

## MEMORANDUM

DATE May 25, 2016

PROJECT NO. 13140B

TO Keith Venter

PROJECT MFA Parking Lot 3  
Improvements

OF Historic Preservation  
Officer, NASA ARC

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VIA email

**REGARDING: MFA Parking Lot 3 Improvements Section 106 Consultation**

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### Introduction

The purpose of this memorandum is to provide necessary information for Section 106 consultation, historic property identification, and the application of the Criteria of Adverse Effects to the Area of Potential Effects (APE), pursuant to 36 CFR Part 800, for parking lot improvements proposed at Moffett Federal Airfield (MFA), California.

The United States through the National Aeronautics and Space Administration (NASA) Ames Research Center (ARC) possesses the fee simple interest in MFA. The core of MFA contains the Naval Air Station (NAS) Sunnyvale Historic District, nominated to the National Register of Historic Places (NRHP) in 1994, and an extension of the Historic District with the MFA Airfield determined eligible for the NRHP in 2013. As the lead federal agency, NASA is responsible for compliance with the National Historic Preservation Act of 1966, as amended through 2006, including Section 106, 36 CFR Part 800, which requires federal agencies to take into account the effects of their activities and programs on historic properties.

Planetary Ventures, an independent entity, was selected by NASA through a Request for Proposal process to be the long-term ground lessee for an area at MFA of approximately 1,000 acres. Planetary Ventures proposes to make improvements to Lot 3, a parking area adjacent to the airfield at Moffett Field. These improvements would include new paving over existing asphalt, gravel, and dirt surfaces, as well as a jet blast barrier, per aviation requirements, and fencing to meet the new

programmatic requirements of the parking lot. The work is contained within areas of existing paving and previous ground disturbance.

For clarity, the proposed parking lot improvements will be referred to as “the Undertaking.”

#### Project Location

Lot 3, an existing parking and staging area off Macon Road, is the site of the proposed Undertaking. It is located at Moffett Federal Airfield, CA, a federally owned airfield located between the towns of Mountain View and Sunnyvale, California, on the southern edge of San Francisco Bay. The Airfield is 27 miles southeast of San Francisco International Airport, and six miles northwest of San Jose International Airport. Highway 101 runs along the southwest boundary of the site. Macon Road is an automobile road located within the Planetary Ventures lease boundary. It leads along the southern and eastern perimeter of the airfield runways, beginning at Ellis Street (located to the southwest of the airfield) and continuing to its intersection at Marriage Road (to the northeast of the airfield). Specifically, the Undertaking is proposed south of Macon Road near its intersection with Marriage Road. (Macon Road is sometimes referred to as Zook Road west and north of the Marriage Road intersection.) **(Appendix A, Figure 1: Project Location Map)**

#### Summary of Findings

The proposed Undertaking is found not to alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register. After consideration of the Criteria of Adverse Effect, under 36 CFR Part 800.5(a)(1), this evaluation finds that the proposed Undertaking would result in a finding of No Adverse Effect.

#### Description of Undertaking

The proposed undertaking consists of improvements to existing paved and gravel parking areas off Macon Road in order to accommodate bus parking spaces for staff operations. The project would provide compliant parking spaces and fencing to enhance the safety, efficiency, and use of the parking areas.

The proposed parking lot improvements would occur in Lot 3, located on the south side of Macon Road to the north of Hangar 3. The improvements would involve the following the measures:

1. Replacement of existing asphalt concrete (AC) within the western half of Lot 3;
2. Introduction of new paving over the lot's current gravel and dirt surfaces, primarily across its eastern half and surrounding Building 69;
3. Placement of new chain link fencing along an approximately 150' span at the north edge of the parking lot, between two access drives;

4. Installation of a new 20' tall metal jet blast barrier at the eastern edge of Lot 3 to protect the area from aviation blast debris. The construction of the jet blast barrier would require an approximately 1'-deep concrete footing.

In the locations to receive AC and concrete paving the surface will require excavation and replacement of grade and surface material to a depth up to 2' to 3'. At fence post locations, concrete footings are required extending up to 3'-6" below grade. Construction equipment used for this project would be staged on a temporary basis within the perimeter of the project site.

#### Area of Potential Effects (APE)

An Area of Potential Effects (APE) is a defined geographic boundary in which historic properties may be affected by an undertaking, including direct effects (such as demolition) and indirect effects (such as blocking a visual corridor) that impact the historic character of a property.<sup>1</sup> An undertaking would have an effect on a historic property if the action would result in changes to the characteristics of any of the historic properties within the APE that qualify the property for inclusion in the National Register. An APE may include historic properties that are well beyond the limits of the undertaking.

The following project analysis for the current Undertaking involves two APEs: one for direct effects and another for indirect effects (**Appendix A,**

**Figure 2: USGS Map with APEs and Figure 3: Vicinity Map with nearby buildings and APEs).**

Direct effects: The APE for direct effects represents those areas where the proposed Undertaking would occur, in which historic properties—if and where they exist—could potentially be affected physically by the scope of the Undertaking. The APE for direct effects includes the areas proposed for Lot 3, where repaving and the new fencing and blast barrier would occur.

Indirect effects: The APE for indirect effects represents the physical extent to which the Undertaking may conceivably cause visual, audible, or atmospheric (for instance, noise and vibration) changes, which could affect a historic property's integrity of setting, feeling, and association. Considering the potential visual, audible, and atmospheric effects related to proposed paved areas and site features, the APE for indirect effects is bounded within a 150' buffer zone surrounding the north and east edges of the project site. This boundary provides a distance of 500' to the west edge of Lot 3, taking into consideration the potential visual effect of the jet blast fence.

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<sup>1</sup> Seifert, Donna, *Defining Boundaries for National Register Properties bulletin*, revised 1997: accessed <http://www.nps.gov/NR/publications/bulletins/boundaries/bound1.htm>

#### Identification of Archaeological Resources within the APE

A records search at the California Historical Resources Information System, Northwest Information Center (NWIC), shows there have been numerous cultural resource studies conducted for the site of the NASA ARC, MFA property, with a comprehensive and complete archaeological overview and surface survey completed in 1991 by Basin Research Associates. The Basin Research surveyors attempted to relocate recorded sites, including those formerly-recorded by early archaeologist L.L. Loud in 1912, as well as other archaeological evidence shown on historic maps, and could not find evidence of any prehistoric sites. They observed that development and subsurface impacts since 1931 appeared to have destroyed the integrity of any archaeological resources, and concluded the likelihood of the existence of pristine archaeological sites is remote.<sup>2</sup> They also stated that none of the historic-era resources (or areas) appears to satisfy the eligibility criteria for inclusion on the National Register of Historic Places.<sup>3</sup>

An Archaeological Sensitivity Map of NASA ARC was provided with long range planning documents by NASA after 2000. The Historic Resources Protection Plan for NASA Research Park, prepared in 2001 (included to the NASA Ames Development Plan Final Programmatic EIS in 2002<sup>4</sup>), and the Draft Integrated Cultural Resources Management Plan, NASA Ames Research Center, prepared in 2014, include the Sensitivity Map to designate likely areas of highest archaeological sensitivity, informed by previously recorded sources.

The landscape of NASA ARC has changed dramatically over the past century with agricultural use, grading, and development by the Navy and NASA. Surface disturbance has occurred as a result throughout NASA ARC. Any archaeological sensitivity is presumed only where identified archaeological sites may be located below modern ground surfaces and not disturbed by excavation since the time they were deposited.

A review of the project location for the Undertaking reveals the site boundary for the improvements, and the APE for Direct Effects, is not within an area of identified archaeological sensitivity. The APE boundary for Indirect Effects may overlap an area of identified archaeological sensitivity; however the potential Indirect Effect would not be associated with below surface disturbance. As the proposed work is outside of the boundary of sensitive zones, and the work involves surface

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<sup>2</sup> NASA Ames Research Center Historic Resources Protection Plan for portions of Moffett Field, California, NASA, March 2001, pg. 26.

<sup>3</sup> Ibid, pg. 27.

<sup>4</sup> Design, Community & Environment, NASA Ames Development Plan Final Programmatic Environmental Impact Statement, July 2002.

disturbance of 3-4 feet maximum in locations of existing paving and previous disturbance, NASA ARC does not anticipate any likelihood of finding archaeological deposits and does not believe further archaeological survey is necessary.

The process for addressing archaeological procedures with construction activities associated with the Undertaking, or with any unanticipated archaeological discoveries during the work, is outlined in the proprietary lease document between the Tenant and the Landlord, which indicates the Tenant shall make provisions as appropriate for the site if required by Landlord and Applicable Law. In the event archaeological observation or survey work is required, it will be performed by an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology.

#### Identification of Historic Properties within the APE

Planetary Ventures' lease area at MFA has previously been studied in efforts to inform an understanding of the significance of historic properties throughout the site. These studies were utilized in reviewing whether the Undertaking may have potential effects on historic properties.

- *US Naval Air Station Sunnyvale, California Historic District National Register of Historic Places Nomination*, Bonnie Bamburg, Urban Programmers: 1994.

This nomination to the National Register of Historic Places (National Register) identified the significant historic context and contributing properties of the original NAS Sunnyvale Historic District. The periods of significance (POS) was established as 1930-1935 and 1942-1946, corresponding to the Navy's Lighter-Than-Air (LTA) missions at the installation. The district was found to be significant under Criterion A (events) and Criterion C (architecture/engineering). 40 buildings, one structure, and two objects are listed as contributors. These primarily consist of historic properties in or adjacent to Hangar 1 and Shendandoah Plaza at the west end of the airfield, but they also include Hangars 2 and 3 and their associated boiler house, Building 55.

- *Historic Property Survey Report for the Airfield at NASA Ames Research Center, Moffett Field, California*, AECOM: 2013.

In 2013, NASA initiated Section 106 consultation with the SHPO regarding the outlease and maintenance of Moffett Federal Airfield. In a letter dated June 6, 2013, SHPO concurred that the airfield contributes to the significance of the NAS Sunnyvale, California Historic District under a broadened historic context that included continuous LTA and Cold War Naval operations. This consultation found the expanded district (referenced as the "expanded NAS Sunnyvale Historic District" throughout the current document) to be nationally significant

under Criterion A. The SHPO recommended that NASA develop a list of contributing properties to the district, and identify character-defining features of contributors and landscape design.

Following the recommendations of the SHPO, NASA requested AECOM prepare a *Historic Property Survey Report* (HPSR) to expand upon the post-1946 historic context of Moffett Field. The HPSR proposed an expanded period of significance for the airfield within the NAS Sunnyvale Historic District, 1930-1961, which encompasses the installation's subsequent significant Naval missions that were not considered in the earlier National Register district nomination. The HPSR also identified the airfield's significant cultural landscape characteristics and provided a preliminary list of potential contributing properties. Properties included on this list were not fully evaluated for National Register eligibility and were not submitted to SHPO for concurrence.

- *Historic Property Survey Report for the Defense Fuel Support Point Closure Project at Ames Research Center, Moffett Field, California*, AECOM: 2016.

In 2016, NASA requested AECOM to prepare a report to analyze the effect of a proposed undertaking at MFA, the removal of the Defense Fuel Support Point, in compliance with Section 106. This report identified resources within the undertaking's Area of Potential Effect (APE) and evaluated them for National Register eligibility. Five of these resources had previously been identified by the HPSR as potential contributing resources within the expanded NAS Sunnyvale, California Historic District. The report was submitted to the SHPO on April 19, 2016 and is currently under review.

Historic properties include any district, site, building, structure, or object that is included in or eligible for listing in the National Register (36 CFR Part 800.16(l)(1)).

The identified APEs for direct and indirect effects are located within the boundaries of the expanded NAS Sunnyvale Historic District. The APE for direct effects identified for the proposed Undertaking—corresponding to the project site and construction staging area—does not contain any historic properties that have been determined to be eligible for listing to the National Register, either as district contributors or as individually eligible properties. The APE for indirect effects does contain properties that contribute to the historic district (see **Table 1** below).

Additionally, the 2013 HPSR identified a number of the airfield's cultural landscape characteristics. Encompassing the viewsheds, circulation patterns, topography, and the spatial organization of the



airfield, these landscape characteristics allow the site's spatial and functional relationships to convey the overall district's historic significance. None of these landscape characteristics appear to rely on physical features or spatial and visual relationships that are located at or near the site of the proposed Undertaking.

As the APE for indirect effects contains several properties that date to various periods of development at MFA, these properties are listed in the table below (**Table 1: Properties within the APE for Indirect Effects**) and **Appendix A, Figure 3: Vicinity Map with nearby buildings and APEs**. The table includes a summary of existing historic status or eligibility for listing in the National Register.

**Table 1: Properties within the APE for Indirect Effects**

Name (and Building #)	Year Built	Status / Evaluation	Historic Property
Inert Ammunition Storage (69)	1943 Source: Historic Property Survey Report, AECOM, 2013	Previously identified in the HPSR as a potential contributor to the expanded NAS Sunnyvale Historic District; <sup>5</sup> evaluated as ineligible to the National Register by AECOM in the <i>Historic Property Survey Report for the Defense Fuel Support Point Closure Project</i>	No (under review by the SHPO)
Aircraft Washrack (439)	Post-1968 Source of date: 1968 photograph	Not age-eligible for listing in the National Register; was constructed after the period of significance of the expanded NAS Sunnyvale Historic District (1930-1961)	No
Eastern Side Aquifer Treatment System (439A)	Post-1968 Source of date: 1968 photograph	Not age-eligible for listing in the National Register; was constructed after the period of significance of the expanded NAS Sunnyvale Historic District (1930-1961)	No

<sup>5</sup> AECOM, *Historic Property Survey Report for the Airfield at NASA Ames Research Center, Moffett Field, California*, prepared for NASA Ames Research Center, November 26, 2013, Appendix C.

Name (and Building #)	Year Built	Status / Evaluation	Historic Property
Equipment Storage Facility (511)	1968 Source of date: Alexandra Cole, <i>Inventory and Evaluation of Cold War Era Historical Resources, Moffett Federal Airfield</i> , 1999	Not age-eligible for listing in the National Register; was constructed after the period of significance of the expanded NAS Sunnyvale Historic District (1930-1961)	No
Navy Day Tank Facility (953)	Post-1993 Source: Google Earth aerial images	Not age-eligible for listing in the National Register.	No
Aircraft parking apron (MF1002) north of Hangars 2 and 3 (partially within APE)	c. 1943-1944 Source: 1944 photograph	Previously identified in the HPSR as a potential contributor to the expanded NAS Sunnyvale Historic District; <sup>6</sup> evaluated as eligible to the National Register by AECOM in the <i>Historic Property Survey Report for the Defense Fuel Support Point Closure Project</i>	Yes (under review by the SHPO)

#### Application of the Criteria of Adverse Effect

The criteria of adverse effect on historic properties under Section 106 of the NHPA are defined in 36 CFR Part 800.5(a)(1):

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Consideration shall be given to all qualifying characteristics of a historic property,

<sup>6</sup> AECOM, *Historic Property Survey Report for the Airfield at NASA Ames Research Center, Moffett Field, California*, prepared for NASA Ames Research Center, November 26, 2013, Appendix C.



including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

According to 36 CFR Part 800.5(a)(2), examples of adverse effects on historic properties include, but are not limited to:

- i. Physical destruction of or damage to all or part of the property;
- ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- iii. Removal of the property from its historic location;
- iv. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- v. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- vii. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

To comply with Section 106, the criteria of adverse effects are applied to historic properties in the project Area of Potential Effects (APE), pursuant to 36 CFR Part 800.5(a)(1). A finding of no adverse effect may be appropriate when the undertaking's effects do not meet the threshold set forth in the criteria of adverse effect, or conditions are imposed to ensure review of rehabilitation plans for conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (codified in 36 CFR Part 68). If adverse effects findings are made, mitigation is proposed and resolution of adverse effects occurs through consultation pursuant to 36 CFR Part 800.6 to avoid, minimize, or mitigate adverse effects on historic properties.

Per the adverse effects threshold detailed in CFR Section 800.5(a)(2), an analysis of the Undertaking reveals the following:

#### Direct Effects

No historic properties have been identified within the APE for direct effects. Therefore it is not anticipated that the proposed Undertaking would result in the circumstances specified under

categories i, ii, iii, iv, and vii of the criteria of adverse effect listed above, namely: physical destruction or damage; alteration inconsistent with the Secretary of the Interior's Standards; removal from historic location; neglect; or transfer, lease, or sale out of federal ownership.

#### Indirect Effects

The proposed Undertaking's APE boundary for indirect effects does encompass the following historic property, as evaluated in the *Historic Property Survey Report for the Defense Fuel Support Point Closure Project*: the aircraft parking apron, MF1002, located immediately north of the hangars. This is considered a contributing property within the expanded NAS Sunnyvale Historic District. It is located in the vicinity of the project site, within an area where its historic integrity could possibly be affected by changes in physical setting, as well as by changes in visual, atmospheric, or audible elements that may diminish a property's ability to convey significance. The Inert Ammunition Storage Building (69) is also located within the APE and was identified as a potential district contributor by the 2013 HPSR; upon full evaluation of eligibility in 2016 by AECOM, however, it was not found to be a historic property. This determination of ineligibility is currently under review by SHPO and may supersede the previous preliminary finding of contributing status. As concurrence on this determination has not yet been issued by the SHPO, Page & Turnbull includes discussion of potential effects to Building 69 below. The following analysis is organized according to discussions of potential indirect effects described in categories iv and v of the Criteria of Adverse Effect.

*Category iv: changes in use or physical features within the property's setting.* The Undertaking would involve physical improvements within the setting of the historic property, but these changes would not affect aspects of setting that convey the property's significance. The new paving to occur in Lot 3 would surround Building 69, within an area that has already experienced change since the end of the expanded NAS Sunnyvale Historic District's period of significance (1961). Historic aerial photographs dating to that time reveal that Building 69 was located within a graded and unpaved area—save adjacent paths, roadways, and parking pad beside its north façade. The building's immediate surroundings were subsequently paved with gravel and dirt; additionally, the concrete parking apron of the airfield approached from the west during the 1970s and 1980s. In taking advantage of existing parking areas, therefore, the new paving proposed around Building 69 would not affect the building's setting to a greater extent than has previously occurred.

Furthermore, the metal chain-link fencing proposed along a 150' stretch of Macon Road and the jet blast barrier fence to be installed along the west edge of Lot 3 (required to comply with airfield safety protocol) would not have the effect of obscuring the primacy of Hangars 2 and 3, or of the airfield aprons, taxiways, and runways—the properties within the overall setting of the airfield that are most critical to contextualizing the significant aviation-related military character of the NAS Sunnyvale

Historic District. The new fencing is of a dramatically smaller scale in comparison to the hangars and the airfield: the jet blast barrier stands 20' tall, while the hangars are each approximately 175' tall. Sub-surface footings required for the jet barrier would occur at a non-historic paved surface and would not affect historic features within the setting of Building 69 or the contributing aircraft parking apron. Furthermore, the blast barrier is necessitated by the continuing aviation use that has defined the airfield's character since its construction and development during the period of significance. Therefore, the proposed Undertaking would not change the use or physical features of historic properties' setting that qualify historic properties for inclusion in the National Register.

*Category v: introduction of visual, atmospheric or audible elements.* The proposed Undertaking would involve temporary construction conditions, which would not cause sustained atmospheric or audible effects on historic properties within the APE. The introduction of new paved surfaces on Lot 3 would occur in areas that have already been graded flat and paved in concrete, gravel, or dirt; the Undertaking would not lead to new audible or atmospheric elements that would diminish the integrity of historic properties located within the Undertaking's APE for indirect effects.

The airfield has been defined during and after the NAS Sunnyvale Historic District's period of significance by industrial and transportation-related uses. Parking aprons, taxiways, and fueling pits located to the north of Hangars 2 and 3 have supported the continual movement, storage, and fueling of aircraft and associated equipment in the area of the proposed Undertaking. New bus parking accommodated by the Undertaking would be compatible with these past and existing uses and would not detract from the overall atmospheric or audible conditions that characterize the airfield. Furthermore, the jet barrier to be placed along the western edge of Lot 3 directly reflects the programmatic needs of an active airfield and, as discussed above, supports its continued aviation use. The Undertaking would therefore not cause any adverse effect to the site's atmosphere and general aviation-related character that contribute to historic properties' integrity.

As stated earlier in this document, no character-defining aspects of the airfield cultural landscape—including viewsheds—are located within the APE of the Undertaking, so that new visual elements such as the jet blast barrier and chain-link fencing would not interrupt characteristics that qualify historic properties as contributors to the expanded NAS Sunnyvale Historic District. New visual elements within the setting of historic properties are addressed further in the Category iv analysis above and are not considered to pose an adverse effect to the properties' integrity or overall historic character.

### Conclusion

The proposed Undertaking primarily involves improvements to paving in Lot 3 adjacent to Macon Road, as well as a jet blast barrier and chain-link metal fencing. The Undertaking does not appear to have the potential to alter, directly or indirectly, any of the characteristics that qualify historic properties for inclusion in the National Register. Two properties previously found potentially eligible for the National Register are located within the identified APE for indirect effects. Upon complete National Register evaluation for a separate Section 106 consultation (currently under SHPO review), only the aircraft parking apron north of Hangars 2 and 3 is eligible to the National Register as a contributor to the NAS Sunnyvale, California Historic District. After consideration of the Criteria of Adverse Effect, under 36 CFR Part 800.5(b), it is Page & Turnbull's opinion that the Undertaking would not cause visual, audible, or atmospheric changes that would diminish any of the characteristics of a historic property that qualify the property for inclusion in the National Register. This evaluation therefore finds that the proposed Undertaking would result in a finding of No Adverse Effect.



## APPENDIX A: MAPS

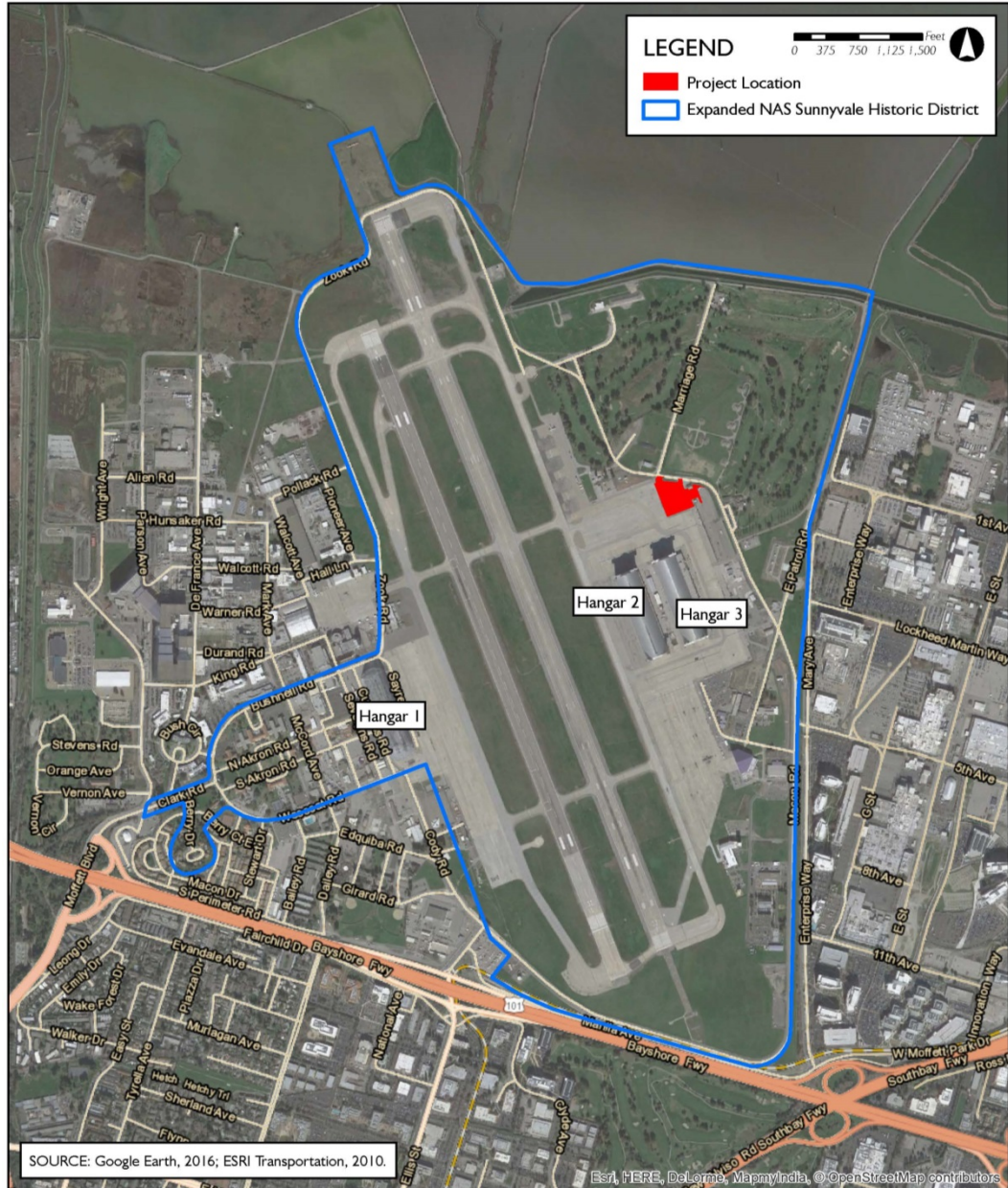


Figure 1. Project Location Map showing the Expanded NAS Sunnyvale Historic District, project location, and locations of Hangars 1, 2, and 3



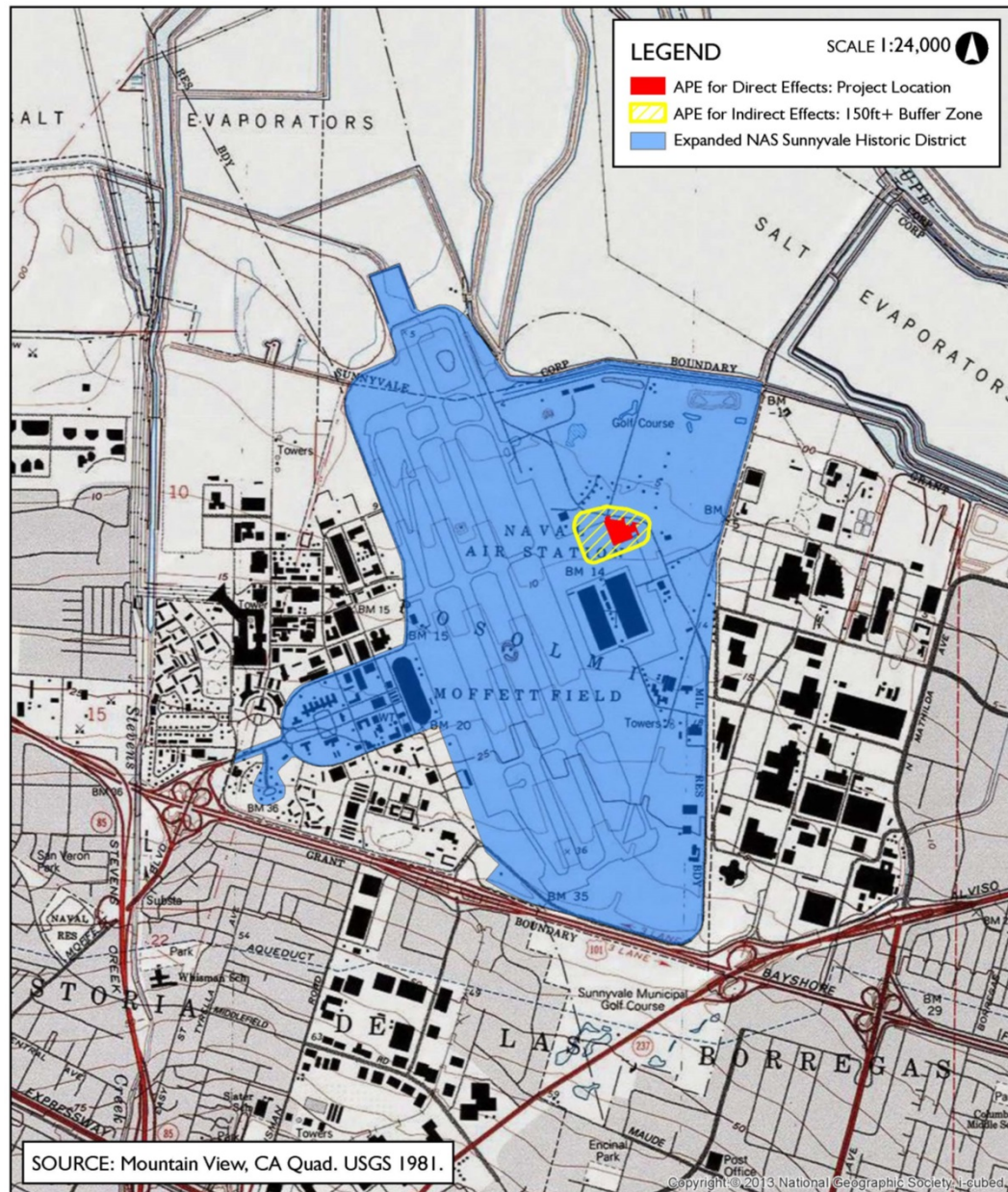


Figure 2. USGS Map with APEs - Expanded NAS Sunnyvale Historic District and APEs for direct and indirect effects





**Figure 3. Vicinity Map with nearby buildings and APEs for Direct Effects (project location) and Indirect Effects.**

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## **APPENDIX B: CONSTRUCTION DOCUMENTS**

Submitted under separate cover