

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, Texas 77058-3696



Reply to Attn of: JE-24-064

09-20-2024

Mr. Brad Patterson
State Historic Preservation Office
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

Subject: Initiation of Section 106 Consultation, Project Review, Construction of the Texas A&M University Space Institute, at NASA Johnson Space Center (JSC) Historic District, 17341–17331 Saturn Lane, Houston, Harris County, Texas

Dear Mr. Patterson:

The National Aeronautics and Space Administration (NASA) Lyndon B. Johnson Space Center (JSC), in coordination with the Texas A&M University (TAMU) System, is proposing to construct the TAMU Space Institute on 32.4 acres (13.1 hectares [ha]) in far southeast Houston, Harris County, Texas (project). Reference materials are included as attachments to this letter in Appendices A-E. The proposed project is on land managed by NASA and is within the JSC Historic District, a historic district previously determined eligible for the National Register of Historic Places (NRHP). The proposed location is outside the Heritage Zone that will be established by the Nationwide Programmatic Agreement (NPA), which is pending final review and soon to be implemented (see Appendix A, Figure 3). Because the proposed project would be located on federal land, the activity is subject to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 Code of Federal Regulations [CFR] 800). The proposed project is also subject to the Antiquities Code of Texas (ACT), as it is being funded by state legislation (Texas House Bill 1) and is sponsored by the TAMU System, a political subdivision of the State of Texas. This letter serves as initiation of NHPA Section 106 and ACT consultation with the Texas Historical Commission (THC).

NASA conducted a reconnaissance-level historic resources survey of aboveground historic-age resources built in or before 1979 (45 years prior to the let date of December 2024) within an indirect area of potential effects (APE) measuring a 0.5-mile radius from the direct APE (project area) (see Appendix A, Figure 2). The indirect APE also included areas to the north and northeast of the direct APE within a 0.5- to 0.75-mile viewshed without substantial obstructions. On July 31, 2024, the THC concurred with this survey methodology for aboveground historic resources. In total, 114 historic-age resources were recorded during the July 2024 reconnaissance survey of the indirect APE and viewshed. During this survey effort, architectural historians documented and evaluated historic-age resources within the APE (Appendix E). Based on the historic resources survey results, NASA recommends the following:

- NASA affirms the existing NRHP-listed and -eligible inventory of NASA properties within the JSC Historic District (**Resource D1**) (Appendix A, Figure 3).
- For the purposes of this project, Test Apollo Spacecraft BP-K (**Resource 0A**) could be potentially eligible for the NRHP as a potentially contributing resource to the JSC Historic District, and as such will be evaluated further in JSC's next gate-to-gate survey.
- Outside of the JSC Historic District, NASA recommends the remaining surveyed historic-age resources (**Resources 2A–D, 3A, 4, 5A–DB, 6A–AO, 7A–F, 8A–D, 9A–G, 10A–R, 11A, and 12A**) not eligible for the NRHP under Criteria A, B, C, or D.
- NASA recommends **no archaeological survey** for this project as it is in a previously disturbed area with limited potential for subsurface resources (Appendix C). In accordance with the ACT, NASA requests concurrence for a no archaeological survey recommendation.

In accordance with 36 CFR 800, NASA assessed potential effects from the proposed project to historic properties. As the proposed project is on undeveloped land, it would have no direct or physical effect to historic properties. NASA completed a reconnaissance-level survey of the indirect APE and conducted a viewshed analysis of the indirect APE and current viewshed of the proposed project to assess for indirect or nonphysical effects to historic properties. This exercise carefully examined potential indirect visual effects from the proposed project. The project team developed a scaled three-dimensional model of the proposed building in Google Earth to further examine visual impacts to the historic district and surrounding areas (Appendix D). Results of the viewshed analysis found that the proposed building would not introduce a substantial horizontal change to the historic district and its contributing resources because of existing interruptions along the horizon line.

To ensure the proposed building would have no adverse effect to the historic district, the project design incorporated JSC historic architectural character-defining features and planning principles into the proposed project design that communicate with the contributing resources in the JSC Historic District (see Appendix A, Figure 3). These elements include:

- Vertical exterior metal panels that are similar in color to the metal panels found in the design for the upcoming new Building 22, recently approved by THC;
- A flat roof and blocky, horizontal massing that mirrors original JSC building massing;
- Landscaping and entryway transitions that communicate with the JSC campus' pedestrian-friendly plan;
- An integrated stoop entrance;
- An interior planning module that mirrors the 28-foot planning module of the historic JSC campus; and
- Prominent front signage with typography in the font Helvetica that is similar to typography found on historic-age JSC buildings.

As a new high-bay building, the proposed new building also includes design elements seen in existing historic-age high-bay buildings like the Space Environment Simulation Laboratory (Building 32), including rectilinear fins along the side of the structure, rectangular massing, and minimal fenestration. Combined, these design elements will allow the proposed new building to conform to the planning and design principles established during the construction of the original JSC campus while also maintaining separation between new and historic-age campus elements.

Additionally, the NPA among NASA, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, will establish a Heritage Zone and management procedures to allow NASA to meet mission requirements while fulfilling its responsibilities under Sections 106 and 110 of the NHPA and integrating historic properties into a robust project planning and cultural resources management system. JSC requests the SHPO review this project in light of the upcoming NPA. The area of the construction would be outside the proposed Heritage Zone; however, regardless of exclusion from the proposed Heritage Zone, JSC intends to participate fully in the Section 106 process for this project.

In accordance with the NHPA and its implementing regulations, NASA has determined this undertaking would have **no adverse effect to historic properties** because the proposed new building:

- 1) is an appropriate distance from contributing resources in the JSC Historic District and is outside the proposed Heritage Zone;
- 2) is within an area designated for future development since initial JSC planning during the 1960s;
- 3) does not substantially alter the existing horizon from various points within the historic district (Appendix D), and;
- 4) maintains architectural communication and cohesion with the JSC Historic District via similarities in massing, form, exterior material color, planning module size, and signage typeface.

The proposed project would not significantly impact the integrity of location, setting, design, materials, workmanship, feeling, or association of the JSC Historic District.

Consistent with the obligations under Section 106 of the NHPA, NASA JSC is seeking input from interested parties and the public. These notices are in progress concurrently with this consultation with your office. Should the outreach result in an opinion that conflicts with or provides useful information as it pertains to the determination of no adverse effect, we will supplement the file with your office. With this determination and concurrent activities, NASA JSC requests your concurrence to proceed.

Thank you for your attention to this consultation. NASA JSC appreciates the collaboration and support from THC in fulfilling the mission to lead human space exploration by expanding mission operations and adding new capabilities to ensure success for our most challenging missions to the moon and Mars. If you have any questions or need additional information, please contact me at 281-667-6287 or by email at janani.vedanth@nasa.gov.

Sincerely,

Janani Vedanth
JSC Cultural Resources Manager

Reference Materials (5):

Appendix A. Figures

Appendix B. Architectural Renderings and Schematics (30 percent)

Appendix C. Archaeological Scope of Work and Background Review

Appendix D. Viewshed Analysis Documentation

Appendix E. Historic Resource Survey Inventory Forms

cc:

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INTRODUCTION

In coordination with the National Aeronautics and Space Administration (NASA), the Texas A&M University (TAMU) System proposes to construct an approximately 80-foot tall, 408,000-square-foot building for the TAMU Space Institute on 32.4 acres (13.1 hectares [ha]) in far southeast Houston, Harris County, Texas (project) (Appendix A, Figure 1; Appendix B). The project is within the boundaries of the Lyndon B. Johnson Space Center (JSC) Historic District; a historic district determined eligible for listing in the National Register of Historic Places (NRHP) under Criteria A, B, and C (see Appendix A, Figure 2). The project is within the *League City, Texas* (2999-432), U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (USGS 2024).

The new building would be on undeveloped lands west of Area 4 in JSC bound by Saturn Lane to the southwest, Cow Bayou of the NASA JSC drainage system (**Resource 864**) to the southeast, and the JSC Antenna Range (**Resource 863**) and undeveloped land to the north. The proposed 30 percent design indicates the rectangular modernistic building will have a primarily flat roof and minimal fenestration, with the front (south) façade facing southwards towards Saturn Lane. The north elevation, which faces northward towards the undeveloped western greenspace of the JSC campus has a three-story building flanked by two large high-bay volumes. The building is approximately 408,000 square feet (37,904 square meters [m]). The landscape design includes the construction of a 7.4-acre (3-ha), 4-foot-deep (1.2-m-deep), detention pond to the southwest of the building, and two parking lots north (228 spaces) and south (200 spaces) of the building, totaling 428 spaces. The interior of the facility will be distinguished by its lunar and Mars testing grounds, as well as serving as a hub for: research, mission development, and training in engineering design, development, and testing; science curation; and space health and medicine. Architectural renderings and schematics of the proposed building are in Appendix B.

Because this proposed project is occurring on federal land, the project is subject to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800). The project is also subject to the Antiquities Code of Texas (ACT) as it is being funded by state legislation (Texas House Bill 1) and is sponsored by the TAMU System, a political subdivision of the State of Texas. Because the proposed project is in a disturbed area with limited potential for subsurface resources, NASA recommends no archaeological survey for this project (ACT Background Review and Scope of Work in Appendix C). For aboveground historic resources, NASA conducted a reconnaissance-level historic resources survey and viewshed analysis in accordance with Section 106 of the NHPA (Appendices E–F).

Area of Potential Effects and Viewshed

The direct area of potential effects (APE) for the project is defined as the 32.4-acre (13.1-ha) tract for the proposed facility (see Appendix A, Figure 2). NASA applied an indirect APE encompassing a 0.5-mile (0.8 kilometer [km]) buffer from the direct APE to capture the general viewshed of the proposed project (see Appendix A, Figure 2). For due diligence, NASA also assessed viewshed impacts visible to the north of the proposed project. This included approximate areas within line-of-sight without obstructions from the proposed project along West Linkage Road (i.e., 300 and 400 areas of JSC).

Consultation for Cultural Resources

NASA engaged the Texas Historical Commission (THC) for guidance for the Section 106 procedure for this project on July 31, 2024. At this meeting, the THC concurred with NASA's methodology for the project. NASA-contracted architectural historians who meet the Secretary of the Interior (SOI) Professional Qualifications (36 CFR 61) completed documentation of historic-age resources within the APE built in or before 1979, 45 years prior to the proposed construction start date of December 2024. The survey excluded resources documented in the NASA JSC *Historic and Architectural Survey and Evaluation of Facilities*, commonly referred to as the NASA JSC 50-Year Survey (hereafter; 50-Year Survey) (NASA 2017). During this meeting, TAMU presented the project and preliminary renderings to the THC.

Because the area has low potential for archaeological resources and has previously undergone subsurface investigations, NASA has not currently completed any archaeological investigations for this project. An SOI-qualified archaeologist completed a background review of the proposed project area (see Appendix C). Based on a review of available soils, geology, archaeological data, historic maps, and aerial photographs, the proposed project area has been undeveloped pasture in an upland setting since the early twentieth century. Extensive modifications have altered the original footprint of the JSC, and the direct APE is likely to have minimal deposition. Additionally, the previous archaeological survey considered the direct APE to be extensively disturbed and determined no further work was recommended. Therefore, NASA recommends no archaeological investigations for this project.

BACKGROUND REVIEW

An SOI-qualified architectural historian completed a desktop review of previously identified historic resources in the project area using the THC Archeological and Historic Sites Atlas (Atlas) and the Texas Department of Transportation (TxDOT) Historic Resources Aggregator (Aggregator) (see Appendix A, Figure 2) (THC 2024; TxDOT 2024). Designated historic resources are National Historic Landmarks (NHLs), properties and districts determined eligible or listed in the NRHP, Recorded Texas Historic Landmarks (RTHLs), State Antiquities Landmarks (SALs), and Official Texas Historical Landmarks (OTHM).

Previous Investigations

According to the THC Atlas and TxDOT Aggregator, the project APE has been subject to four NASA-sponsored cultural resources investigations. Two previously conducted cultural resources investigations occurred within 0.6 mile (1.0 km) of the project (Table 1).

TABLE 1. CULTURAL RESOURCES SURVEYS WITHIN 0.6 MILE (1.0 KM) OF THE APE

Year	Investigation Type	Project	Investigation Summary / Results
2007	Historic resources survey	Survey and Evaluation of Historic Facilities and Properties in the Context of the U.S. Space Shuttle Program at NASA Johnson Space Center, Houston, Harris County, Texas	Overlaps the project APE. Historic resources survey covering approximately 1,364 acres (552 ha) (THC 2024; Atlas No. 6600000158).

2012	Archaeological survey	Archaeological Survey of the NASA JSC	Overlaps the project APE. Pedestrian and reconnaissance archaeological survey of high probability areas, supplemented with shovel testing were conducted on the JSC campus (1,620 acres) (Black and Karbula 2013; Atlas No. 8500026085).
2017	Reconnaissance-level historic resources survey	JSC 50-Year Survey	Identified the boundaries of the Johnson Space Center Historic District and an inventory of contributing and noncontributing resources (NASA 2017).

Note: All surveys in Table 1 were sponsored and completed by NASA. Source: THC (2024), TxDOT (2024).

Historic Districts and Properties

The direct APE intersects the JSC Historic District, which has been determined eligible for the NRHP under Criterion A for Events and Space Exploration, Criterion B for Person, and Criterion C for Architecture and Engineering (NASA 2017:77–119). Established by NASA in 1962 as the Manned Spacecraft Center, the JSC Historic District comprises the original JSC campus and associated lands. The NASA JSC campus exhibits mid-twentieth century modernist style architecture and autocentric planning methods. Historic-age buildings on the campus are often Brutalist in style with heavy usage of concrete, concrete decoration, and sometimes minimal fenestration. Elements of New Formalism style is also present on office buildings with large bands of fenestration with vertical window alignments and evenly spaced box columns along porched areas (McAlester 2013:663–664). Buildings are oriented along a common axis measuring 20 degrees south of east (NASA 2023:53). The street network follows this grid with only the outer roads, pathways, and drainage system diverting from the 20-degree axis. Buildings are clustered in the Central Mall with parking surrounding the buildings on the outer edge, fostering a walkable central greenspace. The entire complex is fenced-in with limited areas open to the general public, including Space Center Houston (SCH), Space Center Intermediate School (SCIS), Houston Fire Station 72, and guided tour areas. The 50-Year Survey identified JSC, Ellington Field, and Sonny Carter Training Facility as one discontinuous historic district. The JSC Historic District is eligible for the NRHP at the national level of significance. Its period of significance spans from the start of construction in 1962 to the end of the Space Shuttle Program in 2011.

The background review identified 42 contributing resources to the historic district within the study area, 26 in the indirect APE and 16 in the viewshed (Table 2; see Appendix A, Figures 2–3). Of these contributing resources, the Outdoor Antenna Range (**Resource 863**) and the potentially contributing drainage system (**Resource 864**) are the closest to the direct APE. Three NRHP-listed properties are within the study area: the Space Environment Simulation Laboratory (Building 032) (NR 1985), the Christopher C. Kraft, Jr. Mission Control Center (Building 030) (NR 1985), and the Saturn V Launch Vehicle (**Resource 090C**) (NR 2003) (see Appendix A, Figures 2–3) (THC 2024). The Space Environment Simulation Laboratory and the Christopher C. Kraft, Jr. Mission Control Center are also designated as NHLs (THC 2024). The remaining contributing resources have been determined eligible for the NRHP either individually or as a contributing resource to the JSC Historic District. In addition to federal designations, NASA is in the process of finalizing a Heritage Zone comprising the complex core along the Central Mall (see Appendix A, Figure 3). The proposed project is outside of the Heritage Zone but is within the zone’s viewshed along Second Street. No SALs, RTHLs, OTHMs, local historic districts, cemeteries, local neighborhood surveys, freedom colonies, or

archaeological sites are in the project or study areas (THC 2024; Texas Freedom Colonies Project 2024; TxDOT 2024) (see Appendix A, Figure 2).

TABLE 2. HISTORIC PROPERTIES WITHIN 0.6-MILE (1.0 KM) OF THE APE

Resource No.	Name (Historic or other name[s])	Designation	Year	Type	NRHP Criteria	Location
D1	Lyndon B. Johnson Space Center Historic District (Manned Spacecraft Center)	NRHP-eligible	1962	District	A, B, C	APE
001	Project Management Building	NRHP-eligible, C	1964	Building	A, B, C	Indirect APE
002S	Auditorium and Public Affairs Facility	NRHP-eligible, C	1964	Building	A, B, C	Indirect APE
013	Structures and Mechanics Building	NRHP-eligible, C	1964	Building	A, B, C	Indirect APE
014	Antenna and Tracking Development	NRHP-eligible, C	1965	Building	A, B, C	Indirect APE
015	Experiments and Systems Laboratory	NRHP-eligible, C	1964	Building	A, C	Indirect APE
016	Avionics Systems Laboratory	NRHP-eligible, C	1964	Building	A, B, C	Indirect APE
017	Engineering and Applications Development Laboratory	NRHP-eligible, C	1971	Building	A, C	Indirect APE
024	Central Heating and Cooling Plant	NRHP-eligible, C	1963	Building	A, C	Indirect APE
025	Fire Operations Facility	NRHP-eligible, C	1963	Building	A, C	Indirect APE
030	Christopher C. Kraft Jr. Mission Control Center (Apollo Mission Control Center)	NHL, NRHP-listed, C	1965	Building	A, B, C	Indirect APE
040	Elevated Water Storage Tank	C	1962	Structure	–	Viewshed
044	Communications and Tracking Development Laboratory	NRHP-eligible, C	1966	Building	A, C	Indirect APE
045	Project Engineering Building	NRHP-eligible, C	1966	Building	A, C	Indirect APE
048	Emergency Power Building (MCC-H)	NRHP-eligible, C	1964	Building	C	Indirect APE
090A	Little Joe II Rocket	C	1963	Object	A, C	Indirect APE
090B	Mercury Redstone Launch Vehicle	C	1960	Object	A, C	Indirect APE
090C	Saturn V Launch Vehicle	NRHP-listed, C	1970	Object	A, C	Indirect APE

Resource No.	Name (Historic or other name[s])	Designation	Year	Type	NRHP Criteria	Location
090G	Manned Space Flight Exhibit Complex (Rocket Park)	NRHP-eligible, C	1978	Building	A, C	Indirect APE
103	Third Street Entry Gatehouse	C	1965	Building	–	Indirect APE
305	Avenue B West Gatehouse	C	1965	Building	–	Viewshed
350	Energy Systems Laboratory	NRHP-eligible, C	1964	Building	A	Viewshed
351	Power Systems Test Facility	NRHP-eligible, C	1964	Building	A, C	Viewshed
352	Pyrotechnics Test Facility	NRHP-eligible, C	1964	Building	A, C	Viewshed
352B	Pyrotechnic Storage Bunker	C	1964	Structure	–	Viewshed
352I	Pyrotechnic Storage Bunker	C	1990	Structure	–	Viewshed
353	Resource Conversion Test Facility	NRHP-eligible, C	1964	Building	A, C	Viewshed
354	Cryogenics Test Facility	NRHP-eligible, C	1964	Building	A	Viewshed
356A	Fluid Systems Test Building	NRHP-eligible, C	1965	Building	A, C	Viewshed
419	Logistical Services Offices	NRHP-eligible, C	1963	Building	A, C	Viewshed
420	Shipping and Receiving Warehouse	NRHP-eligible, C	1963	Building	A, C	Viewshed
421	General Supply Warehouse	NRHP-eligible, C	1966	Building	C	Viewshed
422	Logistic Support Warehouse	NRHP-eligible, C	1965	Building	C	Viewshed
831	Bridge, Third Street Exit	Potentially C	1962	Structure	–	Indirect APE
832	Bridge, Third Street Entrance	Potentially C	1962	Structure	–	Indirect APE
841-30	Elevated Water Storage Tank	C	1962	Structure	–	Viewshed
851	Bridge, Avenue B Entrance	Potentially C	1965	Structure	–	Viewshed
856	Mall Pond No. 3	C	1964	Structure	–	Indirect APE
863	Outdoor Antenna Range	C	1965	Structure	–	Indirect APE
864	Drainage system	Potentially C	1962	Structure	–	Indirect APE

Resource No.	Name (Historic or other name[s])	Designation	Year	Type	NRHP Criteria	Location
SCA-905	Space Shuttle Carrier Aircraft NASA 905	NRHP-eligible, C	1970	Object	A, C	Indirect APE
T-38-900	T-38 N900NA	NRHP-eligible, C	1968	Object	A, C	Indirect APE
T-38-968	T-38 N968NA	NRHP-eligible, C	1965	Object	A, C	Indirect APE

Notes: Contributing resources were not assigned NRHP criteria significance per the NASA JSC Asset List or 50-Year Survey (NASA 2017; NASA 2024).

Please see Appendix C for previously recorded archaeological resources and investigations within the study area.

METHODOLOGY

Architectural historians completed a reconnaissance-level historic resources survey of the indirect APE and viewshed for the project. NASA applied a 0.5-mile APE. The survey methodology was customized following consultation with the THC, resulting in a sole focus on undocumented resources within the APE. Because the project is within an NRHP-eligible historic district and is within view of NHLs and NRHP-listed properties, architectural historians completed a viewshed survey and analysis in all areas around the proposed project (Appendix D).

Two architectural historians who meet the SOI Professional Qualifications for Architectural History and/or History (36 CFR Part 61) conducted the reconnaissance survey in July 2024. All historic-age resources built in or before 1979 (45 years prior to the anticipated construction date of 2024) were documented and evaluated for NRHP eligibility. The survey followed National Park Service (NPS) and THC documentation standards, as well as the following parameters:

- The survey followed an indirect APE of 0.5 mile from the direct APE which included a general viewshed and intersecting parcels from the Harris Central Appraisal District (CAD) (Harris CAD 2024).
- Architectural historians completed a historic resource survey form for each historic-age resource detailing architectural features, exterior alterations, and historical information (Appendix E).
- CAD construction dates were used by default, if deemed historically accurate. NASA notated approximate construction dates as circa (ca.).
- Architectural historians excluded resurvey of JSC resources included in the 50-Year Survey (2017) and only documented resources that were not included in the 50-Year Survey and historic-age resources in the indirect APE.
- In accordance with *National Register Bulletin 15*, architectural historians applied the NRHP criteria (A, B, C, and D) and integrity aspects (location, design, setting, materials, workmanship, feeling, and association) in the evaluation of historic-age resources in the APE (NPS 1997).
- Because the direct APE is on land that has low potential for archaeological resources, NASA did not complete an archaeological investigation and recommends no survey for this project. Although SAL designation applies to aboveground and subsurface resources, no historic-age resources were recommended for SAL designation.
- To maintain consistency with previous surveys, previously surveyed resources within the NASA JSC were numbered following the Asset List and 50-Year Survey numbering scheme. NASA

assigned newly recorded resources within the JSC Historic District beginning with the primary number being zero (i.e., Resource 0A).

- Unless noted as individually eligible for the NRHP, ancillary resources associated with a primary resource in the JSC Historic District were sometimes grouped with the primary resource to streamline inventory methods. These resource groups are identified with “etc.” following the primary building name.
- Resources outside of NASA JSC were numbered from north to south and east to west in accordance with TxDOT documentation standards.
- Historic-age resources were given priority in numbering (i.e., Resource 12A), with nonhistoric-age resources on the parcel assigned subsequently (i.e., Resource 12B).
- Historic-age parking canopy structures were documented with a single representative inventory form and resource count because of their common construction.
- Other than the NASA drainage system (Resource 864), architectural historians did not document any bayou channelization waterways in the indirect APE as historic-age resources.
- Manufactured homes, recreational vehicles, and NASA trailers were not documented.
- Small-scale objects including JSC Historic District landscape features and equipment were not documented.
- No right of entry was sought or granted for resources on private property within the indirect APE. Resources were documented from the public right-of-way (ROW).
- When a resource was obstructed or not visible, architectural historians provided oblique aerial imagery (Bing 2024) and standard aerial imagery of the resource (Environmental Science Research Institute [ESRI] 2024; Google Earth 2024).
- When available, Google Street View was used to identify alterations on resources between ca. 2007 to present (Google Maps 2024).

Architectural historians completed research for surveyed resources online and in-person at the Clear Lake City-County Freeman Branch Library. The following reference material was utilized for this project:

- *A Field Guide to American Houses* by Virginia Savage McAlester (McAlester 2013)
- *Historic and Architectural Survey and Evaluation of Facilities* (NASA 2017)
- *JSC Architectural Resources and Guidelines* (NASA 2023)
- Archival material and vital records available on Ancestry.com.
- Harris CAD and Harris County Clerk records (Harris CAD 2024).
- Historical newspapers and other records available on Newspapers.com and *The Portal to Texas History*, and historical imagery from Google Earth, Nationwide Environmental Title Research (NETR), and USGS (Google Earth 2024; NETR 2024; USGS 2024).

Architectural historians worked with NASA JSC to conform to agency standards and cultural resources management practices. Although NASA is anticipating the implementation of a Nationwide PA for its facilities, the Section 106 review process was completed according to standard documentation practices in accordance with THC and NPS standards.

RESULTS

NASA documented 114 historic-age resources (one district, 101 buildings [including parking canopy structures thrice recorded as a single record], 13 structures, and one object) within the indirect APE at 12 survey locations (**Resources 0–12**) (see Appendix A, Figure 4). One historic-age resource (**0A**) was recorded within the JSC Historic District that was not documented in the 50-Year Survey or Asset List. All other historic-age resources documented in the survey were outside of JSC but within the indirect APE. Documented resources were built between 1962 and 1979, with most of the resources being built in 1979 (number [n]=61). The survey identified the following historical uses: commerce/professional (n=2), commerce/ restaurant (n=1), domestic/multiple dwelling (n=87), domestic/secondary structure (n=3), government/government office (n=1), government/public works (n=1), industry/waterworks (n=4), recreation and culture/outdoor recreation (n=5), recreation and culture/sports facility (n=5), social/clubhouse (n=3), and transportation/space-related (n=1). Most resources did not evoke a particular architectural style, but some of the documented resources exhibited common twentieth century styles like Colonial Revival, Spanish Colonial Revival, Shed, and Late Modern styles. The resources exhibited mostly good integrity with typical alterations related to materials and design. The overall landscape of the survey area is suburban, consisting of multiple dwellings (i.e., apartment buildings, townhouses, etc.) alongside standalone commercial and recreational resources.

RECOMMENDATIONS

As a result of the historic resources survey, NASA affirms the NRHP-eligible status of the JSC Historic District being eligible under Criteria A, B, and C at the national level of significance. NASA affirms all NRHP-listed and -eligible properties and contributing resources within the JSC Historic District. Although NASA did not complete any updated documentation for the district or properties within the historic district (besides **Resource 0A**), for the purposes of this project NASA affirms the existing NRHP statuses and NASA management categories (Table 3; see Appendix A, Figure 3). NASA identified one historic-age resource within the indirect APE that was not specifically listed in the Asset List or identified in the 50-Year Survey inventory: the 1966 Test Apollo Spacecraft BP-K (**Resource 0A**). One historic-age resource, the 1962 JSC drainage system (**Resource 864**) was delineated during the survey effort because its boundaries were not identified in the 50-Year Survey nor the JSC Management Categories. During the 50-Year Survey, the resource was recommended potentially contributing to the JSC Historic District. NASA closely examined the drainage system as it is immediately adjacent to the direct APE to determine the extent of the drainage system. A recommended boundary was developed for this resource to assist in the Section 106 process (see Appendix A, Figure 5).

As a result, the Test Apollo Spacecraft BP-K (**Resource 0A**) is recommended potentially eligible for the NRHP as a potentially contributing resource to the JSC Historic District. Although not individually eligible for the NRHP, the NASA JSC Drainage System (**Resource 864**) is affirmed as a potentially contributing resource to the JSC Historic District. Both resources will be revisited at the next JSC historic resources survey cycle, where each will be given formal recommendations. Neither **Resource 0A** or **864** would be directly or indirectly affected by this undertaking. Each resource is analyzed in further detail in the JSC Historic District subsection below.

All remaining surveyed historic-age resources (**2A–D, 3A, 4, 5A–DB, 6A–AO, 7A–F, 8A–D, 9A–G, 10A–R, 11A, and 12A**) are recommended not eligible for the NRHP under Criteria A, B, C, or D.

No nonhistoric-age resources identified outside and within the historic district were found to possess exceptional significance under Criteria Consideration G; however, NASA recommends further study for the 2017 SpaceX Falcon 9 Booster Exhibit (**Resource 0U**). Because this object is so new, but also potentially exceptional, NASA recommends this resource is reexamined at a future date. Further study of this resource is not recommended for this project. Like all other historic properties and historical resources within the historic district, **Resource 0U** would not be impacted by the proposed project and would not experience any adverse effects from the undertaking.

Eligible or Contributing

Resource D1 is the JSC Historic District, NASA's center for flight control, training, and research activities. Established in 1961 as the Manned Spacecraft Center, JSC has been the flight control center for every human space flight mission since Gemini 4 in 1965. The JSC Historic District includes offices, laboratories, testing facilities, and staff supportive facilities. The complex has two NHLs including the Space Environment Simulation Laboratory and the Christopher C. Kraft, Jr. Mission Control Center, which famously aided the Apollo 11 mission, the first human Moon landing on July 20, 1969. The district is generally bound by NASA Road 1 to the east, Saturn Lane to the south, approximately College Green Drive to the west, and Space Center Boulevard to the north. The JSC Historic District has been determined eligible for the NRHP under Criterion A for Events and Space Exploration, Criterion B for Person, and Criterion C for Architecture and Engineering (NASA 2017:77–119). Established by NASA in 1961 as the Manned Spacecraft Center, the JSC Historic District comprises the original JSC campus and associated lands. The 50 Year Survey identified JSC, Ellington Field, and Sonny Carter Training Facility as one discontinuous historic district. The JSC Historic District is eligible for the NRHP at the national level of significance. Its period of significance spans from the start of construction in 1962 to the end of the Space Shuttle Program in 2011. The historic district has 79 contributing resources and 240 noncontributing resources. NASA affirms the NRHP-eligible district and its contributing resources. The proposed project would have no adverse effect on the NRHP-eligible district.

Resource 864 is the NASA JSC Drainage System. The JSC campus is equipped with several large drainage ditches around the perimeter of the historic core. One of these ditches is the channelization of Cow Bayou and an east tributary running along Saturn Lane. This ditch has an even slope and shoulder layout with grassy banks and a small creek filled with water. The 50-Year Survey noted the drainage ditch as potentially contributing to the historic district (NASA 2017:454). The 50-Year Survey did not specify the limitations of the drainage system. This portion of the drainage system runs along Cow Bayou and the southern segment of Saturn Lane, running northeasterly along NASA Parkway. The JSC Drainage System was an important development in the campus master plan and has continued to be key in managing the hydrology of the campus. The ditch system appears unaltered, retaining all aspects of integrity. In accordance with the potentially contributing recommendations made during the 50-Year Survey, NASA affirms this drainage ditch system as a potentially contributing resource to the JSC Historic District as an intact example of early environmental campus planning efforts for the JSC campus. The proposed project would have no direct impact, nor would it have an adverse effect on this resource.

Resource 0A is the Boilerplate (BP) K. The BP-K is a test spacecraft that was used in the Apollo program between 1966 and 1983 (NASA 2024). These command modules were known as boilerplates. NASA produced thousands of these for testing loads, handling characteristics, and system configurations to minimize damage to more expensive spacecraft. BP-K was produced by Ace Fabricating in Clute, Texas. NASA engineer John Howard Kimzey (1922–2004) performed fire extinguishing tests in this chamber (*Houston Chronicle* 2004; NASA 2024). Following the 1967

Apollo fire, this module was key in modifying Apollo spacecraft for fire protection and for testing of the Space Shuttle Thermal Protection System (spacecraft insulation tiles). The 'K' in BP-K honors Kimzey's legacy. Following the end of testing in the 1980s, the BP-K was refurbished for public display as well as a tribute to NASA engineers at JSC. The module is on display in the T-38 Talon Park on the Space Center Houston portion of the JSC complex. The BP-K was not included in the 2017 JSC 50-Year Survey. Like the nearby Space Shuttle Carrier, T-38-968, and T-38-900, the BP-K contributes to the historic district as an installed spaceflight object for public historical interpretation. The BP-K is significant for its contributions to space exploration during the Apollo program, particularly for its innovation related to fire protection. Although the BP-K is no longer in use, the object retains all aspects of integrity. Its historical use can be easily understood. Therefore, NASA recommends the BP-K potentially eligible for the NRHP as a potentially contributing resource to the JSC Historic District. NASA recommends a period of significance from 1966 to 1983, meeting Criteria Consideration G (1980–83) for exceptional significance related to the Apollo space program (1961–1972). The recommended boundary is the footprint of the module. The project would have no physical impact or adverse effect to this potentially contributing resource.

In addition to the above resources recommended eligible for the NRHP as potentially contributing resources to the JSC Historic District, NASA affirms the current resource inventory in Table 3.

TABLE 3. INVENTORY OF THE JSC HISTORIC DISTRICT

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
D1	Johnson Space Center Historic District	NRHP-eligible	1962	District	APE
864	NASA JSC drainage system	Affirmed Potentially C	1962	Structure	Indirect APE
0A	Test Apollo Spacecraft BP-K	Recommended Potentially C	1966	Object	Indirect APE
0B	Warehouse	NC	ca. 2000	Building	Viewshed
0C	Longhorn Project (LHP) pole barn	NC	ca. 2000	Building	Indirect APE
0D	LP storage tank	NC	ca. 2000	Structure	Indirect APE
0E	LP windmill	NC	ca. 2000	Structure	Indirect APE
0F	LP shed	NC	ca. 2000	Building	Indirect APE
0G	LP outbuilding	NC	ca. 2000	Building	Indirect APE
0H	Rocket Park tram shelter	NC	ca. 2000	Building	Indirect APE
0I	Rocket Park shelter	NC	ca. 2000	Building	Indirect APE
0M	Astronaut Memorial Grove	NC	1986	Site	Indirect APE
0N	Space Center Houston (SCH)	NC	ca. 1995	Building	Indirect APE

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
0O	SCH outbuilding	NC	ca. 2000	Building	Indirect APE
0P	SCH outbuilding	NC	ca. 2005	Building	Indirect APE
0Q	SCH outbuilding	NC	ca. 1995	Building	Indirect APE
0R	Gazebo	NC	ca. 2000	Building	Indirect APE
0S	Ticketing shelter	NC	ca. 2015	Building	Indirect APE
0T	SCH outbuilding	NC	ca. 2018	Building	Indirect APE
0U	Falcon 9 Booster Exhibit	NC	2017	Object	Indirect APE
0V	SCH gantry booth (west)	NC	ca. 2000	Building	Indirect APE
0W	SCH gantry booth (middle)	NC	ca. 2000	Building	Indirect APE
0X	SCH gantry booth (east)	NC	ca. 2000	Building	Indirect APE
0Y	SCH sign	NC	ca. 2010	Object	Indirect APE
0Z	Houston Fire Department Station 72	NC	ca. 2000	Building	Indirect APE
0AA	Houston Fire Department cell tower	NC	ca. 2000	Structure	Indirect APE
0AB	Space Center Intermediate School (SCIS)	NC	ca. 2000	Building	Indirect APE
0AC	SCIS sign	NC	ca. 2000	Object	Indirect APE
0AD	SCIS portable classroom	NC	ca. 2000	Building	Indirect APE
0AE	SCIS portable classroom	NC	ca. 2000	Building	Indirect APE
0AF	SCIS portable classroom	NC	ca. 2000	Building	Indirect APE
0AG	SCIS portable classroom	NC	ca. 2000	Building	Indirect APE
0AH	SCIS storage tank	NC	ca. 2000	Structure	Indirect APE
0AI	SCIS track	NC	ca. 2000	Structure	Indirect APE
0AJ	SCIS tennis court	NC	ca. 2000	Structure	Indirect APE

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
0AK	SCIS tennis court	NC	ca. 2000	Structure	Indirect APE
001	Project Management Building	NRHP-eligible, C	1964	Building	Indirect APE
001A	Flagpoles	C	1965	Structure	Indirect APE
002A	Outdoor Display Slab	NRHP-eligible, C	1967	Building	Indirect APE
002S	Auditorium and Public Affairs Facility	NRHP-eligible, C	1964	Building	Indirect APE
012	Dorothy Vaughan Center in Honor of the Women of Apollo (Administrative Support Building)	NC	1963	Building	Indirect APE
013	Structures and Mechanics Building	NRHP-eligible, C	1964	Building	Indirect APE
014	Antenna and Tracking Development	NRHP-eligible, C	1965	Building	Indirect APE
015	Experiments and Systems Laboratory	NRHP-eligible, C	1964	Building	Indirect APE
015A	Cryogenic/Cooling Tower Slab & PEA	NC	1964	Building	Indirect APE
016	Avionics Systems Laboratory	NRHP-eligible, C	1964	Building	Indirect APE
017	Engineering and Applications Development Laboratory	NRHP-eligible, C	1971	Building	Indirect APE
019	MCC South Guard Post	NC	2001	Building	Indirect APE
020	LEED Office Facility for Transition	NC	2011	Building	Indirect APE
021	Human and Health Performance Lab	NC	2018	Building	Indirect APE
024	Central Heating and Cooling Plant	NRHP-eligible, C	1963	Building	Indirect APE
024A/800	Cooling Towers/etc.	NC	1963	Structure	Indirect APE
025	Fire Operations Facility	NRHP-eligible, C	1963	Building	Indirect APE
030	Christopher C. Kraft Jr. Mission Control Center (Apollo Mission Control Center)	NHL, NRHP-listed, C	1965	Building	Indirect APE
044	Communications and Tracking Development Laboratory	NRHP-eligible, C	1966	Building	Indirect APE
045	Project Engineering Building	NRHP-eligible, C	1966	Building	Indirect APE

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
046	Central Computer Facility	NRHP-eligible, C	1989	Building	Indirect APE
048	Emergency Power Building (MCC-H)	NRHP-eligible, C	1964	Building	Indirect APE
048/800A	Plant Equipment Emergency Power Building/etc.*	NC	1964	Building	Indirect APE
090A	Little Joe II Rocket	C	1963	Object	Indirect APE
090B	Mercury Redstone Launch Vehicle	C	1960	Object	Indirect APE
090C	Saturn V Launch Vehicle	NRHP-listed	1970	Object	Indirect APE
090G	Manned Space Flight Exhibit Complex (George W.S. Abbey Rocket Park)	NRHP-eligible, C	1978	Building	Indirect APE
095A	LHP outbuilding	NC	1996	Building	Indirect APE
095B	LHP outbuilding	NC	ca. 2000	Building	Indirect APE
095C	LHP pole barn	NC	ca. 2000	Building	Indirect APE
095D	LHP outbuilding	NC	ca. 2000	Building	Indirect APE
095F	LHP pole barn	NC	ca. 2000	Building	Indirect APE
095H	LHP outbuilding	NC	ca. 2000	Building	Indirect APE
103	Third Street Entry Gatehouse	C	1965	Building	Indirect APE
104	Center Identification Sign	NC	1993	Object	Indirect APE
105	Second Street Guard Post	NC	1993	Building	Indirect APE
106	JSC Identification Sign	NC	1993	Object	Indirect APE
107	Third Street and Avenue D Guardhouse	NC	2004	Building	Indirect APE
110	Security Center	NC	1992	Building	Indirect APE
111	Security Services Building	NC	1992	Building	Indirect APE
302	Water Well No. 2	NC	1962	Structure	Viewshed
305	Avenue B West Gatehouse	C	1965	Building	Viewshed

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
350	Energy Systems Laboratory	NRHP-eligible, C	1964	Building	Viewshed
350F	Air Compressor Shed	NC	1997	Building	Viewshed
351	Power Systems Test Facility	NRHP-eligible, C	1964	Building	Viewshed
351A–C	Thermal Equipment Storage Building/etc.	NC	1970	Building	Viewshed
352	Pyrotechnics Test Facility	NRHP-eligible, C	1964	Building	Viewshed
352A	Pyrotechnic Storage Bunker	C	1964	Structure	Viewshed
352K	Pyrotechnic Test Cells	NC	1964	Building	Viewshed
352I	Pyrotechnic Storage Bunker	C	1990	Structure	Viewshed
353	Resource Conversion Test Facility	NRHP-eligible, C	1964	Building	Viewshed
353A	Boiler Instrumentation Shed	NC	1964	Building	Viewshed
353H	Boiler Building	NC	1984	Building	Viewshed
354	Cryogenics Test Facility	NRHP-eligible, C	1964	Building	Viewshed
354A	Thermal Chamber Building, Test Cell No. 5	NC	1968	Building	Viewshed
354B	Liquid Hydrogen Storage Shed	NC	ca. 1970	Building	Viewshed
354D	Fuel Storage Shed	NC	ca. 1970	Building	Viewshed
354M	Hazardous Waste Containment Area	NC	ca. 1970	Site	Viewshed
354P	Battery Testing Facility	NC	2005	Building	Viewshed
354K	Liquid Hydrogen Service Center	NC	1991	Building	Viewshed
355	Manufacturing Support Facility	NC	1993	Building	Viewshed
356GA	Fluid Systems Test Building	NRHP-eligible, C	1965	Building	Viewshed
357	ESTA Storage Facility	NC	1964	Building	Viewshed
359	Energy Systems Equipment Storage Facility	NC	1966	Building	Viewshed
360	Thermal Control Systems Test Facility	NC	1998	Building	Viewshed
361	Actuator Systems Test Facility	NC	1993	Building	Viewshed
411	Excess Storage Shed	NC	1994	Building	Viewshed
412	Mission Support Storage Facility	NC	1986	Building	Viewshed
413	Special Purpose Staging Facility	NC	1989	Building	Viewshed
415	Rigging Equipment Storage Building	NC	1975	Building	Viewshed
416	Installation Support Facility	NC	1965	Building	Viewshed
417	Garage	NRHP-eligible, C	1963	Building	Viewshed

Resource No.	Name (Historic or other name[s])	Designation	Year Built	Type	Location
417A	Truck Scales	NC	2000	Object	Viewshed
417H	Truck Scales Building	NC	2000	Building	Viewshed
418	Heavy Equipment Storage Shed	NC	1989	Building	Viewshed
419	Logistical Services Offices	NRHP-eligible, C	1963	Building	Viewshed
420	Shipping and Receiving Warehouse	NRHP-eligible, C	1963	Building	Viewshed
420A	Electrical Unit Substation	NC	1964	Building	Viewshed
421	General Supply Warehouse	NRHP-eligible, C	1966	Building	Viewshed
422	Logistic Support Warehouse	NRHP-eligible, C	1965	Building	Viewshed
423	Media Resource Center	NC	1967	Building	Viewshed
424	Film Repository Facility	NC	1971	Building	Viewshed
425	Logistic Support Depot	NC	1989	Building	Viewshed
451	Microwave Transmitting Antenna Tower	NC	1997	Structure	Indirect APE
831	Bridge, Third Street Exit	Potentially C	1962	Structure	Indirect APE
832	Bridge, Third Street Entrance	Potentially C	1962	Structure	Indirect APE
841-30	Elevated Water Storage Tank	C	1962	Structure	Viewshed
851	Bridge, Avenue B Entrance	Potentially C	1965	Structure	Viewshed
856	Mall Pond No. 3	C	1964	Structure	Indirect APE
863	Outdoor Antenna Range	C	1965	Structure	Indirect APE
SCA-905	Space Shuttle Carrier Aircraft NASA 905	C	1970	Object	Indirect APE
T-38-900	T-38 N900NA	NRHP-eligible, C	1968	Object	Indirect APE
T-38-968	T-38 N968NA	NRHP-eligible, C	1965	Object	Indirect APE

Sources: Asset list courtesy of NASA (2024), JSC 50-Year Survey (NASA 2017).

* Etcetera (etc.) notes ancillary resources associated with the primary resource that were grouped in the JSC 50-Year Survey and were all deemed not eligible/noncontributing.

Not Eligible

Resource 2A is the ca. 1975 Clear Lake City Water Authority (CLCWA) complex at 17507 El Camino Real. The CLCWA complex has had water operations here since the mid-1970s per historical aerial imagery (Harris CAD 2024; NETR 2024). The CLCWA complex includes two historic-age

buildings (Resources 2A–B), two historic-age metal water tanks (Resources 2C–D), a nonhistoric-age cell tower (Resource 2E), and a nonhistoric-age water tower (Resource 2F). The CLCWA complex is a common mid-twentieth century public works facility. Though this resource was partially obstructed, aerial imagery and field observations indicate that the building has integrity; however, the resource is not significant. There are no significant individuals or known events associated with this resource or the CLCWA complex. New infill buildings lessen the design integrity of the entire complex. This building does not possess distinctive design characteristics. A replaced primary door diminishes material integrity. The complex and resource are unlikely to yield information potential. Therefore, this resource is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 3A is the Clear Lake Islamic Center. This 1975 building originally housed Lake Publishing Company and Gulf Coast Newspapers, Inc., during the 1980s and the AIDS (Acquired Immunodeficiency Syndrome) Alliance of the Bay Area during the 1990s (Harris CAD 2024; *The Galveston Daily News* 1994). By 1986, Lake Publishing Company, a publisher of educational materials, was housed at this office building (Bookscouter.com 2024; Harris CAD 2024). Established in 1993, the AIDS Alliance of the Bay Area provided HIV (Human Immunodeficiency Virus) testing, food, clothing, legal help, and home care (*The Galveston Daily News* 1993). Clear Lake Islamic Center currently occupies the space. This parcel has a historic-age mosque (Resource 3A), three nonhistoric-age sheds (Resources 3B–D), a nonhistoric-age garbage enclosure (Resource 3E), and a nonhistoric-age sign (Resource 3F). The AIDS Alliance of the Bay Area provided important services to the Clear Lake community from 1993 to 1999. Although this building was associated with historical events of the HIV/AIDS epidemic, the contributions occurred after the historic period and do not merit exceptional significance for Criteria Consideration G for significance under Criterion A for Social History/LGBT History. Its other uses as a publishing company and current use as a mosque do not possess significance. The building has changed uses from professional to religious, diminishing integrity of association. The building has diminished integrity of design and materials because of alterations to the front (southeast) facade. The building is not the work of a master. The resource is unlikely to yield information potential. Therefore, the building is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 4 is a commercial warehouse with a side gable roof built in 1975 (Harris CAD 2024). Houston area developer, Friendswood Development Company, originally owned this building (Harris CAD 2024). Most recently, the warehouse was occupied by CSA Shop. This resource is not associated with significant events or individuals. The building does not possess distinctive elements and is not the work of a master. The resource is unlikely to yield information potential. Therefore, the resource is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 5 is Skylar Pointe Apartments, a 1979 apartment complex with 49 historic-age apartment buildings (Resources 5D–BD), one historic-age clubhouse (Resource 5A), two historic-age kidney-shaped swimming pools (Resources 5B–C), and 54 historic-age parking canopies (Resources 5BE–DB). The complex was originally known as Camino Village from 1979 until 1997 when it became Skylar Pointe (Harris CAD 2024). The buildings within the complex either have Shed-style characteristics or no architectural style. Apartment buildings either have a central breezeway stairwell or direct access from the facade. The parcel also has a nonhistoric-age mail shelter (Resource 5DC), two nonhistoric-age signs (Resources 5DD–5DE), and a nonhistoric-age parking shelter (Resource 5DF). The Skylar Pointe Apartments is not associated with significant events or individuals. Although access to the entire apartment complex was limited, various alterations and additions were observed on most of the buildings. These alterations diminish integrity of design and materials. Some of the buildings within the complex exhibit stylistic characteristics of the Shed style, but these

architectural attributes are not significant or are considered the work of a master. The design and planning of the apartment complex is not significant within the context of apartment complexes. The complex is unlikely to yield information potential. Therefore, the apartment complex and this resource are recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 6 is the 1968 Regatta Kings Park apartment and townhouse complex (Harris CAD 2024). The Regatta Kings Park is a garden apartment complex with 16 apartment and townhouse block buildings (Resources 6A–O, 6Q), one kidney-shaped swimming pool (Resource 6P), and 21 parking canopy structures (Resources 6R–AO) (Harris CAD 2024). Buildings vary between the Spanish Colonial Revival and Late Modern styles. The Regatta Kings Park apartment complex is not associated with significant events or individuals. Although some of the buildings possess distinctive elements of Spanish Colonial Revival and Late Modern architecture styles, they are not significant within these architectural styles nor are they the work of a master. The design and planning aspects of the apartment complex are not significant within the context of apartment complexes. Painted brick and replaced materials diminish integrity of materials. The complex is unlikely to yield information potential. Therefore, the apartment complex and this resource are recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 7A is the Bay Area Racquet Club (BARC); a 1973 tennis and racquetball club with a historic-age clubhouse (Resource 7A), five historic-age tennis courts (Resources 7B–F), one nonhistoric-age tennis court (Resource 7A), one nonhistoric-age cabana (Resource 7G), and one nonhistoric-age picnic shelter (Resource 7H). BARC was partly established by tennis athlete and NASA Apollo scientist Jim F. Robinson (1941–2019) (Dossman Funeral Home 2019; *The Galveston Daily News* 1975; *Waco Tribune-Herald* 2019). Robinson served as part of the tech crew for the Apollo 11 flight (*Waco Tribune-Herald* 2019). The club has held regional tournaments since the 1970s. Although BARC has been a local staple since the mid-1970s, the tennis complex is not associated with significant events. Its partial founding by Jim Robinson is an interesting component of its history; however, Robinson's contributions to NASA are typical to many who lived and worked at NASA JSC during the 1960s and 1970s and resided in the Bay Area. His contributions to the BARC were focused on recreational as well as competitive events but did not elevate to Olympic-level sportsmanship activities. The tennis clubhouse has Late Modern A-Frame-like design, which has some replaced materials that detract from its integrity. The overall complex is a grid system that does not feature any innovative design choices. The resource is unlikely to yield information potential. Therefore, the tennis complex and this resource are recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 8 is a 1979 Colonial Revival style townhouse complex (Harris CAD 2024). The Kings Park Townhomes complex includes three historic-age townhouse blocks (Resources 8A–C), a historic-age freeform-shaped swimming pool (Resource 8D), two nonhistoric-age mailbox shelters (Resources 8E–F), and a nonhistoric-age sign (Resource 8G). The Kings Park Townhomes are not associated with significant events or individuals. Although the building incorporates some Colonial Revival stylistic details, this design is not distinctive and is not a work of a master. The design and planning of the townhouse complex is not significant within the context of multiple dwelling complexes. Alterations including replaced doors, windows, and wall cladding, diminish material integrity. The resource is unlikely to yield information potential. Therefore, the townhouse complex and this resource are recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 9 is the Regatta Apartments; a collection of seven historic-age apartment buildings built in 1968 (Resources 9A–G). Most of the buildings feature no particular style, but two of these buildings

feature Spanish Colonial Revival styling (Resources 9F–G). The complex includes two nonhistoric-age signs (Resources 9H–I). Regatta Apartments are not associated with significant events or individuals. Although some buildings evoke the Spanish Colonial Revival style, some do not feature any distinctive architectural characteristics that represent a cohesive style. Painted brick and replaced materials on the buildings diminish integrity of materials. The design and planning of the apartment complex is not significant within the context of apartment complexes. The resource is unlikely to yield information potential. Therefore, the resource is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 10 is the eastern complex of the Regatta Apartments. The complex has nine historic-age apartment buildings (Resources 10C–K), one clubhouse (Resource 10A), one swimming pool (Resource 10B), and eight parking canopy structures (Resources 10L–R). The complex also has one nonhistoric-age sign (Resource 10S). Built in 1976, this complex was the last phase of the three-apartment complex (Resources 6, 9, and 10) development plan. Apartment buildings in this complex either have Late Modern architectural styling or no style at all. The Regatta (East) apartment complex is not associated with significant events, important individuals, or notable architectural or planning characteristics. Although some buildings represent Late Modern style architecture, they are not the work of a master. Replaced materials lessen integrity of materials, and in some cases (like Resource 10A), additions to the front facade and changes to the roofline detract from the original design. The complex is unlikely to yield information potential. Therefore, the apartment complex and this resource are recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 11A is East NASA Plaza. Originally known as Atrium I, this Late Modern style building features curved concrete walls and partial glass curtain wall with paneled spandrels on the original volume. The building has professional offices in its original volume and commercial spaces in its south addition. The building was also known as the Allen-Zarcaro Building during its early years as offices for Allen-Zarcaro Realty, a local real estate firm for the Bay Area during the 1970s and 1980s (*The Galveston Daily News* 1982). Other former businesses in the building include Aroma Cafeteria, Video Masters Inc., and various law firms (*Austin American-Statesman* 1981; *The Galveston Daily News* 1980; *The Kansas City Star* 1991). The parcel has a nonhistoric-age shed (Resource 11B) and a nonhistoric-age sign (Resource 11C). This building is not associated with significant events or individuals. Although the building has some distinctive Late Modern architectural elements in its original volume, the massive addition to the street-facing facade takes away from its cohesive design. This addition lessens integrity of design and materials, and removed signage further hinders integrity of materials. The resource is unlikely to yield information potential. Therefore, the resource is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Resource 12A is a 1973 commercial building with no specific style. Prior to housing the Mediterranean Chef restaurant, the building housed Café Nasa (*Jewish Herald-Voice* 1990). The parcel has a nonhistoric-age sign (Resource 12B). This building is not associated with significant events or individuals. The building does not possess distinctive elements and is not the work of a master. Major additions detract from integrity of design. Replaced materials diminish the integrity of materials. The resource is unlikely to yield information potential. Therefore, the resource is recommended not eligible for the NRHP under Criteria A, B, C, or D.

Effects

In accordance with 36 CFR 800, NASA completed an effects assessment for the proposed project as it would be within the JSC Historic District and within vantage of contributing resources in the

historic district. The assessment included direct (physical) and indirect (nonphysical) effects. The proposed project would have no direct effects or physical impacts to any existing resources as it is proposed on undeveloped land. The land has been undeveloped since the inception of JSC; thus, it would change the historical landscape of Area 4. However, the undeveloped nature of Area 4 is not considered a contributing resource to the historic district. Additionally, the original JSC master plan assumed that Area 4 would eventually be developed. No resources exist within the direct APE, meaning no resources would be displaced from the proposed project.

Two historic-age (both potentially contributing) resources are within 600 feet of the proposed project and one NRHP-listed property is within 1,600 feet of the proposed project. The closest resources to the proposed project are the recommended potentially contributing JSC Drainage System along Cow Bayou (**Resource 864**), the Outdoor Antenna Range (NRHP contributing resource; **Resource 863**) and Building 14 (NRHP-eligible and contributing resource; **Resource 014**). The JSC Drainage System is approximately 524 feet (159.7 m) from the proposed building footprint. The Outdoor Antenna Range is approximately 578 feet (176.1 m) from the proposed building footprint. Building 14 is approximately 1,793 feet (546.5 m) from the proposed building footprint. The NRHP-listed Saturn V Launch Vehicle (**Resource 090C**) is approximately 1,600 feet (487.6 m) from the proposed building footprint; however, this object is covered in the Manned Space Flight Exhibit warehouse (**Resource 090G**). None of these resources would be directly impacted by the proposed project. Moreover, the setback of the proposed building is an adequate distance from the nearby contributing resources that would not result in a substantial change in setting and feeling.

Because numerous buildings are within the viewshed of the proposed project, NASA also completed an assessment of indirect (i.e., visual) effects. In July 2024, architectural historians completed a preliminary viewshed analysis of the project area, which included photographs toward the project area from various spots on or near the JSC campus (see Appendix D). NASA also completed a three-dimensional (3-D) viewshed analysis using a 3-D model of the proposed building developed by Energy Architects. In addition to in-situ photographic documentation with annotations, NASA included oblique aerial imagery viewsheds of the 3-D model in Google Earth. These 3-D renderings accurately depict the proposed building within the existing landscape of the JSC Historic District and vicinity.

At a height of approximately 80 feet, the proposed building would be visible throughout the JSC Historic District depending on topography and existing obstructions. While the height and location of the proposed project means that it will be visible from resources contributing to the JSC Heritage Zone, NASA historians found that several landscape elements (including topography, vegetation, fencing, and other extant buildings) would effectively screen the new building from view from much of the Heritage Zone. For areas outside of the Heritage Zone within direct or partial line-of-sight to the proposed project; visual impacts from the proposed project would be negligible as there are existing disruptions along the horizon line. The addition of the proposed building would not substantially alter the existing setting and would not diminish integrity of the district or its contributing resources.

The design of the proposed building was thoroughly reviewed to ensure compatibility with the JSC Historic District. The design team worked to emphasize historical architectural design choices that would complement the historic-age buildings and campus design of JSC. The proposed building incorporates the following characteristics listed below which communicate with the JSC Historic District and its contributing resources.

- **Horizontal massing and flat roofline:** The modernistic box design follows the mid-twentieth century architectural design trends (i.e., long horizontal flat buildings) applied to high-bay warehouse buildings on the JSC campus.
- **Minimal fenestration:** High-bay buildings are typically designed with minimal fenestration like other high-bay buildings on the JSC campus that house hangars and laboratory spaces.
- **Vertical emphasis:** The vertical exterior metal panels are similar in color to the metal panels on JSC buildings, and vertical metal accents mirror those found on historic-age JSC buildings, such as Building 32; this design incorporates vertical accents on its elevations as a nod to the historical design tradition.
- **Integrated stoop entrance:** The entrance area is similar to the wraparound integrated porches on historic-age JSC buildings in the Central Mall area. In contrast, the proposed building design incorporates angled elements in its stoop opening on the front (south) façade.
- **Scaled-building program:** The interior planning module, as in the interior spacing between structural supports, measures 28-feet (8.5 m). This same spatial measurement is used in some of the historic-age buildings on the JSC campus.
- **Color:** Use of historical color palette including Ash Gray (Pantone 572) and Charcoal Gray (Pantone 908), while also including TAMU's maroon color palette.
- **Signage:** Building signage features sans-serif typography matching the Helvetica style font on historic-age Building 001 and nonhistoric-age entrance signs. The proposed building signage also includes the TAMU logo alongside the text, similar to the use of the iconic NASA logo alongside text signage.
- **Site Plan:** Building orientation matches historical 20-degree axis and faces Saturn Lane. The proposed site plan features open parking lots and landscaping as well as walkways to access the building from parking areas and Saturn Lane; all commonalities with the rest of the JSC campus.

The proposed building successfully incorporates these design and planning considerations that complement the JSC Historic District and its contributing resources. Therefore, NASA has determined that the proposed building design, including its exterior appearance and associated site improvements, would have no adverse effect on the historic district and its contributing resources.

The investigation also included review of archival material which indicated that the proposed project site is in an area which has been earmarked for future expansion since the 1960s (NASA 1962). In 1977, NASA removed the 18-acre Lunar Landing Area that was previously located near the proposed project site, altering the original plan of Area 4 (NASA 2023:46; NASA 2017:79). Consequently, the undeveloped land, including the former Lunar Landing Area, in the west JSC campus has been targeted for future development. NASA has already leased portions of the land to tenants like the Longhorn Project (LHP) at JSC (**Resource 095**), a 1996 longhorn cattle farm west of the Rocket Park (LHP 2024). NASA continues to seek future expansion, development, and new partnerships which continue to contribute to its exceptional history.

Because the proposed project is in line with initial planning and space programming of JSC, the addition of the proposed project would not result in indirect effects or cumulative impacts that were outside the scope and planning of the JSC campus. As a result, NASA recommends the project would have no adverse effects to NHL and NRHP-listed and -eligible properties, the JSC Historic District, or its contributing resources.

CONCLUSION

On behalf of the TAMU System, NASA conducted a reconnaissance-level historic resources survey for the TAMU Space Institute project in southeast Houston, Harris County, Texas. In coordination with the NASA, TAMU proposes the construction of the project on 32.4 acres (13.1 ha) at 17341 through 17331 Saturn Lane within the boundaries of the JSC Historic District; a historic district determined eligible for listing in the NRHP under Criteria A, B, and C. Because this proposed project is occurring on federal land, the activity is subject to Section 106 of the NHPA and its implementing regulations (36 CFR 800). The project is also subject to the ACT as it is being funded by state legislation (Texas House Bill 1) and is sponsored by the TAMU System, a political subdivision of the State of Texas.

Architectural historians documented 114 historic-age resources during the July 2024 reconnaissance survey of the indirect APE and viewshed (see Appendix E). During this survey effort, architectural historians conducted viewshed documentation of the proposed project. Based on the historic resources survey results, NASA recommends the following:

- NASA affirms the existing NRHP-listed and -eligible inventory of NASA properties within the JSC Historic District (**Resource D1**) (see Appendix A, Figure 3).
- For the purposes of this project, NASA affirms the JSC drainage system (**Resource 864**) and recommends the Test Apollo Spacecraft BP-K (**Resource 0A**) as potentially contributing resources to the JSC Historic District.
- Outside of the JSC Historic District, NASA recommends the remaining surveyed historic-age resources (**Resources 2A–D, 3A, 4, 5A–DB, 6A–AO, 7A–F, 8A–D, 9A–G, 10A–R, 11A, and 12A**) not eligible for the NRHP under Criteria A, B, C, or D.
- NASA recommends **no archaeological survey** for this project as it is in a previously disturbed area with limited potential for subsurface resources (see Appendix C). In accordance with the ACT, NASA requests concurrence for a no archaeological survey recommendation.

In accordance with 36 CFR 800, NASA conducted a viewshed analysis of the proposed project to assess for adverse visual effects to historic properties (see Appendix D). Because the proposed new building is 1) an appropriate distance from contributing resources in the JSC Historic District and is outside the Heritage Zone, 2) within an area designated for future development since initial JSC planning during the 1960s, 3) does not substantially alter the existing horizon from various points within the historic district, and 4) maintains architectural communication and cohesion with the JSC Historic District via similarities in massing, form, exterior material color, planning module size, and signage typeface, the proposed project would not significantly impact the integrity of location, setting, design, materials, workmanship, feeling, or association of the JSC Historic District. In accordance with the NHPA and its implementing regulations, NASA has determined that this undertaking would have **no adverse effect to historic properties**.

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