
To: Stephanie Strelow, Dudek
From: Tyler Young, Biologist
Subject: Federally-listed Species Assessment, 415 Natural Bridges Drive Project, City Santa Cruz, California
Date: September 7, 2022

This memorandum has been prepared by Dudek to provide information on the occurrence of, and potential impacts to, federally-listed species, as a result of implementation of the above-referenced project. The proposed 415 Natural Bridges Drive Project (project) consists of constructing a 20-unit affordable housing development within a three-story building on a vacant lot located at 415 Natural Bridges Drive. This memorandum presents the results of a review and evaluation of potential project impacts on federally-listed plant and wildlife species.

Methods

For the purposes of this evaluation, federally-listed species are defined as those that are listed, proposed for listing, or candidates for listing as Threatened or Endangered under the federal Endangered Species Act. Federally-listed species that are present or potentially present on and in the vicinity of the project site were identified through a literature and database search using the following sources: U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) Trust Resource Report (USFWS 2022). Additionally, Dudek reviewed Google Earth aerial and ground-level imagery of the project site and conducted a site visit to assess the area.

On September 1, 2022, Dudek scientist Tyler Young conducted a habitat assessment of the project area to survey vegetation types to determine if suitable habitat for listed species existed within the survey area. The survey area consists of an approximately .35-acre undeveloped parcel and a small area of an existing parking lot that serves the adjacent commercial building that is not on the project site. Access to the subject property is from Natural Bridges Drive to the east or from the rail line to the south. The survey area is transected by a barrier (concrete wall) which roughly runs north-south through the property. Due to the southwestern section of the survey area being paved, only the eastern section of the survey area was determined to potentially contain biologic resources.

Results

Desktop Review

Based on the results of the database search and literature review, a total of 17 federally-listed species (4 plants and 13 animals) were identified as potentially occurring in the project region and are summarized in Table A below. Attachments 1 and 2 provide the report generated the IPaC database searches.

Species	Federal Status*
<i>Cicindela ohlone</i> Ohlone tiger beetle	FE
<i>Monarch Butterfly</i> <i>Danaus plexippus</i>	FE
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	FE
<i>Ambystoma californiense</i> California tiger salamander	FT
<i>Rana draytonii</i> California red-legged frog	FT
<i>Rana boylei</i> Foothill Yellow-legged frog	PT
<i>Sternula antillarum browni</i> California least tern	FE
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	FT
<i>Vireo bellii pusillus</i> Least bell's vireo	FE
<i>Brachyramphus marmoratus</i> Marbled murrelet	FT
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE
<i>Coccyzus americanus</i> Yellow-billed Cuckoo	FT
<i>Eucyclogobius newberryi</i> Tidewater goby	FT
<i>Arenaria paludicola</i> Marsh sandwort	FE
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT
<i>Polygonum hickmanii</i> Scotts Valley polygonum	FE
<i>Chroisanthe robusta</i> var. <i>hartwegii</i> Scotts Valley spineflower	FE

*Status: FE- federally-listed as endangered
 FT- federally-listed as threatened
 PT - Proposed federally-listed as threatened

Existing Conditions

Based on the site visit, the survey area is comprised of annual grassland and scrub-shrub habitat with scattered trees present. Annual grassland was the dominant vegetation community with dominant species including slender oat (*Avena barbata*), perennial rye grass (*Festuca perennis*), Prairie junegrass (*Koeleria macrantha*), purple pampas grass (*Cortaderia jubata*) and desert saltgrass (*Distichlis spicata*). The dominant shrub within the survey area was Arroyo willow (*Salix lasiolepis*), with some coyote bush (*Baccharis pilularis*) along the southwest corner of the site. Herbs onsite included bull thistle (*Cirsium vulgare*), cheeseweed mallow (*Malva parviflora*), Petty Spurge (*Euphorbia peplus*), Cleavers (*Galium aparine*), Belladonna lily (*Amaryllis belladonna*), Carolina geranium (*Geranium carolinianum*), prickly lettuce (*Lactuca serriola*), Narrow leaf plantain (*Plantago lanceolata*), Jersey cudweed (*Helichrysum luteoalbum*), horseweed (*Erigeron canadensis*), Radish (*Raphanus sativus*) and autumn hawkbit (*Leontodon autumnalis*). Seven trees exist within the survey area. Acacia (*Acacia baileyana*) is the dominant tree species on site, along with one coast live oak (*Quercus agrifolia*), one tulip tree (*Liriodendron tulipifera*), one Northern California black walnut (*Juglans hindsii*) and a Deodar cedar (*Cedrus deodara*) along the northern border of the property. No wetlands or wetland indicators were observed onsite. It should be noted that survey occurred in September, and the region has had significantly below average rainfall. Due the dry site conditions, some of the grasses could not be accurately identified. A more robust plant compendium could be generated from a survey conducted when vegetation is in bloom and seeding.

Federally-listed Plants

A total of four federally-listed plants have potential to occur in the vicinity of the project site. However, due to the existing disturbed nature of the project site and largely urbanized setting of the surrounding lands, as well as the absence of suitable native communities and substrates that could support federally-listed plants, the potential occurrence of federally-listed plant species on the project site is considered highly unlikely.

Federally-listed Animals

A total of 13 federally-listed animals have potential to occur in the vicinity of the project site. Two of these species, San Francisco garter snake and Marbled murrelet, were eliminated from consideration due to the location of the project site outside of the known range of these species. The federally-listed fish species (Tidewater goby) was eliminated from consideration due to the lack of any tributaries such as creeks, streams or other drainages on the project site. The remaining nine species are not expected to occur on or in the vicinity of the project site due to the absence of suitable habitat conditions, existing developed and disturbed conditions, and associated urban land uses in the immediate vicinity of the project site.

Critical Habitat

Critical habitat is defined as the specific portions of the geographic area occupied by the species in which physical or biological features essential to the conservation of the species are found and that may require special management considerations or protection. Critical habitat has been designated for 8 of the 17

federally-listed species identified above. However, the project site is located outside of areas designated as critical habitat for all 8 of these species. At the time of the site reconnaissance, the subject property consisted of mowed annual grassland along with several small brush piles. The site is largely flat and gently sloping to the east and south. An existing wall borders the subject property on the west along the parking lot on the adjacent developed property. The site is vegetated with a mix of planted and naturally occurring vegetation, including grasses, herbs, shrubs, and trees, except for the southwest corner that is paved and part of the adjacent property parking lot. Lower Moore Creek and Antonelli Pond, along with adjacent riparian habitat, begin approximately 100 meters west of the survey area.

Conclusion

After reviewing the current status of federally-listed plant and animal species in the vicinity of the project site and evaluating the proposed project activities in the context of existing conditions and land uses, the proposed 415 Natural Bridges Drive Project will have no effect on federally-listed plant or animal species because the project site is: (1) located outside of the species known range; or (2) does not support suitable habitat conditions for such species. Furthermore, the proposed project will have no effect on critical habitat as no critical habitat has been designated in the location of the project site.

If you have any questions or concerns regarding the content or findings of this memorandum, please contact me at tyoung@dudek.com.

References Cited

CDFW (California Department of Fish and Wildlife). 2022. RareFind 5. California Natural Diversity Database. CDFW, Biogeographic Data Branch. Accessed March 2022.
<https://www.wildlife.ca.gov/data/cnddb/maps-and-data>

USFWS (U.S. Fish and Wildlife Service). 2022. IPaC (Information for Planning and Consultation) Search. Accessed March 2022. <http://www.fws.gov/data>.

Attachments: Database Reports
Att 1: IPaC Report

Attachment 1

IPaC Report

IPaC

IPaC resource list

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

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

Location

Santa Cruz County, California



Local office

Ventura Fish And Wildlife Office

☎ (805) 644-1766

📅 (805) 644-3958

✉ FW8VenturaSection7@FWS.Gov

2493 Portola Road, Suite B
Ventura, CA 93003-7726

<https://www.fws.gov/Ventura>

NOT FOR CONSULTATION

Endangered species

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

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

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

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

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

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Birds

NAME	STATUS
<p>California Least Tern <i>Sterna antillarum browni</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104</p>	Endangered
<p>Least Bell's Vireo <i>Vireo bellii pusillus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945</p>	Endangered
<p>Marbled Murrelet <i>Brachyramphus marmoratus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4467</p>	Threatened
<p>Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6749</p>	Endangered
<p>Western Snowy Plover <i>Charadrius nivosus nivosus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8035</p>	Threatened
<p>Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911</p>	Threatened

Reptiles

NAME	STATUS
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San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5956>

Amphibians

NAME

STATUS

California Red-legged Frog *Rana draytonii*

Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/2891>

California Tiger Salamander *Ambystoma californiense*

Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/2076>

Foothill Yellow-legged Frog *Rana boylei*

Proposed Threatened

No critical habitat has been designated for this species.

Fishes

NAME

STATUS

Tidewater Goby *Eucyclogobius newberryi*

Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/57>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Ohlone Tiger Beetle *Cicindela ohlone*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8271>

Flowering Plants

NAME

STATUS

Marsh Sandwort *Arenaria paludicola*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/2229>

Santa Cruz Tarplant *Holocarpha macradenia*

Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/6832>

Scotts Valley Polygonum *Polygonum hickmanii*

Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/3222>

Scotts Valley Spineflower *Chorizanthe robusta* var.

Endangered

hartwegii

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/7108>

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS
INDICATED FOR A BIRD ON
YOUR LIST, THE BIRD MAY

APPENDIX 9

BREED IN YOUR PROJECT AREA
SOMETIME WITHIN THE
TIMEFRAME SPECIFIED, WHICH
IS A VERY LIBERAL ESTIMATE
OF THE DATES INSIDE WHICH
THE BIRD BREEDS ACROSS ITS
ENTIRE RANGE. "BREEDS
ELSEWHERE" INDICATES THAT
THE BIRD DOES NOT LIKELY
BREED IN YOUR PROJECT
AREA.)

Allen's Hummingbird *Selasphorus sasin*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9637>

Breeds Feb 1 to Jul 15

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Aug 31

Belding's Savannah Sparrow *Passerculus sandwichensis beldingi*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8>

Breeds Apr 1 to Aug 15

Black Oystercatcher *Haematopus bachmani*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9591>

Breeds Apr 15 to Oct 31

Black Skimmer *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

Black Swift *Cypseloides niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8878>

Breeds Jun 15 to Sep 10

Black Turnstone <i>Arenaria melanocephala</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bullock's Oriole <i>Icterus bullockii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Thrasher <i>Toxostoma redivivum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch <i>Carduelis lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Mountain Plover <i>Charadrius montanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3638	Breeds elsewhere

<p>Nuttall's Woodpecker <i>Picoides nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410</p>	Breeds Apr 1 to Jul 20
<p>Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656</p>	Breeds Mar 15 to Jul 15
<p>Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914</p>	Breeds May 20 to Aug 31
<p>Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480</p>	Breeds elsewhere
<p>Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910</p>	Breeds Mar 15 to Aug 10
<p>Western Grebe <i>Aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743</p>	Breeds Jun 1 to Aug 31
<p>Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and

understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

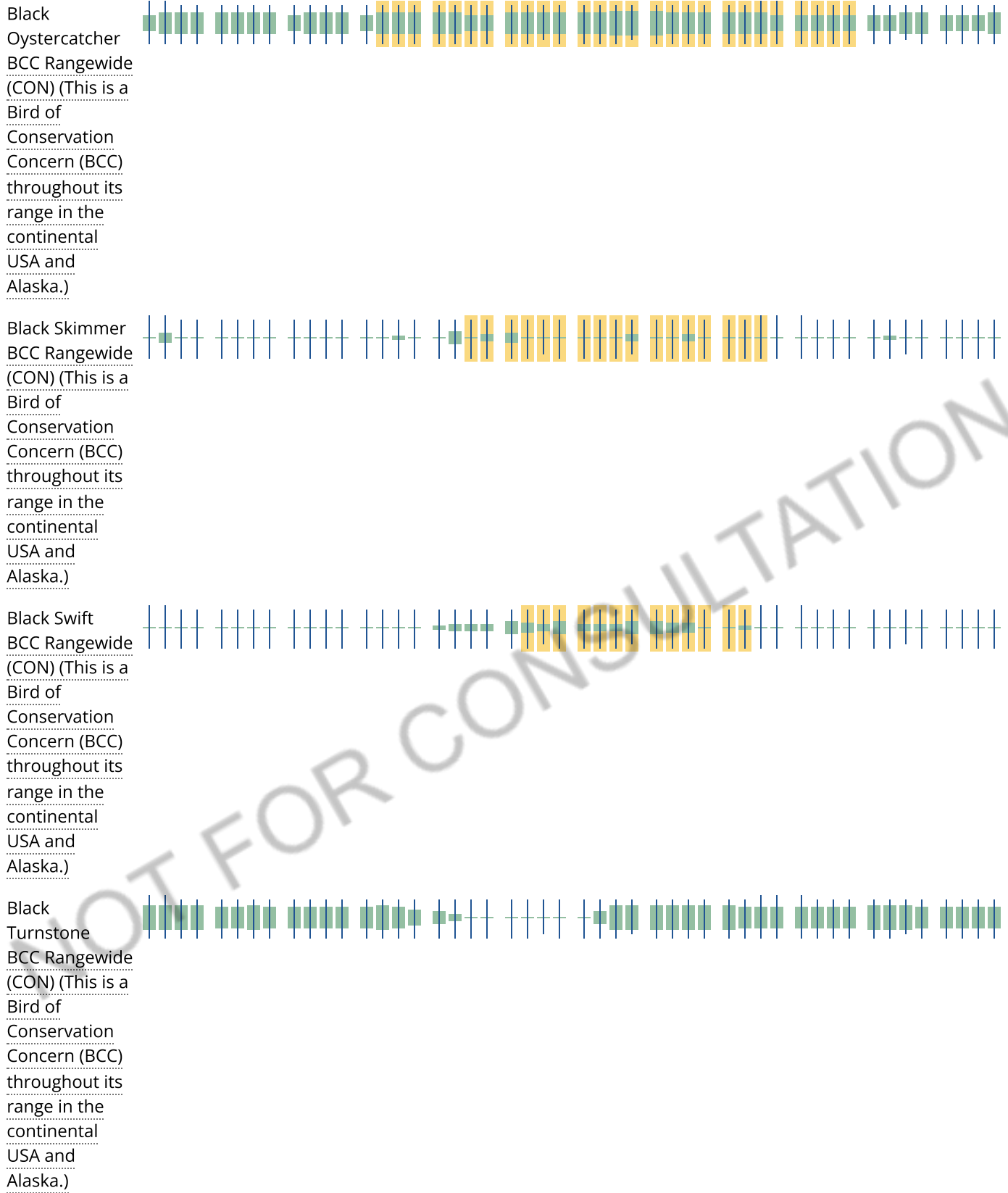
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

APPENDIX 9

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





NOT FOR CONSULTATION

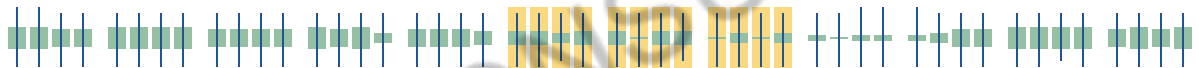
Bullock's Oriole
 BCC - BCR (This
 is a Bird of
 Conservation
 Concern (BCC)
 only in
 particular Bird
 Conservation
 Regions (BCRs)
 in the
 continental
 USA)



California
 Thrasher
 BCC Rangewide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental
 USA and
 Alaska.)



Clark's Grebe
 BCC Rangewide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental
 USA and
 Alaska.)



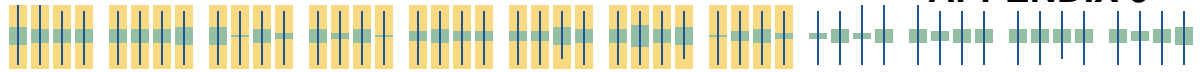
Common
 Yellowthroat
 BCC - BCR (This
 is a Bird of
 Conservation
 Concern (BCC)
 only in
 particular Bird
 Conservation
 Regions (BCRs)
 in the
 continental
 USA)



NOT FOR CONSULTATION

APPENDIX 9

Golden Eagle
 Non-BCC
 Vulnerable
 (This is not a
 Bird of
 Conservation
 Concern (BCC)
 in this area, but
 warrants
 attention
 because of the
 Eagle Act or for
 potential
 susceptibilities
 in offshore
 areas from
 certain types of
 development
 or activities.)

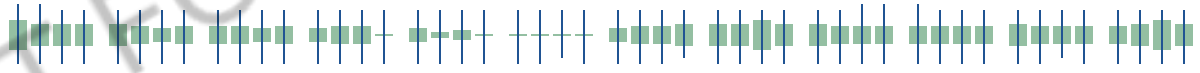


SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

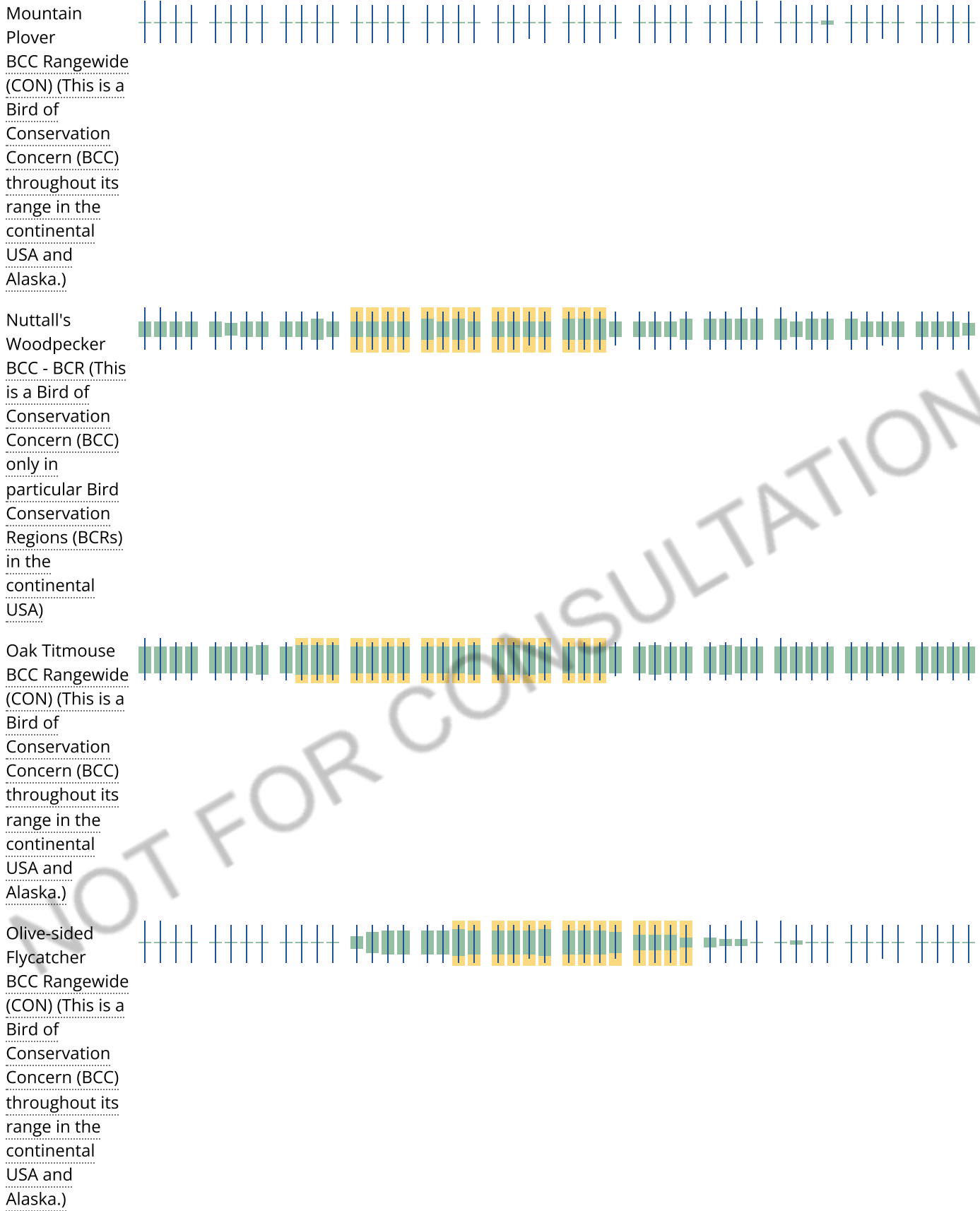
Lawrence's
 Goldfinch
 BCC Rangewide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental
 USA and
 Alaska.)



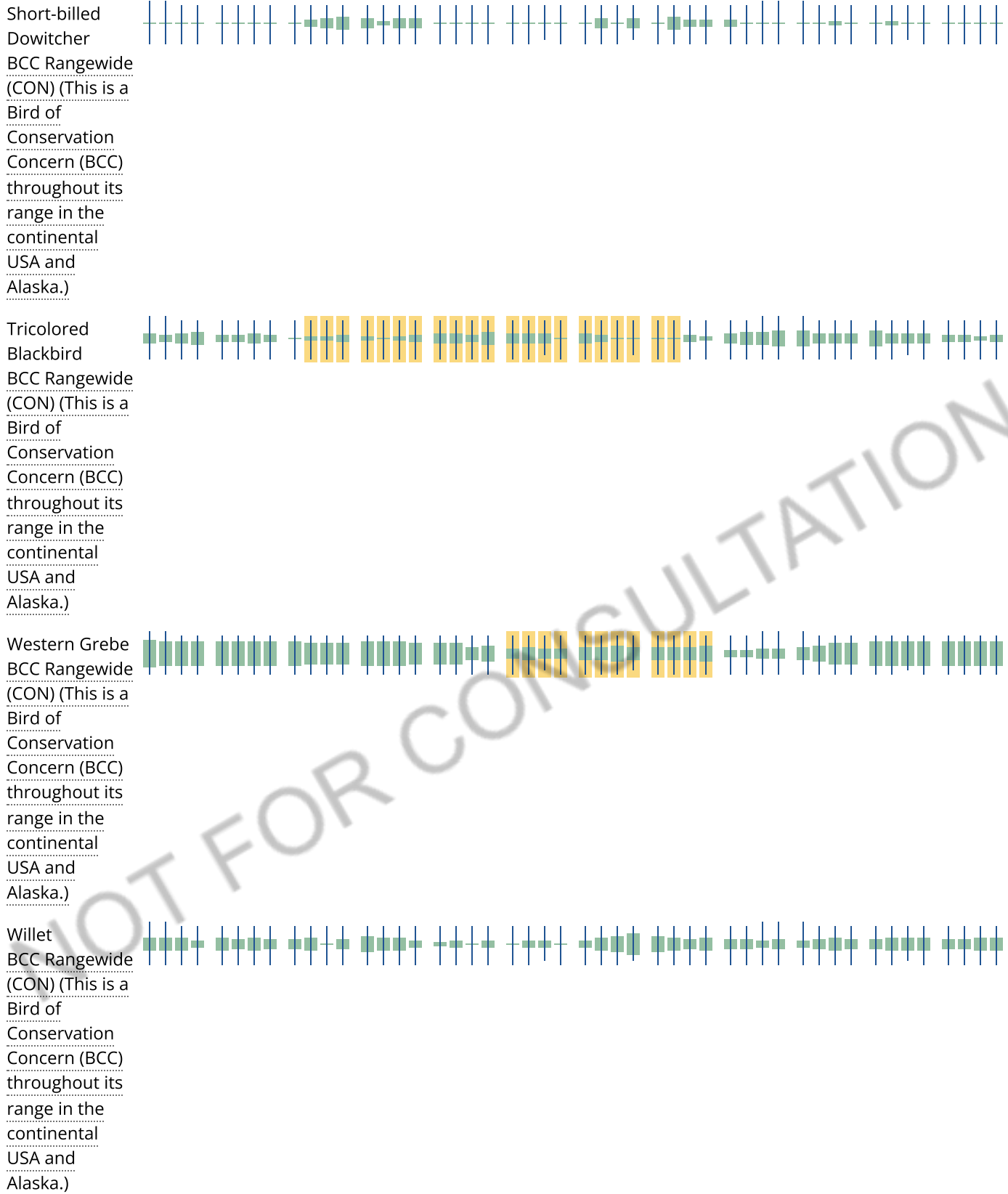
Marbled
 Godwit
 BCC Rangewide
 (CON) (This is a
 Bird of
 Conservation
 Concern (BCC)
 throughout its
 range in the
 continental
 USA and
 Alaska.)



APPENDIX 9

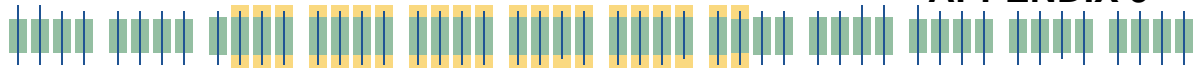


NOT FOR CONSULTATION



NOT FOR CONSULTATION

Wrentit
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental
USA and
Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be

subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

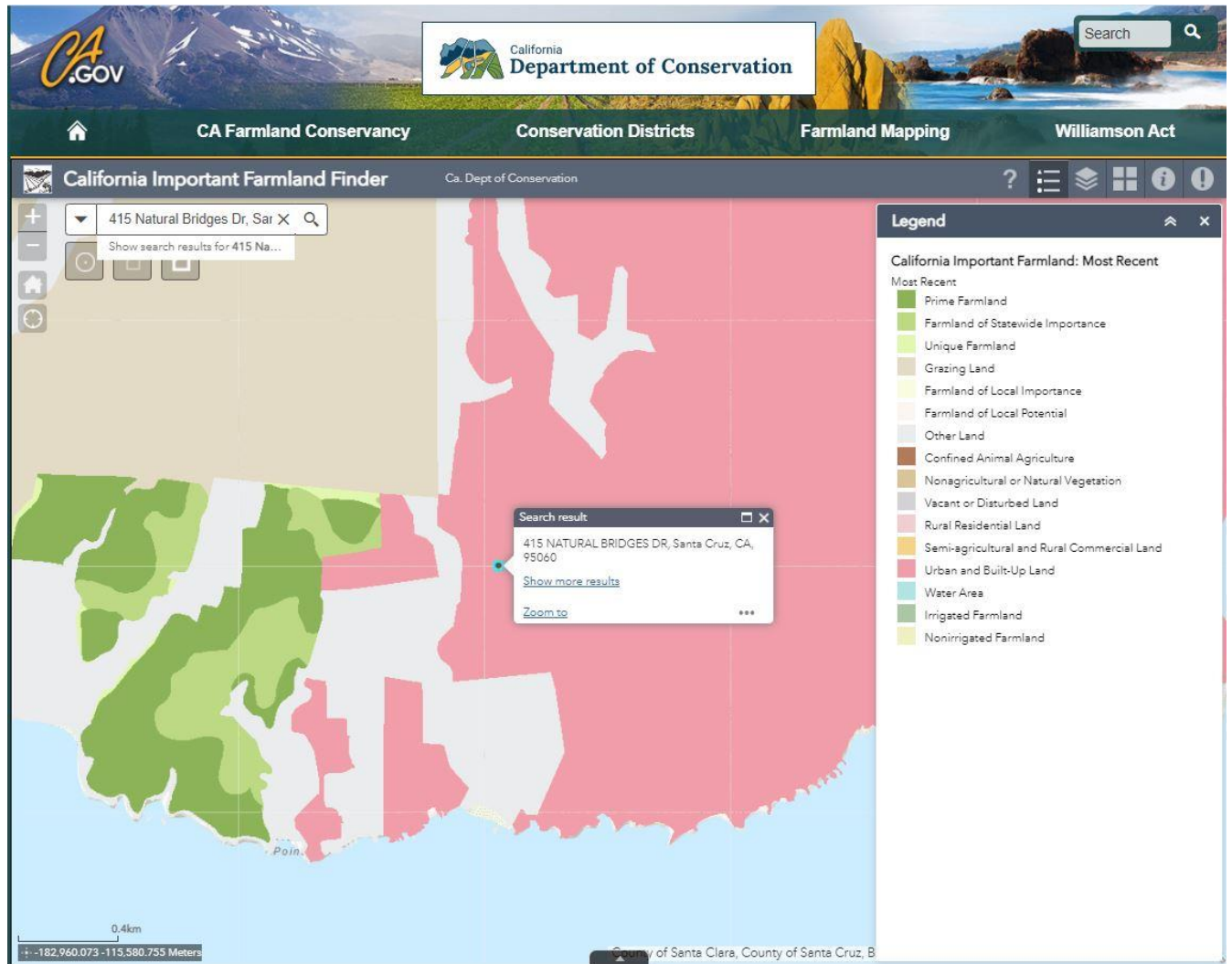
Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Attachment 10: Farmland Map



**DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION**

Armando Quintero, Director

Julianne Polanco, State Historic Preservation Officer

1725 23rd Street, Suite 100, Sacramento, CA 95816-7100

Telephone: (916) 445-7000 FAX: (916) 445-7053

calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

October 24, 2022

[VIA EMAIL]

Refer to HUD_2022_0928_004

Ms. Jessica de Wit
Housing & Community Development Division Manager
Economic Development Department
City of Santa Cruz
337 Locust Street
Santa Cruz, CA 95060

Re: Natural Bridges Drive Single Room Occupancy Affordable Housing Development Project
Located at 415 Natural Bridges Drive, Santa Cruz, CA

Dear Ms. de Wit,

The California State Historic Preservation Office (SHPO) received the consultation submittal for the above referenced undertaking for review and comment pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36 CFR Part 800. The regulations and advisory materials are located at www.achp.gov.

Pursuant to 36 CFR Part 800.4(d) the SHPO does not object to the City of Santa Cruz's finding of *No historic properties affected* for the U.S. Department of Housing and Urban Development (HUD) Project -based Voucher (PBV) funded Natural Bridges Drive single room occupancy 20-unit affordable housing development located at 415 Natural Bridges Drive. The City may have additional Section 106 responsibilities under certain circumstances set for in 36 CFR Part 800. For example, in the event that historic properties are discovered during the implementation of the undertaking, the City is required to consult further pursuant to 36 CFR Part 800.13(b).

SHPO appreciates the City of Santa Cruz's consideration of historic properties in the project planning process. If you have questions please contact Shannon Lauchner Pries, Historian II, with the Local Government & Environmental Compliance Unit at shannon.pries@parks.ca.gov.

Note that we are only sending this letter in electronic format. Please confirm receipt of this letter. If you would like a hard copy mailed to you, respond to this email to request a hard copy be mailed.

Sincerely,

A handwritten signature in blue ink, appearing to be "Julianne Polanco".

Julianne Polanco
State Historic Preservation Officer



ECONOMIC DEVELOPMENT DEPARTMENT
337 Locust Street • Santa Cruz, CA 95060 • (831) 420-5150 •
www.cityofsantacruz.com

September 27, 2022

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

RE: 415 Natural Bridges Drive Project
415 Natural Bridges Drive, Santa Cruz, Santa Cruz County, CA 95060
USGS Santa Cruz Quad - T11S, R2W, Section 22
APNs: 003-011-06 and 003-011-10

Trigger: Receipt of HUD Project-based Vouchers

Dear Ms. Polanco;

The purpose of this letter is to complete the SHPO consulting requirements pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36 CFR Part 800 prior to the above-referenced project receiving HUD Project-based Vouchers (PBV) to partially fund the operations of a 100% affordable, 20-unit Single Room Occupancy (SRO) project to be located at 415 Natural Bridges Drive in the City of Santa Cruz, Santa Cruz County, California. The use of federal funds in the project requires that a NEPA environmental review be conducted on the project site, which includes Section 106 consultation with SHPO.

Conclusion

The City of Santa Cruz has concluded that the proposed project will not cause any significant impact to archaeological or historic resources in the project area and, therefore, has made a finding of *"No Historic Properties Affected"* per CFR 36 Part 800.4 (d)(1). The City of Santa Cruz requests your concurrence in this finding.

Proposed Project

The proposed 100% affordable, 20-unit SRO project will be built on 2 full parcels totaling approximately 0.35 acres located at 415 Natural Bridges Drive in the City of Santa Cruz, Santa Cruz County, California (APNs: 003-011-06 and 003-011-10). The site is currently an undeveloped lot. The project will consist of 20 affordable rental units. The project area is characterized by a mix of office, industrial, residential and open space uses.

Area of Potential Effect (APE)

The APE is the project and immediately adjacent properties around the project site.

California Historical Resources Information System (CHRIS)

A literature search of the Project APE was performed at the Northwest Information Center (NWIC) on April 21, 2021. The NWIC search included a review of previously recorded cultural resources and previously conducted archaeological investigations within a ¼ mile of the subject property. Three recorded linear historical resources are located within the study area including the Southern Pacific Railroad alignment (P-44-000377), the historic alignment of California State Route 1 (P-44-000406, CA-SCR-334 H), and a portion of the right of way of the Ocean Shore Railroad (P-44-000700). Three historic buildings have also been recorded along nearby Mission Street.

Cultural Resources Survey

A pedestrian survey was conducted as part of the project's archaeological investigation on April 23, 2021. An archaeologist intensively surveyed the project footprint with parallel transects spaced at 1-5 meter intervals with periodic trowel and boot scrapes to inspect exposed soils and rodent back-dirt piles. No prehistoric or historical archaeological evidence was identified within the project area. Based on the geomorphic context and soil type, the probability of discovering subsurface archaeological sites is low. No additional cultural resource study is recommended for the proposed project.

Native American Heritage Commission (NAHC)


Consultation with the NAHC was initiated on August 5, 2022. A response was not received from NAHC until September 1, 2022. That response stated that a Sacred Lands File for the area of potential effect was completed with positive results. NAHC did not provide details, but recommended consultation with the Costanoan Ohlone Rumsen-Mutsen tribe for additional information. NAHC provided a list of six (6) Native American contacts, including the Costanoan Ohlone Rumsen-Mutsen Tribe. The City had preemptively sent consultation letters to the six NAHC-listed contacts, including the Costanoan Ohlone Rumsen-Mutsen, and a seventh representative, on August 17, 2022.

The Amah Mutsun Tribal Band of Mission San Juan Bautista replied on August 17, 2022 and recommended a cultural sensitivity training be conducted for individuals involved in earth disturbance as well as a qualified archaeological and Native American monitor be present during earth movement. The letters were followed up with phone calls to the remaining contacts on September 22, 2022. A

response was received from the Amah Mutsun Tribal Band on September 23, 2022 requesting notification in the event cultural resources are discovered. No additional responses have been received.

I hope this information is helpful to you. Please feel free to contact me should you have any questions or comments about this project.

Sincerely,



Jessica de Wit, Housing & Community Development Division Manager
City of Santa Cruz

cc: Ryan Brady and Stephanie Strelow, Dudek

Attachments:

1. Project Location Map of Area of Potential Effects (APE)
2. Site Plan
3. NAHC Response Letter and Contacts List, dated September 1, 2022
4. Native American Tribal Consultation Letters, dated August 17, 2022
5. Tribal Consultation Response Letter, dated August 17, 2022
6. Archaeological Report

Attachment 1

Site Location

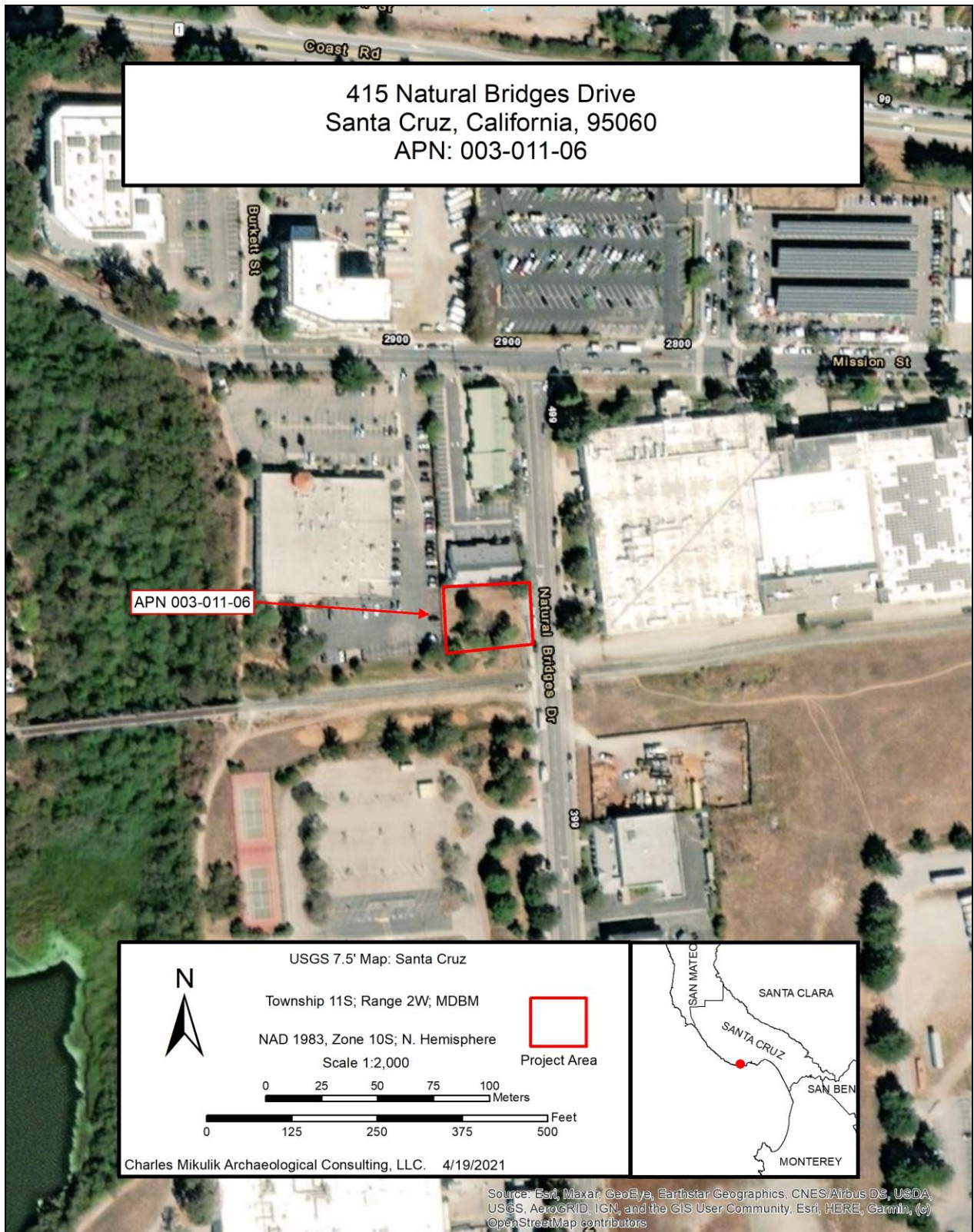
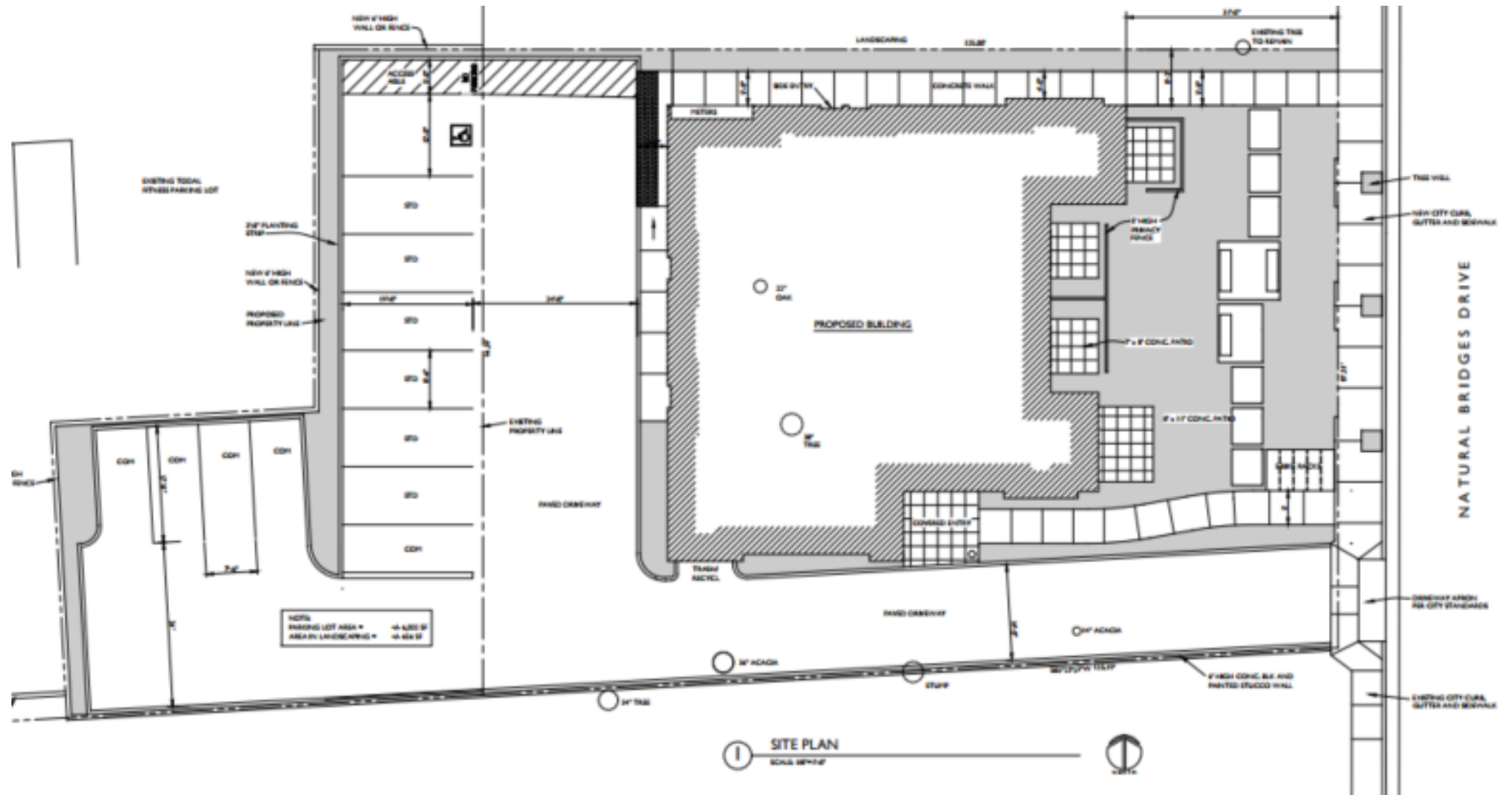


Figure 2. Project Area Aerial View.

Attachment 2

Site Plan

Attachment 2: Site Plan



Source: Adapted from Thacher and Thompson Architects 2021.

Attachment 3

NAHC Response and List of Contacts



September 1, 2022

Angela Moniz
Dudek

Via Email to: amoniz@dudek.com

CHAIRPERSON
Laura Miranda
Luiseño

Re: Dudek 9711.0001-1_451 Natural Bridges Drive Project, Santa Cruz County

VICE CHAIRPERSON
Reginald Pagaling
Chumash

Dear Ms. Moniz:

PARLIAMENTARIAN
Russell Attebery
Karuk

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Costanoan Ohlone Rumsen-Mutsen Tribe on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

SECRETARY
Sara Dutschke
Miwok

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

Sincerely,

COMMISSIONER
Wayne Nelson
Luiseño

Cody Campagne

COMMISSIONER
Stanley Rodriguez
Kumeyaay

Cody Campagne
Cultural Resources Analyst

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

Attachment

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

Native American Heritage Commission **ATTACHMENT 11**
Native American Contact List
Santa Cruz County
9/1/2022

Amah Mutsun Tribal Band

Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley
Yokut

**Amah Mutsun Tribal Band of
Mission San Juan Bautista**

Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

**Costanoan Ohlone Rumsen-
Mutsen Tribe**

Patrick Orozco, Chairman
644 Peartree Drive
Watsonville, CA, 95076
Phone: (831) 728 - 8471
yanapvoic97@gmail.com

Ohlone

**Indian Canyon Mutsun Band of
Costanoan**

Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Costanoan

**Indian Canyon Mutsun Band of
Costanoan**

Kanyon Sayers-Roods, MLD
Contact
1615 Pearson Court
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonconsulting.com

Costanoan

**Wuksache Indian Tribe/Eshom
Valley Band**

Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443 - 9702
kwood8934@aol.com

Foothill Yokut
Mono

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Dudek 9711.0001-1_451 Natural Bridges Drive Project, Santa Cruz County.

Attachment 4

Native American Consultation Letters

ZONING / PERMIT PROCESSING
831/420-5100 • FAX 831/420-5434
COMPREHENSIVE PLANNING
831/420-5180 • FAX 831/420-5101



INSPECTION SERVICES
831/420-5120 • FAX 831/420-5434
PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Monica Arellano
20885 Redwood Road, Suite 232
Castro Valley, CA 94546

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Monica Arellano,

The City, with assistance from Dudek, is conducting environmental review for a proposed affordable housing project on a 0.35-acre parcel located at 415 Natural Bridges Drive (APNs 003-011-06 and 003-011-10), Santa Cruz, Santa Cruz, County, California (Project Area; Figure 1). The project would result in the construction of a three-story, approximate 10,520 square foot residential building, consisting of 20 affordable dwelling units and associated improvements on the property.

As part of our review, which assists in the Project's compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), the City is reaching out to Native American tribes with local knowledge of the Project vicinity. Any information you provide will remain confidential and be used for planning purposes for this project only.

Please review the Project Area map included with this letter and respond within 30 days if you have any questions or comments. You may respond by mail, e-mail, telephone, or in person. You can reach me by telephone at (831) 291-8370, or by e-mail at amoniz@dudek.com. Thank you very much for your time regarding our request.

Sincerely,

Angela Moniz, MA, RPA
Cultural Resources
DUDEK

Clara Stanger, Senior Planner
Planning and Community Development Department
City of Santa Cruz

Attachment: Figure 1. Project Location Map

ZONING / PERMIT PROCESSING
831/420-5100 • FAX 831/420-5434
COMPREHENSIVE PLANNING
831/420-5180 • FAX 831/420-5101



INSPECTION SERVICES
831/420-5120 • FAX 831/420-5434
PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Chairperson Valentin Lopez
P.O. Box 5272
Galt, CA 95632

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Chairperson Lopez,

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Angela Moniz, MA, RPA
Cultural Resources
DUDEK

Clara Stanger, Senior Planner
Planning and Community Development Department
City of Santa Cruz

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831/420-5100 • FAX 831/420-5434
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INSPECTION SERVICES
831/420-5120 • FAX 831/420-5434
PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Chairperson Patrick Orozco
644 Peartree Drive
Watsonville, CA 95076

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Chairperson Orozco,

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Angela Moniz, MA, RPA
Cultural Resources
DUDEK

Clara Stanger, Senior Planner
Planning and Community Development Department
City of Santa Cruz

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INSPECTION SERVICES
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PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Chairperson Ann Marie Sayers
1 Indian Canyon Road
Hollister, CA 95023

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Chairperson Sayers,

The City, with assistance from Dudek, is conducting environmental review for a proposed affordable housing project on a 0.35-acre parcel located at 415 Natural Bridges Drive (APNs 003-011-06 and 003-011-10), Santa Cruz, Santa Cruz, County, California (Project Area; Figure 1). The project would result in the construction of a three-story, approximate 10,520 square foot residential building, consisting of 20 affordable dwelling units and associated improvements on the property.

As part of our review, which assists in the Project's compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), the City is reaching out to Native American tribes with local knowledge of the Project vicinity. Any information you provide will remain confidential and be used for planning purposes for this project only.

Please review the Project Area map included with this letter and respond within 30 days if you have any questions or comments. You may respond by mail, e-mail, telephone, or in person. You can reach me by telephone at (831) 291-8370, or by e-mail at amoniz@dudek.com. Thank you very much for your time regarding our request.

Sincerely,

Angela Moniz, MA, RPA
Cultural Resources
DUDEK

Clara Stanger, Senior Planner
Planning and Community Development Department
City of Santa Cruz

Attachment: Figure 1. Project Location Map

ZONING / PERMIT PROCESSING
831/420-5100 • FAX 831/420-5434
COMPREHENSIVE PLANNING
831/420-5180 • FAX 831/420-5101



INSPECTION SERVICES
831/420-5120 • FAX 831/420-5434
PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

MLD Contact Canyon Sayers-Roods
1615 Pearson Court
San Jose, CA 95122

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear MLD Contact Sayers-Roods,

The City, with assistance from Dudek, is conducting environmental review for a proposed affordable housing project on a 0.35-acre parcel located at 415 Natural Bridges Drive (APNs 003-011-06 and 003-011-10), Santa Cruz, Santa Cruz, County, California (Project Area; Figure 1). The project would result in the construction of a three-story, approximate 10,520 square foot residential building, consisting of 20 affordable dwelling units and associated improvements on the property.

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PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Chairperson Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA 93906

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Chairperson Woodrow,

The City, with assistance from Dudek, is conducting environmental review for a proposed affordable housing project on a 0.35-acre parcel located at 415 Natural Bridges Drive (APNs 003-011-06 and 003-011-10), Santa Cruz, Santa Cruz, County, California (Project Area; Figure 1). The project would result in the construction of a three-story, approximate 10,520 square foot residential building, consisting of 20 affordable dwelling units and associated improvements on the property.

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Planning and Community Development Department
City of Santa Cruz

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PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

August 17, 2022

Chairperson Irenne Zwierlein
3030 Soda Bay Road
Lakeport, CA 95453

Subject: 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County-Native American Outreach

Dear Chairperson Zwierlein,

The City, with assistance from Dudek, is conducting environmental review for a proposed affordable housing project on a 0.35-acre parcel located at 415 Natural Bridges Drive (APNs 003-011-06 and 003-011-10), Santa Cruz, Santa Cruz, County, California (Project Area; Figure 1). The project would result in the construction of a three-story, approximate 10,520 square foot residential building, consisting of 20 affordable dwelling units and associated improvements on the property.

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Sincerely,

Angela Moniz, MA, RPA
Cultural Resources
DUDEK

Clara Stanger, Senior Planner
Planning and Community Development Department
City of Santa Cruz

Attachment: Figure 1. Project Location Map

Attachment 5

Native American Consultation Response (Amah Mutsun Tribal
Band)

If you have done a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS) and the Native American Heritage Commission (NAHC). If you have received any positives within 1 mile of the project area:

Our recommendations are as follows:

All Crews and Individuals who will be moving any earth be Cultural Sensitivity Trained.

A Qualified California Trained Archaeological Monitor be present during any earth movement.

A Qualified Native American Monitor be present during any earth movement.

If you have not done the searches, please do so and contact us with the results for our recommendations.

Any further questions or information we are happy to assist.

Irenne Zwierlein

AMTB Inc.
Amah Mutsun Tribal Band
3030 Soda Bay Road
Lakeport, CA 95453

Our rates for 2022

\$ 150.00 per hour.

4 hours minimum

Cancellations not 48 hours prior will be charged a 4-hour minimum. There is a round trip mileage charge if canceled after they have traveled to site.

Anything over 8 hours a day is charged as time and a half.

Weekends are charged at time and a half.

Holidays are charged at double time.

For fiscal year (FY) 2022, standard per diem rate of \$324 (\$255 lodging, \$69 M&IE).

M&IE Breakdown FY 2022

M&IE Total¹	Continental Breakfast/ Breakfast²	Lunch²	Dinner²	Incidental Expenses	First & Last Day of Travel³
\$69	\$16	\$17	\$31	\$5	\$64.00

Beginning on January 1, 2022, the standard mileage rates for the use of a car round trip (also vans, pickups or panel trucks) will be: 58.5 cents per mile driven for business use, or what the current federal standard is at the time. As of July 1, 2022 the rate will increase to 62.5 cents per mile.

Our Payment terms are 5 days from date on invoice.

Our Monitors are Members of the Amah Mutsun Tribal Band of Mission San Juan Bautista.

If you have any questions, please feel free to contact the AMTB Inc. at the below contact information.

Sincerely,

Irenne Zwiierlein

Irenne Zwiierlein

amtbinc21@gmail.com

650 851 7489



CERTIFICATE OF LIABILITY INSURANCE

ATTACHMENT A DATE (MM/DD/YYYY)

7/25/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Allied Brokers 591 Lytton Avenue Palo Alto CA 94301		CONTACT NAME: Brenda Aldaco PHONE (A/C, No, Ext): (650) 328-1000 FAX (A/C, No): (650) 324-1142 E-MAIL ADDRESS: BusinessVIP@alliedbrokers.com	
		INSURER(S) AFFORDING COVERAGE	
		INSURER A: Scottsdale Insurance Company	NAIC # 41297
INSURED		INSURER B: United States Liability Insurance Company 25895	
Amah Mutsun Tribal Band 3030 SODA BAY RD LAKEPORT CA 95453		INSURER C:	
		INSURER D:	
		INSURER E:	
		INSURER F:	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY			CPS7617452	07/09/2022	07/09/2023	EACH OCCURRENCE	\$ 1,000,000	
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 100,000	
	GEN'L AGGREGATE LIMIT APPLIES PER:							MED EXP (Any one person)	\$ 5,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						PERSONAL & ADV INJURY	\$ 1,000,000	
	OTHER:						GENERAL AGGREGATE	\$ 2,000,000	
	AUTOMOBILE LIABILITY						PRODUCTS - COMP/OP AGG	\$ 2,000,000	
	<input type="checkbox"/> ANY AUTO						Deductible	\$ 500	
	<input type="checkbox"/> OWNED AUTOS ONLY	<input type="checkbox"/> SCHEDULED AUTOS					COMBINED SINGLE LIMIT (Ea accident)	\$	
	<input type="checkbox"/> HIRED AUTOS ONLY	<input type="checkbox"/> NON-OWNED AUTOS ONLY					BODILY INJURY (Per person)	\$	
	<input type="checkbox"/> UMBRELLA LIAB	<input type="checkbox"/> OCCUR					BODILY INJURY (Per accident)	\$	
	<input type="checkbox"/> EXCESS LIAB	<input type="checkbox"/> CLAIMS-MADE					PROPERTY DAMAGE (Per accident)	\$	
	DED	RETENTION \$						\$	
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						PER STATUTE	OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	<input type="checkbox"/> Y / <input type="checkbox"/> N	N/A				E.L. EACH ACCIDENT	\$	
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	\$	
B	Professional Liability			SP 1573468B	06/21/2022	06/21/2023	Each Claim	\$1,000,000	
							Aggregate	\$1,000,000	
							Deductible	\$2,500	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROOF OF COVERAGE

CERTIFICATE HOLDER For Your Information	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Brenda Aldaco</i>

ATTACHMENT 11

From: Valentin Lopez <vjltestingcenter@aol.com>
Sent: Friday, September 23, 2022 3:54 PM
To: Angela Moniz
Subject: Re: Native American Outreach-415 Natural Bridges Drive

Dear Ms. Moniz,

Please notify our Tribe immediately in the event any cultural resources are discovered. In that event, we will request that a Native American Monitor from our Tribe be used for all ground disturbance work that remains.

Thank you,

Val

-----Original Message-----

From: Angela Moniz <amoniz@dudek.com>
To: vjltestingcenter@aol.com <vjltestingcenter@aol.com>
Sent: Thu, Sep 22, 2022 8:14 am
Subject: Native American Outreach-415 Natural Bridges Drive
Hello Chairperson Lopez,
We are interested in learning if you have any knowledge of cultural or heritage resources within the vicinity of a project located within Santa Cruz County. A letter containing information on the project is attached as well a map of the project area. We look forward to hearing from you.
Thank you,

Angie Moniz, M.A., RPA
Archaeologist

725 Front St. #400, Santa Cruz, CA 95060
O: 831.600.1400 C: 831.291.8370
www.dudek.com

Attachment 6

Archaeological Report

**PRELIMINARY ARCHAEOLOGICAL RECONNAISSANCE
415 NATURAL BRIDGES DRIVE, SANTA CRUZ,
SANTA CRUZ COUNTY, CALIFORNIA (APN 003-011-06)**



May 6, 2021

Prepared For

Jennifer Panetta, Executive Director
Housing Authority of the County of Santa Cruz
2160 41st Avenue
Capitola, CA 95010

By

Patricia Paramoure, A.S., B.A., M.A. RPA
Principal and Consulting Archaeologist

Patricia Paramoure Archaeological Consulting
5439 Soquel Drive
Soquel, CA 95073
(408) 891-9678

patparamourearcheconsult@gmail.com

Sites: None

Acreage: ca. 0.28 acres

UTM Approximate Center of Parcel: WGS 84, Zone 10 S, 583879 mE / 4090709 mN

Quad Map: SANTA CRUZ, CA 7.5' USGS Quadrangle

Key Words: Negative

Dwight J. Younglove

Southern Pacific Railroad

MANAGEMENT SUMMARY

The archival research and the surface reconnaissance survey did not indicate the presence of an archaeological site within the subject parcel. No archaeological impact is predicted and the proposed construction should not be held up on the basis of archaeological concerns. However, in the unlikely chance that unanticipated buried archaeological resources from either the precontact or historic periods are encountered during excavations for this project, a qualified archaeologist meeting the Secretary of the Interior Standards shall be called to assess the finds and give recommendations for treatment.

INTRODUCTION

Patricia Paramoure Archaeological Consulting (PPAC) was contacted by Mark Failor, Agent for Jennifer Panetta, Executive Director of the Housing Authority of the County of Santa Cruz, Owner, to perform an Archaeological Review required by the City of Santa Cruz Office of Planning and Community Development, prior to issuance of a permit for the construction of 20 new habitation units on the property located at 415 Natural Bridges Drive, APN 003-011-06, in the City of Santa Cruz, Santa Cruz County, California.

The Archaeological Review consisted of: 1) archival research information from the Northwest Information Center of the California Historical Resources Information System, in Rohnert Park, California, and within the files of PPAC, 2) performance of a surface field survey on the parcel, 3) evaluation of the field findings, 4) evaluation of possible impacts, and 5) management recommendations. The details of the investigation are described in this written report, to be submitted to the City of Santa Cruz Planning and Community Development Department. This archaeological resources review was performed to fulfill the requirements of the California Environmental Quality Act (CEQA) and City of Santa Cruz planning directives concerning cultural resources.

LOCATION

The property is situated on the west side of Natural Bridges Drive, between Mission Street, to the north, and Delaware Avenue, to the south, and is north of and adjacent to a railroad right of way, in a primarily industrial neighborhood, on the far west side, within the southwestern area, of the City of Santa Cruz, California. The lot lies within the central area of Section 22 of Township 11 South, Range 2 West, Mount Diablo Meridian. The UTM location for the approximate center of the

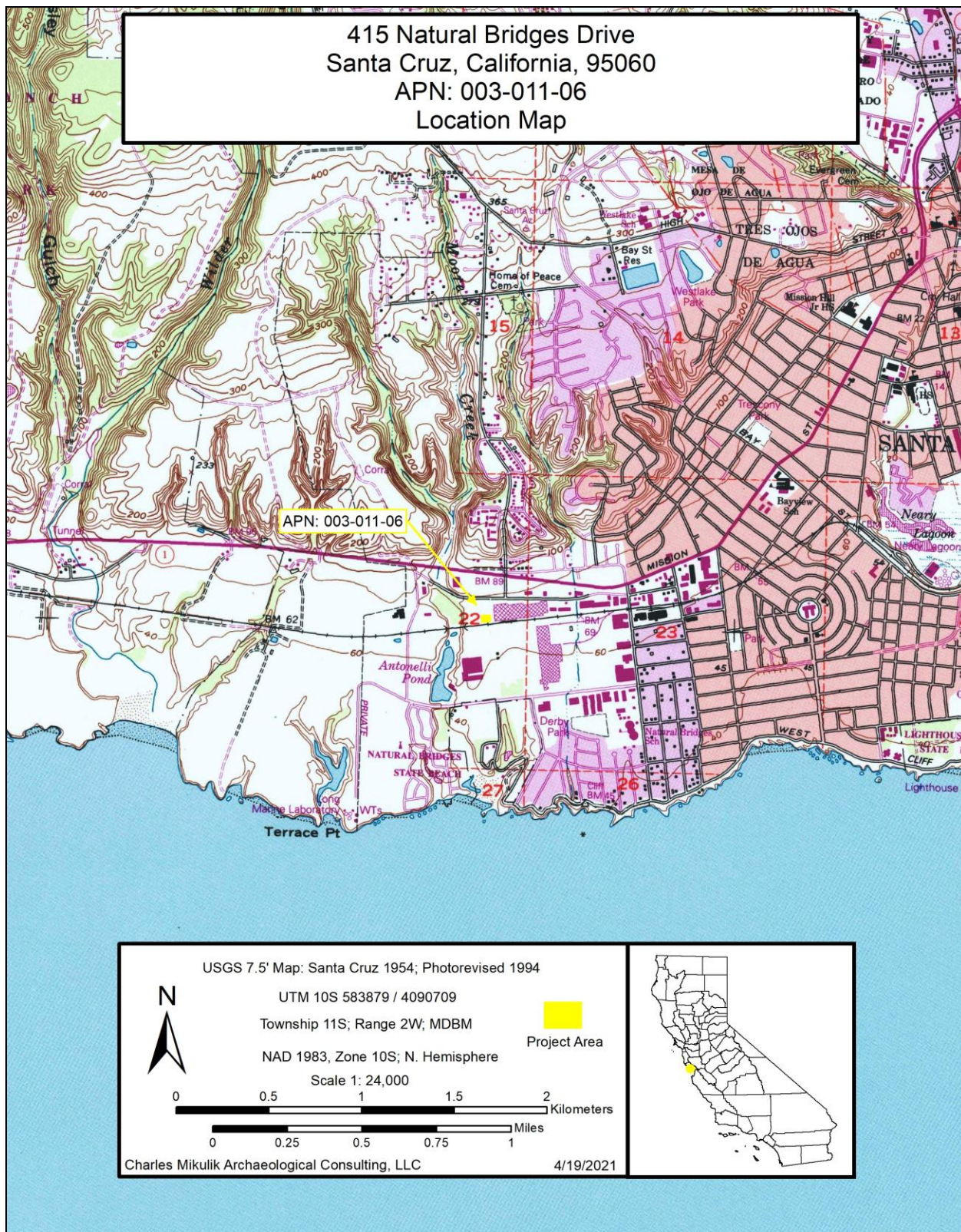


Figure 1. Project Area Location Map.

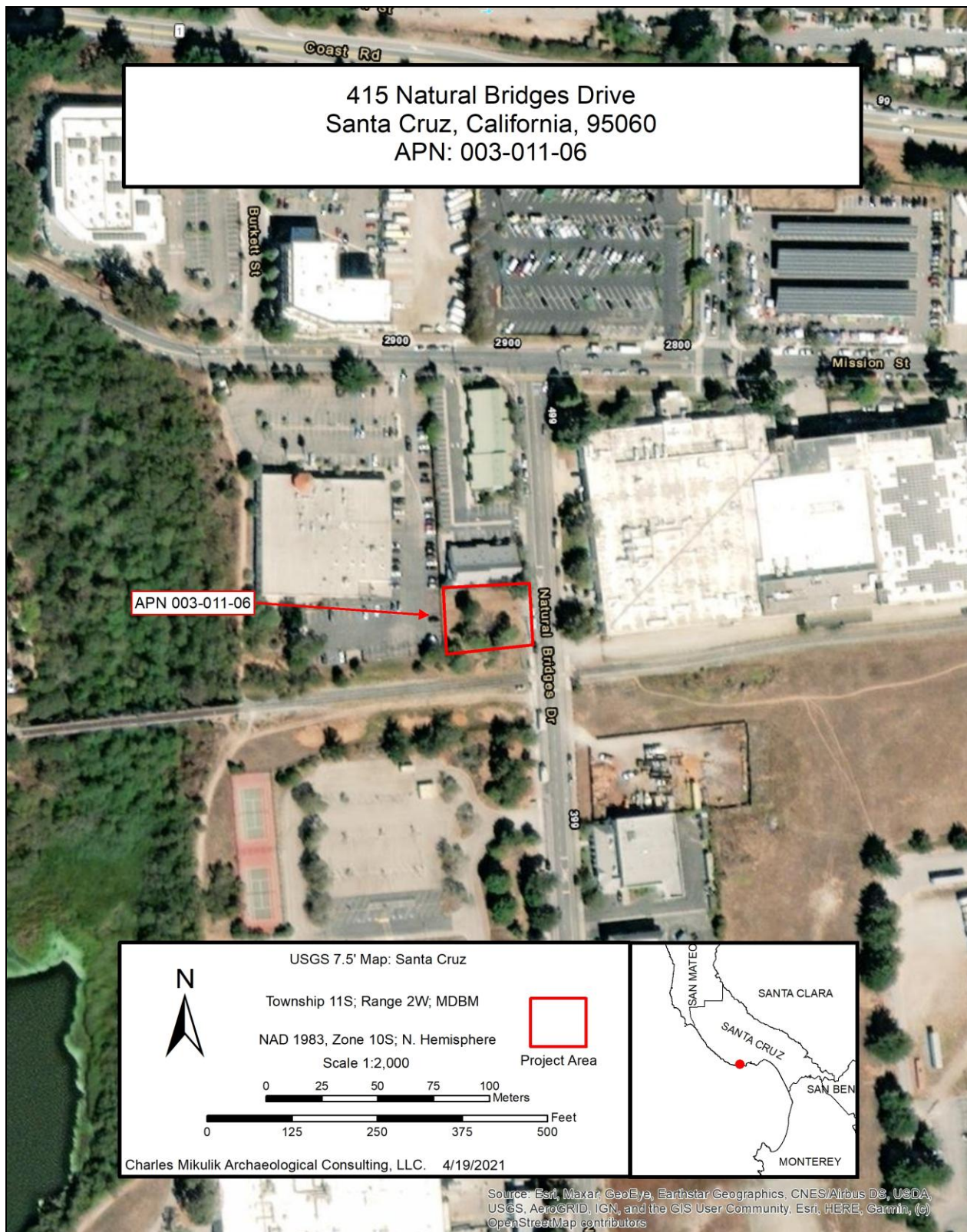


Figure 2. Project Area Aerial View.

parcel is WGS 84, Zone 10 South, 583879 meters Easting / 4090709 meters Northing. The property is located at the northwest corner of the intersection of Natural Bridges Drive and the former Southern Pacific Railroad (aka Santa Cruz & Monterey Bay Railway, aka the St. Paul & Pacific Railroad), and approximately 2 miles southwest of Santa Cruz City Hall, within the incorporated lands of the City of Santa Cruz, California. The parcel is reached by paved city streets. (See Figure 1, Project Area Location Map, Page 2, and Figure 2, Project Area Aerial View, Page 3.)

According to the City of Santa Cruz, the property is situated within an archaeologically sensitive area because precontact Native American sites are commonly found in similar topography, close to the coast, where various resources exploited by native groups were located before California was colonized by the Spanish during the late 18th Century. Both precontact and historic era archaeological sites have been found nearby.

NATURAL SETTING

The climate in Santa Cruz County consists of a dry season and a wet season. The dry season extends from May to October, and the wet season extends from November to April. The precipitation rate is lowest along the coast and highest in the inland mountains. Annual average rainfall ranges from twenty to fifty inches. The winter winds blow from north to south. The summer winds blow from the west and northwest to the east, and bring in fog that usually dissipates during the day (Gordon 1977).

Soils in this region, when intact, consist of the Watsonville-Elkhorn-Pinto complex, comprised of very deep, nearly level to moderately steep, well-drained to somewhat poorly drained loams and sandy loams on marine terraces and old alluvial fans and plains, that cut through primarily northwest striking, folded marine and non-marine sedimentary rocks from the late Eocene to the Pleistocene. The primary rock types in the study area are sandstone, limestone, siltstone, and mudstone. Erosion due to farming and logging activities during the late 19th and early 20th centuries has contributed to the siltation of streams and seasonal drainages. The modern overdraft of the underwater aquifers in the general region has contributed to a significant drop in the flow of streams and springs in recent years, as has a general drop in rainfall over approximately the past 100 years (USDA 2011; USDA 1980).

This property is located within the Coastal Rangeland vegetation zone that is comprised of marine terraces and gently rolling, open grasslands gently sloping southwest toward Monterey Bay. The vegetation is characterized by Küchler (1977) as a Coastal prairie-scrub mosaic (*Baccharis-Danthonia-Festuca*) composed of grasslands interspersed with small stands of hardwoods such as live oak (*Quercus agrifolia*) and bay-laurel (*Umbellularia californica*). Historically, the foothills included the interface between the coastal rangeland and the Redwood Forest. Major logging operations took place in the Santa Cruz Mountains after smaller stands along the low terraces and foothills were first cut (Welch 1992:19). Significant numbers of coastal trees were felled to provide fuel for domestic and industrial use, including lime manufacture, which was done in this area during historic times.

The native vegetation has been altered throughout the historic period. These areas were cultivated and grazed after settlement by European descendants, when farms and ranches occupied the area, and many of the trees were cut down for human use during this same time. Additionally, many introduced foreign species of vegetation, including grasses, trees, and flowering plants, both planted and incidental, have contributed to the changes in plant communities over time. Other factors include farming and logging, mentioned above (Gordon 1977).

Around this area a great number of animal species can be found. About 330 species occur including 250 species of birds, 56 mammals, 8 reptiles, and 13 amphibians, excluding all marine species (Roper 1993:23). Species that are no longer present in this area are the grizzly bear, wolves, tule elk, pronghorn antelope, Guadalupe fur seals, and jaguars. Species that were almost hunted to extinction but that are now making a comeback include gray whales, sea otters, elephant seals, and mountain lions. Some species that were present in aboriginal times have become more numerous, including black-tailed deer, sea lions, cottontail rabbit, coyote, raccoon, meadow-mice, and ground squirrels. Other species that have been introduced are the common mouse, Norway rat, Virginia opossum, gray squirrel, Russian boar, muskrat, and golden beaver (Gordon 1977).

HISTORY

Pre-contact History of the Santa Cruz Area

By Rob Edwards

The first signs of human occupation in this region appear to be approximately 8,500 - 10,000 years ago in Scotts Valley. Evidence of dense occupation of the Santa Cruz County area, at least as has been documented to date, does not appear until about 6,000 BP.

Living in an area of considerable ecological diversity allowed the early inhabitants of the north Monterey Bay region to have a hugely varied diet. They relied most heavily on foods collected in the inter-tidal region. The local archaeological middens contain shell from California mussel, black turban, limpet, barnacle, olivella, brachiopods, dogwinkles, and other rocky shore mollusk species (Hylkema 1991). However, they also traveled inland for plant foods like acorns, grass, and flower seeds, buckeye, roots, and berries. They hunted terrestrial animals such as elk, deer, rabbit, gopher, marine resources, and fished freshwater streams.

Due to the highly mobile lifestyles of both foragers and collectors, it is to be expected that they would not burden themselves with heavy non-portable possessions. This observation is borne out by the artifacts found at local village sites of both earlier and later periods (Hylkema 1991:7). The earlier inhabitants of the Santa Cruz coast relied on stones, shells, animal bones, and plants for materials for their tools and equipment.

Baskets were made to serve a wide variety of purposes: cooking vessels, storage containers, water carriers, and seed-gathering devices. Before about 4,000 B.C., they made arrowheads and other tools from animal bone and antler, from the local Monterey chert, from Franciscan chert received in trade from the Santa Clara Valley (Hylkema 2003:270), and from obsidian quarried in Casa Diablo and the Bodie Hills on the east side of the Sierra Nevada, and from Napa and Clear Lake north of the San Francisco Bay (Roper 1993:321).

Using the concepts developed by Binford in 1980, two basic subsistence strategies were practiced in this region. During the earlier phase (5800 BP to 1000 to 2000 BP.), the residents were foragers who lived in small groups and moved from site to site throughout the inland and coastal ecosystems within their territories in order to take advantage of food resources as they became available. They would then settle into a camp or village where they would process and eat the harvests, as well as carry on all the other activities of daily life. Some camps or temporary villages would be revisited time and time again, resulting in a build-up of refuse consisting of many types of artifacts, including food debris, lithic debris from tool-making, trade items, and burials (Hylkema 1991:15).

It has further been proposed that at least by 2,000 years ago, a new group of people entered the area that followed a somewhat different collector subsistence strategy. This correlates in time to a rise in oak pollens found in sediment cores taken from Elkhorn Slough, indicating that oak trees became more prevalent in the coastal region between 1700 and 2000 years ago, attracting communities who relied mostly on acorns as a staple food (Roper 1993:308). While both foragers and collectors were quite mobile, collectors tended to establish more long-term villages as bases to maintain acorn storage facilities. The communities became more sedentary and grew in population (Hylkema, personal communication). Members of the community traveled from more permanent sites to seasonal task-specific camps to harvest other resources as they became available, but would then return to the village once the harvest was complete to process the food. The seasonal camps might be revisited year after year, but would be expected to contain debris only from particular seasonal activities, rather than the full complement of artifacts generated by daily village life in a permanent site (Hylkema 1991:21).

As proposed by Gary Breschini in 1981, it appears that the early foragers may have been members of Hokan speaking groups who are thought to have occupied the area until the entry of Penutian speaking collectors. Whether the change indicates the replacement of one people by another, or the adoption of new technologies by the same people, is still under discussion (Hylkema, personal communication 2008). Recent DNA studies of archaeological materials seem to support replacement (Breschini, personal communication 2014).

Whatever the mechanism for the change, in the northern portion of the Monterey Bay coastal area where fewer oak trees were present, foraging continued to be the optimal subsistence strategy at least until 1000 A.D., and may have persisted in isolated pockets until after the arrival of the Spanish in the 1770s (Hylkema 1991:25). The growing separation of the coastal cultures and the inland acorn-based cultures was evidenced by the decreasing amount of imported materials and the increasing reliance on local materials for tools, until about 1000 A.D., after which no new Franciscan chert is found (Hylkema, personal communication 2008).

Ethnography

At the time of European contact, the Santa Cruz County area was within the traditional territory of the native Costanoan peoples. The term Costanoan is derived from the Spanish word for the local inhabitants, *Costeños*, meaning people of the coast. The aboriginal peoples of the region, collectively labeled Costanoan by ethnographers, were actually several distinct sociopolitical

groups who spoke between eight and twelve separate languages belonging to the Utian family of the Penutian language stock and lived in a contiguous geographic area. The language spoken in the Santa Cruz area was documented in Mission records as *Awaswas*. The nearest linguistic relatives of the Costanoan languages were those of the Miwok to the north and northeast (Levy 1978:485–486; Margolin 1978:1). The Costanoan peoples occupied the region surrounding the San Francisco Bay, with the southern coastal extent of their territory including the Monterey Bay region south to the area around Point Sur (Kroeber 1925:462). Since the 1970s, some descendant groups in these areas have preferred to use the term Ohlone to refer to themselves (Levy 1978:487; Margolin 1978:1).

The primary sociopolitical unit was the tribelet. Each tribelet was made up of one or more permanent villages with multiple seasonal villages and camps within their territory, defined by physiographic landscape features. Chiefs served primarily in an advisory capacity and the office was passed on patrilineally, with a daughter succeeding if there was no male heir (Levy 1978:485–487; Milliken 1995:1).

The Native Americans of the Santa Cruz County area employed a subsistence strategy that exploited both land and ocean resources through hunting, fishing, and gathering. They managed their landscapes through controlled burning to promote the growth of seed-producing annual plants. Acorns were likely the most important dietary plant. Additional vegetative foods included seeds, shoots, bulbs, and tubers. Meat protein came from large and small terrestrial and sea mammals, along with birds, fish, reptiles, insects, and shellfish. Their technology included tule balsa rafts, bows and arrows, flaked stone tools, pigments, cordage, woven skins and pelts, mortars and pestles, and basketry. Warfare between tribelets and with outside groups was common, with trespassing being a prevalent cause of conflict (Levy 1978:487–493; Margolin 1978:13–16). Although evidence shows the local Native Americans used portions of the Santa Cruz Mountains, they changed the landscape only in small subtle ways, in contrast to historic use of the mountain resources, which changed the area significantly.

After European contact, missionization, disease, and displacement due to population collapse caused the breakdown of social organization that severely disrupted the lifeways of the Ohlone peoples. Mission-based interaction with other groups from disparate geographical, linguistic, and cultural backgrounds also contributed to significant culture changes. When the newly independent Mexican government secularized the missions during the 1830s, the natives experienced further critical changes to their way of life. Many natives voluntarily left or were evicted from Mission holdings and became laborers at Californio-owned *ranchos* (ranches) or in the developing *pueblos* (towns). Multicultural Native American hamlets formed from these displaced populations were established within and just outside many new towns and ranches. The appropriation of California by Anglo-Americans further worsened the plight of the natives, as they became third class citizens in their own homeland (Levy 1978:487; Bean 1994:xxii).

There are no known remnants of Native American sites within or adjacent to the project parcel. Evidence of Native American sites includes dark midden soil with eroded marine shell fragments, fire-altered rock, isolated ground stone, and/or points or flakes of chert or obsidian. None of these were seen during the pedestrian survey of the project area.

The Study Area During the Spanish and Mexican Eras

The Santa Cruz area was first traversed by Europeans in 1769 when Captain Gaspar de Portolá y de Rovira led an expedition totaling 64 people, and comprised of soldiers, priests, and Mexican Indians, from Loreto, Baja California, to Monterey, Alta California, by way of San Diego. Their aim was, to once again, after 167 years, find the bay previously named Monterey, so much praised by Vizcaíno in 1602 as a potential harbor for Manila Galleons returning to Mexico by way of the California coast. They missed Monterey Bay due to heavy summer fogs and continued north, along the coast, traversing the Santa Cruz County area, and then continued on and discovered San Francisco Bay (Clark 2008:249; Welsh 1992:10).

Diarist Fr. Juan Crespi documented the exploration party's venture through the area that is now the City of Santa Cruz. On October 17, 1769, the party traversed an area, "in sight of the sea," that was crossed by multiple "steep gulches containing running water," and three "reed-lined" lagoons (today's Woods Lagoon, Schwan Lake, and Corcoran Lagoon). Later that day, they reached a large river, which they crossed and then made camp for the night on the west side. Crespi named the river San Lorenzo. The campsite was in what is now downtown Santa Cruz. The following morning, October 18, traveling west-northwest along the coast, the party encountered a creek after "500 steps", that Crespi named "Santa Cruz." The creek gave its name to Mission Santa Cruz in 1791, and still later to the county and the city. However, the creek is no longer called Santa Cruz. Camp for the night was at what is now called Majors Creek, formerly called Coja Creek, near the coast. This creek forms part of the western border of Wilder Ranch State Park (Bolton 1927:214-216).

The Portolá expedition included the founding of a presidio and a mission at Monterey. In 1771, due to problems between the Native Americans and the soldiers, this mission was moved south and became known as Mission San Carlos de Borromeo de Carmelo. Eventually, two more missions were established in the area, Mission Santa Cruz in 1791, and Mission San Juan Bautista in 1797. These three missions baptized thousands of Native Americans from the Monterey Bay region, with Missions Santa Cruz and San Francisco (1776) recording the majority of converts from the northern Santa Cruz County area (Milliken 1988).

Six Franciscan missions were established within Costanoan territory, with La Misión de la Exaltación de la Santa Cruz (Exultation of the Holy Cross) being founded on August 28, 1791, by Fray Fermin Lasuen, Junipero Serra's successor. The original location, on the San Lorenzo River floodplain, was deemed undesirable after a wet winter, and the mission was moved to the top of a bluff overlooking the river on the western side in late winter of 1793. By 1794, an adobe chapel was built and during the early years of the 19th Century, the mission complex around the chapel expanded to include a grist mill, large gardens, grain fields, orchards, and over 4,000 cattle. The main complex was located within the area bordered by today's High, Mission, Emmet, and Sylvar Streets (Hoover et al. 1990).

The Quiroste tribe of Ohlone Indians were from the Año Nuevo region and the mountains to the east, at the northern edge of Monterey Bay, and the Native Americans from the area west of Santa Cruz may have been allied with this group centered a little less than 10 miles up the coast to the northwest. The Quiroste were likely the largest and most powerful coastal tribe between

Monterey Bay and the Golden Gate due to their control of the Monterey banded chert source at Año Nuevo, widely traded throughout the area for use in stone tool manufacture. This tribelet was responsible for what was likely the only direct assault on a mission building in the central California area. On December 14, 1793, they attacked and partially burned two buildings at Mission Santa Cruz, under the leadership of Charquin, who was later captured and imprisoned at the Santa Barbara Presidio (Milliken 1991).

The subject parcel is situated approximately 1.2 miles east of Mission Santa Cruz, the birthplace of the City of Santa Cruz, located on Mission Hill, near the intersection of Mission and Sylvar Streets. During the Spanish and Mexican eras, the coastal marine terrace grasslands of Santa Cruz County were primarily used as pasture for grazing livestock, including cattle, sheep, and horses, belonging to first, Mission Santa Cruz, founded in 1791 on the west side of the San Lorenzo River, and later, to the Villa de Branciforte, the pueblo (town) founded on the east side of the same river, and settled in 1797 (Rowland 1980:167). Additionally, the native tanbark oak trees (*Lithocarpus densiflorus*) found in coastal areas, were exploited for the early hide tanning industry. The tannin from this tree was the best known for tanning heavy leather for items such as shoe soles and saddles (Tappeiner et al. nd:11).

The Villa de Branciforte, the third of three Royal towns, or “pueblos” (secular communities) was established in Colonial Alta California in 1797 on the eastern side of the San Lorenzo River, across the flood plain from the mission. (The other two pueblos were San Jose and Los Angeles.) The mission priests were not pleased that the Spanish government had established a pueblo so close to their religious institution. Junípero Serra, leader of the California Missions thought that area resources were not sufficient to support both communities and that the secular hamlet would have a negative effect on the mission Indians (Lydon 1997:7).

The community was instituted by Governor Diego de Borica for settlement by inválidos (retired soldiers) and their families, as a colonization effort to help discourage Russian encroachment from the north. It was named after Miguel de la Grua Talamanca de Carini y Branciforte, First Marqués of Branciforte, and the 53rd Viceroy of New Spain (Mexico). A Sicilian, he had served in the army of Spain and his administration was one of the most corrupt in the history of New Spain (Model 2016).

The town site was chosen because it had everything needed for a settlement: rich soil, water, timber, stone, lime, a summer anchorage, and a favorable climate (Rowland 1980:27) The first buildings were erected in 1798, on the hill across the river from the mission. The town was settled primarily by paroled criminals from jails in Guadalajara and retired soldiers (Dillon 1992:52-57). The seventeen original pobladores (settlers) arrived sick and destitute, on the schooner, *Concepción*, from San Blas, and although the Spanish government promised homes, tools, and livestock, upon arrival, they quickly realized that were on their own (McManis 2014; Rowland 1980:50).

Branciforte had its own municipal government, led by a comisionado (commissioner) and an alcalde (mayor) (Rowland 1980:28). The plaza was situated at the approximate location of the present Branciforte Small School Campus, at the corner of North Branciforte Avenue and Water Street. Its main street, today’s North Branciforte Avenue, was part of El Camino Real, and it was

the first civil engineer surveyed road in the state (McManis 2014). A number of small adobe homes were scattered along this early mile-long road, laid out as a race track, by Lieutenant Alberto de Cordova of the Spanish army's engineering corps (Clark 2008:4; Rowland 1980:30).

Along with the rest of California, Branciforte was transferred to Mexican control in 1822, when Mexico gained its independence from Spain. Branciforte did not thrive as a settlement, as did the other two pueblos. The population at its peak, in about 1831, was about 200 people (Kimbro 1978). After both Mexico declared its independence in 1822, and the missions were secularized in 1833, the extensive lands previously belonging to the church were opened for private ownership and the resulting Mexican-era Land Grants carved up the vast lands previously controlled by the Catholic Church into estates owned by members of many prominent Californio families with strong ties to local and regional governments (Rowland 1980:167). Ranching and cattle grazing became the prominent land use patterns and the hide and tallow trade dominated the economy. The Native Americans left the mission compounds and settled on the edges of developing towns, villages, and hamlets, working as low-level laborers, or dispersed into the countryside to work on the ranchos. Some returned to their home territories, while others formed villages, living on the fringes of Californio society (Welsh 1992:12-13).

This project parcel was situated just west of the eastern boundary of Rancho Refugio. After the Mexican era secularization of the mission holdings in Alta California, Rancho Refugio was granted, in 1839, by Governor Juan B. Alvarado, to three sisters from the prominent Castro family, daughters of José Joaquín Castro, a member of the 1775 – 1776 de Anza expedition: María de los Angeles, Candida, and Jacinta (who became a nun and relinquished her 1/3 share). Two years later, in 1841, the grant was made to José Bolcoff, the Russian immigrant husband of Candida Castro, after he erased her name. The grant was patented, for 12,147.12 acres, in 1860, to Francisco and Juan Bolcoff, sons of José Bolcoff and Candida Castro. Rancho Refugio, stretched along the Pacific coast from today's western Santa Cruz city limit to Laguna Creek, east of modern Davenport, the eastern border of Rancho Arroyo de la Laguna, granted in 1840 to Gil Sanchez of Branciforte (Rowland 1980:42 ; Shumway 2007:123, 125).

The Study Area During the American Period

The subject property is located within the central area of Section 22 of Township 11 South, Range 2 West, Mount Diablo Base Meridian, and lies within the area of Santa Cruz known as the "West Side". Historic map research shows that in 1866 the project parcel was located within a long, thin rectangular shaped property, just east of the western boundary of the City of Santa Cruz, and between two large ranches that later became dairies. The property encompassed approximately 35 acres, had its short northern axis fronting the south side of Mission Street, and was owned by Henry Ryan (Foreman & Wright 1866:4). No information was found about this individual. By 1881, this property had been sold to J. W. Brown (Wright et al. 1881:Sheet 40). Although a number of men with the last name of Brown lived in Santa Cruz during the later part of the 19th century, only limited information on J. W. Brown was found. In partnership with S. W. Field, J. W. Brown ran a grocery store in the northern half of a building at the corner of River Street and Mission Street, constructed by William Anthony and Joseph Ruffner, in 1867. Around 1872, Charles Brown purchased the building, remodeled it with a wrap-around porch, added a third story, and opened the St. Charles Hotel, in 1873 (Whaley 2020).

By 1889, the previous Brown property had been purchased by Dwight Younglove (Hatch 1889:Tile 27). Dwight J. Younglove was born in Great Barrington, Massachusetts, in 1831. He served as a private in Companies C and D of the 5th Wisconsin Infantry in the Civil War, enlisting in May of 1861, and he was discharged in December of 1861. He came to California in 1864, and did well as a business man. He and his wife, Elmira, had two sons and lived on Church Street for many years. He died in his home, in 1900, and was buried at Santa Cruz Memorial Park (Nelson 2004).

In 1906, the previous Younglove property was owned by the Shore Line Investment Company, a companion corporation to the Ocean Shore Railway Company (Punnett Brothers 1906:Sheet 5). During the early 1900s, a group of prominent businessmen from San Francisco devised a plan to build a railroad along the Pacific coast from San Francisco to Santa Cruz. The southern, Santa Cruz County portion of the railroad that was completed extended from the community of Swanton, approximately 5 miles north of the coastal town of Davenport, located approximately 10 miles northwest of into the city of Santa Cruz, and it terminated near Cowell Beach. The April 18, 1906 San Francisco Earthquake devastated the fledgling railway when 4,000 feet of right of way and most of the construction equipment at the northern end of the project plunged into the ocean. Although the company struggled to continue, over the long term, competition with the Southern Pacific Railroad, and unenthusiastic real estate activity along the line, caused the company to fail. Profits never materialized and operations ceased in 1920. The following year, assets were sold and the rails were removed. The central portion of the railroad was never completed. Much of California State Route 1 in northern Santa Cruz County was later constructed along the Ocean Shore Railroad alignment (Clark 2008:221-222; Hamman 1980:169-199; San Francisco Trains 2005; Whaley 2014).

A 1931 Map of the City of Santa Cruz shows that the large property previously owned by the Shore Line Investment Company was starting to be subdivided. The subject property was in the southeast corner of an approximately 5 acre parcel owned by L. Mazzoni (Standard Map Service 1931:18). Louis Mazzoni was born in Italy around 1872 and is listed as Head of Household in the U.S. 1940 Census, with his wife, Carmel (55), sons James (26) and John (20), and daughter Levia (24) (United States Population Census 1940). Moore Creek was dammed nearby, to become a mill pond for the San Vicente Lumber Company's planing mill. The original name was Mazzoni Pond, and it was called Antonelli Pond in later years (Whaley 2015). The 1944 and 1947 maps of the City of Santa Cruz from the same map series show that the subject parcel had been split off from the larger Mazzoni property and sold to J & A Ferkari (Standard Map Service 1944:18; 1947:18). No information was found concerning this couple.

RESEARCH METHODS

Archival Research

Archaeological research began with the extensive files of the Northwest Information Center (NWIC) at Sonoma State University, in Rohnert Park, California. A literature search was performed at the NWIC on April 21, 2021, by Archival Specialist, Charles Mikulik, M.A., RPA (IC File Number 20-1797). The project parcel had not been previously surveyed. However, the

properties to the north (Report # S-22779) and to the west (Report # S-16815) had both been surveyed, with negative results. The NWIC search included a review of previously recorded cultural resources and previously conducted archaeological investigations within ¼ mile of the subject property. The archives and library of PPAC were also searched in relation to the history of this area of Santa Cruz, and digital maps were accessed using the Santa Cruz County GIS website (<https://gis.santacruzcounty.us/gisweb/>) and the UC Santa Cruz Digital Map Library website (<https://guides.library.ucsc.edu/maps/historic>).

Three recorded linear historical resources are located within a ¼ mile radius of the subject parcel. The Southern Pacific Railroad alignment (P-44-000377) was recorded, in 1999, as a historic cultural resource, by Far Western Anthropological Research Group and JRP Historical Consulting Services (Ruby and Mikesell 1999). This section of the former Southern Pacific Railroad was built between Santa Cruz and Davenport, located approximately 10 miles up the coast to the northwest, primarily to transport cement from the large manufacturing facility built there, in 1906. At one time, both the Ocean Shore Railroad and the Southern Pacific Railroad ran parallel to each other, to just past Davenport. In 1996, the Union Pacific Railroad acquired the Southern Pacific. The Davenport Cement Plant closed in 2010, and in 2011, the California Transportation Commission allowed the Regional Transportation Commission of Santa Cruz County to purchase the line. Iowa Pacific Railway was named the new operator, and it formed the Santa Cruz & Monterey Bay Railway, to furnish regular freight transportation for local companies, and they also ran public excursion trains during the holiday season. However, by 2020, the Iowa Pacific was forced into bankruptcy by mounting debt, and the company was forced to sell off its rail properties and equipment to pay their creditors. Presently, the line is operated by Progressive Rail, as the St. Paul and Pacific Railroad (American-Rails.com 2021). The County of Santa Cruz has developed a Rail Trail along the former Southern Pacific corridor.

The historic alignment of California State Route 1 (P-44-000406, CA-SCR-334 H) was recorded as a historic archaeological site, in 1999 (Leach-Palm et al. 1999) during Far Western Anthropological Research Group's (FWARG) extensive study of Caltrans District 5 rural highways in Santa Cruz County, in 1999 (Mikkelsen et al. 2001). Additionally, a portion of the right of way of the Ocean Shore Railroad was recorded as a historic archaeological site, (P-44-000700) in 2011, by Sally Morgan, UCSC Senior Environmental Planner. Delaware Avenue, within the west side of Santa Cruz, was the former route of the Ocean Shore Railroad (Morgan 2011). Furthermore, three historic buildings have been recorded along nearby Mission Street, within the ¼ mile study area,

Information relating to thirty two cultural resources reports on properties within a ¼ mile radius of the subject parcel was reviewed for this project. These reports were written between 1977 and 2018. Information concerning six reports, covering a large area of the county, the region, the state, or the Pacific Coast, written between 1977 and 1996, were also reviewed for this report.

Field Research

A pedestrian field survey was performed by Staff Archaeologist, Michael Boyd, B.S., A.A., on Friday, April 23, 2021. The approximately 12,153 square foot, rectangle-shaped parcel was accessed via Natural Bridges Drive. The property is located in the middle of the block, with the

right of way of the St. Paul and Pacific Railroad adjacent, to the south. The parcel is generally flat and does not contain any buildings or structures. The property is primarily covered with forbs, grasses, and weeds, with eight mature trees present in various situations on the property. Visibility was poor (ca. 15%) due to the dense ground vegetation. Overall, soil visibility was considered barely adequate for the purpose of the archaeological survey of this lot. Property boundaries were well defined by Natural Bridges Drive, the railroad right of way, and a concrete wall running along part of the western property boundary.

The field Archaeologist performed an intensive pedestrian surface reconnaissance, covering approximately 80% of the subject parcel, using 5 foot transects oriented north / south, beginning in the northeast corner of the property. Mr. Boyd was not able to survey an area of thick thistle growth, measuring approximately 50 feet long (east / west), and 20 feet wide (north / south), along the border between the property and the railroad right of way. The archaeologist used a mason's trowel to scrape through the ground cover, roughly every 10 feet, to view the ground surface and soils just beneath the surface vegetation. Gopher back dirt piles, an excellent means of detecting sub-surface archaeological deposits, were closely inspected. Soils on the property were comprised of light to medium tan silty clay. The archaeologist recorded and mapped a fragment of an opaque white glass jar, a red common brick fragment, and a fragment of colorless pane glass, likely from a window, near the northeast corner of the property. A large scattered pile of modern glass and ceramic fragments was photographed in the northwest corner of the property. This appears to be the result of a relatively recent dumping episode.

REPORT OF FINDINGS

The goal of the archaeological records search, historical research, and field reconnaissance is to identify potentially significant archaeological resources within the proposed project area. Neither the archival research nor the pedestrian reconnaissance revealed any indications of precontact or historic era archaeological deposits on the project parcel. No recorded or significant precontact or historical archaeological resources have been identified within or adjacent to the project parcel as part of the research conducted for this report.

Signs of Native American activity include dark midden soils with eroded marine shell fragments, fire-altered rock, ground stone, and/or chipped stone points or flakes of chert or obsidian. No evidence of surface or subsurface precontact archaeological deposits was observed during the field reconnaissance of the parcel. Evidence of early historic activities includes roof tile (teja) fragments, adobe melt soils, stone foundations, irregular split wood posthole soil stains, saw-cut bone, cut nails, and early glass and ceramic fragments. No indications of intact historical archaeological deposits were seen on the parcel. During the field reconnaissance, the archaeologist photographed three small fragments of historic items. This does not constitute a historic archaeological site.

MANAGEMENT RECOMMENDATIONS

The Preliminary Archaeological Reconnaissance of the parcel at 415 Natural Bridges Drive, Santa Cruz, Santa Cruz County, California (APN 003-011-06) did not reveal evidence of the existence of an archaeological site on the property. Therefore, no subsurface testing is recommended at this time. No archaeological impact is predicted, and the proposed project should not be delayed on the

basis of archaeological concerns. The entire parcel was surveyed. No archaeological deposits were found on the property that would be impacted by ground disturbing activities involved with this project or with any future projects. However, in the event that construction related excavation activities expose unanticipated archaeological materials from either the precontact or historic eras, a qualified archaeologist shall be contacted right away, to inspect and assess the find.

ENCOUNTERING HUMAN REMAINS

Human burials are often evidenced by disarticulated bones and bone fragments. Although not likely, the possibility of encountering human remains in the project area cannot be discounted. Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial. If human remains are encountered, work will halt within 100 feet of the find, and the County Coroner will be notified immediately. At the same time, an archaeologist will be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours. The Commission then notifies the Most Likely Descendant, who has 48 hours to make recommendations to the landowner for the disposition of the remains.

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[Home \(/\)](#) > [Programs \(/programs/\)](#) > [Environmental Review \(/programs/environmental-review/\)](#) > DNL Calculator

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the [Day/Night Noise Level Calculator Electronic Assessment Tool Overview \(/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/\)](#).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	415 Natural Bridges Drive
Record Date	08/01/2022
User's Name	M. Greene

Road # 1 Name:

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>
Distance to Stop Sign	<input type="text" value="300"/>	<input type="text" value="300"/>	<input type="text" value="300"/>
Average Speed	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="25"/>
Average Daily Trips (ADT)	<input type="text" value="2754"/>	<input type="text" value="57"/>	<input type="text" value="28"/>
Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="15"/>
Road Gradient (%)	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="0"/>
Vehicle DNL	<input type="text" value="53"/>	<input type="text" value="46"/>	<input type="text" value="59"/>
<input type="button" value="Calculate Road #1 DNL"/>	<input type="text" value="60"/>	<input type="button" value="Reset"/>	

Road # 2 Name:

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
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Effective Distance	340	340	340
Distance to Stop Sign			
Average Speed	30	30	25
Average Daily Trips (ADT)	4133	85	43
Night Fraction of ADT	15	15	15
Road Gradient (%)			0
Vehicle DNL	46	39	47
Calculate Road #2 DNL	50	Reset	

Road # 3 Name:

Highway 1/ Cabrillo Hwy

Road #3**Vehicle Type**Cars Medium Trucks Heavy Trucks

Effective Distance

770

770

770

Distance to Stop Sign

Average Speed

45

45

40

Average Daily Trips (ADT)	16425	339	169
Night Fraction of ADT	15	15	15
Road Gradient (%)			0
Vehicle DNL	50	43	47
Calculate Road #3 DNL	53	Reset	

[Add Road Source](#)[Add Rail Source](#)

Airport Noise Level

Loud Impulse Sounds?

 Yes NoCombined DNL for all
Road and Rail sources

61

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

[Calculate](#)[Reset](#)



Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

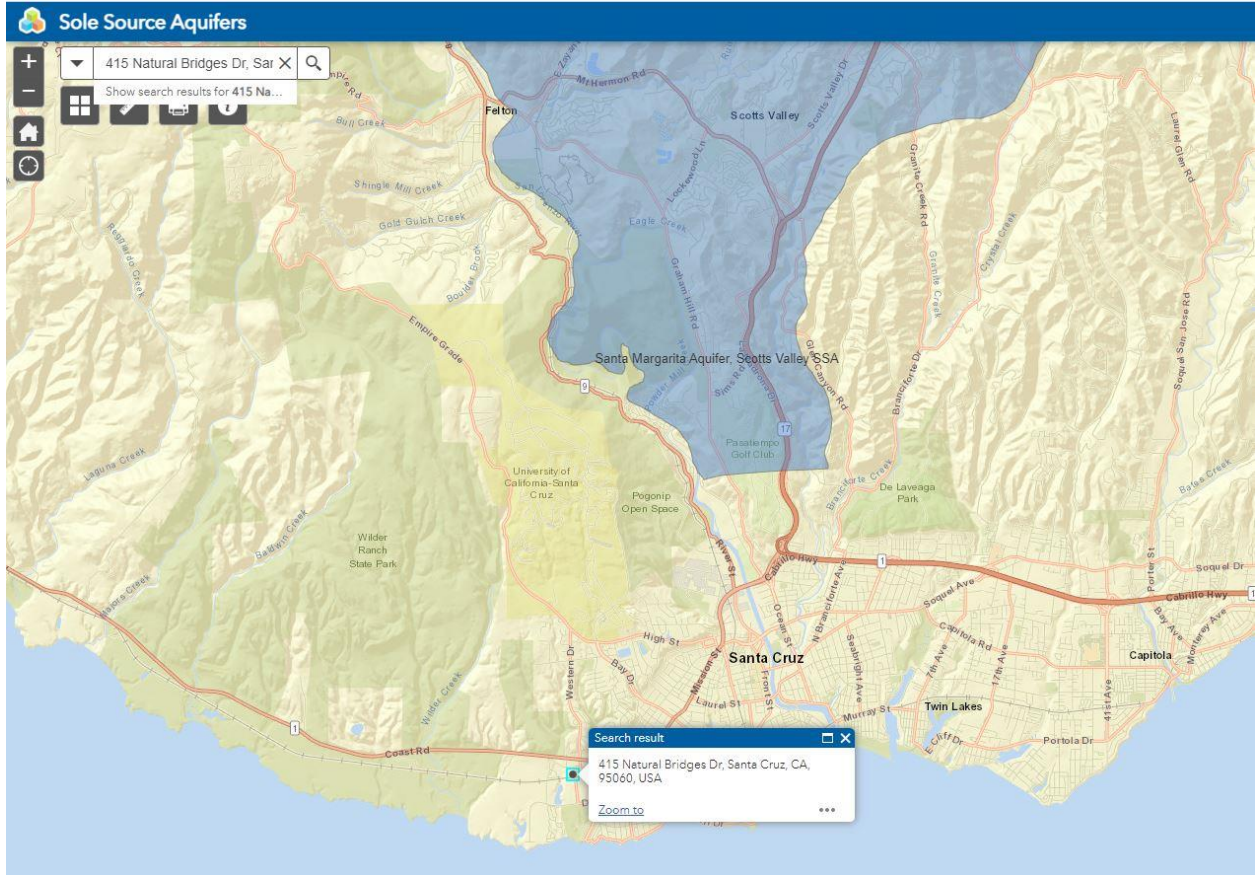
- **No Action Alternative:** Cancel the project at this location
- **Other Reasonable Alternatives:** Choose an alternate site
- **Mitigation**
 - Contact your Field or Regional Environmental Officer (</programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
 - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
 - Incorporate natural or man-made barriers. See *The Noise Guidebook* (</resource/313/hud-noise-guidebook/>)
 - Construct noise barrier. See the Barrier Performance Module (</programs/environmental-review/bpm-calculator/>)

Tools and Guidance

[Day/Night Noise Level Assessment Tool User Guide \(/resource/3822/day-night-noise-level-assessment-tool-user-guide/\)](/resource/3822/day-night-noise-level-assessment-tool-user-guide/)

[Day/Night Noise Level Assessment Tool Flowcharts \(/resource/3823/day-night-noise-level-assessment-tool-flowcharts/\)](/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)

Attachment 13: Sole Source Aquifers



Attachment 14: Wetlands



Attachment 15: Wild and Scenic Rivers

