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TRANSMISSION CORRIDOR EVALUATION

Humboldt Wind Energy Area Volume 2: Appendices

Prepared for



CALIFORNIA
ENERGY COMMISSION

Prepared by:



With assistance from:



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Schatz Energy Research Center

May 6, 2024

APPENDIX 1: CORRIDOR PHOTOS

(GOOGLE STREET VIEW)

Transmission Corridor Evaluation Humboldt Wind Energy Area

May 6, 2024

INTRODUCTION TO APPENDIX 1

This appendix presents screenshots from Google Street View of the study corridors listed below. The bookmarks (if opened) allow navigation among corridors and segments.

1. Corridor 1 – Humboldt Bay to Fern Road

- 1.1 - Humboldt Bay to Humboldt Substation
- 1.2 – Humboldt Substation
- 1.3 – Humboldt Substation to 115 kV Split (where north and south 115 kV lines separate)
- 1.4 – Northern 115 kV Along Hwy 299 and Into Cottonwood Substation
- 1.5 – Southern 115 kV Along SR 36
- 1.6 – Cottonwood Substation
- 1.7 – Cottonwood to Millville (Shared ROW with Round Mountain)
- 1.8 – Cottonwood to Fern Road via Millville
- 1.9 – Millville to Round Mountain
- 1.10 – Round Mountain to Fern Road

2. Corridor 2A – Coastal Underground – no photos (line would be underground south of Longvale)

Corridor 2B – Coastal Overhead

- 2.1 – Humboldt Bay to Bridgeville (see Corridor 1)
- 2.2 – Bridgeville to Longvale
- 2.3 – Longvale to Fulton (north of Santa Rosa)
- 2.4 – Fulton to Petaluma
- 2.5 – Petaluma Substation to Vaca-Dixon Substation
- 2.6 – Vaca-Dixon to Collinsville

3. Corridor 3 – Olinda to Collinsville

- 3.1 – Olinda to Madison
- 3.2 – Madison to Vaca-Dixon
- 3.3 – Vaca-Dixon to Collinsville (See Corridor 2B)

4. Corridor 4A and 4B – Fern Road to Collinsville

- 4.1 – Corridor 4A: Fern Road to Sutter
- 4.2 – Corridor 4A: Sutter to Madison
- 4.3 – Corridor 4A: Madison to Vaca-Dixon (see Corridor 3)
- 4.4 – Corridor 4B: Vaca-Dixon to Collinsville (See Corridor 2B)
- 4.6 – Corridor 4B: Brannan to Collinsville

1. CORRIDOR 1: HUMBOLDT BAY TO FERN ROAD

1.1. Humboldt Bay to Humboldt Substation

Humboldt Hill Road looking west towards power plant



Walnut Drive – SE corner of Eureka – Humboldt Bay-Humboldt 115 kV Line



2. CORRIDOR 2B: COASTAL OVERHEAD HVDC

2.1. Humboldt Bay to Bridgeville

See Corridor 1 for Photos

2.2. Bridgeville to Longvale

Alderpoint Road near Little Burr Creek



Alderpoint Road near Windbigler Ranch Road



Just East of US 101 on Spyrock Road



2.3. Longvale to Fulton

North of Longvale at US 101



Longvale at US 101



North of Laytonville at Harmon Road



South Laytonville East Side US 101



Hearst Road (East of Willits) = Center of Corridor



South of Willits (Hilltop Drive)



Coyote Valley Reservation and Casino



Redwood Valley Rancheria Sign (at Hwy 20, south of Redwood Valley)



Lake Mendocino Drive (just west of Lake, all within Corridor)



Appolinaris Drive South of Vichy Springs



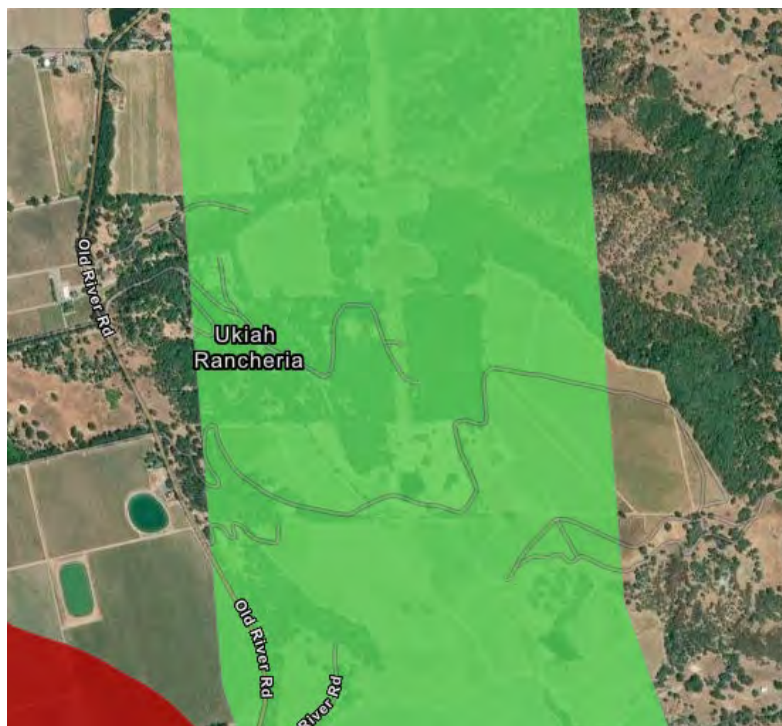
Vichy Springs Conference Center (eastern side of corridor on Vichy Springs Road)



**Talmage – Dharma Buddhist University (immediately west of corridor):
Wonderful Enlightenment Way**



Ukiah Rancheria



Yokayo Ranch Road (Ukiah Rancheria)



Russian River Estates, Center of Corridor



Hopland (just east of Old Hopland on Hwy 175)



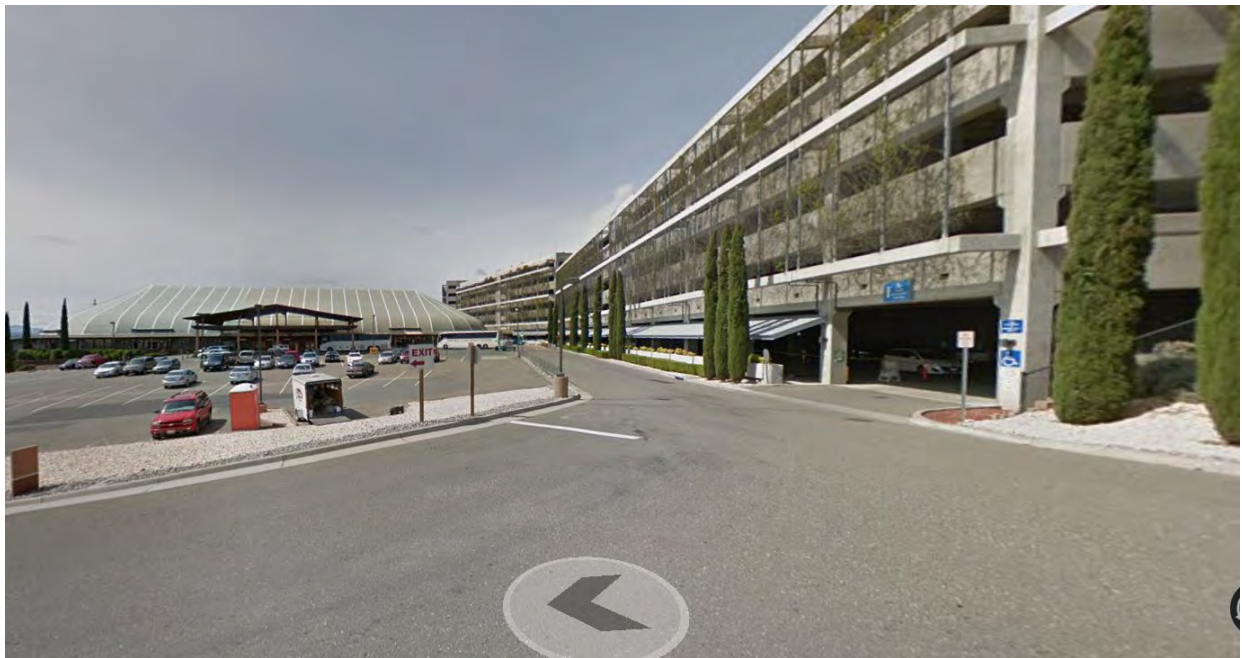
Cloverdale (Along River Road east of central Cloverdale)



River Road – south of Cloverdale



Dry Creek Rancheria and Casino (Center of Corridor)



Alexander Valley Road (just north of Healdsburg)



N. Fitch Mountain Rd, East of Healdsburg



South Fitch Mtn Road (Russian River Crossing)



Vinecrest Circle – Corridor behind these homes



Faught Road SE of Windsor and Foothill Regional Park



Larkfield-Wikiup Neighborhood North of Fulton Substation

(Yellow lines are 230 kV – west side of corridor; blue lines are 60 kV – east side of corridor)



San Miguel Elementary School (left)



Old Redwood Hwy Looking down Mark West Commons Circle



Deerwood Drive Looking South



Lavell Road at Mark West Charter School and Maddux Ranch Regional Park



2.4. Fulton to Petaluma

Fulton Substation (Vineyards Across the street)



Lark Center Drive just across US 101 from Fulton Substation



Old Redwood Hwy at Pacific Heights Drive (1/2 mile east of Fulton Substation)



Mark West Springs Road at Corridor Crossing



Ursuline Road (South of Mark West Springs Road)



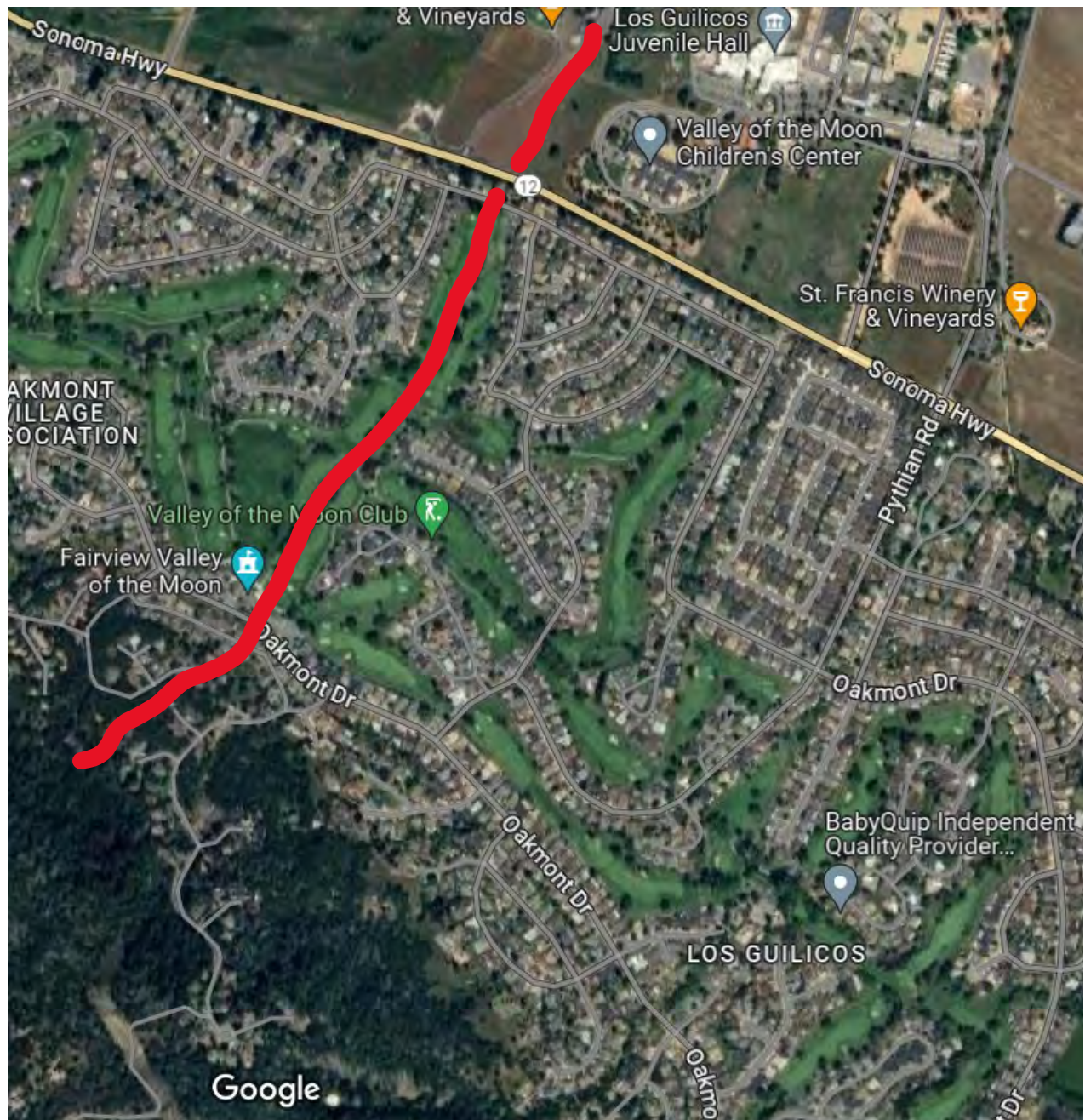
North of Santa Rosa: Skyfarm Drive Looking East



Cross Creek at Meadowcroft Way



Santa Rosa at Oakmont (Existing line in Red)



Oak Leaf Drive (Santa Rosa)



Corridor Looking South at Oak Leaf Drive



Oakmont Drive Looking South



2.5. Petaluma Substation to Vaca-Dixon Substation

Petaluma Substation



230 kV Lines Leaving Petaluma Sub to the East



CA 116 (Stage Gulch Road) West of Schellville



East of Schellville



Schellville Area



8th Street East (looking east, south of Sonoma Skypark Airport)



8th Street East (looking west, south of Sonoma Skypark Airport)



Napa Vallejo Highway near Anderson Road



Napa Valley Corporate Drive; Meritage Resort



Solano County, Twin Sisters Road (Looking NE)



Solano County, Williams Road, looking NE



Pleasants Valley Road near Vaca Valley Road



Browns Valley Road at Beck Lane



Beck Lane (just east of Vacaville City Limits)



**City of Vacaville: Corridor along Aster St and Crane Court
(Now there are Newly Built Homes in on Right Side of Photo)**



City of Vacaville: Leisure Town Along South side of Corridor



2.6. Vaca-Dixon to Collinsville

Walnut Road (1.3 miles south of Vaca-Dixon Substation)



Maple Road South of Vaca-Dixon Substation



Elmira Road (City of Vacaville) Looking SW Towards Adjacent Residential Area



South End Box R Ranch Road – NE end of Travis AFB Runway (500 kV behind home)



Hwy 12 Crossing (About 10 miles West of Rio Vista)



Vaca-Dixon to Tesla 500 kV 90-Degree Turn to East



Collinsville Area



1.2. Humboldt Substation SE of Eureka

Residential Development Around Humboldt Sub



Wing Land and Spears Road – just east of Humboldt Substation



1.3. Humboldt Sub to 115 kV Split

Area of 2 115 kV lines crossing Freshwater Road



Southern 115 kV crossing Freshwater Road (2 miles east of Humboldt Substation)



Northern 115 kV crossing Freshwater Road



1.4. Northern 115 kV Along Hwy 299 and Into Cottonwood Sub

South of Weaverville on Oregon Street



Mountain View Street – Weaverville



115 kV Crossing Hwy 299 in Weaverville



Whiskeytown NRA at Oakbottom Marina



Whiskeytown NRA Tower in Lake North of SR 299



Whiskeytown NRA at Eastern Corner



Centerville Area - Muletown Road – Area of newer Large Homes on Hilltops



Happy Valley Road – 115 kV Corridor 8 miles East of Cottonwood



Spring Gulch Road, Anderson CA



Olinda Road 4 miles NW of Cottonwood Sub



Skyview Estates, Anderson (2.5 miles NW of Cottonwood)



Locust Street, ½ mile NW of Cottonwood Sub



1.5. Southern 115 kV (Along SR 36)

Barry Road, Kneeland



Hwy 36 East of Bridgeville



Hwy 36 East of Bridgeville



Robinson Glen Drive, Cottonwood, CA



Robinson Glen Drive, Cottonwood, CA



Matthew Court, Cottonwood (just west of I-5)



Main Street, Cottonwood CA



1.6. Cottonwood Substation

Cottonwood Sub, looking West



Cottonwood to Round Valley Corridor, Panorama Point Road (1.5 miles north of Cottonwood Sub)



1.7. Cottonwood to Millville (Shared ROW with Round Mtn or Millville)

Panorama Point Road – Corridor to Round Mountain



Balls Ferry Road



Sacramento River Crossing



Hwy 44 Crossing Southeast of Millville



Whitmore Road Crossing South of Millville



1.8. Cottonwood to Fern Road via Millville (Shorter Route)

60 kV Line East from Millville is Over this Ridge North of the Cow Creek Area



Last Street View Photo of Cow Creek Road (60 kV line to the left and not visible)



Cow Creek Road Near Fern Road Sub (with 60 kV Line)



South Cow Creek Road Along 60 kV Line



Fern Road Substation Area (at Whitmore Road)



1.9. Millville to Round Mountain

Oak Run Community (230 kV Lines Crossing) ("Oak Run to Fern Road")



Frisby Road (approaching Round Mountain Sub)



Round Mountain Substation



Lines Approaching Substation from South



1.10. Round Mountain to Fern Road (500 kV) – North to South

500 kV Corridor to Fern Road from Round Mountain Sub



500 kV Corridor at Phillips Road



500 kV Corridor at “Oak Run to Fern Road”



3. CORRIDOR 3: OLINDA TO COLLINSVILLE

3.1. Olinda to Madison

Olinda Substation (Looking south from Gas Point Road)



Evergreen Road (view to South)



Bowman Road (looking south)



Basler Road (looking north)



Callahan Road (West of Red Bluff)



Live Oak Road (West of Red Bluff; one mile west of Red Bluff Municipal Airport)



King Road (SW of Red Bluff)



Simpson Road (NW of Corning)



Roser Road (looking south) – SW of Orland



County Road 35 (SW of Orland)



State Hwy 162 West of Willows



Maxwell Sites Road (Looking South)



SR 20 West of Williams



Sand Creek Road (west of Arbuckle)



County Road 85 (West of Dunnigan)



Crossing of I-505 (at County Road 19) – Northeast of Madison and Esparto



3.2. Madison to Vaca-Dixon

County Road 16, Looking South



County Road 32 (East of Winters)



Sweeney Road (North of Allendale) – Looking South



Griffin Road, Vacaville (Looking North)



Midway Road, Looking South – 0.8 miles North of Vaca-Dixon Substation



Vaca-Dixon Substation (from Meridian Road, looking southwest)



**3.3. Vaca-Dixon to Stratton to Collinsville -
See Corridor 2B Photos – Section 1.6**

4. CORRIDOR 4: FERN ROAD TO COLLINSVILLE

4.1. Corridor 4A and 4B: Fern Road to Sutter

Fern Road Substation Site



Fern Road Northwest of Whitmore



Whitmore Road Crossing (SW of Whitmore)



SR 44 Crossing West of Shingletown



SR 36 E SW of Paynes Creek



Cohasset Road Crossing (NW of Chico)



Deer Creek Highway (East of Chico)



Honey Run Road (SE of Chico)



Paradise Skyway Road (SE of Chico)



SR 149 (NW of Oroville)



Round Mountain Substation



Durham-Pentz Road



US 99 West of Oroville (Looking SW)



Afton Road West of Biggs



Colusa Highway West of Gridley



Pennington Road (Sutter Buttes at Right)



4.2. Corridor 4A: Sutter to Madison

Pass Road NW of Sutter



McGarth Road Looking South (West of Yuba City)



I-5 at Zamora



County Road 19 West of Woodland



4.3. Corridor 4A: Madison to Vaca-Dixon

See Corridor 3 Photos, Section 1.2.

4.4. Corridor 4A: Vaca-Dixon to Collinsville

See Corridor 2 Photos, Section 1.3.

4.5. Corridor 4B: Sutter to Brannan

Butte House Road (Northeast of Community of Sutter)



Sutter Causeway (Adjacent to Sutter NWR)



I-5 West of Sacramento Airport



I-80 Crossing (Yolo Bypass)



Hastings Island Hunting Preserve (North of Rio Vista)



4.6. Corridor 4B: Brannan to Collinsville

Montezuma Hills Road



Northeast of Collinsville



APPENDIX 2: GEOSPATIAL DATA SOURCES

Transmission Corridor Evaluation Humboldt Wind Energy Area

May 6, 2024

Appendix 2: Geospatial Data Sources

California Department of Conservation

Alquist-Priolo Fault Hazard Zones

<https://maps-cnra-cadoc.opendata.arcgis.com/datasets/cadoc::cgs-seismic-hazards-program-alquist-priolo-fault-hazard-zones/about>

Important Farmland

<https://maps-cadoc.opendata.arcgis.com/datasets/cadoc::california-important-farmland-most-recent/about>

Landslide Susceptibility

<https://gis.conservation.ca.gov/portal/home/item.html?id=87289025c11d4ba7ae65f0f472bf7c2d>

Williamson Act

<https://gis.conservation.ca.gov/portal/home/item.html?id=aed46e5566a244fdafc8b276fb3fa791>

California Department of Fish & Wildlife

California Natural Diversity Database

<https://wildlife.ca.gov/Data/CNDDDB/Data-Updates>

Essential Connectivity Areas

<https://data.cnra.ca.gov/dataset/essential-connectivity-areas-california-essential-habitat-connectivity-cehc-ds620>

Owned and Operated Lands and Easements

<https://wildlife.ca.gov/Data/GIS/Clearinghouse>

State Refuges

<https://wildlife.ca.gov/Data/GIS/Clearinghouse>

Wild and Scenic Rivers (State Designations Only)

https://gis.data.ca.gov/datasets/708e420c300b4f9793af993a2612dbd4_0/about

California Department of Forestry and Fire Protection

California Land Ownership (USFS and BLM)

<https://www.fire.ca.gov/what-we-do/fire-resource-assessment-program/gis-mapping-and-data-analytics>

Fire Hazard Severity Zones in State Responsibility Areas

<https://www.fire.ca.gov/what-we-do/fire-resource-assessment-program/gis-mapping-and-data-analytics>

Incorporated Cities

<https://gis.data.ca.gov/datasets/CALFIRE-Forestry::california-incorporated-cities-1/about>

California Office of Environmental Health Hazard Assessment**Disadvantaged Communities**

<https://oehha.ca.gov/calenviroscreen/sb535>

California Protected Areas**California Conservation Easement Database**

<https://www.calands.org/cced/>

California Protected Areas Database

<https://www.calands.org/cpad/>

California Department of Transportation**California Scenic Highways**

<https://www.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>

California Parcels**Statewide Parcels**

<https://www.arcgis.com/home/item.html?id=f937000d00c340fb8b502fdd16e30882>

Butte County

https://gisportal.buttecounty.net/arcgis/rest/services/Base_Layers/FeatureServer/2

Colusa County

<https://www.countyofcolusa.org/713/GIS-Download-Library>

Contra Costa County

<https://www.contracosta.ca.gov/1818/GIS>

Glenn County

<https://countyofglenn.maps.arcgis.com/home/item.html?id=3cb8651bfe4d48909116a49f76ac2791>

Humboldt County

<https://humboldt.gov/276/GIS-Data-Download>

Lake County

<https://gispublic.co.lake.ca.us/portal/home/>

Mendocino County

https://gis.mendocinocounty.org/server/rest/services/Parcels_sde_pub/MapServer/6

Napa County

<https://gisdata.countyofnapa.org/>

Shasta County

https://data-shasta.opendata.arcgis.com/datasets/86651f4b529246a98a95cd432f8327e1_0/about

Solano County

<https://regis.solanocounty.com/apps/>

Sonoma County

<https://gis-sonomacounty.hub.arcgis.com/pages/data>

Sutter County

<https://opendata-suttercounty.hub.arcgis.com/>

Tehama County

<https://tehamartpa.org/gis/data/>

Trinity County

https://trinity-county-gis-data-portal-trinitycounty.hub.arcgis.com/datasets/b2a15b6b085e42d3b371a0ed23d7986b_0/about

Yolo County

https://yodata-yolo.opendata.arcgis.com/datasets/df8c2b8839d447038f4d073fc1f27af9_0/about

Federal Aviation Administration**Airport Locations**

<https://adds-faa.opendata.arcgis.com/datasets/faa::airports-1/about>

Class Airspace

<https://adds-faa.opendata.arcgis.com/datasets/faa::class-airspace/about>

Military Training Routes

<https://adds-faa.opendata.arcgis.com/datasets/faa::mtr-segment-1/about>

Federal Emergency Management Agency**National Risk Index Wildfire Risk**

<https://hazards.fema.gov/nri/data-resources#gdbDownload>

Federally Recognized Tribal Lands

ESRI Living Atlas (within ArcGIS Pro): American Indian, Alaska Native, and Native Hawaiian Areas

National Audubon Society**Important Bird Areas**

<https://ca.audubon.org/conservation/california-important-bird-areas-gis-data-and-methods>

National Oceanic and Atmospheric Administration**National Marine Fisheries Service Critical Habitat**

<https://noaa.maps.arcgis.com/home/item.html?id=f66c1e33f91d480db7d1b1c1336223c3>

West Coast Essential Fish Habitat

<https://www.habitat.noaa.gov/application/efhinventory/index.html>

West Coast Habitat Areas of Particular Concern

<https://www.habitat.noaa.gov/application/efhinventory/index.html>

National Park Service**California National Historic Trail**

<https://irma.nps.gov/DataStore/Reference/Profile/2238903>

National Natural Landmarks

<https://services1.arcgis.com/fBc8EJBxQRMchlei/ArcGIS/rest/services/NonSensitiveNNLs/FeatureServer>

National Park Service Tract and Boundary Data

<https://public-nps.opendata.arcgis.com/datasets/nps::nps-land-resources-division-boundary-and-tract-data-service/about?layer=2>

National Register of Historic Places

https://services1.arcgis.com/fBc8EJBxQRMchlei/ArcGIS/rest/services/National_Register_Points/FeatureServer/0

Pony Express National Historic Trail

<https://irma.nps.gov/DataStore/Reference/Profile/2238912>

US Bureau of Land Management**Areas of Critical Environmental Concern**

<https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-ca-areas-of-critical-environmental-concern/about?layer=0>

National Monuments

<https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-natl-nlcs-national-monuments-national-conservation-areas-polygons/about>

Section 368 Corridors

<https://corridoreis.anl.gov/maps/>

Visual Resource Management

<https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-natl-visual-resource-inventory-classes-polygons/about>

Wilderness Areas

<https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-natl-nlcs-wilderness-areas-polygons/about>

US Environmental Protection Agency**Superfund Areas**

<https://catalog.data.gov/dataset/npl-superfund-site-boundaries-epa1>

US Fish & Wildlife Service**Critical Habitat**

<https://ecos.fws.gov/ecp/report/table/critical-habitat.html>

National Wetlands Inventory

<https://www.fws.gov/program/national-wetlands-inventory/download-state-wetlands-data>

National Wildlife Refuges

<https://www.fws.gov/service/national-wildlife-refuge-system-gis-data-and-mapping-tools>

US Department of Agriculture Forest Service

National Wilderness Areas

<https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=national+wilderness+areas>

National Wild and Scenic Rivers

<https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=scenic+river>