UNDERSTANDING NASA'S HISTORIC DISTRICTS

The National Aeronautics and Space Administration
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ACRONYMS

ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AFB	Air Force Base
ARC	Ames Research Center
ATA	Alfa Test Area
BTA	Bravo Test Area
CFR	Code of Federal Regulations
CMU	Carnegie Mellon University
CRM	Cultural Resource Management
CRMP	Cultural Resource Management Plan
CTA	Coca Test Area
DoD	Department of Defense
DOE	Department of Energy
EUL	Enhanced Use Lease
EULA	Enhanced Use Lease Authority
EMD	Environmental Management Division
EO	Executive Order
FERP	Facilities Engineering and Real Property Division
FPO	Federal Preservation Officer
HMCA	Hypergolic Maintenance and Checkout Area
HMP	Hypergol Module Processing
HPO	Historic Preservation Officer
HRPP	Historic Resources Protection Plan
HSB	Hypergol Support Building
GRC	Glenn Research Center
ICBM	Intercontinental Ballistic Missile
IRBM	Intermediate-Range Ballistic Missile
JSC	Johnson Space Center
KSC	Kennedy Space Center
LACB	Landing Aids Control Building

ACRONYMS

LaRC	Langley Research Center
LC	Launch Complex
MDD	Mate Demate Device
MMH	Monomethyl Hydrazine
MOA	Memorandum of Agreement
MSFC	Marshall Space Flight Center
NACA	National Advisory Committee for Aeronautics
NASA	National Aeronautics and Space Administration
NHL	National Historic Landmark
NHPA	National Historic Preservation Act of 1966
NPR	NASA Procedural Requirement
NPS	National Park Service
NRHP	National Register of Historic Places
OHPO	Ohio Historic Preservation Office
OMRF	Orbiter Maintenance and Refurbishment Facility
OMS	Orbital Maneuvering System
OPF	Orbiter Processing Facility
PA	Programmatic Agreement
PSL	Propulsion Systems Laboratory
RCS	Reaction Control System
RTLS	Return to Launch-Site
SHPO	State Historic Preservation Officer
SLF	Shuttle Landing Facility
SOI	Secretary of the Interior
SRB	Solid Rocket Booster
SSFL	Santa Susana Field Laboratory
SSME	Space Shuttle Main Engine
SSMEPF	Space Shuttle Main Engine Processing Facility
SSP	Space Shuttle Program
TPS	Thermal Protection System
TPSF	Thermal Protection System Facility

URS	URS Group, Inc.
U.S.	United States
USSR	Union of Soviet Socialist Republics

SECTIONONE – Purpose

This report has been prepared for National Aeronautics and Space Administration (NASA) Historic Preservation Officers (HPOs), mainly those who have a historic district at their Center. These personnel have a responsibility to: (1) be aware of historic districts within their areas of responsibility; (2) consider the potential impacts on the historic districts in normal operation and maintenance; and (3) incorporate historic districts in center planning. The report provides a useful guide with recommendations on management tools that may be employed to administer the districts and the historic resources therein. This report should also be valuable to HPOs who may need to identify historic districts as their building stock ages. Additionally, the report includes resource recommendations and guidance regarding legal authorities as they pertain to real property. As such, this guide can also serve as a resource for NASA planners and real property and facility managers. It provides suggestions on how to manage, as well as maximize the use of, NASA's historic districts.

The purpose of this report is to provide NASA managers with an understanding of historic districts as they apply to all Federal agencies with real property holdings. It outlines how historic districts are defined and documented (including statement of significance, period of significance, boundary description, etc.) and summarizes National Register of Historic Places (NRHP or "National Register") historic districts where NASA has facilities.

Section Two contains background information on how and why historic districts are defined and managed. The respective center Historic Preservation Officers provided the summaries and boundary maps contained in Section Three. These data are summarized in a standardized format for easy extraction and use. The HPOs can provide copies of the historic survey reports from which this information was derived. A statement of significance provides useful background information to help planners understand what drove the designation for each historic district. Section Four provides a list of references.

This report serves as a resource for NASA master planners and facility managers. The purpose is to provide information to facilitate reutilization of assets and thus support transition from the Space Shuttle to Constellation Program. Additionally, historic eligibility surveys will continue to be conducted as our buildings age. The Texas and New Mexico State Historic Preservation Officers (SHPOs) have recently discussed historic district designations with the Johnson Space Center and White Sands Test Facility, respectively. They have both acknowledged that the potential for historic districts within the centers will need to be considered as the facilities become 50 years old. As such, this Historic District summary will be updated whenever new historic districts are identified and new management tools, such as Programmatic Agreements (PAs), are executed.

Additional information can be obtained from Center HPOs or by visiting Center websites or NASA's Cultural Resource Management (CRM) Web site at http://oim.hq.nasa.gov/oia/emd/crm.html. If you have any questions or need additional information, please contact NASA's Federal Preservation Officer (FPO), Tina Norwood, Environmental Management Division (EMD), Headquarters, or your Center/Facility HPO. Contact information is provided on the next page.

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2.1 INTRODUCTION

The purpose of this section is to address NASA's responsibilities concerning historic districts, specifically:

- What is a historic district
- How to characterize a historic district
- How to document a historic district
- How to manage a historic district
- How a district differs from a multi-property listing

2.2 NASA'S RESPONSIBILITIES CONCERNING HISTORIC DISTRICTS

The identification, evaluation, and nomination of historic properties to the NRHP are the responsibilities of Federal agencies under the National Historic Preservation Act of 1966, as amended (NHPA). Section 110 of the NHPA states that Federal agencies shall establish a preservation program for the identification, evaluation, and nomination to the NRHP, and protection of historic properties.[1] A historic property can be a district, site, building, structure, or object that is significant in American history, architecture, engineering, archaeology, or culture at the national, State, or local level and that meets the National Register criteria.[2] (When used later in this document, the generic term "building" also implicitly includes a facility, object, or site.) Therefore, Federal agencies are obligated to identify, evaluate, and nominate historic districts to the NRHP. For Federal agencies concerned with NHPA compliance, listed and eligible properties are equal, i.e., both are historic properties.

The Secretary of the Interior's Professional Qualification Standards addresses educational and professional requirements necessary to identify, evaluate, and nominate historic properties, including historic districts, for listing in the NRHP.[3] *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* state that the evaluation of historic properties must be preformed by persons qualified in the application of the criteria.[4] Relevant qualification is achieved through adequate education, training, and experience with the specific type of historic properties being evaluated,

[1] 16 USC 470h-2(a)
[2] National Park Service, *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*, 1983.
[3] National Park Service, *The Secretary of the Interior's Professional Qualification Standards*, 1983.
[4] National Park Service, *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*, 1983.

along with the application of the NRHP criteria. NASA hires qualified CRM professionals to complete the necessary studies and analyses, under the direction of the respective HPOs. HPOs are expected to make the final decisions for their respective Centers regarding determinations of eligibility for listing on the NRHP.

2.3 WHAT IS A HISTORIC DISTRICT AND WHAT ARE CONTRIBUTING AND NON-CONTRIBUTING RESOURCES WITHIN A HISTORIC DISTRICT?

A historic district is defined as "a geographically definable area – urban or rural, large or small – possessing a significant concentration, linkage, or continuity of sites, buildings, structures, and/or objects united by past events or aesthetically by plan or physical development."[5] A district may also comprise individual elements that are separated geographically, but linked by association or history. A district derives its importance from being a unified entity, even though it is often composed of a variety of resources. The identity of a district results from the interrelationship of its resources, which can convey a sense of the overall historic environment. Alternatively, a district can be an arrangement of historically or functionally related properties.

A district can comprise both features that lack individual distinction and individually distinctive features that serve as focal points. A district may even be considered eligible if all of the components lack individual distinction, provided that the grouping achieves significance as a whole within its historic context. In either case, the majority of the components that add to the district's historic character, even if they are individually undistinguished, must possess integrity (applying the seven aspects defined by the National Park Service),[6] as must the district as a whole.[7]

A district can contain both **contributing** and **non-contributing** resources. Resources may include buildings, landscape, hardscape, open spaces, etc. Characterizing a historic district involves analysis of the district's **historic context**, significance, character-defining elements, boundaries, and contributing versus non-contributing resources.

A **contributing** building, site, structure, or object adds to the historical architectural qualities, historic associations, or archaeological values for which a property is significant because: a) it was present during the period of significance, and possesses historic integrity reflecting its

[5] National Park Service, *National Register Bulletin #15 – How to Apply the National Register Criteria for Evaluation*, 1995.
[6] National Park Service, *National Register Bulletin #15 – How to Apply the National Register Criteria for Evaluation*, 1995.
[7] National Park Service, *National Register Bulletin #15 – How to Apply the National Register Criteria for Evaluation*, 1995.

character at that time or is capable of yielding important information about the period; or b) it independently meets National Register criteria.

A **non-contributing** building, site, structure, or object does not add to the historical architectural qualities, historic associations, or archaeological values for which a property is significant because: a) it was not present during the period of significance; b) due to alterations, disturbances, additions or other changes, it no longer possesses historic integrity reflecting its character at that time or is incapable of yielding important information about the period; or c) it does not independently meet the National Register criteria.

In cases where a resource contributes on the basis of significance unrelated to that of the district, the documentation for the historic district should explain how the resource independently meets the National Register criteria. The number of non-contributing properties a district can contain and still convey its sense of time and place and historical development depends on how these properties affect the district's integrity.[8]

The basis for judging a district's eligibility under the National Register criteria is **historic context**. Historic contexts are patterns or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear. The *National Register Bulletin – How to Apply the National Register Criteria for Evaluation* outlines how to determine whether a property is significant within its historic context. A specific district can be **significant within one or more historic contexts within the same boundaries**; if possible, all of these contexts should be identified. A property is only required, however, to be documented as significant in one context. The Code of Federal Regulations (36 CFR 60.4) provides the National Register criteria:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history *(Criterion A);* or
>
> (b) that are associated with the lives of persons significant in our past *(Criterion B);* or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction *(Criterion C);* or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history *(Criterion D).*

Character-defining features of a historic district are physically and/or historically distinctive resources that contribute to the district's eligibility for the National Register. Character-defining

[8] National Park Service, *National Register Bulletin #17 – Certification of State and Local Statutes and Historic Districts*, 1987.

features often overlooked when assessing a historic district are roads, walkways, and smaller landscape features that were built/installed during the district's period of significance.

The district's significance and historic integrity helps determine the boundaries of the historic district. It is important to select boundaries that encompass a significant portion of buildings, sites, structures, or objects making up the district. The following factors should be considered when selecting the boundaries of a historic district:

- **Visual barriers** that mark a change in the historic character of the area or that break the continuity of the district, such as new construction, highways, or development of a different character.
- **Visual changes** in the character of the area due to different architectural styles, types or periods, or to a decline in the concentration of contributing resources.
- **Boundaries at a specific time** in history, such as the original NASA location limits.
- **Clearly differentiated patterns** of historic development, such as commercial versus residential or industrial.

After establishing the district's boundaries, it is important to define what types of resources contribute and do not contribute to the significance of the district and character-defining features.

The physical characteristics and historic significance of the overall district provide the basis for evaluating component resources.

The importance of defining contributing and non-contributing resources within a district was made clear to the Kennedy Space Center (KSC) in the 1990s. When the Launch Pads at Launch Complex 39A and 39B were originally designated as historic properties, all of the assets within the resource boundary, defined as the fenced area of the pads, were considered contributing resources and subject to review under Section 106 of the NHPA. This included a number of railroad box cars that were used as office and work space. Over time they began to deteriorate and become a hazard and an eyesore. However, these box cars were not part of the original development and they provided no value or character to the property from a historic perspective. When the Launch Complex was reevaluated, the box cars were determined to be a non-contributing element to the district. They were removed without having to go through the Section 106 review and were not subject to any mitigation requirements.

2.4 HOW IS A HISTORIC DISTRICT DEFINED?

A historic district that is designated under NHPA must meet National Register criteria explained in 36 CFR 60. In order to document a historic district, the following information is required:

1. *A **concise description** of the general physical or historical elements and qualities that make this area a historic district, with a description of building types, architectural styles, and periods represented in the district. This description should include information on the scale, materials, workmanship, and spatial qualities of the district and should use the appropriate professional terminology.*

2. ***Statement of significance,** which is a statement that clearly documents why the district has significance (areas of significance that reflect the district's historic importance), the period of time for which it is significant, and why it substantially meets National Register criteria for listing (36 CFR 60.4); the relevant criteria should be identified as A, B, C, and D.*

3. ***Boundary justification,** which is a clearly defined and explained boundary for the district.*

The boundary justification and description are crucial to the evaluation of the historic district. In order to meet National Register criteria, it must be demonstrated that the district reflects the historical or architectural qualities employed in the delineation of the boundaries. Districts with irregular or unusual boundaries usually require a description of what lies outside the district in order to define the edge of the resource and to explain the exclusion of adjoining areas.[9]

Discontiguous boundaries are uncommon and only appropriate in the following situations:

- When visual continuity is not a factor of historic significance, when resources are geographically separate, and when the intervening space lacks significance;
- When manmade resources are interconnected by natural features that are excluded from the National Register listing; and
- When a portion of a district has been separated by intervening development or highway construction and when the separated portion has sufficient significance and integrity to meet the National Register criteria.[10]

4. *A definition of what type of buildings **contribute** and **do not contribute** to the significance of the district, as well as an estimate of the percentage of buildings within the district that do not contribute to its significance. The standards used by the National Park Service for evaluating properties within National Register districts are defined in 36 CFR 67.5. These definitions are*

[9] National Register Bulletin #21 – *Establishing Boundaries for National Register Properties*
[10] URS Group, Inc. *Third-Party Review of Space Shuttle Survey Reports*. Report prepared for NASA – Environmental Management Division by URS/EG&G, Gaithersburg, Maryland, 2007.

explained and amplified in National Register Bulletin 16, "Guidelines for Completing National Register of Historic Places Forms." The physical characteristics and historic significance of the overall property provide the basis for evaluating component resources.

5. *A **map** illustrating all buildings in the district with an identification of contributing and non-contributing resources. The map or maps should indicate the district boundaries and all the buildings within it; include the street and place names with general street numbers (if available); and identify all contributing and non-contributing resources, if possible.*

6. ***Photographs** of typical streetscapes in the district and the major types of contributing and non-contributing structures.*

2.5 EXAMPLES OF OTHER FEDERAL HISTORIC DISTRICTS

All Federal agencies with real property holdings are responsible for identifying, evaluating, and nominating historic properties, including historic districts. Historic districts are not unique to NASA. Examples of Federal agencies designating historic districts include the Department of the Navy, other Department of Defense (DoD) organizations, and the Department of Energy (DOE).

The Department of the Navy's Washington Navy Yard in Washington D.C. is a good example of a district with various historic contexts and periods of significance, all within the same boundary. The historic district was nominated in 1973. The district has various historic contexts and periods of significance, all within the same boundaries. The boundaries of the district extend to the 1858 boundaries of the navy yard (about 40 acres). Established in 1799, it was one of the United States' first naval yards. It was the United States primary navy yard until 1815, and later in the nineteenth century it became the center for naval ordinance research and production. In this role it made many significant technological advances, most important of which was the work of John Dahlgren in the 1840s and 1850s. The Navy Yard also has an important place in Washington's local history. It is the southern terminus for L'Enfant's Eighth Street (east) axis, and was one of the city's few important nineteenth century manufacturing establishments.[11]

In some instances, the DoD has designated multiple historic districts that span the entire site, including the Mare Island Naval Shipyard Historic District in Vallejo, California; the U.S. Marine Corps Barracks and Commandant's House Historic District in Washington D.C.; and the Civic Park Historic District in Flint, Mississippi.

The U.S. Army has designated multiple historic districts, such as East Commerce Street Historic District in Butler, Alaska and the Palm Circle Historic District in Honolulu, Hawaii.

The DOE has designated multiple historic districts including archaeological historic districts, such as Hanford North Archaeological District, Locke Island Archaeological District, and Ryegrass Archaeological District, which are all in Richland, Washington.

[11] The Washington Navy Yard Historic District, http://www.history.navy.mil/faqs/faq52-2.htm (Last accessed April 11, 2008).

2.6 PROGRAMMATIC AGREEMENTS AND OTHER TOOLS FOR MANAGING HISTORIC DISTRICTS

An effective tool in managing historic districts is the establishment of PAs. A PA is a document that spells out the terms of a formal agreement between the agency, the respective SHPO, and other State and/or Federal agencies. PAs establish a process for consultation, review, and compliance with one or more Federal laws, most often with those Federal laws concerning historic preservation. In the context of Section 106 of the NHPA, PAs may be used when the full effects of an undertaking are not known or as tools for implementing approaches that do not follow the normal Section 106 process. They can be used to streamline historic preservation and expedite project approval efforts. Procedural PAs are useful because they can establish classes of actions that will not require consultation with the SHPO, as well as procedures for expediting SHPO review of other classes of action.[12] PAs also may be developed to address those elements of the resources in the district that make it a historic property and eligible for the NRHP. For example, the resources in some districts may be significant because of their design and architectural features, while other districts may contain resources that are significant because of their function and interior components. A PA should take into consideration these distinctions between districts to provide the most appropriate management framework.

NASA has already implemented a PA at Ames Research Center (ARC) in California to help manage properties within The Shenandoah Plaza Historic District.[13] Other Centers, including Kennedy Space Center (KSC) and Langley Research Center (LaRC), are in the process of negotiating PAs that may address historic districts located within their boundaries, when finished.

2.6.1 Redevelopment Opportunities

Transition from the Space Shuttle Program to the Constellation Program involves agency-wide facilities with a replacement value of $5.7 billion. Numerous facilities will need to be modified if they are going to be reused. Facilities that are not reused will likely become inactive. Managers need to consider if these facilities are historic properties, not only to ensure compliance processes are met, but also to consider redevelopment opportunities associated with historic resources. NASA master planners and facility managers who see a historic resource that no longer meets NASA's mission should contact their appropriate HPO. The NHPA Section 111 encourages the reuse of Federal assets and states:

[12] King, Thomas. *Cultural Resource – Laws & Practice*. Walnut Creek (California), AltaMira Press, 2004. 174 – 181.
[13] Historic Resources Protection Plan (HRPP). NASA Ames Research Center. July 2002. http://historicproperties.arc.nasa.gov/histrecprotectplan.html

> (a) Notwithstanding any other provision of law, any Federal agency after consultation with the Council, shall, to the extent practicable, establish and implement alternatives for historic properties, including adaptive use, that are not needed for current or projected agency purposes, and may lease an historic property owned by the agency to any person or organization, or exchange any property owned by the agency with comparable historic property, if the agency head determines that the lease or exchange will adequately insure the preservation of the historic property.
>
> (b) The proceeds of any lease under subsection (a) may, notwithstanding any other provision of law, be retained by the agency entering into such lease and used to defray the costs of administration, maintenance, repair, and related expenses incurred by the agency with respect to such property or other properties which are on the National Register which are owned by, or are under the jurisdiction or control of, such agency. Any surplus proceeds from such leases shall be deposited into the Treasury of the United States at the end of the second fiscal year following the fiscal year in which such proceeds were received.
>
> (c) The head of any Federal agency having responsibility for the management of any historic property may, after consultation with the Advisory Council on Historic Preservation, enter into contracts for the management of such property. Any such contract shall contain such terms and conditions as the head of such agency deems necessary or appropriate to protect the interests of the United States and insure adequate preservation of historic property.

The Advisory Council on Historic Preservation (ACHP), in responding to NASA's 2004 Executive Order (EO) 13287 Section 3 Report, stated that…"Section 111 is a statutory requirement, distinct from Section 106 of the NHPA, that allows proceeds from leases to assist in the maintenance and rehabilitation of historic properties. While we commend NASA for its willingness to use the 'lessons-learned' approach and previous contracts to comply with this requirement, more formal, agency-wide procedures should be developed."[14]

Section 2 of Executive Order 13287, Preserve America, which was issued in 2004, addresses Building Preservation Partnerships and states:

> When carrying out its mission activities, each agency, where consistent with its mission and governing authorities, and where appropriate, shall seek partnerships with State and local governments, Indian tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties. Each agency shall examine its policies, procedures, and capabilities to ensure that its actions encourage, support, and foster public-private initiatives and investment in the use, reuse, and rehabilitation of historic properties, to the extent that such support is not inconsistent with other provisions of law, the Secretary of Interior's Standards for Archeology and Historic Preservation, and essential national department and agency mission requirements.

Under this EO, NASA must report on compliance progress triennially. The HPOs considered this a progress report on NASA's NHPA compliance activities, which includes showcasing the reuse and the development of partnerships to protect and historic resources.

[14] Advisory Council on Historic Preservation. Executive Order 13287: Section 3, ACHP/DOI Review Comments for the National Aeronautics and Space Administration. 20 October 2005.

NASA managers are encouraged to consider NASA historic preservation processes not merely as a regulatory obligation but as a tool to provide redevelopment opportunities that may generate revenue. This opportunity will continue to grow under the ongoing expansion of the enhanced use lease authority (EULA).

2.6.2 Lease of Historic Properties

There are several options for leasing historic properties under NHPA and EULA. NASA's Office of General Counsel has reviewed several opportunities for "leveraging" NASA's real property and facilities using existing legal authorities.[15] This analysis illustrates the potential value of enhanced use lease authority within the context of historic properties. The entire analysis is posted on NASA's CRM Web site at http://oim.hq.nasa.gov/oia/emd/crm.html. The analysis highlights the following:

> Proceeds from NHPA adaptive use leases may be used to defray the costs of administration, maintenance, repair, and related expenses. Like EULA, the NHPA is an exception to the general rule that proceeds retained by the Government cannot be kept by an Agency but rather must be deposited in the U.S. Treasury. Also, as with EULA, funds remain available beyond the usual one fiscal year period in which appropriated funds must be spent. Finally, as with EULA, there are no limits on the total amount of proceeds a Center may receive under an NHPA adaptive use lease. The NHPA is not limited to any number of NASA Centers but rather is available now and can be used Agency-wide.
>
> Similar to EULA, the NHPA provides tremendous flexibility for strategic development with associated potential to expand NASA's business base, distribute costs, and create human capital advantages. Under the concept of "adaptive use," NASA may lease qualifying property and retain proceeds for two years.

ARC has an active leasing partnership program for tenants who rent historic properties in the Shenandoah Plaza National Historic District (hereinafter the "District"). Examples of this include the long-term lease and partnership with Carnegie Mellon University (CMU) for a $5 million renovation of Buildings 23 and 24. Building 23, an approximately 21,000-square-foot building, was the original hospital building at Moffett Field and is a contributing structure within the Shenandoah Historic District. Building 24 was the original ambulance garage for the hospital and is also a contributing structure within the Shenandoah Historic District. Buildings 23 and 24 have been adaptively reused by CMU as the nucleus of the CMU West Coast Campus for graduate level education in software technology and management; they are leased to CMU under NHPA leasing authority. The lease, which was signed in 2001, is for a 30-year term with additional possible extensions. Proceeds from this lease arrangement represent in-kind payments that offset the cost of renovating the building.

Building 17 has had minor rehabilitation work and is currently being adaptively re-used. It will be the home of the NASA Lunar Science Institute. Building 19, a 151,000-square-foot building that was originally a naval barracks, is currently fully occupied by approximately 32 separate

[15] David S. Schuman (Office of General Counsel, NASA Headquarters) *Leveraging the Value of NASA's Real Property and Facilities Using Existing Legal Authorities*. May 2005.

corporate tenants who pay rent for use of office space. The NASA Exchange Council continues to operate a small hotel in the west wing of Building 19. This directly benefits users who have a NASA or military affiliation and seek convenient and economical lodging. The building is fully occupied and the rents obtained from the occupants are helping to defray the maintenance and repair costs of the historic district. The historic landscapes, street lighting, and roads are maintained by ARC. ARC is reimbursed, in part, by the tenants in the District as part of the institutional support services.

ARC has a challenge in meeting current fire code and life safety regulations for the 75-year-old contributing buildings within the District. Modification of historic buildings is often required to accommodate code egress requirements, fire safety, Americans with Disability Act (ADA) access, and seismic stability. This must be done without degrading the historic integrity of the buildings. Implementing these upgrades is an expensive challenge. ARC has used the EULA for the contributing buildings within the historic district. Proceeds from this lease arrangement have represented in-kind payments that offset the cost of totally renovating the building.

2.7 HOW DOES A DISTRICT DIFFER FROM A MULTI-PROPERTY LISTING?

A historic district is a resource type as defined by the NRHP (i.e., building, structure, site, object, and district). A historic district is either present or it is not. The presence or absence of a historic district will be determined through identification and evaluation surveys, such as that recently conducted for the Space Shuttle Program (SSP). A historic district will include contributing properties that are linked historically, thematically, and physically, and exist within a shared, cohesive, and defined geographical area.

Frequently, however, historic properties that are linked historically, thematically, and physically do not exist within a shared, cohesive, and defined geographical area. Thematically related historic properties may be located at discontiguous places within one center, or at different centers. In such cases, the preparation of a historic context study on a broad, common theme is useful in establishing and describing the historical framework that links these geographically disparate properties. A historic context forms the basis of a Multiple Property Documentation Form, a CRM planning tool designed to efficiently and thematically nominate related historic properties for listing in the NRHP. The Multiple Property Documentation Form serves as an umbrella document under which individual historic property nominations are submitted.

For example, NASA could prepare a Multiple Property Documentation Form on NACA/NASA wind tunnels. This document would describe the history and significance of wind tunnels, and would define various property types within that context, including the various forms and uses of wind tunnels. Then NASA would prepare individual NRHP nomination forms for each eligible wind tunnel. The nomination would reference the Multiple Property Documentation Form and

describe the individual wind tunnel's particular characteristics and significance within the historic context. As such, a Multiple Property Documentation Form is a useful way to nominate for listing related historic properties in the NRHP. NASA Centers may determine that this approach is more successful than linking geographically disparate properties in a discontiguous historic district.

The Multiple Property Documentation Form approach has been used by NASA. When NASA was seeking to excess the remaining portion of the NASA Industrial Plant in Downey, California, the General Services Administration and NASA, in cooperation with the City of Downey, conducted a historic building survey of the plant site. The draft report identified 19 buildings and structures as meeting the criteria for listing in the NRHP and recommended that they be considered as a historic district. NASA's review concurred with the assessment of the 19 buildings and structures; however, the agency felt that eligibility and nomination of individual historic properties for listing in the NRHP through the Multiple Property Documentation Form would be more appropriate than the nomination of a historic district because the historic buildings and structures were important at different periods during the long history of the facility and were associated with widely divergent events and activities. After considering NASA's views, the building survey consultant agreed with NASA's position, and its final report recommended a Multiple Property Documentation Form. NASA then entered consultation with the CA SHPO, as required by the NHPA. Ultimately the CA SHPO concurred that eligibility as a multiple property approach, rather than a historic district, was indeed appropriate. In this instance, NASA felt that the multiple property approach was more appropriate than a historic district designation not only for cultural resource reasons, but also because there was a practical advantage from an NHPA Section 106 perspective. It was believed that a Multiple Property Documentation Form and the associated individual historic properties were easier to manage, as adverse effect considerations associated with proposed modification or demolition of one of the 19 buildings could be confined to individual buildings, rather than the historic district as a whole.

In addition to the application at NASA's former industrial park in Downey, California, NASA has also used the multiple-property designation at KSC. In 1998, KSC conducted an evaluation of facilities that resulted in the preparation of a multiple-property nomination based on the thematic approach of the Apollo-era manned space program. Under this cover nomination, KSC determined ten facilities to be individually eligible, including LC 39 Pads A and B, which were nominated as historic districts. This approach is summarized in KSC's Cultural Resource Management Plan (CRMP) (dated December 2001). KSC recently expanded the historic context of this multiple-property cover to include properties associated with the Space Shuttle Program. This resulted in identification of several new individually eligible properties, as well as the new historic districts described in Section Three.

The justification for the use of the multiple-property nomination is explained in the CRMP as follows:

A Multiple Property nomination was selected as the most appropriate means by which the significant properties identified could be nominated to the National Register. Information common to the group of properties is presented in the Multiple Property Documentation Form (the "cover" nomination) which was prepared and submitted under separate cover, while information specific to each individual building, site, structure, object, or district was placed on the individual registration forms, also submitted with the Multiple Property cover. An advantage of this approach is that the Multiple Property nomination, which groups related significant properties, facilitates the evaluation of individual properties by comparing them with resources that share similar physical characteristics and historical associations. In addition, the Multiple Property nomination is a flexible document permitting additional contexts and resources to be added as they become eligible.[16]

[16] Archaeological Consultants, Inc. Kennedy Space Center – Cultural Resource Management Plan. 2001.

3.1 AMES RESEARCH CENTER, CALIFORNIA

The following district was identified by the U.S. Navy in 1994 and conveyed to NASA that year.

3.1.1 Shenandoah Plaza Historic District (US Naval Air Station Sunnyvale, California, Historic District)

Statement of Significance: The Shenandoah Plaza Historic District (listed as the US Naval Air Station Sunnyvale, California, Historic District) is significant under Criterion A for its association with the expanding coastal defense capabilities of the U.S. Navy, and with airship technology during the inter-war era between 1932 and 1945. The Sunnyvale Naval Air Station was built in 1932 and was dedicated in 1933 to support the development of lighter-than-air dirigibles used to patrol the Pacific coast. The district is also significant under Criterion C, for its distinctive Spanish Colonial Revival-style buildings popular in California in the 1920s and 1930s. The grid layout and landscaping is significant as representative of the Navy Bureau of Yards and Docks adherence to good planning design. The plan is axial, with vistas culminating at Hangar 1, the dominant feature of the base. The layout and landscaping has not changed dramatically over the years. Although a number of the Spanish Colonial Revival-style buildings have distinctive interior elements, only the exterior of the buildings are considered significant.

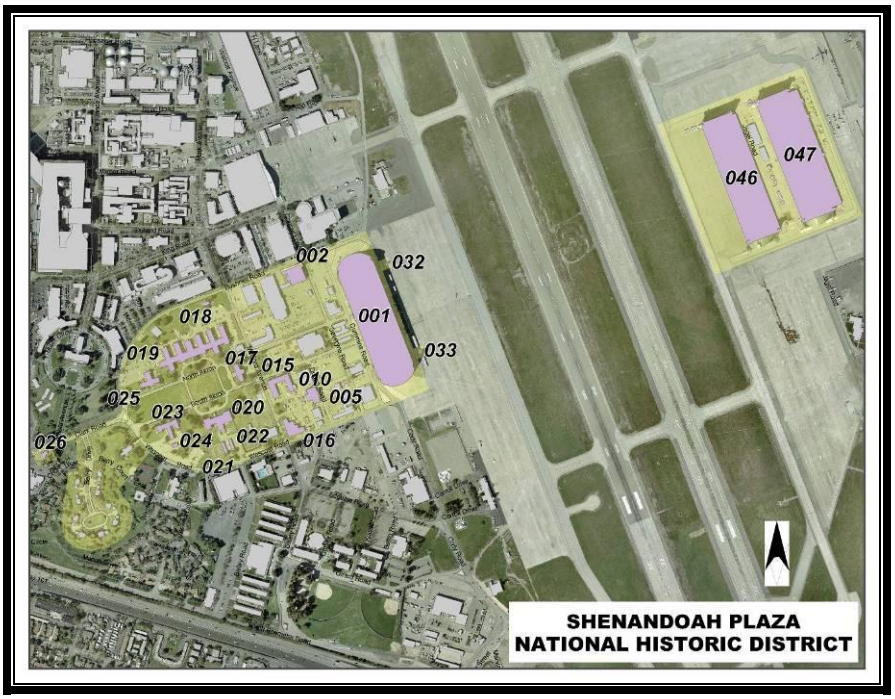
Period of Significance: The period of significance dates from 1930 to 1935 for the original naval air station and also 1942 to 1945 for the World War II era.

Boundary Justification: The district boundaries encompass the cluster of buildings constructed in the Spanish Colonial Revival Design, including the parade grounds, landscaping and Hangar 1. Hangars 2 and 3 are included in the eastern portion of the district.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Keith Venter (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): Ames has a PA in place that became effective November 15, 2002. The agreement contains the Historic Resources Protection Plan (HRPP), which is NASA's mechanism for complying with historic preservation requirements set forth in Section 106 and 110 of the National Historic Preservation Act of 1966, as amended. The primary purpose of the HRPP is to establish procedures to integrate the planning, preservation, and use of historic properties on lands that will be developed by NASA Ames Research Center into a world-class campus featuring research, development, and education partnerships between government, academia, industry and non-profit organizations in support of NASA missions.

Boundary Map for Shenandoah Plaza National Historic District



Aerial View of Shenandoah Plaza National Historic District

3.2 GLENN RESEARCH CENTER (GRC), OHIO

3.2.1 Lewis Field Historic District (Under Review)

Statement of Significance: The Lewis Field Historic District is significant under NRHP Criteria A and C (36 CFR 60.4). The district has significance under Criterion A for its associations with national aeronautic and aerospace programs and technological and scientific advances in those fields. It has significance under Criterion C as a largely intact example of a federally planned, funded, and designed research and development facility. The plan of the facility retains its original campus-like appearance, with a landscaped setting and administrative and office buildings that present a consistent design and appearance.

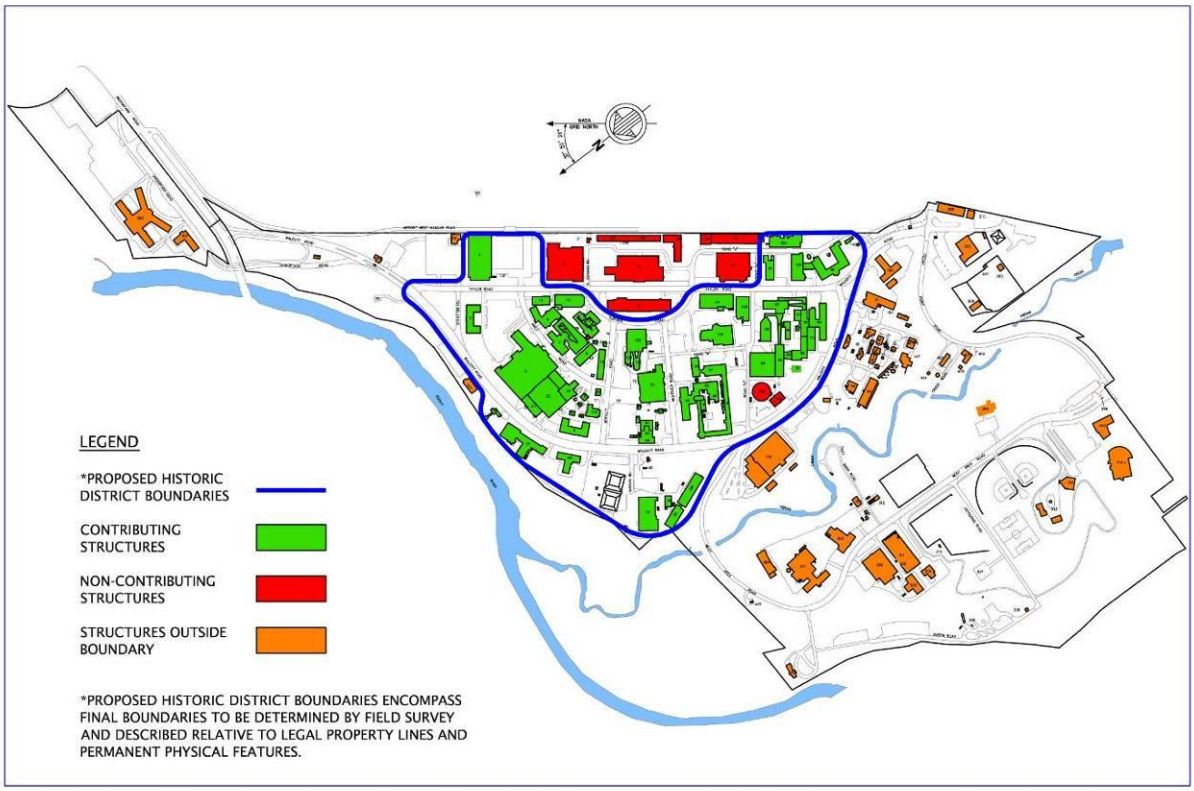
Period of Significance: The period of significance for the identified historic district is 1940-1970, encompassing the period of work that led to the successful completion of the Apollo project. The completion of the Apollo project, and the placing of a man on the Moon, is considered an event of exceptional importance. This period of significance applies to individual resources within the district that are significant because of their associations with research and development programs and activities (Criterion A). The period of significance for resources that derive their significance solely from their associations with the distinctive plan and architecture associated with the early development of the facility (Criterion C) is 1940-1950. Some resources within the district are considered significant under both Criteria A and C.

Boundary Justification: The intent was to include those resources within the original semicircular plan, which dated from the district's period of significance and that retained their historic integrity. The proposed boundaries include those resources constructed prior to 1970 that retain their integrity and that front the two principal thoroughfares developed in the 1940s. The proposed boundaries exclude resources fronting those roads that were constructed after 1970 or that have lost their integrity as a result of post-1970 additions and alterations.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Les Main (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): The Glenn Research Center has two Memoranda of Agreement (MOAs). The first MOA with the Ohio Historic Preservation Office (OHPO) addresses the demolition of the Altitude Wind Tunnel. The second MOA with the OHPO addresses the Propulsion Systems Laboratory (PSL), Cells No. 1 and No. 2 (PSL 1 & 2).

Glenn Research Center, Ohio
Boundary Map of Glenn Research Center Historic District



NASA Glenn Research Center at Lewis Field
Historic District Determination

3.3 KENNEDY SPACE CENTER (KSC), FLORIDA

3.3.1 Launch Complex 39: Pad A Historic District

Statement of Significance: The LC 39: Pad A Historic District was originally listed in the NRHP in 1973 for its association with the Apollo Program. The district was reevaluated and redefined between 1998 and 2000 and modifications were made to the NRHP nomination. At that time, the historic district contained 23 contributing and 39 non-contributing resources within its boundary. As currently defined for the SSP, the district contains 21 contributing resources. Of the total contributing resources, one is individually eligible to the NRHP. The LC 39: Pad A Historic District has since gained importance in the context of the Space Shuttle Program, ca. 1969 to 2010. Because it has achieved exceptional significance within the past 50 years, Criteria Consideration G applies, along with criteria A and C. The district continues to convey its historic function as a launch facility and maintains its integrity of location, design, setting, materials, workmanship, feeling, and association. The LC 39: Pad A Historic District is one of two sites at KSC specially designed and constructed to launch the Space Shuttle vehicle. It has facilitated nationally significant events associated with space travel, and has been integral to the launching of the Shuttle.

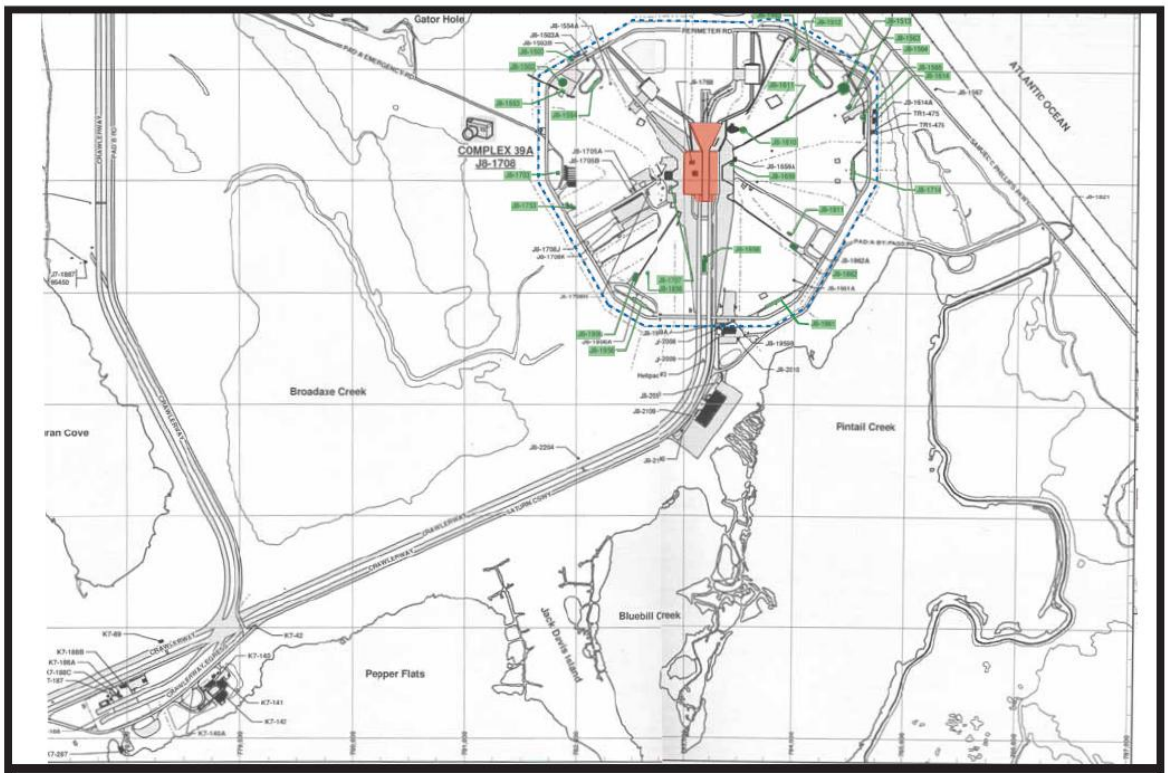
Period of Significance: The LC 39: Pad A was constructed between November 1963 and October 1965. Beginning in 1976, Pad A underwent major modifications to accommodate the Space Shuttle vehicle. On April 14, 1981, Pad A was the launch site for the first launch of the Space Shuttle Program, STS-1. Between 1981 and 1986, the next 23 launches were from Pad A. In September 1986, in the aftermath of the *Challenger* accident, LC 39 Pad A was put into inactive status for approximately two years to allow modifications. It was reactivated in 1990.

Boundary Description: The LC 39: Pad A Historic District is octagonal in configuration and covers roughly .25 mi^2.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the KSC HPO, Barbara Naylor (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Launch Complex 39: Pad A Historic District



Location Map: Launch Complex 39: Pad A Historic District; blue dashed line indicates historic district boundaries, red indicates contributing resources, which are also individually NRHP-eligible, green indicates contributing resources (Base map prepared by Space Gateway Support 2006).

3.3.2 Launch Complex 39: Pad B Historic District

Statement of Significance: The "Missile Launch Complex 39 Site" (LC 39: Pad B Historic District) was originally listed in the NRHP on May 24, 1973 for its association with the Apollo Program (ca. 1961-1975). This historic district was reevaluated and redefined in 1998 and on January 21, 2000 the newly defined district was modified in the NRHP. At that time, the district contained 23 contributing and 34 non-contributing resources within its boundary. The district has since gained importance in the context of the Space Shuttle Program, 1969-2010, under Criteria A and C in the areas of Space Exploration and Engineering, respectively. The district is one of two sites at KSC specially designed and constructed to launch the Space Shuttle vehicle. The district is also eligible for the NRHP under Criterion C in the area of Engineering. The district contains many facilities, including fuel storage structures, water tanks, and electrical substations, which work as a cohesive whole for a successful Space Shuttle launch. The LC 39 Pad B historic district is significant under both the Apollo Program (1961-1975) and Space Shuttle Program (1969-2010) contexts in the areas of Space Exploration, Transportation and Engineering. Pad B was one of two sites able to successfully launch manned lunar missions, and that it was used to launch one mission for the Apollo Program, three for the Skylab Program, and also was used for the Apollo-Soyuz Test Project mission in 1975.

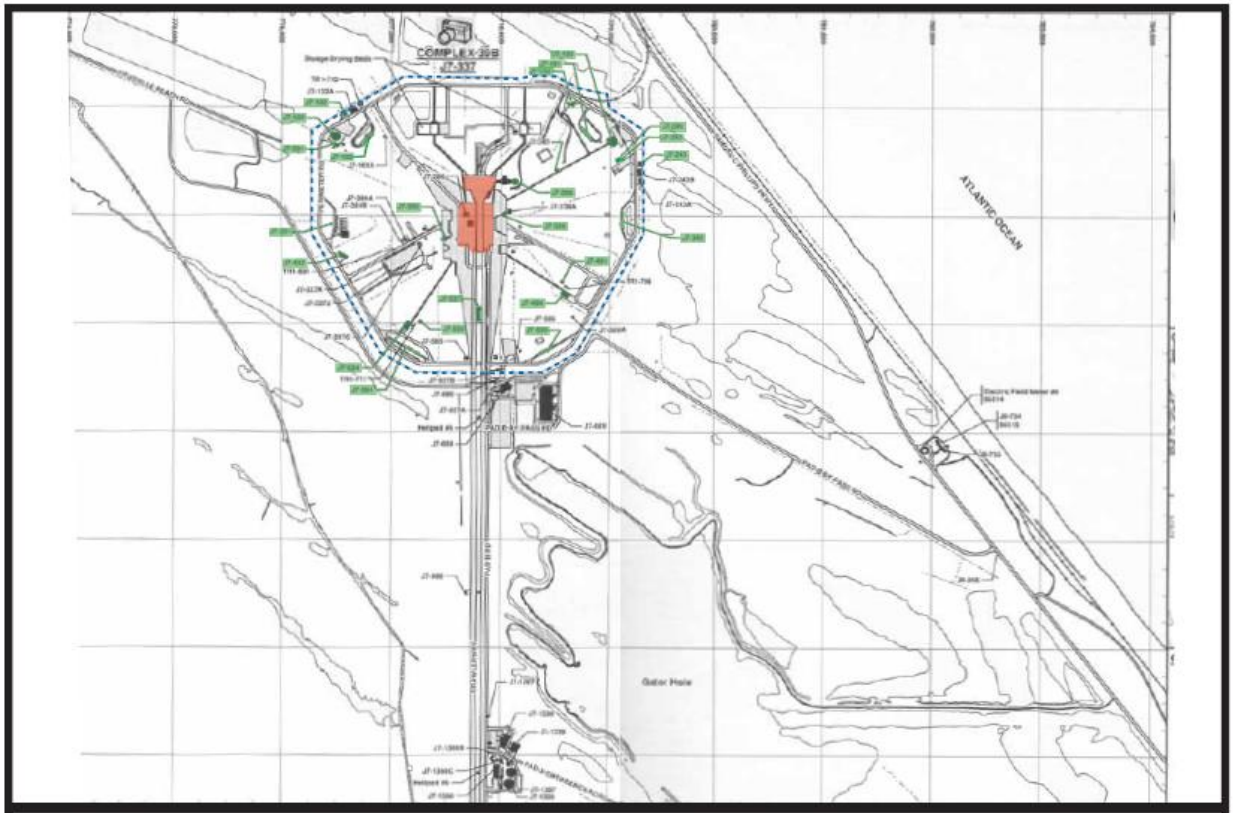
Period of Significance: The LC 39: Pad B Historic District was constructed between 1964 and 1968. Between 1978 and 1985, LC 39: Pad B underwent major modifications for the Space Shuttle Program On January 28, 1986, STS-51L, Space Shuttle *Challenger* was the first Space Shuttle mission to lift off from Pad B. Approximately one minute after launch, it ended disastrously with the explosion of the spacecraft and the loss of the entire crew. The first Return to Flight mission saw the launch of STS-26 Space Shuttle *Discovery* from Pad B on September 29, 1988, which became NASA KSC's primary launch facility. In June 1991, Pad B was placed on inactive status to allow for a six-month period of repairs and refurbishment.

Boundary Description: The LC 39: Pad B Historic District is octagonal in configuration and covers roughly .25 mi^2.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the KSC HPO, Barbara Naylor (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Launch Complex 39: Pad B Historic District



Location Map: Launch Complex 39: Pad B Historic District; blue dashed line indicates historic district boundaries, red indicates contributing resources, which are also individually NRHP-eligible, green indicates contributing resources (Base map prepared by Space Gateway Support 2006).

3.3.3 Shuttle Landing Facility (SLF) Area Historic District

Statement of Significance: The Shuttle Landing Facility (SLF) Area Historic District is considered eligible for listing in the NRHP in the context of the U.S. Space Shuttle Program under Criterion A in the area of Space Exploration and under Criterion C in the area of Engineering. Because it has achieved exceptional significance within the past 50 years, Criterion Consideration G also applies. The SLF Area Historic District maintains a high level of integrity with regard to location, design, setting, materials, workmanship, feeling, and association.

Activities supported at this complex include orbiter recovery, safing, processing, and tow operations. In addition, the historic district maintains orbiter ground support equipment and Navaids equipment to support landing operations at sites world wide. The SLF Area serves as the main landing site for the orbiter, or as a return from landing site when weather or other issues necessitated the use of Edwards Air Force Base (AFB) as the landing facility. It also functions as the main organizational hub for fire and rescue operations, security officers, safety and medical teams and other KSC support operations during both shuttle landing, and take-off, in case of an emergency return-to-launch-site (RTLS) maneuver and it supports astronaut training.

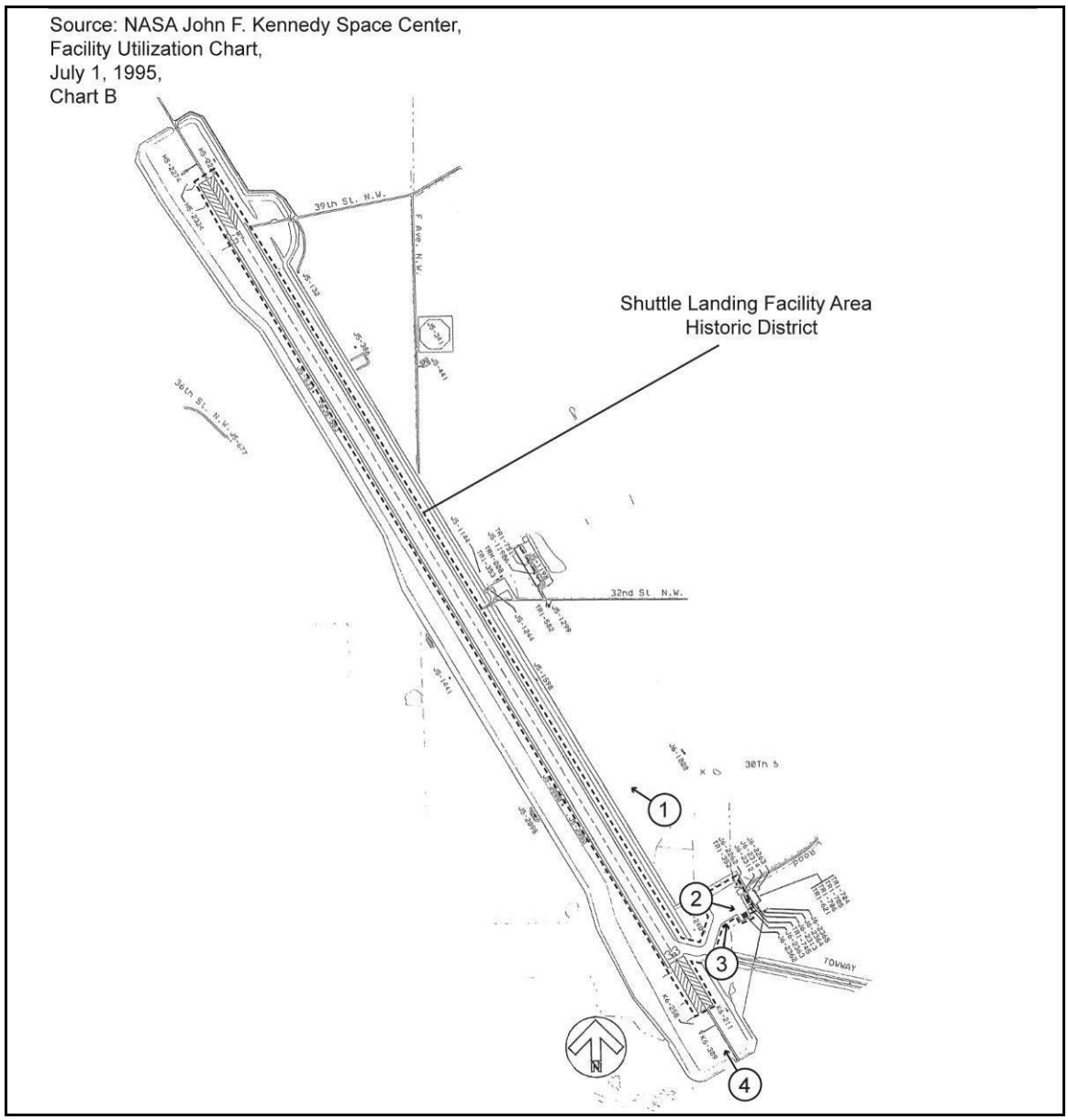
Period of Significance: The period of significance for the Shuttle Landing Facility is within the context of the U.S. Space Shuttle Program (1969-2010). The three individually eligible and contributing resources within the historic district were constructed between 1974 and 1978.

Boundary Description: The SLF Area Historic District is located in the northwest section of KSC, to the west of Kennedy Parkway North. It includes three individually NRHP-eligible properties: the SLF Runway, the Landing Aids Control Building (LACB), and the Mate Demate Device (MDD). The boundary of the historic district is contiguous with the footprints of the three contributing resources.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Barbara Naylor, (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Shuttle Landing Facility (SLF) Area Historic District



3.3.4 Orbiter Processing Historic District

Statement of Significance: The Orbiter Processing Historic District is considered eligible for listing in the NRHP in the context of the U.S. Space Shuttle Program under Criteria A and C in the areas of Space Exploration and Engineering, respectively. Because it has achieved exceptional significance within the past 50 years, Criteria Consideration G applies. The Orbiter Processing Historic District contains NASA's only facilities designed and built exclusively to support pre-flight and post-landing processing of the Space Shuttle orbiter. The historic district includes three individually NRHP-eligible properties. The design and method of construction of the Orbiter Processing Facility (OPF) and OPF-3 clearly embody the specific requirements of the Space Shuttle Program. Both the Space Shuttle Main Engine Processing Facility (SSMEPF) and the Thermal Protection System Facility (TPSF) were uniquely designed and built to improve the process flow of the inspection and refurbishment of the Space Shuttle Main Engines (SSMEs) prior to and following each mission, as well as Thermal Protection System (TPS) manufacture and installation.

Period of Significance: The period of significance for the Orbiter Processing Historic District is within the context of the U.S. Space Shuttle Program. The three individually eligible and contributing resources within the historic district were constructed between 1977 and 1998. In 1977, the OPF was constructed exclusively to prepare the Space Shuttle orbiter for flight. OPF High Bay 3, originally built in 1987 as the Orbiter Modification and Refurbishment Facility (OMRF), was converted to an OPF in 1989-1991. It currently supports processing of the Orbiter *Discovery*. In 1996-1998, the SSMEPF was added to provide the capabilities for post-flight inspections and maintenance and functional check-out of all engine systems prior to installation in the orbiters. The TPSF was built in 1988 specifically to manufacture TPS materials for use in the Space Shuttle.

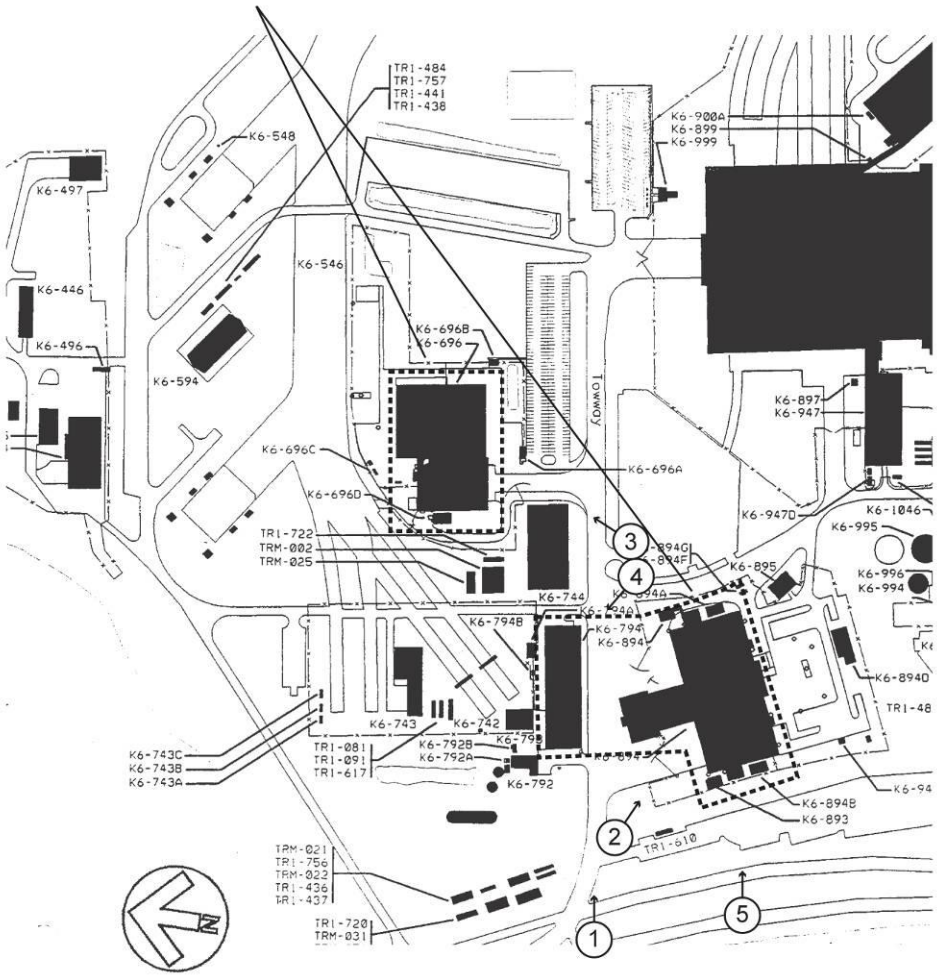
Boundary Description: The boundary of the historic district is contiguous with the footprints of the three contributing resources: the OPF, the OPF High Bay 3 (which includes the SSMEPF), and the TPSF.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Barbara Naylor (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Orbiter Processing Historic District

Source: NASA John F. Kennedy Space Center,
Facility Utilization Chart,
July 1, 1995,
Chart F



3.3.5 Solid Rocket Booster (SRB) Disassembly and Refurbishment Complex Historic District (Under Review)

Statement of Significance: The Solid Rocket Booster (SRB) Disassembly and Refurbishment Complex Historic District is considered eligible for listing in the NRHP in the context of the U.S. Space Shuttle Program under Criterion A in the area of Space Exploration. Because it has achieved exceptional significance within the past 50 years, Criteria Consideration G applies. Most of the structures within the historic district were specifically designed for processing SRBs, from pre-launch manufacture and assembly to post-launch recovery, disassembly, cleaning and refurbishment in preparation for their next use. The facilities that constitute the historic district are functionally related as processing facilities. The historic district is also essential to the reusability of essential Space Shuttle components. There are two individually eligible and 10 contributing resources for the district. The SRB Disassembly and Refurbishment Complex Historic District maintains a high level of integrity with regards to location, design, setting, materials, workmanship, feeling, and association.

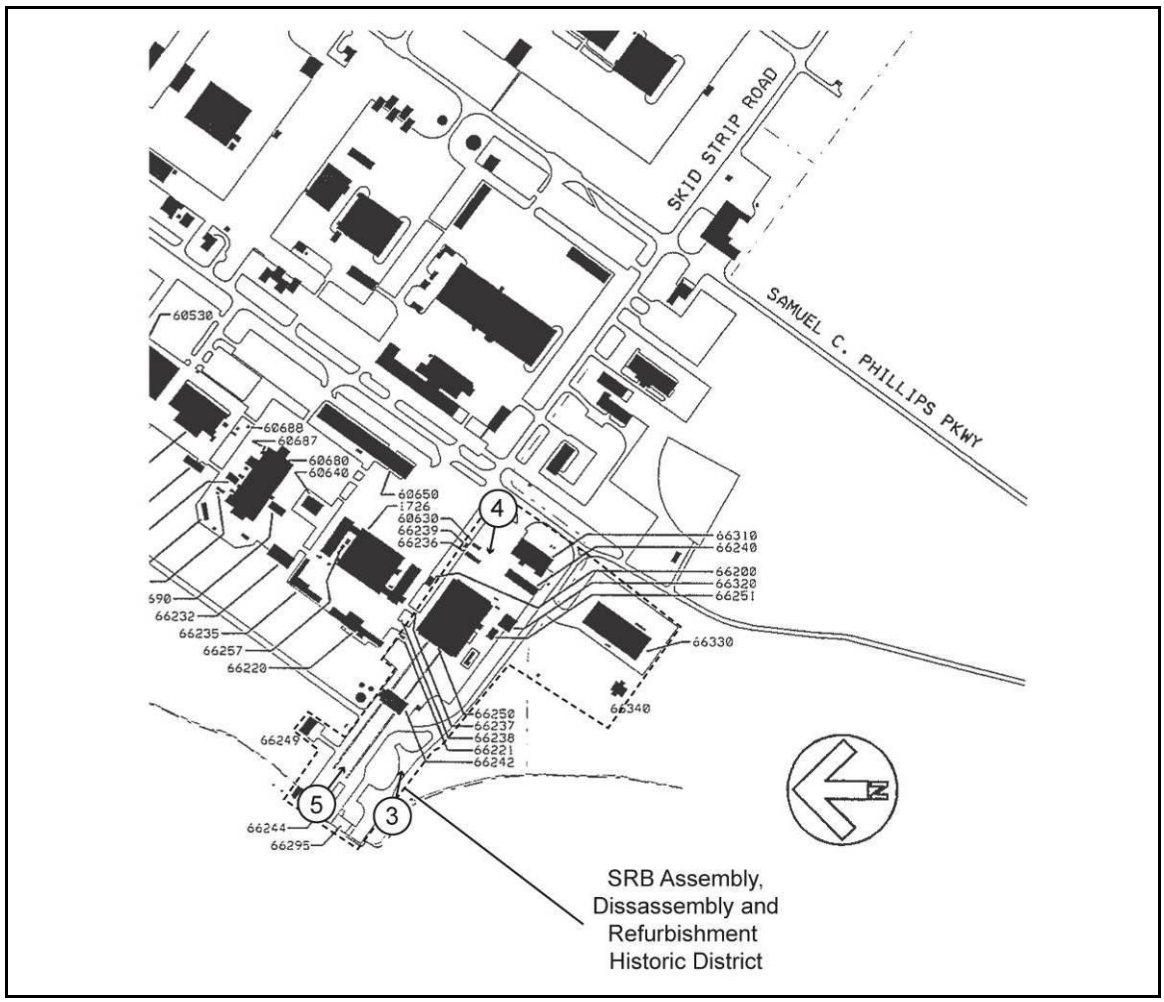
Period of Significance: The period of significance for the SRB Disassembly and Refurbishment Complex Historic District is within the context of the U.S. Space Shuttle Program. Hangar AF was originally built by the Paul Smith Construction Company, and transformed into the SRB Recovery and Disassembly Facility between 1977 and 1978. Like the High Pressure Gas Facility, Hangar AF was originally built to support Project Mercury and the Apollo Program. The other seven contributing resources were built between 1979 and 1992 specifically to support the Space Shuttle Program.

Boundary Description: The district boundaries are defined as the edges of the concrete hardscape that encompasses the Hangar AF/SRB Disassembly Complex area. The boundaries include all necessary structures and components historically required for its functions. The two individually eligible historic properties are the Rotation/Processing Building and the Manufacturing Building.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Barbara Naylor (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Solid Rocket Booster (SRB) Disassembly and Refurbishment Complex Historic District



3.3.6 Hypergolic Maintenance and Checkout Area (HMCA) Historic District

Statement of Significance: The HMCA Historic District is considered eligible for listing in the NRHP in the context of the U.S. Space Shuttle Program Criterion A in the area of Space Exploration. Because it has achieved exceptional significance within the past 50 years, Criteria Consideration G applies. It is a one-of-a-kind facility used for processing the Orbital Maneuvering System (OMS) pods, with the incorporated Reaction Control System (RCS), both of which use the hypergolic fuels monomethyl hydrazine (MMH) and nitrogen tetroxide, which explode on contact. There is one individually eligible historic property and one contributing resource to the district. The HMCA Historic District is in good condition and maintains integrity of location, design, setting, materials, workmanship, feeling, and association.

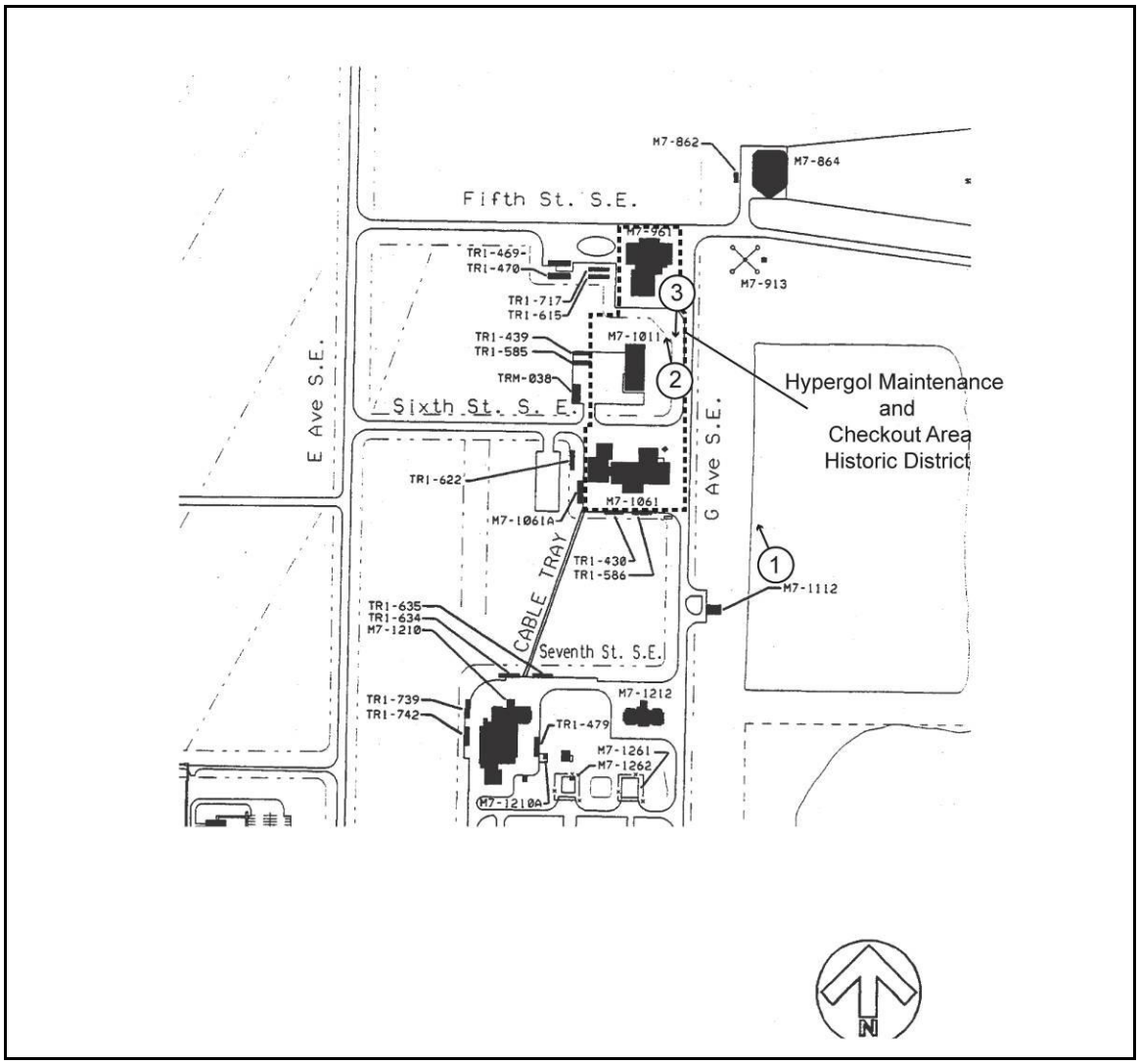
Period of Significance: The period of significance for the HMCA Historic District is within the context of the U.S. Space Shuttle Program. The HMCA Historic District was established as a group of facilities for hazardous materials testing during the Apollo Program. The complex was originally designed in 1963 and constructed in 1964. The interiors of the HMCA facilities were remodeled in 1976 to support the Space Shuttle.

Boundary Description: The HMCA Historic District is located within the KSC Industrial Area. The boundary of the district runs from the footprint of the Hypergol Module Processing (HMP) North building, which is the individually eligible historic property, at the north end to the footprint of the Hypergol Support Building (HSB) at the south, which is the resource that contributes to the historic district.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Barbara Naylor (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): KSC is in the process of negotiating a PA for the management of historic resources.

Kennedy Space Center, Florida
Boundary Map of Hypergolic Maintenance and Checkout Area (HMCA) Historic District



3.4 LANGLEY RESEARCH CENTER, VIRGINIA

3.4.1 NASA Langley Historic District (Under Review)

Statement of Significance: NASA LaRC, the successor of National Advisory Committee for Aeronautics' (NACA) Langley Memorial Aeronautical Laboratory and the Langley Aeronautical Laboratory, was the nation's first civilian aeronautics laboratory and played a principal role in the American aerospace story. From its beginnings in 1917, LaRC has examined complex issues associated with flight and space travel. Collaborative research has led to significant advances in American aeronautical and space research and technology.

A survey has identified a potential historic district in both the East Areas and West Areas that illustrates the major contributions and advances made by NASA researchers in the fields of aeronautics and space flight. The district is potentially eligible for listing in the National Register under Criterion A and C because of major contributions these facilities made to aeronautics and space research and testing. The district is potentially significant at the national level in the areas of science, engineering, military, defense communication, and transportation. The Lunar Lander Research Facility, constructed in 1965, is considered individually eligible for listing in the National Register as a National Historic Landmark (NHL).

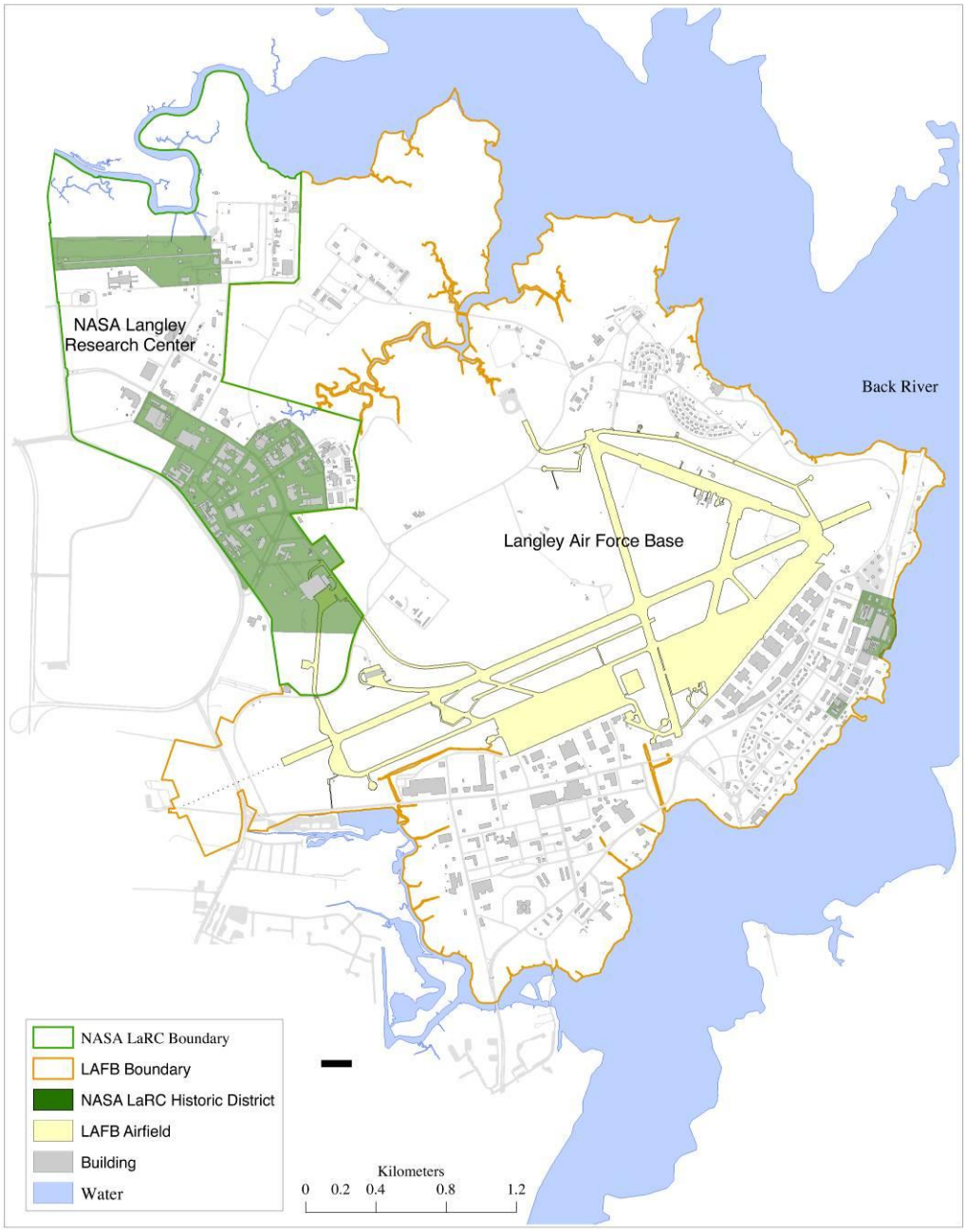
Period of Significance: The proposed period of significance for the NASA LaRC historic district encompasses the period from 1921 until 1962.

Boundary Justification: The buildings and structures included within the proposed boundaries of the proposed NASA LaRC Historic District correspond to the perimeters of four discontiguous areas that include the existing facilities established between 1921 and 1962 by the NACA and NASA.

List of Contributing and Non-Contributing Buildings/Structures: Please contact the Center HPO, Rodney Harris (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): The HPO is in the process of negotiating a PA for the historic district.

Langley Research Center, Virginia
Boundary Map of NASA Langley Historic District



NASA Langley Research Center and Langley Air Force Base
Property and Historic District Boundaries

3.5 SANTA SUSANA FIELD LABORATORY (SSFL), CALIFORNIA

The following three districts located at the SSFL have been identified through an eligibility survey conducted by Marshall Space Flight Center (MSFC), Alabama, who manages the facility. The survey report is currently under review by the California SHPO.

3.5.1 Alfa Test Area (ATA) Historic District

Statement of Significance: The Alfa Test Area (ATA) Historic District is considered eligible for listing in the NRHP in the contexts of the Cold War (Military) and Space Exploration, under Criteria A and C. Under Criterion A, the ATA Historic District is considered eligible for its underlying associations with multiple static engine tests run between 1955 and 1991, including tests for developmental Atlas Intercontinental Ballistic Missile (ICBM) engines (1950s), Navaho cruise missile engines (1950s), Thor and Jupiter Intermediate-Range Ballistic Missile (IRBM) engines (1950s), Thor engines for space vehicle boosters (1960s and 1970s), Atlas engines for space vehicle boosters (late 1960s forward), and RS-27 (uprated Thor) engines for the Delta space vehicle (early 1970s forward). Under Criterion C, the ATA Historic District is considered eligible for the design and engineering of the test site, inclusive of the test stands and blockhouse, the associated ancillary buildings and structures (both contributing and non-contributing to the district), and that portion of the natural landscape integrated into the man-made complex. The design and engineering of the Alfa site is representative of a static rocket engine test site of the late 1940s and early 1950s, and reflects site planning and design tenets adapted from late World War II Germany.

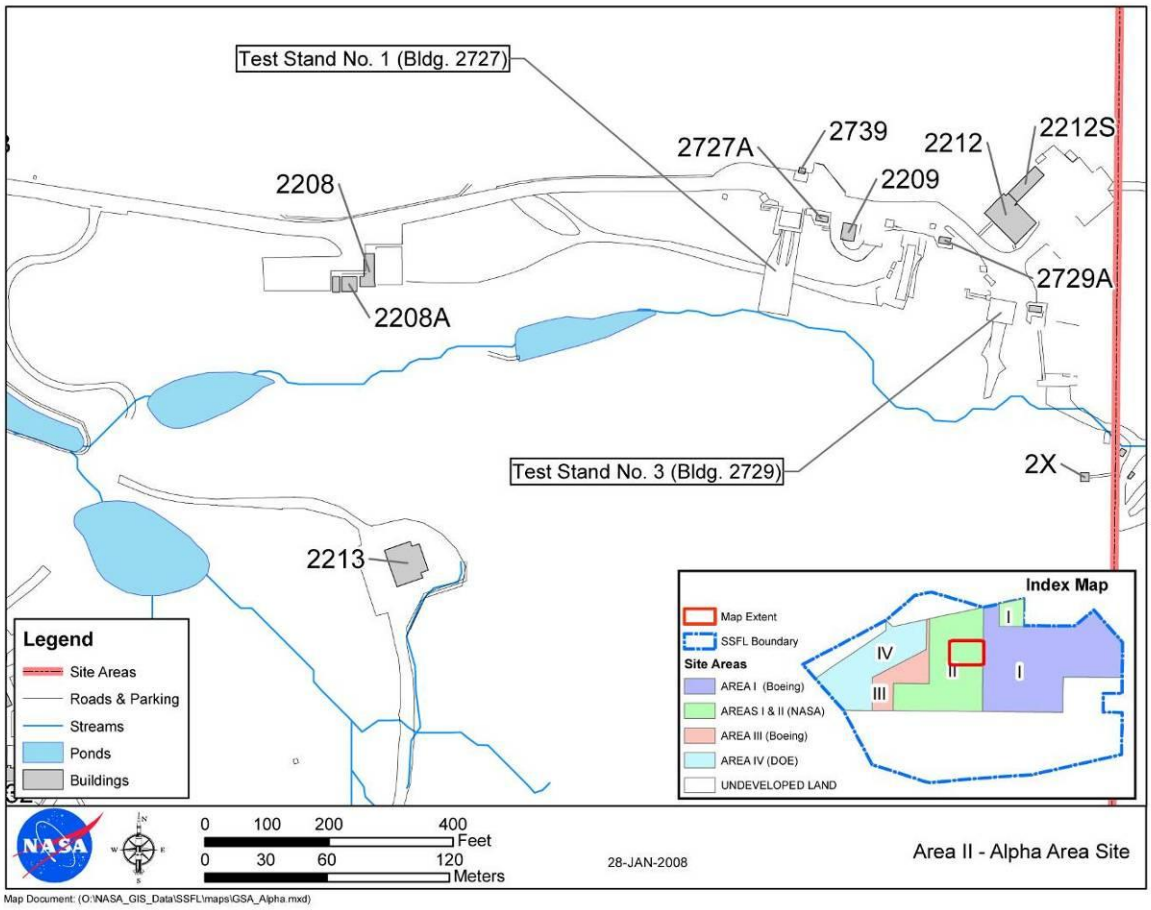
Period of Significance: The period of significance is defined as 1954, the date of design, through 1991, which reflects the formal conclusion of the sustained conflict between the United States and the former Union of Soviet Socialist Republics (USSR).

Boundary Description/Justification: The boundary of the Alfa Test Area Historic District is in the shape of a pentagon. The boundaries include all primary and ancillary resources required for the operation of the test complex.

List of Contributing and Non-Contributing Buildings/Structures: Available upon request made to the MSFC HPO, Ralph Allen (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): Currently, there are no MOAs or PAs for the Santa Susana Field Laboratory historic districts.

Santa Susana Field Laboratory, California
Alfa Test Area (ATA) Historic District



3.5.2 Bravo Test Area (BTA) Historic District

Statement of Significance: The Bravo Test Area (BTA) Historic District is considered eligible for listing in the NRHP in the contexts of the Cold War (Military) and Space Exploration, under Criteria A and C. Under Criterion A, the BTA Historic District is considered eligible for its underlying associations with multiple static engine tests run between 1956 and 1991, including tests for Atlas ICBM thrust chambers (1950s and early 1960s), E-1 developmental thrust chambers (1950s), the RS-2 rocket sled pre-shipment to Holloman Air Force Base (1950s), F-1 thrust chambers, gas generators, heat exchangers, turbopumps, and components (after 1965), Lunar Module Rocket Engine assemblies (late 1960s), Atlas and Delta RS-27 vernier engines (1960s forward), Atlas sustainer turbopumps and booster engines (1970s forward), and Delta RS-27 turbopumps (1970s forward). Under Criterion C, the BTA Historic District is considered eligible for the design and engineering of the test site, inclusive of the test stands and blockhouse, the associated ancillary buildings and structures (both contributing and non-contributing to the district), and that portion of the natural landscape integrated into the man-made complex. The design and engineering of the Bravo site is representative of a static rocket engine test site of the late 1940s and early 1950s, and reflects site planning and design tenets adapted from late World War II Germany.

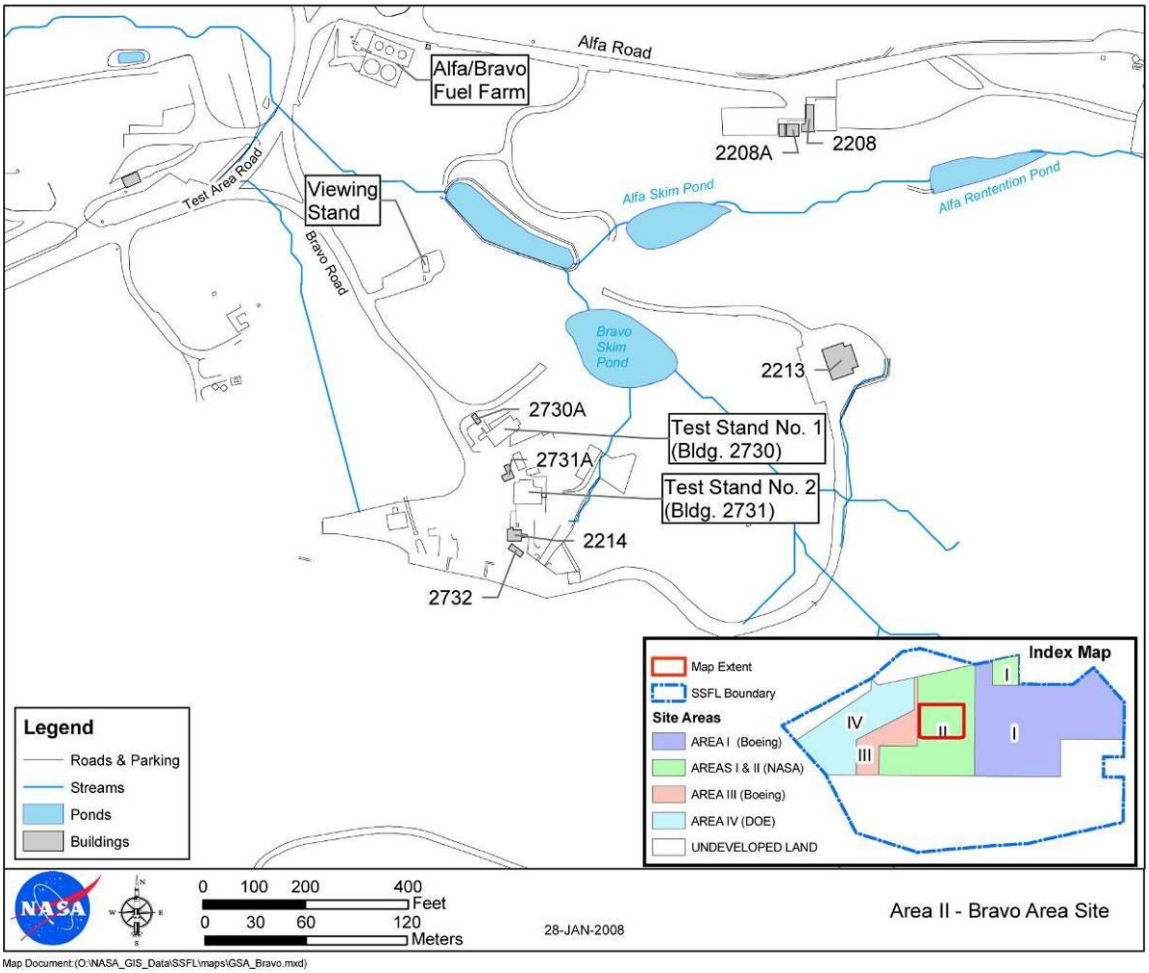
Period of Significance: The period of significance is defined as 1955, the date of design, through 1991, which reflects the formal conclusion of the sustained conflict between the United States and the former USSR.

Boundary Description/Justification: The boundary of the Bravo Test Area Historic District is in the shape of a quadrangle. The boundaries include all primary and ancillary resources required for the operation of the test complex.

List of Contributing and Non-Contributing Buildings/Structures: Available upon request made to the MSFC HPO, Ralph Allen (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): Currently, there are no MOAs or PAs for the Santa Susana Field Laboratory historic districts.

Santa Susana Field Laboratory, California
Bravo Test Area (BTA) Historic District



3.5.3 Coca Test Area (CTA) Historic District

Statement of Significance: The Coca Test Area (CTA) Historic District is considered eligible for listing in the NRHP in the contexts of the Cold War (Military) and Space Exploration, under Criteria A and C. Under Criterion A, the CTA Historic District is considered eligible for its underlying associations with multiple static engine tests run between 1956 and 1988, including tests for Atlas ICBM developmental engines (1950s), Atlas flight engines (hot environment run-ups, 1950s), Navaho cruise missile engines (1950s), the Saturn V J-2 engine cluster (1960s), the Saturn V second-stage vehicle (1960s), SSME developmental components (1970s), complete SSMEs (as of 1978), and the SSME turbopump (acceptance testing into 1988). Under Criterion C, the CTA Historic District is considered eligible for the design and engineering of the test site, inclusive of the test stands and blockhouse, the associated ancillary buildings and structures (both contributing and non-contributing to the district), and that portion of the natural landscape integrated into the man-made complex. The design and engineering of the Coca site is representative of a static rocket engine test site of two very different periods. The original Coca facilities of the middle 1950s, inclusive of the adaptation of the existing land forms, are representative of the late 1940s and early 1950s, and reflect site planning and design tenets adapted from late World War II Germany. The additions to the Coca site of 1962-1974 are representative of a standard static engine test complex of the early-middle 1960s and reflect the changing functions of the district.

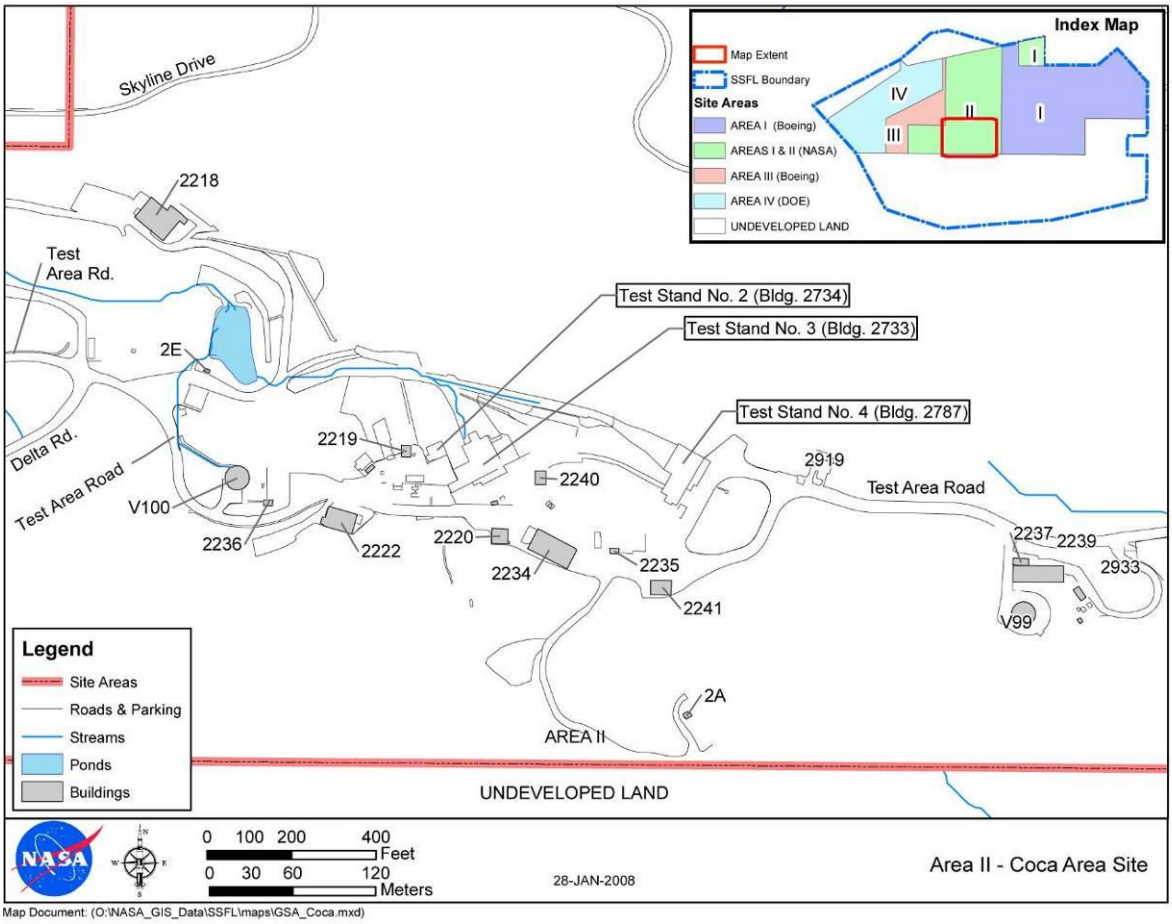
Period of Significance: The period of significance is defined as 1955, the date of design, through 1988, which reflects the formal conclusion of testing for the Space Shuttle program.

Boundary Description/Justification: The boundary of the Coca Test Area Historic District is in the shape of a quadrangle. The boundaries include all primary and ancillary resources required for the operation of the test complex.

List of Contributing and Non-Contributing Buildings/Structures: Available upon request made to the MSFC HPO, Ralph Allen (see page 1-2 for contact information).

Center-Specific Management Agreements (MOAs/PAs): Currently, there are no MOAs or PAs for the Santa Susana Field Laboratory historic districts.

Santa Susana Field Laboratory, California
Coca Test Area (CTA) Historic District



SECTION FOUR – Reference Documents

1. 36 CFR – Parks, Forests, and Public Property: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=7f5c482792696f4de94b0faa4ca58269;rgn=div5;view=text;node=36%3A1.0.1.1.29;idno=36;cc=ecfr

2. Advisory Council on Historic Preservation. Executive Order 13287: Section 3, ACHP/DOI Review Comments for the National Aeronautics and Space Administration. 20 October 2005.

3. Archaeological Consultants, Inc. Kennedy Space Center – Cultural Resource Management Plan. 2001.

4. Historic Resources Protection Plan (HRPP). NASA Ames Research Center. July 2002. http://historicproperties.arc.nasa.gov/histrecprotectplan.html

5. King, Thomas. *Cultural Resource – Laws & Practice*. Walnut Creek, AltaMira Press, 2004

6. NASA CRM Website: http://oim.hq.nasa.gov/oia/emd/crm.html

7. National Historic Preservation Act of 1966, as amended: http://www.achp.gov/NHPA.pdf

8. National Register Bulletin #15 – *How to Apply the National Register Criteria for Evaluation*: http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15.pdf

9. National Register Bulletin #16 – *How to Complete the National Register Nomination Form*: http://www.nps.gov/nr/publications/bulletins/nrb16a/

10. *National Register Bulletin #17 – Certification of State and Local Statutes and Historic Districts,* National Park Service (Out of Print)

11. National Register Bulletin #21 – *Establishing Boundaries for National Register Properties*: http://www.nps.gov/history/nr/publications/bulletins/boundaries/Boundaries.pdf

12. David S. Schuman (Office of General Counsel, NASA Headquarters) *Leveraging the Value of NASA's Real Property and Facilities Using Existing Legal Authorities*. May 2005.

13. *The Secretary of the Interior's Professional Qualification Standards:* *http://www.nps.gov/history/local-law/Prof_Qual_83.htm*

14. *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*: http://www.nps.gov/history/local-law/arch_stnds_0.htm

15. *The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act*: http://www.nps.gov/history/hps/fapa_110.htm

16. URS Group, Inc. *Third-Party Review of Space Shuttle Survey Report.* Report prepared for NASA – Environmental Management Division, 2007

17. The Washington Navy Yard Historic District: http://www.history.navy.mil/faqs/faq52-2.htm

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