b) (Significant GHG Emissions and GHG Plan Conflict) Less Than Significant Impact: Implementing the Citywide CMP would result in GHG emissions from service vehicles, mowers, chippers, tractors, backhoes, excavators, water trucks, and loaders. Emissions from maintenance activities will be dependent on the nature of the four primary activities, each being temporary and limited to hand tools and occasionally the use heavy-duty construction equipment. Heavy equipment would consist of one long arm excavator, winch or small dozer. Typically operation of equipment would be limited to a few hours. Given the short term duration of vehicle operation, that only a limited number of equipment will be necessary to carry out the CMP and that no other project activities will generate GHG emission, the project's contribution of GHG emission is expected to be negligible and well below significance thresholds. Therefore, impacts from GHGs due to project implementation will be less than significant.

Mitigation Measures: None Required.

4.8. HAZARDS/HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Sources: Geotracker and Envirostor Queries 2016; and City of Petaluma General Plan and EIR.

Hazardous Material Setting: Hazardous materials and waste management is implemented by a number of governmental agencies that have established regulations regarding the proper transportation, handling, management, use, storage, and disposal of hazardous materials for specific operations and activities. Pursuant to the Planning and Zoning Law, the Department of Toxic Substances Control (DTSC) maintains a hazardous waste and substances sites list (e.g., Cortese List).

Existing hazardous materials and/or waste within Petaluma include underground storage tanks, Polychlorinated Biphenyls (PCBs), asbestos, herbicides and pesticides. There are approximately sixty (60) open Leaking Underground Storage Tank (LUST) sites dispersed throughout the city. There are no identified "brownfield" properties in the city.

Hazardous waste management in Petaluma is administered by the Sonoma County Waste Management Agency (SCWMA) through the Countywide Integrated Waste Management Plan (CoIWMP). As required by State law, the General Plan includes the Source Reduction and Recycling Element (SRRE), Household Hazardous Waste Element (HHWE), Non-Disposal Facility Element (NDFE), as well as the Siting Element. State law requires that communities form a Consolidated Unified Protection Agency (CUPA) to manage the acquisition, maintenance, and control of hazardous waste by industrial and commercial business. In Petaluma, the Fire Marshall's Office administers the CUPA programs.

Hazards/Hazardous Materials Impact Discussion:

3.8(a-b) (Routine Transport, Upset and Accident Release) Less than Significant Impact with Mitigation: The proposed project will involve the ongoing maintenance of select creek reaches citywide including vegetation management and sediment and trash removal. Some activities may require the use of heavy-duty construction equipment that may result in the temporary presence of potentially hazardous materials including but not limited to fuels and lubricants. Although these potentially hazardous materials may be present during active maintenance their presence does not pose a substantial risk as mitigation measure HAZ-1 will be implemented. HAZ-1 requires that maintenance crew be prepared with spill prevention kits on hand and readily available for use in the event of an accidental spill. With HAZ-1 potential impacts will be reduced to less than significant levels.

It should be mentioned that as part of the CMP, removal of discarded debris and trash from the creek corridor would occur. There is a possibility that some materials removed will be hazardous or potentially hazardous such as paint cans, oil filters, and appliances containing coolant. These items will be handled with care and transported for disposal at an appropriate facility.

Maintenance activities may periodically require the use of herbicides and appropriate treatment to effectively remove noxious vegetation. The improper use of herbicides and the improper handling of invasive species could result in a significant impact to the environmental. In order to ensure that herbicides do not pose any threat to the environment or species, mitigation measure HAZ-2 shall be implemented. Herbicides, approved for aquatic use (Post-emergent herbicide spray) would only be used in areas with dense invasive vegetation, if necessary, and left for a week prior to removal. Mitigation measure HAZ-3 provides that vegetation cuttings must be placed on tarps or plastic bags to minimize the spread of invasive species during transport for off-site disposal. Implementation of HAZ-2 and HAZ-3 measures would avoid water quality impacts as a result of the use of herbicides and ensure that spread of invasive species does not occur.

All activities carried out under the CMP are required to comply with existing federal, state and local safety regulations governing the transportation, use, handling, storage and disposal of potentially hazardous materials. Once maintenance is complete in any given reach there will not be any ongoing use or generation of hazardous materials or hazardous waste onsite. Therefore, the project's potential to create a significant hazard due to hazardous materials or waste would be reduced to less than significant levels with mitigation.

3.8(c) (Emit or Handle Within ¼ Mile of School) Less than Significant Impact: Due to the project being limited to creek corridors and riparian areas throughout Petaluma some activities may occur within ¼ mile of schools. However, the CMP will not result in the emission of hazardous substances nor generate substantial quantities of hazardous waste. Therefore, the CMP will have no impact to schools due the handling or use of potentially hazardous materials.

3.8(d) (Government Code §65962.5 Site) No Impact: There are no areas within the CMP reaches that are listed as a Cortese site. There is no indication of past spills, leaks, or contaminated soils at creeks within the City of Petaluma. Therefore, the project will not create a significant hazard to the public or the environment by virtue of it being located on an identified Cortese site.

3.8(e-f) (Public and Private Airport Land Use Plan) No Impact: The nearest airport is the Petaluma Municipal Airport. There are no other airports, or private airstrips within the City. The Petaluma River and its tributaries are not subject to any safety restrictions from an adopted Airport Land Use Compatibility Plan. The CMP would not involve new structures or activities that could pose a safety hazard associated with aircraft activity or that would conflict with an airport land use plan. Therefore, no impacts associated with airport-related hazards are expected.

3.8(g) (Impair Emergency Response Plan) No Impact: The project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The CMP will not alter any emergency response or evacuation routes. In some limited instances construction equipment may be posited within the roadway right-of-way and may obstruct one lane of traffic. However, adequate access for emergency response vehicles will be provided. Therefore, the CMP will have no impact on the emergency response plan or emergency evacuation plan.

3.8(h) (Wildland Fire) No Impact: The CMP does not involve the introduction of people or structures to previously unoccupied areas including wildland. There are no aspects of the project that would increase risk of exposure due to fires on wildlands. Therefore, no impacts related to the exposure of people or structures to a significant risk of loss, injury or death involving wildland fires are expected.

Mitigation Measures:

HAZ-1 All field personnel shall be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills. Equipment and materials for cleanup of spills be available on site and that spills and leaks will be cleaned up immediately and disposed of properly. Construction equipment shall be maintained and fuelled offsite in designated staging areas only. Spill containment and cleanup materials shall be maintained onsite during the construction work period when heavy duty equipment is in use or when herbicides are in use.

HAZ-2 Herbicides shall be limited to those approved for aquatic use (Post-emergent herbicide spray) only. Use of herbicides shall be precluded to areas with dense invasive vegetation, if necessary, and left for a week prior to removal. No application shall be permitted when rainfall is anticipated with 72 hours.

HAZ-3 Vegetation cuttings shall be placed on tarps or plastic bags to minimize the spread of invasive species during transport for off-site disposal. Invasive plants shall be disposed of at suitable disposal facility.

4.9. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern on the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern on the site or area, including through the alteration of the course of a stream or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Sources: 2025 General Plan and EIR.

Hydrology and Water Quality Setting: The Petaluma River is the primary watercourse within the City of Petaluma and drains the Petaluma watershed (an area of approximately 46 square miles). The Petaluma River is tidally influenced and flows in a southeast direction into San Pablo Bay. The Petaluma River is used for recreational boating and water sports as well as long-standing river-dependent industrial operations.

The Petaluma Rivers is in violation of the federal Clean Water Act (CWA) due to elevated nutrient contents from fertilizers, metals from urban runoff, and pathogen loads from livestock operations. The river is included on the 303(d) list of "impaired water bodies". Tributaries are located on the upstream areas of watersheds and generally are not located along impaired water bodies.

Section 402 of the Clean Water Act regulates the discharge of pollutants to waters of the U.S. Locally, this is implemented through the National Pollution Discharge Elimination System (NPDES) General Permit. Requirements apply to construction activities (e.g. grading, grubbing, and other site disturbance). Construction activities on more than one acre are subject to NPDES permitting requirements including, the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP identifies stormwater collection and discharge points, drainage patterns across the site, and best management practices that dischargers will use to reduce the pollutants in stormwater runoff.

Primary goals in the execution of maintenance activities conducted by the City will be to improve flood capacity and downstream storm flow conditions while reducing flooding within the project areas. Selective and periodic removal of excess vegetation, non-native invasive species, trash, and sediments within channels and along the banks of reaches will increase the conveyance capability of these streams and increase water quality, thereby reducing flooding frequency during storm events. Understory and canopy layers of tree cover will be trimmed using the limb up method in order to provide sufficient cover to cool water temperatures while providing habitat to species of concern.

Hydrology and Water Quality Impact Discussion:

3.9(a, c) (Violate Water Quality Standards, Erosion and Sedimentation) Less than Significant Impact with Mitigation: The project will result in activities that temporarily disturb creek bottom or bank, which could contribute to water quality violations. Sediment removal and bank stabilization efforts may inadvertently result in deposition of soil that could enter into the waterway and degrade water quality. During storm events soil could be swept up in runoff and enter the water column, increasing turbidity and resulting in sediment accumulation downstream. Secondary effects of sedimentation can prevent aquatic plant species from establishing and can impair beneficial uses of fish and wildlife. In order to ensure that water quality standards are not violated, maintenance activities shall be subject to mitigation measure HYDRO-1, which calls for the application of best management practices for soil erosion and sediment control including conducting activities during the dry season, stabilizing exposed soils, preventing runoff and good housekeeping as described below. With implementation of mitigation measures HYDRO-1 impacts due to water quality violation will be less than significant.

With mitigation, the project would not alter the course of a stream or river in a manner that substantially increases erosion. Existing flow volume and direction would be retained and enhanced via the removal of overgrown vegetation and sediment accumulation at choke points. The method of maintenance detailed in the Manual provides for the protection of native vegetation and tree roots that stabilize banks and limit erosion potential. Where vegetation removal is proposed it will largely be limited to pruning and trimming with root masses being retained. Non-native or invasive vegetation may be removed which could

temporarily expose banks to erosion. With implementation of HYDRO-1, including temporary bank stabilization techniques such as vegetation mats, filter rolls and native replanting, erosion will be minimized. Therefore, with activities conducted in a manner consistent with the Manual and as specified in HYDRO-1 impacts due to erosion would be reduced to less than significant levels.

Certain reaches may require dewatering in order to conduct maintenance activities. Dewatering can result in impacts to biological resources as described above as well as impacts to water quality. Installation and removal of the water flow division device could result in increased sediment and turbidity in the water column. Temporary coffer damns could fail resulting in the introduction of sediment, sand and other debris downstream that could adversely affect water quality. In order to provide protection from increased sedimentation due to failure of temporary cofferdams or dewatering activities, mitigation measure HYDRO-2 shall be implemented. HYDRO-2 requires that dewatering occur via gravity driven systems that utilize existing hardscapes features (undercrossings) as feasible and that cofferdams be constructed of materials that are not likely to contribute to sedimentation such as sand bags, clean gravel and rubber bladders. HYDRO-2 further requires that in the event that pumps are necessary to facilitate dewatering activities then a temporary siltation basin shall be required. Once dewatering activities are completed the flow diversion shall be removed as soon as possible and impounded water shall be released at a reduced flow rate. With implementation of HYDRO-2 impacts due to dewatering will be reduced to less than significant levels.

3.9(b) (Groundwater Supply and Recharge) No Impact: Routine maintenance of the Petaluma River reaches and its tributaries will not affect groundwater supply or recharge ability. None of the activities within the CMP will include water extraction or lowering of the water table. There are no elements of the CMP that require groundwater water use or consumption.

There would be no use of groundwater supplies and the CMP would not interfere with groundwater recharge, as no impervious surfaces would be constructed. Groundwater recharge and percolation naturally occurring within the waterways would continue to occur. Therefore, the CMP would have no impact to groundwater supplies or groundwater recharge.

3.9(d-f) (Drainage, Runoff and Other) No Impact: Activities proposed under the CMP will not result in an increase of surface water runoff since it does not include the introduction of new impervious surfaces, nor does it include activities that will significantly alter the course of streams. Routine maintenance of the reaches will not result in an increase of flooding on- or off- site, rather it will increase channel capacity by removing accumulated sediment and overgrown vegetation that blocks flows. Additionally, the project will not affect stormwater drainage system, rather, routine maintenance of culverts, outfalls and undercrossing will ensure that stormdrain infrastructure continues to operate in manner consistent with its intended design. Therefore, the CMP would have no impacts due to increasing runoff on or offsite.

3.9(g-i) (Flood Hazard) No Impact: The project does not propose the creation of housing or other structures within the 100-year flood zone that would inhibit flow in any way, nor does it expose people or structures to an increased risk of flooding. Implementing routine maintenance activities will instead benefit stormwater capacity of the specified reaches during storm events by clearing debris and blockages. Therefore, the CMP would have no impact due to introducing people or structures to a flood hazard area.

3.9(j) (Seiche, Tsunami, Mudflow) No Impact: There are no aspects of the CMP that would result in elevated risks associated with seiche, tsunami, or mudflow. Therefore, there would be no impact under this criterion.

Mitigation Measures:

HYDRO-1: In order to protect water quality and prevent erosion of downstream waterways the following shall be implemented during all creek maintenance activities:

1. Activities shall occur during the dry season from June 15 through October 31.
2. No construction materials or debris shall be discharged directly to the Petaluma River or its tributaries.
3. Prior to the first rain all construction equipment and stockpiles shall be removed from in-channel locations.
4. Sediment controls such as straw mulch, silt fences, sediment basins or traps and/or other measures shall be employed during active ground disturbance. Materials shall consist of natural fiber that biodegrade overtime. No plastics or non-porous materials shall be used for erosion control purposes.
5. Exposed soils shall be stabilized using hydroseeding or erosion control fabrics.
6. No stockpiled soils shall remain exposed and unworked for more than 30 days.
7. Tracking dirt or other materials offsite shall be avoided and offsite paved areas and sidewalks shall be cleaned regularly using dry sweeping methods.

HYDRO-2: In order to protect water quality during dewatering activities the following shall be implemented:

1. A temporary cofferdam shall be constructed using clean sandbags, rubber bladders or other suitable materials.
2. A gravity driven system shall be installed for dewatering activities. Where pumping is required all pumps shall be screened with wire mesh not larger than 5 millimeters.
3. When activities are complete, the diversion structure shall be removed as soon as possible. Impounded water shall be released at a reduced flow rate.

4.10. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Sources: Petaluma River Access and Enhancement Plan; and 2025 General Plan and EIR.

Land Use and Planning Setting: The following policies contained in the City of Petaluma's General Plan are applicable to the proposed CMP.

4-P-1(D) Create setbacks for all tributaries to the Petaluma River extending a minimum of 50 feet outward from the top of each bank, with extended buffers where significant habitat areas, vernal pools, or wetlands exist. Development shall not occur within this setback, except as part of greenway enhancement (for example, trails and bikeways). Where there is degradation within the zone, restoration of the natural creek channels and riparian vegetation is mandatory at time of adjacent development.

4-P-1(G) Expand the planting and retention of trees along the upper banks of the river and creeks to reduce ambient water temperature and shade out invasive, non-native species.

8-P-35(A) Work with SCWA, regulatory agencies and/or property owners, as appropriate given maintenance authority, to insure maintenance of the engineered channels, natural creeks, and enclosed surface water system.

8-P-35(C) Work with regulatory and advisory agencies to facilitate preservation and environmental enhancement of the natural corridor for species of importance and native to the area.

The ongoing maintenance of waterways within the City has been occurring in a non-formalized manner as part of the general responsibilities of the City in its supporting role to the SCWA as the regional floodwater management entity. The Fire Department periodically conducts fire suppression measures including mowing overgrown vegetation at top of banks, removal of accumulated vegetation that present a potential fuel source for fire and other such ongoing maintenance routinely conducted within the urban city limits.

The proposed CMP formalizes the routine maintenance of creeks to ensure their continued function for flood control purposes, habitat, and as a community amenity.

Land Use and Planning Impact Discussion:

3.10 (a) (Divide An Established Community) No Impact: The project does not propose any development, roadways or other improvements that would divide an established community. Activities are limited to the maintenance of sediment, vegetation and trash within the certain reaches of the Petaluma River and its tributaries. Therefore, there would be no impacts due to the division of an established community.

3.10 (b) (Land Use Plan, Policy, Regulation Conflict) No Impact: The City's General Plan guides all development and associated activities within the City of Petaluma and identifies the Petaluma River and its tributaries as an important resource for flood control, biological value and recreational amenities.

There are no activities proposed under the CMP that conflict with identified policies and guidelines set forth in the City's General Plan, Petaluma River Access and Enhancement Plan, and other applicable regulations. The Manual develops methods and techniques that are informed by the various planning efforts that have considered the Petaluma River and its tributaries as important local resources. The Petaluma River Access and Enhancement Plan provides specific direction on the type of maintenance activities that are expected to occur including the ongoing management of waterways. The CMP is a formalization of the activities that will be undertaken along specific reaches in order to ensure the continued function of waterways for flood control purposes while retaining or enhancing habitat value. The CMP would have no impact due to conflicts with local regulations.

3.10 (c) (Habitat Conservation Plan) No Impact: The project is not subject to a habitat conservation plan or a natural community conservation plan. There are no conservation plans that apply to the UGB. Therefore, the project will have no impact to any conservation plan or natural community plan.

Mitigation Measures: None Required.

4.11. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Sources:

Mineral Resources Impact Discussion:

3.11(a-b) (Mineral Resources or Plan) No Impact: There are no known mineral resources within the City where maintenance activities will occur. The Petaluma River and its tributaries are not delineated as locally important mineral resource recovery sites. It is not expected that the project will result in the loss of availability of a known mineral resources, including those designated as "locally important". Therefore, the proposed project will have no impact that results in the loss of availability of mineral resources.

Mitigation Measures: None Required.

4.12. NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Sources: General Plan and EIR.

Noise Setting: Existing noise sources within the City's Urban Growth Boundary (UGB) include vehicular traffic along roadways and Highway 101, trains and industrial activities such as mechanical equipment and refrigeration units. Freight train service through Petaluma is currently irregular, and thus does not constitute a significant noise source. In the future, the addition of SMART commuter rail service will contribute to noise levels within the UGB.

Implementing Zoning Ordinance (IZO) §21.040(A)(3)(a) limits noise generating construction activities to the hours of 7:00 a.m. to 10:00 p.m. on weekdays and 9:00 a.m. to 10:00 p.m. on weekends and holidays. For daily operational noise, both the General Plan and IZO provides guidelines and standards for acceptable levels. IZO §21.040(4)(A) establishes an hourly average level of 60 dBA as the maximum that may be generated on one land use that would be affecting another land use. Allowable levels are adjusted to account for existing ambient noise levels, though the maximum allowed noise level may not exceed 75 dBA

after adjustments are made.

Noise Impact Discussion:

3.12(a-b) (Noise Standards and Groundbourne Vibration) Less Than Significant Impact: The project consists of the routine maintenance of specific reaches of the Petaluma River and its tributaries. Noise generating activities are limited to temporary construction noises as described below. There are no elements of the CMP that would expose people to noise levels or groundbourne vibration in excess of established standards. Therefore, noise impacts of the project would be less than significant.

3.12(c) (Ambient Noise Levels) No Impact: The project consists of maintenance activities, which are temporary in nature. There will be no permanent increase in ambient noise levels once the activities are completed since the project is limited to temporary activities. Therefore, the project would have no impact under this criterion.

3.12(d) (Temporary or Periodic Noise Increase) Less Than Significant Impact with Mitigation: The CMP will result in a temporary increase in noise levels within the immediate project area when backhoes, excavators, and other heavy equipment are in use. Noise levels generated by this equipment will vary in duration and intensity, depending on the type of equipment in use and the specific activity. Use of hand held equipment such as chainsaws, mowers, and trimmers will be similar to noise level generated by landscaping activities, which commonly occur in the urban environment. The use of large construction equipment will result in elevated noise levels, which may generate temporary impact due to intrusive noise levels at nearby uses.

In order to mitigation potential impacts, mitigation measures NOISE-1 will be implemented, which limits the hours of activities. Additionally, in order to ensure that workers are not exposed to excessive noise levels, measure NOISE-2 requires the use of protective headgear. With mitigation measures noise levels due to temporary activities would have a less than significant effect. Additionally, impacts will be of short duration since maintenance activities will be limited to only a few working days within any given reach. Also, equipment will largely be stationary, as grading, trenching and other large-scale groundwork activities are not proposed.

3.12(e-f) (Airport Noise) Less than Significant Impact: The project site is not located within a private airstrip. However, the Petaluma Municipal Airport is located within two miles of some of the proposed reach segments. The activities set forth under the CMP would not result in any new residents being introduced to areas with elevated noise levels. Although workers carrying out maintenance activities may be in close proximity to the airport during certain time periods, noise levels are not expected to be excessive given the side of the Petaluma Airport, aircrafts that frequent to airport, and that activities will occur far enough away from the airport such that noise volumes decrease. Therefore, noise from the Petaluma Airport will have less than significant impacts to workers implementing the CMP.

Mitigation Measures:

NOISE-1: Temporary noise impacts will be limited by restricting construction activities to weekday daylight hours from 7:00 am to 7:00 pm, with no work on weekends. This exceeds standards required by the Petaluma Noise Ordinance, which prohibits construction activity between the hours of 10:00 pm and 7:00 am.

NOISE-2: Workers operating or in close proximity to heavy equipment will be required to wear hearing protection in order to reduce decibel level exposure, pursuant to OSHA standards CFR 29 part 1910.95.

4.13. POPULATION AND HOUSING:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Induce substantial growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Sources: City of Petaluma Housing Element; and General Plan and EIR.

Population and Housing Setting: The City of Petaluma is currently home to approximately 59,000 residents, and comprised of a wide variety of housing stock. The 2025 General Plan proposes development of approximately 6,000 additional residential units and a buildout population of approximately 72,700. This represents an annual growth rate of nearly 1.2% per year.

With regards to the CMP, no housing resources or housing opportunities are located within City creeks and their corridors. CMP activities are confined to areas in or immediately near creeks and streambeds, and would not affect any existing or planned residential housing.

Population and Housing Impact Discussion:

3.13(a-c) No Impact: Routine channel maintenance activities would maintain existing waterway features through the ongoing and periodic management of sediment, vegetation and trash. The CMP does not propose new structures or infrastructure that would induce growth, divide an established community or displace housing.

The project would not create any changes in population or housing conditions. The CMP would not induce substantial growth in an area through the extension of roads or other infrastructure, as these types of facilities are not proposed nor required in conjunction with the proposed project. The project would not displace any existing housing, as there are no existing homes located within the proposed work area. Additionally, no people would be displaced as a result of the project.

There are no other aspects of the CMP that would affect the City's population or housing stock. Therefore, the CMP would have no impact to population and housing.

Mitigation Measures: None Required.

4.14. PUBLIC SERVICES:

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

Sources: City of Petaluma General Plan and EIR.

Public Services Impact Discussion:

3.14(a-e) No Impact: The need for new or expanded services is typically associated with increases in the population size that results from new residential or commercial development. The CMP involves maintenance of existing culverts, storm drain pipes, and other infrastructure within stream channels, as well as the management of vegetation and trash. The project does not involve any components that would increase the service population or otherwise increase the need for public services including police and fire protection, schools and parks. No new public services would be needed in order to carry out the CMP. Therefore, the Project would have no impact on the service ratios, response times, or other performance objectives of schools, parks, and other public facilities.

Mitigation Measures: None Required.

4.15. RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Sources: City of Petaluma General Plan and EIR.

Recreation Setting: The City of Petaluma offers a wide variety of recreational opportunities, such as parks and open spaces, trails, water access points for all types of boating, and other recreational facilities and resources. The City contains approximately 1,300 acres of parks and open spaces, which represents approximately 18% of the acreage within the UGB. The public parks and recreational opportunities within the UGB accommodate a wide range of uses and activities that include both active and passive recreation.

The CMP is confined to certain reaches Petaluma River and its tributaries including those that have established multi-use trails, paths and parkland in close proximity.

Recreation Impact Discussion:

3.15(a-b) No Impact: Routine maintenance activities consist of existing structure repairs, sediment removal, tree maintenance/removal, trash removal, and vegetation management. Therefore, the project would not result in the increased use of neighborhood and regional parks or recreational facilities nor does it include the construction or expansion of existing facilities. No impacts to recreational sources are expected.

Mitigation Measures: None Required.

4.16. TRANSPORTATION AND CIRCULATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Sources: 2025 General Plan and EIR.

Transportation and Circulation Setting: The City of Petaluma is bisected by U.S. 101, which serves as the primary route between San Francisco and Marin and Sonoma Counties. U.S. 101 accommodates over 92,000 vehicles per day within Petaluma. The circulation system within the City of Petaluma consists of approximately 140 miles of streets including, arterials, collectors, connectors, and local streets.

The City's Traffic Impact Study Guidelines are based on industry standards and indicate that a traffic study is warranted if a project is anticipated to create either 500 trips per day or 50 trips per peak hour. If a project falls within 10% of these thresholds the City may exercise discretion in whether or not to require a project

specific traffic study. As a maintenance effort for creeks citywide, the proposed project will not generate vehicle trips. Accordingly, a traffic impact analysis was not conducted.

Project activities will predominately take place along the banks or within streambeds of reaches throughout the City, accessed from nearby roadways. Small work crews will perform maintenance duties by establishing temporary staging areas within existing roadway rights-of-way or immediately contiguous areas. Temporary partial lane closure may be required to perform certain maintenance procedures, particularly with sediment removal by use of long arm excavators. Lane closure will be temporary in the event that it is required and will be limited to roadway shoulders and locations with the least interference to traffic flows.

Transportation and Circulation Impact Discussion:

3.16(a) (Plan, Policy, Ordinance: Circulation System) No Impact: Maintenance activities within riparian corridors will not impede existing plans, policies, or programs dealing with intercity circulation efficiency. Work crews may temporarily place equipment within public rights-of-way but will not inhibit traffic or circulation in any perceivable way. There will be no change to the level of service at intersections. Nor will the project result in substantial delays or detours. Therefore, there will be no impact to the circulation system as result of the CMP.

3.16(b) (Congestion Management Plan) No Impact: Sonoma County opted out of performing Congestion Management Plans in 1997. Thus, the proposed project would not exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. Therefore, there would be no impact due to a conflict with an adopted congestion management plan.

3.16(c) (Air Traffic Patterns) No Impact: Work activities will occur citywide within select reaches of the Petaluma River and its tributaries. There are no activities that will affect air traffic patterns or result in a substantial safety risk. Therefore, the CMP will have no impact to air traffic patterns.

3.16(d) (Design Feature Hazard) No Impact: Implementing the CMP will not introduce hazardous designs or incompatible uses. The maintenance activities do not include any elements that would adversely impact site distances. While there may be new plantings introduced as part of the CMP activities, new trees, shrubs and grasses will be confined to the top of bank and in line with the riparian corridor. Thus, views of roadways and access drive will not change substantially from the no project condition. There are no other design features that would result from the CMP that would pose a design hazard or otherwise reduce site distance. There are no hazards that would impede or block visibility or represent an incompatible design feature. Therefore, the CMP will have no impact due to a site design hazards.

3.16(e) (Emergency Access) Less Than Significant: The project does not include the introduction of homes and will therefore not induce population growth within the City. Therefore, emergency response personnel to resident ratios will be unaffected. In the event of temporary partial lane closures, the City and emergency services will be notified of times, location, detours, and any other variable with potential to affect response times. Any partial lane closures will be temporary by nature and will not occur on major arterials. Rather side streets and small collectors may be temporarily affected during limited work windows outside of the peak travel times. Routine maintenance activities are not expected to cause a substantial disruption to existing roadway capacities. As explained above, maintenance activity work may be done from the road's shoulder, or top of bank, in order to clear out sediments and debris from the channel bottom. Therefore, the CMP will have less than significant impacts to emergency access.

3.16(f) (Transit, Bicycle, Pedestrian Facilities) No Impact: The CMP does not include components that may alter or affect the performance of policies or facilities governing public transportation. There will be no changes to transit, bicycle or pedestrian facilities as a result of maintenance activities. Therefore, there will be no impact to such facilities.

Mitigation Measures: None Required.

4.17. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Sources: City of Petaluma General Plan and EIR.

Utilities and Service Systems Setting:

Wastewater Treatment
The Ellis Creek Water Recycling Facility treats all wastewater generated by the City of Petaluma and the unincorporated Sonoma County community of Penngrove. The water recycling facility produces tertiary recycled water in compliance with the California Department of Health Services Title 22 requirements for unrestricted use. The wastewater treatment system is comprised of more than 195 miles of underground piping and 9 pump stations, with plans for incremental expansion until 2025. Treatment capacity is at approximately 6.7 million gallons per day (average dry weather flow) with actual treatment at approximately 5 million gallons per day. During the dry summer months, recycled water is introduced into the City's recycled water system with allowable irrigation uses including residential landscaping, unrestricted access golf courses, agricultural lands, parks, playgrounds and schools and other uses permitted by the California Department of Health and Safety Code. As set forth in the General Plan EIR, the Ellis Creek Facility has the capacity to serve all wastewater treatment needs for the City through 2025 and beyond.

Storm Drains
Within the City of Petaluma storm drains convey runoff from impervious surfaces such as streets, sidewalks, and buildings to gutters that drain to creeks and the Petaluma River and ultimately the San Pablo Bay. This water is untreated and carries with it any contaminants picked up along the way such as solvents, oils, fuels and sediment. The City has implemented a storm drain-labeling program to provide a visual reminder that storm drains are for rainwater only. The City's Stormwater Management and Pollution Control Ordinance, set forth in Chapter 15.80 of the City's Municipal Code, establishes the standard requirements and controls on the storm drain system. All activities must adhere to the City's Stormwater Management and Pollution Control Ordinance, as well as the policies set forth in the General Plan.

Water Service System
The Petaluma Department of Public Works and Utilities is the water purveyor for the City of Petaluma. The City purchases potable water wholesale from the Sonoma County Water Agency (SCWA). The primary source of water is supplied by the Russian River and supplemented with groundwater from the Santa Rosa Plain via the Petaluma Aqueduct. The City of Petaluma also extracts groundwater. Groundwater serves as an emergency water supply in the event that SCWA water deliveries are curtailed.

Utilities and Service Systems Impact Discussion:

3.17(a and e) (Exceed Wastewater Treatment Requirements) No Impact: The project will not exceed wastewater treatment requirements set forth by the Regional Water Quality Control Board, nor will the project necessitate the expansion or construction of wastewater treatment facilities. The CMP will not result in the generation of wastewater as no such facilities are proposed or required for its implementation. Therefore, the CMP would have no impact to wastewater facilities.

3.17(b and d) (New On-Site Water or Wastewater Treatment Facilities and Water Supplies) No Impact: The proposed maintenance activities will not result in the need for new wastewater treatment, nor will it require the expansion of existing water or wastewater facilities. Water supplies are not required by the project in order to be completed and it will not burden existing treatment commitments. Therefore, the CMP will have no impact due to demands for new wastewater or water facilities.

3.17(c) (Require New Stormwater Facilities) No Impact: Activities would result in minor drainage improvements in order to alleviate storm water drainage facilities already in place. This includes cleaning out culverts, improving failed facilities, removing vegetation and roots from storm drains and sediment removal. No new stormwater facilities will be constructed or installed. All activities will be limited to the maintenance of existing facilities. Therefore, there will be no impact due to the installation of new stormwater facilities.

3.17(f-g) (Landfill Capacity and Solid Waste Disposal) Less than Significant Impact: The amount of solid waste generated by the project is considered minimal and is consistent with the service needs anticipated by the Petaluma General Plan and evaluated in the General Plan EIR.

Solid waste disposal facilities are owned and operated by the Sonoma County Department of Transportation and Public Works and the City maintains a franchise solid waste hauling agreement requiring the franchise hauler as part of its contractual obligations to select properly permitted Approved Disposal Location(s) with adequate capacity to serve city service needs.

At present, the City is under contract with Petaluma Refuse and Recycling for solid waste disposal and recycling services. This company provides canisters for waste, green (plant waste) materials, and recycling.

Solid waste is collected and transferred to the Sonoma County landfill sites. Although the project would result in the disposal of solid waste from the collection and removal of trash discarded in waterways, it is not expected to exceed landfill capacity and is not expected to result in violations of federal, state, and local statutes and regulations related to solid waste. Therefore, the project would have a less then significant impact due to solid waste disposal.

Mitigation Measures: None Required.

4.18. MANDATORY FINDINGS OF SIGNIFICANCE (CAL. PUB. RES. CODE §15065)

A focused or full environmental impact report for a project may be required where the project has a significant effect on the environment in any of the following conditions:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Mandatory Findings Discussion:

3.18(a) Less Than Significant Impact: Creek maintenance will occur within the UGB and is considered as part of the activities anticipated by the City's General Plan and analyzed in the EIR. The CMP is consistent with the General Plan Land Use and goals, policies and programs, as well as with the Petaluma River Access and Enhancement Plan. With implementation of mitigation measures set forth above and BMPs set forth in the Manual, potential impacts to the quality of the environment would be reduced to levels below significance. As such, the maintenance activities will not degrade the quality of the environment, reduce habitat, or affect cultural resources. Therefore, the project will have less than significant impacts due to degradation of the environment, with implementation of the mitigation measures set forth herein.

3.18(b) Less Than Significant Impact: The project is consistent with the intent of the Petaluma River Access and Enhancement Plan by protecting natural resources while providing for flood control and maintenance. Potential environmental impacts of the project would not be cumulatively considerable. The project does not increase the severity of any of the impacts from the levels identified and analyzed in the General Plan EIR. Therefore the project's cumulative impacts will be less than significant

3.18(c) Less Than Significant Impact with Mitigation: The CMP has the potential to result in adverse impacts to biological resources, hydrology and water quality, and noise. With those mitigation measures set forth above, and BMPs detailed in the Manual, the project will have less than significant environmental effect that would directly or indirectly impact human beings onsite or in the project vicinity. Therefore, with implementation of identified mitigation measures and BMP in the Manual, the project will have less than significant impacts due to substantial adverse environmental effects.

5. REFERENCE DOCUMENTS:

City of Petaluma			
	General Plan 2025		General Plan 2025 EIR
	Tree Preservation		Implementing Zoning Ordinance
	Surface Water Master Plan (2003)		Floodplain Management Plan (2015)
	Petaluma River Access and Enhancement Plan (1996)		Draft Citywide Creeks Maintenance Manual (May 2016) and all References Therein
	Capri Creek Initial Study (April 2014)		Denman Reach Phase 3 (June 2012)
Other Sources of Information			
	Petaluma UWMP		Published geological maps
	SCWA UWMP		SCWA Stream Maintenance Program and PEIR
	FEMA Flood Insurance Rate Maps		SMART Master Plan
	BAAQMD CAP		BAAQMD CEQA Guidelines
	Biological Opinion conducted by National Marine Fisheries Service for the SCWA Stream Maintenance Program (Corps File No. 2009-00136N)		Programmatic Biological Opinion conducted by the Fish and Wildlife Service for the SCWA Stream Maintenance Program (Ref File No. 81420-2009-F-0788-1)

Technical Appendices: Copies of the following are incorporated herein by reference and are available for review during normal business hours at the City of Petaluma, 11 English Street, in the Community Development Department.

A. Biological Resources Matrix, prepared by WRA, March 2016.

B. Confidential Cultural Resources Report, prepared by Evans & De Shazo, August 2016.