



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

Ecological Services
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



IN REPLY REFER TO:
08EVEN00-2015-I-0173

October 4, 2021

Stephanie Hansen
Assistant Planning Director
County of Santa Cruz
701 Ocean Street, 4th Floor
Santa Cruz, California 95060

Subject: Reinitiation of Informal Consultation on the Pippin Apartment Project in Santa Cruz County, California

Dear Stephanie Hansen:

We are responding to your request, dated September 23, 2021, to reinitiate consultation on the Pippin Apartments Project (project) due to changes to the project description. You are requesting our concurrence that the updated project may affect, but is not likely to adversely affect the federally threatened California red-legged frog (*Rana draytonii*). The U.S. Department of Housing and Urban Development (HUD) would provide funding for the project. Under HUD regulations, the local agency receiving Federal funds assumes the role of HUD as the lead Federal agency in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

The County of Santa Cruz (County) proposed changes include the development of 80 new multi-family rental apartments on an approximately 15-acre site on assessor parcel numbers 019-236-01 and 048-221-09, located in Watsonville, in unincorporated Santa Cruz County. Proposed updates are referred to as Phase II of the project, with the original project being Phase I. Although the project description of the original section 7 consultation included only the 46-unit Phase I of the project, biological reports submitted with the initial consultation were prepared for both Phase I and Phase II. However, Phase II planning was still ongoing, therefore, a defined project description was not included (for Phase II) at that time. The updated project is located adjacent, east of Phase I.

The County proposes to implement all avoidance and minimization measures that were included for Phase I, which include the following:

1. The credentials of biologists will be submitted to the U.S. Fish and Wildlife Service (Service) for review and approval at least 30 days prior to the onset of project activities.
2. Initial project activities (including but not limited to ground disturbance and vegetation removal) will occur during dry weather, during the day, preferably before newly metamorphosed frogs disperse, and when California red-legged frogs are less likely to be migrating between aquatic environments. Initial ground disturbing activities will occur between June 1 and October 15.
3. Prior to initiating project activities, the boundaries of the work area will be marked with materials that are not potentially injurious to wildlife. With the input of the Service-approved biologist, appropriate fence materials will be installed. Project activities will take place within these marked boundaries to ensure minimum impact to the area.
4. Prior to initiating any project activities, a temporary wildlife barrier will be installed between the work area(s) and habitat features providing potential California red-legged frog habitat (e.g., wetland, ephemeral drainage, agricultural basin, and Corralitos Creek). A Service-approved biologist will work with the appropriate agencies to develop designs of a barrier that will prevent entrapment or potentially harm to California red-legged frogs or other sensitive species. The Service-approved biologist will inspect the barrier daily to ensure no California red-legged frogs or other sensitive species are located along the fence. In the event a California red-legged frog is observed along the fence, all on-site activities will cease and appropriate agencies will be contacted immediately. No California red-legged frogs or other sensitive species will be handled or moved without pre-approval from the appropriate agencies.
5. Any wetland, ephemeral drainage, riparian, upland forest, grassland, ruderal, or scrub habitats will be inspected by an approved biologist before and during any clearing of vegetation or any other ground disturbing activities to ensure no California red-legged frogs are present during these activities.
6. Before any project activities begin, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include: (1) a description of the life history of California red-legged frogs and any other sensitive resources and habitat information, (2) general measures to be implemented to conserve the California red-legged frog and other sensitive resources as they relate to the project, (3) the boundaries of the project, and (4) education about the need to halt activities and avoid handling or moving any California red-legged frog or other sensitive wildlife if encountered in the work area. Brochures, books, and briefings may be used in the training session, provided that a Service-approved biologist is on hand to answer any questions.
7. Where trenching occurs, an escape ramp will be installed at each end of the open trench to avoid wildlife entrapment. The ramp may be constructed of dirt fill, wood planking, or other

suitable material that is placed at an angle of 30 degrees or less. Open segments of trench will be backfilled as soon as possible to avoid wildlife entrapment.

8. Workers will check for wildlife under all equipment before use. If any species status wildlife is observed under equipment or within the work area, the animal will not be disturbed or handled. Project activities will cease and the Service will be contacted for further guidance.
9. During project activities, all trash that could attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
10. Fueling and maintenance of vehicles and other equipment and staging areas will not occur within or near wetland or riparian habitats or water bodies. A plan to allow a prompt and effective response to accidental spills will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to be taken should a spill occur. The Service should be contacted regarding spills if the approved biologist anticipates that impacts to California red-legged frogs may occur as a result of the spill.

California red-legged frog

The larger planning area includes a freshwater wetland complex with an associated drainage, an irrigated agricultural basin, a segment of Corralitos Creek, ruderal habitat, cultivated fields, orchards, unpaved farm roads, and a few private residential and agricultural-related buildings (RBF Consulting 2009). Mori (2008) and Ecosystems West Consulting Group (Ecosystems West) (2009) determined that California red-legged frogs are unlikely to be present within the planning area. They based this determination on the presence of bullfrogs in aquatic habitats, limited upland habitat, and the relative isolation from other known California red-legged frog locations due to development in the area. In 2013, the Service recommended protocol-level surveys be conducted due to the present of suitable aquatic habitat within the planning area and known California red-legged frog occurrences within dispersal distance. In 2013, Mori provided an update to the 2008 California red-legged frog assessment (Mori 2013), noting changes in the habitat and reiterating the low likelihood of the species' presence in the project area. Based on this information, Ecosystems West requested the Service reevaluate the need for protocol surveys (Ecosystems West 2013). The Service supported the recommendation that further surveys would provide little additional information and recommended implementation of measures to avoid and minimize effects during project activities (D. Cooper, Service, pers. comm. 2013). We concur with your determination that the proposed Phase II project activities may affect, but are not likely to adversely affect the California red-legged frog. Our concurrence is based on the following:

1. California red-legged frogs are unlikely to be present in the project area.
2. The County proposes to implement the above avoidance and minimization measures.

Stephanie Hansen

4

As a reminder, in the unlikely event that a federally listed species enters the project site, all construction activities must halt and the County must contact the Service to discuss the need for formal consultation. If you have any questions, please contact Chad Mitcham by electronic mail at chad_mitcham@fws.gov.

Sincerely,

Leilani Takano
Assistant Field Supervisor

REFERENCES

- Ecosystems West Consulting Group. 2009. Biotic assessment for the proposed City of Watsonville and Santa Cruz County Atkinson Lane Specific Plan, Santa Cruz County, California. Prepared for RBF Consulting, Marina, California.
- Ecosystems West Consulting Group. 2013. Request for U.S. Fish and Wildlife Service review of need to conduct California red-legged frog protocol surveys for the proposed MidPen Housing Corp, affordable housing community project located on Atkinson Lane in Watsonville, California. Dated March 27, 2013.
- Mori, B. 2008. Special status amphibian and reptile preliminary site assessment for the City of Watsonville Atkinson Lane Specific Master Plan, Santa Cruz County, California. Bryan M. Mori Biological Consulting Services, Watsonville, California. Dated July 30, 2008.
- Mori, B. 2013 Atkinson Property – California red-legged frog site assessment update. Bryan M. Mori Biological Consulting Services, Watsonville, California. Dated March 20, 2013.
- RBF Consulting. 2009. Draft environmental impact report, Atkinson Lane Specific Plan and Planned Unit Development. Prepared for the County of Santa Cruz Planning Department, Santa Cruz, California.

PERSONAL COMMUNICATION

- Cooper, Doug. 2013. U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, Electronic mail regarding California red-legged frog survey recommendations to William Davilla, Ecosystems West Consulting Group. Dated April 25, 2013.



COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
PAIA LEVINE, INTERIM PLANNING DIRECTOR

September 23, 2021

Ms. Leilani Takano
Assistant Field Supervisor
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

RE: Amended Section 7 Informal Consultation - HUD-Funded Project
Initiated for 46-unit Pippin Apartments (Phase I of II)
56 Atkinson Lane, Watsonville, Santa Cruz County, California 95076
APN #019-226-42 (City Parcel) and #048-211-25 (County Parcel)

Amending Project Description to add 80-unit Pippin Phase II Apartments
78 Atkinson Lane, Watsonville, Santa Cruz County, California 95076
APN #019-236-01 (City - 0.5 acre) and 048-221-09 (County - 14.33 acres)
Portion of Watsonville West Quad, Sections 32 & 33: T.11S., R.2E.

Refer to: O8EVEN00-2015-I-0173 (attached)
Informal Consultation for the Pippin Apartments Project in the City of
Watsonville and Unincorporated Santa Cruz County, California

Dear Ms. Takano:

The purpose of this letter is to amend the project description of the Section 7 Informal Consultation between the County of Santa Cruz and the United States Fish and Wildlife Service (USFWS) that was submitted by the County of Santa Cruz on February 25, 2015, and received by USFW on March 13, 2015. At that time, the County initiated Informal Consultation on Phase I of a two phase project. The County would like to amend the original Informal Consultation on the 46-unit project by amending the project description to include Phase II of the project, a proposed 80-unit affordable multifamily project to be constructed on two parcels adjacent to the original parcels, with one situated in the City of Watsonville and one situated in the County of Santa Cruz. All 80 units are to be constructed on the County parcel with the adjacent City parcel, located on the south side of Atkinson Lane, used only for temporary Emergency Vehicle Access (EVA) and access to main

utilities to be undergrounded across the parcel. As with Phase I, Phase II will be receiving HUD funds in the form of project-based vouchers.

Under HUD regulations, the local agency receiving federal funds assumes the role of HUD as the lead agency for agency-to-agency consultation purposes, including Section 7 Informal Consultation with USFWS. The County of Santa Cruz assumed the lead agency role and, therefore, initiated Section 7 Informal Consultation with USFWS in 2015 and is seeking to amend that Consultation with this letter.

Original Consultation

The original Informal Consultation request submitted by the County of Santa Cruz for Phase I of the project, dated February 25, 2015, is attached, as well as the USFWS response dated June 2, 2015.

Although the project description of the original Section 7 Informal Consultation included only the 46-unit Phase I of the project, to be constructed on APN #019-226-42 (City Parcel) and 048-211-25 (County Parcel), the reports submitted with the Consultation request were prepared for the entire area including the current two parcels. Without a defined project, Phase II could not be included in the project description at that time.

The applicant team spoke with HUD Region IX Environmental Protection Specialist, Stanley W. Toal CGA, who recommended that the County amend the project description of the Informal Consultation and the County is doing so here.

Amended Project Description for Informal Consultation

Phase I of Project

The 46-unit affordable housing project was built on an approximate 4-acre site located at 56 Atkinson Lane in Watsonville and Santa Cruz County (APNs above). See the attached letter for a full project description.

Phase II of Project

The proposed Pippin Phase II project (“the project”) consists of the development of 80 new multi-family rental apartments on the nearly 15-acre site located at 78 Atkinson Lane and Brewington Avenue on the outskirts of Watsonville, CA. The site consists of two contiguous parcels, one within the city limits of Watsonville (APN: 019-236-01; 0.50 Acres) and the other just outside the city limits in unincorporated Santa Cruz County (APN: 048-221-09; 14.33 Acres). The project description is amended to include the proposed 80 apartments to be built in three residential buildings. All of the buildings will be three-story, wood-frame structures without elevators. The units will range in size from one to three bedrooms and will be restricted to occupancy by lower-income households with target income levels from

30% to 60% of the Santa Cruz County Area Median Income (AMI). The proposed unit mix include 32 one-bedroom, 24 two-bedroom and 24 three-bedroom units.

The project will consist of construction of the described residential buildings and all necessary infrastructure including, but not limited to, sidewalks, curbs, gutters, lighting, water, sewer and electrical connections (including undergrounding from mains), water drains, parking lot and landscaping.

Phase I Proposed Avoidance and Minimization Measures Approved by USFWS
(from USFWS 6.2.15 letter)

Minimization measures were developed for Phase I of the project to address the potential for take of California red-legged frog, a federally listed species, and were approved by USFWS. Although no California red-legged frogs are expected to occur within the project area during construction, in an abundance of caution, the project proponent has proposed the following avoidance and minimization measures to further reduce the risk of adverse effects (Ecosystems West 2013, R. Hastings, pers. comm. 2015). The same minimization measures are proposed for Phase II of the project:

1. The credentials of biologists will be submitted to the Service for review and approval at least 30 days prior to the onset of project activities.
2. Initial project activities (including but not limited to ground disturbance and vegetation removal) will occur during dry weather, during the day, and preferably before newly metamorphosed frogs disperse and when California red-legged frogs are less likely to be migrating between aquatic environments. Initial ground-disturbing activities will occur between June 1 and October 15.
3. Prior to initiating project activities, the boundaries of the work area will be marked with materials that are not potentially injurious to wildlife. With the input of a Service-approved biologist, appropriate fence materials will be installed. Project activities will take place within these marked boundaries to ensure minimum impact to the area.
4. Prior to initiating any project activities, a temporary wildlife barrier will be installed between the work area(s) and habitat features providing potential California red-legged frog habitat (e.g., marsh/wetland, ephemeral drainage, agricultural basin, and Corralitos Creek). A Service-approved biologist will work with the appropriate agencies to develop designs of a barrier that will prevent entrapment or potentially harm to California red-legged frogs and/or other sensitive species. The Service-approved biologist will inspect the barrier daily to ensure no California red-legged frogs or other sensitive species are located along the fence. In the event a California red-legged frog is observed along the fence, all on-site activities will cease and appropriate agencies will be contacted immediately. No

California red-legged frogs or other sensitive species will be handled or moved without pre-approvals from the appropriate agencies.

5. Any marsh/wetland, ephemeral drainage, riparian and/or, upland forest, grassland, ruderal or scrub habitats will be inspected by an approved biologist before and during any clearing of vegetation or any other ground disturbing activities to ensure no California red-legged frogs are present during these activities.

6. Before any project activities begin, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include: (1) a description of the life history of California red-legged frogs and any other sensitive resources and habitat information, (2) general measures to be implemented to conserve the California red-legged frog and other sensitive resources as they relate to the project, (3) the boundaries of the project, and (4) education about the need to halt activities and avoid handling or moving any California red-legged frog or other sensitive wildlife if encountered in the work area. Brochures, books, and briefings may be used in the training session, provided that a Service-approved biologist is on hand to answer any questions.

7. Where trenching occurs, an escape ramp will be installed at each end of the open trench to avoid wildlife entrapment. The ramp may be constructed of dirt fill, wood planking, or other suitable material that is placed at an angle of 30 degrees or less. Open segments of trench will be backfilled as soon as possible to avoid wildlife entrapment.

8. Workers will check for wildlife under all equipment before use. If any special status wildlife is observed under equipment or within the work area, the animal will not be disturbed or handled. Project activities will cease and the Service will be contacted for further guidance.

9. During project activities, all trash that could attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

10. Fueling and maintenance of vehicles and other equipment and staging areas will not occur within or near wetland and/or riparian habitats or water bodies. A plan to allow a prompt and effective response to accidental spills will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to be taken should a spill occur. The Service should be contacted regarding spills if the approved biologist anticipates that impacts to California red-legged frogs may occur as a result of the spill.

Request for Approval of Avoidance and Minimization Measures for Phase II

The County is requesting that USFWS approve the County's amended project description and adoption of the 10 measures above previously approved for Phase I for the construction of Phase II.

If you require additional information, please contact Roy Hastings of R.L. Hastings & Associates, who is preparing the NEPA Environmental Assessment on behalf of the County. He can be reached at 916.397.6795 or by email at roy@rlhastings.com.

Thank you for your assistance.

Sincerely,



Stephanie Hansen
Assistant Planning Director
County of Santa Cruz

Cc: R.L. Hastings & Associates, LLC
Attn: Roy Hastings
1765 Carson Road
Placerville, CA 95667

Enclosures:

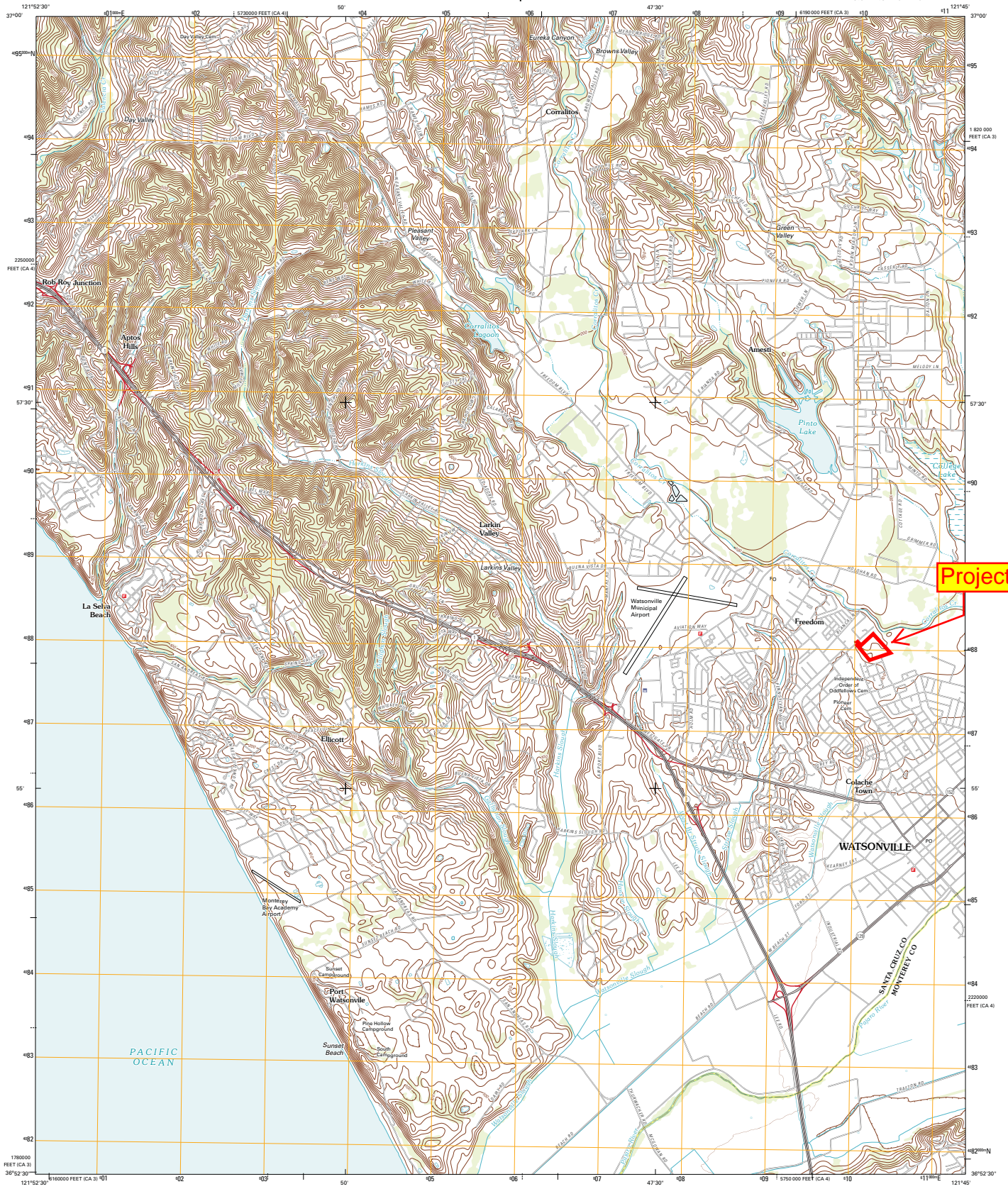
- USGS Topographic Map with Project Site Outlined
- Aerial Photo with Project Parcels Outlined
- Site Plan
- County of Santa Cruz Letter – February 25, 2015
- USFWS Letter – June 2, 2015



U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

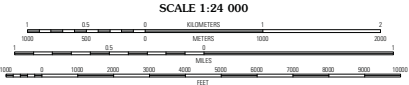
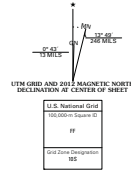


WATSONVILLE WEST QUADRANGLE
CALIFORNIA
7.5-MINUTE SERIES



Project Site

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1,000-meter grid. Universal Transverse Mercator, Zone 10S
10 000-foot scale. California Coordinate System of 1983
(zones 3 and 4)



CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.1



QUADRANGLE LOCATION

Local	Local	Local
Superior	Watsonville West	Watsonville East
Mass Landing		Princeton

ROAD CLASSIFICATION

Interstate Route	State Route
US Route	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

WATSONVILLE WEST, CA
2012

Inventory:NAP, May 2010
Roads:©2006-2011 TomTom
Names:©2006-2011 TomTom
Hydrography:National Hydrography Dataset, 2010
Contours:National Elevation Dataset, 1999
Boundaries:Census, BWC, USC, USGS, 1972 - 2010

Refer to: 08EVEN00-2015-I-0173
Pippin Orchards Apartments (Phase I)
56 Atkinson Lane, Watsonville, CA
APNs: 019-226-42 & 048-211-25

Subject Site:
Pippin Phase II
78 Atkinson Lane, Watsonville, CA
APN: 019-236-01 (City Parcel)

Subject Site:
Pippin Phase II
Brewington Ave (no situs address)
Watsonville, CA
APN: 048-221-09 (County Parcel)



Google Earth

DATE	07/13/21
REVISION	
BT	
PER PLAN CHECK COMMENTS	

ISLAND ENGINEERS
 CIVIL ENGINEERING ■ LAND PLANNING ■ STRUCTURAL DESIGN
 6900 SOQUE AVENUE SUITE 101
 SANTA CRUZ, CA 95062
 TEL 831-438-4533
 FAX 831-438-4788
 www.islandengineers.com

78 ATKINSON LANE, WATSONVILLE, CALIFORNIA
PIPPIN II HOUSING
 SITE PLAN
 PRELIMINARY
 APN 048-221-09 & 019-236-01
 DESIGN DEVELOPMENT
 DRAWN STAFF
 DESIGN MR
 DATE 09/13/2021
 SHEET C1.0
 JOB NO. 20011

NOT FOR CONSTRUCTION

TREE REMOVAL COUNT
 4 - REMOVE DUE TO CONDITION (152, 156, 157, 159)
 11 - REMOVE DUE TO CONSTRUCTION (151, 153, 154, 155, 158, 160, 172, 173, 176, 177, 178)
 15 - TOTAL TREES TO BE REMOVED

TREE NUMBERS AND REMOVAL DATA PROVIDED BY KURT FOUTS, PROJECT ARBORIST, IN REPORT DATED MARCH 4, 2020, AND SHOWN HERE FOR REFERENCE ONLY.

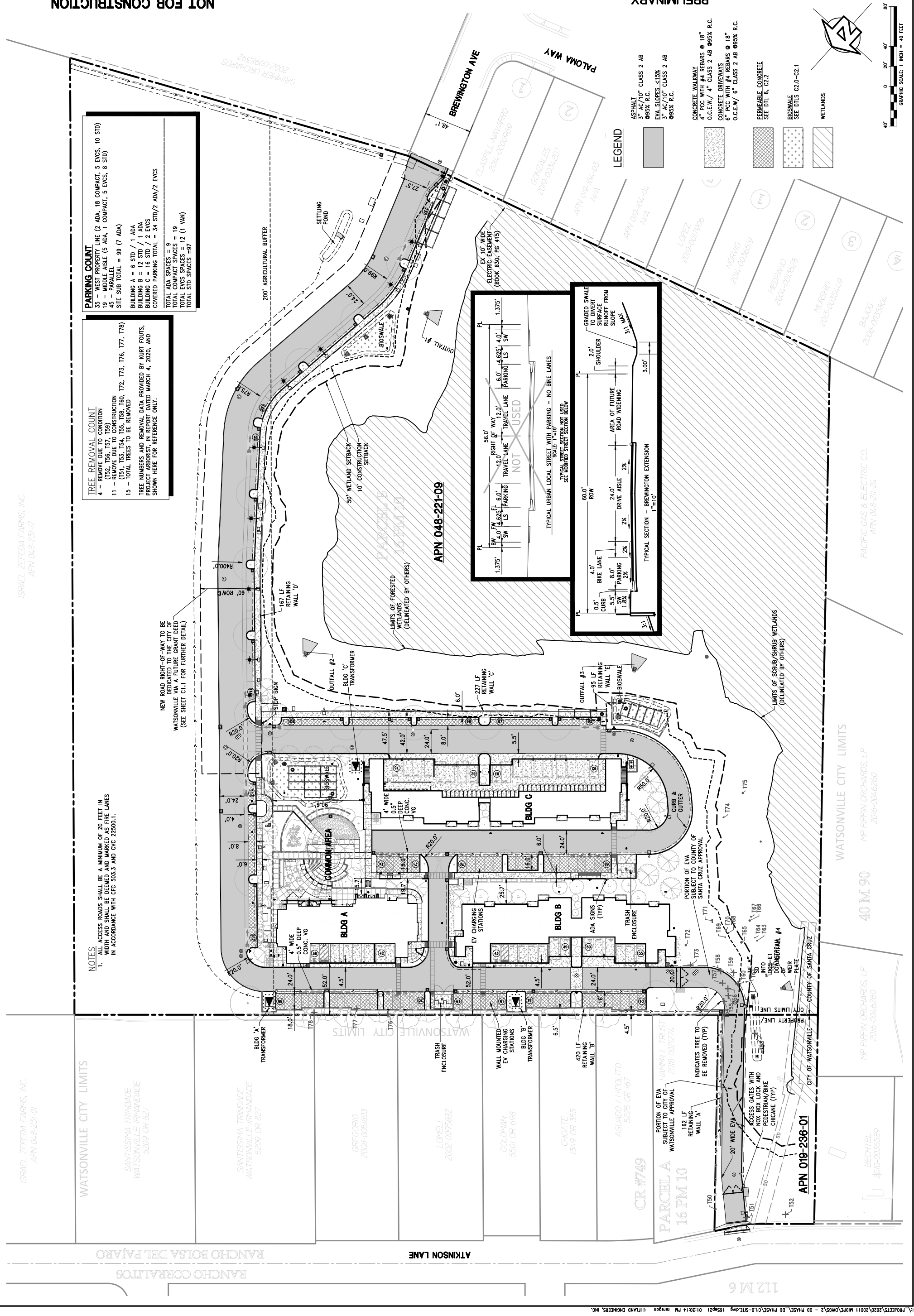
PARKING COUNT
 35 - WEST PROPERTY LINE (2 ADA, 18 COMPACT, 5 EVCS, 10 STD)
 19 - MIDDLE AISLE (5 ADA, 1 COMPACT, 5 EVCS, 8 STD)
 45 - PARALLEL
 SITE SUB TOTAL = 99 (7 ADA)

BUILDING A = 6 STD / 1 ADA
 BUILDING B = 12 STD / 1 ADA
 BUILDING C = 16 STD / 2 EVCS
 COVERED PARKING TOTAL = 34 STD/2 ADA/2 EVCS

TOTAL ADA SPACES = 9
 TOTAL COMPACT SPACES = 19
 TOTAL EVCS SPACES = 12 (1 VAN)
 TOTAL STD SPACES = 97

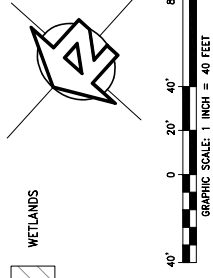
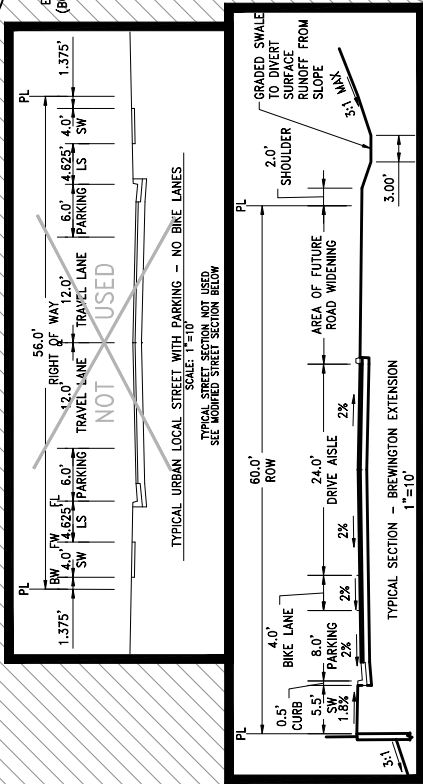
NOTES
 1. ALL ACCESS ROADS SHALL BE A MINIMUM OF 20 FEET IN WIDTH AND SHALL BE DEEMED AND MARKED AS FIRE LANES IN ACCORDANCE WITH CRC 503.3 AND CVC 23000.1.

NEW ROAD RIGHT-OF-WAY TO BE DEDICATED TO THE CITY OF WATSONVILLE VIA A FUTURE GRANT DEED (SEE SHEET C1.1 FOR FURTHER DETAIL)



LEGEND

- ASPHALT 3" AC/10" CLASS 2 AB 95% R.C.
- EVA SLOPES <15% 3" AC/10" CLASS 2 AB 95% R.C.
- CONCRETE WALKWAY 4" PCC WITH #4 REBARS @ 18" O.C.E.W./ 4" CLASS 2 AB 95% R.C.
- CONCRETE DRIVEWAYS 5" PCC WITH #4 REBARS @ 18" O.C.E.W./ 6" CLASS 2 AB 95% R.C.
- PERMEABLE CONCRETE SEE DTL 6, C2.2
- BUSWALE SEE DTL 5, C2.0-C2.1
- WETLANDS



WATSONVILLE CITY LIMITS

ISRAEL ZEPEDA FARMS, INC. APN 048-231-01

SANTISSIMA TRINDADE WATSONVILLE IRMANDADE 5209 OR 827

SANTISSIMA TRINDADE WATSONVILLE IRMANDADE 5209 OR 827

GREGORIO 2008-0051803

LOWELL 2002-0095882

GOLDMAN 5501 OR 698

CHOATE 1349 OR 353

AGUADO / HIFOLITO 5225 OR 167

PARCEL A 16 PM 10

PORTION OF EVA SUBJECT TO CITY OF WATSONVILLE APPROVAL

162 LF RETAINING WALL 'A' INDICATES TREE TO BE REMOVED (TYP)

ACCESS GATES WITH NO. 6 X 6 AND PEDESTRIAN BARRIER CHICANE (TYP)

CR #749

APN 019-236-01

CITY OF WATSONVILLE

WATSONVILLE CITY LIMITS

40 M 90

MP PIPPIN ORCHARDS, LP 2016-0046260

MP PIPPIN ORCHARDS, LP 2016-0046260

PACIFIC GAS & ELECTRIC CO. APN 048-211-24

BALOG 2006-0035904

MURSHID 2018-0035349

MEDRANO 2004-0015528

NORWIG 2014-0036519

LOPEZ 2014-0017906

APN 019-164-04 N/A

APN 019-164-03 N/A

GONZALES 2014-0033207

CLASPELL/NAVARRO 2014-0009069

BREWINGTON AVE

PALOMA WAY

ATKINSON LANE

RANCHO CORRALITOS

RANCHO BOLSA DEL PAJARO

112 M 6



COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

February 25, 2015

Mr. Douglass M. Cooper
Deputy Assistant Field Supervisor
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

SUBJECT: Section 7 Informal Consultation - HUD-Funded Project
Pippin Apartments
56 Atkinson Lane, Watsonville, Santa Cruz County, California
APN #019-226-42 (City Parcel) and 048-211-25 (County Parcel)
Portion of Watsonville West Quad, Sections 32 & 33: T.11S., R.2E.

Dear Mr. Cooper;

The purpose of this letter is to initiate Section 7 Informal Consultation between the County of Santa Cruz and the United States Fish and Wildlife Service (USFW) in respect to the Pippin Apartments, a planned 46-unit affordable multifamily project to be constructed on two adjacent parcels, one situated in the City of Watsonville and one situated in the County of Santa Cruz. Twenty units are to be constructed on the City parcel and 26 units on the adjacent County parcel. The project will be receiving HUD funds in the form of project-based vouchers. The use of federal funds in the project requires that a NEPA environmental review be conducted on the project site.

Under HUD regulations, the local agency receiving federal funds assumes the role of HUD as the lead federal agency for agency-to-agency consultation purposes, including Section 7 Informal Consultation with USFW. The County of Santa Cruz has assumed the local lead agency role and is, therefore, initiating Section 7 Informal Consultation with the USFW.

Proposed Project

The 46-unit affordable housing project is to be built on an approximate 4-acre site located at 56 Atkinson Lane in Watsonville and Santa Cruz County (APNs shown above). Surrounding land uses include single and multifamily residential to the north and west, vacant land and agricultural uses to the east, and a PG&E substation to the south, with residential uses on the opposite side. Portions of the project site and the PG&E site contain jurisdictional wetlands (discussed below).

California Environmental Quality Act

The County of Santa Cruz, in cooperation with the City of Watsonville, prepared a CEQA Environmental Impact Report (EIR) and Addendum for the Atkinson Lane Specific Plan and PUD area, which includes the two parcels comprising this project site.

In preparing Section 3.4: Biological Resources, the following documents were prepared: A draft Biotic Assessment, for the Proposed Atkinson Lane Specific Plan and PUD, Santa Cruz County, California, prepared by EcoSystems West Consulting Group (ESW); a draft Delineation of Wetlands and Waters of the U.S. Subject to Section 404 Jurisdiction for the Atkinson Lane Specific Plan, prepared by ESW, and; a Special-status Amphibian and Reptile Preliminary Site Assessment for the Atkinson Lane Specific Plan and PUD, Santa Cruz County, California, prepared by Bryan M. Mori, Biological Consulting Services (Mori).

ESW and Mori identified one special-status plant species and one special-status wildlife species with the status of "Federal Threatened" as either occurring in the area or with the potential to occur.

The Federally Threatened Santa Cruz Tarplant was found in only one location - on the PG&E site - which will not be developed.

The Federally Threatened California Red-Legged Frog (CRLF) was found to have the potential to occur due to known occurrences 1.2 and 1.6 miles from the project area and potential dispersal and aquatic habitat in the project area. Mori found their occurrence to be unlikely.

Additionally, the Federally Endangered Santa Cruz Long-Toed Salamander and the Federally Threatened California Tiger Salamander were identified as having the potential to occur but were determined to be unlikely, or "Not Expected," to occur.

USFW was provided with the Site Assessment and guidance was requested on whether protocol level surveys for the three amphibian species discussed above were necessary. USFW responded on October 30, 2008 that protocol level surveys were not necessary for the Santa Cruz Long-Toed Salamander and the California Tiger Salamander but was necessary for CRLF.

On March 18, 2013, ESW and Mori met with USFWS Senior Biologist Jacob Martin at the project site to acquaint him with the site and related aquatic features and discuss potential impacts to CRLF. It was determined that protocol level surveys were unlikely to confirm the presence of CRLF on the site and that implementation of standard preconstruction and construction avoidance measures was a more appropriate approach at this time. Mori prepared an Atkinson Property – California Red-Legged Frog Site Assessment Update on March 20, 2013 containing the conclusion that Phase I of the Atkinson Lane project was "not likely to result in direct impacts to CRF." At Mr. Martin's recommendation, ESW submitted this report to USFW on March 27, 2013 with a request that USFW reconsider the need for protocol level surveys for CRLF and substitute the recommendation that standard preconstruction and construction period avoidance measures be implemented with the standard caveats that the recommendation does not authorize a "take" of CRLF and that if CRLF or any other protected species is encountered during development activities all development activities are to stop and USFW consultation initiated. The letter contained a listing of ten mitigation measures to be implemented to avoid a take of CRLF.

On April 25, 2013, USFW responded via email supporting the above recommendation and providing it as technical assistance. USFW confirmed that this recommendation does not authorize any form of take and that if any listed species are detected on the project site all development activities should cease and USFW be contacted immediately.

NEPA Section 7 Informal Consultation – County of Santa Cruz and USFW

All of the above activities, reports, and correspondence were initiated under the CEQA process prior to the receipt of federal funds in the project. Receipt of federal funds in the project has triggered the requirement for federal agency-to-agency consultation; therefore, the County of Santa Cruz is, through this letter, initiating Section 7 Informal Consultation with USFW.

The County is requesting that USFW approve the County's adoption of the ten mitigation measures contained in the March 27, 2013 letter from ESW to USFW as required mitigations for the project with the same caveats, that no take is authorized, and that all development activities will cease and USFW contacted immediately if any listed species are detected on the project site. This is consistent with the recommendation contained in the April 25, 2013 email from USFW to ESW.

Jurisdictional Waters of the U.S. - Wetlands

The U.S. Army Corp of Engineers issued an approved jurisdictional wetlands determination on December 16, 2013, based on a wetlands delineation certified on December 11, 2013 as accurately depicting the extent and location of wetlands on the project site subject to U.S. Army Corp of Engineer's regulatory authority under Section 404 of the Clean Water Act. (File Number 2013-00180S)

If you require additional information, please contact Roy Hastings of R.L. Hastings & Associates, who is preparing the NEPA Environmental Assessment on behalf of the County. He can be reached at 916.359.0626 or 916.397.6795.

Thank you for your assistance.

Sincerely,



Todd Sexauer
Environmental Coordinator

cc: R. L. Hastings & Associates, LLC
c/o Roy Hastings
1765 Carson Road
Placerville, CA 95667

Enclosures:

- USGS Topographic Maps with Project Site Outlined
- Google Aerial Photos of the Project Site
- Atkinson Lane Specific Plan and PUD Draft EIR, Section 3.4: Biological Resources
- Atkinson Lane Specific Plan and PUD Draft EIR, Appendix D: Biological Resources containing the following:
 - o Draft Biotic Assessment, for the Proposed Atkinson Lane Specific Plan and PUD, Santa Cruz County, California
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- Mori, March 20, 2013 - Atkinson Property – California Red-Legged Frog Site Assessment Update
- 3.27.13 letter from William Davilla of EcoSystems West to Douglass Cooper, USFW
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- Map of Potential Jurisdictional Wetlands and Waters of the U.S. (subject to Section 404 Jurisdiction)
- U.S. Army Corp of Engineers Jurisdictional Wetlands Determination



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



IN REPLY REFER TO:
08EVEN00-2015-I-0173

June 2, 2015

Todd Sexauer, Environmental Coordinator
County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, California 95060

Subject: Informal Consultation for the Pippin Apartments Project in the City of
Watsonville and Unincorporated Santa Cruz County, California

Dear Mr. Sexauer:

We have reviewed your letter dated February 25, 2015, and received in our office on March 13, 2015, requesting our concurrence with your determination that the Pippin Apartments project in the City of Watsonville and unincorporated Santa Cruz County may affect but is not likely to adversely affect the federally threatened California red-legged frog (*Rana draytonii*). The proposed project is the development of a new 46-unit affordable rental family housing community on two contiguous parcels comprised of 3.7 acres, one located in the City of Watsonville and one in unincorporated Santa Cruz County. Both parcels are owned by Mid-Peninsula the Farm, Inc., an affiliate of MidPen Housing Corporation. The U.S. Department of Housing and Urban Development (HUD) would provide funding for the project. Under HUD regulations, the local agency receiving Federal funds assumes the role of HUD as the lead Federal agency in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Project Description

The Atkinson Lane Specific Plan and Planned Unit Development Draft EIR (DEIR) and Final EIR (FEIR) (RBF Consulting 2009a, 2009b) analyze environmental impacts of the Specific Plan and Planned Unit Development project for the Atkinson Lane future growth area. This area incorporates approximately 34.7 net-acres for residential uses for the construction of approximately 450 units. The Pippin Apartment project is restricted to the two parcels and acreages described in this consultation, and this consultation pertains solely to the Pippin Apartment project.

The two proposed Pippin Apartment parcels are currently vacant. The property is surrounded by single-family homes to the north and west. A Pacific Gas and Electric substation and single-family homes are located to the south, and fallow agricultural land to the east. The 46 proposed units would be within three buildings, two to three stories each, over the two parcels. Buildings

1 and 2 would be located on the City's 1.3-acre parcel and would contain 20 units; Building 3 would be located on the County's 2.4-acre parcel and contain 26 units plus community space. Community amenities would include a multipurpose room, computer lab, community garden boxes, bicycle storage, a playground, and office space for MidPen Property Management and MidPen Services Corporation.

Access is proposed through a 24-foot wide driveway on Atkinson lane that loops around to a parking lot at the southern end of the property. A second emergency access would be created at the southwestern portion of the property, connecting the roadway of the adjacent development to the west. One hundred twenty parking spaces are proposed. Landscaping would include planting trees, a mix of drought tolerant shrub and groundcover species, and turf throughout the site. A bioswale would be developed to catch and filter storm water.

Site Conditions and California Red-Legged Frog in the Project Area

The larger planning area includes a freshwater marsh/seasonal wetland complex with an associated drainage/swale, an irrigated agricultural basin, a segment of Corralitos Creek, open ruderal habitat, cultivated fields, orchards, unpaved farm roads, and a few private residential and agricultural-related buildings. (RBF Consulting 2009a)

Mori (2008) and EcoSystems West Consulting Group (Ecosystems West) (2009) determined California red-legged frogs are unlikely to be present within the planning area. They based this determination on the presence of bullfrogs, known predators of California red-legged frogs, in the aquatic habitats; limited upland habitat; and the relative isolation from other known occurrences due to development in the area. In 2008, the Service recommended protocol-level surveys be conducted due to the presence of suitable aquatic habitat within the planning area and known California red-legged frog occurrences within dispersal distance. In 2013, biological consultant B. Mori provided an update to the 2008 California red-legged frog assessment, noting changes in the habitat and reiterating the low likelihood of the species' presence in the project area. Based on this information, EcoSystems West requested the Service reevaluate the need for protocol surveys (EcoSystems West 2013). The Service supported the recommendation that further surveys would provide little additional conservation value and recommended implementation of measures to avoid and minimize effects during project activities (Mori 2013, D. Cooper in litt 2013).

Proposed Avoidance and Minimization Measures

Although no California red-legged frogs are expected to occur within the project area during construction, in an abundance of caution, the project proponent has proposed the following avoidance and minimization measures to further reduce the risk of adverse effects (Ecosystems West 2013, R. Hastings, pers. comm. 2015):

1. The credentials of biologists will be submitted to the Service for review and approval at least 30 days prior to the onset of project activities.

2. Initial project activities (including but not limited to ground disturbance and vegetation removal) will occur during dry weather, during the day, and preferably before newly metamorphosed frogs disperse and when California red-legged frogs are less likely to be migrating between aquatic environments. Initial ground-disturbing activities will occur between June 1 and October 15.
3. Prior to initiating project activities, the boundaries of the work area will be marked with materials that are not potentially injurious to wildlife. With the input of a Service-approved biologist, appropriate fence materials will be installed. Project activities will take place within these marked boundaries to ensure minimum impact to the area.
4. Prior to initiating any project activities, a temporary wildlife barrier will be installed between the work area(s) and habitat features providing potential California red-legged frog habitat (e.g., marsh/wetland, ephemeral drainage, agricultural basin, and Corralitos Creek). A Service-approved biologist will work with the appropriate agencies to develop designs of a barrier that will prevent entrapment or potentially harm to California red-legged frogs and/or other sensitive species. The Service-approved biologist will inspect the barrier daily to ensure no California red-legged frogs or other sensitive species are located along the fence. In the event a California red-legged frog is observed along the fence, all on-site activities will cease and appropriate agencies will be contacted immediately. No California red-legged frogs or other sensitive species will be handled or moved without pre-approvals from the appropriate agencies.
5. Any marsh/wetland, ephemeral drainage, riparian and/or, upland forest, grassland, ruderal or scrub habitats will be inspected by an approved biologist before and during any clearing of vegetation or any other ground disturbing activities to ensure no California red-legged frogs are present during these activities.
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8. Workers will check for wildlife under all equipment before use. If any special status wildlife is observed under equipment or within the work area, the animal will not be disturbed or handled. Project activities will cease and the Service will be contacted for further guidance.
9. During project activities, all trash that could attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
10. Fueling and maintenance of vehicles and other equipment and staging areas will not occur within or near wetland and/or riparian habitats or water bodies. A plan to allow a prompt and effective response to accidental spills will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to be taken should a spill occur. The Service should be contacted regarding spills if the approved biologist anticipates that impacts to California red-legged frogs may occur as a result of the spill.

Conclusion

We concur with your determination that the Pippin Apartments Project may affect, but is not likely to adversely affect the California red-legged frog. We have based our concurrence on the limited upland habitat, presence of bullfrogs in the nearby aquatic habitats, the relative isolation from other known occurrences due to development, and the implementation of the proposed avoidance and minimization measures. If circumstances arise indicating that the proposed project may result in adverse effects to any federally protected species, construction activities should be suspended and the Service should be contacted immediately to determine whether additional consultation is required. If you have any questions regarding this matter, please contact Lena Chang of my staff at (805) 644-1766, extension 302.

Sincerely,



Douglass M. Cooper
Deputy Assistant Field Supervisor

REFERENCES CITED

- EcoSystems West Consulting Group. 2009. Biotic assessment for the proposed City of Watsonville and Santa Cruz County Atkinson Lane Specific Plan, Santa Cruz County, California. Prepared for RBF Consulting, Marina, California.
- EcoSystems West Consulting Group. 2013. Request for U.S. Fish and Wildlife Service review of need to conduct California red-legged frog protocol surveys for the proposed MidPen Housing Corp. affordable housing community project located on Atkinson Lane in Watsonville, California. Dated March 27, 2013.
- Mori, B. 2008. Special status amphibian and reptile preliminary site assessment for the City of Watsonville Atkinson Lane Specific Master Plan, Santa Cruz County, California. Bryan M. Mori Biological Consulting Services, Watsonville, California. Dated July 30, 2008.
- Mori, B. 2013. Atkinson Property – California red-legged frog site assessment update. Bryan M. Mori Biological Consulting Services, Watsonville, California. Dated March 20, 2013.
- RBF Consulting. 2009a. Draft environmental impact report, Atkinson Lane Specific Plan and Planned Unit Development. Prepared for County of Santa Cruz Planning Department, Santa Cruz, California.
- RBF Consulting. 2009b. Final environmental impact report, Atkinson Lane Specific Plan and Planned Unit Development. Prepared for County of Santa Cruz Planning Department, Santa Cruz, California.

In litteris

- Cooper, D. 2013. Electronic mail from Douglass Cooper, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, regarding California red-legged frog survey recommendations to William Davilla, EcoSystems West Consulting Group. Dated April 25, 2013.
- Hastings, R. 2015. R.L. Hastings and Associates, LLC. Electronic mail regarding the potential to dewater in the project area to Lena Chang, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office. Dated May 14, 2015

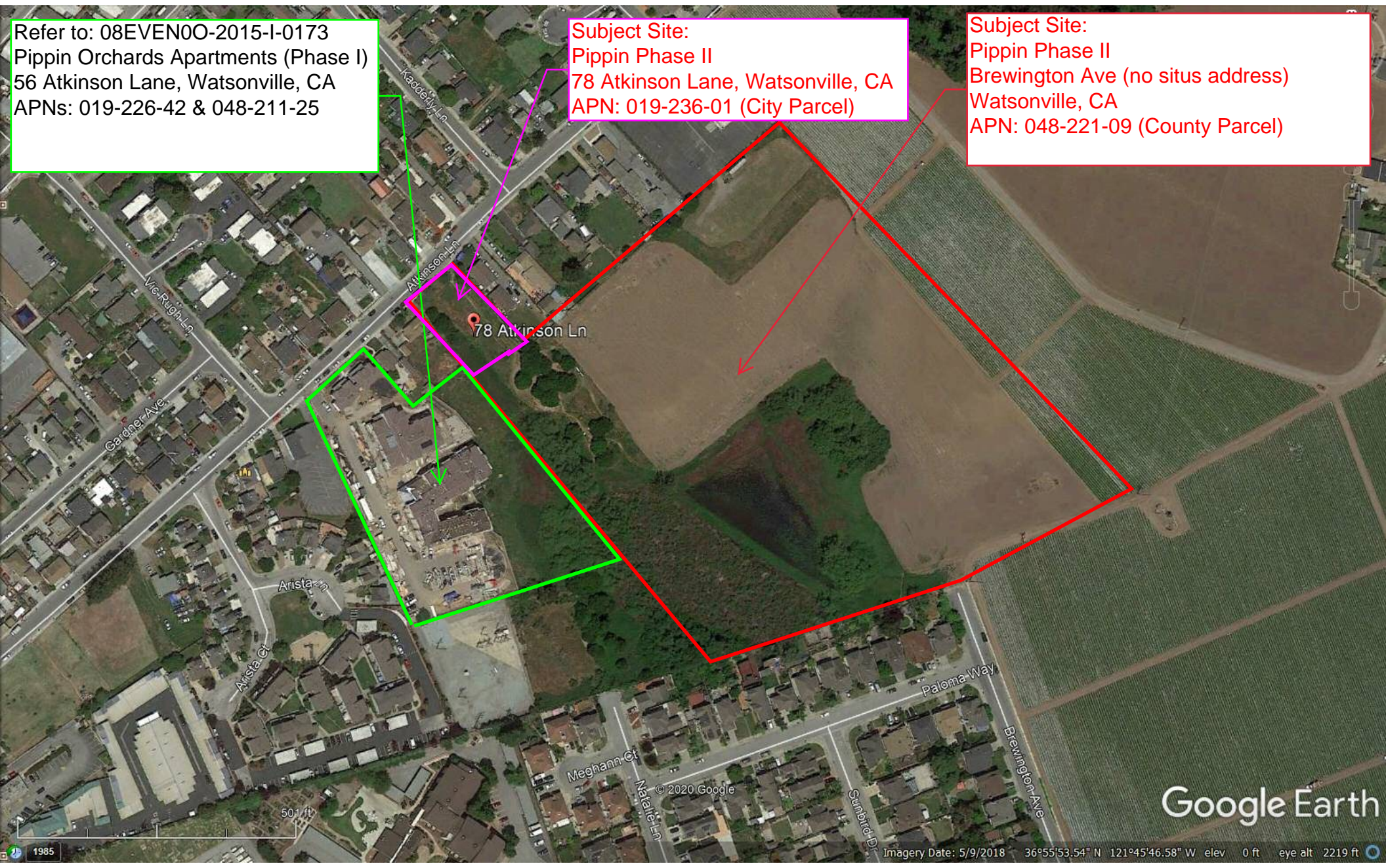
Personal Communications

- Hastings, R. 2015. R.L. Hastings and Associates, LLC. Phone conversation regarding biologist approvals for the proposed project with Lena Chang, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office. June 2, 2015.

Refer to: 08EVEN00-2015-I-0173
Pippin Orchards Apartments (Phase I)
56 Atkinson Lane, Watsonville, CA
APNs: 019-226-42 & 048-211-25

Subject Site:
Pippin Phase II
78 Atkinson Lane, Watsonville, CA
APN: 019-236-01 (City Parcel)

Subject Site:
Pippin Phase II
Brewington Ave (no situs address)
Watsonville, CA
APN: 048-221-09 (County Parcel)





COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

February 25, 2015

Mr. Douglass M. Cooper
Deputy Assistant Field Supervisor
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

SUBJECT: Section 7 Informal Consultation - HUD-Funded Project
Pippin Apartments
56 Atkinson Lane, Watsonville, Santa Cruz County, California
APN #019-226-42 (City Parcel) and 048-211-25 (County Parcel)
Portion of Watsonville West Quad, Sections 32 & 33: T.11S., R.2E.

Dear Mr. Cooper;

The purpose of this letter is to initiate Section 7 Informal Consultation between the County of Santa Cruz and the United States Fish and Wildlife Service (USFW) in respect to the Pippin Apartments, a planned 46-unit affordable multifamily project to be constructed on two adjacent parcels, one situated in the City of Watsonville and one situated in the County of Santa Cruz. Twenty units are to be constructed on the City parcel and 26 units on the adjacent County parcel. The project will be receiving HUD funds in the form of project-based vouchers. The use of federal funds in the project requires that a NEPA environmental review be conducted on the project site.

Under HUD regulations, the local agency receiving federal funds assumes the role of HUD as the lead federal agency for agency-to-agency consultation purposes, including Section 7 Informal Consultation with USFW. The County of Santa Cruz has assumed the local lead agency role and is, therefore, initiating Section 7 Informal Consultation with the USFW.

Proposed Project

The 46-unit affordable housing project is to be built on an approximate 4-acre site located at 56 Atkinson Lane in Watsonville and Santa Cruz County (APNs shown above). Surrounding land uses include single and multifamily residential to the north and west, vacant land and agricultural uses to the east, and a PG&E substation to the south, with residential uses on the opposite side. Portions of the project site and the PG&E site contain jurisdictional wetlands (discussed below).

California Environmental Quality Act

The County of Santa Cruz, in cooperation with the City of Watsonville, prepared a CEQA Environmental Impact Report (EIR) and Addendum for the Atkinson Lane Specific Plan and PUD area, which includes the two parcels comprising this project site.

In preparing Section 3.4: Biological Resources, the following documents were prepared: A draft Biotic Assessment, for the Proposed Atkinson Lane Specific Plan and PUD, Santa Cruz County, California, prepared by EcoSystems West Consulting Group (ESW); a draft Delineation of Wetlands and Waters of the U.S. Subject to Section 404 Jurisdiction for the Atkinson Lane Specific Plan, prepared by ESW, and; a Special-status Amphibian and Reptile Preliminary Site Assessment for the Atkinson Lane Specific Plan and PUD, Santa Cruz County, California, prepared by Bryan M. Mori, Biological Consulting Services (Mori).

ESW and Mori identified one special-status plant species and one special-status wildlife species with the status of "Federal Threatened" as either occurring in the area or with the potential to occur.

The Federally Threatened Santa Cruz Tarplant was found in only one location - on the PG&E site - which will not be developed.

The Federally Threatened California Red-Legged Frog (CRLF) was found to have the potential to occur due to known occurrences 1.2 and 1.6 miles from the project area and potential dispersal and aquatic habitat in the project area. Mori found their occurrence to be unlikely.

Additionally, the Federally Endangered Santa Cruz Long-Toed Salamander and the Federally Threatened California Tiger Salamander were identified as having the potential to occur but were determined to be unlikely, or "Not Expected," to occur.

USFW was provided with the Site Assessment and guidance was requested on whether protocol level surveys for the three amphibian species discussed above were necessary. USFW responded on October 30, 2008 that protocol level surveys were not necessary for the Santa Cruz Long-Toed Salamander and the California Tiger Salamander but was necessary for CRLF.

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On April 25, 2013, USFW responded via email supporting the above recommendation and providing it as technical assistance. USFW confirmed that this recommendation does not authorize any form of take and that if any listed species are detected on the project site all development activities should cease and USFW be contacted immediately.

NEPA Section 7 Informal Consultation – County of Santa Cruz and USFW

All of the above activities, reports, and correspondence were initiated under the CEQA process prior to the receipt of federal funds in the project. Receipt of federal funds in the project has triggered the requirement for federal agency-to-agency consultation; therefore, the County of Santa Cruz is, through this letter, initiating Section 7 Informal Consultation with USFW.

The County is requesting that USFW approve the County's adoption of the ten mitigation measures contained in the March 27, 2013 letter from ESW to USFW as required mitigations for the project with the same caveats, that no take is authorized, and that all development activities will cease and USFW contacted immediately if any listed species are detected on the project site. This is consistent with the recommendation contained in the April 25, 2013 email from USFW to ESW.

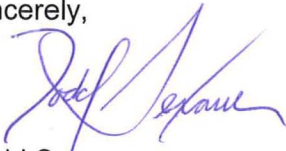
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If you require additional information, please contact Roy Hastings of R.L. Hastings & Associates, who is preparing the NEPA Environmental Assessment on behalf of the County. He can be reached at 916.359.0626 or 916.397.6795.

Thank you for your assistance.

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Enclosures:

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
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IN REPLY REFER TO:
08EVEN00-2015-I-0173

June 2, 2015

Todd Sexauer, Environmental Coordinator
County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, California 95060

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8. Workers will check for wildlife under all equipment before use. If any special status wildlife is observed under equipment or within the work area, the animal will not be disturbed or handled. Project activities will cease and the Service will be contacted for further guidance.
9. During project activities, all trash that could attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
10. Fueling and maintenance of vehicles and other equipment and staging areas will not occur within or near wetland and/or riparian habitats or water bodies. A plan to allow a prompt and effective response to accidental spills will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to be taken should a spill occur. The Service should be contacted regarding spills if the approved biologist anticipates that impacts to California red-legged frogs may occur as a result of the spill.

Conclusion

We concur with your determination that the Pippin Apartments Project may affect, but is not likely to adversely affect the California red-legged frog. We have based our concurrence on the limited upland habitat, presence of bullfrogs in the nearby aquatic habitats, the relative isolation from other known occurrences due to development, and the implementation of the proposed avoidance and minimization measures. If circumstances arise indicating that the proposed project may result in adverse effects to any federally protected species, construction activities should be suspended and the Service should be contacted immediately to determine whether additional consultation is required. If you have any questions regarding this matter, please contact Lena Chang of my staff at (805) 644-1766, extension 302.

Sincerely,



Douglass M. Cooper
Deputy Assistant Field Supervisor

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**BIOTIC ASSESSMENT FOR THE PROPOSED
CITY OF WATSONVILLE AND SANTA CRUZ COUNTY
ATKINSON LANE SPECIFIC PLAN
SANTA CRUZ COUNTY, CALIFORNIA**

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January 2009

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INTRODUCTION

This report presents the methodologies and findings of a botanical and wildlife assessment conducted by EcoSystems West Consulting Group for the proposed City of Watsonville Atkinson Lane Specific Plan study area in Santa Cruz County, California. The objectives of the botanical and wildlife assessment were:

- To characterize the vegetation in the vicinity of proposed project site.
- To identify the wildlife resources (habitats and species) in the vicinity of the project site.
- To identify special-status plant and wildlife species and sensitive habitats occurring, or potentially occurring, in the project site.

SITE DESCRIPTION

The project site is located adjacent to city limits of Watsonville, south of Corralitos Creek, and east of Freedom Boulevard. The 68-acre site is bordered by residential development to the south and west and by private agriculture lands to the north and east. Residential neighborhoods and agricultural fields comprise the majority of the surrounding areas (Figure 1).

Existing features within the proposed project site include a seasonal wetland with an associated drainage/swale, an irrigated agricultural basin, a segment of Corralitos Creek, open ruderal/cultivated fields, orchards, unpaved farm roads and a few private residential and agricultural-related buildings (Figure 2).

PROJECT DESCRIPTION

In November 2002, the voters of the City of Watsonville passed Measure U, which directs the distribution of new growth within and around the City. Measure U was designed to protect commercial agriculture lands and environmentally sensitive areas while providing the means for the City to address housing and job needs for the next 20 to 25 years. Measure U established a 20 to 25-year urban limit line around the City, and directs growth into several unincorporated areas. The three primary areas of growth include the Buena Vista, Manabe-Ow (formerly Manabe-Burgstrom), and Atkinson Lane Specific Plan areas. In accordance with Measure U, the City of Watsonville General Plan, which was adopted by the City Council in June of 2006, identifies the project site as a new growth area to accommodate up to 600 new housing units, including affordable units, townhomes, and single-family homes.

The County of Santa Cruz General Plan and Housing Element require the rezoning of a 16-acre site within the project site to allow 200 housing units at a density of 20 units per acre by June 2009. The City is also required to provide housing capacity on the remainder of the project site (City expansion area) to address its projected needs for the next housing element cycle. To address these requirements, the City and County determined that it is in their mutual interest to jointly plan for the development of the entire project site. In 2007, the City and County entered into a Memorandum of Understanding (MOU) to jointly pursue a Specific Plan for the project site. The MOU sets specific project requirements that will fulfill the City and County obligations to provide adequate housing for the region and requires that the City and County create a development plan for the project site that addresses roadway layout, housing types and

affordability restrictions, parks and schools, infrastructure financing, neighborhood concerns, protection of environmental resources, and specific development guidelines.

The County of Santa Cruz and the City of Watsonville are currently preparing a joint Specific Plan for the Atkinson Lane future growth area. The Atkinson Lane future growth area (project site) falls within the City of Watsonville Urban Growth Boundary. The total gross acreage of the project site is approximately 68 acres, which includes 16 acres of land to be developed by the County prior to annexation by the City to meet County affordable housing goals. The MOU estimates that up to 200 units may be developed within the 16-acre area. Development by the City would follow after 2010 wherein the City may propose to annex the 16-acre County site, as well as the City expansion area. Land uses and densities for the plan will be determined as part of the Specific Plan process.

Providing adequate access to the project site to serve the anticipated development without overwhelming the existing circulation system is a critical project objective. The City of Watsonville General Plan assumes that Wagner Avenue would be improved and connected to Crestview Drive to serve as the primary access arterial between Freedom Boulevard and East Lake Avenue. Secondary access routes will be analyzed including Atkinson Lane and Brewington Avenue. The proposed project will also analyze additional infrastructure necessary to serve the area including sewer lines, water lines, storm drains, gas and electric, cable, phone, etc.

This environmental review presents our preliminary assessment of existing wetlands and other sensitive biotic resources occurring or potentially occurring within the vicinity of the project area. A preliminary site plan (Watsonville, City of, 2007) and a Land Use Plan (RBF Consulting and Payatok Architects, Inc 2008) were available during our fall 2008 site evaluation. No other detailed plans or specific drawings were available.

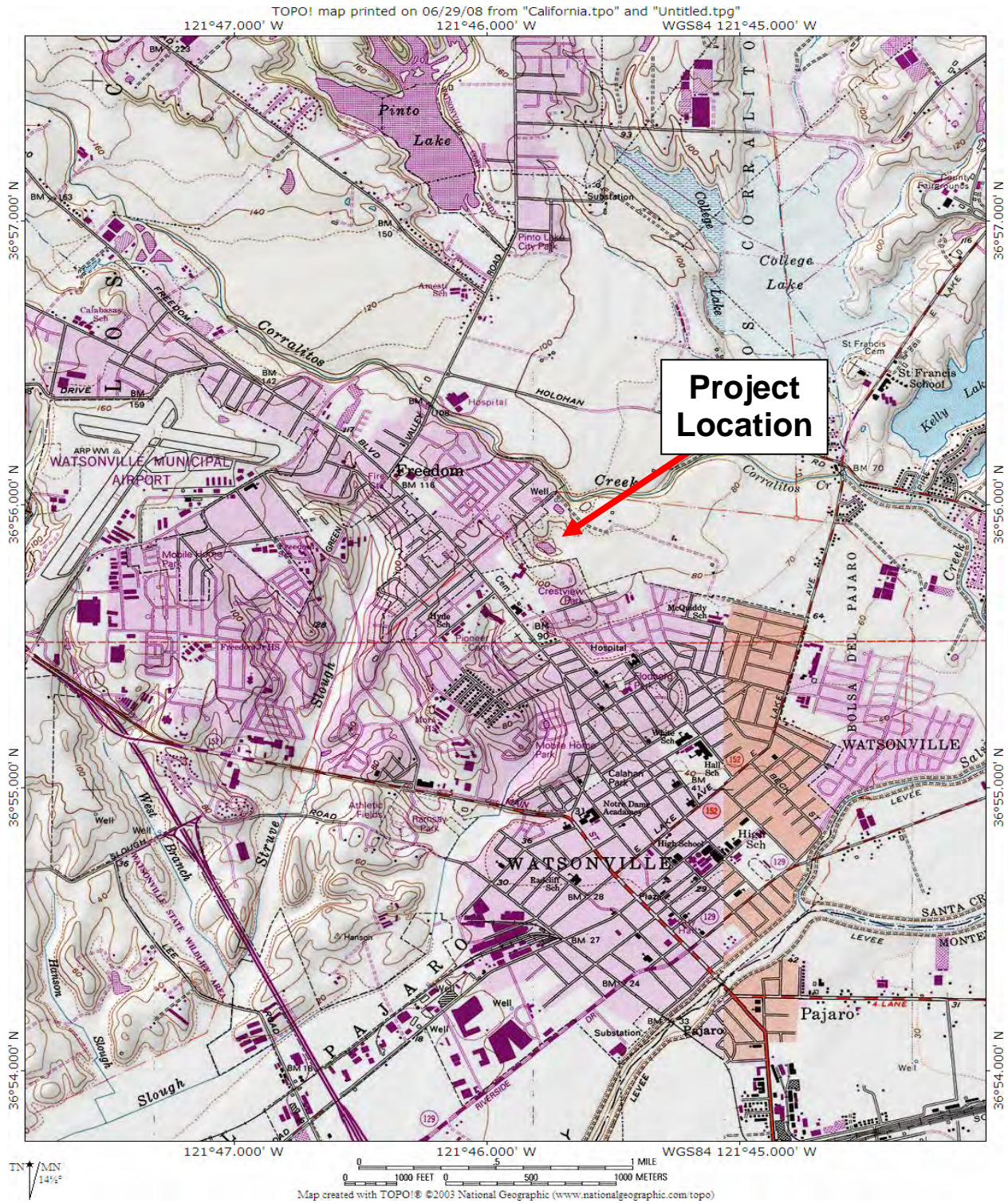
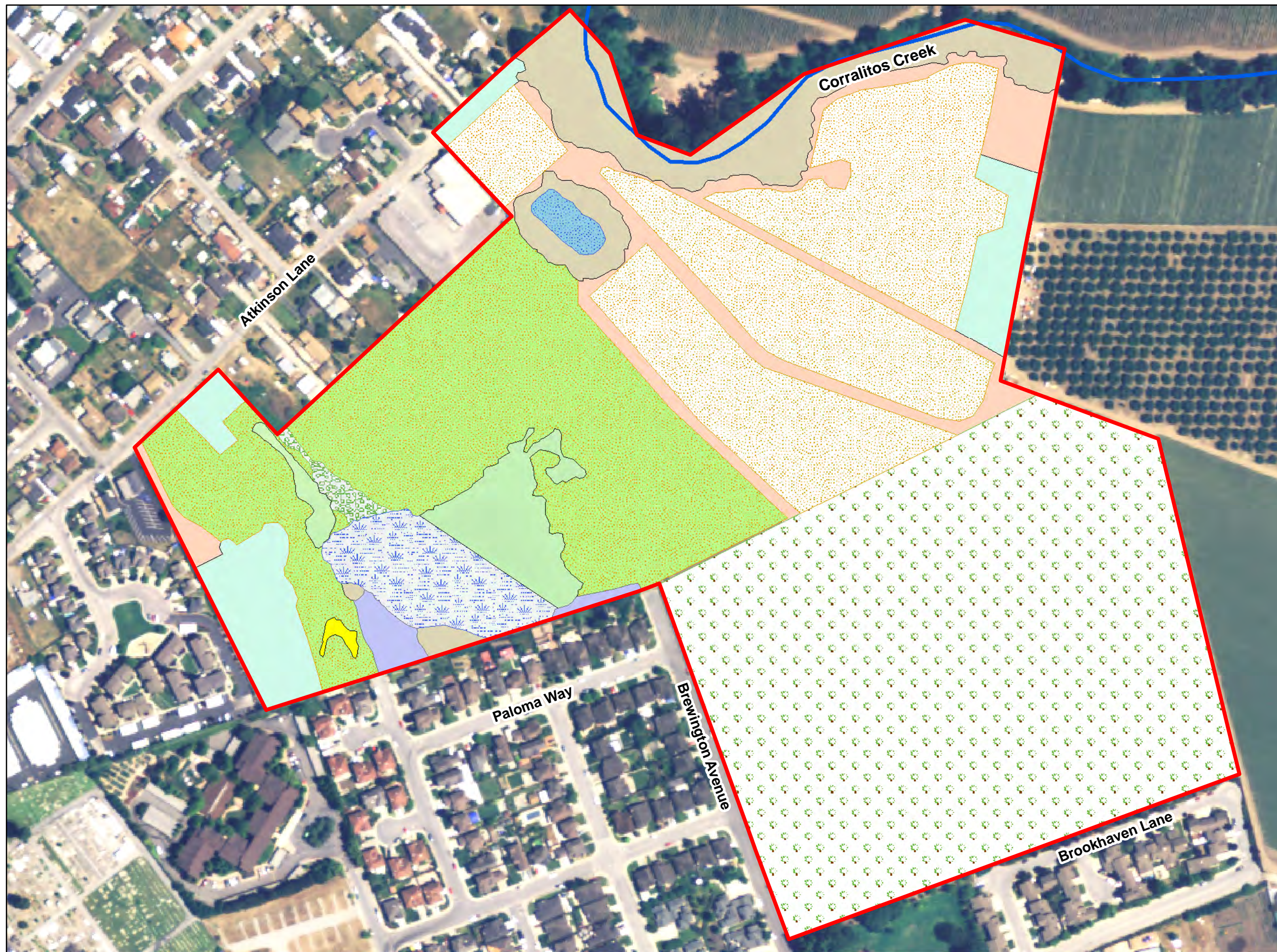


Figure 1. General location of the Proposed City of Watsonville Atkinson Lane Specific/Master Plan Area, Santa Cruz County, California.

Figure 2.

Map of Existing Habitat and Land Use Types in the Atkinson Lane Project Area.



- Project Boundary
- Corralitos Creek
- Ephemeral Drainage
- Freshwater Marsh
- Isolated Marsh
- Seasonal Wetland
- Riparian Canopy
- California Annual Grassland
- Blackberry Scrub
- Cropland
- Orchard
- Ruderal
- Developed
- Santa Cruz Tarplant



Drawn by: Justin Davilla
Date: November 13, 2008
Filepath: E:\Atkinson Lane\Habitat Types.mxd

METHODS

Botany

Review of Literature and Data Sources

EcoSystems West botanists reviewed literature and special-status species databases to identify special-status plant species and sensitive habitat types with potential to occur in the project site. Sources reviewed include California Natural Diversity Data Base (CNDDDB) occurrence records for the Soquel USGS 7.5 minute quadrangle; county occurrence records and USGS quadrangle occurrence records in the California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants of California* (Tibor 2001; CNPS 2008) for the Watsonville West quadrangle and the seven surrounding quadrangles, and local and regional floras (Thomas 1960; Munz and Keck 1973; Hickman 1993).

Sources consulted for current agency status information include U.S. Fish and Wildlife Service (USFWS) (2008a, b, c) for federally listed species (including federal Proposed and Candidate species) and California Department of Fish and Game (CDFG) (2008a) for state listed species. Special-status species also include species listed on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS *Inventory* (Tibor 2001; CNPS 2008). These species fall under state regulatory authority under the provisions of the California Environmental Quality Act (CEQA) Guidelines.

Also considered special-status species are species included on List 3 (Plants About Which We Need More Information -- A Review List) or List 4 (Plants of Limited Distribution -- A Watch List) of the CNPS *Inventory*. These species are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are not generally required for species in these categories.

Based on information from the above sources, we developed a target list of special-status plants with potential to occur in the vicinity of the project area (Appendix A).

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species and CDFG 'Species of Special Concern', areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the CNDDDB working list of 'high priority' habitats for inventory (i.e., those habitats that are rare or endangered within the borders of California) (Holland 1986; CDFG 2003) and areas considered to be 'sensitive habitats' under county General Plans. EcoSystems West botanists reviewed the CNDDDB list of high priority habitats and the Santa Cruz County General Plan (1994) for sensitive habitat designations prior to conducting the site assessment visit.

Site Visit

An EcoSystems West biologist conducted a botanical assessment of the project area on 23 May 2008. The entire site was thoroughly evaluated on foot and all vascular plant species in identifiable condition when the site visit was conducted, regardless of regulatory status, were

identified to species or infraspecific taxon using keys and descriptions in Thomas (1960); Munz and Keck (1973); and Hickman (1993).

We characterized and mapped all habitat types occurring on the site, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type. In classifying the habitat types on the site, we consulted the generalized plant community classification schemes of Holland (1986); Sawyer and Keeler-Wolf (1995); and the CDFG (2003). Our final classification and characterization of the habitat types of the project area was based on field observations.

EcoSystems West botanist Justin Davilla conducted a focused survey for special-status plants within the Atkinson Lane project area on 12 June 2008. The survey followed guidelines from the California Native Plant Society (2001) coincided with time periods for identifying those special-status plant species for which suitable habitat was present within the survey area (Appendix A).

The entire project area was traversed on foot with closer attention given to habitat types with an increased likelihood of supporting special-status plant species. Special-status plants encountered during the survey were mapped as polygons using differentially corrected GPS with a resource grade Trimble GeoExplorer-3 GPS receiver. Technical specifications for the GPS data included: 3D Mode, a PDOP filter of 8 or below, SNR filter of 6 or above, and an elevation mask of 15 degrees. We used a data dictionary to record attribute data for each feature. Attribute data recorded included: scientific name, date of observation, estimated number of individuals, phenology, aspect and slope, habitat type, overall site quality, and potential threats to the population. The GPS data was post-processing differentially corrected using data from the California Survey and Drafting Supply base station, Sacramento, California. Data was exported to ArcGIS shapefile(s) using Trimble Pathfinder Office software.

EcoSystems West evaluated the project area for sensitive habitats based on the following parameters:

COUNTY SIGNIFICANT TREE ORDINANCE

The County of Santa Cruz prohibits the removal of “significant trees” in sensitive habitats, including riparian corridors (County of Santa Cruz Planning Dept., 1994). Significant trees are those greater than 20 inches in diameter at breast height (DBH) for single stemmed trees; any sprout clump of five or more stems each of which is greater than 12 inches DBH; or any group consisting of five or more trees on one parcel, each of which is greater than 12 inches DBH. No stipulations are made for native versus non-native and/or ornamental trees. Exceptions are made for trees that are diseased or deemed hazardous to public safety; or pursuant to a Timber Harvest Plan or Fire Protection Plan submitted to and approved by the California Department of Forestry. Removal of significant trees in a riparian corridor would require a permit issued by the County of Santa Cruz Planning Department and would likely require mitigation including, but not limited to, planting of replacement trees at a ratio and species composition determined by the Planning Director. EcoSystems West evaluated the project area for the presence of significant trees.

RIPARIAN HABITAT

Riparian habitats are valued for wildlife habitat, stream bank stabilization, and flood control and are generally considered a sensitive resource by most city and county general plans.

The County of Santa Cruz riparian ordinance limits development activities in riparian areas and provides buffer/setback requirements based on slope and vegetation composition. Specifically, the ordinance states that a buffer “shall always extend fifty (50) feet beyond the edge of riparian woodland and twenty (20) feet beyond the edge of other woody vegetation as determined by the dripline” (County of Santa Cruz 1994). Exemptions are made for continuance of a preexisting use, pest control and eradication, drainage and erosion control, habitat restoration, and/or maintenance of existing levee structures. Applicants may file for a permit from the County of Santa Cruz enabling development activities in a riparian corridor. The permit application must include a property and project description, as well as proposed best management practices and potential mitigation measures.

POTENTIAL WETLANDS AND “OTHER WATERS” OF THE U.S.

Wetlands are defined as, “those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas” (EPA, 40 CFR 230.3, and CE 33 CFR 328.3). The three criteria used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the US Army Corps of Engineers (Corps) Manual, evidence of at least one positive wetland indicator from each parameter must be found in order to make a positive determination. Under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of fill materials into wetlands and waters of the United States. A routine level delineation of wetlands and waters potentially subject to Corps jurisdiction was conducted by EcoSystems West on 1 May 2008.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are also subject to Section 404 jurisdiction. Along the Central California coast, these “other waters” can include intermittent and ephemeral streams, as well as lakes, and rivers. “Other waters” are identified by the presence of an ordinary high water (OHW) mark, a defined river or stream bed, a bank, or by the absence of emergent vegetation in ponds or lakes. An OHW mark is defined as the natural line on the shore established by fluctuations of water. The project area was concurrently evaluated for the presence of “other waters” at the time of the biotic assessment site visit.

WATERS OF THE STATE OF CALIFORNIA

Section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Act (SWRCB 2002) assign overall responsibility for water rights and water quality protection to the State Water Resource Control Board (SWRCB) and directs the nine statewide Regional Water Quality Control Boards (RWQCBs) to develop and enforce water quality standards within their boundaries. Under California State law, “waters of the state” pertains to “any surface water or

groundwater, including saline waters, within the boundaries of the state.” As a result, water quality laws and permitting authority apply to both surface and groundwater.

Following the 2001 U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers (SWANCC)* the SWRCB released a legal memorandum confirming the State’s jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other “waters of the state” are subject to State regulation, including wetlands isolated from navigable waters or their tributaries. In the recent Supreme Court decision for *Rapanos v. United States* (547 U.S. 715 (2006)), the Court recommended further restrictions on federal jurisdiction and required that a “significant nexus” test be applied to those wetlands and “other waters” which are not navigable waters. A memorandum issued in June 2007 provides guidance to the Corps and EPA for implementing the Supreme Court’s significant nexus test. Wetlands and others waters lacking a significant nexus to navigable waters of the U.S. may still be regulated by state Regional Water Quality Control Boards (RWQCB). In general, the RWQCB regulates discharge into isolated waters in much the same way as the Corps does for Federal-jurisdictional waters, using Porter-Cologne rather than Section 404 authority (SWRCB 2001).

Wildlife

Review of Literature and Data Sources

Prior to our site visit, EcoSystems West biologists reviewed CNDDDB occurrence records of special-status wildlife species for the USGS 7.5 minute Watsonville West quadrangle. In addition, we reviewed documents for previous projects in the vicinity that contained sensitive wildlife species lists for Santa Cruz County. Sources consulted for up-to-date agency status information include the USFWS (1978, 2004, 2005a, 2006, and 2008b,c,d,e,f) for federally listed species and/or designations of critical habitats, and the CDFG for state species listed as ‘Threatened’ or ‘Endangered’ or as ‘Species of Special Concern’ (CDFG 2008b). Maps produced by the Biogeographic Information and Observation System (BIOS) (CDFG 2008c) and Santa Cruz County (2005) were also reviewed to obtain distribution information for special-status species.

The CDFG Mammal Species of Special Concern (Williams 1986) was reviewed, as was the list of species considered ‘High Priority’ by the Western Bat Working Group (WBWG) (1998). According to the CDFG Special Animals List, species designated as ‘High Priority’ by WBWG are defined as “imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats” (CDFG 2008b). These species fall under State regulatory authority under the provisions of the CEQA Guidelines.

From these sources we developed a target list of special status wildlife species and their habitat requirements to consider while assessing the project area (Table 1).

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Table 1. Conservation status and habitat requirements of special-status wildlife species that may occur in the vicinity of the proposed Atkinson Lane Specific Plan project area, Santa Cruz County, California.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Amphibians and Reptiles					
Santa Cruz long-toed salamander <i>Ambystoma macrodactylum croceum</i>	FE	SE	FP	Require shallow ponds with emergent and submerged vegetation for cover during the aquatic phase of their life. In terrestrial phase, require woodlands with a dense understory and abundant burrows.	Not Expected Nearest records from the project area are over 3 miles west, and northwest along Merk Road, Larkins Valley, and in Ellicott Pond. Occurrence is not expected due to the site being isolated from surrounding urban barriers, the distance to known populations, and the presence of non-native predators (e.g. bullfrog) (Mori 2008).
California tiger salamander <i>Ambystoma californiense</i>	FT	SC	-	Seasonal pools, stock ponds and irrigated agricultural basins, and ditches with nearby upland grasslands and/or open woodlands within Central California. May migrate over 1 mile to reach breeding ponds.	Not Expected Nearest records from the project area are over 3 miles west, in Buena Vista and Ellicott Ponds. Occurrence is not expected due to the site being isolated from surrounding urban barriers, the distance to known populations, regular discing practices of upland habitat, and the presence of non-native predators (e.g. bullfrog) (Mori 2008).
California red-legged frog <i>Rana draytonii</i>	FT	SC	-	Requires the presence of surface water until mid to late summer for reproduction; utilizes ephemeral and/or perennial systems with standing or slow moving flows; upland habitat includes leaf litter, burrows and crevices; adults may travel over 2 miles overland between aquatic sites.	Possible Nearest records from the project area are approximately 1.2 miles southwest in Watsonville Slough and 1.6 miles southwest in Struve Slough. The project site provides potential aquatic and dispersal habitat (Mori 2008; USFWS 2008f).
Western pond turtle <i>Actinemys marmorata</i>	-	SC	-	Found in ponds, marshes, rivers, streams, and ditches containing aquatic vegetation. Basks on logs, debris, banks and/or rocks. Moves up to 4 miles within a creek/drainage system, especially during 'walk-about' before a female lays eggs. Forms nesting burrows in upland areas up to several hundred feet away from aquatic habitat in woodlands, grasslands, or open areas.	Present Observed within the large wetland feature in the project area during site visits in 2007 and 2008 (K. Glinka and B. Mori pers. obs.). Nearest known additional records are from 1.2 miles southwest in Struve Slough and 1.4 miles north in Pinto Lake. Project area provides aquatic, upland nesting, and dispersal habitat (Mori 2008).
Raptors and Birds (Nesting and/or Wintering)*					
Nesting birds of prey (Various species)	-	-	3503.5	Variety of woodland, riparian, and savanna habitats	Possible Tree stands in project area provide potential nesting habitat for birds of prey including owls and hawks.
Golden eagle <i>Aquila chrysaetos</i>	-	-	FP; BCC	Resident in open mountains, foothills, canyons, and open fields of Santa Cruz County. Nests in a mass of sticks on cliffs or in trees.	Not Expected Project area lacks suitable nesting habitat; May forage or occur as migrant.
Ferruginous hawk <i>Buteo regalis</i>	-	-	BCC	Winter visitor to open field and grasslands	Possible (wintering) Nearest record is from north Monterey Co.; May forage or occur as seasonal migrant.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Northern harrier <i>Circus cyaneus</i>	-	SC	FP	Ground nester; grasslands, sloughs, wet meadows, savanna, and prairies.	Not Expected Project area lacks suitable nesting habitat from regular discing of grasslands and cultivation of agriculture fields. May forage over site or occur as migrant
White-tailed kite <i>Elanus leucurus</i>	-	-	FP	Nests in conifers on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards.	Possible Project area provides potential nesting and wintering habitat in tree stands. May forage over site or occur as migrant.
Short eared owl <i>Asio flammeus</i>	-	SC	-	Ground nests and/or roosts in tall grass meadows, tules stands, or scrub habitats. Rare fall and winter visitor to the open fields and grasslands within Santa Cruz. County.	Not Expected Project area lacks suitable nesting habitat from regular discing of grasslands and cultivation of agriculture fields. Nearest known occurrence is approximately 8 miles south in Monterey County. May forage or occur as seasonal migrant.
Western burrowing owl <i>Athene cunicularia</i>	-	SC	BCC	Open areas with burrow features available to nest or winter in; Burrow features include small mammal burrows, rock piles/outcrops, sparsely vegetated berms/slopes along roadways, agriculture ponds, retention basins and culverts	Not Expected Project area lacks burrow features for nesting and/or wintering sites from regular discing of grasslands and cultivation of agriculture fields. Nearest record is approximately 8 miles south near Dolan Road in Monterey County.
Willow flycatcher <i>Empidonax traillii</i>	-	SE	-	Nests in riparian areas and large wet meadows with extensive willows. Usually found in riparian habitats during migration	Not Expected Project area lacks extensive dense willow riparian stand for nesting. May forage or occur as migrant.
Loggerhead shrike <i>Lanius ludovicianus</i>	-	SC	BCC	Grasslands, coastal sage scrub. Nests in low trees and shrubs; feeds on insects, lizards and small snakes.	Not Expected Project area lacks suitable breeding habitat from regular discing and cultivation of agricultural fields. Known to breed in the southern portion of Santa Cruz County, in the vicinity of Pajaro Valley. May forage or occur as migrant.
Yellow-breasted chat <i>Icteria virens</i>	-	SC	-	Nests in extensive dense riparian vegetation 1-8 ft. above the ground, with a well-developed understory.	Not Expected Project area lacks extensive dense riparian vegetation for nesting. May forage or occur as migrant.
Yellow warbler <i>Dendroica petechia brewsteri</i>	-	SC	-	Nests in deciduous riparian woodland with open canopy along streams or other watercourses; forages in dense understory of riparian woodland.	Possible Project area provides riparian vegetation for marginal potential nesting habitat. May forage or occur as migrant.
Tricolored blackbird <i>Agelaius tricolor</i>	-	SC	BCC	Colonial nesting species. Inhabits agricultural fields, pastures, ponds, sloughs, marshes, swamps, and estuaries. Nests in dense stands of tall emergent vegetation over water.	Not Expected Project area lacks suitable nesting and foraging habitat. Nearest records occur approximately 2.5 miles southwest in Struve Slough and 2.5 miles southwest in Hanson Slough. May forage over site or occur as migrant.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Potential Occurrence
	Federal	State	Other		
Mammals					
Townsend's western big-eared bat <i>Corynorhinus townsendii</i>	-	SC	HP	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in tree hollows, under bridges, in residential attics and under decks. Highly sensitive.	Not expected Project area lacks 'cave-like' roosting features and is frequently exposed to human disturbance. May forage over site or occur as migrant.
Pallid bat <i>Antrozous pallidus</i>	-	SC	HP	Roost sites are primarily associated with oak, redwood, ponderosa pine, and giant sequoia forests. Will also roost under bridges and in buildings and rock outcrops.	Possible Project area provides potential roosting habitat features. May forage over site or occur as migrant.
Western red bat <i>Lasiurus blossevillii</i>	-	SC	HP;**	Roosts in foliage, primarily in riparian and wooded habitats.	Possible Project area provides potential roosting habitat in riparian and/wooded canopy. May forage over site or occur as migrant.
Fringed myotis <i>Myotis thysanodes</i>	-	-	HP: **	Roosts sites in California are primarily in buildings or mines; will also roost in large conifer snags and caves.	Possible Potential roosting habitat available in tree stands and structures in study area. May forage over site or occur as migrant.
Long-legged myotis <i>Myotis volans</i>	-	-	HP;**	Roosts primarily in large hollow tree snags or live trees with exfoliating bark; also uses rock crevices, mines, and buildings.	Possible Potential roost sites available in structures, snags, and trees with exfoliating bark, and broken tops in project area. May forage over site or occur as migrant.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	-	SC	-	Associated with riparian, oak woodland and redwood forest habitats. Builds stick nests under or in buildings, hollow trees, or in tree canopy.	Possible Potential habitat occurs in project area in willow riparian habitat, dense understory surrounding the irrigation pond and along Corralitos Creek. Minimal additional potential habitat occurs among scattered old structures on site.
American badger <i>Taxidea taxus</i>		SC	-	Friable soils and open, uncultivated grasslands and meadows. Forages on burrowing rodents, insects, and ground nesting birds. Badgers mate in the summer and early fall and experience delayed embryonic implantation. Young are born the following spring (March-April).	Not Expected Study area lacks suitable habitat for burrowing and foraging due to regular discing practices and cultivation of agriculture fields. Nearest historical records are approximately 3 miles west of project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Table 1 Notes:

*All nesting raptors (i.e., hawks and owls), native birds, and their occupied nests are federally protected under the Migratory Bird Treaty Act (MBTA) of 1918 (Title 16 United States Code, Section 703-712 as amended; 50 Code of Federal Regulations Section 21; and 50 Code of Federal Regulations Section 13) and by CDFG codes that support the act. The MBTA makes it unlawful to “take” (e.g., pursue, kill, harm, harass) any migratory bird or raptor listed in the 50 Code of Federal Regulations Section 10, including nests, eggs, or products.

Federal Status (USFWS 2008d; CDFG 2008b)

FE = Endangered: Any species, which is in danger of extinction throughout all, or a significant portion of its range

FT=Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range.

State Status (Williams 1986; CDFG 2008b)

SE=Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease.

SC=CDFG ‘Species of Special Concern’ are taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California or taxa that are closely associated with a habitat that is declining in California (e.g., wetlands).

Other (WBWG 1998; CFGC 2006; CDFG 2008b)

3503.5 = Protected birds of prey (Order Falconiformes and Strigiformes) under California Fish and Game Code 3503.5.

FP= Fully Protected: This classification was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

BCC=Species of migratory nongame birds that USFWS considers to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats.

HP =Considered “High Priority” on the Western Bat Working Group’s (WBWG) Western Bat Species Regional Priority Matrix (1998).

******=Included on preliminary list of CDFG Mammal Species of Special Concern (Williams 1986).

Site Visit

EcoSystems West wildlife biologists reviewed distribution information and conducted site visits on 16 June, 21 August, and 6 November 2008. Our objective during these visits was to evaluate the site to determine if the target wildlife species listed in Table 1 are present or if potential habitat for these species occurs in the vicinity of the proposed project site. Focused-level wildlife surveys were not conducted as part of this assessment. Habitat evaluation methods for specific taxa are described below.

AMPHIBIANS AND REPTILES

EcoSystems West contracted B. Mori Biological Consulting Services to conduct a detailed assessment of the project site for special status amphibians and reptiles including the CTS, SCLTS, CRLF, and WPT (Appendix B). Detailed descriptions of habitat requirements for these species are provided in Appendix B.

Salamanders, frogs and turtles depend on both aquatic and non-aquatic habitats for substantial portions of the year. Information was gathered from aerial maps and from BIOS maps (CDFG 2008c) showing the locations of potential aquatic and upland habitat and of documented resources within approximately three miles of the project site. Museum and data base records were also reviewed. With this information, an evaluation was made to determine the likelihood that these species would occur within and/or migrate from nearby known locations through the project site. Formal protocol surveys for Santa Cruz long-toed salamander (SCLTS) (Brode 1993), California tiger salamander (CTS) (USFWS and CDFG 2003), and California red-legged frog (CRLF) (USFWS 2005b) were not conducted as part of this effort. B. Mori's assessment (Appendix B) was submitted to the USFWS for recommendations regarding the need for protocol-level surveys for the special-status amphibians. USFWS's response letter (October 30, 2008) is provided in Appendix C.

RAPTORS AND BIRDS

The bird species listed in Table 1 may occur as seasonal migrants, year-long residents, or nest in the vicinity of the project site. Nesting seasons for raptors takes place between January and August. The smaller passerine birds listed in Table 1, such as the yellow warbler, utilize nesting habitats in riparian/wetland areas, primarily with a well-developed understory (Suddjian 2000). Their nesting season generally occurs during the spring and summer.

EcoSystems West biologists conducted a visual assessment of the project site to evaluate the suitability of available habitat and to determine which of the birds listed in Table 1 could potentially nest, migrate through, or winter on the site. During this evaluation we identified and documented the location of any active nests or existing stick nest structures within the tree stands of the project site. Locations of active nest sites and potential nest structures were noted on field maps.

MAMMALS

During our site visits, our biologists assessed the availability and suitability of potential habitat for special-status mammals listed in Table 1. For bats, areas assessed included the tree stand

canopy and fallen trees within the project area. During the day, we visually inspected trees on the property for potential bat roosting features such as broken tops, senescent limbs, hollows, crevices, holes, and furrowed bark. The exterior of some of the structures (e.g., sheds, awnings, and storage space) on the site were briefly examined to determine the potential for bat use (Brown et al. 1996).

The typical breeding season for bats occurs from mid April to September. Depending on the species, female bats congregate in small or large numbers to form maternity colonies to give birth and rear their young over the spring/summer season while males roost separately as individuals or in small bachelor groups. Juvenile bats begin flying by the fall season to forage and prepare for migration. Also depending on the species, males and females communally roost during the fall to breed before and during migration or before hibernating through the winter season (Brown et al. 1996). Our assessment was conducted when many of the target bat species (Table 1) would have had maternity colonies during the spring/summer season and/or formed temporary roosts during fall migration.

No interior inspections, evening bat acoustic monitoring, or emergence surveys, were conducted during our habitat assessment. We anticipate these advanced levels of survey effort will be conducted at a later date once project designs become finalized and evening access to the structures is arranged with property owners and tenants.

Biologists searched the project site for San Francisco dusky-footed woodrats and their stick nest structures. Woodrats are commonly found in areas with a moderate to dense canopy and thick understory near riparian areas. They build nests/houses from sticks, either on the ground or in trees; some up to heights of 3-5 feet tall on the ground and approximately up to 30 feet up in tree canopies (K. Glinka, personal observation). They also utilize slash piles of woody debris and abandoned buildings or structures in which to forage, seek refuge, or construct nest/house structures (Sakai and Noon 1993). Typically, several dens are built close together in a colony. In riparian areas, highest densities of woodrats and their houses are often encountered in willow thickets with an oak overstory. They are most numerous where shrub cover is dense and least abundant in open areas. San Francisco dusky-footed woodrats breed from December through September, with a peak in mid-spring. An examination was made of the ground, understory vegetation, tree stand canopies, slash piles, and structures (when accessible) within the project area.

In addition, the site was examined to determine whether suitable burrowing and/or foraging habitat were available for the American badger. Badgers are most abundant in uncultivated open stages of most shrub, forest, and herbaceous habitats with friable soils. They may dig burrows or reuse old burrows for cover and/or to have their young. Badgers primarily forage on fossorial rodents, especially California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gophers (*Thomomys bottae*). They may also forage for reptiles, insects, earthworms, eggs, birds and carrion. Their diet shifts seasonally and yearly in response to availability of prey (Zeiner et al 1988-1990). Locations of active woodrat nest structures and/or badger evidence (i.e. burrows, tracks, scat, and prey remains) were noted on field maps and photographed.

WILDLIFE MOVEMENT

Functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and for the continued dispersal of native plant and animal species. Open space near aquatic environments and watersheds in developed or urban areas often offer dispersal routes for wildlife (Hayden, 2002). Maintaining sufficient wildlife dispersal routes that link aquatic/wetland environments to riparian corridors allows wildlife to access foraging areas and water resources as well as contributing to the maintenance of species richness and diversity (Hayden 2002; Hilty et al 2006).

EcoSystems West biologists assessed the project site for wildlife movement. Distributions of wildlife species known or with potential to occur were reviewed. Evidence of movement (e.g., observations of wildlife, trails, tracks, scat, and prey remains) were recorded. The scope of this assessment did not include determining the frequency of wildlife passing through the site, or determining the width of open space needed to link and maintain sufficient wildlife dispersal between existing habitat features. Wildlife movement falls under state regulatory authority under provisions of the CEQA Guidelines.

RESULTS

Botany

Floristic Inventory and Habitat Characterization

We recorded a total of 113 species of naturalized vascular plants in the Atkinson Lane project area. Of these, 47 species are native, and 66 species are non-native. A complete species list is presented in Appendix D. The majority of vegetation in the project area consists of an assortment of weedy annual grasses and forbs with Coast live oak, eucalyptus, sycamore, acacia and willows dominating riparian areas along Corralitos Creek. Freshwater marsh and seasonal wetlands within the property include an assortment of hydrophytic plants typical of the supporting hydrologic regimes of these features.

We recognize seven predominant habitat and land use types occurring in the project area: wetland/aquatic, riparian woodland, California annual grassland, Himalayan blackberry scrub, agricultural lands, ruderal, and developed/landscaped areas. Wetlands and riparian woodland are considered native habitats in the sense that they are not primarily associated with heavy, ongoing or repeated human disturbance. California annual grassland habitat is typically comprised of an array of naturalized grasses and forbs of Eurasian origin. The remaining habitat and land use types are entirely the result of human disturbance.

WETLAND/AQUATIC

Wetlands and aquatic features are valued as wildlife habitat and for the ability to filter and absorb contaminants present in stormwater runoff. Wetland and aquatic habitat within the project area are described in detail below.

Freshwater marsh- The freshwater marsh plant community is most closely related to Holland's (1986) coastal and valley freshwater marsh description and also corresponds to a phase of the bulrush-cattail series of Sawyer Keeler-Wolf (1995) and the CDFG (2003). The marsh areas within the project area are contained within deep, depressional basins. The larger marsh complex located in the western portion of the property is fed by seasonal precipitation and surface runoff conveyed by an ephemeral drainage entering the basin from the north. The feature is enclosed by a six foot levee to the east. The smaller marsh is located in the northern portion of the site near the terminus of Atkinson lane. This feature is situated in a man-made irrigated agricultural basin used for irrigating agricultural crops on the property.

Freshwater marsh habitat is dominated by emergent wetland vegetation including California bulrush (*Scirpus californicus*) and narrow-leaved cattail (*Typha angustifolia*). The larger marsh also contains a dense cover of water smartweed (*Polygonum amphibium* var. *emersum*) and scattered to locally dense patches of arroyo willow (*Salix lasiolepis*).

Seasonal wetland- Seasonal wetlands are primarily characterized by shallow depressional topography and are supported by a combination of direct precipitation, surface runoff from adjacent uplands, and seasonal fluctuations in the water table. Seasonal wetlands are defined as naturally occurring wetlands that periodically lack indicators of hydrophytic vegetation, hydric soil, or wetland hydrology due to normal seasonal or annual variability. Within the project area,

seasonal wetlands are infrequently saturated or inundated during the rainy season and are dominated by curly dock (*Rumex crispus*), soft chess (*Bromus hordeaceus*), prickly ox-tongue (*Picris echioides*), water smartweed, and Italian ryegrass. This habitat type is not specifically described by Holland, Sawyer Keeler-Wolf or the CDFG.

Ephemeral drainage- An ephemeral drainage is located immediately north of the large freshwater marsh wetland complex in the western portion of the project area. This feature conveys surface runoff from Atkinson Lane and surrounding uplands into the marsh during periods of heavy rainfall. This drainage is entirely dry for the majority of the year and is dominated by an assortment of annual grasses and forbs including Italian ryegrass, prickly ox-tongue and prickly lettuce (*Lactuca serriola*). The lower extent is dominated by Himalayan blackberry (*Rubus discolor*) and a stand of mature Pacific willow trees (*Salix lasiandra* ssp. *lasiandra*). This habitat type is not specifically described by Holland, Sawyer Keeler-Wolf or the CDFG.

Corralitos Creek- Within the project area, Corralitos Creek is an intermittent waterway with steep streambanks and a sandy alluvial bottom. Flowing or standing water is absent for the majority of the year allowing for the persistence of herbaceous vegetation along cobbly portions of the streambed. Mugwort (*Artemisia douglasiana*), periwinkle (*Vinca major*) and flatsedge (*Cyperus eragrostis*) predominate below the ordinary high water mark of the creek.

RIPARIAN WOODLAND

The riparian woodland is associated with Corralitos Creek and the freshwater marsh habitats located within the project area. Riparian habitat along Corralitos Creek corresponds to elements of the sycamore alluvial woodland type of Holland (1986), the mixed willow and Coast live oak series of Sawyer Keeler-Wolf (1995) and the arroyo willow riparian forests and woodlands alliance of CDFG (2000). Riparian woodland occurs on the intermediate to steep embankments of Corralitos Creek. Although flowing water was not observed in Corralitos Creek at the time of the site visit, it appears that a seasonal/intermittent hydrologic regime supports this riparian woodland complex. Additional riparian woodland is situated on the embankments of freshwater marsh habitat in the western portion of the project and along the irrigated agricultural basin near the terminus of Atkinson Lane.

The riparian woodland associated with Corralitos Creek is dominated by several species of willow including arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and Pacific willow (*Salix lasiandra* ssp. *lasiandra*). While Pacific willow and red willow generally have a typical tree growth form, with a single trunk well above the base, arroyo willow is typically an arborescent (tree-sized) shrub, with multiple trunks from the base. Coast live oak (*Quercus agrifolia*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), sycamore (*Platanus racemosa*), and big leaf maple (*Acer macrophyllum*) are other commonly associated tree species. The native woody vine Pacific blackberry (*Rubus ursinus*) and the non-native Himalayan blackberry (*Rubus discolor*), largely dominates the understory, forming dense, often impenetrable tangles. The native sub-shrub mulefat (*Baccharis salicifolia*), and invasive species such as veldt grass (*Ehrharta erecta*), German ivy (*Delairea odorata*), and periwinkle are also relatively common.

Coast live oak and arroyo willow dominate the riparian woodland habitat associated with freshwater marsh features, including the irrigated agricultural basin, on the property. The understory in these areas is comprised of patchy Himalayan blackberry and an assortment of non-native grasses and forbs.

CALIFORNIA ANNUAL GRASSLAND

This habitat type corresponds to the California annual grassland series of Sawyer Keeler-Wolf (1995) and to a phase of the non-native grassland type described by Holland (1986). California annual grassland occurs on the flat to moderately sloped areas throughout a significant percentage of undeveloped portions of the project site. Due to isolation from nearby coastal prairie habitat, as well as close proximity to urban development and annual spring tilling, grassland habitat within the site is highly disturbed and comprised primarily of weedy, non-native species.

Within the Atkinson Lane project area, California annual grassland is dominated by brome grasses (*Bromus diandrus*, *B. hordeaceus*), wild oats (*Avena* spp.), foxtail barley (*Hordeum murinum*), Italian ryegrass, filaree (*Erodium botrys*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), English plantain (*Plantago lanceolata*), and rough cat's ear (*Hypochaeris radicata*). The native annual herb, Santa Cruz tarplant (*Holocarpha macradenia*), a state Endangered and federally Threatened species, also occurs in the western half of the property. In general, a large percentage of plant species identified within this habitat type are listed as invasive weeds with "moderate to high ecological impacts" by the California Invasive Plant Council (Cal-IPC 2007).

BLACKBERRY SCRUB

Dense, impenetrable thickets of Himalayan blackberry are located along the levees and embankments surrounding the large freshwater marsh complex in the western portion of the project area. No other species are associated with this habitat type. This habitat type is not specifically described by Holland, Sawyer Keeler-Wolf or the CDFG.

AGRICULTURAL LANDS

Much of the land in the eastern half of the project area is presently used to grow strawberries and apples. The majority of these agricultural fields and orchards have been actively cultivated for many decades. Present management includes the seasonal application of herbicides and tilling with heavy machinery. As a result, these areas have marginal habitat value and do not support naturalized vegetation or sensitive plant communities.

RUDERAL

Ruderal areas are not described by Sawyer Keeler-Wolf, Holland or the CDFG. Ruderal habitat consists of highly disturbed, weedy areas immediately adjacent to existing urban and agricultural infrastructure or along dirt access roads throughout the property. Ruderal vegetation is comprised of aggressive, early-successional species such as bull mallow (*Malva nicaensis*), pineapple weed (*Chamomilla suaveolens*), wild radish, black mustard, and filaree.

DEVELOPED/LANDSCAPED

Developed and landscaped areas are comprised of urban and light-industrial infrastructure including residential housing, agricultural facilities and paved roads as well as actively landscaped areas associated with these features. Within the project area, several developed areas occur along the western and northeastern perimeters of the property boundary. Additionally, the eastern terminus of Atkinson Lane, a paved residential road, is also located within the project area boundary.

Sensitive Habitats

SIGNIFICANT TREES

Within the Atkinson Lane project area, an undetermined number of significant trees are scheduled for removal as a result of the proposed project. The majority of these trees include mature Coast live oaks surrounding the irrigated agricultural basin near the northwest corner of the project site. Currently, due to the perennial nature of the marsh, these trees function as riparian habitat and would be subject to protection under the County Significant Tree ordinance.

RIPARIAN HABITAT

The riparian woodland habitat within the Atkinson Lane project area is recognized as a “high priority” habitat type by CNDDDB (CDFG 2003).

The riparian woodland along Corralitos Creek is supported by an intermittent flow regime. The present vegetation structure along the stream corridor is indicative of a historic hydrologic regime prior to heavy water usage associated with adjacent agriculture. The riparian corridor along Corralitos Creek will not be directly impacted by the proposed development. However, a permeable pedestrian walkway, wildlife viewing benches, and vegetated drainage swales are proposed for inclusion within the 50-foot buffer adjacent to the dripline of the riparian canopy.

Additional riparian vegetation occurs on the embankments of the irrigated agricultural basin in the northwest corner of the site near the terminus of Atkinson Lane. The overstory is comprised entirely of Coast live oak. The understory is lacking in riparian specific species although Himalayan blackberry and other ruderal weedy species are present in locally dense patches. This riparian feature is planned for removal by the proposed project.

POTENTIAL WETLANDS AND “OTHER WATERS” OF THE UNITED STATES

The freshwater marsh/seasonal wetland complex and ephemeral drainage, located in the western half of the planning area, and the irrigated agricultural basin, located in the northwestern corner of the planning area, are wetland features that meet ACOE parameters, based on the Wetland Delineation for Atkinson Lane (EcoSystems West 2009). Through analysis of drainage patterns, an RBF Consulting hydrologist proposed that these wetland features are likely isolated from navigable waters, and may therefore be exempt from 404 jurisdiction (RBF Consulting 2008). These features would be considered waters of the State of California, subject to the regulation by the State Water Resource Control Board (SWRCB) and the Wetlands Resources Policy of the California Department of Fish and Game (CDFG) and the Fish and Game Commission.

Corralitos Creek, an intermittent waterway with a clearly defined bed and ordinary high water mark, is classified as “other waters” of the U.S. and is mapped as a blue line stream on the USGS Watsonville West 7.5 minute quadrangle map. This feature would be subject to 404 jurisdiction.

WATERS OF THE STATE OF CALIFORNIA

An irrigated agricultural basin in the northwest corner of the property is likely exempt from Section 404 jurisdiction due to both the *SWANCC* and *Rapanos* Supreme Court decisions. While this feature has characteristics of freshwater marsh, it does not appear to have a hydrological connection to navigable “Waters of the U.S.,” one of its tributaries, or an adjacent jurisdictional wetland. A hydrological connection was determined to be absent if (1) the wetland was located too far from another jurisdictional feature, and/or (2) the wetland did not have a discernable surface water connection that would allow surface water to be transported from the wetland directly into a jurisdictional feature. Moreover, this wetland feature is actively flooded via mechanical pumps and retained water is used for irrigating agricultural crops throughout the property. Although situated in a deep basin, it is unlikely that this feature would continue to maintain characteristics of freshwater marsh if irrigation was removed. This feature is scheduled for removal by the proposed project.

Located in the western half of the planning area, a large freshwater marsh located situated in a deep basin receives surface runoff from an ephemeral drainage and surrounding uplands. According to RBF 2008, the marsh is likely exempt from Section 404 jurisdiction as it does not appear to have a hydrological connection to navigable “Waters of the U.S.” The marsh is separated from a seasonal wetland to the north by a levee approximately ten feet wide by 350 feet in length and is dominated by cattail, California bulrush, water smartweed, and arroyo willow.

Two seasonal wetlands are located within the planning area. The larger seasonal wetland is located immediately northeast of the levee abutting the potential freshwater marsh. The wetland is deepest in the southwest corner where it meets the levee. It contained several inches of standing water at the time of the delineation site visit and is dominated entirely by swamp smartweed. From here it gradates into shallower topography with plant species more typical of seasonal wetlands of the region. Dominant plants throughout this portion of the wetland include curly dock, Italian ryegrass, and prickly ox tongue. Several mature arroyo willows are also found along the northwest boundary of the wetland; however several of these willows have since been removed by annual discing activities. A smaller seasonal wetland is located immediately west of an ephemeral drainage and north of the freshwater marsh. This marginal wetland feature appears to be only periodically saturated during the rainy season and is comprised of a mix of hydrophytic and upland plants typical of seasonal wetlands including Italian ryegrass, curly dock, soft chess and spreading rush (*Juncus patens*). Through an analysis of drainage patterns by an RBF Consulting hydrologist (RBF 2008), these seasonal wetlands were proposed to be isolated from navigable waters of the U.S.

A linear ephemeral drainage is located in the northwestern corner of the planning area and appears to convey surface water from residential development to the north into the freshwater marsh following storm events. Because the swale is almost entirely vegetated and lacks a clearly

defined bed, bank or OHW mark, it is best classified as a wetland rather than waters of the U.S. The uppermost portion of the feature is dominated by Himalayan blackberry, tall flatsedge, Italian ryegrass and curly dock while the lower half is comprised of an overstory of Pacific willow and a dense understory of blackberry and water smartweed. Soils were saturated during the assessment site visit but flowing or standing water was not observed in the drainage/swale at this time. This feature is directly connected to the large freshwater marsh. RBF Consulting (2008) suggests that these features lack a hydrologic connection with navigable waters of the U.S. and therefore may not be subject to Section 404 jurisdiction.

Special-Status Plant Species

One population of Santa Cruz tarplant (*Holocarpha macradenia*) was located in the PG&E easement in the westernmost portion of the Atkinson Lane project area. Santa Cruz tarplant is a small to medium-sized, annual herb in the sunflower family (Asteraceae). It is glandular, aromatic, and more or less sticky to the touch, and produces solitary or clustered flower heads with short but prominent yellow ray flowers. This species is federally listed as Threatened (USFWS 2000) and State-listed as Endangered (CDFG 2008a). It is also listed on List 1B of the CNPS *Inventory* (Tibor 2001; CNPS 2008). This population was initially observed by Brian Mori, a local biologist, approximately 15 years ago but was never reported to the CNDDDB. This population, comprised of 59 individuals (per the 2008 survey), is located on flat terrace of California annual grassland. The majority of the plants observed are robust with several to many branching stems. The largest individuals were several decimeters in height and had more than 20 flowering buds.

Although the soils are mapped as Watsonville loam, the artificially flattened terrace contains coarse gravelly aggregate several inches below the ground surface. Furthermore, burnt vegetation observed in the area indicates that a short duration, low intensity fire occurred in the area within the past 18 months. Santa Cruz tarplant is often found in disturbed grassland and coastal prairie habitat with a high percent cover of non-native species (Bainbridge 2003). Disturbance such as grazing, mowing, scraping and burning has been shown to reduce the distribution and cover of species that compete with Santa Cruz tarplant for resources (Holl and Hayes 2006, Hayes 1998). However, annual deep tilling on the remainder of annual grassland habitat within the Atkinson Lane property is likely too disruptive to facilitate the germination and persistence of Santa Cruz tarplant. Despite tilling activities, it is possible for a viable seedbank to have persisted in these areas, and a diminished disturbance regime could lead to the reemergence of a dormant Santa tarplant population (Bainbridge 2003)

The existing Santa Cruz tarplant population will not be impacted by the proposed development as it is located entirely within a PG&E easement. However, active management such as mowing and/or short duration grazing could help to maintain the long-term viability of the population and offset impacts to potential tarplant habitat elsewhere in the project area.

Wildlife

Amphibians and Reptiles

Of the amphibian and reptile species listed in Table 1, the CRLF is considered 'Possible' for occurrence on the project site, while the WPT was observed to be 'Present'. No other special-status amphibian species are expected to occur, as discussed below.

AMPHIBIANS

Upon review of B. Mori's habitat assessment for the SCLTS, CTS, and CRLF (Appendix B), because of the presence of suitable aquatic habitat within the project area and known CRLF localities within dispersal distance of the project area, the USFWS recommended that federal protocol-level surveys be conducted for the CRLF (Appendix C). The federal CRLF protocol specifies a set of eight field surveys be conducted between February and September in order to examine the site during the CRLF breeding, non-breeding, and dispersal seasons (USFWS 2005b). We anticipate these surveys will be conducted in 2009.

The USFWS concluded the SCLTS and CTS are not likely to occur within the project site and that protocol-level surveys for these species are not necessary (USFWS 2008e). These species are not expected to occur within the project site due to surrounding urban and agricultural barriers, distance from known populations of SCLTS and CTS, and regular discing practices on potential upland habitat (Mori 2008).

WESTERN POND TURTLE

EcoSystems West and B. Mori made direct observations of WPT basking on floating debris within the freshwater marsh/seasonal wetland in the planning area during recent site visits (K. Glinka, personal observation 2007; B. Mori 2008). Anecdotal evidence documents the occurrence of WPT in this wetland feature since 1993 (B. Mori, personal communication, 2008). In 1996, an individual sub-adult WPT was documented near the intersection of Crestview Drive and Brewington Avenue approximately 1500 feet southeast of the wetland (CNDDDB 2008). A WPT was observed in the wetland again in 1997 (CNDDDB 2008). The WPT is also known to occur approximately 1.2 miles southwest in Struve Slough, and 1.4 miles north in Pinto Lake (CNDDDB 2008; Mori 2008). Western pond turtles are known to inhabit the Pajaro River system (CNDDDB 2008), of which Corralitos Creek is a tributary. These locations are within dispersal distance of WPT in the planning area.

The WPT is highly associated with freshwater aquatic environments, but also requires upland habitat for portions of its life cycle as well as dispersal routes to other aquatic habitats. Female WPT have been documented laying their eggs in upland habitat from a minimum distance of 165 feet to a maximum of 1300 feet from their associated aquatic habitats (Holland 1994; Rathbun et al 1992). Male WPT have been documented nearly three miles from their associated aquatic habitat (B. Stafford, personal communication 2008). The freshwater marsh/seasonal wetland provides suitable aquatic habitat for WPT. As the wetland dries up, the nearby blackberry thickets and annual grasslands on the site provide potential upland nesting/aestivation¹ habitat;

¹ State of dormancy

however, discing practices in the cultivated areas may preclude successful reproduction (Mori 2008). In addition, the planning area provides potential dispersal habitat between the occupied wetland feature and Corralitos Creek and the Pajaro River system. The irrigated agricultural basin offers potential nesting/aestivation habitat, refuge/cover, and temporary foraging habitat between these larger aquatic features.

WPT are capable of moving long distances between aquatic environments and/or upland habitat to mate, nest or aestivate (Rathbun et al. 1992). B. Mori (2008) states that there is uncertainty regarding the status of the WPT population in the planning area and whether the site is utilized seasonally or year-round. The WPT population has persisted in the wetland feature within the planning area since 1993 (B. Mori, personal observation, 2008) and has been documented a distance of 1500 feet from this feature (CNDDDB 2008). This implies that the WPT move from the occupied aquatic feature, disperse across/utilize other potential habitat on the site and in the vicinity of the site, and return to the wetland. According to the B. Mori's Site Assessment (Appendix B), it is reasonable to assume that Corralitos Creek/Salsipuedes Creek may serve as a dispersal/migration corridor for WPT since they are known to inhabit the Pajaro River system (CNDDDB 2008) and are capable of moving over long distances (Rathbun et al 1992).

It is unknown which portions of the planning area WPT utilize for nesting, aestivating, and/or dispersing; however minimum habitat requirements for WPT include aquatic, nesting/aestivation, and dispersal habitat to prevent loss of viability or extirpation of the population.

Raptors and Birds

We observed a total of 10 potential stick-nest structures within the project area among the willow stand adjacent to the large seasonal wetland feature, within the stand of oaks surrounding the irrigated agricultural basin, and within the riparian woodland forest along Corralitos Creek. At the time of our site visits, we did not observe any special-status raptors or active nests within the project area (Table 1). Of the special status raptors and birds listed in Table 1, we determined the project site provides potential habitat for wintering Ferruginous hawks, and nesting white tailed kites and yellow warblers. The remaining raptor/bird species are not expected to nest on site due to regular discing activities and agricultural cultivation practices on open landscapes within the project site. These practices preclude successful reproduction of ground nesting raptors and birds and likely restrict ground squirrels from utilizing the site. Species such as the western burrowing owl are further limited from occupying the site because of the lack of ground squirrel burrows or other burrow features and limited prey base. While many of the bird species listed in Table 1 are not expected to nest within the project site, they may forage or occur as seasonal migrants. We heard an individual red-shouldered hawk calling within the vicinity of the project site during our spring site visit, observed a pair of red-tailed hawks in the late summer, and an individual during our fall season visits.

The tree stands adjacent to the seasonal wetland, the irrigated agricultural basin, and along Corralitos Creek provide potential habitat for more common species such as the red-shouldered hawk, red-tailed hawk, great horned owl, and many other passerine birds that are not considered special-status species. The federal Migratory Bird Treaty Act (MBTA) and California Fish and

Game Codes (CFGC) prohibit the destruction or possession of individual birds, birds of prey, eggs or active nests without federal and/or State authorization.

Mammals

Of the seven special status mammal species listed in Table 1, occurrences of four of the bat species and the San Francisco dusky-footed woodrat are considered 'Possible' within the project site. No other special-status mammal species are expected to occur, as discussed below.

BATS

We determined that the site provides potential roosting habitat for four of the five bat species listed in Table 1. The Townsend's big-eared bat is not expected to roost within the project site due to the lack of 'cave-like' features among the landscape and buildings, but may forage over or migrate through the site. Potential roosting habitat is available for the remaining four special status bat species in Table 1. The project site is also within the range of more common bat species found in California. These species include but are not limited to the big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), and hoary bat (*Lasiurus cinereus*). All of the bats in Table 1 and other more common bat species may forage in or migrate through the project area. Our limited access to many of the structures on site and lack of survey data prohibits us from making an accurate determination as to whether or not bats roost within the project site.

The California Fish and Game Codes (CFGC) protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies. These include CFGC Section 86; 2000; 2014; 3007; 4150, along with several sections under Title 14 of California Code of Regulations (CFGC 2006).

SAN FRANCISCO DUSKY-FOOTED WOODRAT AND AMERICAN BADGER

During our assessment of the project area, we did not observe any active San Francisco dusky woodrat nest/house structures. Marginal potential habitat is available among the willow riparian and tree stands near the large wetland feature, agricultural pond, and along Corralitos Creek. The project site is within the range of the species and potential habitat occurs within the project site.

The American badger is known to occur within 3 miles west of the project site (CNDDDB 2008). We did not observe any individual badgers or their evidence (i.e. tracks, scat, prey remains) within the project site. Regular discing activities and cultivation of surrounding agricultural fields diminish habitat suitability for the badger. In addition, we made no observations of California ground squirrels, an important prey base for badgers. The American badger is not expected to occur within the project site due to the lack of suitable habitat.

Wildlife Movement

EcoSystems West observed individual wildlife, and/or their trails, tracks, and scat including raccoon (*Procyon lotor*), and brush rabbit (*Sylvilagus bachmani*), and striped skunk (*Mephitis mephitis*), within grassland and ruderal areas of the project site. Numerous migratory bird species were observed foraging, and/or migrating through the area, utilizing the scrub and tree canopies

adjacent to the wetland feature, irrigated agricultural basin, ephemeral drainage, and along Corralitos Creek for cover, and flying back and forth in flocks between these habitat features. Minimal evidence of wildlife movement was observed on the developed and cultivated areas of the property.

The western pond turtle is known to occupy the wetland feature on the project site and requires upland habitat for a portion of its life cycle as well as dispersal routes to other aquatic habitats (Semlitsch and Bodie 2003). In addition to the wetland feature where WPT have been observed, the ephemeral drainage, agricultural pond, Corralitos Creek and associated willow riparian, blackberry scrub, riparian woodland, grassland, and ruderal habitats provide potential habitat for foraging, nesting, overwintering, and refuge/cover. According to Mori (2008), it is reasonable to assume that Corralitos Creek/Salsipuedes Creek serves as a dispersal/migration corridor for WPT since they are known to inhabit the Pajaro River system and are capable of moving over long distances. Though the WPT may spend much of its life within the wetland, retaining connectivity to Corralitos Creek/Salsipuedes Creek and the upland habitat between them is important to maintaining the viability of the population.

The scope of this assessment did not include determining the frequency of wildlife passing through the site, or determining the width of open space needed to link and maintain sufficient wildlife dispersal between existing habitat features; however, our direct observations of resident wildlife utilizing the space to access resources provides evidence that the property is part of a broad area linking wildlife to the upper and lower regions of Corralitos/Salsipuedes Creek and to the Pajaro River watershed.

Incidental Wildlife Species Observations

The majority of the proposed project site is comprised of cultivated and ruderal habitat types, and the site is surrounded by urban areas; however, the freshwater marsh, seasonal wetland, ephemeral drainage, Corralitos Creek, blackberry scrub, and riparian woodland habitat types provide habitat for a diverse assemblage of wildlife species. EcoSystems West biologists made the following incidental observations of wildlife species within the project area (Table 2).

Table 2. Incidental wildlife species observations.

<i>Amphibians and Reptiles</i>	
Pacific tree frog (<i>Hyla [=Psuedacris] regilla</i>)	Western fence lizard (<i>Sceloporus occidentalis</i>)
Bullfrog (<i>Rana catesbeiana</i>)	
<i>Birds</i>	
Great blue heron (<i>Ardeo herodias</i>)	American crow (<i>Corvus brachyrhynchos</i>)
Canada Goose (<i>Branta Canadensis</i>)	Chestnut-backed chickadee (<i>Poecile rufescens</i>)
Mallard (<i>Anas platyrhynchos</i>)	Bushtit (<i>Psaltriparus minimus</i>)
Turkey vulture (<i>Cathartes aura</i>)	American robin (<i>Turdus migratorius</i>)
Red shouldered hawk (<i>Buteo lineatus</i>)	Townsend’s warbler (<i>Dendroica townsendii</i>)

Red-tailed hawk (<i>Buteo jamaicensis</i>)	Wilson's warbler (<i>Wilsonia pusilla</i>)
Virginia rail (<i>Rallus limicola</i>)	California towhee (<i>Pipilo crissalis</i>)
Anna's hummingbird (<i>Calypte anna</i>)	Song sparrow (<i>Melospiza melodia</i>)
Downy woodpecker (<i>Picoides pubescens</i>)	Red-winged blackbird (<i>Agelaius phoeniceus</i>)
Black phoebe (<i>Sayornis nigricans</i>)	Meadow lark (<i>Sturnella neglecta</i>)
Say's phoebe (<i>Sayornis saya</i>)	House finch (<i>Carpodacus mexicanus</i>)
Western scrub jay (<i>Aphelocoma californica</i>)	House sparrow (<i>Passer domesticus</i>)
Mammals	
Botta's pocket gopher (<i>Thomomys bottae</i>).	Striped skunk (<i>Mephitis mephitis</i>),
Brush rabbit (<i>Sylvilagus bachmani</i>)	Eastern fox squirrel (<i>Sciurus niger</i>).
Raccoon (<i>Procyon lotor</i>)	

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**APPENDIX A. SPECIAL-STATUS PLANTS WITH POTENTIAL TO
OCCUR**

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. Status, distribution and habitat of special-status plants with potential to occur in the vicinity of the proposed Atkinson Lane Project Area in Aptos, Santa Cruz County, California.

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	None	None	List 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub	ALA, CCA, COL, LAK, MRN, NAP, SBT, SCL, SCR, SHA?, SIS?, SMT, SON, YOL	March-June	LOW. Poor quality grassland habitat within the project area. Nearest known occurrence in Scotts Valley.
<i>Arabis blepharophylla</i> bent-flowered fiddleneck	None	None	List 4.3	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest; damp rock and soil on outcrops, usually on roadcuts	CCA, MRN, SCR, SFO, SMT, SON	February- May	NONE. Suitable habitat not present within the project area.
<i>Arctostaphylos andersonii</i> Santa Cruz manzanita	None	None	List 1B.2	Chaparral; openings in and edges of broadleaved upland forest and north coast coniferous forest	SCL, SCR, SMT	November- April	NONE. Suitable habitat not present within the project area.
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i> Hooker's manzanita	None	None	List 1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub	MNT, SCR	January- June	NONE. Suitable habitat not present within the project area.
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	None	None	List 1B.1	chaparral; sandy soil	MNT, SBT, SCR*	December- March	NONE. Suitable habitat not present within the project area.
<i>Arctostaphylos regismontana</i> Kings Mountain manzanita	None	None	List 1B.2	Broadleaved upland forest, chaparral, North Coast coniferous forest; granitic or sandstone	SCL, SCR?, SMT	January- April	NONE. Suitable habitat not present within the project area.
<i>Arctostaphylos silvicola</i> Bonny Doon manzanita	None	None	List 1B.2	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	February- March	NONE. Suitable habitat not present within the project area.
<i>Calandrinia breweri</i> Brewer's calandrinia	None	None	List 4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns	CCA, LAX, MEN, MNT, MPA, MRN, NAP, SBA, SBD, SCL, SCR, SCZ, SDG, SLO, SMT, SON, VEN, BA	March-June	NONE. Suitable habitat not present within the project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Calochortus umbellata</i> Oakland mariposa lily	None	None	List 4.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; often serpentinite.	ALA, CCA, MRN, SCL, SCR*, SMT	March-May	NONE. Presumed extirpated from Santa Cruz County. Almost always associated with serpentinite.
<i>Calyptridium parryi</i> var. <i>hesseae</i> Santa Cruz Mtns. pussypaws	None	None	List 1B.1	Chaparral, cismontane woodland; sandy or gravelly openings	MNT, SBT, SCL, SCR*	May-July	NONE. Suitable habitat not present within the project area.
<i>Carex comosa</i> bristly sedge	None	None	List 2.1	Marshes and swamps, lake margins, coastal prairie, valley and foothill grassland	CCA, LAK, MEN, SAC, SBD*, SCR*, SFO*, SHA, SJQ, SON, Idaho, Oregon, Washington, other states	May-September	LOW. Suitable freshwater marsh habitat present within the project area. However, presumed extirpated from Santa Cruz County.
<i>Carex saliniformis</i> deceiving sedge	None	None	List 1B.2	Coastal prairie, coastal scrub, meadows, coastal salt marshes	HUM, MEN, SCR*, SON	June-July	NONE. Perennial saline wetland habitat not present within the project area.
<i>Castilleja latifolia</i> Monterey paintbrush	None	None	List 4.3	Closed cone coniferous forest, cismontane woodland (openings), coastal dunes, coastal scrub; sandy soils	MNT, SCR	February-September	NONE. Suitable habitat not present within the project area.
<i>Ceanothus cuneatus</i> var. <i>rigidus</i> Monterey ceanothus	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub; sandy soils	MNT, SLO, SCR*	April-June	NONE. Suitable habitat not present within the project area.
<i>Ceanothus ferrisiae</i> Coyote ceanothus	Endangered	None	List 1B.1	Chaparral, coastal scrub, valley and foothill grassland; serpentinite	SCL	January-March	NONE. Serpentinite soils not present within project area. Not known from Santa Cruz County.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	None	None	List 1B.2	Valley and foothill grassland; alkaline soils	ALA, CCA, MNT, SCL(*?), SCR*, SLO, SOL*	May-November	NONE. Alkaline soils not present within the project area.
<i>Chorizanthe pungens</i> var. <i>hartwegiana</i> Ben Lomond spineflower	Endangered	None	List 1B.1	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	April-July	NONE. Suitable habitat not present within the project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Chorizanthe pungens</i> var. <i>pungens</i> Monterey spineflower	Threatened	None	List 1B.2	Maritime chaparral, cismontane woodland coastal dunes, coastal scrub, valley and foothill grassland; sandy soils	MNT, SCR	April-June	LOW. Disturbed grassland with sandy loam soils unlikely to provide suitable habitat for this species.
<i>Chorizanthe robusta</i> var. <i>hartwegii</i> Scotts Valley spineflower	Endangered	None	List 1B.1	Meadows, grasslands in sandstone or mudstone	SCR	April-July	NONE. Suitable sandstone or mudstone habitat not present within the project area.
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	Endangered	None	List 1B.1	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	ALA*, MNT, MRN, SCL*, SCR, SFO, SMT*	April- September	NONE. Suitable habitat not present within the project area.
<i>Clarkia concina</i> ssp. <i>automixa</i> Santa Clara red ribbons	None	None	List 4.3	Cismontane woodland	ALA, SCL	April-July	NONE. Suitable habitat not present within the project area.
<i>Cordylanthus rigidus</i> ssp. <i>litoralis</i> seaside bird's beak	None	Endangered	List 1B.1	Closed cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub; sandy often disturbed sites	MNT, SBA	May- September	NONE. Suitable habitat not present within the project area.
<i>Cyperidium fasciculatum</i> clustered lady's slippers	None	None	List 4.2	Lower montane coniferous forest, North Coast coniferous forest; usually serpentine seeps and streambanks	BUT, DNT, HUM, NEV, PLU, SCL, SCR*, SHA, SIE, SIS, SMT, TEH, TRI, YUB, ID, OR, UT, WA+	March-July	NONE. Suitable coniferous forest and serpentine streambank habitat not present within the project area.
<i>Cyperidium montanum</i> mountain lady's slipper	None	None	List 4.2	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest	DNT, HUM, MAD, MEN, MOD, MPA, PLU, SIE, SIS, SMT, SON, TEH, TRI, TUO, OR, WA++	March-July	NONE. Suitable habitat not present within the project area.
<i>Dudleya setchellii</i> Santa Clara Valley dudleya	Endangered	None	List 1B.1	Cismontane woodland, valley and foothill grassland; serpentine, rocky	SCL	April- October	NONE. Suitable serpentine outcrops not present within the project area. Not known from Santa Cruz County.
<i>Elymus californicus</i> California bottle-brush grass	None	None	List 4.3	Broadleaved upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland	MNT, MRN, SCR, SMT, SON	July- September	LOW. Very limited potential for occurrence within low quality broadleaved upland forest habitat within the project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Ericameria fasciculata</i> Eastwood's goldenbush	None	None	List 1B.1	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub; sandy openings	MNT	July-October	NONE. Suitable habitat not present within the project area.
<i>Erysimum ammophilum</i> sand-loving wallflower	None	None	List 1B.2	Chaparral, coastal dunes, coastal scrub; sandy openings	SCR	March-July	NONE. Suitable habitat not present within the project area.
<i>Erysimum franciscanum</i> San Francisco wallflower	None	None	List 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; often serpentinite or granitic substrates, roadcuts	MRN, SCL, SCR, SFO, SMT, SON	March-June	NONE. Granitic or serpentine soils not present within the project area. Nearest know occurrence north of the Santa Cruz city limits.
<i>Erysimum teretifolium</i> Santa Cruz wallflower	Endangered	Endangered	List 1B.1	Inland marine sands in chaparral, closed-cone coniferous forest, sand parkland, sandhill ponderosa pine forest	SCR	March-July	NONE. Suitable habitat not present within the project area.
<i>Fritillaria agrestis</i> stinkbells	None	None	List 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland; clay or serpentinite.	ALA, CCA, FRE, KRN, MEN, MNT, MPA, PLA, SAC, SBT, SCR*, SMT*, STA, TUO, VEN, YUB	March-April	NONE. Poor quality grassland habitat within the project area does not contain clayey or serpentine soils.
<i>Fritillaria liliaceae</i> fragrant fritillary	None	None	List 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite	ALA, CCA, MNT, MRN, SBT, SCL, SFO, SMT, SOL, SON	February-April	NONE. Serpentine soils not present within the project area. Not known from Santa Cruz County.
<i>Gilia tenuiflora</i> ssp. <i>arenaria</i> sand gilia	Endangered	Threatened	List 1B.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy openings	MNT	April-June	NONE. Not known from Santa Cruz County, sandy openings not present within the project area.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	None	None	List 1B.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy or serpentinite soils	MNT, MRN, SCR, SFO, SLO, SMT	June-September	NONE. Not known from Santa Cruz County, true sand and serpentine soils not present within the project area.
<i>Hoita strobilina</i> Loma Prieta hoita	None	None	List 1B.1	Moist sites in chaparral, cismontane woodland, riparian woodland, often serpentinite	ALA*, CCA*, SCL, SCR	May-July (August-October)	LOW. Suitable riparian habitat present within the project area. However, <i>H. strobilina</i> is typically restricted to serpentine soils.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Holocarpha macradenia</i> Santa Cruz tarplant	Threatened	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	ALA*, CCA*, MNT, MRN*, SCR, SON*	June- October	PRESENT. Found in poor quality annual grassland habitat in westernmost portion of the property. Not observed in heavily tilled grassland throughout the remainder of the site.
<i>Horkelia cuneata</i> ssp. <i>sericea</i> Kellogg's horkelia	None	None	List 1B.1	Openings in closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal prairie, in sandy or gravelly soil	ALA*, MRN*, MNT, SBA, SCR, SFO*, SLO, SMT	April- September	NONE. Suitable habitat not present within the project area.
<i>Horkelia marinensis</i> Point Reyes horkelia	None	None	List 1B.2	Coastal dunes, coastal prairie, coastal scrub, in sandy soil	MEN, MRN, SCR, SMT, SON	May- September	NONE. Suitable habitat not present within the project area.
<i>Leptosiphon ambiguous</i> serpentine leptosiphon	None	None	List 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland; serpentinite	ALA, CCA, MER, SBT, SCL, SCR, SJQ, SMT, STA	March-June	NONE. Serpentine soils not present within the project area.
<i>Leptosiphon grandiflorus</i> large-flowered leptosiphon	None	None	List 4.2	Coastal bluff scrub, closed cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy	ALA, KRN, MAD, MER, MNT, MRN, SBA*, SCL, SCR*, SFO, SLO, SMT, SON	April- August	LOW. Poor quality grassland habitat exists within the project area; however, no recent extant occurrences known from Santa Cruz County.
<i>Lessingia micradenia</i> var. <i>glabrata</i> smooth lessingia	None	None	List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, roadsides, usually in serpentine soils	SCL	July- November	NONE. Not known from Santa Cruz County. Serpentine soils not present within the project area.
<i>Lilium rubescens</i> redwood lily	None	None	List 4.2	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest; sometimes serpentinite and/or roadsides	DNT, HUM, LAK, MEN, NAP, SCR*, SHA, SIS	June-July	NONE. Suitable habitat not present within the project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Lomatium parvifolium</i> small-leaved lomatium	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal scrub, riparian woodland; serpentinite soils Moist to wet places, broadleaved upland forest, coastal scrub, coastal bluff	MNT, SCR, SLO	February-June	NONE. Serpentine soils not present within the project area.
<i>Lotus formosissimus</i> harlequin lotus	None	None	List 4.2	scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, meadows and seeps, marshes, north coast coniferous forest, valley and foothill grassland	DNT, HUM, MEN, MNT, MRN, SBT, SCR, SFO, SLO, SMT, SON, Oregon, Washington	March-July	MODERATE. May occur along margins of freshwater marsh and seasonal wetland habitat within the project area.
<i>Malacothamnus arcuatus</i> arcuate bush mallow	None	None	List 1B.2	Chaparral, cismontane woodland	SCL, SCR, SMT	April-September	NONE. Suitable habitat not present within the project area.
<i>Malacothamnus hallii</i> Hall's bush mallow	None	None	List 1B.	Chaparral, coastal scrub	CCA, MEN, MER, SCL, SMT, STA	May-September	NONE. Suitable habitat not present within the project area.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	None	None	List 3.2	Rocky areas in broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland, coastal scrub	ALA, CCA, COL, LAK, MNT, MRN, NAP, SBA, SCL, SCR, SJQ, SLO, SOL, SON	March-May	LOW. Low quality annual grassland habitat may provide suitable habitat within the project area. Several extant occurrences documented throughout Santa Cruz County.
<i>Mimulus rattanii</i> ssp. <i>decurtatus</i> Santa Cruz County monkeyflower	None	None	List 4.2	Chaparral, lower montane coniferous forest/margins; gravelly substrates	SCR	May-July	NONE. Suitable habitat not present within the project area.
<i>Monardella undulata</i> curly leaved monardella	None	None	List 4.2	Closed cone coniferous forest, chaparral, coastal dunes, coastal prairie, coastal scrub, lower montane coniferous forest (pine sandhills); sandy areas	MNT,MRN, SBA, SCR,SFO,SLO, SMT, SON	May-July	NONE. Suitable habitat not present within the project area.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Monardella villosa</i> var. <i>globosa</i> robust monardella	None	None	List 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	ALA, CCA, HUM, LAK, MRN, NAP, SMT, SON	June- August	LOW. Low quality broadleaved riparian forest and annual grassland habitat provide limited potential to support this species. Nearest known occurrence on eastern slope of Santa Cruz mountains. NONE. Last known record for Santa Cruz County dates to 1884 collection. Extant occurrences in adjacent counties occur primarily in mixed evergreen forest habitat.
<i>Pedicularis dudleyi</i> Dudley's lousewort	None	Rare	List 1B.2	Maritime chaparral, north coast coniferous forest, cismontane woodland, valley and foothill grassland	MNT, SCR*, SLO, SMT	April-June	NONE. Suitable habitat not present within the project area.
<i>Penstemon rattanii</i> var. <i>kleei</i> Santa Cruz Mtns. Beardtongue	None	None	List 1B.2	Chaparral, lower montane coniferous forest, North Coast coniferous forest, often in sandy soil	SCL, SCR	May-June	NONE. Nearest extant occurrence north of Santa Cruz near Eagle Rock. Presumed extirpated in Santa Cruz County.
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	Endangered	Endangered	List 1B.1	Valley and foothill grassland, coastal scrub, coastal prairie	MNT, MRN*, SCR*, SMT	March-May	MODERATE. Suitable annual grassland and seasonal wetland habitat located within the project area.
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> Gairdner's yampah	None	None	List 4.2	Moist sites in coastal prairie, broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools	CCA, DNT, KRN, LAX*, MEN, MNT, MRN, NAP, ORA*, SBT, SCL, SCR, SDG*, SLO, SMT(*?), SOL, SON	June- October	NONE. The one Monterey pine located within the project area is outside of this species' native range and is considered an ornamental planting.
<i>Pinus radiata</i> Monterey pine	None	None	List 1B.1	Closed cone coniferous forest, cismontane woodland	MNT, SCR, SLO, SMT, BA, GU	N/A	NONE. Suitable habitat not present within the project area.
<i>Piperia yadonii</i> Yadon's rein orchid	Endangered	None	List 1B.1	Coastal bluff scrub, closed-cone coniferous forest, chaparral (maritime); sandy	MNT	(February) May- August	NONE. Suitable habitat not present within the project area.

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Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcorn-flower	None	None	List 1B.2	Moist places in chaparral, coastal prairie, coastal scrub	ALA(*?), SCR, SFO, SMT	March-June	NONE. Suitable habitat not present within the project area.
<i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i> Hickman's popcorn-flower	None	None	List 4.2	Moist places in closed- cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools	MNT, SBT, SCL, SCR, SLO, SMT?	April-June	MODERATE. Suitable freshwater marsh and seasonal wetland habitat located within the project area.
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	None	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland	ALA, SCR, SFO*, SMT	March-June	NONE. The highly degraded nature of the seasonal annual grassland habitat within the project area is not likely to support this species.
<i>Polygonum hickmanii</i> Scotts Valley polygonum	Endangered	Endangered	List 1B.1	Valley and foothill grassland; sandstone	SCR	May- August	NONE. This sandstone specific species is known only from two small populations in Scotts Valley.
<i>Ranunculus lobbii</i> Lobb's aquatic buttercup	None	None	List 4.2	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; mesic areas	ALA, CCA, MEN, MRN, NAP, SCL, SOL, SON	March- April	LOW. Not known from Santa Cruz County. Seasonal wetlands within project area supports mix of ruderal weedy species.
<i>Rosa pinetorum</i> pine rose	None	None	List 1B.2	Closed cone coniferous forest	MNT, SCR	May-July	NONE. Suitable habitat not present within the project area.
<i>Sanicula hoffmannii</i> Hoffmann's sanicle	None	None	List 4.3	Broadleaved upland forest, mixed evergreen forest, chaparral, coastal scrub; serpentine or clay	MNT, SBA, SCR, SCZ, SLO, SMT, SRO	March-May	NONE. Suitable habitat not present within the project area.
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	None	None	List 4.2	Broadleaved upland forest, coastal prairie, coastal scrub, valley and foothill grassland; sandy areas	HUM, MEN, MNT, SCL, SCR, OR	May- August	LOW. Typically found in mesic forest habitats. Very limited potential for occurrence in sandy loam soils in annual grassland.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewelflower	None	None	List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland; serpentine	ALA, CCA, MNT, SCL, SLO	(March) April- September (October)	NONE. Serpentine soils not present within the project area. Not known from Santa Cruz County.

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Appendix A. (continued)

Species Common Name ¹	USFWS Listing ²	State Status ³	CNPS Status ⁴	Habitat Type ⁵	Distribution by County ⁶	Flowering Period ⁷	Potential for Occurrence
<i>Trifolium buckwestiorum</i> Santa Cruz clover	None	None	List 1B.1	Coastal prairie; margins of broadleaved upland forest, cismontane woodland	MEN, MNT, SCL, SCR, SMT, SON	April- October	NONE. Suitable habitat not present within the project area.
<i>Tifolium depauperatum</i> var. <i>hydrophyllum</i> saline clover	None	None	List 1B.2	Marshes and swamps, mesic valley and foothill grassland, vernal pools; alkaline soils	ALA, COL(?), MNT, NAP, SBT, SCL, SCR, SLO, SMT, SOL, SON	April-June	NONE. Alkaline soils not present within the project area.
<i>Zigadenus micranthus</i> var. <i>fontanus</i> small-flowered death camas	None	None	List 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps	LAK, MEN, MNT, MRN, NAP, SBT, SCR, SLO, SMT, SON	April-July	LOW Typically found in serpentine soil is chaparral or wet meadows. Few documented occurrences in Santa Cruz County.

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix A. Notes:

¹Nomenclature follows Hickman (1993); Tibor (2001); California Native Plant Society (2007).

²U.S. Fish and Wildlife Service (2007a, b, c).

³Section 1904, California Fish and Game Code (California Department of Fish and Game 2007a).

⁴Tibor (2001); California Native Plant Society (2007).

CNPS Lists: List 1A: Presumed extinct in California. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3: Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.

Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.

⁵Thomas (1960); Munz and Keck (1973); Hickman (1993); Tibor (2001); California Native Plant Society (2007); and unpublished information.

⁶Tibor (2001); California Native Plant Society (2007); and unpublished information; counties abbreviated by a three-letter code (below); occurrence in other states as indicated.

⁷Munz and Keck (1973); Tibor (2001); California Native Plant Society (2007)

ALA: Alameda
AMA: Amador
BUT: Butte
CCA: Contra Costa
COL: Colusa
DNT: Del Norte
FRE: Fresno
GLE: Glenn
HUM: Humboldt
KRN: Kern
LAK: Lake
LAX: Los Angeles
MAD: Madera
MEN: Mendocino
MER: Merced
MNT: Monterey
MOD: Modoc
MPA: Mariposa

MRN: Marin
NAP: Napa
NEV: Nevada
ORA: Orange
PLA: Placer
PLU: Plumas
RIV: Riverside
SAC: Sacramento
SBA: Santa Barbara
SBD: San Bernardino
SBT: San Benito
SCL: Santa Clara
SCR: Santa Cruz
SCZ: Santa Cruz Island (SBA Co.)
SDG: San Diego
SFO: San Francisco
SHA: Shasta
SIE: Sierra

SIS: Siskiyou
SIQ: San Joaquin
SLO: San Luis Obispo
SMT: San Mateo
SOL: Solano
SON: Sonoma
SRO: Santa Rosa Island (SBA Co.)
STA: Stanislaus
SUT: Sutter
TEH: Tehama
TRI: Trinity
TUL: Tulare
TUO: Tuolumne
VEN: Ventura
YOL: Yolo
YUB: Yuba

* Presumed extinct in these counties or states.

**APPENDIX B. SPECIAL STATUS AMPHIBIAN AND REPTILE
PRELIMINARY SITE ASSESSMENT**

July 30, 2008

Attn: Bill Davilla
Ecosystems West Consulting Group
819 ½ Pacific Avenue, Suite 4
Santa Cruz, CA 95060

Attn: Dave Pereksta
Ventura Fish and Wildlife Service Office
2493 Portola Road, Suite B
Ventura, CA 93003

Subject: Special-status Amphibian and Reptile Preliminary Site Assessment for the City of Watsonville Atkinson Lane Specific/Master Plan, Santa Cruz County, California.

Dear B. Davilla and D. Pereksta:

The purpose of this letter-report is to provide the County of Santa Cruz (the County) and the City of Watsonville (the City) information intended to guide the planning process for the proposed Atkinson Lane future growth area in Watsonville (Figure 1). It also provides resource agencies a preliminary assessment of special status amphibian and reptile species and their potential for occurrence within the vicinity of the proposed project area. The assessment focused on the following species - California tiger salamander (CTS) (*Ambystoma californiense*), Santa Cruz long-toed salamander (SCLTS) (*A. macrodactylum croceum*), California red-legged frog (CRF) (*Rana aurora draytonii*), and western pond turtle (WPT) (*Actinemys marmorata pallida*). Based on this assessment, it is anticipated that U.S. Fish and Wildlife Service (USFWS) will determine if protocol-level surveys for CTS, SCLTS, and/or CRF should be conducted prior to initiating project activities. The proposed project is currently focusing on developing a Specific Plan/Master Plan intending to provide land use alternatives by August 2008 and final adoption of the Specific Plan/Master Plan in March 2009. At the time of this assessment the land use alternatives had not been finalized or a construction schedule had not yet been established.

In summary, except for the western pond turtle, a definitive statement regarding the status of the focal species on the project site could not be made at this time, due to the absence of focused surveys. The western pond turtle has been identified on the site. The chances of CTS and SCLTS occurring on the site, appear to be very low to none, given the lack of known local breeding sites in the relevant project vicinity, the marginal quality of habitat on the project site, and the isolated nature of the site and it's setting within a landscape highly fragmented by urban and agricultural uses.

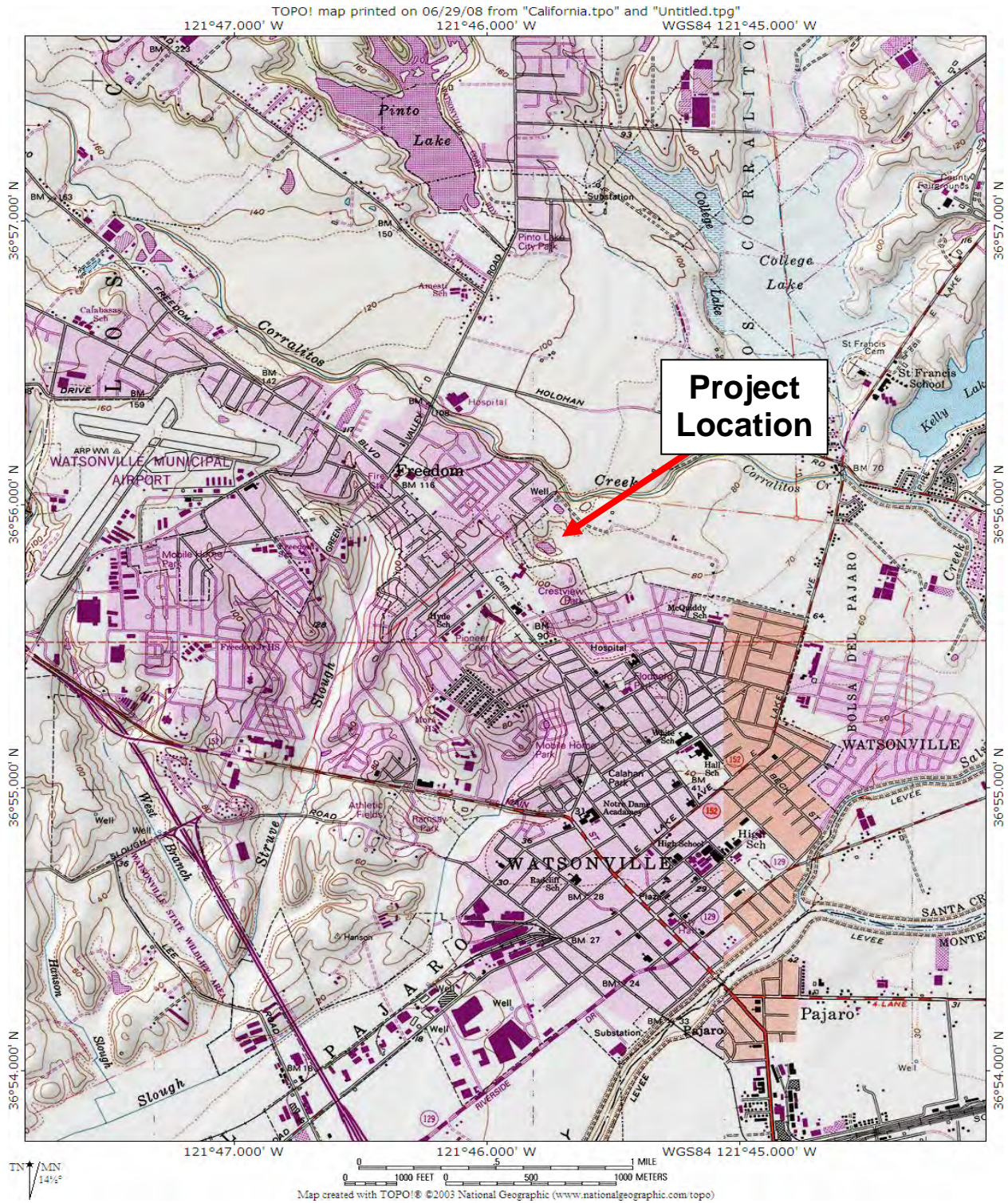


Figure 1. General location of the Proposed City of Watsonville Atkinson Lane Specific/Master Plan Area, Santa Cruz County, California.

The possibility of CRF presence at the project site is also considered low for the same reasons above; however, the chances of their occurrence on the site are slightly higher, due to the project location occurring between known occurrences of the frog from Struve Slough and Watsonville Slough to the south and the close proximity of potential non-breeding habitat in Corralitos Creek to the north (Figure 1). Surrounding urban development, however, creates barriers and likely restricts CRF movement between Corralitos Creek and Struve and Watsonville sloughs.

PROJECT DESCRIPTION

In November 2002, the voters of the City of Watsonville passed Measure U, which directs the distribution of new growth within and around the City. Measure U was designed to protect commercial agriculture lands and environmentally sensitive areas while providing the means for the City to address housing and job needs for the next 20 to 25 years. Measure U established a 20 to 25-year urban limit line around the City, and directs growth into several unincorporated areas. The three primary areas of growth include the Buena Vista, Manabe-Ow (formerly Manabe-Burgstrom), and Atkinson Lane Specific Plan areas. In accordance with Measure U, the City of Watsonville General Plan, which was adopted by the City Council in June of 2006, identifies the project site as a new growth area to accommodate up to 600 new housing units, including affordable units, townhomes, and single-family homes.

The County of Santa Cruz General Plan and Housing Element require the rezoning of a 16-acre site within the project site to allow 200 housing units at a density of 20 units per acre by June 2009. The City is also required to provide housing capacity on the remainder of the project site (City Expansion Area) to address its projected needs for the next housing element cycle. To address these requirements, the City and County determined that it is in their mutual interest to jointly plan for the development of the entire project site. In 2007, the City and County entered into a Memorandum of Understanding (MOU) to jointly pursue a Specific Plan/Master Plan for the project site. The MOU sets specific project requirements that will fulfill the City and County obligations to provide adequate housing for the region and requires that the City and County create a development plan for the project site that addresses roadway layout, housing types and affordability restrictions, parks and schools, infrastructure financing, neighborhood concerns, protection of environmental resources, and specific development guidelines.

The County of Santa Cruz and the City of Watsonville are currently preparing a joint Specific Plan/Master Plan for the Atkinson Lane future growth area. The Atkinson Lane future growth area (project site) falls within the City of Watsonville Urban Growth Boundary. The total gross acreage of the project site is approximately 68 acres, which includes 16 acres of land to be developed by the County prior to annexation by the City to meet County affordable housing goals. The MOU estimates that up to 200 units may be developed within the 16-acre area. Development by the City would follow after 2010 wherein the City may propose to annex the 16-acre County site, as well as the City expansion area. Land uses and densities for the plan will be determined as part of the Master Plan/Specific Plan process.

Providing adequate access to the project site to serve the anticipated development without overwhelming the existing circulation system is a critical project objective. The City of Watsonville General Plan assumes that Wagner Avenue would be improved and connected to Crestview Drive to serve as the primary access arterial between Freedom Boulevard and East Lake Avenue. Secondary access routes will be analyzed including Atkinson Lane and Brewington Avenue. The proposed project will also analyze additional infrastructure necessary to serve the area including sewer lines, water lines, storm drains, gas and electric, cable, phone, etc. Existing wetlands, and other potential sensitive biotic resources occurring within the vicinity of the future growth area are currently being analyzed as part of the detailed environmental review. No other detailed plans or drawings were available at the time of this preliminary assessment.

METHODS

The assessment was performed using the following protocols as guides - Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003 (USFWS and CDFG 2003) and Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog, August 2005 (USFWS 2005). These protocols also were used as guidelines for assessing SCLTS and WPT habitat, since formal habitat assessment protocols for these species are presently not available.

A reconnaissance-level survey was performed 5 and 17 June 2008 to evaluate habitat conditions at the project site. During the reconnaissance, the principal habitats were photographed (Appendix A – Photos) and conditions recorded in a field notebook. A pair of 10 x 40 powered binoculars was used to assist in wildlife identification.

The surrounding landscape within a one-mile radius of the site was qualitatively characterized, based on observations from public roads and using an aerial map and the Watsonville West USGS topographic quadrangle. For CRF and WPT, the CNDDDB was accessed and other biologists were consulted for known localities within one mile of the project site (in some cases, beyond one mile), whereas for CTS and SCLTS, the search for records was expanded to at least 3.1 miles, as per protocol guidelines.

EXISTING CONDITIONS

Project Site

Aquatic Habitats: Aquatic habitats on the project site include an ephemeral drainage swale, a large detention basin, a seasonal wetland, an irrigation pond and a section of Corralitos Creek. Attachment B presents eight photos of on-site aquatic resources.

The drainage swale is located in the northwestern corner of the project site and conveys surface water (when present) to the large detention basin (Photos 1 and 2). The swale is approximately 340 feet long, with a narrow band of willows and dense understory of blackberry along the downstream-half of the corridor and annual ryegrass, smartweed, dock and blackberry within the upstream-half of the swale. The swale conveys surface runoff from urban development to the north and appears to be highly seasonal; the swale was

dry during the June 5th and June 17th site visit.

The large detention basin is approximately 350 feet along its length and along the head, and roughly 270 feet across at the tail end (Photos 3 and 4). The basin is bermed along the eastern edge and along the head. The basin was nearly completely filled with cattails, with a narrow band of bulrush along the eastern margin. Dense willow and blackberry thickets grow along the basin's western edge and at its southeast corner, while dense smartweed grows along the eastern berm. Surface water was present in shallow pockets around the periphery of the basin. Shallow surface water also may have been present in the center of the basin, but was difficult to determine due to the dense growth of cattails. A western pond turtle, two bullfrogs (*Rana catesbeiana*) and unidentified frogs were observed during the site assessment.

A triangular-shaped, seasonal wetland occurs immediately adjacent to the detention basin, within a broad shallow depression (Photo 5). The length adjacent to the basin is roughly 270 feet, with the remaining two sides estimated at 180 feet each. The area is dominated by smartweed. Only a small pocket of shallow surface water was present during the assessment. During years of normal to heavy rainfall, a broad pool forms in the depression (pers. obs.). The margins of the wetland were disced sometime in the recent past.

An irrigation pond is present at the northeast corner of the project site (Photo 6). The pond is estimated to be 180 feet x 100 feet and is surrounded by a berm, which supports a narrow band of oak woodland vegetation and dense blackberry understory. The pond was nearly completely filled with bulrush. What appeared to be fairly deep pockets of surface water were present between the stands of bulrush; the water was tea-colored and dark, and the bottom was not visible from the small pier extending over the pond. One bullfrog and one unidentified frog, plus Pacific treefrog (*Pseudacris regilla*) larvae were observed on 5 June.

The section of Corralitos Creek within and adjacent to the project site boundary supports an overstory of mature cottonwood forest with coast live oak woodland, mature willows and a eucalyptus grove interspersed. The understory canopy included of young cottonwoods and willows, dogwood, acacia, coast redwood and big leaf maple. The shrub and herbaceous layer was dense and structurally complex; typical species included blackberry, stinging nettle, poison oak, German ivy and hemlock. During the 17 June reconnaissance, the channel adjacent to the site was completely dry (Photo 7). The substrate consists mostly of cobbles, with pockets of sand deposits. For the most part, the channel is v-shaped with moderate to steep-sided slopes, with occasional broad benches.

Uplands: Roughly two-thirds of the project site supports agricultural uses (i.e., strawberry fields and orchards). The majority of the remaining uplands consist of non-native annual grassland/ruderal vegetation and three single-family residential units, with varying degrees of landscape vegetation. Apparently, the majority of the grassland/ruderal vegetation is regularly disced and was largely barren on 6 June. Consequently, the presence of small mammal burrows was difficult to determine, but occasional occluded dens were observed. A narrow band of annual grassland/ruderal along the southwest edge of the swale and a vacant lot at the northwest corner do not appear to be maintained on a regular basis, as the vegetation was dense and the thatch layer thick, especially adjacent to the swale; as such, the presence of burrows was difficult to determine. Other minor components of the upland

include blackberry thickets, a small grove of live oaks and remnant orchard trees east and adjacent to the drainage, oak woodlands surrounding the irrigation pond, and scattered occurrences of coyote brush.

Off-Site

The following characterizations include upland and aquatic habitats within a one mile radius of the project site (Figures 2 and 3).

Uplands: The surrounding landscape is characterized by a sharp division between urban development and agricultural uses (Figure 2). A continuous block of urban development exists adjacent to the project site to the northwest, west, southwest, south and southeast. Urban land uses within this block include high-density residential, schools, commercial, industrial and a portion of the Watsonville Airport. Freedom Boulevard and Green Valley Road serve as main thoroughfares through this urbanized area. In contrast, continuous agricultural uses are present to the north, northeast, east and southeast, including row crop and orchards. Within this urban-agricultural matrix, native vegetation is limited to riparian habitat along Corralitos Creek; wetlands along the arm of Struve Slough and upper Watsonville Slough; and isolated patches of annual grasslands associated with College Lake, the Watsonville Airport and small ranches.

Aquatic Habitats: Only two ponds were identified within or just beyond the one mile radius of the project site (Figure 3), based on aerial photo and USGS topographic map interpretation and cursory observations from public roads.

Pond 1 is present to the northeast adjacent to the Lakeview Middle School track and field (Figure 3). The pond appears to serve as a catch basin for runoff from the playing fields, prior to entering Salsipuedes Creek. The basin is ringed by willows and supports scattered occurrences of cattails, bulrush and spikerush around the shoreline. No water was present on 6 June.

Pond 2 is to the southwest and is within an arm of Struve Slough (Figure 3). This pond appears to serve as a run-off detention basin for the surrounding subdivisions. The pond margins support mostly freshwater marsh vegetation, but a dense stand of willows is present at the tail end. No water was present in the pond on 6 June.

Other significant aquatic habitats within 1-mile of the site include Corralitos Creek and its tributaries, Struve Slough and upper Watsonville Slough. Corralitos Creek is intermittent and supports cottonwood-willow riparian forest, which is confined to the immediate banks due to urbanization and agriculture. Struve and Watsonville Sloughs support freshwater marsh vegetation and willow thickets and surface water is largely seasonal. Urban developments border both sloughs.



TOPO! map printed on 06/29/08 from "California.tpo" and "Untitled.tpg"
 121°47.000' W 121°46.000' W WGS84 121°45.000' W

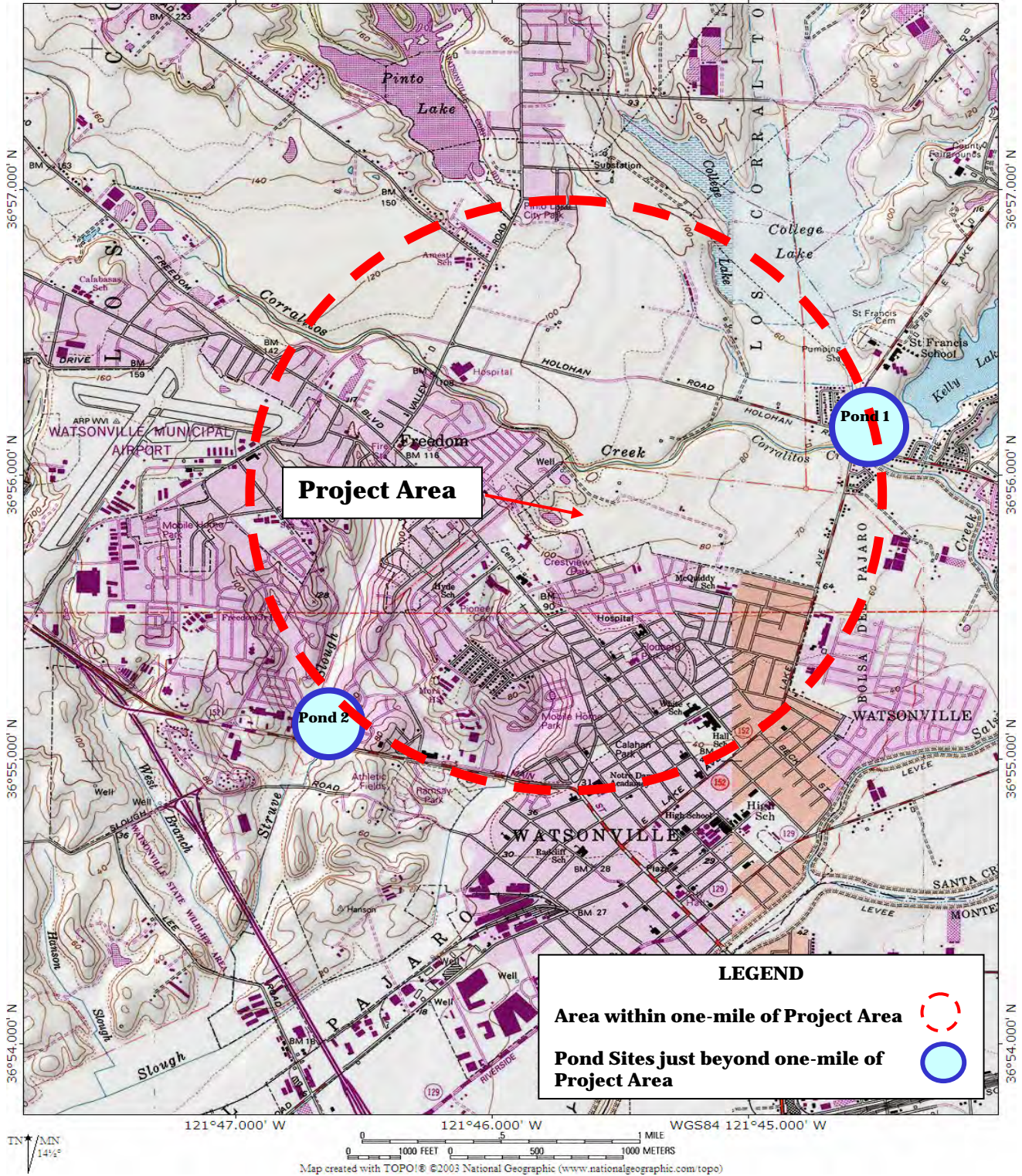


Figure 3. Locations of pond sites just beyond one mile of the proposed City of Watsonville Atkinson Lane Specific/Master Plan Area, Santa Cruz County,

SPECIES STATUS AND NATURAL HISTORY

California Tiger Salamander

The California tiger salamander is a Federal threatened species and State species of special concern (USFWS 2004a; CDFG 2008). The population consists of three Distinct Population Segments (DPS) – the Santa Rosa DPS, Santa Barbara DPS and Central California DPS, all of which are federally listed as threatened or endangered (USFWS 2004a; USFWS 2003). The California tiger salamander has disappeared from 55% of its historic range (Jennings and Hayes 1994). Presently, this species is distributed in the Central Valley from Yolo County south to Tulare County, and in the Coast Range valleys and lower foothills from Sonoma County south to Santa Barbara County (Shaffer 1991). California tiger salamanders primarily inhabit valley floor and foothill grasslands, open oak woodlands and scrub habitats encompassing vernal pools and seasonal ponds (Trenham 2001; USFWS 2000). Post-metamorphic individuals (i.e., adults and juveniles) live in rodent burrows in uplands for most of their lives (Trenham 2001; Trenham *et al* 2000; Loredó *et al* 1996). During the rainy season, typically November through March, adults migrate at night to aquatic breeding sites (Loredó and Van Vuren 1996), which include quiet waters of seasonal ponds, reservoirs, lakes and occasionally stream pools (Stebbins 1985). Tiger salamanders have osmoregulatory adaptations that allow for existence in highly alkaline aquatic environments (Kirschner *et al.* 1971; Romspert and McClanahan 1981). Based on a recent study, migration distances of adults between upland habitat and breeding pools generally are within 450 m (Trenham and Shaffer 2005), but distances up to 2 km (1.2 miles) have been recorded (USFWS 2000). In habitats encompassing several ponds, experienced adults may breed at more than one pond during their lifetime (Trenham *et al* 2001). The adults remain at the breeding pond from one day to several weeks, and then return to upland refugia (Loredó and Van Vuren 1996). Males migrate to breeding sites before females and tend to stay at breeding sites longer (e.g., 6 – 8 weeks for males and 1 – 2 weeks for females) (Trenham *et al* 2000; Loredó and Van Vuren 1996; Shaffer 1993). Eggs are laid singly, or in small groups of up to four, on stalks of submerged vegetation or other objects (e.g., rocks woody material, etc.), typically along the shoreline. The eggs hatch in 10 days to approximately three weeks (USFWS 2000; Jennings and Hayes 1994; Storer 1925). The number of eggs deposited per female per breeding season ranges from around 400 – 1,300 (USFWS 2000). The diet of larvae consists of aquatic insects and other invertebrates, and mostly tadpoles as the larvae grow larger (USFWS 2000; Petránka 1998; Anderson 1968). Larvae typically metamorphose in two to three months, from late spring to summer, when ponds begin to dry (USFWS 2000). Metamorphs emerge from ponds and seek shelter mostly in the immediate vicinity in burrows, cracks in the ground or under debris, but sometimes as far as 200 meters away, even in the absence of rain (Trenham 2001; Trenham and Shaffer 2005.; Loredó *et al* 1996). During the rainy-season, the juveniles continue to disperse farther to seek refuge in upland areas within 640 m of the breeding pond, but distances up to 1.6 km away from the breeding pond have been recorded (Jennings and Hayes 1994). Adults live up to at least 10 years, but take up to 4 – 5 years to reach sexual maturity (Trenham *et al* 2000). Females may not breed every year and only may breed once or twice during their lifetime (Trenham *et al* 2000). Sub-adults and adults appear to be “sit-and-wait” predators, preying on earthworms, insects and snails (CDFG 1990; Lindquist and Bachmann 1980). Threats and reasons for the decline of this species

include loss of breeding and upland habitat and habitat fragmentation due to agricultural and urban development; the introduction of bullfrogs (*Rana catesbeiana*) and predatory non-native fishes; use of larval forms as fishing bait; and hybridization with introduced non-native tiger salamanders (USFWS 2000; Stebbins 2003).

Santa Cruz Long-toed Salamander

The Santa Cruz long-toed salamander was listed as endangered by the U.S. Fish and Wildlife Service in 1967 (USFWS 2004b), and subsequently in 1970 by the State of California under the California Species Preservation Act (Ruth 1989). The Santa Cruz long-toed salamander is the southernmost subspecies of *Ambystoma macrodactylum* and was first discovered in 1954 at Valencia Lagoon, near Aptos, in Santa Cruz County, California (Russell and Anderson 1956). Presently, the breeding population is restricted to southern Santa Cruz and northern Monterey Counties (USFWS 2004b). Adult and sub-adult Santa Cruz long-toed salamanders spend most of the year in upland refugia, including rodent burrows, leaf litter, underneath surface objects, and in rotting logs within dense oak woodlands, riparian vegetation and mesic coastal scrub (Ruth 1989). Adults migrate from upland habitats to seasonal/semi-perennial breeding ponds at night, during late fall and winter rains, generally from November through March. In contrast, juvenile dispersal is mostly confined to the first substantial fall rains, sometimes as early as August (M. Allaback, pers. comm.). Long-toed salamanders appear to travel in nearly straight lines, with marked individuals documented to migrate 0.6 mile from breeding ponds to upland habitat (USFWS 2004b; M. Allaback, pers. comm.). However, unmarked long-toed salamanders have been observed 1 mile from the nearest breeding pond (USFWS 2004b). Males usually precede females to the breeding site by one to two weeks, remain at the pond longer than females, and may mate with more than one female each season (Ruth and Tollestrup 1973; USFWS 2004b). Mating and egg-laying generally peak in January and February (USFWS 2004b). The female deposits 200 - 400 eggs singly on stems of emergent vegetation (Anderson 1967). After mating, the adults return to upland habitat within 6 - 12 weeks, typically by March or April (Ruth 1988; USFWS 2004b). Eggs hatch within 15 - 30 days and metamorphose into juveniles between May and September, depending on aquatic conditions. In drought years, larvae may perish prior to transformation due to insufficient water levels (Ruth 1988). Crustaceans (cladocerans and copepods) and tendipedids (midgefly larvae) are the primary food items of larvae (Anderson 1968). Recently metamorphosed salamanders (metamorphs) typically seek terrestrial refuge immediately adjacent to the breeding pond, and remain until dispersing during the first fall rains, however, early rains may induce metamorphs to move up to 200 feet from the breeding pond (Ruth 1989; USFWS 2004b). Important prey for juveniles and adults include isopods (pillbugs), beetles, centipedes, earthworms and spiders (Anderson 1968). Adults are estimated to live up to twenty years (Ruth 1988). A long life span and high reproductive output are believed to be adaptations, which allow for populations to persist at seasonal breeding sites during prolonged periods of drought (Reed 1979; Ruth 1988). Climatic changes over geologic time have restricted the distribution of the Santa Cruz long-toed salamander, making the species especially vulnerable to habitat loss resulting from agricultural and urban developments, predation from bullfrogs and non-native predatory fishes, as well as natural catastrophes related to climate and infestations (Ruth 1988; USFWS 2004b).

California Red-legged Frog

The California red-legged frog (*Rana draytonii*, hereafter CRF), is a federal threatened species and a State species of special concern (USFWS 2002; CDFG 2008). The historic range of this species extended southward from the Marin County coast, and inland from Shasta County south to Baja California (Jennings and Hayes 1994). The CRF has been extirpated from 70% of its former range (USFWS 1996). Presently, CRF is found primarily in central coastal California in natural and artificial ponds, quiet pools along streams and in coastal marshes (USFWS 1996). In the breeding season, CRF mostly inhabit pools greater than 2 feet deep, although shallow, perennial marsh habitat may also be productive if it is free of non-native aquatic predators (Hayes and Jennings 1988; B. Mori, pers. obs.). Optimal aquatic habitat is characterized by dense emergent or shoreline vegetation for cover. Seasonal ponds with little emergent/shoreline cover located in grasslands, however, may also be used for breeding, where water levels permit the metamorphosis of larvae and rodent burrows offer cover (USFWS 2002). Breeding typically occurs between December and April, depending on annual environmental conditions and locality. Egg masses containing 2,000 – 5,000 eggs are usually deposited near the water surface on emergent vegetation, but occasionally on the pond bottom where attachments are absent. Eggs require 6 to 14 days to hatch and metamorphosis generally occurs within 3.5 to 7 months after hatching, although larvae have the ability to over-winter at some sites (Fellers, *et al.* 2001). Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size and do not travel far from aquatic habitats, if appropriate cover is present. Dispersal of juveniles generally begins with the first rains of the weather-year, although all size classes will move in response to receding water. Radio-telemetry data indicate that adults engage in straight-line movements irrespective of riparian corridors or topography, and they may move up to 1.7 miles between non-breeding and breeding sites (Bulger, *et al.* 2003; Fellers and Kleeman 2007). They may take refuge in small mammal burrows, leaf litter or other moist areas during periods of inactivity or whenever it is necessary to avoid desiccation (Rathbun, *et al.* 1993; Jennings and Hayes 1994). At permanent ponds, most CRF remain at the pond but often move up to 300 feet into surrounding uplands, especially following rains, when individuals may spend days or weeks in upland habitats (Bulger, *et al.* 2003); whereas at seasonal breeding sites, frogs will move at least as far as the nearest suitable non-breeding habitat, e.g., riparian zone, marsh, etc. (Fellers and Kleeman 2007). Much of this species' habitat has undergone significant alteration by agricultural, urban development and water projects, leading to the extirpation of many populations (USFWS 1996). Other factors contributing to the decline of red-legged frogs include its historical exploitation as food; competition and predation by bullfrogs (*Rana catesbeiana*) and introduced predatory fishes (Jennings and Hayes 1985; Hayes and Jennings 1988; Lawler, *et al.* 1999); and salinization of coastal breeding habitat (Jennings and Hayes 1990).

Western Pond Turtle

The western pond turtle (WPT) has been separated into two subspecies *Actinemys m. marmorata* is the northern subspecies and *Actinemys m. pallida* is the southern subspecies. Current research suggests, however, that the taxon may be represented by three distinct populations in California and may therefore require a taxonomic revision (Jennings and Hayes 1994). The southwestern pond turtle is a State species of special concern (CDFG 2008). In California, the pond turtle is distributed mostly along the Pacific slope drainages from Oregon to Mexico (Jennings and Hayes 1994). Pond turtles primarily occur in permanent freshwater ponds, lakes, marshes and quiet waters of streams (Bury and Holland 1993). Pond turtles favor sites with the largest and deepest pools and with an abundance of basking sites, such as partially submerged logs or rocks, matted emergent vegetation, or exposed shorelines (Bury and Holland 1993); pond turtles displace one another from basking sites, where such resources are limited (Bury and Wolfheim 1973). Pond turtles are highly sensitive and will seek cover when approached within 100 meters (Bury and Holland 1993). Undercut banks, root masses and boulder piles provide underwater escape cover (Bury and Holland 1993). Although highly aquatic, pond turtles leave the water to reproduce, aestivate and overwinter (Jennings and Hayes 1994). Females dig nests and deposit eggs, during May and June, along the shoreline or in a variety of open, sparsely vegetated upland habitats, usually within 200 meters from water, but as much as 500 meters, and mostly on south-facing slopes with well-drained clay soils (Rathbun *et al* 1992; Jennings and Hayes 1994). Nests must remain dry for proper incubation. The young hatch and may overwinter in the nest, before emerging in the spring (Jennings and Hayes 1994). Hatchlings require shallow water habitat with dense emergent vegetation and abundant zooplankton (Jennings and Hayes 1994). Pond turtles reach sexual maturity between seven and fourteen years of age (Bury and Holland 1993) and live to be over 42 years (Jennings and Hayes 1994). During dispersal, pond turtles can move up to two kilometers in search of suitable habitat and can tolerate a minimum of seven days without water (Jennings and Hayes 1994). Studies on central coast drainages show that turtles use upland habitat within 50 meters of the creek in times of drought or to avoid winter floods (Rathbun *et al* 2002) and up to 500 meters in other studies (Reese and Welsh 1997). Pond turtles are threatened by habitat alteration and loss due to water developments, agricultural practices and non-native predators (Jennings and Hayes 1994).

LOCAL SPECIAL-STATUS SPECIES RECORDS

Through consultation with other biologists, access of the CNDDDB and gray-literature review, 10 records of CTS, SCLTS CRF and WPT were identified from the general project region. The nearest CRF records to the project site are from Watsonville Slough, approximately 1.2 miles to the southwest, and from Struve Slough, approximately 1.6 miles southwest of the site. The only known occurrences of CTS are south of State Route 1 at the Buena Vista site, 3.4 miles west of the project site, and from the Ellicott Slough National Wildlife Refuge (ESNWR), approximately 3.8 miles west of the site. The three nearest SCLTS records to the site are from Merk Pond, 3.7 miles to the northwest; ESNWR, 3.8 miles to the west; and from Larkin Valley, approximately 4.0 miles to the northwest. In addition to the observation of WPT at the project site, other localities include Struve Slough and Pinto Lake. These records are summarized on Table 1.

Table 1. Locations of CTS, SCLTS, CRF and WPT records from the Atkinson Lane project region in Santa Cruz County.

Taxon	Observation	Distance from Project Site	Source
California tiger salamander	South of Hwy 1, Buena Vista pond.	3.4 mi. W	CNDDB & BIOS 2008
	Ellicott Pond	3.8 mi W	CNDDB & BIOS 2008
Santa Cruz long-toed salamander	Merk Road	3.7 mi. NW	CNDDB & BIOS 2008
	Ellicott Pond	3.8 mi. W	CNDDB & BIOS 2008
	Larkins Valley	4 mi. NW	CNDDB & BIOS 2008
California red-legged frog	Watsonville Slough	1.2 mi. SW	CNDDB & BIOS 2008
	Struve Slough	1.6 mi. SW	CNDDB & BIOS 2008
Western pond turtle	On the project site.	–	K. Glinka pers. obs. onsite 2007; B. Mori pers. obs. 2008; CNDDB & BIOS 2008
	Struve Slough	1.2 mi. SW	CNDDB & BIOS 2008
	Pinto Lake	1.4 mi. N	CNDDB & BIOS 2008

DISCUSSION

California Tiger Salamander

The existence of a CTS population on the project site seems unlikely due to the combination of the following factors: 1) the aquatic habitats support bullfrogs, which are significant predators of native amphibians; 2) the uplands on the site are limited in area and marginal due to regular discing practices, which destroy potential refugia for adults and subadults; 3) the project site is isolated from other areas of potential CTS upland (e.g., extensive stands of annual grassland and oak woodlands) and aquatic habitat, due to extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known CTS populations are over three miles away and because of the isolated nature of the site from these localities. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

Santa Cruz Long-toed Salamander

As with CTS, the presence of SCLTS on the project site is considered unlikely due to the combination of the following factors: 1) the aquatic habitats support bullfrogs, which are significant predators of native amphibians; 2) potential upland habitat on the site is confined to only a few isolated patches of dense blackberry and willow thickets; 3) the project site is isolated from other areas of primary upland habitat (e.g., extensive stands of moist oak woodlands, willow thickets and mesic coastal scrub) and aquatic habitat, due to

extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known SCLTS populations are between three to four miles away and because of the isolated nature of the site from these localities. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

California Red-legged Frog

The presence of CRF on the project site also is considered unlikely, due to the combination of the following factors: 1) the aquatic habitats on site support bullfrogs, which are significant predators of native amphibians; 2) potential non-breeding habitat on the site is confined to only a few isolated patches of dense blackberry, willow thickets and smartweed; 3) the project site is largely isolated from other areas of potential habitat, due to extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known CRF populations are over one mile away (Table 1), and because of the isolated nature of the site from these localities. Although CRF are known to use riparian corridors (such as Corralitos Creek) for migration and as non-breeding habitat, in this situation, no CRF observations are known from Corralitos Creek or nearby Salsipuedes Creek. The section of Corralitos Creek adjacent to the project site does not appear to provide a reliable source of standing water outside of the rainy season, and potential breeding ponds adjacent to the creek are lacking in the project vicinity. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

Western Pond Turtle

Western pond turtles have been observed at the large detention basin sporadically since at least 1996 (pers. obs.). There is uncertainty regarding the status of the population and whether the site is used seasonally or year-round, since focused surveys have not been performed. The annual grasslands on the site appear to provide potential nesting habitat, however, discing practices may preclude successful reproduction. Given the level of urban and agricultural developments surrounding the site, it is reasonable to assume that Corralitos Creek/Salsipuedes Creek may serve as a dispersal/migration corridor for turtles, since they are known to inhabit the Pajaro River system and are capable of long distance movements.

CONCLUSIONS

Except for WPT, which is present on the project site, a conclusive determination regarding the presence/absence of CTS, SCLTS and CRF could not be made during this assessment, due to the lack of focused surveys. Several factors regarding the marginal/unsuitable habitat conditions present on the site and surrounding landscape, however, do suggest that their occurrence on the site is unlikely. As previously mentioned, based on the results of this assessment USFWS will determine whether or not protocol-level surveys should be conducted prior to initiating project activities and should reply to EcoSystems West Consulting Group with their comments.

Also, please call me at (831) 728-1043 if you have any comments or questions regarding this report.

Sincerely,

Bryan Mori
Consulting Wildlife Biologist

CC: Erika Spencer, Senior Planner, RBF Consulting
Todd Sexauer, Environmental Planner, County of Santa Cruz Planning Department
Suzi Aratin, Senior Planner, City of Watsonville Community Development Department

Attachments: Appendix A - Site Photographs

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APPENDIX A

Photographs of Features in the Vicinity of the Atkinson Lane Project Area



Photo 1. Downstream section of drainage swale.



Photo 2. Upstream section of drainage swale.



Photo 3. Overall view of detention basin.



Photo 4. Close-up view of detention basin.



Photo 5. Broad view of seasonal wetland.



Photo 6. Close up view of irrigation pond.



Photo 7. View of Corralitos Creek, June 2008

**APPENDIX C. USFWS RESPONSE TO SPECIAL STATUS
AMPHIBIAN AND REPTILE PRELIMINARY SITE ASSESSMENT**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003



IN REPLY REFER TO:
81440-2008-TA-0607

October 30, 2008

Bill Davilla
Ecosystems West Consulting Group
819.5 Pacific Avenue, Suite 4
Santa Cruz, California 95060

Subject: Special Status Amphibian and Reptile Site Assessment for the Atkinson Lane Specific/Master Plan, Watsonville, Santa Cruz County, California

Dear Mr. Davilla:

We are responding to your letter, dated August 1, 2008, and the accompanying Special Status Amphibian and Reptile Site Assessment for the Atkinson Lane Specific/Master Plan (Site Assessment), Watsonville, Santa Cruz County, California. Your letter requested that we review the Site Assessment and provide guidance on the need for protocol level surveys for federally listed amphibians, including the endangered Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) and the threatened California red-legged frog (*Rana aurora draytonii*) and California tiger salamander (*Ambystoma californiense*). The current project consists of planning for residential development and associated infrastructure improvements on approximately 68 acres.

The U.S. Fish and Wildlife Service's (Service) responsibilities include administering the Endangered Species Act of 1973, as amended (Act), including sections 7, 9, and 10. Section 9 of the Act prohibits the taking of any endangered or threatened species. Section 3(18) of the Act defines take to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 CFR 17.3) define harm to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species.

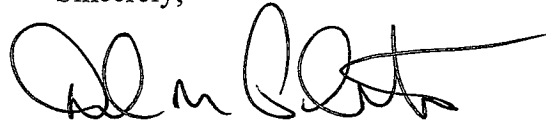
The project site includes an ephemeral drainage swale, a large detention basin, a seasonal wetland, an irrigation pond, and a section of Corralitos Creek. One or more of these aquatic habitats may provide breeding habitat for the above listed amphibians. However, upland habitats within the project area have been highly disturbed through disking and other agricultural activities, the project area is largely surrounded by agricultural and urban development, and the nearest known locality of either the Santa Cruz long-toed salamander or California tiger

salamander is over 3 miles from the project area. Therefore, we conclude that neither of these species is likely to occur within the project area and protocol level surveys for them are not necessary.

California red-legged frogs may complete their entire life cycle within a single habitat type, such as a pond (U.S. Fish and Wildlife Service 2002) and are therefore less dependent on upland habitats than the Santa Cruz long-toed salamander or California tiger salamander. California red-legged frogs have been observed to move overland more than 2 miles (U.S. Fish and Wildlife Service 2002) and are known to occur within 1.2 miles of the project area. Because of the presence of suitable aquatic habitat within the project area and of known localities within dispersal distance of the project area, we recommend that surveys of the project area for the California red-legged frog be performed to protocol (U.S. Fish and Wildlife Service 2005).

Thank you for coordinating with us on this project to ensure that adequate information on the presence of listed species is gathered. If you have any questions regarding this letter, please contact Jacob Martin of my staff at (805) 644-1766, extension 285.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. M. Pereksta', with a long horizontal flourish extending to the right.

David M. Pereksta
Assistant Field Supervisor

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APPENDIX D. LIST OF VASCULAR PLANT SPECIES OBSERVED

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix D. List of all Vascular Plant Species Observed During Atkinson Lane Habitat Assessment Site Visit.	
Scientific Name	Common Name
* <i>Acacia dealbata</i>	silver wattle
<i>Acer macrophyllum</i>	big-leaved maple
* <i>Agave americana</i>	century plant
<i>Artemisia douglasiana</i>	mugwort
* <i>Anagallis arvensis</i>	scarlet pimpernel
* <i>Avena barbata</i>	slender wild oat
* <i>Avena fatua</i>	wild oat
<i>Baccharis pilularis</i>	coyote bush
* <i>Beta vulgaris</i> var. <i>cicla</i>	chard
* <i>Brassica nigra</i>	black mustard
<i>Bromus carinatus</i>	California brome
* <i>Bromus diandrus</i>	ripgut grass
* <i>Bromus hordeaceus</i>	soft chess
<i>Calystegia purpurata</i>	Pacific false bindweed
* <i>Capsella bursa-pastoris</i>	sheppard's purse
* <i>Carduus pycnocephalus</i>	Italian thistle
* <i>Chamomilla suaveolens</i>	pineapple weed
* <i>Chenopodium murale</i>	nettle leaved goosefoot
* <i>Cirsium vulgare</i>	bull thistle
<i>Clematis ligusticifolia</i>	virgin's bower
* <i>Conium maculatum</i>	poison hemlock
* <i>Convolvulus arvensis</i>	bindweed
<i>Cornus sericea</i>	creek dogwood
* <i>Cortaderia selloana</i>	pampas grass
<i>Corylus cornuta</i>	hazelnut
* <i>Cotoneaster pannosa</i>	silverleaf cotoneaster
* <i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus eragrostis</i>	flatsedge
* <i>Delairea odorata</i>	cape ivy

Appendix D. List of all Vascular Plant Species Observed During Atkinson Lane Habitat Assessment Site Visit.	
Scientific Name	Common Name
<i>Distichlis spicata</i>	saltgrass
* <i>Ehrharta erecta</i>	veldt grass
<i>Eleocharis macrostachya</i>	spikerush
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	willow herb
<i>Equisetum arvense</i>	common horsetail
<i>Equisetum laevigatum</i>	smooth horsetail
* <i>Erodium botrys</i>	common filaree
* <i>Erodium cicutarium</i>	red-stemmed filaree
<i>Eschscholzia californica</i>	California poppy
* <i>Eucalyptus globulus</i>	blue gum eucalyptus
* <i>Filago gallica</i>	narrowleaved filago
* <i>Foeniculum vulgare</i>	fennel
<i>Galium aparine</i>	sticky bedstraw
* <i>Galium murale</i>	tiny bedstraw
* <i>Geranium dissectum</i>	cutleaf geranium
* <i>Gnaphalium luteo-album</i>	everlasting cudweed
* <i>Hedera helix</i>	English ivy
* <i>Hirschfeldia incana</i>	shortpod mustard
*** <i>Holocarpha macradenia</i>	Santa Cruz tarplant
* <i>Hordeum marinum</i>	Mediterranean barley
* <i>Hordeum murinum</i> ssp. <i>leporinum</i>	foxtail barley
* <i>Hypochaeris radicata</i>	rough cat's ear
<i>Juglans californica</i> var. <i>californica</i>	California black walnut
<i>Juncus effusus</i>	soft rush
<i>Juncus patens</i>	spreading rush
* <i>Lactuca serriola</i>	prickly lettuce
* <i>Lolium multiflorum</i>	annual ryegrass
<i>Madia sativa</i>	Coast tarweed
* <i>Malus domestica</i>	common apple

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix D. List of all Vascular Plant Species Observed During Atkinson Lane Habitat Assessment Site Visit.	
Scientific Name	Common Name
* <i>Malva nicaeensis</i>	bull mallow
* <i>Medicago polymorpha</i>	burclover
* <i>Melilotus alba</i>	white sweetclover
* <i>Opuntia ficus-indica</i>	Mission cactus
* <i>Pennisetum clandestinum</i>	kikuyu grass
* <i>Phalaris aquatica</i>	Harding grass
* <i>Picris echioides</i>	prickly ox-tongue
* <i>Plantago lanceolata</i>	English plantain
<i>Platanus racemosa</i>	sycamore
** <i>Pinus radiata</i>	Monterey pine
* <i>Piptatherum miliaceum</i>	smilo grass
* <i>Poa annua</i>	annual bluegrass
<i>Polygonum amphibium</i> var. <i>emersum</i>	water smartweed
* <i>Polygonum arenastrum</i>	common knotweed
* <i>Polypogon monspeliensis</i>	rabbit-foot grass
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	black cottonwood
<i>Potamogeton natans</i>	pondweed
<i>Quercus agrifolia</i>	Coast live oak
<i>Rhamnus californica</i>	California coffeeberry
* <i>Raphanus sativus</i>	wild radish
<i>Ribes divaricatum</i>	gooseberry
<i>Rorippa nasturtium-aquaticum</i>	water cress
<i>Rosa californica</i>	California wild rose
* <i>Rubus discolor</i>	Himalayan blackberry
<i>Rubus ursinus</i>	California blackberry
* <i>Rumex acetosella</i>	sheep sorrel
* <i>Rumex crispus</i>	curly dock
* <i>Rumex pulcher</i>	fiddle dock
<i>Sambucus mexicana</i>	elderberry

Draft Biotic Assessment for the Proposed Atkinson Lane Specific Plan/Master Plan

Appendix D. List of all Vascular Plant Species Observed During Atkinson Lane Habitat Assessment Site Visit.	
Scientific Name	Common Name
<i>Salix laevigata</i>	red willow
<i>Salix lasiandra</i> ssp. <i>lasiandra</i>	Pacific willow
<i>Salix lasiolepis</i>	arroyo willow
<i>Scirpus californicus</i>	California bulrush
<i>Scirpus microcarpus</i>	small fruited bulrush
<i>Scrophularia californica</i> ssp. <i>floribunda</i>	California figwort
<i>Sequoiadendron sempervirens</i>	Coast redwood
* <i>Senecio vulgaris</i>	common groundsel
<i>Solanum americanum</i>	common nightshade
* <i>Sonchus asper</i>	prickly sow thistle
* <i>Sonchus oleraceus</i>	common sow thistle
<i>Stachys adjugoides</i>	hedge nettle
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	common snowberry
<i>Toxicodendron diversilobum</i>	poison oak
* <i>Tragopogon porrifolius</i>	purple salsify
* <i>Trifolium dubium</i>	little hop clover
* <i>Trifolium hirtum</i>	rose clover
* <i>Trifolium incarnatum</i>	crimson clover
<i>Typha angustifolia</i>	narrow-leaved cattail
<i>Urtica dioica</i>	stinging nettle
* <i>Vicia sativa</i>	common vetch
* <i>Vinca major</i>	periwinkle
* <i>Vulpia bromoides</i>	six-weeks fescue
<i>Xanthium spinosum</i>	spiny cocklebur
* <i>Yucca</i> sp.	ornamental yucca
* <i>Zantedeschia aethiopica</i>	calla lily

* non-native plant species

** Considered special status species in native range, invasive non-native at the Atkinson Lane project area.

*** Special status plant species

**DELINEATION OF
WETLANDS AND WATERS OF THE U.S.
SUBJECT TO SECTION 404 JURISDICTION
FOR THE
ATKINSON LANE SPECIFIC PLAN**

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January 2009

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1.0 INTRODUCTION

1.1 Project Background

The Atkinson Lane Specific Plan project area covers approximately 68.4 acres and is located southeast of Atkinson Lane and north of Brookhaven Lane in the city of Watsonville, Santa Cruz County, California (Figure 1). The property is bounded to the south and west by residential development, agricultural fields and fruit orchards to the east, and Corralitos Creek to the north.

On 1 May 2008, staff biologist Justin Davilla of Ecosystems West Consulting Group conducted a routine wetland delineation of the project area to determine the extent of potential wetlands and waters subject to federal jurisdiction under Section 404 of the Clean Water Act. This report presents the results of this delineation.

1.2 Project Description

In November 2002, the City of Watsonville voted to approve Measure U, which established the urban limit line for the City for the next 25 years. The Atkinson Lane future growth area is part of the Measure U growth boundary, but is currently outside of the City limits. A portion of the site is within the City's existing sphere of influence. The future growth area consists of 65-acres, including 9 parcels. The County of Santa Cruz has identified two of these parcels (16-acres) for affordable housing density to meet the goals of their current Housing Element in the City's sphere of influence. Following discussions about the mutual benefits of joint development of site, the City and County have entered into a Memorandum of Understanding (MOU) to jointly pursue a Specific Plan for the 65-acre Atkinson Lane new development area, defined by Measure U and the City's General Plan.

Details of the Specific Plan were not available at the time of this delineation. The MOU estimates approximately 200 units (20 units per acre) to be developed within the 16-acre parcel to meet the County's goals. The City's General Plan identifies that up to 600 residential units may be generated in the planning area. Of this total, 400 units will be developed within the City-controlled lands.

The developed areas will eventually include necessary infrastructure including sewer lines, water lines, storm drains, and power, cable, and phone lines. Existing roads will be expanded and connected to create primary access to the development area. Secondary access routes will also be analyzed in the Specific Plan. The plan will also determine the necessity and location of additional parks, recreation areas, and possible education facilities for new community services. Existing wetlands and other potential sensitive biotic resources occurring within the vicinity of the future growth area are to be analyzed as part of the detailed environmental review. No other detailed plans or drawings were available at the time of this delineation.

Figure 1. Atkinson Lane Project Area Location Map

1.3 Regulatory Setting

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding the discharge of dredged or fill material into “navigable waters of the United States”. Section 502(7) of the Clean Water Act defines navigable waters as “waters of the United States, including territorial seas.” Section 328 of Chapter 33 in the Code of Federal Regulations defines the term “waters of the United States” as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of this definition of “waters of the U.S.” in 33 CFR 328.3 includes:

- (1) waters used in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) interstate waters and wetlands;
- (3) “other waters” such as lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. used by interstate or foreign travelers for recreational or other purposes; or
 - ii. from which fish or shellfish are taken and sold in interstate or foreign commerce; or
 - iii. which are for industrial purpose by industries in interstate commerce;
- (4) impoundments of waters otherwise defined as waters of the United States;
- (5) tributaries of other waters;
- (6) the territorial seas;
- (7) wetlands adjacent to waters.

Therefore, for the purpose of determining Corps jurisdiction under the Clean Water Act, “navigable waters” as defined in the Clean Water Act are the same as “waters of the U.S.” defined in the Code of Federal Regulations above.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows:

- (a) *territorial seas*: three nautical miles in a seaward direction from the baseline;
- (b) *tidal waters of the U.S.*:
 - i. extending up to the high tide line or
 - ii. up to the limit of adjacent non-tidal waters;
- (c) *non-tidal waters of the U.S.*: ordinary high water mark or limit of adjacent wetlands;
- (d) *wetlands*: to the limit of the wetland.

Section 328.3 of the Federal Code of Regulations defines wetlands as:

"Those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas."

The delineation study determined the presence or absence of wetland indicators used by the Corps in making a jurisdictional determination. The three criteria used to delineate wetlands are the presence of: (1) hydrophytic (water-loving) vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual, evidence of at least one positive wetland indicator from each parameter must be found in order to make a positive determination.

2.0 METHODS

Prior to conducting field surveys, available reference materials were reviewed, including the 1980 Soil Survey of Santa Cruz (USDA, Soil Conservation Service (SCS)/Natural Resources Conservation Service (NRCS)), the Watsonville West USGS 7.5' quadrangle map, and available aerial photographs of the site. A focused evaluation of indicators of wetlands and waters was performed in the project area on May 1, 2008. The methods used in this study to delineate jurisdictional wetlands and waters are based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the project area. A general description of the project area, including plant communities present, topography and current and historical land use practices, was also generated during the delineation visit. The methods for evaluating the presence of wetlands and other waters of the United States employed during the site visit are described in detail below.

2.1 Potential Section 404 Wetlands

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visit were recorded on standard Corps data forms. Once an area was determined to be a potential jurisdictional wetland, its boundaries were mapped using resource grade GPS equipment and overlaid on an aerial photo. The acreage of potential jurisdictional wetlands was measured digitally using ArcGIS software. Wetland indicators described in the Corps Manual that were used to make wetland determinations at each sample point in the project area are summarized below.

Vegetation

Plant species identified on the property were assigned a wetland indicator status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as shown in Table 1 below.

Table 1. Wetland Indicator Status Categories for Vascular Plants

INDICATOR STATUS	SYMBOL	FREQUENCY
OBLIGATE	OBL	greater than 99%
FACULTATIVE WETLAND	FACW	67-99%
FACULTATIVE	FAC	34-66%
FACULTATIVE UPLAND	FACU	1-33%
UPLAND (Not Listed)	UPL/NL	less than 1%
NO INDICATOR	NI	Undetermined

Plant species with an indicator status of OBL, FACW, and/or FAC are classified as hydrophytic vegetation according to methodology outlined in the Corps Manual. The hydrophytic vegetation criterion is met when greater than 50 percent of the dominant plant species have an indicator status of OBL, FACW, and/or FAC. Dominant plant species are those that contribute more to the character of the plant community than other species. For herbaceous plants, the 50/20 rule was applied where dominant plants are those that individually or collectively account for 50 percent of the total areal coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (minimum of 14 consecutive days in the Monterey Bay Area). Evidence of wetland hydrology can include direct evidence (“primary indicators”), such as visible inundation or saturation, drift lines, and surface sediment deposits (including algal mats), or indirect indicators (“secondary indicators”), such as oxidized root channels and the FAC-neutral test. If indirect or secondary indicators are used, at least two secondary indicators must be present to conclude that an area has adequate wetland hydrology. Primary and secondary hydrology indicators were used to determine if areas surrounding each sample point in the project area satisfied the Corps’ hydrology criterion.

Soils

The Natural Resource Conservation Service (USDA NRCS) defines a hydric soil as:

“A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.”

(Federal Register July 13, 1994)

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils generally have a characteristic low matrix chroma, designated 0, 1, or 2, used to identify them as hydric. Chroma designations are determined by comparing a soil sample with a standard Munsell soil color chart (GretagMacbeth 2000). Soils with a chroma of 0 or 1 are considered hydric; however, some

upland forest and grassland soils may also have dark (black), low chroma colors. Soils with a chroma of 2 must also have redoximorphic features (mottles) to be considered hydric. Soil profiles at each sample point in the project area were described to include horizon depths, color, redoximorphic features, and texture to determine if the soils satisfy the Corps' criteria for hydric soils. The NRCS manual *Field Indicators of Hydric Soils in the United States* (USDA, NRCS, 2002) was also used as a guide for determining hydric soils in the project area.

2.2 “Other Waters” of the U.S.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are also subject to Section 404 jurisdiction. In the Central California Coast, these “other waters” can include intermittent and ephemeral streams, as well as lakes, mudflats, playas, arroyos, and rivers. The project area was concurrently evaluated for the presence of “other waters” at the time of the delineation site visit.

Areas delineated as “other waters” are characterized by an ordinary high water (OHW) mark, defined as:

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(33 CFR Part 328.3)

“Other waters” are identified in the field by the presence of a defined river or stream bed, a bank, and evidence of the flow of water, or by the absence of emergent vegetation in ponds or lakes. Corps jurisdiction of waters in non-tidal areas extends to the ordinary high water (OHW) mark. “Other waters” within the project area were either mapped using sub-meter accuracy GPS units, or digitized using GIS software based on USGS topographic maps and aerial photograph interpretation.

2.3 Areas Exempt from Section 404 Jurisdiction

Some areas that meet the technical criteria for wetlands or waters may not be jurisdictional under Section 404 of the Clean Water Act. Included in this category are some man-induced wetlands which are areas that have developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities. Examples of man-induced wetlands include, but are not limited to, irrigated wetlands, stock ponds, drainage ditches excavated entirely in uplands, and dredged material disposal areas.

In addition, some isolated wetlands and waters may also be considered outside of Corps jurisdiction as a result of the Supreme Court's decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* (531 U.S. 159 (2001)). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and

are not adjacent to a navigable “Waters of the U.S.”, and do not otherwise exhibit an interstate commerce connection. In the recent Supreme Court *Rapanos v. United States* (547 U.S. 715 (2006)) decision, the Court recommended further restrictions on federal jurisdiction over wetlands and required that a “significant nexus” test be applied to those wetlands and waters which are not “navigable”. A memorandum issued in June 2007 provides guidance to the Corps and EPA for implementing the Supreme Court’s significant nexus test. The *Rapanos* decision and the SWANCC decision may be applicable to this project area if any of the potential wetlands are considered to lack a direct connection or significant nexus with navigable waters.

3.0 PROJECT AREA DESCRIPTION

The project area is approximately 68.4 acres located southeast of Atkinson Lane, in the city of Watsonville, California (Figure 1). Elevations range from approximately 76 to 104 feet NGVD. The site is comprised of annual grassland, cultivated agricultural fields, fruit orchards, a detention basin, a large freshwater marsh, and a segment of Corralitos Creek. Escaped ornamental vegetation is found in some portions of the project area where it is bordered by residential development. The majority of annual grassland habitat is disced in late spring for fire prevention and weed control. The project area is crossed by a series of maintained dirt roads used for agriculture and site maintenance. Several former dirt roadways are evident throughout the open grassland and are at least partially overgrown by annual grasses and forbs. Riparian habitat associated with Corralitos Creek consists of an assortment of evergreen trees including Coast live oak, sycamore, and blue gum eucalyptus with a dense understory of perennial forbs including nettles, blackberry, and German ivy.

Vegetation

Four major natural vegetation types are present in the project area as described by Ecosystems West (2008): annual grassland, riparian woodland, freshwater wetland/marsh, and agricultural lands. The majority of the site is characterized by annual grassland, cultivated agricultural fields, and fruit orchards. Riparian woodland is located along the embankments of Corralitos Creek, a detention basin used for crop irrigation, and a large freshwater marsh in the south-central portion of the project area.

Annual grassland is dominated by primarily non-native annual grasses and forbs including wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), filaree (*Erodium botrys*), cutleaf geranium (*Geranium dissectum*), and sheep sorrel (*Rumex acetosella*). Riparian woodland associated with Corralitos Creek in the northern portion of the site is characterized by open to nearly closed canopies of coast live oak (*Quercus agrifolia*) and blue gum eucalyptus (*Eucalyptus globulus*) with a dense herbaceous understory. Additional riparian habitat along the perimeter of freshwater marsh features is dominated by Coast live oak and arroyo willow (*Salix lasiolepis*). These areas often lack riparian species specific understories. Strawberries and fruit trees are the predominant food crops cultivated in agricultural areas within the project area. The freshwater marsh, detention basin, and other wetland and waters features are described in detail below.

Hydrology

The principal natural hydrological sources for the project area are precipitation, perched groundwater, and surface runoff from adjacent uplands. Corralitos Creek, an intermittent waterway in the northwest corner of the site, may provide an additional source of hydrology to the adjacent floodplain during extreme (100 year) rainfall events. A shallow west to east trending drainage conveys temporary runoff from uplands adjacent to Atkinson Lane into the freshwater marsh in the southern portion of the project area.

Soils

The Santa Cruz County Soil Survey (USDA 1980) identifies five soil map units within the project area (Figure 2). These soils types are describe in detail below.

- Baywood loamy sand, 0 to 2 percent slopes
- Elder sandy loam, 0 to 2 percent slopes
- Pinto loam, 0 to 2 percent slopes
- Watsonville loam, 2 to 15 percent slopes
- Water

The Soil Survey descriptions of these mapping units are presented below with indications of whether the soils are classified as hydric or not according to the Hydric Soils List for Santa Cruz County (USDA 1992).

Baywood loamy sand, 0 to 2 percent slopes-

This soil type is a very deep, somewhat excessively drained soil formed in aeolian deposits. Baywood soils are primarily found in rangelands or areas used for cultivating specialized crops including strawberries and brussel sprouts. Typical naturalized vegetation associated with this soil type includes annual grasses and forbs with widely scattered shrubs. Baywood loamy sand is particularly well suited to strawberry cultivation because drainage is optimal. The surface layer of this soil is brown loamy sand approximately 17 inches thick. The subsurface layer is typically dark grayish brown fine sand extending to a depth of 61 inches below the ground surface. This soil type is not classified as a hydric soil (USDA 1992). Baywood loamy sand is primarily found in lowland areas in the eastern half of the project area in fruit orchards.

Elder sandy loam, 0 to 2 percent slopes-

Elder sandy loam consists of very deep, well drained soils found on alluvial fans and plains and in narrow valleys. This highly productive soil type is intensively cultivated and supports crops such as brussel sprouts, apples, lettuce, and strawberries. Typically, the surface layer is grayish brown to dark grayish brown about 31 inches below the ground surface. The underlying material extends to a depth of approximately 60 inches and is brown to dark brown sandy loam. Elder sandy loam is not classified as a hydric soil; however, inclusions of loam are identified as hydric by the NRCS (USDA 1992). This soil type is located in the eastern portion of the site in areas used for strawberry cultivation and fallow rangeland.

Figure 2. Map of Soils Occurring within the Atkinson Lane Project

Pinto Loam, 0 to 2 percent slopes-

Pinto loam is typically found on marine terraces and old alluvial fans. This very deep, moderately well drained soil supports primarily shallow rooted crops because permeability is slow and available water capacity is 6.5 to 8 inches. The surface layer is a grayish brown loam approximately 14 inches thick. The subsurface layer is brownish yellow or light yellowish brown extending up to 30 inches below the surface. Included within this soil mapping unit are areas of Watsonville loam and Elkhorn sandy loam. Pinto loam is not considered hydric although areas with inclusions of Watsonville loam are classified as hydric by the NRCS (USDA 1992). Within the project area, Pinto loam occurs near the northwest entrance to the site immediately adjacent to Atkinson Lane in fallow rangeland and uncultivated agricultural fields.

Watsonville loam, 2 to 15 percent slopes-

This soil type is a deep, somewhat poorly drained soil generally formed in sedimentary alluvium. The Watsonville series is found on old coastal terraces and valleys of the central California coast. Common vegetation associated with this map unit includes annual grasses and forbs, oaks, California sage, coyote brush, and eucalyptus stands. The surface layer is typically a very dark grayish brown loam approximately 12 inches thick. The subsurface layer is often a light gray sandy loam with prominent yellowish brown redoximorphic mottles. The underlying material is a brown to grayish brown clay loam or clay extending up to 40 inches below the ground surface. This soil is classified as a hydric soil (USDA 1992) on marine terraces of the central California coast.

Water-

This includes areas that were classified as permanent bodies of standing water at the time the Santa Cruz County Soil Survey was completed. The two areas mapped as water within the Atkinson Lane project area remain inundated but currently function as freshwater marsh.

4.0 RESULTS

This report identified all areas that met the 1987 Corps Manual criteria as wetlands or possessed a discernable ordinary high water mark and could be classified as “other waters” of the United States. Potential jurisdictional areas are described in the following sections and shown on the enclosed map in Appendix A. Vegetation, soils, and hydrology data collected during the delineation site visit are reported on standard Corps data forms presented in Appendix B. Photographs of representative sample points and wetland features are provided in Appendix C. A detailed analysis of drainage patterns and hydrology of the site conducted by hydrologist Harvey Oslick of RBF Consulting is presented in Appendix D.

Corralitos Creek, an intermittent waterway with a clearly defined bed and ordinary high water mark, is classified as “other waters” of the U.S. This feature would likely be subject to 404 jurisdiction. EcoSystems West identified four additional areas within the project site as wetland features that meet Corp parameters. These features were determined to lack a direct and discernable surface water hydrologic connection to navigable waters, their tributaries, or wetlands adjacent to navigable waters, through an analysis of drainage patterns and hydrology conducted by RBF Consulting (Appendix D). Under both the guidance published on the

SWANCC decision or the “significant nexus” test under the *Rapanos* decision, these features would not be considered jurisdictional under Section 404 of the Clean Water Act. This report provides the additional information necessary to make recommendations to the Corps on those areas that are potentially jurisdictional and those which are not.

Wetland boundaries were determined in the field by the predominance of hydrophytic vegetation, evidence of wetland hydrology including soil saturation, ponding, and the presence of oxidized rhizospheres, and shifts in topography. In a few areas, such as the outer boundaries of seasonal wetlands, indicators of hydric soils were observed both in wetland areas and adjacent upland grassland habitat; low chroma soil color with distinct mottles was commonly observed in the upper 12 inches of soil. Additionally, some areas had a soil chroma of 2, and faint redoximorphic features. In these areas, the dominance of hydrophytic vegetation, breaks in topography, and the presence of secondary indicators of wetland hydrology were relied upon to determine whether wetland criteria were met or not.

4.1 Potential Section 404 Jurisdictional Wetlands

None of the wetland features within the project area were identified as potential jurisdictional waters of the U.S. According to an analysis of drainage patterns and hydrology conducted by RBF Consulting (Appendix D) these areas appear to lack a significant nexus with navigable waters of the U.S. Isolated wetlands are not regulated by the Corps under Section 404 of the CWA. These wetlands are described in detail under *Section 4.3 Areas Potentially Exempt from Section 404 Jurisdiction*.

4.2 Potential “Other Waters” of the U.S.

A total of 1,427 linear feet (0.49 acres) of jurisdictional waters were mapped in the project area as potentially jurisdictional areas under Section 404 of the Clean Water Act. Corralitos Creek, located along the northern boundary of the project area, is the only waterway within the property identified as potentially jurisdictional. This feature has a defined bed and bank and evidence of an OHW mark throughout the entirety of its reach within the project area. In addition, this area supports a mature riparian corridor with tree and shrub species including Coast live oak, blue gum eucalyptus, arroyo willow, red willow (*Salix laevigata*), Pacific willow (*Salix lasiandra ssp. lasiandra*), sycamore (*Platanus racemosa*), silver wattle acacia (*Acacia dealbata*), hazelnut (*Corylus cornuta var. californica*), elderberry (*Sambucus mexicana*), and Himalayan blackberry (Appendix B). In addition, this feature is mapped as a blue line stream on the USGS Watsonville West quadrangle map.

4.3 Areas Potentially Exempt from Section 404 Jurisdiction

Freshwater Marsh

A 2.07 acre freshwater marsh located in the western portion of the project area was designated as an isolated wetland because it lacks a hydrological connection to navigable “Waters of the U.S.”, one of its tributaries, or an adjacent jurisdictional wetland, according to a detailed hydrologic analysis of drainage patterns on the site conducted by RBF Consulting (Appendix D). A

hydrological connection was determined to be absent if (1) the wetland was located too far from another jurisdictional feature, and/or (2) the wetland did not have a discernable surface water connection that would allow surface water to be transported from the wetland directly into a jurisdictional feature. The hydrologic analysis (Appendix D) indicates that overland or subsurface flow does not enter culverts or other tributaries with connectivity to navigable waters including Corralitos Creek, Harkin Slough or the Pacific Ocean. Overland flow was considered where such flow may occur during average (2-year) storm events based on the presence of surface water flow indicators such as sediment deposits, ditches, and/or culverts that collect surface flow and direct it to downstream navigable waters. The perennial freshwater marsh is separated from a seasonal wetland to the north by a levee approximately ten feet wide by 350 feet in length. Water contained within the marsh has direct groundwater connectivity with the adjacent seasonal wetland; however, under normal conditions, standing water in the seasonal wetland either evaporates or sheets into a large apple orchard to the southeast.

The freshwater marsh contained several feet of standing water at the time of the late spring site visit and was dominated entirely by hydrophytic plants including California bulrush (*Scirpus californicus*, OBL), narrowleaf cattail (*Typha angustifolia*, OBL), swamp smartweed (*Polygonum amphibium* var. *emersum*, OBL), and arroyo willow (OBL). The hydric soil indicators observed along the edge of the sampled marsh included low-chroma coloration with prominent redoximorphic mottles. Mottling was typically observed as oxidation along root channels and iron masses in the soil matrix.

It was initially presumed that the levee separating the freshwater marsh from the seasonal wetland to the north was an upland feature. However, upon closer inspection, a representative sample point taken along the top of the levee met the three wetland criteria and is considered to be located within a wetland. Although this feature does not have topography typical of jurisdictional wetlands, the levee is completely dominated by swamp smartweed. Additionally, the soil pit associated with this sample point revealed soil saturation throughout the upper 12 inches of the profile and evidence of hydric soil formation. The levee has been mapped as an extension of the freshwater marsh (Appendix B).

EcoSystems West determined that an irrigated agricultural basin (0.31 acres) in the northwest corner of the property was likely exempt from Section 404 jurisdiction due to both the *SWANCC* and *Rapanos* Supreme Court decisions. While this feature had characteristics of freshwater marsh habitat, it does not appear to have a hydrological connection to navigable “Waters of the U.S”. Moreover, this man-made wetland is actively flooded via mechanical pumps and retained water is used for irrigating agricultural crops throughout the property. Although situated in a deep basin, it is unlikely that this man-induced wetland would continue to maintain characteristics of freshwater marsh if irrigation was removed.

Seasonal Wetlands

Seasonal wetlands are primarily characterized by shallow depressional topography and are supported by a combination of direct precipitation, surface runoff from adjacent uplands, and seasonal fluctuations in the water table. Two seasonal wetlands totaling 1.87 acres were located within the Atkinson Lane project area. The larger seasonal wetland (1.58 acres) is located

immediately north of the levee abutting the potential freshwater marsh. The wetland is deepest in the southwest corner where it meets the levee. It contained several inches of standing water at the time of the delineation site visit and is dominated entirely by swamp smartweed. From here it gradates into shallower topography with plant species more typical of seasonal wetlands of the region. Dominant plants throughout this portion of the wetland include curly dock (*Rumex crispus*, FACW-), Italian ryegrass (*Lolium multiflorum*, FAC), and prickly ox tongue (*Picris echioides*, FAC). Several mature arroyo willows (*Salix lasiolepis*, OBL) are also found along the northwest boundary of the wetland. As mentioned above, this feature is likely isolated from other Waters of the U.S. and standing water either evaporates or sheets overland and dissipates into an adjacent apple orchard to the southwest (Appendix D).

A smaller seasonal wetland (0.29 acres) is located immediately north of the larger freshwater marsh and west of an ephemeral drainage. This marginal wetland feature appears to be only periodically saturated during the rainy season and is comprised of a mix of hydrophytic and upland plants typical of seasonal wetlands including Italian ryegrass, curly dock, soft chess and spreading rush (*Juncus patens*, FAC). Although this feature has a direct hydrological connection to the marsh and ephemeral drainage, according to the hydrologic analysis (Appendix D), it is not connected to navigable waters of the U.S. and therefore would not be subject to Section 404 jurisdiction.

Wetland hydrology indicators observed in the sampled seasonal wetlands generally consisted of a combination of primary and secondary indicators. Primary indicators of wetland hydrology included standing water and/or saturated soils in the upper 12 inches of the soil profile. Secondary indicators observed included oxidized root channels, satisfaction of the FAC-neutral test, and “other” indicators such as depressional topography. Hydric soil indicators in the sampled seasonal wetland consisted of low chroma colors and redoximorphic characteristics such as mottling and oxidized root channels.

Ephemeral Drainage/Swale

A linear drainage swale (0.28 acres) is located in the northwestern corner and appears to convey surface water into the larger freshwater marsh following storm events. Because the swale is almost entirely vegetated and lacks a clearly defined bed, bank or OHW mark, it is best classified as a wetland rather than “other waters” of the U.S. The uppermost portion of the feature is dominated by Himalayan blackberry (*Rubus discolor*, FACW), tall flatsedge (*Cyperus eragrostis*, FACW), Italian ryegrass and curly dock while the lower half is comprised of an overstory of Pacific willow (OBL) and a dense understory of Himalayan blackberry and smartweed. Soils were saturated at the time of the delineation site visit but flowing or standing water was not observed at this time. This feature is directly connected to the isolated freshwater marsh; however, according to the hydrologic analysis (Appendix D) there is no evidence that it satisfies the significant nexus criteria and therefore is considered as an isolated wetland.

4.4 Problem Areas/Atypical Situations

Several wetlands within the project area are classified as seasonal wetlands which meet all three wetlands parameters during wetter portions of the year but often lack wetland indicators of

hydrology and/or vegetation during the drier portion of the growing season. The primary sources of hydrology for the seasonal wetlands appear to be from precipitation and runoff from surrounding uplands. Because the wetland delineation was completed in spring, it is not expected that wetland indicators would have been lacking at the time of the site visit. However, plant species composition within the seasonal wetlands is likely to differ somewhat during later site visits and evidence of wetland hydrology may be more difficult to discern outside of the rainy season. Atypical situations include wetlands that are the result of unauthorized activities, natural events, or man-induced wetlands purposely or incidentally created by human activities. These include irrigated wetlands and impoundments (such as levees) that alter the natural hydrology of an area. Both freshwater marsh features identified within the project area are man-induced wetlands. Atypical wetlands are evaluated by the Corps on a case-by-case basis to determine whether “normal circumstances” are present.

5.0 CONCLUSION

The Atkinson Lane project area has four distinct areas with wetland indicators (Appendix B). These areas have hydric soils characterized by low-chroma colors and/or redoximorphic characteristics, a predominance of hydrophytic vegetation with FAC, FACW, and OBL classified plants, and wetland hydrology characterized by drainage patterns, sediment deposits, oxidized root channels, and/or satisfaction of the FAC-neutral test. However, despite meeting the three wetland indicators, these features are characterized as isolated wetlands lacking direct connectivity to navigable Waters of the U.S., according the hydrologic analysis conducted by RBF Consulting. Moreover, the irrigated agricultural basin in the northwest corner of the project area is actively flooded with mechanical pumps and is unlikely to function as a freshwater marsh if irrigation was discontinued. Therefore, these features are not likely subject to federal jurisdiction although they may still be regulated under Section 401 of the CWA and by other local laws /ordinances pertaining the project area.

In addition to potential jurisdictional wetlands, the project area contains approximately 1,427 linear feet (0.49 acres) of Corralitos Creek, a potentially jurisdictional river. A summary of potentially jurisdictional and isolated wetlands and other waters is presented in Table 2.

Table 2. Summary of Potential Section 404 Jurisdictional Wetlands and Waters of the U.S.

Feature Type	Potential Jurisdictional Area (Acres)	Potential Non-Jurisdictional Area (Acres)
Freshwater Marsh	0.0	2.38
Seasonal Wetland	0.0	1.87
Ephemeral Drainage/Swale	0.0	0.28
Corralitos Creek	0.49 (1,427 linear feet)	0.0
Total	0.49 Acres	4.53Acres

The conclusion of this delineation is based on conditions observed at the time of the field survey conducted on May 1, 2008.









6.0 REFERENCES

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Appendix A. Map of Potential Jurisdictional Wetlands and Waters of the U.S

Appendix A.

Map of Potential Jurisdictional Wetlands and Waters of the U.S.

-  Project Boundary (68.4 acres)
-  Corralitos Creek (0.49 acres/1,427 l. ft)
-  Freshwater Marsh (2.07 acres)
-  Seasonal Wetland (1.85 acres)
-  Isolated Marsh (0.31 acres)
-  Ephemeral Drainage (0.29 acres)
-  Non-wetland Riparian (4.52 acres)
-  Sample Points



Drawn by: Justin Devilla
Date: July 2008
Filepath: E:\Atkinson Lane\Wetland Delineation.mxd



Appendix B. Army Corps Wetland Delineation Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla Ecosystems West</u>	Date: <u>5/1/03</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>possible seasonal wetland</u>	Community ID: <u>Upland</u> Transect ID: _____ Plot ID: <u>SP2</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Hordeum marinum</u>	<u>H</u>	<u>FAC</u>	9. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>
2. <u>Avena barbata</u>	<u>H</u>	<u>NL</u>	10. <u>Bromus hordeaceus</u>	<u>H</u>	<u>FACU-</u>
3. <u>Vicia villosa</u>	<u>H</u>	<u>NL</u>	11. _____	_____	_____
4. <u>Vulpia bromoides</u>	<u>H</u>	<u>FACW</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: Only 50% of dominant + sub-dominant plants are FAC - OBL. Does not pass FAC-neutral test; therefore not dominated by wetland vegetation.

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <input checked="" type="checkbox"/> <u>No Recorded Data Available</u>	Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> <u>Oxidized Root Channels in Upper 12"</u> ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>712</u> (in.) Depth to Saturated Soil: <u>712</u> (in.)	
Remarks: <u>Oxidized root channels in upper 6" of soil profile but no other evidence of wetland hydrology</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input type="radio"/> No <input checked="" type="radio"/> Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>SP2</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Polygonum amphibium</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>var. emersum</u>	_____	_____	10. _____	_____	_____
3. <u>Scirpus californicus</u>	<u>H</u>	<u>OBL</u>	11. _____	_____	_____
4. <u>Typha latifolia</u>	<u>H</u>	<u>OBL</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Sample point located along southern edge of marsh dominated by obligate plants

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): _____ Stream, Lake, or Tide Gauge _____ Aerial Photographs <input checked="" type="checkbox"/> Other - <u>marked on soil survey</u> _____ No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>10</u> (in.) Depth to Saturated Soil: <u>6</u> (in.)	
Remarks: <u>Taken at wetland edge, soils not inundated but saturated in upper 12" of soil profile.</u>	

SOILS

SP2

Map Unit Name (Series and Phase): "Water" Drainage Class: N/A
 Taxonomy (Subgroup): N/A Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		10 YR 2/1	None	None	Clay loam / muck

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Very dark, low chroma soils with high organic content

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No

Remarks: Sample point located at edge of freshwater marsh/detention basin.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>Levee berm</u>	Community ID: _____ Transect ID: _____ Plot ID: <u>SP3</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Polygonum amphibium</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>var. emersum</u>	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Dominated entirely by smartweed

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: ___ Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>16</u> (in.) Depth to Saturated Soil: <u>8"</u> (in.)	
Remarks: <u>Despite sample point location on levee berm, soil pit was saturated in upper 12 inches of the profile</u>	

SOILS

SP 3

Map Unit Name (Series and Phase): Elder sandy loam Drainage Class: well drained
 Taxonomy (Subgroup): thermic Eumelic Haploxerolls Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				Organic detritus
2-16	A	10YR 2/1	10YR 5/6	10% Prominent	clay

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Clay soil with prominent oxidized rhizospheres and low chroma

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No

Remarks: Sampling point is located on a levee berm approximately 8-10' above adjacent standing water in marsh but meets all three wetland criteria.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Devilla Ecosystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>seasonal drainage w/ vegetation & poorly defined bed + bank.</u>	Community ID: <u>Wetland</u> Transect ID: _____ Plot ID: <u>SP4</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC</u>	9. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>
2. _____	_____	_____	10. <u>Bromus hordeaceus</u>	<u>H</u>	<u>FACU -</u>
3. _____	_____	_____	11. <u>Lactuca scariola</u>	<u>H</u>	<u>FAC</u>
4. _____	_____	_____	12. <u>Pennis echinoides</u>	<u>H</u>	<u>FAC*</u>
5. _____	_____	_____	13. <u>Geranium dissectum</u>	<u>H</u>	<u>NL</u>
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Pit taken in driest portion of drainage w/out Himalayan blackberry or willows. Dominated by Italian ryegrass.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>> 12</u> (in.) Depth to Saturated Soil: <u>6</u> (in.)	
Remarks: <u>Soil profile was saturated in upper portion of cross section. Deep tire ruts from ATV in channel also indicate extent of saturation.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>Seasonal wetland</u>	Community ID: _____ Transect ID: _____ Plot ID: <u>SP5</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Polygonum amphibium</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>var. emersum</u>	<u>H</u>	_____	10. _____	_____	_____
3. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>	11. _____	_____	_____
4. <u>Bromus hordeaceus</u>	<u>H</u>	<u>FACU</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 66%

Remarks: Despite dominance by wetland vegetation in the vicinity of the sample point, this wetland feature has a diverse mix of upland vegetation.

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>12</u> (in.) Depth to Saturated Soil: <u>>12</u> (in.)	
Remarks: <u>No soil saturation or inundation but meets secondary indicators of wetland hydrology.</u>	

SOILS

SP5

Map Unit Name (Series and Phase): Watsonville loam Drainage Class: somewhat poorly drained
 Taxonomy (Subgroup): thermic Xeric Agricbolls Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 2/1	10YR 5/6	S2 / Prominent	loamy clay

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input checked="" type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soils have low chroma and oxidized root channels

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes No
Wetland Hydrology Present? <input checked="" type="radio"/> Yes No (Circle)	
Hydric Soils Present? <input checked="" type="radio"/> Yes No	

Remarks: The sampling point meets all three wetland criteria; however the seasonal wetland has marginal coverage by hydrophytic plants throughout its entirety

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Upland</u> Transect ID: Plot ID: <u>SP6</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Bromus hordeaceus</u>	<u>H</u>	<u>FACW-</u>	10. _____	_____	_____
3. <u>Raphanus sativus</u>	<u>H</u>	<u>NL</u>	11. _____	_____	_____
4. <u>Vicia sativa</u>	<u>H</u>	<u>FACU</u>	12. _____	_____	_____
5. <u>Geranium dissectum</u>	<u>H</u>	<u>NL</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 20%

Remarks: Not dominated by wetland vegetation.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>12</u> (in.) Depth to Saturated Soil: <u>>12</u> (in.)	
Remarks: <u>Very compacted soil with no evidence of wetland hydrology.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla Ecobystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>SP7</u>
Do Normal Circumstances Exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.) <u>Seasonal Wetland.</u>	Community ID: <u>Wetland</u> Transect ID: _____ Plot ID: <u>SP7</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1. <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC</u>	9. <u>Vicia sativa</u>	<u>H</u>	<u>FACU</u>
2. <u>Hordeum marinum</u>	<u>H</u>	<u>FAC</u>	10. <u>Geranium dissectum</u>	<u>H</u>	<u>NL</u>
3. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Dominated by hydrophytic vegetation, but sub-dominant plants are not wetland indicator species.

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available	Wetland hydrology indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <u>X</u> Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data <u>X</u> FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>12</u> (in.) Depth to Saturated Soil: <u>>12</u> (in.)	
Remarks: <u>Meets 2ndary indicators but only marginally.</u>	

SOILS

SP7

Map Unit Name (Series and Phase): <u>Watsonville loam</u>		Drainage Class: <u>somewhat poorly drained</u>			
Taxonomy (Subgroup): <u>thermic Xeric Argialbolls</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12</u>		<u>10YR 3/1</u>	<u>10YR 5/6</u>	<u>2% Faint</u>	<u>loam</u>
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Soils have a chroma of 1 and oxidized root channels/mottles</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle) Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	(Circle) Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <u>Despite marginal vegetation and hydrology indicators, this sample point meets the three criteria and is located within a wetland.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>Recently burned, shallow non-native aggregate landfill.</u>	Community ID: <u>Upland</u> Transect ID: _____ Plot ID: <u>SP8</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Hordeum maritimum</u>	<u>H</u>	<u>FAC</u>	9. <u>Plantago lanceolata</u>	<u>H</u>	<u>FAC-</u>
2. <u>Bromus hordeaceus</u>	<u>H</u>	<u>FACU-</u>	10. <u>Bromus diandrus</u>	<u>H</u>	<u>NL</u>
3. <u>Trifolium hirtum</u>	<u>H</u>	<u>NL</u>	11. <u>Vulpia bromoides</u>	<u>H</u>	<u>FACW</u>
4. <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

sub-

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: Mix of ruderal plants; including sub-dominant plants, this area is not dominated by hydrophytic plants

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>4</u> (in.) Depth to Saturated Soil: <u>>4</u> (in.)	
Remarks: <u>No evidence of wetland hydrology.</u>	

SOILS

SP8

Map Unit Name (Series and Phase): <u>Watsonville loam</u>		Drainage Class: <u>somewhat poorly drained</u>	
Taxonomy (Subgroup): <u>thermic Xeric Agrialbols</u>		Field Observations Confirm Mapped Type? Yes <input checked="" type="radio"/> No	
Profile Description:			
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)
			Mottle Abundance/Contrast
			Texture, Concretions, Structure, etc.
<u>0-4</u>		<u>10 YR 3/3</u>	
<u>4+</u>		<u>N/A</u>	
			<u>loam</u>
			<u>Coarse aggregate</u>
Hydric Soil Indicators:			
<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions		
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils		
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils		
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List		
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List		
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)		
Remarks: <u>Area is level from apparent fill used to construct power substation on adjacent parcel. No evidence of hydric soil formation.</u>			

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No (Circle)	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No	
Hydric Soils Present? Yes <input checked="" type="radio"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="radio"/> No
Remarks: <u>None of the three wetland criteria met. Therefore, sampling point is not located within a wetland.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla Ecosystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: _____
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Upland</u> Transect ID: _____ Plot ID: <u>SP9</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Avena barbata</u>	<u>H</u>	<u>NL</u>	9. <u>Pennis echinoides</u>	<u>H</u>	<u>FAC</u>
2. <u>Raphanus sativus</u>	<u>H</u>	<u>NL</u>	10. <u>Bromus diandrus</u>	<u>H</u>	<u>NL</u>
3. <u>Vicia sativa</u>	<u>H</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Geranium dissectum</u>	<u>H</u>	<u>NL</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: This area is not dominated by wetland vegetation.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>12</u> (in.) Depth to Saturated Soil: <u>>12</u> (in.)	
Remarks: <u>Very hard soil, no evidence of wetland hydrology aside from faint mottles in upper portion of soil profile</u>	

SOILS

SP9

Map Unit Name (Series and Phase): Watsonville loam Drainage Class: somewhat poorly drained
 Taxonomy (Subgroup): thermic Xeric Agrialbolls Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	10YR 5/6	1% faint	clay loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Mottling was very faint, otherwise soils were not low chroma

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No	
Hydric Soils Present? Yes <input checked="" type="radio"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="radio"/> No

Remarks: Despite some faint mottling, there was no evidence of wetland vegetation, hydrology, or soils. This sampling point is not located within a wetland.

DATA FORM
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Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davilla EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>Seasonal Wetland</u>	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>SPI0</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Polygonum amphibium</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>var. emersum</u>	_____	_____	10. _____	_____	_____
3. <u>Picoris echoides</u>	<u>H</u>	<u>FAC</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Sample point completely dominated by wetland vegetation.

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <u>X</u> No Recorded Data Available	Wetland hydrology indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <u>X</u> Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data <u>X</u> FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>12</u> (in.) Depth to Saturated Soil: <u>>12</u> (in.)	
Remarks: <u>Sample point located in area that is clearly seasonally inundated. Very pronounced, bright mottles in soil profile.</u>	

SOILS

SP10

Map Unit Name (Series and Phase): <u>Watsonville loam</u>		Drainage Class: <u>somewhat poorly drained</u>			
Taxonomy (Subgroup): <u>thermic Xeric Agrialbolls</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-14</u>		<u>10 YR 3/1</u>	<u>7.5 YR 5/8</u>	<u>10% Prominent</u>	<u>clay loam</u>
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input checked="" type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Very low chroma with bright prominent mottles</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes No (Circle)	
Wetland Hydrology Present? <input checked="" type="radio"/> Yes No (Circle)	
Hydric Soils Present? <input checked="" type="radio"/> Yes No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes No
Remarks: <u>This area meets all three wetland criteria.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
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Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.) <u>Seasonal Wetland</u>	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>SP11</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Salix lasiolepis</u>	<u>S</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>	10. _____	_____	_____
3. <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Completely dominated by wetland vegetation

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>16</u> (in.) Depth to Saturated Soil: <u>>16</u> (in.)	
Remarks: <u>Area meets secondary indicators of wetland hydrology</u>	

SOILS

SP11

Map Unit Name (Series and Phase): <u>Watsonville loam</u>		Drainage Class: <u>somewhat poorly drained</u>			
Taxonomy (Subgroup): <u>thermic Xeric Agrisolbolls</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		10 YR 3/2	7.5 YR 5/6	5% Distinct	loam
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions		<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils	
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input checked="" type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Listed on National Hydric Soils List		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Reducing Conditions					
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors					
Remarks: <u>Not as dark as other sample points in this seasonal wetland but a chroma of 2 with distinct mottles provides evidence of hydric soil formation.</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes No (Circle)	
Wetland Hydrology Present? <input checked="" type="radio"/> Yes No (Circle)	
Hydric Soils Present? <input checked="" type="radio"/> Yes No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes No
Remarks: <u>This sample point is located at the northern boundary of large seasonal wetland.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Dealle EcoSystems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Upland</u> Transect ID: _____ Plot ID: <u>SP12</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Rumex crispus</u>	<u>H</u>	<u>FACW-</u>	9. _____	_____	_____
2. <u>Vicia sativa</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Avena barbata</u>	<u>H</u>	<u>NL</u>	11. _____	_____	_____
4. <u>Bromus diandrus</u>	<u>H</u>	<u>NL</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 25%

Remarks: This sample point is not dominated by wetland vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>> 16</u> (in.) Depth to Saturated Soil: <u>> 16</u> (in.)	
Remarks: <u>Despite presence of oxidized root channels, no other primary or secondary indicators of wetland hydrology were observed.</u>	

SOILS

SP12

Map Unit Name (Series and Phase): Elder sandy loam Drainage Class: well drained
 Field Observations
 Taxonomy (Subgroup): thermic Cumulic Haploxerolls Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		10YR 3/1	7.5YR 5/8	7% Prominent	loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Area has low chroma soils and bright prominent mottles; therefore there is evidence of hydric soil formation.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	(Circle)
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Hydric Soils Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: Despite evidence of hydric soils, the area does not meet hydrophytic vegetation or wetland hydrology criteria.

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project/Site: <u>Atkinson Lane</u> Applicant/Owner: <u>Santa Cruz County</u> Investigator: <u>Justin Davila EWS Systems West</u>	Date: <u>5/1/08</u> County: <u>Santa Cruz</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.) <u>Man-made isolated detention/irrigation basin</u>	Community ID: <u>Wetland</u> Transect ID: _____ Plot ID: <u>SP13</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Scirpus californicus</u>	<u>H</u>	<u>OBL</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Sample point is dominated by bulrush and standing water.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>3</u> (in.) Depth to Free Water in Pit: <u>N/A</u> (in.) Depth to Saturated Soil: <u>N/A</u> (in.)	
Remarks: <u>Area recorded as "water" in SCS soil survey and was inundated at the time of the delineation site visit.</u>	

SOILS

SP13

Map Unit Name (Series and Phase): <u>"Water"</u>		Drainage Class: <u>N/A</u>			
Taxonomy (Subgroup): <u>N/A</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-12</u>		<u>3/10Y (Gly 1)</u>	<u>7.5 YR 5/8</u>	<u>50% Prominent</u>	<u>clayey muck</u>
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils			
<input checked="" type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Inundated detention basin with gleyed soils</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <u>Sample point is located in a marsh / irrigation detention basin.</u>	

Appendix C. Representative Photographs of the Atkinson Lane Property



Top. Potentially jurisdictional freshwater marsh in north-central portion of the Project Area.

Bottom. Sample point of levee berm separating freshwater marsh from seasonal wetland.





Left. Sample point 13 in potentially isolated detention basin in northwest of property.

Right. Sample point 4 dominated by Italian ryegrass in ephemeral drainage/swale.





Top. Sample point 10 in seasonal wetland north of levee dominated by smartweed.

Bottom. Overview of seasonal wetland adjacent to freshwater marsh and ephemeral drainage/swale.



**Appendix D. Atkinson Lane Specific Plan Stormwater Constraints and Opportunities
Memorandum Prepared by RBF Consulting Hydrologist**

MEMORANDUM

To: City of Watsonville

JN 7010118

From: RBF Consulting

Date: March 13, 2008

Subject: Atkinson Lane Specific Plan Stormwater Constraints and Opportunities

This memorandum addresses the current storm water drainage on the Atkinson Lane project area as well as possible opportunities and constraints associated with the storm water on the project site as it relates to future development.

The project site is currently used for agricultural purposes with open space that has two wetlands/runoff-storage areas as shown in Exhibit 1.

Soil Conditions

According to the National Cooperative Soil Survey by the National Resources Conservation Service, Hydrologic soil groups A, B, C, and D are all present on the project site as shown in Exhibit 2A. The eastern and southern portions of the project area have Type A and B soils which have moderate to high infiltration rates. The western and northern portions of the project area have Type C and D soils which have slow to very slow infiltration rates with high runoff potential (see Exhibits 2A through 2D).

Existing Conditions

Drainage Areas

The project area was divided into five drainage areas as shown in Exhibit 1 for the purpose of evaluating existing conditions. The areas of the drainage areas are presented in Table 1.

Table 1. Project drainage areas.

Identification	Area (acres)
DA 1	1.7
DA 2	17.8
DA 3	34.9
DA 4	5.8
DA 5	4.2

The area directly adjacent to Corralitos Creek on the north portion of the project site drains into the Creek and does not contribute to the three drainage areas. Additionally, area on the eastern portion of the project area drains to the east and south from the drainage area.

Drainage Area 1 contains a runoff storage area that is nearly half of its total drainage area. The runoff will pond in this storage area. Because no runoff is conveyed to the drainage area from an offsite location, there is little potential for overtopping the storage area. Instead, the storage area will retain the water until it infiltrates or evaporates.

Drainage Area 2 also has a runoff storage area where ponding occurs. The offsite residential development to the north of Drainage Area 2 is tributary to Drainage Area 2. When the water surface elevation in the storage area is at 74 feet, the surface area is approximately 1.7 acres. At a water surface elevation of 78 feet, the storage area covers approximately 4.8 acres, at which level additional runoff would likely spill east and south towards Crestview Park, along the existing overland release path illustrated in Exhibit 1.

The majority of the site is in Drainage Area 3, which drains to the south towards Crestview Park. Crestview Park contains a detention basin connected to the City's stormwater conveyance system.

Drainage Area 4 drains north to Corralitos Creek and east of the project area to the adjacent agriculture fields. Drainage Area 5 drains south and east of the project area to the adjacent agriculture fields.

Existing Storm Drain System

Based on information obtained from City provided GIS data, runoff from approximately 23 acres of residential development just north of the project site collects in a storm drain system and discharges through a 12" pipe directly to Drainage Area 2.

A 36" storm drain pipe exists under Brewington Avenue just east of the second storage area. This storm drain pipe collects runoff from approximately 22 acres south and west of the project area. This storm drain pipe conveys the runoff south to the Crestview Park which acts as an off-channel detention basin. At the northwest side of Crestview Park, flow exits a 42" storm drain pipe into a short section of concrete lined channel and then flows into a 18" storm drain pipe. During low-flow conditions, all of the runoff is contained in the channel and bypasses Crestview Park. During high-flow storm events, runoff spills over the channel and into the park. A 12" outlet is located on the southwest corner of the Park.

A 3-acre residential development east of Crestview Park and south of the project area also drains into the storm drain conveyance system upstream of the detention basin.

The existing storm drain system around the project area, according to GIS data from the City, is shown in Exhibit 3

Hydrology

Design precipitation is based off the County of Santa Cruz Design Criteria. The rainfall intensity for the 100-year, 60 minute duration event is approximately 1.3 inches per hour, based on page 48 of the County’s Design Criteria. These can be converted to other duration and return periods based on the intensity duration curves on page 49. The resulting 24 hour depths are shown in Table 2.

Table 2. Precipitation depths based on the County of Santa Cruz Design Criteria

Return Period (years)	24-Hour Depth (in)
RP 2	3.23
RP 5	4.28
RP 10	5.04
RP 15	5.49
RP 25	6.05
RP 50	6.80
RP 100	7.56

The curve numbers that estimate the amount of runoff based on soil type and land use were taken from Urban Hydrology for Small Watersheds (TR-55) by the US Department of Agriculture, pages 2-5 through 2-8. The curve numbers of the drainage areas are presented in Table 3.

Table 3. Curve numbers for the drainage areas.

Drainage Area	CN	Percent Impervious	Description
1	79	0	Open Space, Fair Condition, Soil Type C
2	71	0	Meadow-continuous grass, Soil Type C
3	72	0	Row Crops, Straight Row, Soil Type A

Flooding Potential

The area directly adjacent to Corralitos Creek is currently designated by FEMA as a Zone AE flood zone with a 100-year water surface elevation varying from approximately 90 feet at the western edge to 85 feet near the eastern edge of the project as shown in Exhibit 4.

While the runoff storage area in Drainage Area 2 is not currently designated as a flood zone, there is still flooding risk as surface water ponds in the area. This risk can be understood in the context of expected precipitation depths. According to the Watsonville Storm Drainage Master Plan, the average yearly precipitation for the City of Watsonville is 20.7 inches, and the average annual evaporation for the region is 67.5 inches, however the most evaporation would occur during the summer months. In an average year, it is estimated that Drainage Area 2 would receive approximately 33 acre-feet of runoff, assuming 50% is lost to initial abstraction and infiltration. The pond volume between 74 feet and 78 feet elevation is about 10 acre-feet. Considering expected runoff into the storage area in Drainage Area 2, overflows would be a relatively common occurrence, though overflows may not occur during dry years.

Based on precipitation data compiled by Mr. Jim Goodrich, former California State Climatologist, the most extreme year for precipitation between 1874 and 2001 was 1998 when approximate 46.26 inches of precipitation fell on the City of Watsonville. For this amount of precipitation Drainage Area 2 would receive approximately 74 acre-feet of runoff, much of which would be expected to spill over and flow towards Crestview Park.

Hydrology and Hydraulics Model

To estimate the peak flows and volumes of runoff for the design events, a model was created in the computer program xpsmm. The SCS method was used to generate hydrographs for the existing conditions. The SCS Type I rainfall distribution (see TR-55, page B-2) was scaled for each of the precipitation depths in Table 2.

The model incorporated runoff from offsite developments north of the project area that discharges to Drainage Area 2 and south and west of the project area that discharges to the storm water conveyance system at Crestview Park. These areas are shown as Offsite Areas 1, 2, and 3 in Exhibit 1.

The results of the model show that all of the runoff generated in Drainage Area 1 is retained in the storage area located in Drainage Area 1. The storage area in Drainage Area 2 spills over during the 15, 25, 50, and 100-year events. Overflow rates were calculated based on a starting water surface elevation of 74 feet and an elevation versus capacity relationship developed from the available topographic data. For the 15-year and 25-year events, the peak flow between Drainage Area 2 and Drainage Area 3 is 0.8 cfs and 2.8 cfs, while the peak flow for the 50 and 100-year events is 2.9 and 3.7 cfs respectively.

Potential Impacts of Site Grading

Development of the project area will most likely change the site grading. This may impact both the drainage boundaries and the effective onsite storage.

Altering Drainage Boundaries

Development of the site will potentially alter the existing drainage area boundaries. This may increase or decrease the number of drainage areas within the project area and establish new points of concentration for the storm water runoff.

It is anticipated that the runoff from existing conditions Drainage Areas 4 and 5 would be collected and drained toward the City's storm drainage system to avoid creating new outfall locations.

Altering Effective Onsite Storage

Grading of the developed sight may potentially eliminate the storage area in Drainage Area 1 and decrease the footprint of the storage area in Drainage Area 2. The elimination of this first storage area would redirect runoff into another drainage area.

If the surface area of the storage area in Drainage Area 2 is decreased, it has the potential to increase the frequency and severity of spillage due to a decrease in storage volume, assuming the same amount of runoff is directed to the storage area. However, potential developments in the project area may alter or divert the volume of runoff directed to the storage area. The potential impacts of any diversion would need to be considered.

Potential impacts of increased impervious area

The possible land use plan contains a variety of uses including high-density residential, single family residential, estate homes, mixed-use, and park/open space as shown in Exhibit 5. The development of these areas would increase the impervious area of the project site and would have the potential to increase the peak discharge rates from the project site as well as the volume of runoff. A summary of the resulting SCS curve numbers due to development is shown in Table 4 (see TR-55, pages 2-5 through 2-8).

Table 4. Land use and SCS curve numbers for the possible land uses.

Land Use	Area	Hydrologic Soil Group	Pervious Area CN	Percent Impervious*
Single Family Residential	17.0	B	61	38
Medium Family Residential	1.2	B	61	38
Medium Family Residential	1.1	D	84	65
High Density Residential	12.9	D	84	65
Park	12.1	B	61	0
Pond	2.9	D	84	0
Estate Homes	7.9	A	49	20
Mixed Use/PG&E	1.7	D	84	72

* CN of 98 used for impervious areas

Using the precipitation information presented previously, runoff generated by the potential land use plan was compared to the runoff generated by the existing condition in the xpswmm computer model.

Actual existing condition site runoff is impacted by volumetric storage routing through storage area 2 and Crestview Park. Future condition runoff will be impacted by changes to site grading that alters storage routing and the overall increase in runoff associated with new impervious area.

Storage routing through Crestview Park assumed that the tennis courts on the southwest corner of Crestview Park are estimated to be at an elevation of 71' due to a lack of more precise survey data. The volume of the detention basin when the water surface elevation is at 71' is approximately 4 acre-feet. When the water surface elevation of the detention basin exceeds 71', the excess runoff will spill onto the tennis courts and onto Crestview Drive and south on Brewington Avenue. For the pre-development conditions, this occurs somewhere between the 15-year and 25-year storm events. Assuming the same size detention basin for the post-development conditions, the spilling could occur for precipitation between the 2-year and the 5-year events.

In order to mitigate for increased runoff due to development, an additional 4 acre-feet would be necessary to reduce spilling to between the 15-year and 25-year event as presently occurs in the existing detention basin. In order to mitigate for development and provide enough storage for the 100-year event, 2 acre-feet more, for a total of 6 additional acre-feet of storage would be necessary.

Potential Flooding Concerns

As previously mentioned, the area directly adjacent to Corralitos Creek is currently designated by FEMA as a Zone AE flood zone. No changes to the flood zone are proposed.

As described previously, the wetlands area in Drainage Area 2 has the potential for flooding both the area below the maximum water surface elevation and the area adjacent to it that receives the overflow when the maximum water surface elevation is exceeded. Addition of impervious area that drains directly to the storage area may increase the flooding potential. However, redirecting the offsite drainage away from the storage area may decrease the flooding potential, but would need to be mitigated. Also, as development occurs between the storage area and Crestview Park, the existing overland release path may be altered or removed which may increase the flood risk.

As land use plans are evaluated, the flooding risk of the storage area in Drainage Area 2 will also need to be evaluated carefully in order to account for the risk of spillage or flooding.

Potential Water Quality Impacts

Development of the project site has the potential to contribute to the pollutants that enter the storm water conveyance system. “All developments are required to incorporate a Structural or Treatment Control BMP or combination of BMPs best suited to reducing the pollutant loadings in storm water runoff to the Maximum Extent Practicable (see Watsonville Storm Water Land Development Standards, Section 2).”

Potential Mitigation Measures

The City’s Storm Water Land Development Standards require that “No development of 1 acre or larger shall cause higher rates of storm water runoff than those that existed prior to the project (Section 1).” Because development has the potential to increase storm water runoff rates, steps must be taken to mitigate the increased rates as well as address the risk of flooding.

Mitigation for Impacts to Surface Water Flooding

Because the storage area in Drainage Area 2 has the potential for spilling and flooding, the impacts of surface water flooding would need to be mitigated. A passive regulation system could be developed that allows the wetlands area to drain to a detention area downstream when there is volume available in the downstream detention area. This could be accomplished with

gates and/or valves and sensors to maintain a more constant water surface elevation in the storage area. This would increase the usefulness of the storage area as a detention area, but also decrease the risk of spillage.

In case of failure of the system or extreme events, an overland release path would need to be developed to mitigate the impacts of flooding from overflows of the wetlands area. This could be accomplished by grading the streets to allow excess flow to be detained or routed to other areas, or creating a channel to collect and convey flows.

Mitigation for Impacts to Downstream Discharges

To mitigate the impacts of development of the project site, Crestview Park could be expanded north, onto the project site, to increase the volume of runoff that it could capture.

Also, the presence of Hydrologic Soil Groups A and B in the project area may have the potential to allow infiltration vaults or trenches to be used to decrease the discharge of runoff downstream. The areas of Type A and B soil would need to be studied by a geotechnical engineer to confirm infiltration rates and the suitability of such areas for storm water infiltration vaults or trenches.

Mitigation for Impacts to Water Quality

The City's Storm Water Land Development Standards list several required items that are to be implemented during the design and entitlement process that mitigate for impacts on both water quality and increase in downstream discharge rates:

- Concentrate or cluster development on portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands when present on site (a 50-foot setback from the edge of wetland and riparian areas is required).
- Convey runoff safely from the tops of slopes and stabilize disturbed slopes (see City Erosion Control Standards for more information)
- Utilize natural drainage systems to the Maximum Extent Practicable
- Stabilize permanent channel crossings
- Vegetate slopes with native species appropriate for the surrounding habitat.

- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game (Sections 3 and 4)

Additionally, Crestview Park can be used to help meet the City's BMP requirements. The current function of the Park as an off-channel detention basin can be altered slightly to allow the upstream runoff to pass through a biofilter such as a vegetated swale or strip in the detention basin before being channeled back into the City's stormwater conveyance system. Most of the park area could be retained as a recreation area, while the portion dedicated to the biofilter would be affected during frequent precipitation events.

According to the City's Storm Water Land Development Standards, volumetric-based storm water quality BMPs, such as biofilters, are based on the Directly Connected Impervious Area (DCIA) in the developed area. Based on the possible land uses, the percentage of DCIA would be less than 50%. The required storage volume for 50% DCIA would be about 2 acre-feet. For less than 50% DCIA, the required storage volume would decrease by about 0.25 acre-feet for every 10% reduction in DCIA.

Exhibit 1: Existing Drainage Areas

Exhibit 2: Soil Survey

Exhibit 3: Existing Storm Drain System

Exhibit 4: FEMA FIRMette

Exhibit 5: Post-Development Possible Land Use

July 30, 2008

Attn: Bill Davilla
Ecosystems West Consulting Group
819 ½ Pacific Avenue, Suite 4
Santa Cruz, CA 95060

Attn: Dave Pereksta
Ventura Fish and Wildlife Service Office
2493 Portola Road, Suite B
Ventura, CA 93003

Subject: Special-status Amphibian and Reptile Preliminary Site Assessment for the City of Watsonville Atkinson Lane Specific/Master Plan, Santa Cruz County, California.

Dear B. Davilla and D. Pereksta:

The purpose of this letter-report is to provide the County of Santa Cruz (the County) and the City of Watsonville (the City) information intended to guide the planning process for the proposed Atkinson Lane future growth area in Watsonville (Figure 1). It also provides resource agencies a preliminary assessment of special status amphibian and reptile species and their potential for occurrence within the vicinity of the proposed project area. The assessment focused on the following species - California tiger salamander (CTS) (*Ambystoma californiense*), Santa Cruz long-toed salamander (SCLTS) (*A. macrodactylum croceum*), California red-legged frog (CRF) (*Rana aurora draytonii*), and western pond turtle (WPT) (*Actinemys marmorata pallida*). Based on this assessment, it is anticipated that U.S. Fish and Wildlife Service (USFWS) will determine if protocol-level surveys for CTS, SCLTS, and/or CRF should be conducted prior to initiating project activities. The proposed project is currently focusing on developing a Specific Plan/Master Plan intending to provide land use alternatives by August 2008 and final adoption of the Specific Plan/Master Plan in March 2009. At the time of this assessment the land use alternatives had not been finalized or a construction schedule had not yet been established.

In summary, except for the western pond turtle, a definitive statement regarding the status of the focal species on the project site could not be made at this time, due to the absence of focused surveys. The western pond turtle has been identified on the site. The chances of CTS and SCLTS occurring on the site, appear to be very low to none, given the lack of known local breeding sites in the relevant project vicinity, the marginal quality of habitat on the project site, and the isolated nature of the site and it's setting within a landscape highly fragmented by urban and agricultural uses.

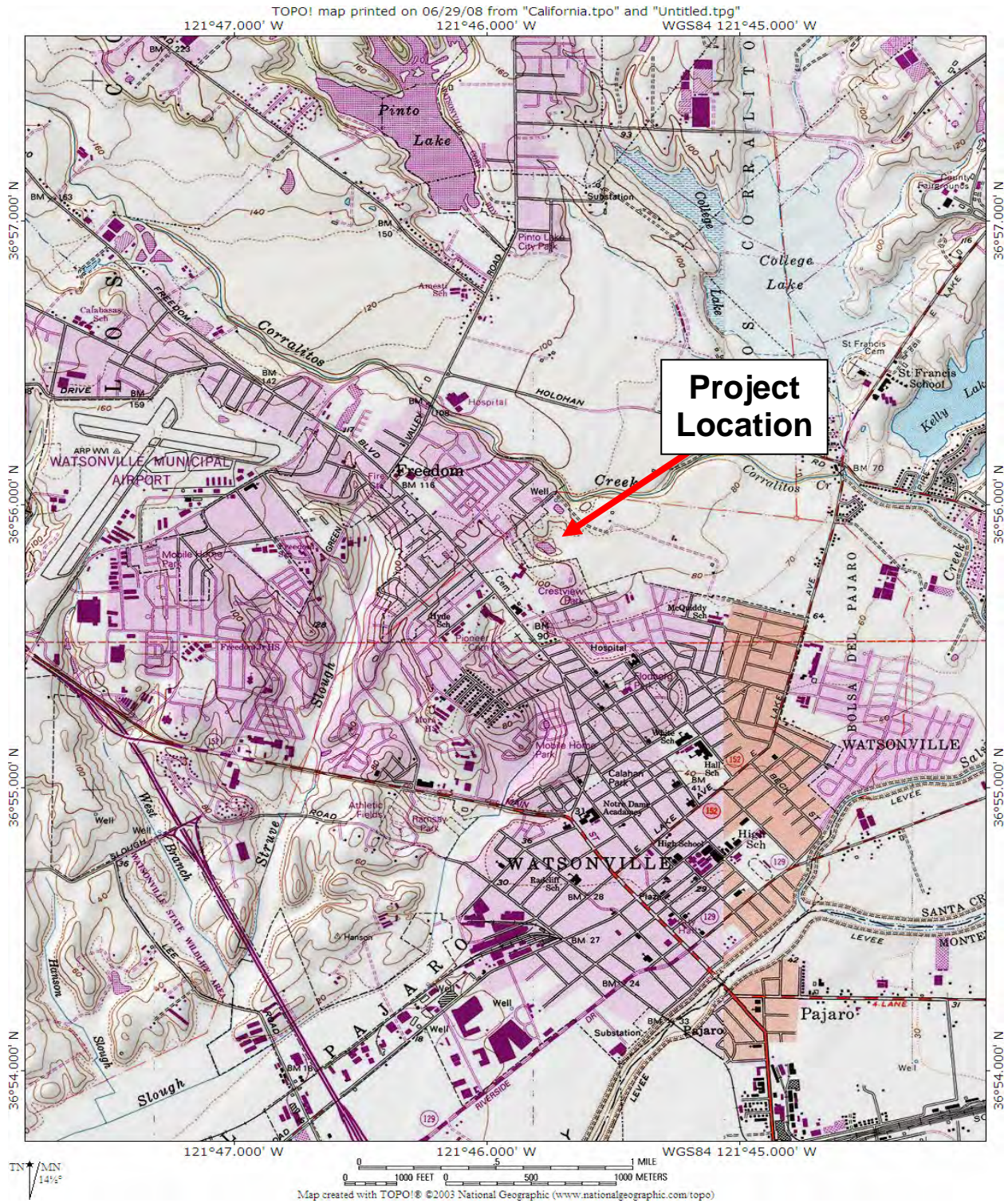


Figure 1. General location of the Proposed City of Watsonville Atkinson Lane Specific/Master Plan Area, Santa Cruz County, California.

The possibility of CRF presence at the project site is also considered low for the same reasons above; however, the chances of their occurrence on the site are slightly higher, due to the project location occurring between known occurrences of the frog from Struve Slough and Watsonville Slough to the south and the close proximity of potential non-breeding habitat in Corralitos Creek to the north (Figure 1). Surrounding urban development, however, creates barriers and likely restricts CRF movement between Corralitos Creek and Struve and Watsonville sloughs.

PROJECT DESCRIPTION

In November 2002, the voters of the City of Watsonville passed Measure U, which directs the distribution of new growth within and around the City. Measure U was designed to protect commercial agriculture lands and environmentally sensitive areas while providing the means for the City to address housing and job needs for the next 20 to 25 years. Measure U established a 20 to 25-year urban limit line around the City, and directs growth into several unincorporated areas. The three primary areas of growth include the Buena Vista, Manabe-Ow (formerly Manabe-Burgstrom), and Atkinson Lane Specific Plan areas. In accordance with Measure U, the City of Watsonville General Plan, which was adopted by the City Council in June of 2006, identifies the project site as a new growth area to accommodate up to 600 new housing units, including affordable units, townhomes, and single-family homes.

The County of Santa Cruz General Plan and Housing Element require the rezoning of a 16-acre site within the project site to allow 200 housing units at a density of 20 units per acre by June 2009. The City is also required to provide housing capacity on the remainder of the project site (City Expansion Area) to address its projected needs for the next housing element cycle. To address these requirements, the City and County determined that it is in their mutual interest to jointly plan for the development of the entire project site. In 2007, the City and County entered into a Memorandum of Understanding (MOU) to jointly pursue a Specific Plan/Master Plan for the project site. The MOU sets specific project requirements that will fulfill the City and County obligations to provide adequate housing for the region and requires that the City and County create a development plan for the project site that addresses roadway layout, housing types and affordability restrictions, parks and schools, infrastructure financing, neighborhood concerns, protection of environmental resources, and specific development guidelines.

The County of Santa Cruz and the City of Watsonville are currently preparing a joint Specific Plan/Master Plan for the Atkinson Lane future growth area. The Atkinson Lane future growth area (project site) falls within the City of Watsonville Urban Growth Boundary. The total gross acreage of the project site is approximately 68 acres, which includes 16 acres of land to be developed by the County prior to annexation by the City to meet County affordable housing goals. The MOU estimates that up to 200 units may be developed within the 16-acre area. Development by the City would follow after 2010 wherein the City may propose to annex the 16-acre County site, as well as the City expansion area. Land uses and densities for the plan will be determined as part of the Master Plan/Specific Plan process.

Providing adequate access to the project site to serve the anticipated development without overwhelming the existing circulation system is a critical project objective. The City of Watsonville General Plan assumes that Wagner Avenue would be improved and connected to Crestview Drive to serve as the primary access arterial between Freedom Boulevard and East Lake Avenue. Secondary access routes will be analyzed including Atkinson Lane and Brewington Avenue. The proposed project will also analyze additional infrastructure necessary to serve the area including sewer lines, water lines, storm drains, gas and electric, cable, phone, etc. Existing wetlands, and other potential sensitive biotic resources occurring within the vicinity of the future growth area are currently being analyzed as part of the detailed environmental review. No other detailed plans or drawings were available at the time of this preliminary assessment.

METHODS

The assessment was performed using the following protocols as guides - Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003 (USFWS and CDFG 2003) and Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog, August 2005 (USFWS 2005). These protocols also were used as guidelines for assessing SCLTS and WPT habitat, since formal habitat assessment protocols for these species are presently not available.

A reconnaissance-level survey was performed 5 and 17 June 2008 to evaluate habitat conditions at the project site. During the reconnaissance, the principal habitats were photographed (Appendix A – Photos) and conditions recorded in a field notebook. A pair of 10 x 40 powered binoculars was used to assist in wildlife identification.

The surrounding landscape within a one-mile radius of the site was qualitatively characterized, based on observations from public roads and using an aerial map and the Watsonville West USGS topographic quadrangle. For CRF and WPT, the CNDDDB was accessed and other biologists were consulted for known localities within one mile of the project site (in some cases, beyond one mile), whereas for CTS and SCLTS, the search for records was expanded to at least 3.1 miles, as per protocol guidelines.

EXISTING CONDITIONS

Project Site

Aquatic Habitats: Aquatic habitats on the project site include an ephemeral drainage swale, a large detention basin, a seasonal wetland, an irrigation pond and a section of Corralitos Creek. Attachment B presents eight photos of on-site aquatic resources.

The drainage swale is located in the northwestern corner of the project site and conveys surface water (when present) to the large detention basin (Photos 1 and 2). The swale is approximately 340 feet long, with a narrow band of willows and dense understory of blackberry along the downstream-half of the corridor and annual ryegrass, smartweed, dock and blackberry within the upstream-half of the swale. The swale conveys surface runoff from urban development to the north and appears to be highly seasonal; the swale was

dry during the June 5th and June 17th site visit.

The large detention basin is approximately 350 feet along its length and along the head, and roughly 270 feet across at the tail end (Photos 3 and 4). The basin is bermed along the eastern edge and along the head. The basin was nearly completely filled with cattails, with a narrow band of bulrush along the eastern margin. Dense willow and blackberry thickets grow along the basin's western edge and at its southeast corner, while dense smartweed grows along the eastern berm. Surface water was present in shallow pockets around the periphery of the basin. Shallow surface water also may have been present in the center of the basin, but was difficult to determine due to the dense growth of cattails. A western pond turtle, two bullfrogs (*Rana catesbeiana*) and unidentified frogs were observed during the site assessment.

A triangular-shaped, seasonal wetland occurs immediately adjacent to the detention basin, within a broad shallow depression (Photo 5). The length adjacent to the basin is roughly 270 feet, with the remaining two sides estimated at 180 feet each. The area is dominated by smartweed. Only a small pocket of shallow surface water was present during the assessment. During years of normal to heavy rainfall, a broad pool forms in the depression (pers. obs.). The margins of the wetland were disced sometime in the recent past.

An irrigation pond is present at the northeast corner of the project site (Photo 6). The pond is estimated to be 180 feet x 100 feet and is surrounded by a berm, which supports a narrow band of oak woodland vegetation and dense blackberry understory. The pond was nearly completely filled with bulrush. What appeared to be fairly deep pockets of surface water were present between the stands of bulrush; the water was tea-colored and dark, and the bottom was not visible from the small pier extending over the pond. One bullfrog and one unidentified frog, plus Pacific treefrog (*Pseudacris regilla*) larvae were observed on 5 June.

The section of Corralitos Creek within and adjacent to the project site boundary supports an overstory of mature cottonwood forest with coast live oak woodland, mature willows and a eucalyptus grove interspersed. The understory canopy included of young cottonwoods and willows, dogwood, acacia, coast redwood and big leaf maple. The shrub and herbaceous layer was dense and structurally complex; typical species included blackberry, stinging nettle, poison oak, German ivy and hemlock. During the 17 June reconnaissance, the channel adjacent to the site was completely dry (Photo 7). The substrate consists mostly of cobbles, with pockets of sand deposits. For the most part, the channel is v-shaped with moderate to steep-sided slopes, with occasional broad benches.

Uplands: Roughly two-thirds of the project site supports agricultural uses (i.e., strawberry fields and orchards). The majority of the remaining uplands consist of non-native annual grassland/ruderal vegetation and three single-family residential units, with varying degrees of landscape vegetation. Apparently, the majority of the grassland/ruderal vegetation is regularly disced and was largely barren on 6 June. Consequently, the presence of small mammal burrows was difficult to determine, but occasional occluded dens were observed. A narrow band of annual grassland/ruderal along the southwest edge of the swale and a vacant lot at the northwest corner do not appear to be maintained on a regular basis, as the vegetation was dense and the thatch layer thick, especially adjacent to the swale; as such, the presence of burrows was difficult to determine. Other minor components of the upland

include blackberry thickets, a small grove of live oaks and remnant orchard trees east and adjacent to the drainage, oak woodlands surrounding the irrigation pond, and scattered occurrences of coyote brush.

Off-Site

The following characterizations include upland and aquatic habitats within a one mile radius of the project site (Figures 2 and 3).

Uplands: The surrounding landscape is characterized by a sharp division between urban development and agricultural uses (Figure 2). A continuous block of urban development exists adjacent to the project site to the northwest, west, southwest, south and southeast. Urban land uses within this block include high-density residential, schools, commercial, industrial and a portion of the Watsonville Airport. Freedom Boulevard and Green Valley Road serve as main thoroughfares through this urbanized area. In contrast, continuous agricultural uses are present to the north, northeast, east and southeast, including row crop and orchards. Within this urban-agricultural matrix, native vegetation is limited to riparian habitat along Corralitos Creek; wetlands along the arm of Struve Slough and upper Watsonville Slough; and isolated patches of annual grasslands associated with College Lake, the Watsonville Airport and small ranches.

Aquatic Habitats: Only two ponds were identified within or just beyond the one mile radius of the project site (Figure 3), based on aerial photo and USGS topographic map interpretation and cursory observations from public roads.

Pond 1 is present to the northeast adjacent to the Lakeview Middle School track and field (Figure 3). The pond appears to serve as a catch basin for runoff from the playing fields, prior to entering Salsipuedes Creek. The basin is ringed by willows and supports scattered occurrences of cattails, bulrush and spikerush around the shoreline. No water was present on 6 June.

Pond 2 is to the southwest and is within an arm of Struve Slough (Figure 3). This pond appears to serve as a run-off detention basin for the surrounding subdivisions. The pond margins support mostly freshwater marsh vegetation, but a dense stand of willows is present at the tail end. No water was present in the pond on 6 June.

Other significant aquatic habitats within 1-mile of the site include Corralitos Creek and its tributaries, Struve Slough and upper Watsonville Slough. Corralitos Creek is intermittent and supports cottonwood-willow riparian forest, which is confined to the immediate banks due to urbanization and agriculture. Struve and Watsonville Sloughs support freshwater marsh vegetation and willow thickets and surface water is largely seasonal. Urban developments border both sloughs.



TOPO! map printed on 06/29/08 from "California.tpo" and "Untitled.tpg"
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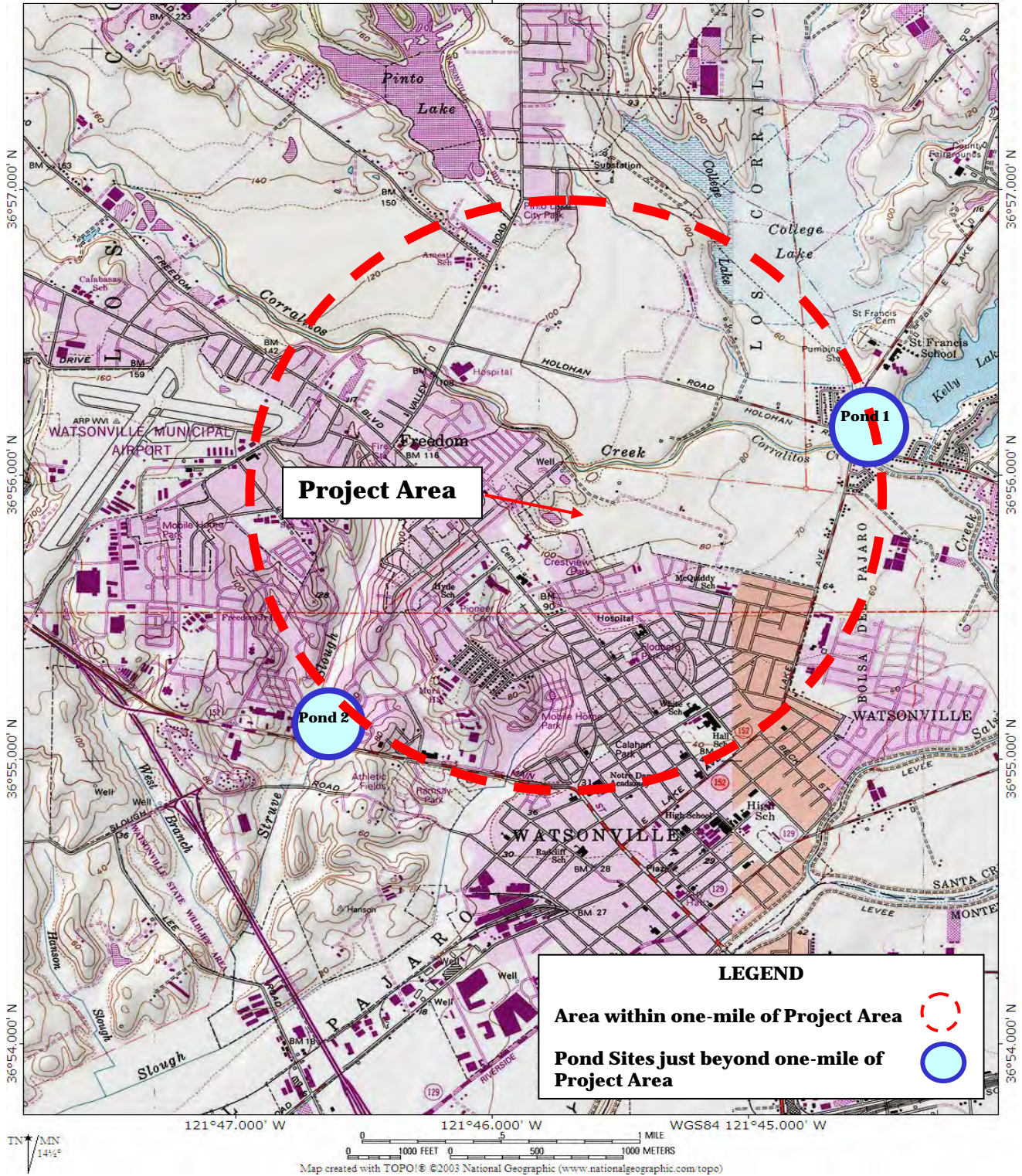


Figure 3. Locations of pond sites just beyond one mile of the proposed City of Watsonville Atkinson Lane Specific/Master Plan Area, Santa Cruz County,

SPECIES STATUS AND NATURAL HISTORY

California Tiger Salamander

The California tiger salamander is a Federal threatened species and State species of special concern (USFWS 2004a; CDFG 2008). The population consists of three Distinct Population Segments (DPS) – the Santa Rosa DPS, Santa Barbara DPS and Central California DPS, all of which are federally listed as threatened or endangered (USFWS 2004a; USFWS 2003). The California tiger salamander has disappeared from 55% of its historic range (Jennings and Hayes 1994). Presently, this species is distributed in the Central Valley from Yolo County south to Tulare County, and in the Coast Range valleys and lower foothills from Sonoma County south to Santa Barbara County (Shaffer 1991). California tiger salamanders primarily inhabit valley floor and foothill grasslands, open oak woodlands and scrub habitats encompassing vernal pools and seasonal ponds (Trenham 2001; USFWS 2000). Post-metamorphic individuals (i.e., adults and juveniles) live in rodent burrows in uplands for most of their lives (Trenham 2001; Trenham *et al* 2000; Loredó *et al* 1996). During the rainy season, typically November through March, adults migrate at night to aquatic breeding sites (Loredó and Van Vuren 1996), which include quiet waters of seasonal ponds, reservoirs, lakes and occasionally stream pools (Stebbins 1985). Tiger salamanders have osmoregulatory adaptations that allow for existence in highly alkaline aquatic environments (Kirschner *et al.* 1971; Romspert and McClanahan 1981). Based on a recent study, migration distances of adults between upland habitat and breeding pools generally are within 450 m (Trenham and Shaffer 2005), but distances up to 2 km (1.2 miles) have been recorded (USFWS 2000). In habitats encompassing several ponds, experienced adults may breed at more than one pond during their lifetime (Trenham *et al* 2001). The adults remain at the breeding pond from one day to several weeks, and then return to upland refugia (Loredó and Van Vuren 1996). Males migrate to breeding sites before females and tend to stay at breeding sites longer (e.g., 6 – 8 weeks for males and 1 – 2 weeks for females) (Trenham *et al* 2000; Loredó and Van Vuren 1996; Shaffer 1993). Eggs are laid singly, or in small groups of up to four, on stalks of submerged vegetation or other objects (e.g., rocks woody material, etc.), typically along the shoreline. The eggs hatch in 10 days to approximately three weeks (USFWS 2000; Jennings and Hayes 1994; Storer 1925). The number of eggs deposited per female per breeding season ranges from around 400 – 1,300 (USFWS 2000). The diet of larvae consists of aquatic insects and other invertebrates, and mostly tadpoles as the larvae grow larger (USFWS 2000; Petránka 1998; Anderson 1968). Larvae typically metamorphose in two to three months, from late spring to summer, when ponds begin to dry (USFWS 2000). Metamorphs emerge from ponds and seek shelter mostly in the immediate vicinity in burrows, cracks in the ground or under debris, but sometimes as far as 200 meters away, even in the absence of rain (Trenham 2001; Trenham and Shaffer 2005.; Loredó *et al* 1996). During the rainy-season, the juveniles continue to disperse farther to seek refuge in upland areas within 640 m of the breeding pond, but distances up to 1.6 km away from the breeding pond have been recorded (Jennings and Hayes 1994). Adults live up to at least 10 years, but take up to 4 – 5 years to reach sexual maturity (Trenham *et al* 2000). Females may not breed every year and only may breed once or twice during their lifetime (Trenham *et al* 2000). Sub-adults and adults appear to be “sit-and-wait” predators, preying on earthworms, insects and snails (CDFG 1990; Lindquist and Bachmann 1980). Threats and reasons for the decline of this species

include loss of breeding and upland habitat and habitat fragmentation due to agricultural and urban development; the introduction of bullfrogs (*Rana catesbeiana*) and predatory non-native fishes; use of larval forms as fishing bait; and hybridization with introduced non-native tiger salamanders (USFWS 2000; Stebbins 2003).

Santa Cruz Long-toed Salamander

The Santa Cruz long-toed salamander was listed as endangered by the U.S. Fish and Wildlife Service in 1967 (USFWS 2004b), and subsequently in 1970 by the State of California under the California Species Preservation Act (Ruth 1989). The Santa Cruz long-toed salamander is the southernmost subspecies of *Ambystoma macrodactylum* and was first discovered in 1954 at Valencia Lagoon, near Aptos, in Santa Cruz County, California (Russell and Anderson 1956). Presently, the breeding population is restricted to southern Santa Cruz and northern Monterey Counties (USFWS 2004b). Adult and sub-adult Santa Cruz long-toed salamanders spend most of the year in upland refugia, including rodent burrows, leaf litter, underneath surface objects, and in rotting logs within dense oak woodlands, riparian vegetation and mesic coastal scrub (Ruth 1989). Adults migrate from upland habitats to seasonal/semi-perennial breeding ponds at night, during late fall and winter rains, generally from November through March. In contrast, juvenile dispersal is mostly confined to the first substantial fall rains, sometimes as early as August (M. Allaback, pers. comm.). Long-toed salamanders appear to travel in nearly straight lines, with marked individuals documented to migrate 0.6 mile from breeding ponds to upland habitat (USFWS 2004b; M. Allaback, pers. comm.). However, unmarked long-toed salamanders have been observed 1 mile from the nearest breeding pond (USFWS 2004b). Males usually precede females to the breeding site by one to two weeks, remain at the pond longer than females, and may mate with more than one female each season (Ruth and Tollestrup 1973; USFWS 2004b). Mating and egg-laying generally peak in January and February (USFWS 2004b). The female deposits 200 - 400 eggs singly on stems of emergent vegetation (Anderson 1967). After mating, the adults return to upland habitat within 6 - 12 weeks, typically by March or April (Ruth 1988; USFWS 2004b). Eggs hatch within 15 - 30 days and metamorphose into juveniles between May and September, depending on aquatic conditions. In drought years, larvae may perish prior to transformation due to insufficient water levels (Ruth 1988). Crustaceans (cladocerans and copepods) and tendipedids (midgefly larvae) are the primary food items of larvae (Anderson 1968). Recently metamorphosed salamanders (metamorphs) typically seek terrestrial refuge immediately adjacent to the breeding pond, and remain until dispersing during the first fall rains, however, early rains may induce metamorphs to move up to 200 feet from the breeding pond (Ruth 1989; USFWS 2004b). Important prey for juveniles and adults include isopods (pillbugs), beetles, centipedes, earthworms and spiders (Anderson 1968). Adults are estimated to live up to twenty years (Ruth 1988). A long life span and high reproductive output are believed to be adaptations, which allow for populations to persist at seasonal breeding sites during prolonged periods of drought (Reed 1979; Ruth 1988). Climatic changes over geologic time have restricted the distribution of the Santa Cruz long-toed salamander, making the species especially vulnerable to habitat loss resulting from agricultural and urban developments, predation from bullfrogs and non-native predatory fishes, as well as natural catastrophes related to climate and infestations (Ruth 1988; USFWS 2004b).

California Red-legged Frog

The California red-legged frog (*Rana draytonii*, hereafter CRF), is a federal threatened species and a State species of special concern (USFWS 2002; CDFG 2008). The historic range of this species extended southward from the Marin County coast, and inland from Shasta County south to Baja California (Jennings and Hayes 1994). The CRF has been extirpated from 70% of its former range (USFWS 1996). Presently, CRF is found primarily in central coastal California in natural and artificial ponds, quiet pools along streams and in coastal marshes (USFWS 1996). In the breeding season, CRF mostly inhabit pools greater than 2 feet deep, although shallow, perennial marsh habitat may also be productive if it is free of non-native aquatic predators (Hayes and Jennings 1988; B. Mori, pers. obs.). Optimal aquatic habitat is characterized by dense emergent or shoreline vegetation for cover. Seasonal ponds with little emergent/shoreline cover located in grasslands, however, may also be used for breeding, where water levels permit the metamorphosis of larvae and rodent burrows offer cover (USFWS 2002). Breeding typically occurs between December and April, depending on annual environmental conditions and locality. Egg masses containing 2,000 – 5,000 eggs are usually deposited near the water surface on emergent vegetation, but occasionally on the pond bottom where attachments are absent. Eggs require 6 to 14 days to hatch and metamorphosis generally occurs within 3.5 to 7 months after hatching, although larvae have the ability to over-winter at some sites (Fellers, *et al.* 2001). Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size and do not travel far from aquatic habitats, if appropriate cover is present. Dispersal of juveniles generally begins with the first rains of the weather-year, although all size classes will move in response to receding water. Radio-telemetry data indicate that adults engage in straight-line movements irrespective of riparian corridors or topography, and they may move up to 1.7 miles between non-breeding and breeding sites (Bulger, *et al.* 2003; Fellers and Kleeman 2007). They may take refuge in small mammal burrows, leaf litter or other moist areas during periods of inactivity or whenever it is necessary to avoid desiccation (Rathbun, *et al.* 1993; Jennings and Hayes 1994). At permanent ponds, most CRF remain at the pond but often move up to 300 feet into surrounding uplands, especially following rains, when individuals may spend days or weeks in upland habitats (Bulger, *et al.* 2003); whereas at seasonal breeding sites, frogs will move at least as far as the nearest suitable non-breeding habitat, e.g., riparian zone, marsh, etc. (Fellers and Kleeman 2007). Much of this species' habitat has undergone significant alteration by agricultural, urban development and water projects, leading to the extirpation of many populations (USFWS 1996). Other factors contributing to the decline of red-legged frogs include its historical exploitation as food; competition and predation by bullfrogs (*Rana catesbeiana*) and introduced predatory fishes (Jennings and Hayes 1985; Hayes and Jennings 1988; Lawler, *et al.* 1999); and salinization of coastal breeding habitat (Jennings and Hayes 1990).

Western Pond Turtle

The western pond turtle (WPT) has been separated into two subspecies *Actinemys m. marmorata* is the northern subspecies and *Actinemys m. pallida* is the southern subspecies. Current research suggests, however, that the taxon may be represented by three distinct populations in California and may therefore require a taxonomic revision (Jennings and Hayes 1994). The southwestern pond turtle is a State species of special concern (CDFG 2008). In California, the pond turtle is distributed mostly along the Pacific slope drainages from Oregon to Mexico (Jennings and Hayes 1994). Pond turtles primarily occur in permanent freshwater ponds, lakes, marshes and quiet waters of streams (Bury and Holland 1993). Pond turtles favor sites with the largest and deepest pools and with an abundance of basking sites, such as partially submerged logs or rocks, matted emergent vegetation, or exposed shorelines (Bury and Holland 1993); pond turtles displace one another from basking sites, where such resources are limited (Bury and Wolfheim 1973). Pond turtles are highly sensitive and will seek cover when approached within 100 meters (Bury and Holland 1993). Undercut banks, root masses and boulder piles provide underwater escape cover (Bury and Holland 1993). Although highly aquatic, pond turtles leave the water to reproduce, aestivate and overwinter (Jennings and Hayes 1994). Females dig nests and deposit eggs, during May and June, along the shoreline or in a variety of open, sparsely vegetated upland habitats, usually within 200 meters from water, but as much as 500 meters, and mostly on south-facing slopes with well-drained clay soils (Rathbun *et al* 1992; Jennings and Hayes 1994). Nests must remain dry for proper incubation. The young hatch and may overwinter in the nest, before emerging in the spring (Jennings and Hayes 1994). Hatchlings require shallow water habitat with dense emergent vegetation and abundant zooplankton (Jennings and Hayes 1994). Pond turtles reach sexual maturity between seven and fourteen years of age (Bury and Holland 1993) and live to be over 42 years (Jennings and Hayes 1994). During dispersal, pond turtles can move up to two kilometers in search of suitable habitat and can tolerate a minimum of seven days without water (Jennings and Hayes 1994). Studies on central coast drainages show that turtles use upland habitat within 50 meters of the creek in times of drought or to avoid winter floods (Rathbun *et al* 2002) and up to 500 meters in other studies (Reese and Welsh 1997). Pond turtles are threatened by habitat alteration and loss due to water developments, agricultural practices and non-native predators (Jennings and Hayes 1994).

LOCAL SPECIAL-STATUS SPECIES RECORDS

Through consultation with other biologists, access of the CNDDDB and gray-literature review, 10 records of CTS, SCLTS CRF and WPT were identified from the general project region. The nearest CRF records to the project site are from Watsonville Slough, approximately 1.2 miles to the southwest, and from Struve Slough, approximately 1.6 miles southwest of the site. The only known occurrences of CTS are south of State Route 1 at the Buena Vista site, 3.4 miles west of the project site, and from the Ellicott Slough National Wildlife Refuge (ESNWR), approximately 3.8 miles west of the site. The three nearest SCLTS records to the site are from Merk Pond, 3.7 miles to the northwest; ESNWR, 3.8 miles to the west; and from Larkin Valley, approximately 4.0 miles to the northwest. In addition to the observation of WPT at the project site, other localities include Struve Slough and Pinto Lake. These records are summarized on Table 1.

Table 1. Locations of CTS, SCLTS, CRF and WPT records from the Atkinson Lane project region in Santa Cruz County.

Taxon	Observation	Distance from Project Site	Source
California tiger salamander	South of Hwy 1, Buena Vista pond.	3.4 mi. W	CNDDB & BIOS 2008
	Ellicott Pond	3.8 mi W	CNDDB & BIOS 2008
Santa Cruz long-toed salamander	Merk Road	3.7 mi. NW	CNDDB & BIOS 2008
	Ellicott Pond	3.8 mi. W	CNDDB & BIOS 2008
	Larkins Valley	4 mi. NW	CNDDB & BIOS 2008
California red-legged frog	Watsonville Slough	1.2 mi. SW	CNDDB & BIOS 2008
	Struve Slough	1.6 mi. SW	CNDDB & BIOS 2008
Western pond turtle	On the project site.	–	K. Glinka pers. obs. onsite 2007; B. Mori pers. obs. 2008; CNDDB & BIOS 2008
	Struve Slough	1.2 mi. SW	CNDDB & BIOS 2008
	Pinto Lake	1.4 mi. N	CNDDB & BIOS 2008

DISCUSSION

California Tiger Salamander

The existence of a CTS population on the project site seems unlikely due to the combination of the following factors: 1) the aquatic habitats support bullfrogs, which are significant predators of native amphibians; 2) the uplands on the site are limited in area and marginal due to regular discing practices, which destroy potential refugia for adults and subadults; 3) the project site is isolated from other areas of potential CTS upland (e.g., extensive stands of annual grassland and oak woodlands) and aquatic habitat, due to extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known CTS populations are over three miles away and because of the isolated nature of the site from these localities. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

Santa Cruz Long-toed Salamander

As with CTS, the presence of SCLTS on the project site is considered unlikely due to the combination of the following factors: 1) the aquatic habitats support bullfrogs, which are significant predators of native amphibians; 2) potential upland habitat on the site is confined to only a few isolated patches of dense blackberry and willow thickets; 3) the project site is isolated from other areas of primary upland habitat (e.g., extensive stands of moist oak woodlands, willow thickets and mesic coastal scrub) and aquatic habitat, due to

extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known SCLTS populations are between three to four miles away and because of the isolated nature of the site from these localities. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

California Red-legged Frog

The presence of CRF on the project site also is considered unlikely, due to the combination of the following factors: 1) the aquatic habitats on site support bullfrogs, which are significant predators of native amphibians; 2) potential non-breeding habitat on the site is confined to only a few isolated patches of dense blackberry, willow thickets and smartweed; 3) the project site is largely isolated from other areas of potential habitat, due to extensive urbanization and agricultural uses surrounding the site; and 4) dispersal to the site from source populations is unlikely, since the closest known CRF populations are over one mile away (Table 1), and because of the isolated nature of the site from these localities. Although CRF are known to use riparian corridors (such as Corralitos Creek) for migration and as non-breeding habitat, in this situation, no CRF observations are known from Corralitos Creek or nearby Salsipuedes Creek. The section of Corralitos Creek adjacent to the project site does not appear to provide a reliable source of standing water outside of the rainy season, and potential breeding ponds adjacent to the creek are lacking in the project vicinity. While these factors strongly suggest their absence from the site, no focused studies were conducted to support this conclusion.

Western Pond Turtle

Western pond turtles have been observed at the large detention basin sporadically since at least 1996 (pers. obs.). There is uncertainty regarding the status of the population and whether the site is used seasonally or year-round, since focused surveys have not been performed. The annual grasslands on the site appear to provide potential nesting habitat, however, discing practices may preclude successful reproduction. Given the level of urban and agricultural developments surrounding the site, it is reasonable to assume that Corralitos Creek/Salsipuedes Creek may serve as a dispersal/migration corridor for turtles, since they are known to inhabit the Pajaro River system and are capable of long distance movements.

CONCLUSIONS

Except for WPT, which is present on the project site, a conclusive determination regarding the presence/absence of CTS, SCLTS and CRF could not be made during this assessment, due to the lack of focused surveys. Several factors regarding the marginal/unsuitable habitat conditions present on the site and surrounding landscape, however, do suggest that their occurrence on the site is unlikely. As previously mentioned, based on the results of this assessment USFWS will determine whether or not protocol-level surveys should be conducted prior to initiating project activities and should reply to EcoSystems West Consulting Group with their comments.

Also, please call me at (831) 728-1043 if you have any comments or questions regarding this report.

Sincerely,

Bryan Mori
Consulting Wildlife Biologist

CC: Erika Spencer, Senior Planner, RBF Consulting
Todd Sexauer, Environmental Planner, County of Santa Cruz Planning Department
Suzi Aratin, Senior Planner, City of Watsonville Community Development Department

Attachments: Appendix A - Site Photographs

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APPENDIX A

Photographs of Features in the Vicinity of the Atkinson Lane Project Area



Photo 1. Downstream section of drainage swale.



Photo 2. Upstream section of drainage swale.



Photo 3. Overall view of detention basin.



Photo 4. Close-up view of detention basin.



Photo 5. Broad view of seasonal wetland.



Photo 6. Close up view of irrigation pond.



Photo 7. View of Corralitos Creek, June 2008

