APPENDIX D: BIOLOGICAL RESOURCES

ARBORIST REPORT
AND
TREE INVENTORY SUMMARY

PACIFIC STREET HOUSING PROJECT SITE
Rocklin, California

Prepared for:

Brad Shirhall, Director of Planning
TLA Engineering & Planning
1504 Eureka Road, Suite 110
Roseville, California 95661

Prepared by:

Edwin E. Stirtz
International Society of Arboriculture
Certified Arborist WE-0510A
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

SIERRA NEVADA ARBORISTS
7425 W 4th Street
Rio Linda, California 95673

May 20, 2015

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QUALIFICATION STATEMENT

Sierra Nevada Arborists is a fully insured, Rio Linda-based arboriculture consulting firm founded in January of 1998 by its Principal, Edwin E. Stirtz. Mr. Stirtz is an ISA Certified Arborist and is ISA Tree Risk Assessment Qualified. He is a member of the American Society of Consulting Arborists and International Society of Arboriculture. Mr. Stirtz possesses in excess of 30 years of experience in horticulture and arboriculture, both maintenance and construction, and has spent the last 23 years as a consulting and preservation specialist in the Sacramento and surrounding regions.

INTRODUCTION

Sierra Nevada Arborists is pleased to present this Arborist Report and Tree Inventory Summary for the trees located within and/or overhanging the property located at the Pacific Street Housing project site in Rocklin, California. This Arborist Report and Tree Inventory Summary memorializes tree data obtained by Edwin E. Stirtz, ISA Certified Arborist WE-0510A, at the time of field reconnaissance and inventory efforts on May 19, 2015.

SCOPE OF INVENTORY EFFORT

The City of Rocklin Oak Tree Preservation Guidelines were adopted as required by Section 17.77.100 of the Rocklin Municipal Code. The Guidelines apply to all oak trees located wholly or partially within the City. The Guidelines define an "oak tree" as an oak tree with a trunk diameter at breast height (TDBH) (four and one-half feet above the root crown) of six inches or more and of a species identified in the Guidelines as native to the Rocklin area. The diameter of multi-trunked trees shall be the total diameter at breast height of the largest trunk only.

METHODOLOGY

During field reconnaissance and inventory efforts, Edwin E. Stirtz of Sierra Nevada Arborists conducted a visual review from ground level of the trees within and/or overhanging the selected lots within the project area as depicted on the project grading plans. The trees which met the defined criteria were identified in the filed by affixing round tags with blue flagging to the tree trunks. The tree numbers utilized in this report and accompanying Tree Inventory Summary correspond to the tree tags which were affixed to the trees in the field, and those tree numbers were rough-plotted on the copy of the Google Earth Aerial Exhibit so that the precise vertical and horizontal location of the trees may be surveyed in the field by a licensed land surveyor and data for the trees (i.e. tree number, diameter, dripline, and protected root zone radii) may be properly depicted on future development plans.

At the time of field identification and inventory efforts specific data was gathered for each tagged tree including the tree's species, diameter measured at breast height ("DBH") and dripline radius ("DLR"). Utilizing this data the tree's overall structural condition and vigor were separately assessed ranging from "excellent"[1] to "poor" based upon the observed characteristics noted within the tree and the Arborist's best professional judgment. Ratings are subjective and are dependent upon both the structure and vigor of the tree. The vigor

[1] It is rare that a tree qualifies in an "excellent" category, and it should be noted that there were no trees observed within the project area which fell within the criteria of an "excellent" or "good" rating. A complete description of the terms and ratings utilized in this report and accompany inventory summary are found on pages 8-9.

rating considers factors such as the size, color and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency and insect infestation. The structural rating reflects the root crown/collar, trunk and branch configurations; canopy balance; the presence of included bark, weak crotches and other structural defects and decay and the potential for structural failure. Finally, notable characteristics were documented and recommendations on a tree-by-tree basis were made which logically followed the observed characteristics noted within the trees at the time of the field inventory effort. The recommendations are based on the assumption that the tree would be introduced into a developed environment and may require maintenance and/or may not be suitable for retention within a post-development setting.

SUMMARY OF INVENTORY EFFORT

Field reconnaissance and inventory efforts found five trees measuring six inches in diameter and larger measured at breast height within and/or overhanging the proposed project area. Composition of the five inventoried trees includes the following species and accompanying aggregate diameter inches:

SPECIES DIVERSIFICATION			
Valley Oak	=	4 trees	(65 aggregate diameter inches)
Interior Live Oak	=	1 tree	(9 aggregate diameter inches)
TOTAL	**=**	**5 trees**	**(74 aggregate diameter inches)**

Recommended Removals

At this time, none of the trees have been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health, and/or structural instability noted at the time of field inventory efforts.

CONSTRUCTION IMPACT ASSESSMENT

This Arborist Report and Tree Inventory Summary is intended to provide to TLA Engineering & Planning, the City of Rocklin, and other members of the development team a detailed *pre-development review* of the species, size, and current structure and vigor of the trees within and/or overhanging the proposed project area. It is not an exhaustive review of the impacts which will be sustained from project implementation. At this early stage of the project specific root system and canopy impacts on a tree-by-tree basis cannot be definitively assessed until the site development, grading, and other improvement plans have been refined and finalized and data from the accompanying inventory summary (i.e., tree numbers, dripline radius, and root protection zones) is properly depicted on the plans.

Since trees are living organisms whose condition may change at any time a complete assessment of construction impacts and specific recommendations to help mitigate for the adverse impacts which may be sustained by the trees from contemplated construction activities cannot be made until the development plans have been refined and finalized. Once final plans have been developed for the site a qualified ISA Certified Arborist with special expertise and demonstrated experience with construction projects in and among native and non-native trees should review those plans and provide a more detailed assessment of impacts, including identification of trees which may require removal to facilitate home construction and other contemplated site development activities. This review will be particularly important if structures and/or residential activities will fall within or near the fall zone of a tree which has been noted as exhibiting structural defects, questionable long-term longevity and/or a conditional rating which is less than "fair", and for trees which measure 16 inches and greater in diameter which will be retained within close proximity to development as trees of this size may pose a more significant hazard if a sudden limb shed and/or catastrophic failure should occur. In addition, the review should include an assessment of root system and canopy impacts which will be sustained by the trees which will be retained within the proposed development area, along with specific recommendations on a tree-by-tree basis to help reduce adverse impacts of construction on the retained trees. In the meantime, this report provides some pre-development recommendations which logically follow the observed characteristics noted in the trees at the time of the field inventory efforts, as well as General Protection Measures which should be utilized as a guideline for the protection of trees which may be retained within the development area. These recommendations will require modification and/or augmentation as development plans are refined and finalized.

GENERAL COMMENTS AND ARBORISTS' DISCLAIMER

The City of Rocklin regulates both the removal of "protected trees" and the encroachment of construction activities within their driplines. Therefore, a tree permit and/or additional development authorization should be obtained from the City of Rocklin prior to the removal of any trees within the proposed project area. All terms and conditions of the tree permit and/or other Conditions of Approval are the sole and exclusive responsibility of the project applicant. It should be noted that prior to final inspection written verification from an ISA Certified Arborist may be required certifying the approved removal activities and/or implementation of other Conditions of Approval outlined for the retained trees on the site. ***Sierra Nevada Arborists will not provide written Certification of Compliance unless we have been provided with a copy of the approved site development plans, applicable permits and/or Conditions of Approval, and are on site to monitor and observe regulated activities during the course of construction.*** Therefore, it will be necessary for the project applicant to notify Sierra Nevada Arborists well in advance (at least 72 hours prior notice) of any regulated activities which are scheduled to occur on site so that those activities can be properly monitored and documented for compliance certification.

Please bear in mind that implementation of the recommendations provided within this report will help to reduce adverse impacts of construction on the retained trees; however, implementation of any recommendations should not be viewed as a guarantee or warranty against the trees' ultimate demise and/or failure in the future. Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of the trees and ***attempt to reduce the risk of living near trees***. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Entities who choose to construct homes on wooded property are accepting a certain level of risk from unpredictable tree related hazards such as toppling in storms, limbs falling and fires that may damage property at some time in the future. Since trees are living organisms their structure and vigor constantly change over time, and they are not immune to changes in site conditions or seasonal variations in the weather. Further, conditions are often hidden within the tree and/or below ground. Arborists and other tree care professionals cannot guarantee that a tree will be healthy and/or safe under all circumstances or for a specific period of time. Likewise remedial treatments cannot be guaranteed. Trees can be managed but they cannot be controlled. To develop land and live near trees is to accept some degree of risk and the only way to eliminate all risk associated with trees would be to eliminate all of the trees. ***An entity who develops land and builds a home with a tree in the vicinity should be aware of and inform their future residents of this Arborists' Disclaimer, and be further advised that the developer and the future residents assume the risk that a tree could at any time suffer a branch and/or limb failure, blow over in a storm and/or fail for no apparent reason which may cause bodily injury or property damage***. Sierra Nevada Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength which can even take down a tree with a structurally sound and vigorous appearance.

Finally, the trees preserved within and/or overhanging the proposed project area will experience a physical environment different from the pre-development environment. As a result, tree health and structural stability should be regularly monitored. Occasional pruning, fertilization, mulch, pest management, replanting and/or irrigation may be required. In addition, ***provisions for monitoring both tree health and structural stability following construction must be made a priority***. As trees age, the likelihood of failure of branches or entire trees increases. Therefore, ***the future management plan must include an annual inspection*** by a qualified ISA Certified Arborist to keep abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment.

Thank you for allowing Sierra Nevada Arborists to assist you with this review. Please feel free to give me a call if you have any questions or require additional information and/or clarification.

Sincerely,

Edwin E. Stirtz

Edwin E. Stirtz
International Society of Arboriculture
Certified Arborist WE-0510A
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant shall not be required to give a deposition and/or attend court by reason of this report unless subsequent contractual arrangements are made for in advance, including payment of an additional fee for such services according to our standard fee schedule, adjusted yearly, and terms of the subsequent contract of engagement.

5. Loss or alteration of any part of this report invalidates the entire report. Ownership of any documents produced passes to the Client only when all fess have been paid.

6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant.

7. Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of the consultant, particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualifications.

8. This report and any values expressed herein represent the opinion of the consultant and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

9. Sketches, diagrams, graphs, drawings and photographs within this report are intended as visual aids and are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by other consultants is for coordination and ease of

reference. Inclusion of such information does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

10. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without laboratory analysis, dissection, excavation, probing or coring, unless otherwise stated.

11. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

12. This report is based on the observations and opinions of Edwin E. Stirtz, and does not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described herein. Neither this author nor Sierra Nevada Arborists has assumed any responsibility for liability associated with the trees on or adjacent to this project site, their future demise and/or any damage which may result therefrom.

13. The information contained within this report is true to the best of the author's knowledge and experience as of the date it was prepared; however, certain conditions may exist which only a comprehensive, scientific, investigation might reveal which should be performed by other consulting professionals.

14. The legal description, dimensions, and areas herein are assumed to be correct. No responsibility is assumed for matters that are legal in nature.

15. Any changes to an established tree's environment can cause its decline, death and/or structural failure.

DEFINITIONS AND RATINGS

Tree Number:	Corresponds to aluminum tag attached to the tree.
Species Identification:	Scientific and common species name.
Diameter ("DBH"):	This is the trunk diameter measured at breast height (industry standard 4.5 feet above ground level).
Dripline radius ("DLR"):	A radius equal to the horizontal distance from the trunk of the tree to the end of the farthest most branch tip prior to any cutting. When depicted on a map, the dripline will appear as an irregularly shaped circle that follows the contour of the tree's branches as seen from overhead.
Protected Zone:	A circle equal to the largest radius of a protected tree's dripline plus 1 foot.
Root Crown:	Assessment of the root crown/collar area located at the base of the trunk of the tree at soil level.
Trunk:	Assessment of the tree's main trunk from ground level generally to the point of the primary crotch structure.
Limbs:	Assessment of both smaller and larger branching, generally from primary crotch structure to branch tips.
Foliage:	Tree's leaves.
Overall Condition:	Describes overall condition of the tree in terms of structure and vigor.
Recommendation:	Pre-development recommendations based upon observed characteristics noted at the time of the field inventory effort.
Obscured:	Occasionally some portion of the tree may be obscured from visual inspection due to the presence of dense vegetation which, during the course of inspection for the arborist report, prevented a complete evaluation of the tree. In these cases, if the tree is to be retained on site the vegetation should be removed to allow for a complete assessment of the tree prior to making final decisions regarding the suitability for retention.

TREE CONDITION RATING CRITERIA

RATING TERM	ROOT CROWN	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR
Good	No apparent injuries, decay, cavities or evidence of hollowing; no anchoring roots exposed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; no codominant attachments or multiple trunk attachments are observed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; below average amount of dead limbs or twigs; no major limb failures or included bark; callus growth is vigorous	Leaf size, color and density are typical for the species; buds are normal in size, viable, abundant and uniform throughout the canopy; annual seasonal growth increments are average or above average; no insect or disease infestations/ infections evident	No apparent structural defects; no weak crotches; no excessively weighted branches and no significant cavities or decay	Tree appears healthy and has little or no significant deadwood; foliage is normal and healthy
Fair	Small to moderate injuries, decay, cavities or hollowing may be evident but are not currently affecting the overall structure; some evidence of infestation or disease may be present but is not currently affecting the tree's structure	Small to moderate injuries, decay, cavities or hollowing may be evident; codominant branching or multiple trunk attachments or minor bark inclusion may be observed; some infestation or disease may be present but not currently affecting the tree's structure	Small to moderate injuries, decay or cavities may be present; average or above average dead limbs or twigs may be present; some limb failures or bark inclusion observed; callus growth is average	Leaf size, color and density are typical or slightly below typical for the species; buds are normal or slightly sparse with potentially varied viability, abundance and distribution throughout the canopy; annual seasonal growth increments are average or slightly below average; minor insect or disease infestation/infection may be present	Minor structural problems such as weak crotches, minor wounds and/or cavities or moderate amount of excessive weight; non-critical structural defects which can be mitigated through pruning, cabling or bracing	Tree appears stressed or partially damaged; minimal vegetative growth since previous season; moderate amount of deadwood, abnormal foliage and minor lesions or cambium dieback
Poor	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the overall structure; presence of infestation or disease may be significant and affecting the tree's structure	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the tree's structure; presence of infestation or disease may be significant and affecting the tree's structure	Severe injuries, decay or cavities may be present; major deadwood, twig dieback, limb failures or bark inclusion observed; callus growth is below average	Leaf size, color and density are obviously abnormal; buds are obviously abnormal or absent; annual seasonal growth is well below average for the species; insect or disease problems may be severe	Obvious major structural problems which cannot be corrected with mitigation; potential for major limb, trunk or root system failure is high; significant decay or dieback may be present	Tree health is declining; no new vegetative growth; large amounts of deadwood; foliage is severely abnormal

The ratings "good to fair" and "fair to poor" are used to describe trees that fall between the described major categories and have elements of both

GENERAL PROTECTION GUIDELINES FOR TREES PLANNED FOR PRESERVATION

Great care must be exercised when work is conducted upon or around protected trees. The purpose of these General Protection Measures is to provide guidelines to protect the health of the affected protected trees. These guidelines apply to all encroachments into the protected zone of a protected tree, and may be incorporated into tree permits and/or other Conditions of Approval as deemed appropriate by the applicable governing body.

A circle with a radius measurement from the trunk of the tree to the tip of its longest limb, plus one foot, shall constitute the critical root zone protection area of each protected tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each protected tree. Removing limbs that make up the dripline does not change the protected area.

Any protected trees on site which require pruning shall be pruned by an ISA Certified Arborist prior to the start of construction work. All pruning shall be in accordance with the American National Standards Institute (ANSI) A300 pruning standards, ANSI Standard 2133.1-2000 regarding safety practices, and the International Society of Arboriculture (ISA) "Tree Pruning Guidelines" and Best Management Practices.

Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the root protection zone of the protected trees in order to avoid damage to the tree canopies and root systems. Fencing shall be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the review body. The developer shall contact the Project Arborist and the Planning Department for an inspection of the fencing prior to commencing construction activities on site.

Signs shall be installed on the protective fence in four (4) equidistant locations around each individual protected tree. The size of each sign must be a minimum of two (2) feet by two (2) feet and must contain the following language:

WARNING: THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE CITY OF ROCKLIN MUNICIPAL SERVICES AGENCY

Once approval has been obtained by the City of Rocklin Municipal Services Agency protective fencing shall remain in place throughout the entire construction period and shall not be removed, relocated, taken down or otherwise modified in whole or in part without prior written authorization from the Agency, or as deemed necessary by the Project Arborist to facilitate approved activities within the root protection zone.

Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected tree shall be done under the direct supervision of the Project Arborist. To the maximum extent feasible, demolition work within the dripline protection area of the protected tree shall be performed by hand. If the Project Arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.

No signs, ropes, cables (except those which may be installed by an ISA Certified Arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of identification in preparing tree reports and inventories shall be allowed.

No vehicles, construction equipment, mobile homes/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.

Drainage patterns on the site shall not be modified so that water collects, stands or is diverted across the dripline of any protected tree.

No trenching shall be allowed within the driplines of protected trees, except as specifically approved by the Planning Department as set forth in the project's Conditions of Approval and/or approved tree permit. If it is absolutely necessary to install underground utilities within the dripline of a protected tree the utility line within the protected zone shall be "bored and jacked" or performed utilizing hand tools to avoid root injury under the direct supervision of the Project Arborist.

Grading within the protected zone of a protected tree shall be minimized. Cuts within the protected zone shall be maintained at less than 20% of the critical root zone area. Grade cuts shall be monitored by the Project Arborist. Any damaged roots encountered shall be root pruned and properly treated as deemed necessary by the Project Arborist.

Minor roots less than one (1) inch in diameter encountered during approved excavation and/or grading activities may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area as deemed necessary by the Project Arborist.

Major roots greater than one (1) inch in diameter encountered during approved excavation and/or grading activities may not be cut without approval of the Project Arborist. Depending upon the type of improvement being proposed, bridging techniques or a new site design may need to be employed to protect the roots and the tree.

Cut faces, which will be exposed for more than 2-3 days, shall be covered with dense burlap fabric and watered to maintain soil moisture at least on a daily basis (or possibly more frequently during summer months). If any native ground surface fabric within the protected zone must be removed for any reason, it shall be replaced within forty-eight (48) hours.

If fills exceed 1 foot in depth up to 20% of the critical root zone area, aeration systems may serve to mitigate the presence of the fill materials as determined by the Project Arborist.

When fill materials are deemed necessary on two or three sides of a tree it is critical to provide for drainage away from the critical root zone area of the tree (particularly when considering heavy winter rainfalls). Overland releases and subterranean drains dug outside the critical root zone area and tied directly to the main storm drain system are two options.

In cases where a permit has been approved for construction of a retaining wall(s) within the protected zone of a protected tree the applicant will be required to provide for immediate protection of exposed roots from moisture loss during the time prior to completion of the wall. The retaining wall within the protected zone of the protected tree shall be constructed within seventy-two (72) hours after completion of grading within the root protection zone.

The construction of impervious surfaces within the dripline of a protected tree shall be minimized. When necessary, a piped aeration system shall be installed under the direct supervision of the Project Arborist.

Preservation devices such as aeration systems, tree wells, drains, special paving and cabling systems must be installed in conformance with approved plans and certified by the Project Arborist.

No sprinkler or irrigation system shall be installed in such a manner that sprays water or requires trenching within the dripline of a protected tree. An above ground drip irrigation system is recommended. An independent low-flow drip irrigation system may be used for establishing drought-tolerant plants within the protected zone of a protected tree. Irrigation shall be gradually reduced and discontinued after a two (2) year period.

All portions of permanent fencing that will encroach into the protected zone of a protected tree shall be constructed using posts set no closer than ten (10) feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the tree(s).

Landscaping beneath native oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. Planting live material under protected native oak trees is generally discouraged, and is not recommended within six (6) feet of the trunk of a native oak tree with a diameter a breast height (DBH) of eighteen (18) inches or less, or within ten (10) feet of the trunk of a native oak tree with a DBH of more than eighteen (18) inches. The only plant species which shall be planted within the dripline of native oak trees are those which are tolerant of the natural, semi-arid environs of the tree(s).

TLA ENGINEERING & PLANNING PACIFIC STREET HOUSING ROCKLIN

Google earth feet 1000
meters 300

SIERRA NEVADA ARBORISTS FIELD MAP MAY 19 2015

TLA ENGINEERING & PLANNING
Pacific Street Project Site
City of Rocklin, California
TREE INVENTORY SUMMARY

TREE#	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						NOTABLE CHARACTERISTICS	RECOMMENDATIONS
						ROOT CROWN	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR		
86	Valley Oak	*(Quercus lobata)*		22	24	Fair	Fair	Fair	Fair	Fair	Fair	Above average amount of deadwood; slightly sparse foliage; moderate sprout growth.	None at this time
87	Interior Live Oak	*(Quercus wislizeni)*	1,1,2,2,3	9	5	Fair	Fair	Fair	Fair	Fair	Fair		None at this time
88	Valley Oak	*(Quercus lobata)*	3,4,5	12	8	Fair	Fair	Fair	Fair	Fair	Fair	Forks at grade; slightly above average amount of deadwood.	None at this time
89	Valley Oak	*(Quercus lobata)*		9	15	Fair	Fair	Fair	Fair	Fair	Fair	Slightly above average amount of deadwood.	None at this time
90	Valley Oak	*(Quercus lobata)*		22	25	Fair	Fair	Fair	Fair	Fair	Fair	Trunk has a slight bend to the south; above average amount of deadwood.	None at this time

TOTAL INVENTORIED TREES = 5 Trees (74 aggregate diameter inches)

Marcus H. Bole & Associates
An Environmental Consulting Firm

May 27, 2017

TLA Engineering & Planning
Attn: Brad Shirhall
1504 Eureka Road, Suite 10
Roseville, CA 95661

BIOLOGICAL RESOURCES EVALUATION AND WETLAND DETERMINATION FOR THE QUARRY ROW PROJECT LOCATED AT 4545 PACIFIC STREET, ROCKLIN, CA. MHBA FILE 0501-2017-3470.

INTRODUCTION

On May 16, 2017, a CEQA/NEPA-level Wetland Determination and Biological Resources Evaluation was conducted on the seven-acre Quarry Row Project site located at 4545 Pacific Street in Rocklin, California. The project site is located on the U.S. Geological survey (USGS) Rocklin 7.5-minute topographic quadrangle, Section 17, Township 11 North, Range 7 East, located east of the intersection of Grove Street and Pacific Street, Rocklin, California. (Appendix A, Figure 1). The project site is within Placer County Assessor parcel numbers (APNs) 045-031-001 through -005, and 045-031-047. Elevation of the property is 282 feet in relatively flat terrain. The site is bounded on the northeast, east, south and west by residential properties and on the northwest by commercial properties.

A records search was completed of the United States Fish & Wildlife Service's *Federal Endangered and Threatened Species List* (IPaC Resource List, 5/15/17) and the *California Natural Diversity Database* (May, 2017) for the Rocklin 7 ½ minute quadrangle and eight surrounding quadrangles. These documents list plants and wildlife that have Federal, State and California Native Plant Society (CNPS) special status. The records revealed several plant and wildlife species with a potential to occur onsite. Due to the disturbed nature of the site and the lack of any natural habitat on or near the site, there is limited potential for any of the protected species identified by the USFWS or California Department of Fish & Wildlife to nest or forage on the site.

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no federal jurisdictional wetland habitats within the boundaries of the subject property. Site soils were identified as Andregg coarse sandy loam, 2 to 9 percent slopes. Soil pits were dug in representative areas of the site. All soils were identified as upland soils (Chroma of 10YR 4/4 and 10YR 4/3) with no hydric soil indicators. Plant species were identified as upland grasses and forbs.

2.0 SETTING

The Rocklin area has a Mediterranean climate characterized by hot, dry summers and mild, rainy winters. Annual precipitation generally ranges from 9 to 52 inches. Average annual precipitation is 28 inches. Annual precipitation occurs almost exclusively as rainfall, and mostly from October through May. Mean monthly minimum air temperatures are typically in the high 30s and low 40s F during November through March; while mean maximum air temperatures are around 90º F during July and August. Recorded extremes are 14º F and 109º F, respectively.

3.0 METHODOLOGY

Biological and botanical surveys were conducted based on the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB, May 2017), the United States Fish & Wildlife Service's (USFWS) IPaC Resource List, and the California Native Plant Society's (CNPS) list of rare and endangered plants. All species lists were derived from the United States Geological Survey (USGS) "Rocklin, Citrus Heights, Folsom, Clarksville, Pilot Hill, Auburn, Gold Hill, Lincoln and Roseville" 7.5 minute quadrangles. Based on the results of the species lists, appropriate biological and botanical surveys were conducted. Species habitat surveys were conducted during May, 2017, by Marcus H. Bole & Associates (MHBA) senior wildlife biologist Marcus H. Bole. The species habitat surveys were conducted by walking all areas of the property (and surrounding 500 foot buffer) and evaluating potential habitat for special-status species based on vegetation composition and structure, surrounding area, presence of predatory species, microclimate and available resources (e.g. prey items, nesting burrows). A general botanical survey and habitat evaluation for rare plant botanical species was conducted during May, 2017 by MHBA's senior botanist Charlene J. Bole. The general botanical survey and habitat evaluation for rare plant botanical species was conducted by walking all areas of the property while taking inventory of general botanical species and searching for special-status plant species and their habitats. A delineation of Waters of the U.S. was also conducted on May 16, 2017 by Marcus H. Bole and was conducted under the guidelines of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008).

3.1 Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process.

Federal

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct". Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife". Such an act may

include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term "waters of the United States" is an encompassing term that includes "wetlands" and "other waters". Wetlands have been defined for regulatory purposes as follows: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas." Other waters of the United States (OWUS) are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The USACE may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for permits issued for a particular project, as well as specific regional conditions that apply to each nationwide permit.

Clean Water Act, Section 401

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and OWUS. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit

application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

State of California

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, "species of special concern" receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Wildlife Code

The California Fish and Game Code (CFWC) (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

Rank 1A: Plants presumed extinct in California;
Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
Rank 3: Plants about which we need more information; and
Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Wildlife Code §1913 exempts from the 'take' prohibition 'the removal of

endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way".

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. 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.

4.0 RESULTS

4.1 Description of the Existing Biological and Physical Conditions

The project is located in the City of Rocklin, Placer County, California. The following describes the biological and physical conditions within the property and within the surrounding area.

4.1.1 Project Area

The project area includes the subject property consisting of APNs 045-031-001, 045-031-002, 045-031-003, 045-031-004, 045-031-005-510, 045-031-005-520, and 045-031-047, and a 500 foot buffer around the seven parcels. The surrounding area consists of commercial businesses to the northwest and residential properties to the north, east, south and west.

4.1.2 Physical Conditions

The subject property consists of ruderal non-native grasslands containing one commercial building currently being used as a dance studio. An historical aerial photo from 1938 shows a building on the property surrounded by open fields. The site has remained relatively unchanged from 1938 to the present. An Arborist Report prepared by Edwin E. Stirtz dated May 20, 2015 documented the presence of five oak trees within the non-native grasslands. All oak trees were rated "fair" with an above average amount of "deadwood". The non-native grasslands consisted predominately of wild oats, bromegrass, thistles and non-native forbs.

4.1.3 Biological Conditions

Outside of the one onsite building, the subject property consists of predominately ruderal non-

native annual grasses, forbs and a few native oak trees. There are no wetland or riparian habitats on or near the subject property. The oak trees were examined for the presence of nesting raptors; however, none were found.

Non-native Annual Grasslands

Non-native annual grassland habitats and species composition depend largely on annual precipitation, fire regimes and past agricultural practices (Mayer and Laudenslayer 1998). Common botanical species found in the non-native annual grasslands within the project area include wild oat (*Avena sp.*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and field bindweed (*Convolvulus arvensis*). Wildlife species use grassland habitat for foraging but require some other habitat characteristic such as trees, rocky out crops, cliffs, caves or ponds in order to find shelter and cover for escapement. The site supports a couple of mature native oak trees capable of supporting nesting raptors. A thorough evaluation of each tree did not reveal stick-nests or other indications of nesting raptors. Wildlife species observed within the project area's non-native annual grasslands included the California ground squirrel, American crow (*Corvus brachyrhynchos*), northern flicker (*Colaptes auratus*), and house sparrow (*Passer domesticus*).

Protected Native Oak Trees

All trees within the property area were evaluated in a Tree Inventory conducted by Edwin E. Stirtz, Certified Arborist, and listed in his report dated May 20, 2015. Four valley oaks (*Quercus lobata*) and one Interior Live Oak (*Quercus wislizeni*) qualify as protected by the City of Rocklin Oak Tree Preservation Guidelines (Section 17.77.100 of the Rocklin Municipal Code). Impacts to the five protected trees identified in the Stirtz Report will be mitigated in accordance with the City of Rocklin Tree Preservation Guidelines.

4.2 Regional Species and Habitats of Concern

The following table is a list of species that have the potential to occur within the project area and is composed of special-status species within the Rocklin, Citrus Heights, Folsom, Clarksville, Pilot Hill, Auburn, Gold Hill, Lincoln and Roseville 7.5 minute quadrangles. Species lists reviewed, and which are incorporated in the following table, include the USFWS species list for the Rocklin area. Species that have the potential to occur within the project area are based on an evaluation of suitable habitat to support these species, CNDDB occurrences within a five mile radius of the project area and observations made during biological surveys. Not all species listed within the following table have the potential to occur within the project area based on unsuitable habitat and/or lack of recorded observations within a five mile radius of the project area.

Table 1. Listed and Proposed Species potentially occurring on or near the project area.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
INVERTEBRATES				
California linderiella *(Linderiella occidentalis)*	_/S2S3/_	Vernal pools, swales, and ephemeral freshwater habitat.	A/HA	There are no vernal pools within the project area.
Conservancy fairy shrimp *(Branchinecta conservatio)*	FE/_/_	Moderately turbid, deep, cool-water vernal pool.	A/HA	There are no vernal pools within the project area.
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	FT/_/_	Blue elderberry shrubs usually associated with riparian areas.	A/HA	There are no elderberry shrubs within the project area.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/_/_	Moderately turbid, deep, cool-water vernal pool.	A/HA	There are no vernal pools within the project area.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/_/_	Vernal pools, swales, and ephemeral freshwater habitat.	A/HA	There are no vernal pools within the project area.
REPTILES AND AMPHIBIANS				
Northwestern pond turtle *(Emys marmorata marmorata)*	_/SSC/_	Artificial ponds, pond margins, back waters of rivers, and sloughs vegetated by heavy riparian and/or emergent vegetation and basking areas.	A/HA	There are no wetlands or riparian areas within the project area. None were observed during the habitat survey.
California red-legged frog *(Rana draytonii)*	FT/SSC/_	Quiet pools of streams, marshes and occasionally ponds. (sea level - 4,500 ft elevation)	A/HA	There is no suitable habitat to support the California red-legged frog within the project area. None were observed during the habitat survey.
Giant garter snake *(Thamnophis gigas)*	FT/ST/_	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands. (sea level - 400 ft elevation)	A/HA	No wetland areas were identified within the project area. None were observed during the habitat survey.
FISH				

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha)*	FT/ST/_	Sacramento River and its tributaries.	A/HA	No rivers or tributaries were noted within the project area.
Central Valley steelhead *(Oncorhynchus mykiss)*	FT/_/_	Sacramento and San Joaquin Rivers and their tributaries.	A/HA	No rivers or tributaries were noted within the project area.
Delta smelt (*Hypomesus transpacificus)*	FT/SE/_	Sacramento-San Joaquin Estuary	A/HA	There is no estuary habitat within the project area.
Green sturgeon (Acipenser medirostris)	FT/_/_	Spawning habitat in Sacramento, Klamath and Rogue Rivers.	A/HA	The Sacramento River is not a part of the project area.
Sacramento River winter-run Chinook salmon *(Oncorhynchus tshawytscha)*	FE/SE/_	Sacramento River	A/HA	The Sacramento River is not a part of the project area.
BIRDS				
Bald eagle *(Haliaeetus leucocephalus)*	MBTA/SE/_	Coast, large lakes and river systems, with open forests with large trees and snags.	A/HA	There are no large water bodies within the project area. None were observed during the habitat survey.
Bank swallow *(Riparia riparia)*	MBTA/ST/_	Along water ways with sharply cut banks made up of brittle soils.	A/HA	There are no sharply cut banks suitable for bank swallow nesting colonies within the project area. None were observed during the habitat survey.
Western burrowing owl *(Athene cunicularia)*	MBTA/SSC/_	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	A/MH	There are disturbed non-native grasslands within the project area; however, only a few ground squirrel burrows were noted. None were observed during the habitat survey.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
California black rail *(Laterallus jamaicensis coturniculus)*	MBTA/ST/_	Densely vegetated marshes.	A/HA	There is no suitable emergent wetland habitat for California black rails within the project area. None were observed during the habitat survey.
Grasshopper sparrow *(Ammodramus savannarum)*	MBTA/SSC/_	Valley and foothill grasslands.	A/MH	The majority of the site consists of disturbed non-native grasslands. None were observed during the habitat survey.
Long-eared owl *(Asio otus)*	MBTA/SSC/_	Frequents dense, riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats.	A/HA	There is no suitable habitat within the project area. None were observed during the habitat survey.
Swainson's hawk *(Buteo swainsoni)*	MBTA/ST/_	Open grasslands and shrub lands.	A/MH	There are disturbed non-native grasslands within the project area; however, there are no CNDDB occurrences within a five- mile radius of the project area. None were observed during the habitat survey.
Tri-colored black bird *(Agelaius tricolor)*	MBTA/SSC/_	Marshes and swamps, agricultural irrigation ditches, blackberry brambles and grasslands. Requires open water, protected nesting substrate, and foraging area with insect pretty within a few km of colony.	A/HA	There is no suitable habitat within the project area. None were observed during the habitat survey.
Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	FC/SE/_	Open woodlands, riparian areas, orchards and moist, overgrown thickets	A/HA	There are no extensive parcels of riparian habitat within or near the project area. None were observed during the habitat survey.
White-tailed kite *(Elanus leucurus)*	MBTA/_/_	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland.	A/HA	There is no suitable habitat within or near the project area. None were observed during the habitat survey.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**General Habitat Description**	**Habitat Present/ Habitat Absent**	**Rationale**
Osprey *(Pandion haliaetus)*	MBTA/_/_	Ocean shore, bays, fresh-water lakes, and larger streams.	A/HA	There is no suitable habitat within or near the project area. None were observed during the habitat survey.
Purple martin *(Progne subis)*	MBTA/_/_	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, Ponderosa pine & Monterey pine.	A/HA	There is no suitable habitat within or near the project area. None were observed during the habitat survey.
MAMMALS				
Hoary bat *(Lariurus cinereus)*	_/_/S4	Roost in large to medium sized trees with dense foliage.	A/HA	There are no extensive parcels of riparian habitat within or near the project area. None were observed during the habitat survey.
Western red bat *(Lasiurus blossevillii)*	_/_/SSC	Roosting habitat includes riparian forests associated with cottonwoods and sycamores, oak woodlands and occasionally orchards adjacent to stream systems.	A/HA	There are no extensive parcels of riparian habitat within or near the project area. None were observed during the habitat survey.
Yuma myotis *(Myotis yumanensis)*	_/_/S4	Roosts in buildings, small crevices, bridges and occasionally old swallow nests. Prefers open woodland habitat and is commonly associated with water.	A/HA	There are no bridges, crevices or old nests in or near the project area. None were observed during the habitat survey.
PLANTS				
Ahart's dwarf rush *(Juncus leiospermus var. ahartii)*	_/_/1B.2	Valley and foothill grassland, restricted to edges of vernal pools in grasslands.	A/HA	There are no vernal pools within the project area. None observed during the habitat survey.
Brandegee's clarkia *(Clarkia biloba ssp. Brandegeeae)*	_/_/Rare Plant Rank 4.2	Chaparral, cismontane woodland, lower mountain coniferous forest.	A/HA	There is no suitable habitat within or near the project area. None were observed during the habitat survey.
Boggs Lake hedge-hyssop *(Gratiola*	_/_/1B.2	Marshes and swamps (freshwater), vernal pools.		There are no marshes, swamps or vernal pools within

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	General Habitat Description	Habitat Present/ Habitat Absent	Rationale
heterosepala)				the project area. None observed during the habitat survey.

CODE DESIGNATIONS	
FE = Federally-listed Endangered	**A** = Species Absent
FT = Federally-listed Threatened	**P** = Species Present
FC = Federal Candidate Species	**HA** = Habitat Absent
BCC = Federal Bird of Conservation Concern	**HP** = Habitat Present
MBTA = Protected by the federal Migratory Bird Treaty Act	**CH** = Critical Habitat
SE = State-listed Endangered	**MH** = Marginal Habitat
ST = State-listed Threatened	**CNPS 1B** = Rare or Endangered in California or elsewhere
SR = State-listed Rare	**CNPS 2** = Rare or Endangered in California, more common elsewhere
SSC = State Species of Special Concern	**CNPS 3** = More information is needed
S1 = State Critically Imperiled	**CNPS 4** = Plants with limited distribution
S2 = State Imperiled	**0.1** =Seriously Threatened
S3 = State Vulnerable	**0.2** = Fairly Threatened
S4 = State Apparently Secure	**0.3** = Not very Threatened
SSC = CDFW Species of Special Concern	
FP =CDFW Fully Protected Species	
SNC = CDFW Sensitive Natural Community	

Western Burrowing Owl

The western burrowing owl (*Athene cunicularia*) is listed as a species of special concern in the state of California. They are distributed throughout the western United States from Minnesota to the Pacific Coast, and into Canada and Mexico. In California, western burrowing owls are distributed along the south and southeastern desert areas, throughout the Central Valley, patchy areas around the Bay Area and southern coast lines and into the north eastern high desert areas. The western burrowing owl is a small, slender owl with long tarsi, no ear tufts and has a light to chocolate brown coloration with variable white spots. Suitable habitat includes open plains, grasslands, desert scrub and mima mound topography. Burrowing owls primarily nest in previously made mammal burrows but will also use rock crevices and other dry natural and man-made cavities that provide cover from predators. Current threats facing the western burrowing owl include habitat loss and fragmentation, decline in burrowing rodents, and the spread of invasive plant species.

Survey Results

Western burrowing owls prefer open grassland to desert scrub areas with low line vegetation. They nest in burrows previously made by small mammals such as the California ground squirrel

and other natural made or human made cavities such as timber and rock piles. There were no observations of western burrowing owls during the survey.

Mitigation

Based on unsuitable habitat elements and historical records within a five mile radius of the project area there is no potential for western burrowing owl presence within the project area. No mitigation measures are required for this species.

Migratory Birds

Nesting birds are protected under the MBTA (16 USC 703) and the CFWC (3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA. The CFWC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto".

Survey Results

During the migratory bird and raptor survey conducted during May of 2017, there were no observed nests within the project area. Red-tailed hawks were observed foraging near the project area; however, no nests were noted. Other avian species that have nesting habitat within or near the project area are the grasshopper sparrow (*Ammodramus savannarum*) and the long-eared owl (*Asio otus*). None of these species were observed during onsite surveys. No mitigation measures are required for these species.

Mitigation

Based on unsuitable habitat elements and historical records within a five mile radius of the project area there is limited potential nesting habitat for migratory bird species the project area. No mitigation measures are required for these species.

California Black Rail

The California black rail (*Laterallus jamaicensis coturniculus*) is threatened under the California Endangered Species Act (CESA) and is protected under the Federal Migratory Bird Treaty Act (MBTA). The California black rail is a small, sparrow sized, black rail that inhabits fresh water

palustrine emergent persistent wetlands (wetlands that are non-tidal and dominated by perennial, erect, rooted, herbaceous, hydrophytes) and salt water tidal marshes (Richmond etal. 2008 and 2010). Black rails are elusive, secretive birds that are rarely seen and are able to stay hidden by compressing their bodies laterally to fit through dense, tall, hydrophytic vegetation. The California black rails distribution is patchy and fragmented, occupying as far south as areas around the Colorado River, to areas around the San Francisco Bay, coastal parts of Marin County and along the western slopes of the Sierra Nevada foothills (Spautz etal. 2005). The first known population of California black rails in the Sierra Nevada foothills was discovered in 1994 (Aigner et al. 1995). Since then there have been more efforts to survey for California black rails in the Sierra Nevada foothills and Sacramento Valley regions. In 2008, Richmond etal. conducted a California black rail distribution survey in the Sierra Nevada foothills and found several occupied marshes. In their results they stated they found 103 occupied marshes in Yuba County, 38 occupied marshes in Nevada County and 21 occupied marshes in Butte County (Richmond et al. 2008). Suitable habitat consists of fresh emergent wetlands dominated by rushes and cattails. During the breeding season (March – July), California black rails construct loosely woven, deep cup nests within tall herbaceous hydrophytic vegetation. Current threats to the California black rail include direct and indirect loss, degradation and fragmentation of California's wetland habitat.

Survey Results

California black rails prefer fresh water palustrine, emergent, persistent, wetlands dominated by rushes and cattails. They are an extremely secretive species that is rarely seen and is more commonly heard. They construct their nests in areas that are heavily covered and out of view from predators. No fresh emergent wetlands were observed within the project area. There were no visual or audio observations of California black rails during the species habitat survey.

Mitigation

Based on unsuitable habitat elements and historical records within a five mile radius of the project area there is no potential nesting habitat for the California black rail within the project area. No mitigation measures are required for these species.

Table 2. Impacts and Avoidance/Minimization Measures for Target Species, Quarry Row Project.

Target Species/ Communities	Impacts	Avoidance/ Minimization Measures
Natural Communities	**None**	**None**
Special Status Plant Species	**None**	**None**

Target Species/ Communities	Impacts	Avoidance/ Minimization Measures
Special Status Wildlife Species	**None**	**None**

5.0 RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

5.1 Federal Endangered Species Act Consultation Summary

The USFWS was contacted during May 2017, for a list of endangered, threatened, sensitive and rare species, and their habitats within the project area. The list was derived from special-status species that occur or have the potential to occur within the USGS Rocklin 7.5" Quadrangle and eight surrounding quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the project area.

5.2 Federal Fisheries and Essential Fish Habitat Consultation Summary

Essential fish habitat (EFH) means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Fishery Conservation and Management Act (MSA) §3). There is no habitat within the project area that provides "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," or special-status fish species managed under a fishery council (i.e chinook and coho). Therefore there is no EFH or the need for federal fisheries consultation.

5.3 California Endangered Species Act Consultation Summary

The CDFW was consulted during May, 2017, for a list of endangered, threatened, sensitive and rare species, and their habitats within the project area. The list was derived from special-status species that occur or have the potential to occur within the USGS Rocklin 7.5" Quadrangle and eight adjacent quadrangles. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the project area.

5.4 Wetlands and Others Water Coordination Summary

MHBA conducted a determination of Waters of the U.S. within the project area. Surveys were conducted during May, 2017 by MHBA's Marcus H. Bole. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual (1987); the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the U.S. *Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007); the *U.S. Army Corps of Engineers Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region* (2011); and the *U.S. Army Corps of Engineers*

Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (2008).

5.6 Determination of Waters of the United States

The intent of this determination is to identify wetlands and "other Waters of the United States" that are present within the Study Area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study (as supplemented by the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region,* dated December 2006). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. No wetland plant species were observed within the project site during our onsite evaluations. There was no sign of vernal pools or vernal swales on the property.

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface**.** Onsite soils as identified by the Natural Resources Conservation Service (NRCS) are Andregg

coarse sandy loam, 2 to 9 percent slopes. These soils do not support ponding or pooling, and are not classified as a "hydric" soil of Placer County. There were no signs of hydric soil development on or near the project area.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogrammic lichens, and algal mats. Due to past property development the natural hydrology has been altered through drainage and flood protection.

Wetland Determination Results

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no state or federal jurisdictional wetland habitats within the boundaries of the subject property.

CONCLUSIONS AND RECOMMENDATIONS

According to California Environmental Quality Act (CEQA) guidelines, a project is normally considered to have a significant impact on wildlife if it will interfere substantially with the movement of any resident or migratory fish or wildlife species; or substantially diminishes habitat quantity or quality for dependent wildlife and plant species. Impacts to special status species and their associated habitats are also considered significant if the impact would reduce or adversely modify a habitat of recognized value to a sensitive wildlife species or to an individual of such species. This guideline applies even to those species not formally listed as threatened, rare or endangered by the California Department of Fish & Wildlife and the United States Fish and Wildlife Service. Project implementation will not result in impacts to resident or migratory wildlife, special status plant or wildlife species, or any associated protected habitat. Impacts to the five protected native oak trees identified in the Stirtz Report will be mitigated in accordance with the City of Rocklin Oak Tree Preservation Guidelines. It is our recommendation that no further biological or botanical studies are required at this time.

This concludes our biological and wetland evaluation of the seven-acre Quarry Row project site located at 4545 Pacific Street in Rocklin, California. The project site is within Placer County Assessor parcel numbers (APNs) 045-031-001 through -005, and 045-031-047. If you have any questions concerning our findings please feel free to contact me directly at: Marcus H. Bole & Associates, Attn: Marcus Bole, 104 Brock Drive, Wheatland, CA 95692, phone 530-633-0117, fax 530-633-0119, email: mbole@aol.com. For a complete copy of the Statement of Qualifications of the staff members conducting this evaluation please visit our website at: mhbole.com.

Respectfully Submitted:

Charlene J. Bole Marcus H. Bole

Charlene J. Bole, M.S, Botanist
Senior Wetland Scientist
Marcus H. Bole & Associates

Marcus H. Bole, M. S, Wildlife Biologist
Senior Wetland Scientist
Marcus H. Bole & Associates

LIST OF ATTACHMENTS:

APPENDIX A: MAPS AND PHOTO PLATES

APPENDIX B: NATURAL DIVERSITY DATA BASE & FEDERAL LIST

APPENDIX C: RESUMES OF SURVEYORS

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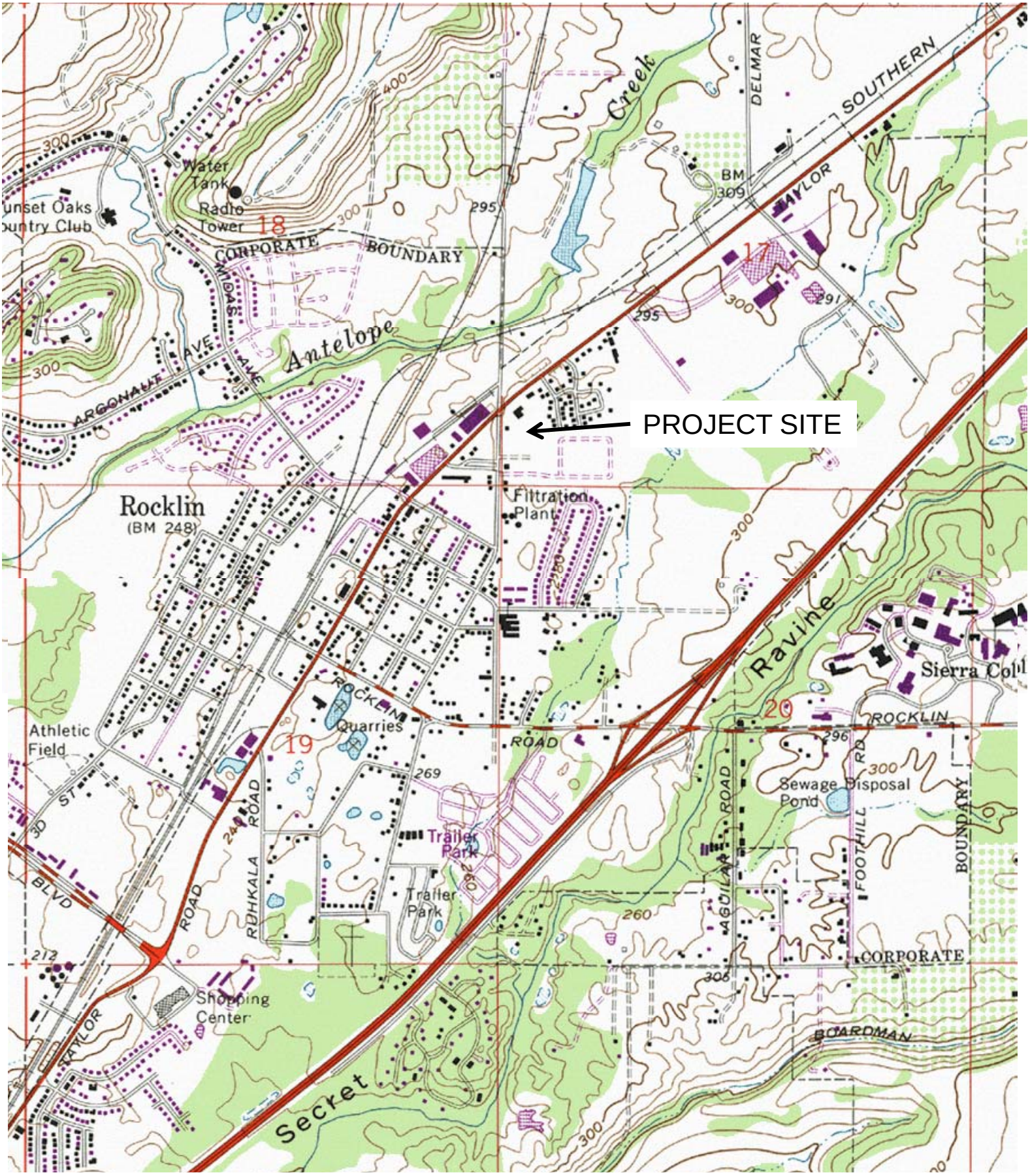
APPENDIX A: MAPS AND SITE PHOTOS



Project Vicinity Map: Quarry Row Project located east of the intersection of Grove Street and Pacific Street, Rocklin, CA. Section 17, Township 11 N, Range 7 E, M.D.B. & M. Rocklin USGS.

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Quarry Row Project, Rocklin
ITEM: Typical View, Onsite Building
DATE: 5/16/2017 PLATE: 1

MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: Quarry Row Project, Rocklin
ITEM: Typical View, Non-native grasslands
DATE: 5/16/2017 PLATE: 2

APPENDIX B: CALIFORNIA NATURAL DIVERSITY DATABASE - WIDE REPORT & FEDERAL SPECIES LIST

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Rocklin (3812172))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR All CNDDB element occurrences OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR All CNDDB element occurrences OR Delisted OR Candidate Endangered OR Candidate Threatened))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	260 320	755 S:2	0	1	0	0	1	0	0	2	1	0	1
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	G4G5T4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	600 600	89 S:1	0	0	0	0	0	1	1	0	1	0	0
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2 S2	Threatened None		320 575	271 S:6	2	1	0	1	1	1	3	3	5	1	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	400 400	164 S:1	0	1	0	0	0	0	0	1	1	0	0
Gratiola heterosepala Boggs Lake hedge-hyssop	G2 S2	None Endangered	Rare Plant Rank - 1B.2 BLM_S-Sensitive	290 290	94 S:1	0	0	1	0	0	0	1	0	1	0	0
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	360 360	241 S:1	1	0	0	0	0	0	0	1	1	0	0
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	520 520	433 S:1	0	0	0	0	0	1	0	1	1	0	0
Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	G1 S1.1	None None		240 400	7 S:3	0	0	0	0	0	3	3	0	3	0	0
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	G5T2Q S2	Threatened None	AFS_TH-Threatened		31 S:1	0	0	0	1	0	0	0	1	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Pandion haliaetus	G5	None	CDF_S-Sensitive	575	496	0	0	1	0	0	0	0	1	1	0	0
osprey	S4	None	CDFW_WL-Watch List IUCN_LC-Least Concern	575	S:1											
Progne subis	G5	None	CDFW_SSC-Species of Special Concern	216	68	0	1	0	0	0	0	0	1	1	0	0
purple martin	S3	None	IUCN_LC-Least Concern	216	S:1											

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Servi**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Placer County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Endangered Species Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened
Steelhead Oncorhynchus (=Salmo) mykiss There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/1007	Threatened

Insects

NAME	STATUS

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

APPENDIX C: RESUMES OF SURVEYORS

Marcus H. Bole & Associates

An Environmental Consulting Firm

MARCUS H. BOLE, Senior Wildlife Biologist

EXPERTISE:
Wildlife & Natural Resource Management
Environmental Site Assessments (NEPA & CEQA-level)
Wetland Delineation, Mitigation, and Permitting

EDUCATION:
Master's Degree in Environmental Science
North Dakota State University, Fargo, 1976
Baccalaureate in Wildlife Biology
California State University, Sacramento, 1970
Registered Environmental Property Assessor (REPA, #647913)
Certified (OSMB) Disabled Veteran Business Enterprise (DVBE)
California Department of General Services (#0000847)
Service Disabled Veteran Owned Small Business (VA)
Awarded GSA Contract Number: GS10F101BA Environmental
Schedule 899, DUNS Number 943646430

PROFESSIONAL HISTORY:
Bole & Associates, Principal, 1993 - Present
U. S. Federal Government Manager of Environmental Engineering,
Compliance and Community Planning, 1970 - 1993
California State Division of Forestry, Engineer, 1966 - 1970

REPRESENTATIVE EXPERIENCE:
Mr. Bole has over forty years of experience in environmental project management and wildlife biology. He has supervised work forces of professional engineers, scientists and technicians responsible for pollution monitoring, permitting, abatement, environmental impact analysis, natural resource evaluation and restoration programs and preserve habitat management. As a biologist, Mr. Bole has conducted numerous Biological Assessments in accordance with United States Fish & Wildlife Service and California Department of Fish & Wildlife protocols and regulations. He has conducted wetland delineations in accordance with the United States Army Corps of Engineers regulations throughout California. Mr. Bole has conducted hundreds of raptor (hawk, owl and bat) assessments in accordance with California Department of Fish and Wildlife and United States Fish and Wildlife Service protocols. As lead environmental scientist for the Department of Veterans Affairs, National Cemetery Administration, he has been directly responsible for coordinating environmental assessments and the Environmental Management System (EMS) for over 160 National Cemeteries in the United States. As Chief, Environmental Management Division, Beale AFB, California, he managed compliance issues and the restoration of natural resources within a 23,000 acre federal military installation, retiring in 1993 in the rank of Lieutenant Colonel. As Principal, Marcus H. Bole & Associates, he manages allocation of personnel, client development and strategic planning.

Marcus H. Bole & Associates
An Environmental Consulting Firm

CHARLENE J. BOLE, Senior Botanist

EXPERTISE:
Threatened and Endangered Species, Botanical Surveys
Wetland Delineation, Mitigation and Permitting
Environmental Project Management

EDUCATION:
Masters Degree in Environmental Science
North Dakota State University, Fargo, 1979
Baccalaureate in Biology
California State University, Sacramento, 1974
Graduate Course work in Environmental Sciences, Botany & Wildlife Biology
Registered Environmental Property Assessor (REP# 229436)
State of California Standard Teaching Credential, Science
California Community College Credential, Environmental Science

PROFESSIONAL HISTORY:
Marcus H. Bole & Associates (MHB&A), Principal, 1991 - Present
Consultant, Veterans Administration, National Cemetery Administration, 2005-Present
Consultant, Regulatory Permitting, US Army, Department of Defense, Belgium, 1988 - 1991
Senior Project Manager, Environmental Development Center, Belgium, 1988 - 1991
Environmental Consultant for Department of Defense, Japan, 1985 - 1987
Science and Math Instructor, Wheatland School District, CA, 1980 - 1984

REPRESENTATIVE EXPERIENCE:
Ms. Bole has over thirty-five years of experience in environmental project management, wildlife biology and avian surveys. A recognized expert in research development and management, she has supervised work forces of professional scientists and technicians responsible for a wide array of environmental issues in overseas locations and throughout California. Ms. Bole has conducted numerous Botanical Assessments in accordance with United States Fish & Wildlife Service and California Department of Fish & Wildlife protocols and regulations. She has conducted wetland delineations in accordance with the United States Army Corps of Engineers regulations throughout California. Her areas of expertise include botany, wildlife ecology, regulatory compliance, natural resource and habitat conservation planning, and the delineation of waters of the United States. She is a Senior Environmental Scientist under contract with the Department of Veterans Affairs, National Cemetery Administration, responsible for the environmental review of cemetery expansions at over 160 Veterans Administration National Cemeteries. She is currently Senior Botanist responsible for restoration planning and monitoring for the Caltrans San Francisco-Oakland Bay Bridge East Span Project. She is also Senior Botanist for the Department of Water Resources Clifton Court Forebay habitat restoration project. Her organizational skills have consistently resulted in finding the most cost effective means for project implementation and completion.