

UNIVERSITY OF CALIFORNIA
PRELIMINARY ENVIRONMENTAL ASSESSMENT
Sedgwick Reserve Wildfire and Landscape Sensing Tower

DATE: November 9, 2023

CAMPUS: Santa Barbara

PROJECT TITLE: Wildfire and Landscape Observational Sensing Tower at Sedgwick Reserve

PROJECT LOCATION: University of California (UC), Santa Barbara, Sedgwick Reserve (see Figures 1a and 1b)

PROJECT DESCRIPTION: The UC Santa Barbara, Natural Reserve System is proposing to install an observational station at the Sedgwick Reserve as part of a regional wildfire readiness program called “ALERTWildfire” <https://www.alertwildfire.org>. The station includes a tower and state-of-the-art Pan-Tilt-Zoom fire cameras and associated tools that will help firefighters and first responders with observational tools from a key research location within the Reserve. The tower will also support research and educational use for Sedgwick Reserve users. There are numerous existing ALERTWildfire stations in the immediate and adjacent areas to the Sedgwick Reserve property and the addition of the tower at Sedgwick will enhance and improve the existing network’s sensing capabilities on behalf of firefighting and fire response objectives in the region.

Background: Climate-related environmental change in California is causing increased fire risk with significant impacts to our natural environment and the agricultural, commercial, and municipal uses of our landscapes. Given the vast acreage in the U.S. needing management to reduce the severity of wildfires (~100 million acres) and the slow rate at which those treatments are occurring (~3 million acres per year), an improved approach to landscape-level management and observation is needed. Related research at Sedgwick addresses this problem with the rapid deployment of environmental sensing technology with associated data science, cutting edge atmospheric and ecological modeling, and experimental and practical prescribed burns to forecast climate conditions and inform risk assessments before the next big wildfire occurs. The information derived from these activities will enable characterization of fire behavior and prescribed burn techniques in regions like Napa, Santa Barbara, and Orange Counties, and other coastal environments that are currently experiencing catastrophic wildfire events. Data from observational stations such as the ALERTWildfire network are essential components of a science-based wildfire research program and wildfire resilient community planning efforts.

Purpose and Need: Installation of the ALERTWildfire Station supports the Sedgwick Reserve’s goal towards improving resilience to wildfires. The installation of the station will contribute to

the ALERTWildfire network already existing in the Western United States in California, Nevada and Oregon. ALERTWildfire is a consortium providing access to state-of-the-art Pan-Tilt-Zoom (PTZ) fire cameras and associated tools to help firefighters and first responders: (1) discover/locate/confirm fire ignition, (2) quickly scale fire resources up or down appropriately, (3) monitor fire behavior through containment, (4) during firestorms, help evacuations through enhanced situational awareness, and (5) ensure contained fires are monitored appropriately through their demise. The station would provide community wildfire observational tools from a key research location within the Reserve and additionally supports research and educational activities for Reserve users.

Setting and Program: The Sedgwick Reserve is located at latitude 34.6922°N and longitude -120.0404°E longitude, in Santa Barbara County, California (Figure 1a). The Reserve is located in the northern part of the Santa Ynez Valley, in the foothills of Figueroa Mountain. The terrain elevation ranges from 300 – 850 m, and is comprised of a mix of small valleys and ridges over sloping terrain. The Reserve’s vegetation is characterized by a mixture of shrublands, grasslands and (woody) savannas.

The station will be installed at latitude 34.708622°N and longitude -120.048693°E in a relatively open area with non-native grassland at an elevation of 507 m (1660 ft) above mean-sea level (Figure 1b) in a location that demonstrated the importance of the site to observe meteorological parameters useful to evaluate wildfire mitigation strategies. The station will be accessible by a dirt road from the Sedgwick Reserve Visitor Center. The station is a research grade, fully automated tower capable of providing environmental sensing data. Potential environmental impacts and ground disturbance will be minimized to the area of the concrete pad. The surrounding natural vegetation and ground surface would be disturbed as little as possible.

The main tower frame is built from 2.5 cm (1 in) outside diameter corrosion-resistant aluminum tubing and is 15 ft tall. It includes anchor bolts, lightning rod and a ground rod. No guy wires are needed, minimizing soil disturbance in the tower surroundings. The station will be anchored to the ground on 16 square-foot, 4-foot deep (4’x4’x4’) concrete pad. All sensor equipment will be installed upon the free-standing aluminum tower (Figure 2). The instruments will be solar powered. The solar panel and battery box will be installed next to the tower on the ground in a sunwise enclosure adjacent to the pad. Communication will be sent over point to point unlicensed wireless network facilitating remote monitoring of tower equipment. Researchers will visit the station semi-annually) for sensor maintenance.

Construction: A 16 square-foot concrete pad would be installed with minimal ground disturbance. Concrete will be used to construct the base and the concrete will be delivered using multiple trips with a kubota. The hole will be dug using shovels and mix the concrete on site after delivering water and bags of concrete. There will be no lights on the tower and the tower will be solar powered. The tower will be accessed using the nearby unpaved road.

Schedule: The proposed project is expected to begin in spring 2023 and will take approximately 1 week to complete. The tower would be in place for up to 10 years and would be evaluated for removal at that time.

Maintenance: The tower's immediate surroundings (defensible space) vegetation is characterized by non-native grasslands, and will be mowed on an annual basis by Sedgwick Reserve staff.

ENVIRONMENTAL ISSUES:

This project is considered Categorical Exempt under CEQA Section 15303, New Construction or Conversion of Small Structures and Section 15304, Minor Alternations to Land as supported by the discussion below. There are no unusual circumstances which would create an exception to the Exemption.

Aesthetics: The wildfire sensing tower is small in scale and would be located in open grassland area of the Reserve. The tower would not obstruct views of the coast or mountains and would not significantly change the visual character of the project area. There would be no impact to aesthetic resources.

Agriculture/ Forestry Resources: There is an agricultural conservation easement with the Santa Barbara County at the Reserve. The proposed tower would not be constructed within this conservation easement and there would be no impact to agricultural resources.

Air Quality: Site preparation is minimal to install the concrete pad and wildfire sensing tower, and would not result in an air quality impact. Installation is short term and would a week to complete. A small kubota would be used to drive the equipment concrete to the project site and would not result in significant emissions. The tower would not have emissions during operation. There would be no air quality impacts.

Biological Resources: The project site is non-native grassland and there are no sensitive biological resources identified at the project site. No vegetation or trees would be removed and no biological resources would be impacted from installation of the tower. The site is accessed from an unpaved road and no biological resources on the Reserve would be impacted.

Cultural Resources: The proposed project would not result in development within the vicinity of recorded archaeological sites and there are no cultural resources identified in the proposed project area. The proposed project does not involve significant ground disturbance, excavation of a 16-square-foot area, 4-feet deep, would be by hand using a shovel. Tribal Consultation with the Santa Ynez Band of Chumash Indians was initiated via email on 10/17/2023.

Geology/Soils: The proposed project does not involve major grading or excavation and would not impact geological resources. The proposed tower would not be located within 50 feet of a known earthquake fault. There would be no impact to geologic resources.

Greenhouse Gas Emissions: The project will not generate greenhouse gas emissions directly or indirectly during operations phase. The emissions during the construction phase from vehicle trips from Kubota would be short term and minimal. There would be no emissions from operation of the weather tower. There would be no greenhouse emissions and no impact.

Hazards and Hazardous Materials: There are no hazardous materials associated with the installation or operation of the tower. There would be no hazardous materials or hazards impacts.

Hydrology/Water Quality: The concrete pad is small in size (16 square feet) and there would not be a substantial increase in impervious area. Surface water runoff quantities would be relatively the same before and after the installation of the tower. Sixty-four cubic feet of soil would be excavated to install the concrete pad. Soil would be dispersed at the site and vegetation would naturally establish within the area. There would be extremely minimal chance of erosion and sedimentation. There would be no impact to hydrology or water quality from the installation or operation of the tower.

Land Use/ Planning: Sedgwick Reserve is within the University's Natural Reserve System and is dedicated Open Space and contains Environmentally Sensitive Habitat areas. The proposed tower would be consistent with the Reserve's mission as its purpose is for research and instruction. There would be no impact to land use at the Reserve.

Mineral Resources: There are no mineral resources identified at the Reserve and there would be no impact to mineral resources as a result of the proposed project.

Noise: Driving the Kubota to the project site would create minimal and short term noise. Excavation would be by hand and there would be no noise generated. There are no sensitive receptors in the project area. Operation of the tower would not result in a noise impact. There would be no noise impact.

Population/ Housing: There would be no impact to population and housing from the proposed project.

Public Services: The proposed project would not increase the need for public services. There would be no impact to public services.

Recreation: There would be no impact to recreational resources as a result of the proposed project.

Transportation: There would not be an increase of traffic or the need for parking from the proposed project. The site would be accessed through the unpaved road within the Reserve for installation of the weather tower and occasional maintenance thereafter.

Tribal Cultural Resources: The proposed project would not result in development within the vicinity of recorded archaeological sites and there are no tribal cultural resources identified in the proposed project area. The proposed project does not involve significant ground disturbance, excavation of a 16-square-foot area, 4-feet deep, would be by hand using a shovel. Tribal Consultation with the Santa Ynez Band of Chumash Indians was initiated via email on 10/17/2023.

Utilities/ Service Systems: The tower is wholly operated utilizing solar power, which will be installed on the ground adjacent to the concrete pad and tower. There would be no impact to Utilities or Service Systems.

Wildfire: The proposed project aims at reducing the wildfire risk at the site, and will not exacerbate the wildfire risk during installation or maintenance of the tower.

DETERMINATION: Based on the above project assessment, the proposed project is classified as exempt from the provisions of CEQA under Section 15303 Class 3, New Construction or Conversion of Small Structures and Section 15304, Minor Alternations to Land. None of the exceptions cited in Section 15300.2 apply to this project.

Shari Hammond

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11/28/2023

Date

References:

Constable, Heather
2023 Personal Communication with Heather Constable, Director, Sedgwick Reserve, University of California, Santa Barbara Natural Reserve System.

Rodriguez Consulting
2004 *Sedgwick Reserve Infrastructure Plan Final Environmental Impact Report*. Prepared by Rodriguez Consulting, Inc. for the University of California, Santa Barbara, Office of Campus Planning and Design. SCH#2003041096.

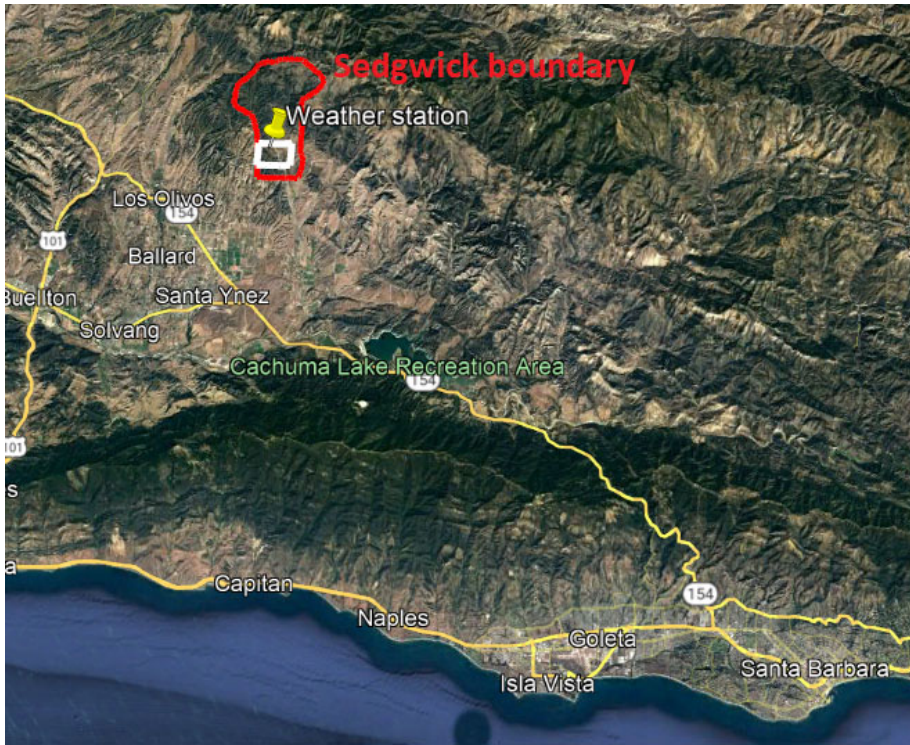


Figure 1a- Sedgwick boundaries in red within Santa Barbara County.

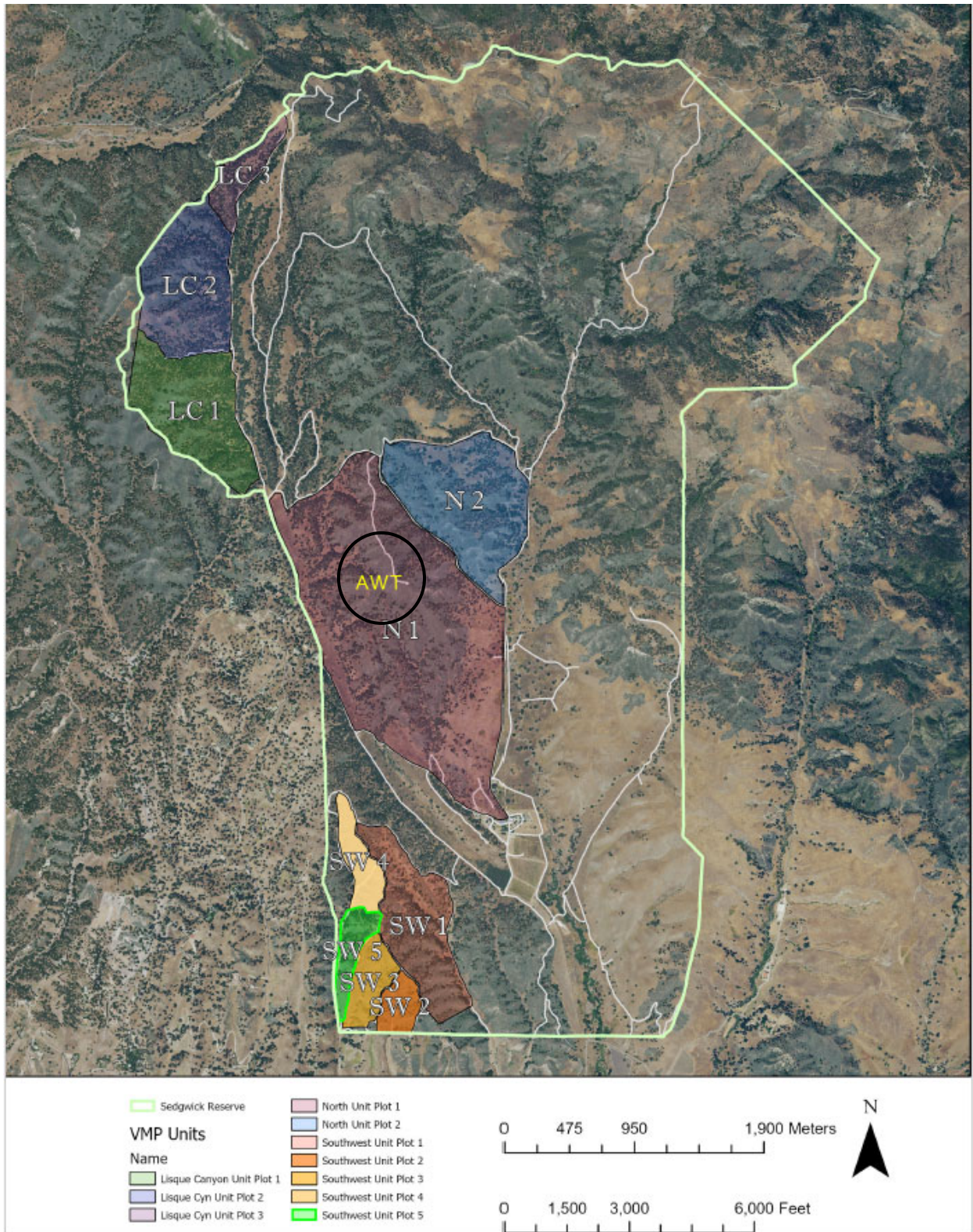


Figure 1b- AWT – Weather Station Location

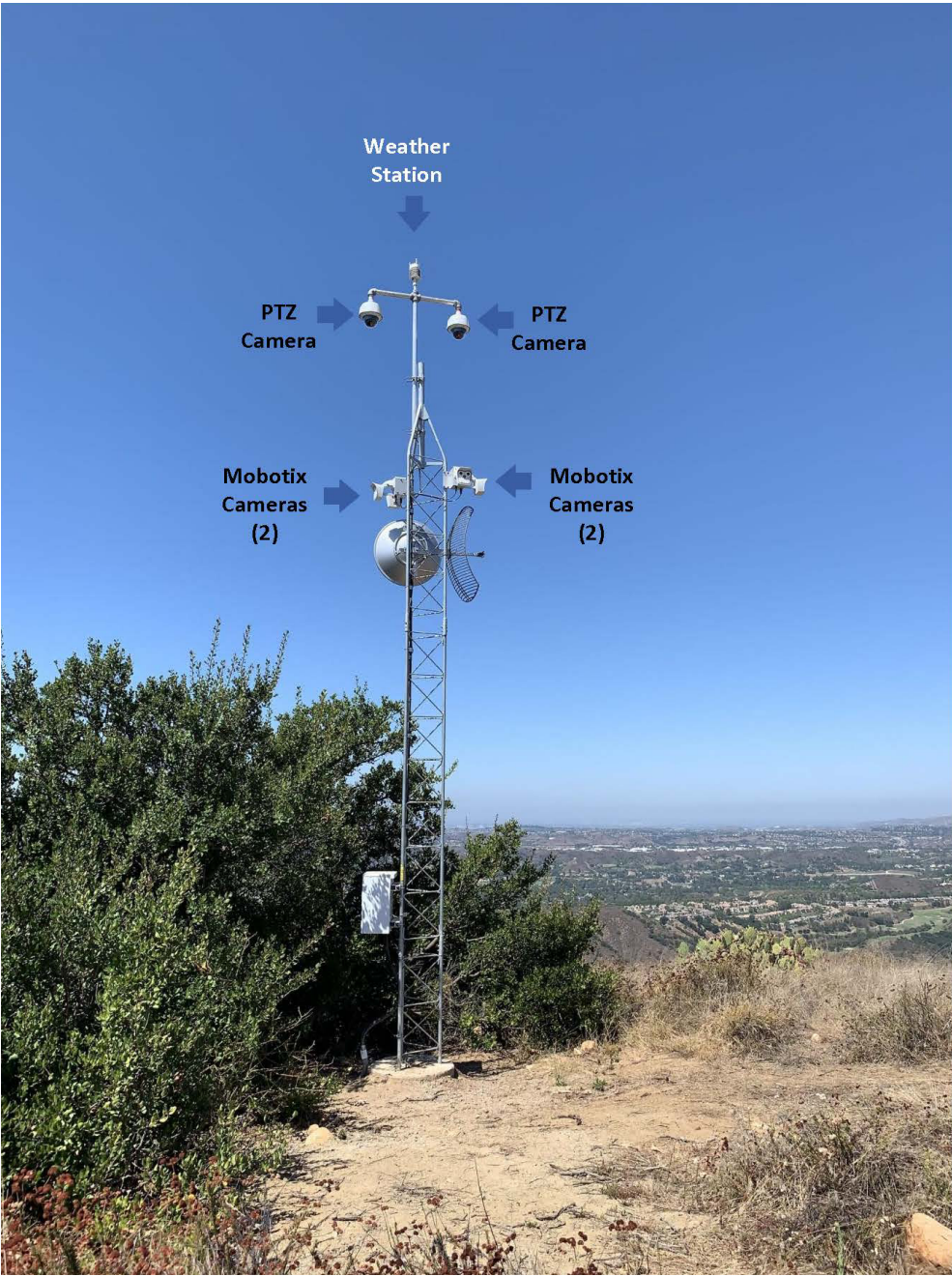


Figure 2: Proposed Weather Station