

January 26, 2024

Abe Leider
Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, CA 94612

Subject: Cultural and Paleontological Resources Services for the Fiber Optic Upgrades Project, in the City of Palo Alto, County of Santa Clara, California (C-0518)

Dear Mr. Leider,

At the request of Rincon Consultants, Inc., Duke Cultural Resources Management, LLC (DUKE CRM) has prepared a cultural and paleontological resources records search review for the Fiber Optic Upgrades Project (Project), located in the City of Palo Alto, County of Santa Clara, California. The City of Palo Alto (CITY) is the lead agency for California Environmental Quality Act (CEQA).

This report includes the result of research and historic document review for cultural resources and paleontological resources of the Study Area and the Area of Direct Impacts (ADI). The ADI is defined as the boundary in which all work will be conducted. The Study Area includes ADI and the 1/2-mile buffer.

PROJECT DESCRIPTION

The Project proposes to construct a fiberoptic backbone and phase 1 of a fiber-to-the-premises (FTTP) infrastructure (limited phase 1 of approximately 6500 homes) to provide communication services throughout the City of Palo Alto. The proposed Project includes the following components: The installation of approximately 83 miles of fiberoptic cables (consisting of about 48.5 miles of below ground installation and 35 miles of aerial installation using existing utility poles); the installation of approximately 10 Local Aggregation Sites either inside pre-fabricated communications shelters (fiber huts) or enclosed within existing commercial buildings; underground utility vaults and aboveground utility cabinets; and connections directly to customers. Except for the Local Aggregation Sites and connections to customers, the fiberoptic cables, vaults, and cabinets will be located within existing public rights-of-way (ROW) or easements. The Project is located in Sections 19, 24, 25, 30, 31, and 35, Townships 5 and 6 South, Range 2 and 3 West, Mount Diablo Meridian and Baseline, as shown on the USGS *Palo Alto, Calif.* 7.5' quadrangle maps (see Attachment 1 for Project Maps).

Proposed Project Elements

Palo Alto Fiber's ring backbone and FTTP infrastructure consists of four primary elements. In essence, the architecture of the FTTP build involves (1) installation of a Fiber Ring, (2) which is connected to Local Aggregation Sites (LASs), (3) which then connects to vaults (underground or in aboveground cabinets), and (4) finally connects to customers. The engineered layout of facilities currently proposed for the City of Palo Alto Fiber cable installation within the existing right of way is fully compatible with existing uses. The core of the cable is made of one or more glass fibers that transmit signals using light instead of electricity. As such, fiberoptic cable is immune to all forms of electrical interference and there is no electromagnetic radiation from fiberoptic cable.

Vaults

Vaults will be installed throughout the City to connect huts and neighborhoods receiving service. Vaults would be up to 36 inches by 78 inches and have no aboveground profile. The majority of vaults are approximately 36 inches by 48 inches or smaller, and 34 inches deep. Vaults would provide system access as well as space for fiberoptic splice locations and fiberoptic cable storage.

Utility Cabinets

Cabinets would be placed in ROW. If needed, cabinets would be sited based on visual shading and preferential placement where they could be screened and less visible. The aboveground cabinets could be up to 33 inches by 17 inches and less than 36 inches high. Most cabinets are generally 17 by 17 inches and less than 36 inches high. Cabinet measurements represent maximum size and may likely be smaller. Placement of cabinets will be in accordance with the City of Palo Alto Municipal Code Minimum Criteria.

Fiber Cable/Conduit

The project will include approximately 114 miles of fiberoptic cable throughout the city. The Fiber Ring, huts, vaults, and cabinets are all interconnected by the basic trunk and branch architecture of the system. To the maximum extent practicable, cable required for the proposed Project would be installed aerially on existing utility poles. With new aerial construction, the fiberoptic cables will be lashed to new strand wire connected to existing aboveground poles. Where aerial installation is not available or practicable, an underground conduit required to carry cable for the proposed Project would be installed within existing rights of way via horizontal directional drilling (HDD) and trenching (see section below on HDD). Up to six (6) conduits would be installed approximately 36 inches below the ground surface. The diameter of the conduits would be 1-inch, 2-inch and 4-inch, the standard dimension-ratio high-density polyethylene (HDPE) pipe, depending on the design. To comply with specific design requirements, borings under rail and highway corridors could require installation of steel pipe.

Hut Site Installation

The Project would require approximately two (2) huts (Colorado Substation, City Hall Level A) for the City-wide network. When prefabricated fiber hut units are installed, they would be delivered to the site completely assembled on a diesel truck with lowboy trailer and would be lowered onto the site by crane. Construction activities at hut sites would consist of site preparation, pouring of a level concrete slab, and installation of enclosure fencing, power feeds, and conduits for fiber cables in underground areas. If hut infrastructure is installed in a commercial or industrial building, equipment would be delivered to the site by trailer truck and installed within the building. These huts will also have back-up generators and heating, ventilation, and air conditioning (HVAC) systems to maintain equipment within operating

environmental specifications. Currently, staff is evaluating hut locations at the Colorado Substation, and anticipated A-level office space at City Hall after the Police Department vacates.

Horizontal Directional Drilling (HDD)

The HDD method of construction, if required, would be used to place fiberoptic cable bundles under road crossings, utilities, dry washes, or other obstacles in the ground. This method of construction consists of subsurface boring using a guided drill head. To start the bore, a typical surface-operated drilling device would be angled into the ground near the entry pit, creating a 3- to 4-inch pilot hole. Typically, a 6-inch back ream would then be attached and pulled back through the pilot hole, connecting the receiving pit to the entry pit. The back ream would increase the pilot hole to the required diameter, approximately 6 inches, to a maximum depth of approximately 60 inches. HDD uses a bentonite/water mixture that is pumped down the drill stem to run the drill head, lubricate the drill pipe, maintain the bore hole, and remove bore cuttings. Bentonite is a non-toxic fine clay that, when mixed with water, provides the necessary lubrication and operating fluid for the drilling process. The bentonite/water mix would be prepared onsite and circulated in tanks and/or tanker trucks.

Trenching

When an open trench is utilized for construction in concrete or asphalt, a T-Cut method would be utilized for restoration, except where this method is not practicable. The typical construction process would consist of using trenching/excavating equipment to cut a minimum 14-inch-wide opening. The trench would be excavated to a depth of approximately 40 inches. The 40-inch depth below existing grade would be maintained during installation, except where existing obstructions, underground congestion, or other reasons necessitate a shallower depth. Conduits would be placed at the bottom of the trench. The trench would then be backfilled and compacted, and the surface restored to a condition of equal quality as the pre-construction condition, or better.

Micro-trenching

Micro-trenching involves grinding or sawing a groove (typically 8-12 inches deep) in a roadway or sidewalk and dropping one or more cables or “microduct(s)” into the groove. The opening is then backfilled with the material removed from the “groove”, along with an adhesive to restore the opening to an equal-or-better condition as compared to the pre-construction condition. Effective January 2022, state law requires the City to allow microtrenching for the installation of underground fiber if the installation in the micro-trench is limited to fiber, unless the City makes a written finding that allowing micro-trenching for a fiber installation would have a specific, adverse impact on the public health or safety. The law also requires the City to adopt or amend its existing policies, ordinances, codes, or construction rules to allow for micro-trenching for fiber. The Public Works Department in collaboration with the City Attorney’s Office, Utilities and Urban Forestry, is developing a microtrenching standard for the City which will further inform on how this method may be implemented in the future.

Aerial Installation

The method of installation for aerial facilities would include installing suspension clamps at each pole. Fiberoptic cables would then be supported by (lashed to) high-strength galvanized suspension strands held in place by the suspension clamps. The strand is high-tensile steel and would be placed under tension to control sag. Standard aerial construction techniques and typical two-axle, rubber-tire vehicles would be used to attach cables and associated equipment to most utility poles. Basic equipment required for aerial installation includes bucket trucks and cable reel trucks or cable trailers. At least one crew and

one bucket truck would travel the pole line alignment. The cable reel truck would carry spooled fiberoptic cable that would be unwound for installation on the existing poles.

RESEARCH

Cultural Research

On October 30, 2023, DUKE CRM submitted a request for a records search by the Northwest Information Center (NWIC) (see Attachment 2). The NWIC located at Sonoma State University is part of the California Historical Resources Information System.

The records search included a review of all recorded cultural resources within a 1/2 -mile radius of the City limits, as well as a review of known cultural resource survey and excavation reports. Record search results were compiled by DUKE CRM Archaeologist Morgan Beigle on December 6, 2023.

The records search identified 63 cultural resources within the ADI. Of these resources, 48 are historic built environment (one resource is duplicated), two (2) historic districts, 11 are prehistoric and two (2) are multicomponent (two are duplicated) (Table 1). Due to the nature of the Project, historic properties and districts will not be impacted and therefore the focus of this research is on the cultural resources that may be impacted.

Table 1: Cultural Resources within the ADI

Resource No.	Resource Type	Description	NRHP Eligibility	Possible Impacts by Project
P-41-002402/ P-43-003137	Multi-component	Prehistoric Deposit with White Ceramic Sherds and Glass	Recommended Eligible under Criterion D	N/A
P-43-000595/ P-43-000669	Multi-component	Alma-Adobe Site, Shell Midden, Lithics Sherds and Faunal Bone	Recommended Eligible under Criterion D	Splice Closure PAO103c-L007a-N01, ROW W. Charleston Ave & Park Blvd to Edlee Ave.
P-43-000580	Prehistoric	Burial, Midden w/ Shell, Lithic, Faunal	Unknown	N/A
P-43-000591	Prehistoric	Midden w/ Shell, Lithic & Human Remains	Unknown	Cabinet PAO102b-L009, Splice Closures PAO102c-L009b-M02 & PAO102c-L009b-N08, Fiber cable
P-43-000593	Prehistoric	Human Burial	Unknown	ROW at University Ave & Bryant St., Splice Closure PAO101b-L002a-M01
P-43-000611	Prehistoric	Midden w/ Historic Debris & Lithics	Unknown	N/A
P-43-000617	Prehistoric	Fire Affected Rock	Unknown	N/A
P-43-000619	Prehistoric	Shell Midden	Unknown	N/A
P-43-000627	Prehistoric	Shell Midden	Unknown	N/A
P-43-000634	Prehistoric	Primary and Secondary Flakes	Unknown	N/A
P-43-000670	Prehistoric	Fire Affected Rock, Shell, Lithic	Unknown	N/A
P-43-002625	Prehistoric	Shell Fragments	Unknown	N/A
P-43-002626	Prehistoric	Shell Scatter	Unknown	N/A
P-43-002353/ 43-002867	Historic Built Environment	San Francisquito Creek Bridge	3S	N/A
P-43-000388	Historic Built Environment	Hostess House / Palo Alto Veterans Memorial Building	7K	N/A

DUKE CULTURAL RESOURCES MANAGEMENT

P-43-000389	Historic Built Environment	John Adams Squire House / Squire House	1S	N/A
P-43-000397	Historic Built Environment	Downing House	1S	N/A
P-43-000454	Historic Built Environment	Pettigrew House	1S	N/A
P-43-000461	Historic Built Environment	Dunker House	1S	N/A
P-43-000463	Historic Built Environment	U S Post Office, Hamilton Branch	1S	N/A
P-43-000551	Historic Built Environment	Professorville Historic District	1S	N/A
P-43-000552	Historic Built Environment	Norris Residence	Unknown	N/A
P-43-000928	Historic Built Environment	Southern Pacific Railroad	Unknown	N/A
P-43-001137	Historic Built Environment	Victorian Cottage	Unknown	N/A
P-43-001138	Historic Built Environment	Old Delta Tau Delta Fraternity House	Unknown	N/A
P-43-001201	Historic Built Environment	Juana Briones House	Unknown	N/A
P-43-001735	Historic Built Environment	First Congregational Church of Palo Alto	6Y	N/A
P-43-001845	Historic Built Environment	Verizon Retail	6Y	N/A
P-43-002040	Historic Built Environment	Single Family Residence	Unknown	N/A
P-43-002204	Historic Built Environment	Commercial Building	Unknown	N/A
P-43-002205	Historic Built Environment	Single Family Residence	Unknown	N/A
P-43-002206	Historic Built Environment	Commercial Building	Unknown	N/A
P-43-002261	Historic Built Environment	President Hotel	2S2	N/A
P-43-002457	Historic Built Environment	St. Albert the Great Church, St. Elizabeth Seton School and St. Thomas Aquinas Catholic Parish	Unknown	N/A
P-43-002623	Historic Built Environment	Former Offices of Beckman Coulter, Inc.	Unknown	N/A
P-43-002624	Historic Built Environment	Arastradero West Apartments	6Y	N/A
P-43-002750	Historic Built Environment	Stanford Inn	Unknown	N/A
P-43-002808	Historic Built Environment	Channing House	2S2	N/A
P-43-002809	Historic Built Environment	Palo Alto CPAU Utility Poles	Unknown	N/A
P-43-002868	Historic Built Environment	University Avenue Underpass	3D	N/A
P-43-002869	Historic Built Environment	Southern Pacific Railroad Depot	2S2	N/A
P-43-002871	Historic Built Environment	Embarcadero Underpass	3S	N/A
P-43-003004	Historic Built Environment	Palo Alto Airport Tower & Beacon	6Z	N/A
P-43-003048	Historic Built Environment	Adobe Creek/Barron Creek Canal	6Z	N/A
P-43-003049	Historic Built Environment	Commercial Building	6Z	N/A
P-43-003129	Historic Built Environment	Palo Alto CPAU Utility Poles	6Y	N/A
P-43-003139	Historic Built Environment	Greenmeadow (units I and II) District	1S	N/A
P-43-003691	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003692	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003694	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003698	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003701	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003702	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003703	Historic Built Environment	Commercial Building	6Y	N/A
P-43-003704	Historic Built Environment	Single Family Residence	6Z	N/A

DUKE CULTURAL RESOURCES MANAGEMENT

P-43-003705	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003706	Historic Built Environment	Town & Country Village Shopping Center	6Z	N/A
P-43-003719	Historic Built Environment	Single Family Residence	6Z	N/A
P-43-003944	Historic Built Environment	Palo Alto Municipal Golf Course	6Z	N/A
P-43-004011	Historic Built Environment	Roller, Hapgood, & Tinney Funeral Home	Unknown	N/A
P-43-004031	Historic Built Environment	Palo Alto Fire Department-Station No. 3	6Z	N/A
P-43-004110	Historic Built Environment	Palo Alto Regional Water Quality Control Plan	6Z	N/A
P-43-004293	Historic Built Environment	University Avenue OC (#37 0092)	Unknown	N/A

1S: Individually listed in the NR by the Keeper. Listed in the CR.

2S2: Individually determined eligible for NR by consensus through Section 106 process. Listed in the CR.

3D: Appears eligible for NR as a contributor to a NR eligible multi-component resource through survey evaluation.

3S: Appears eligible for NR individually through survey evaluation.

6Y: Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing.

6Z: Found ineligible for NR, CR or local designation through survey evaluation.

The NWIC identified 48 cultural resources studies within the ADI (Table 2). None of these reports identify sites within the ADI or the reports are in locations that have now been heavily developed since the study and will no longer be impacted by the Project.

Table 2. Cultural Resource Reports within the ADI

Report No.	Year	Report Title	Author(s)
S-003123	1975	An Assessment of the Archaeological and Paleontological Resources as May be Impacted by the South Bay Dischargers Authority's Proposed Joint Outfall Pipeline	Stephen A. Dietz
S-003163	1973	An archaeological reconnaissance of the proposed Dumbarton Bridge replacement project (letter report)	Stephen A. Dietz
S-004279	1976	Archaeological Reconnaissance, Proposed Site of Sanitary Land Fill, Santa Clara County, California	Lynn Riley
S-004411	1977	Archaeological Reconnaissance and Literature Survey for the City of Palo Alto Regional Wastewater Treatment Works	Stephen A. Dietz
S-004511	1978	Cultural Resources Survey, 04-SCL-82, Proposed Lane Widening at Quarry Road and Route 82, P.M. 26.2, 04220-402291	Cindy Desgrandchamp
S-004883	1977	Historic Property Survey Report, Oregon-Page Mill Expressway Intersection Improvements at El Camino Real, Palo Alto, California.	Francis B. Sullivan and Theodore A. Cicoletti
S-005023	1982	Cultural Resource Evaluation for a Parcel of Land at 3860 Middlefield Road in the City of Palo Alto, County of Santa Clara	Robert Cartier
S-008647	1979	Reconnaissance of the grounds surrounding the Palo Alto Southern Pacific Depot, and the associated Red Cross and Veterans buildings (letter report).	William Roop
S-009442	1987	Cultural Resource Evaluation of the Matadero Creek Flood Control Project in the City of Palo Alto, County of Santa Clara	Robert Cartier
S-009487	1987	Cultural Resource Evaluation of the Proposed Site of the Stanford University Psychiatric Center for the Archaeological Element for the Quarry Road General Plan Amendment	Robert Cartier
S-010077	1988	Archaeological Excavation at CA-SCL-600 on Adobe Creek in the City of Palo Alto, County of Santa Clara	Robert Cartier and Glory Anne Laffey
S-011396	1989	Technical Report of Cultural Resources Studies for the Proposed WTG-WEST, Inc., Los Angeles to San Francisco and Sacramento, California: Fiber Optic Cable Project	BioSystems Analysis, Inc.
S-014246	1992	Cultural Resource Evaluation of the Veterans Administration Medical Center Project in the City of Palo Alto, County of Santa Clara	Robert Cartier
S-015928	1994	Matadero Creek Project, Archaeological Testing Program, Phase II, Santa Clara County, California	Julie C. Wizorek and Jon Reddington
S-018367	1995	Historic Property Survey Report and Finding of No Effect for the Proposed Ramp Metering and HOV Ramp Project, 4-SCL-101 PM 40.0/52.5, EA 132451	Mark Hylkema

DUKE CULTURAL RESOURCES MANAGEMENT

Report No.	Year	Report Title	Author(s)
S-018367	1995	Archaeological Survey Report Addendum #1, for the Proposed Ramp Metering and HOV Ramp Project, 4-SCL-101 PM 40.0/52.5, EA 132451	Mark Hylkema
S-020343	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-619-05, Palo Alto, San Mateo County	Barry A. Price
S-020523	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-533-07, Palo Alto, Santa Clara County, California (letter report)	Barry A. Price
S-020550	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-614-03, Palo Alto, Santa Clara County, California (letter report)	Barry A. Price
S-020910	1998	Review of Historic Resources for Site SF-142-02, 711 Colorado Avenue, Palo Alto, Santa Clara County, CA (50001 84/98) (letter report)	Sunshine Psota
S-021146	1997	Findings of Effect (No Effect), Palo Alto Transit Center Improvements, City of Palo Alto, Santa Clara County	Basin Research Associates, Inc.
S-022157	1999	Cultural Resource Evaluation of the Property at 955 Alma Street in the City of Palo Alto, California (letter report)	Robert Cartier
S-022183	1999	Cultural Resource Evaluation of the Property at 200 Hamilton Avenue in the City of Palo Alto, California	Robert Cartier
S-022359	2000	Archaeological Monitoring at 168 University Avenue, Palo Alto, California (letter report)	Hannah Ballard
S-022605	1999	Cultural Resource Evaluation of the Sprint PCS Mitchell Park Project at 3600 Middlefield Road in the City of Palo Alto, County of Santa Clara	Robert R. Cartier
S-022649	2000	Archaeological Testing Program for the Property at 200 Hamilton Avenue in the City of Palo Alto, California	Robert Cartier
S-022978	2000	Final Cultural Resources Inventory Report for Williams Communications, Inc. Fiber Optic Cable System Installation Project, San Francisco to Santa Clara, San Francisco, San Mateo, and Santa Clara Counties: Addendum 1	Mike Avina
S-023900	2001	Cultural Resources Investigation for Stanford University Athletics Department Lighting Plan, Santa Clara County	Barbra Siskin
S-024125	2000	Cultural Resources Evaluation, Property at #797 and #807 Matadero Avenue, Palo Alto, CA	Robert Cartier
S-025159	2002	Archaeological Investigations for the 2950 West Bayshore Road, Wireless Communications Site, CA 2287H	John A. Nadolski and Michelle St. Clair
S-025174	2002	Cultural Resources Report for San Bruno to Mountain View Internodal Level 3 Fiber Optics Project in San Mateo and Santa Clara Counties, California	John Holson, Cordelia Sutch, and Stephanie Pau
S-025271	2001	Completion of Archaeological Subsurface Augering at the Hyatt Rickey's Hotel Project, 4129 El Camino Real, Palo Alto, Santa Clara County (letter report)	Miley Paul Holman
S-026045	2000	Cultural Resources Reconnaissance Survey and Inventory Report for the Metromedia Fiberoptic Cable Project, San Francisco Bay Area and Los Angeles Basin Networks	Richard Carrico, Theodore Cooley, and William Eckhardt
S-026067	2002	Architectural/Historical Analysis for Cingular Site No. SF-914-01: "First Congregational Church" (Palo Alto) (letter report)	Carolyn Losee
S-026088	2002	Architectural/Historical Analysis for Cingular Site No. BA-350-01: "First Baptist Church" (Palo Alto): Negative Results (letter report)	Carolyn Losee
S-026604	2000	A Cultural Resources Evaluation of the Lands of Midgal, 797 and 807 Matadero Road, Palo Alto, California	William Roop
S-028669	2004	Archaeological Field Study of the 901 San Antonio Road Project Area, Palo Alto, Santa Clara County, California	Miley Paul Holman
S-028906	2004	Cultural Resource Analysis for Cingular Wireless Site SF-971-01 "Block Buster" Palo Alto. (letter report)	Carolyn Losee
S-029036	2004	Archaeological Survey of Homer Avenue Pedestrian Underpass for the City of Palo Alto. (letter report)	William Self
S-029231	2000	Nextel Communications Wireless Telecommunications Service Facility - Santa Clara County, Nextel Site No. (CA-0171A)/Page Mill Road (letter report)	Lorna Billat
S-029233	2000	Nextel Communications Wireless Telecommunications Service Facility-Santa Clara County, Nextel Site No. (CA-0871A)/Oregon Expressway (letter report)	Lorna Billat
S-029573	2000	Final Report, Archaeological Survey and Record Search for the Six Fluor Global Fiber Optic Segments, Mountain View, Palo Alto, and San Mateo County, California.	Jonathan Goodrich and John Holson
S-029698	2005	Equipment Shelter, PG&E City of Palo Alto / SF-05252A, 1080 Colorado Avenue, Palo Alto, CA	Erika Thal

DUKE CULTURAL RESOURCES MANAGEMENT

Report No.	Year	Report Title	Author(s)
S-030233	2004	Cultural Resources Analysis for Cingular Wireless Site BA-350-02, "California Avenue Caltrain Station", Palo Alto, California (letter report)	Carolyn Losee
S-030860	2005	New Tower ("NT") Submission Packet FCC Form 620, First Congregational Church, PN-609-01	Carolyn Losee and Dana E. Supernowicz
S-030860	2005	Cultural Resources Study Of The First Congregational Church, Cingular Wireless Site No. PN-609-01, 1985 Louis Road, Palo Alto, Santa Clara County, California 94303	Historic Resource Associates
S-031911	2006	Archaeological Monitoring for the Palo Alto Water Facilities Project, Palo Alto, Santa Clara County, California (ESA #201490; PL #1772-01) (letter report)	Elena Reese
S-032169	2006	Cultural Resource Assessment Report, Palo Alto Intermodal Transit Center Project (PAITC), Santa Clara County, California	Leigh A. Martin

The records search identified an additional 39 cultural resources within ½ mile of the Study Area. The 39 cultural resources within the search radius are comprised of 19 prehistoric sites, five (5) historic sites, 11 historic built environment resources, two (2) historic districts, and two (2) multi-component sites. The NWIC also identified 173 reports within the Study Area.

DUKE CRM also conducted online research regarding the sensitivity of cultural resources within the City of Palo Alto. According to the City’s General Plan Environmental Impact Report (PlaceWorks 2016) it was determined that areas of high sensitivity are located around historic waterways, including San Francisquito Creek, Matadero Creek, Barron Creek, and Adobe Creek. However, there is no within or directly adjacent to these waterways and is therefore outside of the ADI. The City’s comprehensive plan 2023 (City of Palo Alto 2022), focuses on the historic districts, however as noted above, built historic resources will not be impacted.

Paleontological Research

On November 5, 2023, DUKE CRM Paleontologist/Principal Investigator, Brian Kussman, performed a search of the University of California Museum of Paleontology (UCMP) online database for known fossil localities within the Study Area (City of Palo Alto boundaries), as well as in the vicinity. This intensive record search did not identify any paleontological resources within the ADI. The record search identified one (1) recorded paleontological resource within one (1) mile of the Study Area, UCMP V72123, and three (3) localities, UCMP V90003, V68129, and V74164, between one (1) and two (2) miles from the Study Area. The results of this record search can be found below in Table 3.

Table 3: Paleontological Resources within Study Area

Locality Number	Description	Formation/Age
V90003	Molecular Medical Bldg., ~1 mile SW of Project <i>Bison cf. latifrons</i> mid-humerus	Non-marine sands, Late Pleistocene
V68129	Stanford SLAC National Accelerator, ~2 miles SW of Project, <i>Neoparadoxia repenningi</i> (Holotype specimen), <i>Isurus</i> sp. (shark), <i>Galeocerdo</i> sp. (shark), 2 types of whales, and a reptile.	Marine sandstone, Miocene (Barstovian Land Mammal Age)
V72123	San Francisquito Creek, less than 1 mile NW of Project, <i>Allodesmus</i> sp. R. Innominate	Marine sandstone, Miocene (Barstovian Land Mammal Age)

V74164	Middlefield Road, Menlo Park, ~1 mile NW of Project, Vertebrates	Non-marine, Pleistocene
--------	--	-------------------------

Geology

The geologic units underlying the project area are mapped as alluvial deposits dating from the late Pleistocene to early Holocene epoch. Most of the City of Palo Alto sits on Pleistocene older alluvial deposits (*Qoa*) with some Holocene younger alluvial deposits (*Qya*) exposed in the San Francisquito Creek area. Localities UCMP V90003 and V74164 were likely recovered from these Pleistocene older alluvial deposits (*Qoa*). Holocene-age deposits (*Qya*) are generally assigned a low paleontological sensitivity, as their young age prevents the preservation of significant paleontological material. However, Holocene deposits often transition with depth into older, high sensitivity Pleistocene-age deposits (*Qoa*) with a higher potential to preserve extinct taxa.

Two (2) of the localities are from an older, marine geologic unit primarily composed of an unnamed sandstone, dating to the early Miocene (approximately 16.3 to 13.6 million years before present). This geologic unit underlies the Pleistocene to Holocene alluvial deposits noted above. The depth of the interface between the Pleistocene alluvial deposits and the Miocene marine sandstone mapped in the Palo Alto area is not known, as depths were not recorded for UCMP V68129 or V72123. Additionally, proximity to the hilly region to the west of the City of Palo Alto can affect the elevation of this interface due to undetermined amount of sedimentation as the shoreline is approached, further complicating an understanding of the extent of paleontological resources. Locality UCMP V68129 stands out from a scientific point of view, due to its status as a holotype specimen of *Neoparadoxia repenningi* (Domning and Barnes 2010), a member of the family Paleoparadoxiidae (similar to a modern hippopotamus, but more capable of terrestrial locomotion). Paleoparadoxiidae is a member of the extinct Desmostylians, which filled a near shore herbivore role (Clark 1991). Desmostylians are very scarce in the fossil record and any specimens are important to scientific research. Holotype specimens are the first and most complete fossilized remains of a previously unrecognized organism, described and named in scientific literature.

IMPACTS ANALYSIS

The following three archaeological sites are within the ADI and will be potentially impacted by the Project.

P-43-000595/P-43-000669

Site P-43-000595/P-43-000669 is a multicomponent site located near East/West Charleston Avenue and stretches south and west to Edlee Avenue. Previous test excavations took place within the site boundaries in 2011 and 2018. In 2011, excavations observed a sparse prehistoric cultural deposit between 15-80 centimeters below surface within the Caltrans ROW and was considered eligible for NRHP under Criteria D. In 2018, five (5) trenches were excavated in the ROW between Carolina Lane and Edlee Avenue yielded historic and prehistoric artifacts as deep as 135 centimeters below surface; however the artifacts were in poor condition as was the context in which they were found. Historic artifacts consisted primarily of debris thought to be from the historic railroad, as well as butchered faunal bones. The prehistoric assemblage was made up of ceramic sherds, charcoal, and one lithic flake. Three (3) out of the five (5) trenches yielded prehistoric artifacts.

Proposed excavation within the ADI and the installation of splice closure PAO103c-L007a-N01 is anticipated to be approximately 36 inches below ground surface and located within the recorded boundary of this site. Therefore, there is a likelihood that historic and prehistoric artifacts could be impacted during excavation near West Charleston Avenue and Park Boulevard to Edlee Avenue.

P-43-000591

Prehistoric resource P-43-000591 was first discovered in 1938 and documented in a 1949 Stanford University Masters thesis, with a site record created in 1986. The site is said to have contained a burial from the 800 block of the Oregon Expressway and additional materials known from Marion Avenue between Middlefield Road and Coastland Drive. Unfortunately, the “additional” materials were not detailed any further. The housing project, located north and south of Ross Road, and east of Oregon Avenue, now stands within the site. The 1986 site record noted that the material is shallow and that additional artifacts (i.e.: two pestles and “numerous finds of artifactual materials”) are present that were not noted in the 1949 thesis. Additionally, faunal bone and shell fragments were also observed. It is not known if the site is considered significant or eligible for the CRHR/NRHP.

P-43-000591 is located near the proposed location of cabinet PAO102b-L009, splice closures PAO102c-L009b-M02 & PAO102c-L009b-N08, and fiber cable. The anticipated excavation for these activities is approximately 36 inches below the surface and, due to the lack of information regarding the site, there is potential that the site could be impacted during ground disturbance.

P-43-000593

Site P-43-000593 is a prehistoric site first discovered in 1922 during the excavation for the Follmer Rhoades Building. It was stated that a “mine” of bones were discovered 10 feet below surface with no other information associated with the remains or midden deposits available. A site record was prepared for this site in 1986 with little additional information, with the exception that buildings now lie on top of the recorded site. Due to a lack of locational description in the site record it is not clear where the site is located and if it still intact. Therefore, there is a potential to impact the site during the 36-inch deep excavation for the proposed fiber cable work within the ROW at University Avenue and Bryant Street, as well as the location of splice enclosure PAO101b-L002a-M01, located at the northeast corner of the intersection.

CONCLUSIONS

DUKE CRM assessed the ADI for the presence of previously recorded cultural and paleontological resources. Proposed ground disturbance will primarily be within existing ROW or easements, with a maximum depth of excavation being 36 inches, and therefore likely in previously disturbed matrix. Therefore, the Project is considered to have low sensitivity for cultural resources throughout the majority of the ADI. However, for the two (2) prehistoric resources and one (1) multicomponent site that have a likelihood for containing intact cultural deposits, (i.e., P-43-000595/P-43-000669 – PAO103a-L007a-N01, , P-43-000591 – PAO102b-L009, and P-43-000593 – University Avenue and Bryant Street), archaeological monitoring is recommended to identify and mitigate any potential impacts by the Project. Project changes may have the potential to disturb sediment that are previously undisturbed and may impact previously unidentified cultural resources.

Archaeological Monitoring

An archaeological monitor (B.S./B.A. in archaeology or related field with 1 year field experience) shall be present during ground disturbing within the recorded site locations listed above. The monitor shall work under the direct supervision of a qualified archaeologist (M.S./MB.A. in archaeology or related field with 10 years experience and demonstrated competence in archaeological research, fieldwork, reporting, and curation).

1. The qualified archaeologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.
2. The archaeological monitor shall be present full-time during ground disturbance within three (3) recorded site locations above, including but not limited to grading, trenching, utilities, and off-site easements. If, after excavation begins, the qualified archaeologist determines that the sediments is not likely to produce archaeological resources, monitoring efforts shall be decreased.
3. The monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of an archaeological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified archaeologist has cleared the area.
5. In consultation with the qualified archaeologist, the monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly mapped, documented, removed, and the area cleared.
6. If the discovery is potentially significant the qualified archaeologist shall notify the CLIENT and CITY immediately.
7. In consultation with the CLIENT and CITY the qualified archaeologist shall develop a plan of mitigation which will likely include full-time monitoring, salvage excavation, scientific removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

DUKE CRM assessed the proposed Project for paleontological sensitivity. Research and a review of paleontological literature did not identify paleontological resources within the Project boundaries. Based on published data, the ADI is assessed as having unknown sensitivity for paleontological resources at depths of, and exceeding, five (5) feet. Therefore, ground disturbance that is less than five (5) feet in depth is unlikely to result in significant impacts to paleontological resources. The maximum anticipated depth for this Project is three (3) feet, therefore, no additional efforts related to paleontology are recommended. However, due to the unknown sensitivity for fossils at greater depths, if any paleontological resources are discovered during excavations for the Project, work shall stop until the project paleontologist is able to identify the best course of action for the protection or mitigation of the paleontological resources.

If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has determined the origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall the inspection within

48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Thank you for contacting DUKE CRM on this interesting project. If you have any questions or comments, you can contact me at (951) 760-2265, or by e-mail at morganbeigle@dukecrm.com.

Sincerely,

DUKE CULTURAL RESOURCES MANAGEMENT, LLC



Morgan Beigle, M.A., RPA
Archaeologist/Co-Principal Investigator



Brian Kussman, B.A.
Principal Investigator/Paleontologist

Attachments

1: Project Maps

REFERENCES CITED

City of Palo Alto

2022 City of Palo Alto Comprehensive Plan 2030.

Clark, J. M.

1991 A new early Miocene species of *Paleoparadoxia* (Mammalia: Desmostylia) from California. *Journal of Vertebrate Paleontology* 11, 490–508.

Domning, D.P., and L.G. Barnes

2010 A new name for the ‘Stanford skeleton’ of *Paleoparadoxia* (Mammalia, Desmostylia). *Journal of Vertebrate Paleontology* 27, 748–751.

PlaceWorks

2016 Comprehensive Plan Update Environmental Impact Report for the City of Palo Alto.

ATTACHMENT 1

PROJECT MAPS

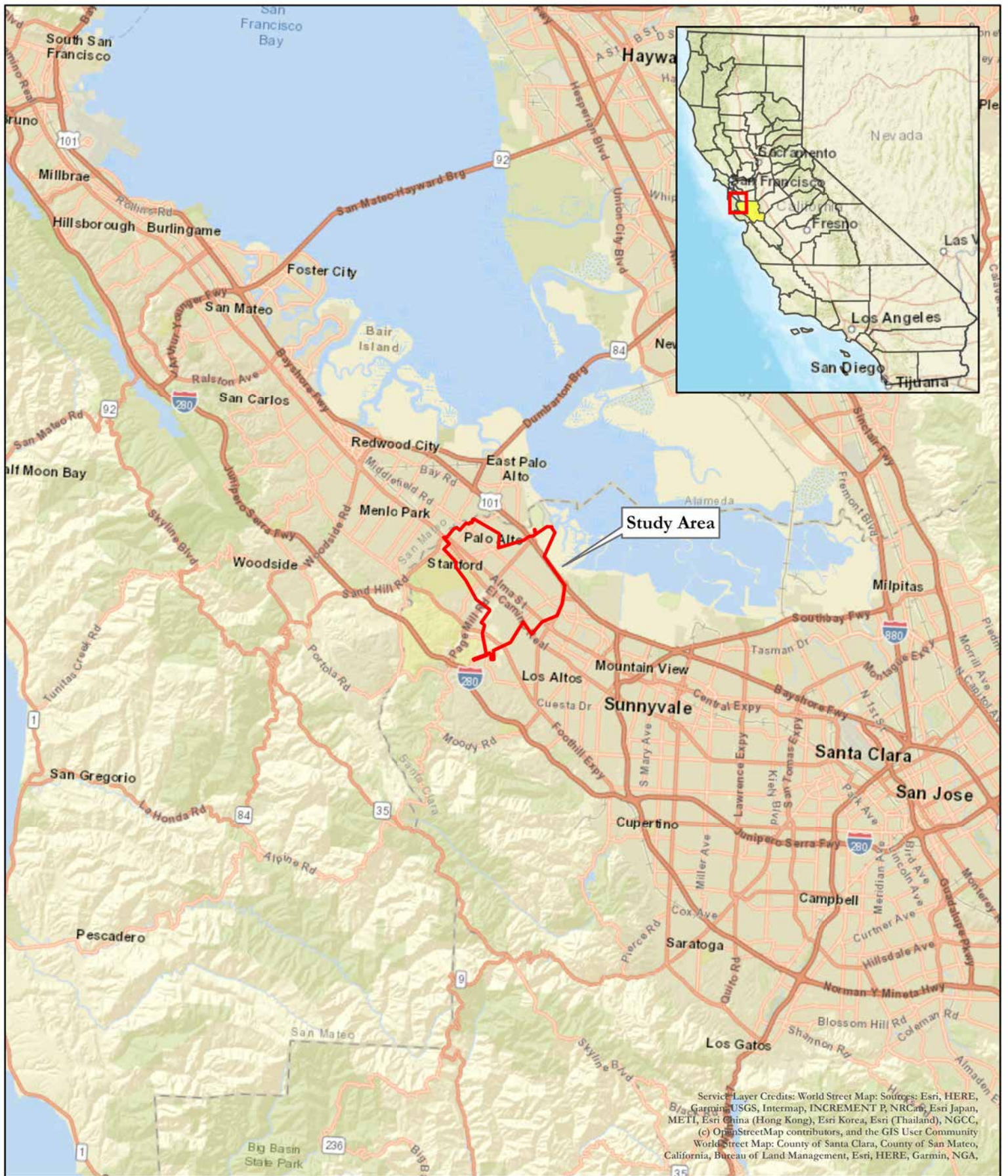


Figure 1. Project Vicinity
Palo Alto Fiber Optic (C-0518)



 Study Area



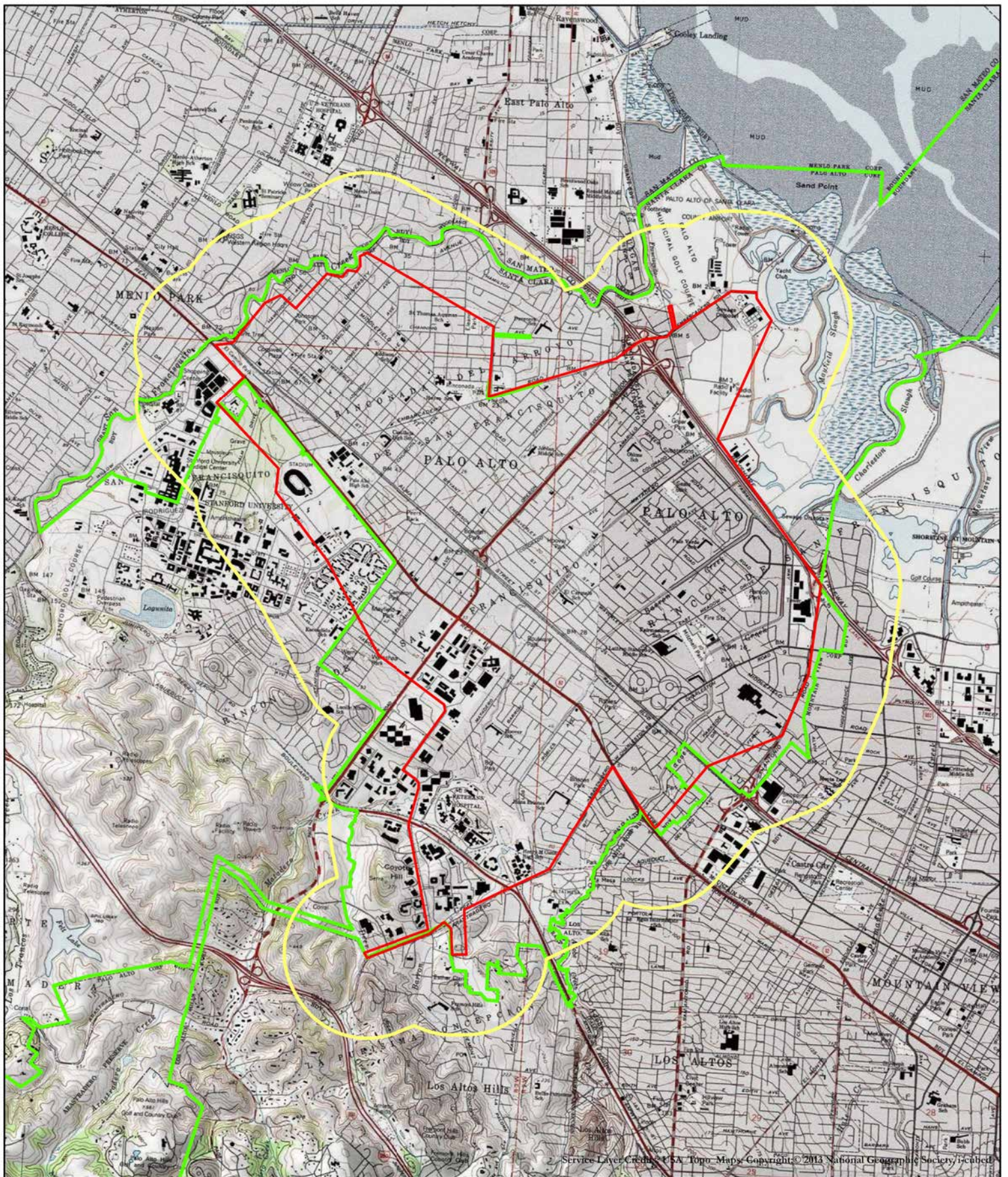
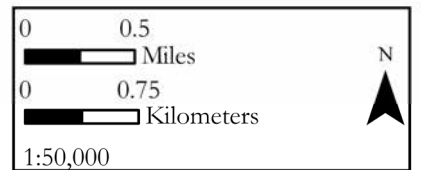


Figure 2. Project Location
 Palo Alto Fiber Optic (C-0518)



- ADI
- City Limits
- Study Area

Palo Alto, Calif USGS 1:100,000 quadrangle
 T5S, R2W, T6S, R2W
 Date of Map: 1982



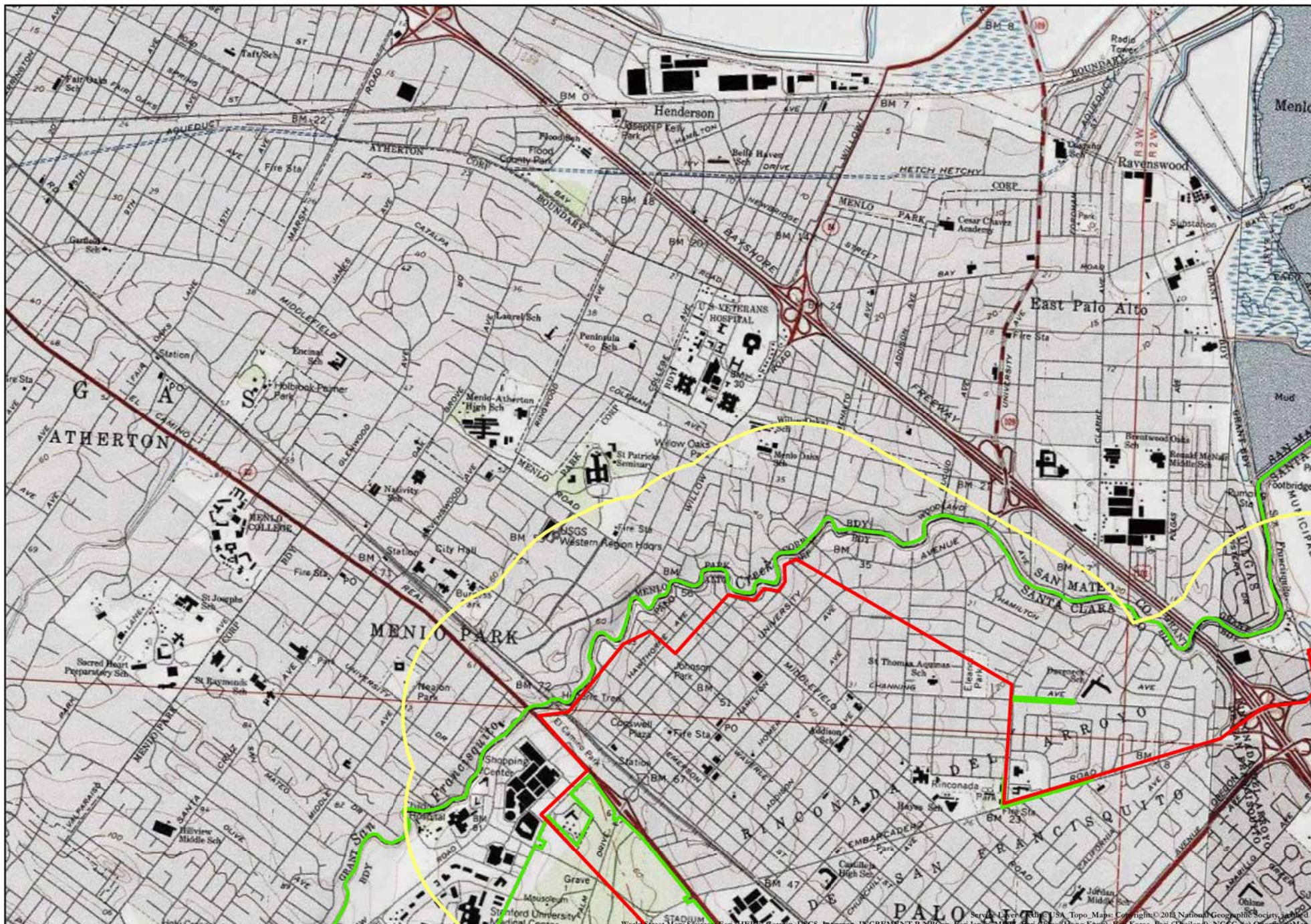
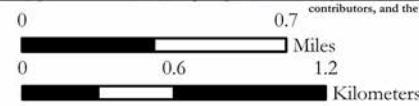


Figure 2. Project Location
Palo Alto Fiber Optic (C-0518)



- ADI
- City Limits
- Study Area

Palo Alto, Calif USGS 1:100,000 quadrangle
T5S, R2W, T6S, R2W
Date of Map: 1982



1:30,000

Source: USGS, USGS, USA, Topo. Maps. Copyright © 2018 National Geographic Society, based on contributors, and the GIS User Community

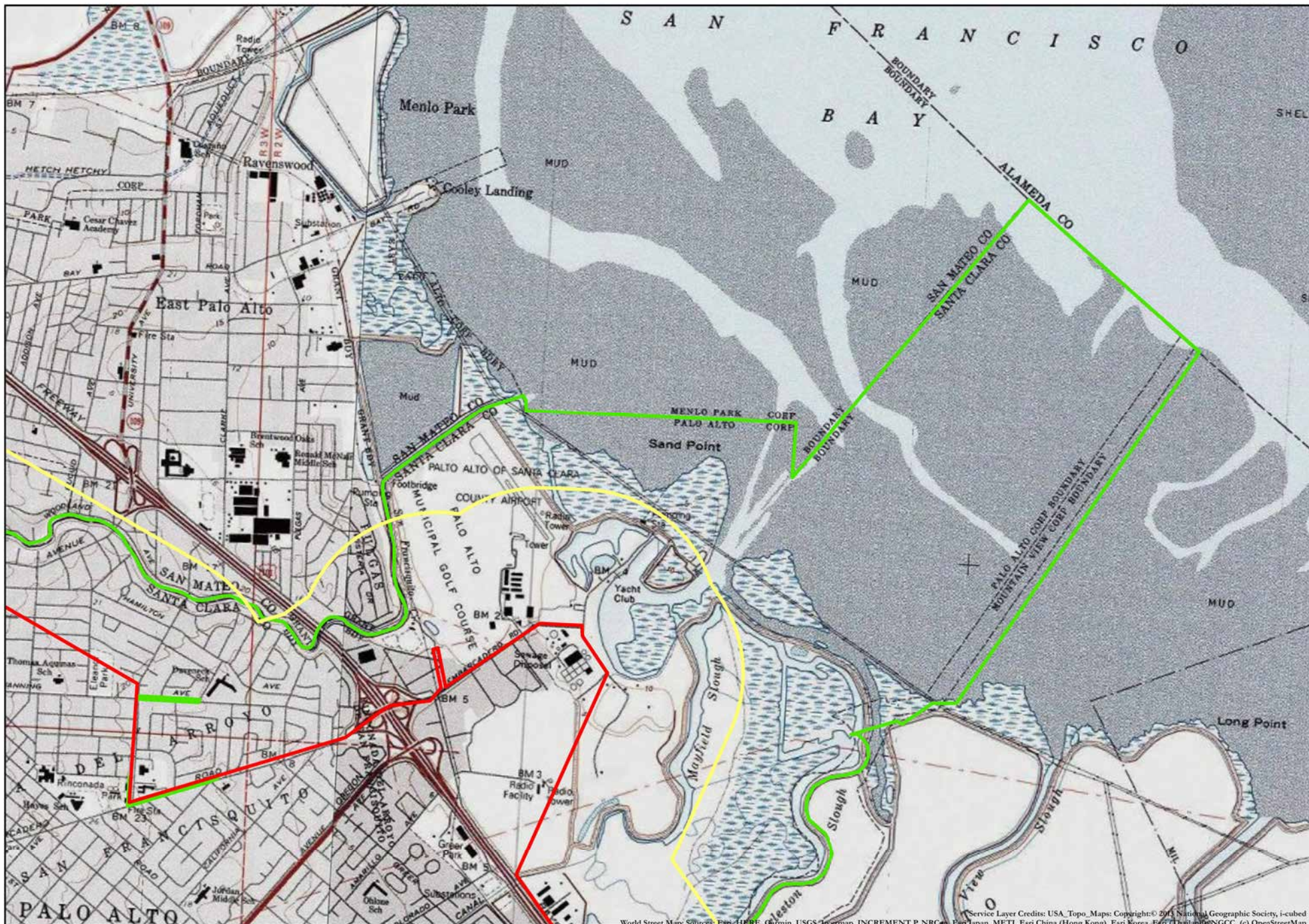
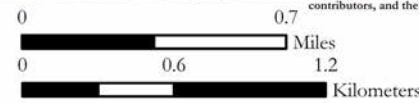


Figure 2. Project Location
 Palo Alto Fiber Optic (C-0518)



- ▬ ADI
- ▬ City Limits
- ▬ Study Area

*Palo Alto, Calif USGS 1:100,000 quadrangle
 T5S, R2W, T6S, R2W
 Date of Map: 1982*



1:30,000



Service Layer Credits: USA Topo Maps Copyright © 2014 National Geographic Society, i-cubed
 World Street Map Sources: Esri, HERE, Garmin, USGS, Jetmap, INCREMENT P, NRCA, Pace, Japan, METI, Esri China (Hong Kong), Esri Korea, Esri Thailand, Swisstopo, contributors, and the GIS User Community

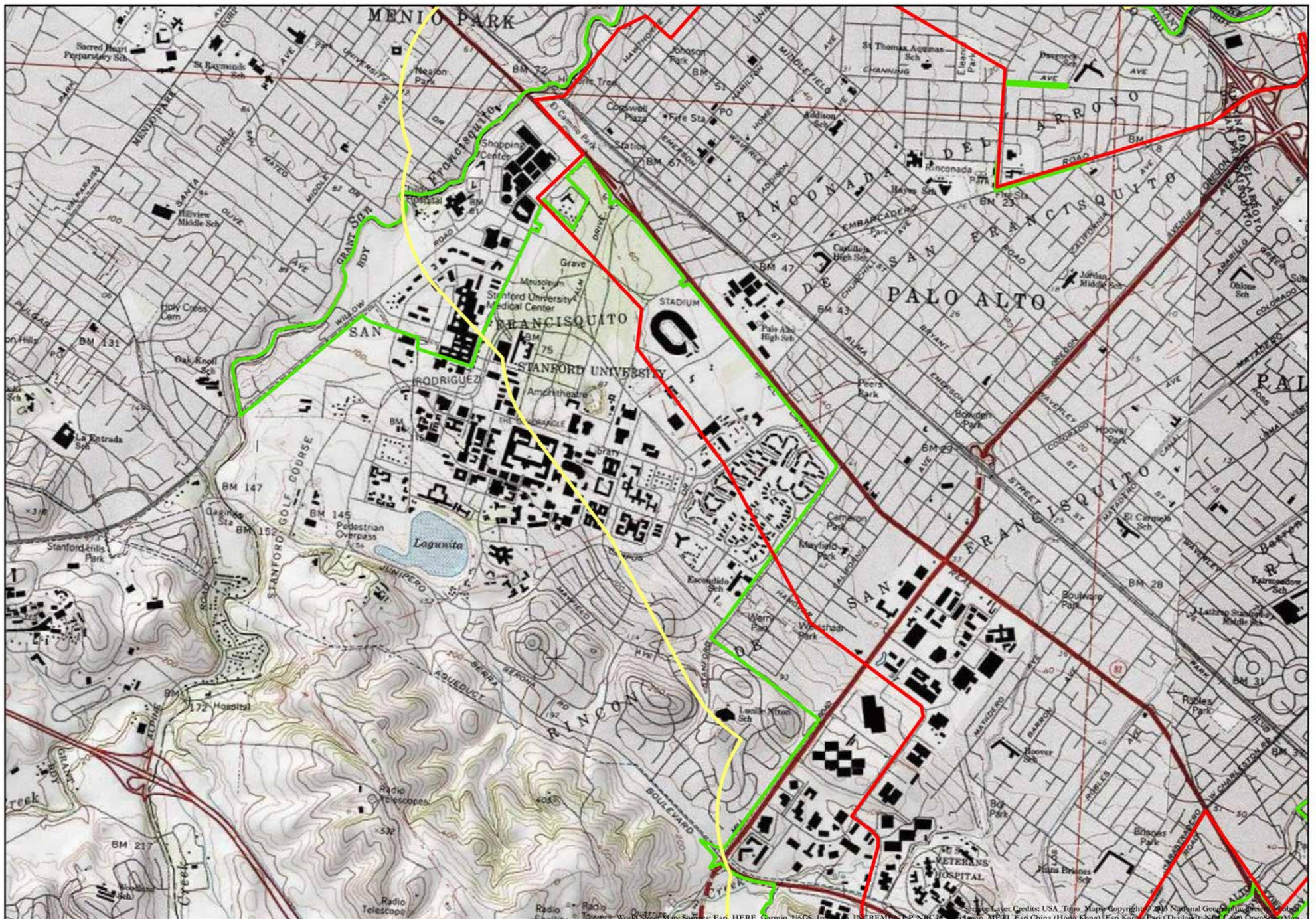


Figure 2. Project Location
 Palo Alto Fiber Optic (C-0518) Page 3 of 6



- ADI
- City Limits
- Study Area

Palo Alto, Calif USGS 1:100,000 quadrangle
 T5S, R2W, T6S, R2W
 Date of Map: 1982



0 0.7
 0 0.6 1.2
 Miles
 Kilometers

1:30,000



Source Layer Credits: USA, Topo, Maps, Copyright © 2014 National Geographic, Inc. All rights reserved. Other layers: OpenStreetMap contributors, and the GIS User Community

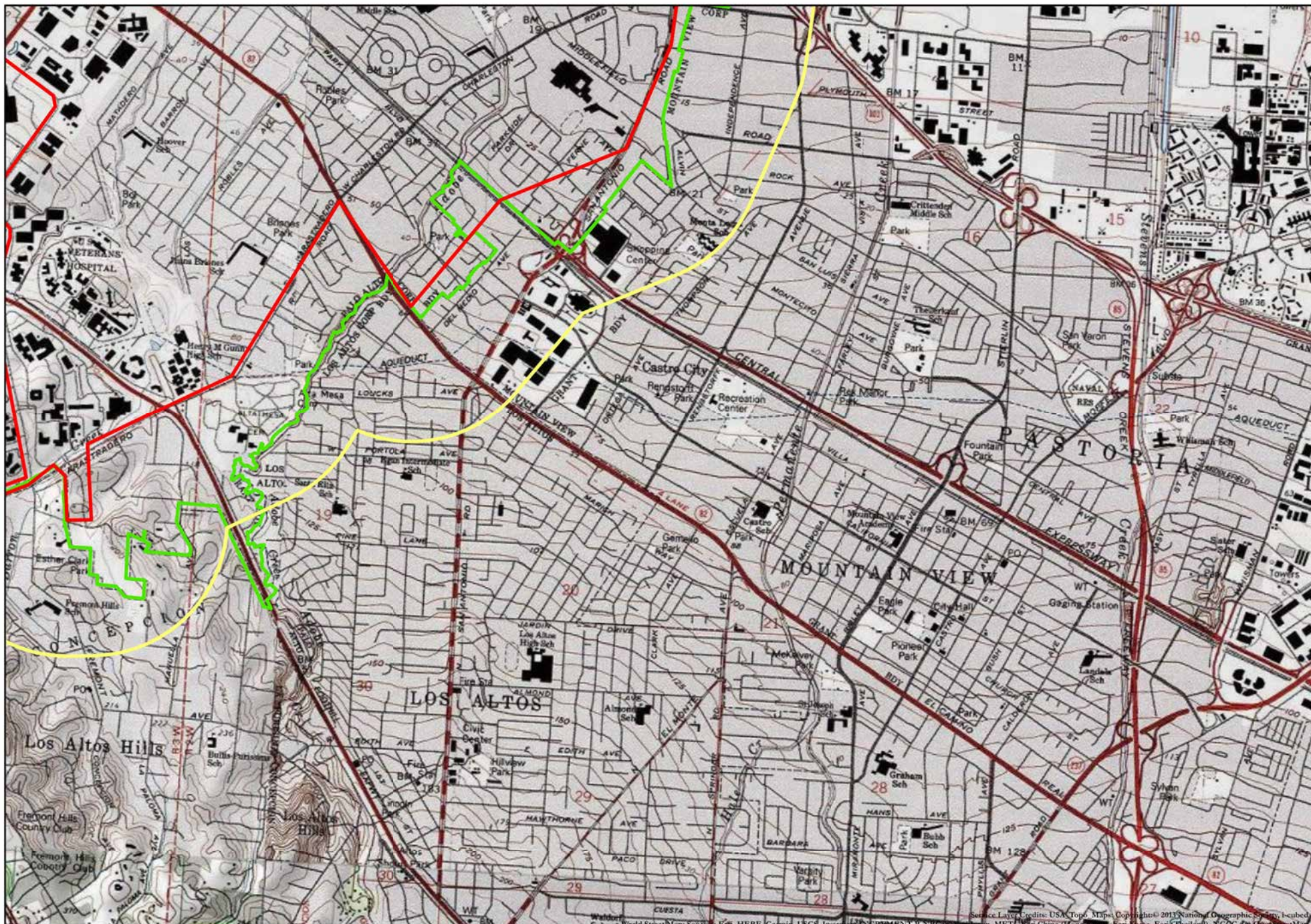
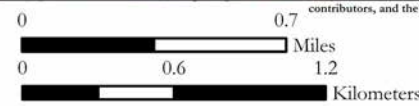


Figure 2. Project Location
Palo Alto Fiber Optic (C-0518)



- ADI
- City Limits
- Study Area

Palo Alto, Calif USGS 1:100,000 quadrangle
T5S, R2W, T6S, R2W
Date of Map: 1982



1:30,000

Source: Layer Credits: USA Topo Maps Copyright © 2013 National Geographic Society, i-cubed contributors, and the GIS User Community

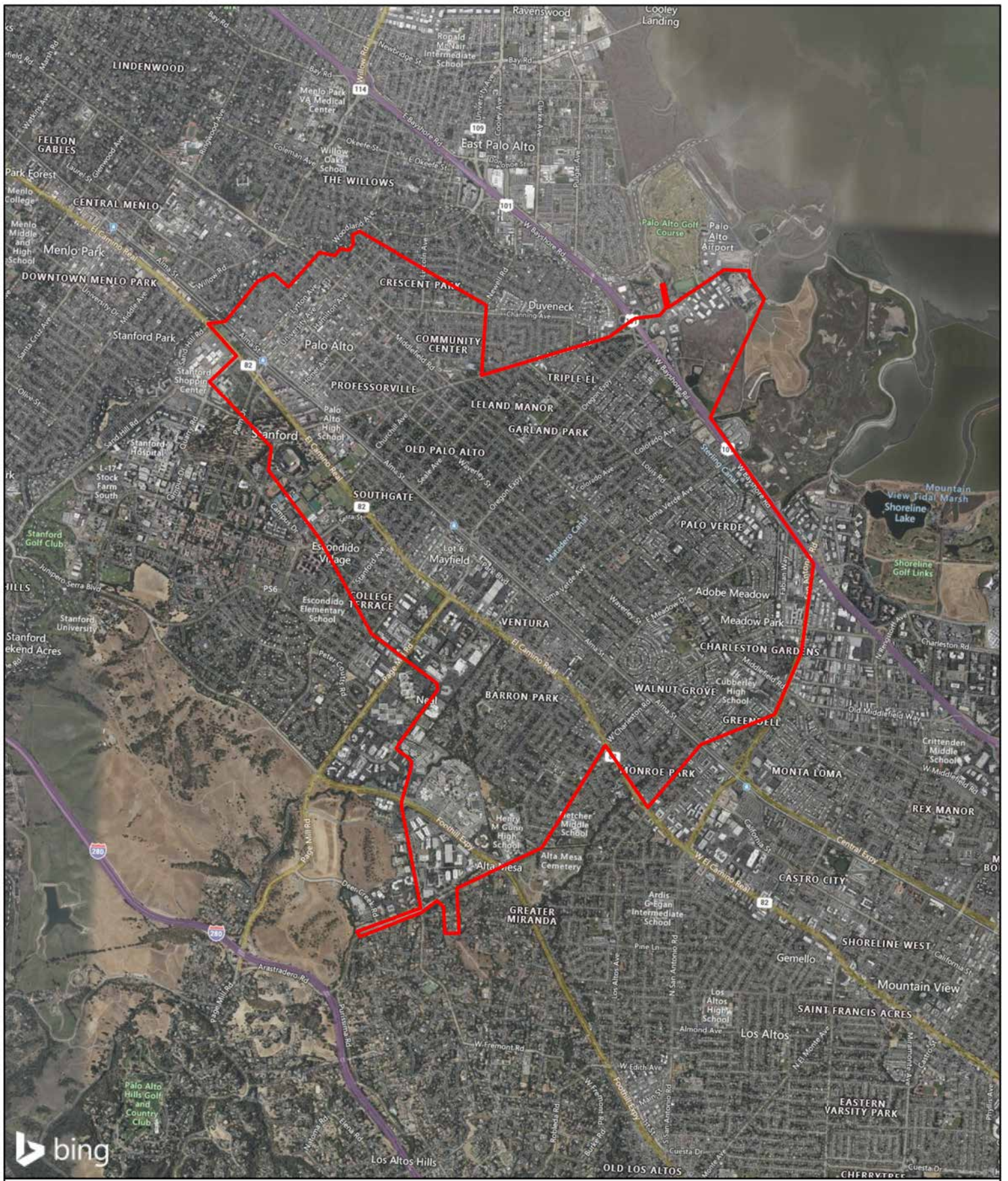



Figure 3. Project Aerial Photo
 Palo Alto Fiber Optic (C-0518)



 Study Area

