National Aeronautics and Space Administration

Ames Research Center
Moffett Field, California 94035

September 18, 2020

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

Attn: Mr. Mark Beason

Subject: Section 106 Consultation for Engineering and Missions Operations Facility N278 Project at Ames Research Center, Moffett Field, Santa Clara County, California

Dear Ms. Polanco:

The National Aeronautics and Space Administration (NASA) Ames Research Center (ARC) requests Section 106 consultation on the Engineering and Missions Operations Facility N278 Project (project or undertaking). NASA ARC proposes to construct the new Building N278 on a site located southwest of the intersection of Mark Avenue and Warner Road on the Ames Campus at ARC (see Figures 1 and 2 in Appendix A, attached). The building site is located within the boundary of the NASA Ames Wind Tunnel Historic District, which is listed in the National Register of Historic Places (NRHP). NASA ARC has determined that this project constitutes an undertaking under Section 106 of the National Historic Preservation Act of 1966 (54 United States Code §306108), as amended. In support of its responsibilities under Section 106, NASA ARC is providing the following analysis, which includes a description of the undertaking, the Area of Potential Effects (APE), identification efforts, a description of the affected historic properties, and an assessment of potential effects resulting from the undertaking, for your review and concurrence.

Description of the Undertaking

The new Engineering and Missions Operations (EMO) Facility will help consolidate and modernize facilities in alignment with the NASA's mission. The facility will optimize EMO operations in a state-of-the-art facility that will reinforce the mission of NASA ARC. The project

will require the demolition of approximately 83,000 square feet of existing facilities, including Building N216, Building N251 and its underground grease trap, two empty underground gas tanks, a fuel station, the paved parking lot, and existing subsurface footings from the demolished Building N216 wind tunnel on the project site. The project will also require relocation of an existing 36-in.-diameter storm drain. There are several underground conduit lines located within the proposed building footprint (see Figure B-1 in Appendix B, attached). These can be removed, rerouted, or left in place (pending the foundation design of the new building). Based on similar projects, the site will likely require some level of contamination remediation, thus likely qualifying the project as a brownfield. The staging area for this project will be limited to existing paved parking lots in the vicinity of the project site.

The project will then construct Building N278, a new, proposed two-story, 55,323-gross-square-foot laboratory and office building (see Figures B-2 through B-7 in Appendix B, attached). Design options for the exterior walls include a painted stucco system on a 12-in. concrete masonry unit, interior finished with 5/8-in. gypsum wall board on 3-5/8-in. metal furring on air-vapor barrier and R-30 exterior insulation; impact resistant gypsum wall board may be required on the laboratory and shop areas. Tilt-up concrete panels and/or insulated metal panels could also be utilized for the exterior walls. Curtain walls will consist of aluminum window wall systems, insulated glass, and aluminum thermally-broken framing systems at conditioned spaces. Windows will consist of pre-finished aluminum windows, curtain walls, and translucent panels with insulated glass units for all storefront, doors, and curtain walls. The eastern elevation will serve as the main public entry. This is where the existing parking lot is to remain and where the main focal point of the building is to be established as the site is approached from the southeast along Mark Avenue. This corner features a prominent cantilevered covered entry. Entrance configurations will consist of anodized aluminum entrance systems at main entrances and exits. Utility doors will consist of painted steel doors (insulated) and frames and mechanically operated overhead (roll-up) doors. The interior laboratory area is intended to be flexible and efficient, and as open as possible with clear sight lines and logical circulation. Transparency and visual connections will facilitate both safety and collaboration. Partitions, where required, are intended to be demountable and typically glass when occurring in the open lab zone. The permanent partition that separates the building circulation spine will be full height glass.

The project will provide a green belt open space feature located along the west side of the new building. The greenbelt will be physically accessible to project occupants and will include pedestrian-oriented paving with physical site elements that accommodate outdoor social activities.

Area of Potential Effects

The APE is defined to address both direct and indirect impacts on potential historic properties and encompasses areas that may be affected by both temporary and permanent construction activities (see Figure 3 in Appendix A, attached). For archaeological resources, the APE includes the limits of the project area, including areas of temporary staging and construction ground disturbance. Below-grade activities are limited to the project site; therefore, only the immediate project footprint was assessed for archaeological resources. The APE for construction of the new building extends to a vertical depth of 20 ft. below surface (the proposed depth of improved soil columns for the new foundation system; see discussion below), though deeper excavations up to 30 ft. below surface may be necessary for removal of existing infrastructure (underground gas

tanks and the existing wind tunnel footings). Above-ground activities include temporary staging, which is unlikely to have indirect impacts on historic properties, and construction of Building N278 and its landscaping. Construction of Building N278 may create visible, auditory, or atmospheric changes in the settings of adjacent historic properties; therefore, the APE includes the first tier of buildings adjacent to the project's footprint. Because the project site is located in the NASA Ames Wind Tunnel Historic District, the entire district is included in the APE.

Identification Efforts

NASA ARC retained AECOM to conduct a technical study for this project. The study was conducted by cultural resources professionals who meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738). The APE has been previously surveyed for archaeological and architectural resources, and architectural resources have been previously evaluated for NRHP eligibility. Previous studies were reviewed to identify potential historic properties. For more details on the study's methodology, please see the attached memorandum provided for your review.

Archaeological Resources

No archaeological resources have been previously identified in or near the APE; furthermore, there is low potential for more deeply buried prehistoric archaeological resources across ARC, because the proposed work is located in an area of low prehistoric or historic archaeological sensitivity (see Figure 4 in Appendix A, attached). The project site is the former location of the 7-ft. x 10-ft. Wind Tunnel No. 2 (demolished). The depth of previous disturbance associated with the former wind tunnel includes 2-ft. to 3-ft.-thick pile caps supported on approximately 30-ft. long driven concrete displacement piles. Additionally, two underground gas tanks and several utility lines are known to exist in the project site. The area is highly disturbed and entirely paved. No new survey was performed.

The expected depth of ground disturbance necessary to construct Building N278 is up to 20 ft. below existing grade. The foundation for the new building is anticipated to consist of 3-ft.-thick concrete spread footings located 1 ft. below grade. Under most of the spread footings will be four 18-in.-diameter by 16-ft.-long grouted soil columns. The soil columns would be constructed by mixing cement grout with the in-situ soil. The project would be limited to previously disturbed areas with low potential for deeply buried prehistoric sites. Therefore, it is not anticipated that archaeological resources will be encountered as a result of this undertaking. The APE is entirely paved, and further archaeological survey or testing related to the undertaking is not necessary; no potential effects on potentially significant archaeological resources are anticipated.

Architectural Resources

The APE encompasses the NRHP-listed NASA Ames Wind Tunnel Historic District and contains 22 resources within the district and two additional buildings outside of the district. Based on previous studies, five facilities (composed of nine buildings) are listed in the NRHP as part of the district: Buildings N215, N220, N221, N221B, N226, N227, N227A, N227B, and N227C. The remaining 13 buildings in the district are non-contributing to the district. Of the 13 non-contributing buildings, seven are less than 50 years old, do not appear to have exceptional

significance to meet Criteria Consideration G that would merit further evaluation under the NRHP criteria, and are not eligible for individual listing in the NRHP (Buildings N216A, N216B, N246, N247, N251, N263, and N288). The other six of the 13 non-contributing buildings were previously evaluated as not eligible for individual listing in the NRHP. Building N212 was previously evaluated as eligible for listing in the NRHP and Building N213 was previously evaluated as not eligible for listing in the NRHP. These previously evaluated buildings have had few alterations since previously recorded, and their significance and integrity remain the same since previously recorded.

Based on previous evaluations and current conditions, NASA ARC has made the following determinations of eligibility for the resources in the APE, pursuant 36 Code of Federal Regulations (CFR) 800.4(c)(2):

Name	Description	Year Built	Determination of Eligibility
N212*	Applied Manufacturing Division Welding Shop	1950	Eligible
N213*	Research Support Building	1950	Not eligible
N214	Paint Shop	1942	Not eligible
N215	7-ft. x 10-ft. Wind Tunnel No. 1	1940	Listed – Ames Wind Tunnel Historic District
N216	Machine Shop	1941	Not eligible
N216A	Model Preparation Building	1973	Not eligible
N216B	Army Model Assembly Building	1973	Not eligible
N220	Technical Services Machine Shop	1940	Listed – Ames Wind Tunnel Historic District
N221	40-ft. x 80-ft. Wind Tunnel	1944	Listed – Ames Wind Tunnel Historic District Eligible for individual listing
N221A	20-G Centrifuge	1964	Not eligible
N221B	80-ft. x 120-ft. Wind Subsonic Tunnel	1985	Listed – Ames Wind Tunnel Historic District
N222	2-ft. x 2-ft. Transonic Wind Tunnel	1951	Not eligible
N225	Electrical Substation	1940	Not eligible
N226	6-ft. x 6-ft. Supersonic Wind Tunnel	1948	Listed – Ames Wind Tunnel Historic District
N227	Unitary Plan Wind Tunnel	1955	National Historic Landmark Listed – Ames Wind Tunnel Historic District
N227A	11-ft. Transonic Wind Tunnel	1955	National Historic Landmark Listed – Ames Wind Tunnel Historic District
N227B	9-ft. x 7-ft. Transonic Wind Tunnel	1955	National Historic Landmark Listed – Ames Wind Tunnel Historic District
N227C	8-ft. x 7-ft. Transonic Wind Tunnel	1955	National Historic Landmark Listed – Ames Wind Tunnel Historic District
N227D	Substation	1955	Not eligible
N246	Model Construction Facility	1973	Not eligible
N247	Astrobiology Institute and Space Biosciences	1975	Not eligible
N251	Motor Pool Building	1977	Not eligible
N263	Telecommunications Building	1989	Not eligible
N288	Biosciences Collaborative Facility	2020	Not eligible

*outside the NASA Ames Wind Tunnel Historic District

Affected Historic Properties

Historic properties in the APE include the NASA Ames Wind Tunnel Historic District, including five facilities consisting of nine buildings, and Building N212. Although the entire district is

included in the APE, due to the scale and location of the project, two contributors, Building N215 and the Unitary Plan Wind Tunnel (N227 and N227A through C) were specifically assessed for potential effects because of their proximity to the project site. For full descriptions of these resources, please see the attached memorandum (with additional Archival Records in Appendix C), provided for your review.

Effects Assessment

There are no known archaeological sites in the APE. The proposed work is not within any identified sensitive archaeological zones and would occur in previously disturbed areas with low potential for deeply buried prehistoric sites. Therefore, there are no effects on archaeological resources as none are present in the APE. Should the project uncover previously unknown subsurface archaeological resources, contractors will immediately halt construction, secure the site, and notify NASA of the unanticipated discovery. NASA will follow the Standard Operating Procedure for unanticipated discoveries as outlined in the Integrated Cultural Resources Management Plan for ARC. With the exception of the potential to affect unknown subsurface archaeological resources, the project is not anticipated to have any direct effects on historic properties.

The project has the potential for indirect effects through visual and contextual changes that may alter the setting of Building N212 and the NASA Ames Wind Tunnel Historic District, particularly two of its contributors: Buildings N215 and N227 (including N227A-C). Buildings N212, N215, and N227 will be visually and contextually impacted by the undertaking. Alterations that are consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties are not considered an adverse effect. The assessment of the project focused on the Secretary of the Interior's Standards for Rehabilitation that relate to new construction and additions (Standards 9 and 10). The project would not destroy any existing historic materials, features, or spatial relationships. The proposed design of the new, two-story, rectilinear, modernistic Building N278 (see Figures B-2 through B-7 in Appendix B, attached) constructed primarily of concrete, glass, and metal is sufficiently differentiated from and compatible with the adjacent historic properties and the setting of the district, which are characterized by industrial facilities of varying size with typically two-story building façades with Streamline Moderne and International Style features that are composed of concrete, metal, and glass. As a new research facility on the site of a former research facility, the proposed Building N278 will have an appropriate function, scale, and aesthetic to complement historic properties within the proposed historic district. Although permanent, the new building, if removed in future, would not impact the district or adjacent historic properties. The new building will have minimal impact on the ability of the district or adjacent historic properties to convey their historical and architectural associations that make them eligible for the NRHP. The project would be consistent with the Secretary of the Interior's Standards.

In summary, the proposed undertaking would not alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP. Furthermore, no archaeological resources, which may qualify as historic properties, are known to exist in the APE and there is a low potential for unanticipated archaeological resources within the heavily disturbed vertical APE. Therefore, the proposed undertaking would have no adverse effects on historic properties per 36 CFR § 800.5(b).

Finding of Effect

Based on the assessment conducted by qualified cultural resources professionals, NASA ARC has made a finding that the undertaking will result in No Adverse Effect.

Consultation Efforts

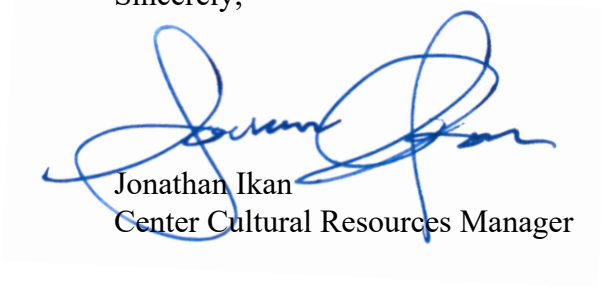
No Federally Recognized Tribes are associated with the geographical boundaries of NASA ARC or this undertaking. As part of a previous archaeological study of the entire ARC property, *NASA Ames Research Center Archaeological Resources Study* (AECOM 2017), a Sacred Lands File search and a list of Native American tribes and representatives with a known interest in the area was requested from the Native American Heritage Commission (NAHC). The NAHC responded on April 27, 2016, indicating that the Sacred Lands File search was negative and providing a list of non-federally recognized Native American representatives who may have additional information regarding cultural resources in the vicinity of the ARC property. Since then, NASA ARC has consulted with these representatives on undertakings that have had the potential to affect cultural resources at known sites and in areas with high sensitivity for prehistoric archaeological resources. These representatives have not provided any additional information regarding known sacred lands or previously undocumented archaeological resources. Due to the highly disturbed nature of the current project site and the low sensitivity for prehistoric archaeological resources, NASA ARC has not consulted with the non-federally recognized Native American representatives on this undertaking. In the event that an inadvertent discovery of prehistoric archaeological resources or human remains of Native American origin are encountered, NASA ARC will consult with these representatives.

NASA ARC has not identified additional consulting parties for this Section 106 review but is making these findings available to the public via the NASA ARC Historic Preservation Office website (https://historicproperties.arc.nasa.gov/section106.html).

NASA ARC requests the State Historic Preservation Officer's concurrence on NASA's determinations of eligibility pursuant 36 CFR 800.4(c)(2) and finding of No Adverse Effect for this undertaking pursuant to 36 CFR 800.5(b). Please provide a response within 30 days of receipt of this letter, as specified in 36 CFR 800.5(c).

Please contact me at jonathan.d.ikan@nasa.gov or at (650) 604-6859 with your comments or questions.

Sincerely,



Jonathan Ikan
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cc:
HQ/EMD/Dr. Rebecca Klein, Ph.D., RPA

Enclosures

Technical Memorandum for the Engineering and Missions Operations (EMO) Facility N278 Project, prepared by AECOM, dated September 16, 2020