

Strategies for Mitigating Adverse Effects at Wright-Patterson Air Force Base



**FINAL DRAFT
DECEMBER 2015**



Center for
Environmental
Management

MILITARY LANDS

Colorado State University

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ABSTRACT

The preservation of cultural resources is national policy, supported by Federal law, Federal regulations, DoD directives, Air Force Policy, and Air Force directives. Wright-Patterson Air Force Base (WPAFB) has demonstrated a good faith effort in complying with this national policy, and yet the challenges of maintaining historic buildings while still responding to the Mission needs of an active military base has resulted in the proposed demolition of fifty-five (55) National Register-eligible and fifty-seven (57) non-eligible historic buildings over the last 30-years. In fact, since the mid-1990s, Federal initiatives to reduce physical infrastructure and operating costs has resulted in demolition trends outpacing new construction by over 60%.

We recognize that as the general military mission has changed throughout history, so too has the military landscape, which necessarily involves cyclic periods of building and demolishing, acquiring and abandoning, reclaiming and expanding (Loechl, Batzli and Ensore n.d., 14). Throughout history, American military installations such as WPAFB, evolved through rapid periods of growth in response to crisis, which was then followed by periods of destruction and demobilization. Nevertheless, the Air Force is still obligated to consider and justly compensate for this cumulative loss of history in accordance with federal laws and regulations governing the protection of cultural resources.

The *Memorandum of Agreement Regarding FY14-15 Demolitions for Physical Plant Reduction at Wright-Patterson Air Force Base* stipulates that WPAFB shall “award a contract to develop a Mitigation Plan that identifies measures required to resolve the adverse effects of this undertaking and takes into account past, current, and future cumulative effects to the cultural resources of the base.” (United States Air Force and Ohio State Historic Preservation Office 2014). In accordance with the terms of this agreement, the Center for Environmental Management of Military Lands (CEMML) at Colorado State University reviewed the built history of WPAFB; evaluated all past agreement documents pertaining to adverse effects and their corresponding mitigation stipulations; prepared an objective evaluation of past, current, and future adverse effects to the built history of the base; assessed cumulative impacts to the integrity of listed and eligible Historic Districts, and prepared a series of mitigation strategies with preliminary cost estimates; a selection of which may be implemented to compensate for the cumulative loss of more than fifty (50) National Register-eligible historic buildings over the past 30-years, including the anticipated adverse effects of the *Demolitions for Physical Plant Reduction (“20/20 by 2020”)*, FY2014-FY2020.

To compensate for the future adverse effects of Physical Plant Reduction, also taking into account the cumulative loss of history, CEMML has prepared a menu of creative mitigation options, each of which presents a tangible public benefit, including the comprehensive evaluation of historic building data and GIS mapping; up-to-date geophysical surveys of archeological sites; identifying a suitable location to house and interpret significant architectural and engineering features, such as the 10-Foot Wind Tunnel, POW mural, Wright Field Mural, and other salvaged remnants; wayfinding improvements between Wright Memorial and Huffman Prairie Flying Field; education and outreach strategies including a website, calendar, self-guided and guided tours, reprinting *Splendid Vision* and *Home Field Advantage*, and a documentary film; as well as identifying partnership opportunities for the equally beneficial and cost-effective achievement of these and other mitigation strategies.

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ACRONYMS AND ABBREVIATIONS

AAF	Army Air Forces
ACHP	Advisory Council on Historic Preservation
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AFRC	Air Force Reserve Command
ANG	Air National Guard
APE	Area of Potential Effect
ASD	Aeronautical Systems Division
BQ	Brick Quarters Historic District
CCC	Civilian Conservation Corps
CEA	Cumulative Effects Analysis
CEQ	Council on Environmental Quality
CEMML	Center for Environmental Management of Military Lands
CLR	Cultural Landscape Report
CWA	Civil Works Administration
EPA	Environmental Protection Agency
FAD	Fairfield Air Depot Historic District
HABS/HAER	Historic American Building Survey / Historic American Engineering Record
HPFFIC	Huffman Prairie Flying Field Interpretive Center
ICRMP	Integrated Cultural Resources Management Plan
MAJCOM	Air Force Major Command
MHPI	Air Forces Military Housing Privatization Initiative
MILCON	Military Construction
MOA	Memorandum of Agreement
NCSHPO	National Conference of State Historic Preservation Officers
NAHA	National Aviation Heritage Alliance
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NR	National Register of Historic Places
NPS	National Park Service
OHI	Ohio Historic Inventory
PA	Programmatic Agreement
PWA	Public Works Administration
SAC	Strategic Air Command
SHPO	State Historic Preservation Office
USAFM	National Museum of the United States Air Force
WF	Wright Field Historic District
WPA	Works Progress Administration
WPAFB	Wright-Patterson Air Force Base
WWASD	Wilbur Wright Field Air Service Depot

INTRODUCTION

In compliance with the “20/20 by 2020” Air Force initiative, Wright-Patterson Air Force Base (WPAFB) initiated consultation in 2014 with the Ohio State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) regarding the potential adverse effects of demolishing buildings in order to reduce 20% of the base’s physical footprint. This Plant Reduction Initiative for WPAFB includes a total of 53 buildings (totaling more than 703,000 square feet) (Barder 2014), 10 of which are non-historic buildings less than 50-years of age, 15 were previously determined ineligible for the National Register, 13 are eligible for the National Register, 3 are non-contributing buildings located in a Historic District, and the remaining 12 are yet to be evaluated (United States Air Force and Ohio State Historic Preservation Office 2014). Stipulations developed for the 2014 *Draft Memorandum of Agreement Regarding FY14-15 Demolitions for Physical Plan Reduction at Wright-Patterson Air Force Base* identified the need for a Mitigation Plan to be prepared by “an objective outside contractor to identify and prioritize potential mitigation for ongoing adverse effects ... to take into account past, current, and future cumulative effects” (United States Air Force and Ohio State Historic Preservation Office 2014 Draft).

In accordance with the terms of the MOA, the Center for Environmental Management of Military Lands (CEMML) at Colorado State University was retained to prepare a mitigation plan, providing a comprehensive review of past, current, and future (proposed) initiatives, projects, and agreement documents addressing adverse effects to the integrity of the Wright Field and Fairfield Air Depot Historic Districts as well as the overarching built history of Wright-Patterson Air Force Base. A systematic evaluation of past cumulative impacts had not previously been conducted, which leaves decision-makers at a distinct disadvantage as they attempt to evaluate the potential adverse effects of future undertakings, including “20/20 by 2020.” In this report, we comprehensively evaluate cumulative impacts; provide an annotated account of past and current adverse effects and agreement documents; and the outline a menu of mitigation strategies, which may be used in part or whole to compensate for the adverse effect future Physical Plant Reduction demolitions will have on WPAFB’s built history.

National Historic Preservation Act (NHPA) states that it is the policy of the Federal Government to foster productive harmony between historic resources and the modern world, provide for stewardship of federally owned resources, and encourage the preservation and utilization of usable elements of the historic built environment (54 USC §300101. Policy). And thus, plans outlining strategies for the mitigation of adverse effects must therefore foster harmony between historic resources and the modern world (mission), enhance the agency’s stewardship of those resources, and encourage utilization of remaining historic elements. And so, this Mitigation Plan outlines creative mitigation opportunities with the specific objective of fulfilling WPAFB’s obligations under this policy.

“The historic buildings that we have on our facilities reflect the history of our country and the Air Force. They represent the men and women that have served and given their lives for freedom. In an age of change, it is important what we preserve our historic buildings and districts, while maintaining their usefulness to fulfill our mission in the 21st century...”

-Sheila Widnall, Secretary of the Air Force, 17 April 1995 (Weitze 2003, Vol. I, vii)

This report on *Strategies for Mitigating Adverse Effects at Wright-Patterson Air Force Base* provides a menu of options to compensate for the loss of history, both its tangibles and intangibles, in a creative way that incorporates a unique blend of documentation, salvage, and interpretation; outreach and education; as well as partnering with entities that possess the experiences and resources necessary to provide unique ways for preserving not only the physical history, but also the heritage and legacy of Wright-Patterson Air Force Base.

Federal Policies Pertinent to Historic Property Mitigation

DoD Directive 4710.1: DoD Components are encouraged to enter into memoranda of agreement to assist in meeting the requirements of NHPA Section 106.

DoD Directive 4715.16: Consider creative and alternative strategies to avoid, minimize, or mitigation adverse effects to cultural resources.

Cultural Resources Management Playbook

1.4.1.15: The CRM, as the installation representative, documents and files correspondence from SHPO/THPO and other consulting parties regarding attempts to avoid or minimize adverse effects. The CRM/IST and SHPO/THPO/Consulting Parties must consult until a plan is developed to fully mitigate the adverse effects of the revised undertaking

1.4.1.19 The Proponent is responsible for funding any mitigation actions developed in planning the activity. The CRM must ensure the agreement is honored, and update the installation plans, including the ICRMP with all MOA/PA information.

National Historic Preservation Act (36 CFR § 800.6(b)): Agency official shall consult with SHPO to seek ways to avoid, minimize or mitigate adverse effects.

AFI 32-7065:

2.9.8.1. Installation CRM will identify significant cultural resources, assess potential impacts, and reduce, avoid, or mitigation effects. Prepare, coordinate, and implement MOA/PA.

2.9.9.2. Project proponents fund mitigation measure for adverse effects to historic properties.

WPAFB ICRMP, 2011 (Labat Environmental Incorporated 2011): The purpose of consultation is to formulate the means of avoiding, reducing, or mitigating the adverse effect of the undertaking on historic properties while taking into account the needs of WPAFB and the concerns of the other consulting parties. The consultation process emphasizes alternatives for meeting the needs of WPAFB that will tend to reduce or eliminate adverse effects. Actions that reduce or compensate for the damaging effects of an undertaking are referred to as “mitigation.”

REQUIRED COMPENSATORY MITIGATION

A finding of adverse effect results when a federally-funded project (referred to as an “undertaking”) alters the characteristics of an historic property that qualify it for inclusion in the National Register of Historic Places (36 CFR §800.5(a)). This regulation goes on to explain that a federal agency shall consider:

“the effects to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property’s eligibility... Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be further removed in distance, or be cumulative.” (36 CFR §800.5(a)(1))

Authorized by the National Historic Preservation Act of 1966, **National Register of Historic Places** is the official list of the Nation’s historic places worthy of preservation.

Examples of adverse effects include the destruction, damage, or alteration of historic properties; isolation or alteration of the property’s setting; introducing elements that are out of character with the property or its setting; and demolition by neglect. For instance, well-meaning attempts to extend the usable life of a temporary WWII building by adding permanent exterior surfaces, such as stucco and EIFS, results in a determination of adverse effect because it irreversibly alters the physical characteristics of that building. With a finding of adverse effect, efforts must then be implemented to mitigate those adverse effects to the historic property; the surrounding historic district in which it is contributing; and to a certain extent, the larger community to which that historic property belongs (36 CFR §800.5(a)(2)).

Under NHPA, federal agencies are obligated to consult with SHPO and other parties to resolve adverse effects, thus considering a sequence of steps to avoid, minimize, or mitigate the effect. When consulting to resolve an adverse effect, agencies should first try and avoid the impact altogether, or attempt to minimize the impact, by lessening the degree or magnitude of the action. If those do not present practicable options, then an agency should consider options to rectify the impact by rehabbing or restoring a property in accordance with the Secretary of the Interior Standards. If and only if those previous options are first considered and then rejected, shall an agency attempt to resolve the adverse effect by justly compensating for the loss of historic integrity. Despite NHPA guidance, in the 1970s and 1980s, mitigation became synonymous with HABS/HAER documentation, and many federal agencies simply employed this as the go-to strategy for resolving adverse effects. Only in recent years are Cultural Resource Management practitioners inside and outside DoD realizing, however, that merely documenting a property and

HABS/HAER is a division of the National Park Service established in 1933 to provide a permanent record of America’s most important historic sites and large-scale objects. These programs constitute the nation’s largest archive of architectural, engineering, and landscape documentation, all of which is stored in the Prints and Photographs Division of the Library of Congress. HABS/HAER establishes baseline documentation standards for measured drawings, archival photographs, and written reports.

filing that information away for posterity and the occasional architect, is not true “compensatory mitigation,” because architectural drawings cannot truly “compensate for the impact by replacing or providing substitute resources or environments.” Instead, the guiding principles of NHPA Section 106 Mitigation stipulate that the value (not necessarily monetary value) of the proposed mitigation should provide a “public benefit” that is greater or equal to the total value lost when an historic property is intentionally or inadvertently destroyed. In an attempt to define the “value” or “public benefit” of cultural heritage, economist David Throsby notes that historic buildings embody not just economic value, “but also *cultural* value, some intrinsic or assigned quality which stands apart from the building’s financial worth and which reflects some evaluation of its cultural significance” (Thorsby 2006, 40). AFI 32-7065 also attempts to capture this “public benefit” concept by obligating AFCEC/ANG/AFRC management to develop public awareness activities and programs regarding Section 106 undertakings that consider the base community as well as the general public (U.S. Department of the Air Force 2014, 3.4.9 Public Awareness). In discussing the public benefits of mitigation at the DoD Cultural Resources Workshop in 2006, W. Ray Luce recommended that mitigation always include a community outreach and/or education component. In developing mitigation plans, Luce challenges us to ask how we can ensure that mitigation will reach the largest audience, provide real worth for the American people, and especially in cases of demolition, increase the “value” of the remaining historic resources (Luce 2006).

The **public benefit** of historic preservation is defined by Congress as “national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States” (16 USC §461).

“In the face of a rapidly changing civilization in which brilliant successes are accompanied by grave perils, people today have an instinctive feeling for the value of ... heritage. This heritage should be passed onto future generations in its authentic state and in all its variety as an essential part of the memory of the human race” (Worthing and Bond 2008, 49-50).

Mitigation is defined in AFI 32-7065 as “Actions or treatments that lessen, eliminate, or compensate for the adverse effects of undertakings to historic properties.” In addition, AFI 32-7065 encourages ‘Creative’ or ‘Alternative’ mitigation, which can include preserving, protecting, studying, or restoring non-affected properties substituted for the affected property. Creative mitigation may involve publishing detailed research, or publically-oriented documents on the archeology or history of a region or locale, or creating a scale model or other representation of the affected property for a park or museum” (U.S. Department of the Air Force 2014, Terms).

Creative Mitigation is a non-standard, innovative approach to resolving adverse effects. Creative mitigation can result in better project and historic preservation outcomes, and has greater public benefit than standard approaches to mitigation (Center for Environmental Excellence by AASHTO 2015)

In recognizing the multi-faceted benefits of creative mitigation, many federal agencies are now promoting a variety of strategies to compensate for adverse effects. In fact, the Air Force Cultural Resources Management Playbook identifies several creative mitigation strategies for consideration:

- “• Supporting creation of interpretive displays, travelling exhibits, or local or on-installation museum exhibits depicting the larger context of the historic property
- Supporting research and development of a high quality historic and or photographic book for publishing and widespread distribution (example: Air Force Academy history and photography book)
- Carefully reconstructing and preserving one or two of a number of historic buildings, allowing the remainder to be modernized, upgraded, or otherwise modified (example: F.E. Warren Air Force Base [AFB] historic housing lead-based paint removal and window, door, and porch reconstruction)
- Creating a full sized representative model using minimal and long lasting materials in the location of an historic property (example: Salt Lake City’s minimalist steel frame Pioneer Meeting House over the entrance to the Zion pedestrian underpass below State Street)
- Supporting research and development of a regional archaeological model based on existing data in place of data recovery at a specific redundant site type
- Allowing local university researchers to fully excavate an important archaeological site that is not threatened by any undertaking, using archaeological field school staff and students, along with installation volunteers; in effect, substituting a rare type of archaeological site for the more redundant site that will suffer adverse effects
- Carefully dismantling, and rebuilding elsewhere, perhaps in an off-installation historical park or recreation area, an important building scheduled for demolition.” (U.S. Department of the Air Force 2014, 1.4.1.15)

At the 2006 DoD Cultural Resources Workshop, “creative mitigation” was discussed at length with DoD CRM personnel expressing the need to identify various alternative mitigation strategies that might be available to them, and then generating a DoD-wide (or at least Service Branch-wide) set of mitigation alternative templates. The resulting *Cultural Resources Public Outreach and Interpretation Source Book* was prepared by Chad Blackwell at HDR, Inc. in 2010, ranking several creative mitigation examples (Blackwell 2010). A summary of those findings is included in **Appendix C**.

WPAFB is to be commended for performing the following mitigation strategies, including HABS/HAER documentation, archeological surveys, National Register nominations, rehab and restoration efforts, resource management plans, and maintaining partnerships with the National Park Service (NPS), National Aviation Heritage Alliance (NAHA), and the Ohio State Historic Preservation Office (SHPO).

WPAFB Cultural Resource Successes

- HABS/HAER documentation for the majority of WPAFB historic buildings and structures
- 100% archeological survey of 8,145 acres
- Architectural Design Guidelines for Wright-Patterson AFB prepared by Hardlines Design Company in 2011
- Air Force's General Thomas D. White Award for Outstanding Cultural Resources Management Program in 2011
- Ohio State Historic Preservation Office Award of Merit for "Outstanding Contributions to Historic Preservation" in 2010
- Implementing a long-term *Maintenance Plan for Historic Buildings* in 2009
- Partnering with the National Park Service in developing the Dayton Aviation Heritage National Historic Park in 1997 and constructing the Huffman Prairie Flying Field Interpretive Center in 2002
- In 1999, Janet E. Ferguson, received the Cultural Resources Management, Individual/Team Award for her efforts to preserve many significant historical facilities at Wright-Patterson
- Establishment of a Cultural Resources Management Plan in 1999 and subsequent Integrated Cultural Resources Management Plan (2011 recent edition)
- Wright Memorial restoration in 1998
- In 1991-92, WPAFB Office of Environmental Management and Aeronautical Systems Center sponsored HAER's completion of *Engineering of Flight: Aeronautical Engineering Facilities of Area B*
- In 1991, extensive studies were completed to evaluate development impacts on historic properties as a result of the ASD for Tomorrow

Since the 1990s, WPAFB and the Ohio State Historic Preservation Office (SHPO) consulted on a compounding number of adverse effect determinations in response to various National and Local directives. As is detailed in the **Project History** section of this report, the results of these consultations produced a laudable and comprehensive library of HABS/HAER documents covering the majority of historic properties at WPAFB. Given that most of the historically significant buildings, sites, and districts at WPAFB have already received this level of documentation, this strategy is no longer a viable mitigation option to resolve future adverse effects.

WPAFB is also successfully implementing an informal "Mitigation Banking" program for salvaged building remnants. This term is most often used in reference to mitigation for damage or destruction of natural resources, commonly wetlands; yet salvaging architectural materials, decorative elements, and notable engineering equipment or machines is an example of successful creative mitigation.

Presently, the history of WPAFB is not accessible to the general public in a meaningful and user-friendly way. The wpafb.af.mil/library website features three documents on the history of WPAFB available for download,¹ and while this level of information is certainly adequate to meets the needs of those requesting general base information, the rich and varied history of WPAFB comprises more than these three documents. As the prevailing approach to compensatory mitigation extends beyond the boundaries of a particular property or historic district to include mitigation alternatives encompassing a public benefit for the larger community or region, particularly with regard to nationally significant history, it's important to ensure that the proposed mitigation strategies provide real worth and reach to the largest audience. In fact, there is an unmet need on behalf of the 21st century public, students, base personnel, military and aviation historians, and the occasional armchair explorer to see and experience base history in a meaningful and interactive way. "Visitors to these historic sites inherently arrive with a latent desire to learn, craving greater depth of understanding, and seeking interaction, entertainment, dialogue, engagement, and motivation" (Oppengaard and Shine 2014, 123). Use of new information technology could provide WPAFB with an opportunity to connect with the larger networked world. In order to satisfy these unmet needs and comply with 16 USC §461 and AFI 32-7065 (see above), WPAFB should strive to incorporate a tangible public benefit as part of all future mitigation strategies, and it is important to mention that there is a vast array of interpretive mitigation alternatives and media outlets available for public outreach that incur little to no long-term O&M investment. In keeping with these guidelines, a menu of options for creative mitigation is proposed herein, outlining a series of strategies for fulfilling the mitigation requirements of the *Memorandum of Agreement Regarding the Physical Plant Reduction Initiative for FY14-FY20* pursuant to 36 CFR §800.6(a).

¹ Documents available for download at www.wpafb.af.mil/library include a 72-page .pdf historical summary of Wright-Patterson Air Force Base: The First Century; 18-page .pdf containing Chapter 1 of Splendid Vision, Unswerving Purpose; and 46-page .pdf of Chapter 1 from Home Field Advantage. These books are no longer available for purchase at the GPO website.

MITIGATION RECOMMENDATIONS

This Mitigation Plan shall serve as a primary tool for fulfillment of the Mitigation Stipulations under the *PA Regarding Demolitions for Physical Plant Reduction*. The following creative mitigation options provide for the continued stewardship of historic resources balanced against the needs of a modern military installation. These mitigation options are proposed in response to the cumulative effects of demolishing more than 50 historic buildings over the last 30-years including those earmarked for future demolition under the most recent “20/20 by 2020” Plant Reduction Initiative. The following recommendations employ a menu of options outlining a justifiable strategy to compensate for the loss of history while also identifying an attainable and economical approach for each strategy to incorporate a tangible public benefit.



Documentation Options

- **I.A. Comprehensive evaluation of historic building data & update OHI forms**
- **I.B. Historical mapping projects**
- **I.C. Re-Evaluate Potential Eligibility of Strategic Air Command Historic District**
- **I.D. Multi-instrument Geophysical surveys**
- **I.E. Electronic database development**



Historical Interpretation Options

- **II.A. Interpretive Center**
 - II.A.1: 5-Foot Wind Tunnel
 - II.A.2: POW Mural
 - II.A.3: Wright Field Mural
- **II.B. Heritage Display Garden**
- **II.C. Visual transportation link: Wright Memorial to Huffman Prairie**



Education, Outreach, and Partnerships

- **III.A. Education and Outreach**
 - III.A.1: WPAFB cultural resources website
 - III.A.2: Photo calendar
 - III.A.3: Base Tours
 - III.A.4: Self-Guided Heritage Tour
 - III.A.5: Documentary film on WPAFB History
 - III.A.6: Reprint Splendid Vision and Home Field Advantage
- **III.B. Partnerships**
 - III.B.1: 1B Gatehouse
 - III.B.2: 16B Gatehouse
 - III.B.3: Hooppole School House
 - III.B.4: Wright Field Taxiway

I. DOCUMENTATION MITIGATION OPTIONS

Objective

The management of cultural resources at WPAFB is mandated by AFI 32-7065, in which it states that the installation shall identify and evaluate archeological and historic properties, survey undeveloped land areas for archeological resources, and determine national register eligibility of identified cultural resources (U.S. Department of the Air Force 2014, 3.1.1 Inventory).

There is a great deal of documentary and photographic information on the history and development of WPAFB and its buildings, chronicled by an array of different inventories and surveys, National Register documents, OHI forms, multiple archeological surveys and inventories (published and unpublished), as well as a variety of historic building lists and files being used to capture and archive historical data and information. Given this vast array of historical data spread over multiple sources and documents, there is a remarkable need for re-evaluation and consolidation of said data into an electronic database and GIS mapping, the results of which will then be communicated to SHPO and shall aid relevant personnel in the continued management of base resources for Master Planning and MILCON. The review of available data should also encompass a reevaluation of National Register eligibility for Strategic Air Command facilities.

Strategies

A. COMPREHENSIVE EVALUATION OF HISTORIC BUILDING DATA AND UPDATE OHI FORMS:

In compliance with AFI 32-7065, a review of all available documentary materials on the significance, integrity, and historical status of existing buildings (not just those 50-years of age) and archeological sites needs to be completed at WPAFB, to be accompanied by a comprehensive update of Ohio Inventory Forms (OHI) for submittal to the Ohio SHPO for Designation Numbers, which will allow for an important consistency of recordkeeping between WPAFB and the SHPO so as to avoid any future miscommunications regarding the eligibility and/or ineligibility status of historic properties. Upon review of existing OHI forms and Historic Building Evaluations, it was determined that there are approximately 200 buildings whose OHI forms require updating and/or whose eligibility requires reevaluation. Additional guidance from the Ohio SHPO and ACHP advises WPAFB not to strictly abide by the “50-year rule,” but rather rank buildings according to their relative significance for evaluation; irrespective of their date of construction. As noted in the 1993 *Interim Guidance for Cold War Historic Properties*, the Air Force acknowledges that “experience shows that waiting 50 years before engaging in historic preservation activities would result in the loss of many historic resources” (Coming in from the Cold: Military Heritage in the Cold War 1995, 61-62). This mitigation strategy may be undertaken by student employees and/or contractors.

B. HISTORICAL MAPPING PROJECT: To augment these data efforts, a base-wide historical mapping project is also needed to graphically capture all previous buildings, sites, and structures using a variety of available historic maps as baseline data. The ability to graphically render past building campaigns (both permanent and temporary) shall aid future master planning efforts and MILCON. In discussing the availability of GIS data with WPAFB personnel, it was revealed that past building layers are not

archived and once buildings are demolished, they are entirely removed from the mapping rather than being saved under a separate demolished buildings database. This data gap should be rectified by initiating a new project to complete base-wide historical mapping. Some of the pertinent information needed to populate a GIS database is already captured in the Wright Field, Fairfield Air Depot, and Army Air Forces the Cultural Landscape Reports. A funding request for Historical Mapping is presently under review.

- C. **RE-EVALUATE POTENTIAL ELIGIBILITY OF STRATEGIC AIR COMMAND HISTORIC DISTRICT:** In 2008, Hardlines Design Company (HDC) conducted an evaluation of West Ramp Strategic Air Command facilities for potential National Register eligibility. At that time, the majority of SAC buildings had not yet reached 50-years of age and were therefore evaluated by HDC according to the standards of “exception significance” (National Register Criterion G), which innately requires a higher level of “importance” and integrity. Now that the SAC buildings are over 50-years old, they need to be reevaluated and the potential eligibility of a Historic District be reconsidered. It is further recommended that this work be undertaken by a contractor; ideally those whom completed the previous assessment.
- D. **MULTI-INSTRUMENT GEOPHYSICAL SURVEYS:** To further satisfy the requirements of AFI 32-7065 3.1.2 and enhance understanding of WPAFB resources, there is also a need for multi-instrument geophysical surveys of Huffman Prairie Flying Field, the Indian Mounds, and Osborn town site, all of which were previously surveyed, but not to their fullest degree using the latest technology. The resulting information will provide the necessary information to populate resource evaluations, and provide for the beneficial, long-term management and interpretation of WPAFB’s history. Given the specialty nature of these investigations, a contract shall be required to conduct these surveys.
- E. **ELECTRONIC DATABASE DEVELOPMENT:** The results of data gathering and analysis noted above, can then be used to populate a common electronic database of information on WPAFB’s built history over time, which will in turn inform all relevant base personnel in their decision-making and planning processes. This consolidated historical record will also be the foundation to which all other mitigation strategies may refer in the future for baseline data. This mitigation strategy may be undertaken by student employees or contractors.

II. HISTORICAL INTERPRETATION MITIGATION OPTIONS

Objective

Presently, Wright-Patterson Air Force Base lacks a dedicated facility where the rich and varied history of the base is preserved, protected, and interpreted to keep the story visible, accessible, and alive. A new publically-accessible facility would not only be a place to display remnants of WPAFB's history and educate visitors, but it would also be an ideal location to house salvaged architectural/engineering remnants and act as a clearinghouse for mitigation actions now and in the future.

It is important to note that the National Park Service's Huffman-Prairie Flying Field Interpretive Center (HPFFIC) focuses on the Wright Brothers and their research, development, and training at Huffman Prairie Flying Field. In fulfillment of this mission, the HPFFIC features exhibits on the achievements of the Wright Brothers at Huffman Prairie and the technology of flight, along with some of the more notable advancements in aviation technology developed at Wright-Patterson Air Force Base during the last half-century. Interpretive information specifically focusing on WPAFB includes a short video clip in the exhibit hall titled "Wings over Dayton," which summarizes the evolution of WPAFB. A longer 18-minute film on WPAFB history narrated by Carl Day, a national award-winning local broadcaster, also used to be available for screening in the theater, but it was discontinued when the film no longer played properly on upgraded videography equipment. For visitors seeking more in-depth information on WPAFB, full-color brochures featuring WPAFB's more notable historic buildings are also available.

Similarly, the National Museum of the United States Air Force (NMUSAF) maintains a nationally-focused mission, that "...researches, conserves, interprets and presents the Air Force's history, heritage and traditions, as well as today's mission to fly, fight and win..." (United States Air Force 2015). Therefore, NMUSAF purposefully focuses on the history and achievements of the Air Force as a whole, rather than the history of any one installation, WPAFB or otherwise. So as not to duplicate capabilities already fulfilled by the NMUSAF, it is recommended that the mission of a new WPAFB Heritage Center and/or Interpretive Center be purposefully limited to the history and development of WPAFB and the technological achievements of those most closely affiliated with WPAFB, including various units, organizations, tenants, etc.

Military museums of all types are "instrumental in preserving our Nation's heritage... [ideally] located in close proximity to military schools, complementing training and educational activities while inspiring our Nation's Service members" (Office of the Deputy Under Secretary of Defense 2009, 6). In accordance with AFI 65-601, base commanders "should employ judicious use of resources and funds for the establishment, management, operation, and maintenance of the supported USAFHP activities" (U.S. Department of the Air Force 2012, 4.27.2 Financing Air Force Field Museums...). More specifically, *Air Force Heritage Centers* are defined as appropriated fund entities housing permanent heritage activities open to military and civilian visitors (Department of the Air Force 2015, The United States Air Force Heritage Program 1.2.3).

Strategies

There is a plethora of documented history regarding the buildings, engineering feats, and notable people and events at WPAFB. In order to mitigate recent adverse effects to WPAFB's built history, it is time to bring that history to life in a tangible, yet approachable/accessible manner for a broader audience; including, but not limited to, Air Force personnel, civilian employees, visiting dignitaries and general public, as well as National Park visitors.

- A. **INTERPRETIVE CENTER ALTERNATIVES at Wright Memorial:** Given the nationally (and even internationally) significant history of WPAFB -- its role in the technological evolution of American military aviation, the creation of an independent US Air Force, and notable aeronautical contributions during World War II and the Cold War, as well as American forays into space -- there is a documented need and desire on behalf of the American public for a physical place where they can see and experience this history in a tangible, first-hand way, but this heritage is being eroded as changing missions and directives alter the built landscape of WPAFB. This fact, coupled with security concerns and challenges, dictate that a publically-accessible location with expanded exhibits focusing on Wright-Patterson AFB's built history needs to be identified, which can satisfy interpretive program requirements without compromising the safety and security of the base.

Because Wright Memorial is already a point of contact known to the visiting public and situated outside the secure perimeter fence, this location presents an ideal opportunity for partnership with the National Park Service (NPS) to expand the physical space and interpretive mission of the site to encompass a greater portion of WPAFB's unique history which could include, but not be limited to, the following **interpretive themes**:

- Association between Huffman Prairie Flying Field and the origins of the United States Air Force
- Association between WPAFB as a research center and the presence of Orville Wright on the committee that was the precursor to NASA
- Aeronautical research and development at WPAFB, including Orville Wright's involvement in the design process for the 5-foot Wind Tunnel and Hap Arnold's influence at WPAFB.
- General aviation and technology history to include other NPS sites in addition to Dayton Aviation Heritage National Historical Park: Minuteman Missile National Historic Site, World War II Valor in the Pacific National Monument, Springfield Armory National Historic Site, etc.

A preliminary space needs assessment of the existing 5,000 sq.ft Huffman Prairie Flying Field Interpretive Center (Facility 40003) determined that all of the program needs noted below could be accommodated within an additional **12,000 sq.ft. (minimum)**. This additional space would serve as the cornerstone of WPAFB's mitigation strategy, upon which other mitigation strategies could be built now and in the future. In conformance with EO 13514 requiring net-zero new construction as of 2020, it is proposed that any new facility be designed, constructed, and operated to reduce energy demand to such a degree as to off-set all energy costs by 2030. During the internal stakeholder meeting with representatives from CEG, ABW, AFMC, AFCEC, NMUSAF, and CEMML on November 12, 2015, three alternatives were identified to achieve these goals:

1. EXPANDED INTERPRETIVE CENTER WITH WPAFB HERITAGE ADDITION

This proposed design goal includes construction of a **12,000 sq.ft. addition to the existing HPFFIC** that meets all of the programming objectives in a low-profile, perhaps semi-buried, addition to the existing building that will not obscure the view from Wright Memorial. This alternative allows for the continued use of existing space while expanding NPS's scope to encompass interpretive themes associated with aeronautical research and development (see above). Retention of the existing facility, site topography, and the proximity of the perimeter fence and steam lines present some notable design constraints that need to be addressed in order to adequately accommodate all identified program needs and security concerns. There is an active 332 Word Order for construction of an expanded HPFFIC Addition.

2. REPLACE HPFFIC WITH NEW, LARGER INTERPRETIVE CENTER

The proposed design goal for this alternative entails demolition of the existing HPFFIC to be replaced by a **new 17,000 sq.ft. (minimum) Net-Zero LEED certified interpretive center** to be occupied by NPS with new interior spaces suitably designed to fulfill all program needs, including exhibits, theater, classroom(s), offices, etc. This alternative presents fewer design constraints, because designing a whole new facility presents greater flexibility to accommodate all program needs and security concerns. However, demolition of the existing facility may not be feasible.

3. CONSTRUCT NEW WPAFB HERITAGE CENTER

This alternative includes design and **construction of a 12,000 sq.ft. USAF Heritage Center** interpreting WPAFB in accordance with AFI 84-103. Management of this facility would fall under the auspices of the USAF Heritage Program and therefore become the responsibility of the base commander to provide continued staffing and support. Like the HPFFIC Addition alternative noted above, site topography, proximity of perimeter fence, and the location of the existing HPFFIC present significant design constraints for construction of a new AFHC at Wright Memorial. Other publically-accessible locations on base should be considered and evaluated to determine the most suitable location for a WPAFB Heritage Center. Under this alternative, the existing HPFFIC would be retained and occupied by NPS.

No matter which interpretive center option is selected as the preferred alternative, there are a number of unmet public and interpretive program needs that need to be incorporated into the design and programming for a new and/or expanded interpretive facility. Unmet **program needs** include:

II.A.1: **5-FOOT WIND TUNNEL**: The historic Wright Field Five-Foot Wind Tunnel was, until very recently, the oldest operating wind tunnel in existence, and it is notable for its significant contributions to the development of early aviation in the 1920s. In 2011, the 5-Foot Wind Tunnel had to be disassembled and placed in storage due to new research mission requirements. As stipulated in the MOA for Renovation of Facility 20019, a new permanent location to suitably house and display the 5-Foot Wind Tunnel will be identified by the time the MOA expires on March 31, 2016, or per amendment to the MOA². The proposed Expanded Interpretive Center at the HPFFIC would be an ideal location for long-term display and interpretation of the Wind Tunnel.

² According to Stipulation I.B.4 of the MOA *Regarding the Renovation of Facility 20019*: "If by March 15th [2016] during the last year that this MOA is in effect, a new home for the Five-Foot Wind Tunnel has not been found, or if its relocation is

II.A.2: **POW MURAL**: 3D scanning, stabilization, relocation, and display of the German POW Mural is needed, because this unique mural reveals WPAFB's expanded role during World War II and the United States' treatment of POWs. In fact, very few people are even aware of the existence of this mural, which is a unique example of POW artistic expression, and is therefore an irreplaceable remnant of our nation's history. There is also documented interest on behalf of the German Government for the continued protection and preservation of the mural. In its current location (Facility 10280), the POW Mural is at risk of being damaged due to the aging and deteriorating condition of the building. Obscured in an interior hallway, the mural cannot be appreciated by base personnel, nor members of the visiting public. This one-of-a-kind remnant of the base's artistic and cultural heritage should be scanned for long-term preservation, and then stabilized and relocated to a publically-accessible facility suitable for long-term display and interpretation.

II.A.3: **RESTORATION AND DISPLAY OF THE WRIGHT FIELD MURAL**: After completing the large "Bridge of Wings" mural at Headquarters, Air Technical Service Command (now Headquarters, Air Force Materiel Command) in 1944, Sgt. Stuyvesant Van Veen painted "The Story of Wright Field" for the office of General Franklin O. Carroll (in Facility 20126), who at the time, was the commandant of the Army Air Forces Engineering School (Air Force Institute of Technology). The Wright Field mural features the WWII flightline with an allegorical figure of "flight" rising into the sky. Already an accomplished and well-known artist at age 33, Van Veen wanted to contribute to the War effort but his enlistment attempts were rejected due to poor eyesight. So instead he was accepted as the civilian Art Director for the Cincinnati Ordnance District of the War Department in 1942, a position he held for only 11-months before being drafted by the Army in March 1943 and subsequently stationed at Wright Field until 1945. During his years in the Army, Van Veen served as a mechanical drawing draftsman and mural painter (Stuyvesant Van Veen papers, circa 1926-1988 n.d., Microfilm 1-5). While at Wright Field, Van Veen won the 1945 Ohio Valley Exhibition and the 1945 Wright Field Army Art competition. In recognition of his many murals and artistic accomplishments, Stuyvesant Van Veen was inducted into the American Academy and Institute of Arts and Letters in 1972, which is the highest honor conferred upon a living American artist (History Office, Air Force Materiel Command 2004, 137). Restoration and long-term display of "The Story of Wright Field" mural would demonstrate a lasting commitment to the history of Wright-Patterson AFB, understanding the importance art played in engaging citizens in supporting military efforts during World War II, and the legacy of Stuyvesant Van Veen.

delayed pending space availability, then WPAFB will review this MOA with SHPO and the consulting party in anticipation of the ongoing storage or disposition of the Five-Foot Wind Tunnel and its components. WPAFB and SHPO may agree to extend the term during which relocation options are sought by amending this MOA, under Stipulation IX."



Figure 1: 5-Foot Wind Tunnel



Figure 2: POW Mural



Figure 3: The Story of Wright Field, Mural by Stuyvesant Van Veen, 1945

II.A.4: There is also substantial need for an affordable, multi-use, publically-accessible, [CLASSROOM/GATHERING SPACE](#) to host events and trainings that would not require base access and/or security clearance.³ The existing HPFFIC Theater was originally intended for screening movies created to portray the history of the Flying Field and Wright-Patterson AFB, but the popularity of this space for other meetings and events is conflicting with its intended use. In fact, requests for use of this space has doubled over the last year. There are no other comparable

³ Groups presently making use of the 50-seat auditorium space within the HPFFIC for a variety of events, meeting, seminars, ceremonies, tours, and classes include various AFIT Meetings and Pre-Graduation Activities, Huffman Prairie Historical Society, Tree City USA Training Classes, WWI Historians Group, Tour Groups, various Air Force Reunions, Aviation Trails, Inc. for various events, Green County Parks & Rec, Local Cycling Clubs, First Flight Ceremony, various Promotions and Retirements, the National Park Service Quarterly Partnership Meetings, Tree Commission Academy, Tree Board Meetings, WPAFB Grounds Maintenance Training, and Natural Resources Working Group Meetings. Additionally, NEPA public meetings and base “new comer briefings” could also be held here if a new multi-purpose space were constructed.

public use facilities onsite offering an affordable alternative. The Carney Auditorium at NMUSAF is a wonderful fixed-seating auditorium large enough to accommodate up to 500 people, featuring top-notch audio-visual support, but it does not lend itself to small informal meetings, and rental rates for this auditorium start at \$500. Likewise, the Hope Hotel offers a variety of public use spaces with multiple rooms and flexible seating arrangements, but they too charge rental fees for use of the space starting at \$250 for 75 people. Alternatively, a new 3000 sq.ft. multipurpose space proposed as part of the HPFFIC addition could be made available to base personnel and affiliates for free with flexible seating arrangements able to accommodate a variety of meetings and/or assemblies for up to 100-people.

II.A.5: In order to meet all of these program needs, the existing 40-space **PARKING LOT** at HPFFIC needs to be increased to accommodate up to 70 personal vehicles (Dayton Zoning Ord. 31283-13, Schedule 150.700.6), thereby eliminating resource damage to the road shoulder and vegetation during popular public events.

- B. **HERITAGE DISPLAY GARDEN**: Accompanying the proposed building addition would be a Heritage Display Garden with opportunities for the display and interpretation of “memorialized” building elements and architectural features salvaged, now and in the future, as part of a Mitigation Bank, which provides a tangible connection to the nationally significant aeronautical and technological advancements that were researched and developed at WPAFB. DoD installations are legally obligated by the 1906 Antiquities Act to “provide stewardship for items of historic and scientific interest” (16 U.S.C. 431). An approximately 1-acre flexible outdoor exhibit space extending from the HPFFIC to Kauffman Road for the display of large-scale architectural and engineering items salvaged during building demolitions, including plumbing valve wheels, building stone, the last WPAFB Rail Car, as well as other remnants that may be identified in the future as part of this Mitigation Bank, presents a low-cost mitigation strategy that will have little or no impact on future maintenance costs, especially if instituted in partnership with local gardening groups.



Figure 4: Heritage Garden Example Exhibits

- C. **VISUAL TRANSPORTATION LINK:** There is a strong and compelling need to provide a visual transportation link between Wright Brothers Memorial and Huffman Prairie Flying Field. Existing signage and wayfinding is inadequate for the average visitor to successfully navigate between these two important sites. At a minimum, increased and more accurate signage is required to lead vehicular and bicycle travelers from the Visitor Center, across Springfield Pike (State Route 444), and along Marl Road to the existing Huffman Prairie Flying Field parking lot.

In an attempt to improve transportation between the various Heritage Area sites, a series of studies were conducted during the latter-1990s and early-2000s to evaluate transportation alternatives. The first study proposed recreating the old Dayton-Springfield-Urbana electric trolley system that originally carried the Wright Brothers from Dayton to Huffman Prairie. Initial proposals recommended construction of a new electric trolley system, which was estimated to cost \$7.8-million for a route between the National Museum of the United States Air Force (NMUSAF) and Huffman Prairie Flying Field (Henry 1997, 55). Later proposals recommended use of a replica bus service to connect Huffman Prairie Flying Field, Wright Memorial, and the NMUSAF with Downtown Dayton, capital cost for which was estimated to be \$10-million (Greater Dayton Regional Transit Authority 2004). In 2007, a Public Lands Highways Discretionary Program project application was submitted for design and construction of a Gateway Project to create an at-grade crossing at the intersection of State Route 444 and Kauffman Avenue along with improvements to Gate 18C and Marl Road to facilitate access between Wright Memorial and Huffman Prairie Flying Field while also enhancing and improving Base security operations. The project included \$500,000 for design and \$3-million for construction. Unfortunately, none of these plans came to fruition. Nevertheless, the need for a transportation link between the Visitor Center at Wright Memorial and Huffman Prairie Flying Field still remains.

III. EDUCATION, OUTREACH, AND PARTNERSHIP MITIGATION OPTIONS

Objective

DoD 4715.16 *Cultural Resources Management*, Enclosure 5, Section 3.c. says “All installations with cultural resources will have a public outreach program.” AFI 36-7065 further articulates that “in addition to informing the public about Section 106 undertakings, the appropriate level of AFCEC/ANG/AFRC management shall develop [public] awareness activities and programs of more general scope to reach the base community and the general public” (U.S. Department of the Air Force 2014, 3.4.9 Public Awareness).

Partnerships, educational programs, and outreach opportunities innately provide for increased accessibility and engage a wider audience, overcoming the basic limitations of interpreting history just within a physical building. By augmenting existing education programs, increasing public outreach, and partnering with multiple outside entities, WPAFB could establish a top-notch heritage outreach program that fulfills obligations under DoD 4715.16 and AFI 32-7065.

Strategies

A. EDUCATION AND OUTREACH MITIGATION OPTIONS

Public access should not be limited to those who walk through the door, but should also be accessible to a wider audience. With the wealth of archival data, including historic maps, photographs, video clips, and written histories on the people, buildings, and accomplishments of WPAFB, there is an unbounded amount of interesting historical information just waiting to be accessed by armchair explorers and historians throughout the country, and indeed around the world. As new missions, technology, and research and development become part of the history of WPAFB, electronic documentation and dissemination is a viable platform for making historical records and information more accessible to the public. Viable options for mitigation include:

1. **WPAFB HISTORY AND CULTURAL RESOURCES WEBSITE (and companion mobile app):** Create a new history and cultural resources website; making it interactive and publically accessible to showcase a variety of historic photos, historic video clips, and historical studies. The proposed website should be developed as an engaging and interactive experience of WPAFB history with links to relevant NMUSAF and NPS lesson plans, mini historical documentaries (similar to those produced by 88 Comm Productions), online activities, and partner websites. The existing website at www.wpafb.af.mil/library provides downloadable documents including a 72-page historical summary of Wright-Patterson Air Force Base: The First Century; 18-pages of Chapter 1 from Splendid Vision, Unswerving Purpose; and 46-pages of Chapter 1 from Home Field Advantage. While the existing website adequately meets the needs of those requesting general base information, an independent WPAFB History website could still be created; not to duplicate, but to augment the existing information by providing responsive, mobile-friendly content that would be more engaging and accessible for the public. A new WPAFB History website, built using good content management systems (CMS), could include the bulk of information contained within Splendid Vision and Homefield Advantage, but as a layered interactive experience, into which viewers could drill-down to gain greater levels of detail regarding WPAFB's history, tenant organizations, historic research and development, and past aerospace science and engineering.

According to the Legacy Program's *Cultural Resources Public Outreach and Interpretation Source Book* (see **Appendix C**), professionally-created websites can be an ideal, cost-effective framework for interpreting history, especially if mutually-beneficial partnerships are developed with outside organizations to host and maintain the website (Blackwell 2010, 81). This is further emphasized by the reporting metrics outlined in DoD 4715.16, in which it asks for the number of installations that have a cultural resources public Web page (U.S. Department of Defense 2008). The Smithsonian's Air & Space Museum's online exhibits and the National WWII Museum website provide outstanding and interactive models to emulate. Similarly, development of a companion mobile app could provide each person with a tailored tour of WPAFB's history on a single hand-held device, which is solely provided and maintained by that person, requiring no O&M investment on behalf of WPAFB (Oppengaard and Shine 2014).

2. **PHOTO CALENDAR:** Hire a contractor to produce and print a commercial-quality photo calendar featuring WPAFB's historic and cultural resources that could be sold at the HPFFIC and digitally remastered as a downloadable desktop background/screensaver.

3. **BASE TOURS:** According to interviews conducted by CEMML in March 2015 with NPS and NAHA staff, there is notable public interest in General Public Tours of WPAFB to feature significant buildings and sites. As the birthplace of aviation, there is a growing demand for a first-hand experience of WPAFB on behalf of interested individuals, pilot groups, historians, and others. Using the public tour models at Edwards Air Force Base and Whiteman Air Force Base,⁴ it is suggested that WPAFB implement a similar program offering general public tours, held once or twice a month in compliance with AFI 35-105, Section I: Base Tours. Advanced reservations, similar to those established at Edwards AFB and Whiteman AFB, would be required to include the requisite personal information necessary for Security Forces. Reservations and guided bus tours would not have to be managed by WPAFB's Public Affairs Office, but instead could be the responsibility of a vetted partner organization such as NAHA or NPS with the understanding that all security protocols must still be observed and advanced reservations be required. It should not go without note that there are a series of informative, full-color brochures on WPAFB's more notable historic buildings that could be used as the foundation upon which to develop a bus tour route.
4. **SELF-GUIDED HERITAGE TOUR:** Because WPAFB is a closed base, there are few opportunities for the public to see and experience base history first-hand. Nonetheless, development of a Self-Guided Heritage Tour, highlighting sites that are already accessible to the public, may be a feasible alternative for showcasing WPAFB history. If each of the designated sites were enhanced with interpretative wayside exhibits, then taken together as a comprehensive tour, they would present a viable substitute for formal tours of the base. To further enhance the visitor experience, a cell phone tour (or podcast tour) could be developed as part of this Self-Guided Heritage Tour, which



Figure 5: Proposed Sites for Self-Guided Heritage Tour

⁴ Edwards Air Force Base Tours: <http://www.edwards.af.mil/questions/topic.asp?id=812> (PA POC: Sgt. Brigitte Brantley)
Whiteman Air Force Base Tours: <http://www.whiteman.af.mil/questions/public tours/index.asp> (PA POC: Dennis Shoffner)

would provide an interactive experience that may also be part and parcel of the WPAFB History and Cultural Resources website (see above). The National Park Service and Aviation Trail, Inc. already sponsor a cell phone tour of their Dayton area sites, including Wright Memorial and the Huffman Prairie Flying Field Interpretive Center. WPAFB may want to consider partnering with these groups to add additional sites to the existing tour featuring WPAFB's role in the history of aviation. Potential sites include: Wright Memorial, Huffman Prairie Flying Field Interpretive Center, Heritage Garden (proposed), Huffman Prairie Flying Field, National Museum of the United States Air Force, F-104A Starfighter at Springfield St. and Harshman Rd., Wright Flyer replica at Gate 1B, proposed NAHA orientation exhibit (see below), and perhaps the Osborn Town site and/or Hooppole School.

5. **DOCUMENTARY FILM ON WPAFB HISTORY:** A new documentary film on WPAFB's History could be produced in-house through the Public Affairs Office or by an independent contractor. A new documentary would replace the old film narrated by Carl Day, which no longer plays on updated videography equipment. Documentary films are an ideal means of preserving the Base's heritage, its built history (including demolished buildings), and the exceptionally significant stories and remarkable research and development that occurred at WPAFB over the last 100-years. This could be accomplished through the production of a more comprehensive 30-minute film summarizing WPAFB's built history, or through a series of shorter (10-15 minute) films, each addressing a specific aspect of WPAFB's history. With regular showings at the HPFFIC and occasion special events, a professionally-produced documentary film can achieve multiple mitigation objectives including documenting buildings and historically significant events/achievements; providing for the visual preservation and interpretation of people, places, and events; and benefiting the public in a profound and long-lasting way. Copies of the film could be made available at the WrightPatt88 YouTube channel and/or available for purchase at the HPFFIC. It may also be possible to redigitize the 18-minute Carl Day documentary, which would present a significant cost-savings over production of a new film.
6. **REPRINT *SPLENDID VISION* AND *HOME FIELD ADVANTAGE*:** Taken together, these two books produced by the AFMC History Office undoubtedly contain the best comprehensive history of WPAFB History, but they are no longer available for printing and purchase through the Government Printing Office (GPO). Reprinting these books would not only provide all of the essential historical background and images necessary to produce new wayside and museum exhibits, but they could also be inventoried for sale at the HPFFIC, GPO, and other venues for the benefit of those most interested in the topic.
 - Splendid Vision, Unswerving Purpose: Developing Air Power for the United States Air Force during the First Century of Powered Flight by US Air Force, Materiel Command History Office, 2002
 - Home Field Advantage: A Century of Partnership between Wright-Patterson Air Force Base and Dayton, Ohio, in the Pursuit of Aeronautical Excellence by US Air Force, Materiel Command History Office, 2004

B. PARTNERSHIP MITIGATION OPTIONS

The existing Wright-Patterson Partnership Program is part of an overarching Air Force Community Partnership initiative, whose goal is to establish installation-community partnerships that “leverage military installation and local community capabilities and resources to obtain value and benefit in support of the AF mission” (Zander 2015). According to AFD 90-22, MAJCOMs are to coordinate and develop processes to assess, develop, implement, and manage installation-community partnerships that protect and/or enhance mission capabilities while reducing operation and service costs, or reduce risks, and provide for mutual value to the installation and local community (U.S. Department of the Air Force 2014, 3.15). DoD’s overriding commitment to volunteer and partnership efforts is perhaps best summarized in the 1994 Resource Manager’s Guide to Volunteer and Partnership Programs, in which it states:

"The authority to establish Volunteer and Partnership Cost-Share programs is provided by the National Defense Authorization Act, P.L. 101-189. Passed in November 1989, this legislation amended two acts and established volunteer and partnership programs for natural and cultural resources management on Department of Defense (DOD) lands. The DOD Authorization Act of 1984 (10 U.S.C. 1588 a-c) was amended to expand existing authority to use volunteers for military museums and family support programs to include acceptance of voluntary services for natural and cultural resources programs at military installations. The Sikes Act (16 U.S. C. 670c-1) was amended to add the use of cooperative agreements with organizations and individuals having appropriate expertise and matching contributions for the maintenance and improvement of natural resources on, or to benefit natural and historic research at, DOD installations" (Bishop 1994, 6).

Partnerships present multiple cost-effective opportunities for the preservation and management of cultural resources, especially excess historic buildings. Section 111 of NHPA (54 U.S.C. 306121. Lease or Exchange) authorizes Federal agencies to partner with private and non-profit organizations to fund the reuse and preservation of historic properties in order to offset the real costs of historic preservation. Proceeds from leasing historic properties may then be used to create a fund “to defray the costs of administration, maintenance, repair and related expenses incurred by the agency with respect to that property or other property that is on the National Register” (54 U.S.C. 306121.(b)).

In addition to the obvious benefits of collecting the proceeds from the lease of historic buildings, DoD further recognizes that involving partners in creative mitigation projects “fulfill other public benefit mandates and foster relationships and connections with the public and outside organizations” (Blackwell 2010, 1). Using the resources of the Air Force’s new partnership program, coupled with the authority granted under Section 111 of NHPA, and WPAFB’s long-standing partnerships and alliances with the organizations noted below, presents an ideal framework for collaborating to achieve common goals that fulfill several of the Mitigation Strategies identified in this report.

1. **ADAPTIVE REUSE OF HISTORIC 1B GATE HOUSES** as a **NAHA-staffed “Welcome Center”** is an ideal mitigation strategy, demonstrating a good-faith effort on behalf of WPAFB to maintain and reuse historic properties and partner with a community organization to further public benefit and education outreach goals. Adaptive Reuse of 20081 and/or 20082 as a Welcome Center would have the dual benefit of providing NAHA with a well-placed location for public outreach, providing visitors with information about the National Aviation Heritage Area; and alleviate some of the demands on Security Forces by serving as a location to provide visitors with general information and orientation for the base. The full scope of interpretive services to be provided at this location and related physical improvements to the facility is subject to further development and consultation, but there is great potential for reuse of these facilities for the benefit of both WPAFB and NAHA. Alternatively, a **NAHA orientation wayside exhibit** could be installed near the Wright Flyer replica at Gate 1B, which would have the dual benefit of providing orientation for visitors wishing to visit other aviation sites in the region, and strengthen the partnership between WPAFB and NAHA.



Figure 6: Wright Field Gate Houses (Gate 1B) in 1931

2. **ADAPTIVE REUSE OF THE 16B GATE HOUSE** as an **Information and Orientation kiosk** for visitors to Wright Memorial and Huffman Prairie Flying Field presents an ideal partnership opportunity demonstrating WPAFB’s continued inter-agency cooperation with the National Park Service. Adaptive reuse of this facility to provide maps and general visitor information would be of substantial benefit to both NPS and WPAFB visitors. As part of this project, it is further recommended that the fence line at Gate 16B be relocated 450-feet to the south at a point where the existing steam lines cross Skyline Drive, thereby increasing base perimeter security by removing the vehicular gate at Skyline Drive, providing an increased buffer between visitor use areas and the base perimeter fence, and reducing the total length of fencing by approximately 50 linear feet.

3. **MOTHBALL AND MAINTAIN HOOPPOLE SCHOOL HOUSE** until such time as a potential partnering historical society or organization can be identified that will assume responsibility for restoration of the property to its original one-room school house configuration using a combination of grants, tax credits, and fundraising. This will require mothballing the facility in accordance with *Preservation Brief 31: Mothballing Historic Buildings* to provide long-term protection of the building from vandalism, water infiltration, and sudden changes to interior humidity and circulation (Michael and McDonald 2008). As an historic one-room school house constructed circa 1852, Hooppole School presents an ideal opportunity for interpreting the history of the local area.



Figure 7: Hooppole School House

4. **PRESERVATION MAINTENANCE OF WRIGHT FIELD TAXIWAY** to sustain continued, limited use of the taxiway in support NMUSAF functions. Closed to all air traffic since 1976, the historic Wright Field Triangular Runways are significant for “the essential role they played in aviation technology development and testing from their early grass-field days... to the days of the early Cold War readiness” (Pacific Environmental Services, Inc. 1999, 4-1). Though the triangular runways are closed to air traffic, preservation maintenance of selected sections by applying a 3” asphalt overlay to the bottom East-West taxiway offers a partnership mitigation opportunity for WPAFB in support of the NMUSAF mission and their occasional aircraft needs.

PARTNERS:

NATIONAL AVIATION HERITAGE ALLIANCE

NAHA is a Congressionally-designated, private, not for profit, corporation whose mission is to “preserve and develop the assets in the National Aviation Heritage Area and promote the heritage and future of aerospace” (NAHA Strategic Plan, 2014, 5). In keeping with this primary mission, NAHA seeks a balanced approach for enhancing visibility and access to the region’s aviation heritage, encompassing both small-scale and large-scale undertakings, all framed against the twin goals of educating the public about our aviation history while also responding to the economic needs and interests of the community. NAHA, in partnership with WPAFB, is interested in enhancing knowledge and visibility of WPAFB’s significant heritage assets. As a heritage tourism resource, NAHA is ideally poised to leverage assistance and support for the mitigation strategies identified above, especially with regard to expanding visitor services and exhibits at the HPFFIC, use of the gatehouses at Gate 1B as a Welcome Center, preservation and public display of the 5-Foot Wind Tunnel and German POW Mural, as well as helping WPAFB identify exceptionally significant Cold War facilities for long-term use and preservation.

Members of NAHA:

Air Camp	Historic Woodland Cemetery & Arboretum
Armstrong Air & Space Museum	National Aviation Hall of Fame
Aviation Trails, Inc.	National Museum of the U.S. Air Force
Dayton Aviation Heritage NHP	The Wright B Flyer
Dayton History	Vectren Dayton Air Show
Greene County Historical Society	Wright Family Foundation
Historical Grimes Field	Wright Image Group
Historic WACO Field	Wright State University Wright Archives

NATIONAL PARK SERVICE: DAYTON AVIATION HERITAGE NATIONAL HISTORICAL PARK

Established in 1992, the mission of this NPS Park Unit is to “preserve, enhance, and interpret the historic and cultural structures, districts, and artifacts associated with the Wright Brothers, the Invention and Development of Aviation, and the Life and Works of Paul Laurence Dunbar through the creation of partnerships.” As originally conceived by Congress, the Dayton Aviation Heritage National Historical Sites (DAAV), in close coordination with its federal, state, private, and non-profit partners, represents a unique preservation and interpretive partnership for the management and oversight of the Wright Cycle Company Building, Hoover Block, Huffman Prairie Flying Field, 1905 Wright Flyer III, Hawthorn Hill, and the Paul Laurence Dunbar State Memorial. DAAV, in partnership with NAHA and WPAFB, is interested in expanding interpretive themes at the Huffman Prairie Flying Field Interpretive Center (HPFFIC) to encompass the history of the base and significant aeronautical and logistics achievements; supporting development of a visual transportation link between Wright Memorial and Huffman Prairie Flying Field; facilitating Wright-Patterson Air Force Base Tours; and encouraging production of a documentary film on the history of the base.

GREENE COUNTY MASTER GARDENER VOLUNTEER PROGRAM

Part of the Ohio State University Extension, GCMGV was founded in the late-1970s to provide intensive training in horticulture to interested Ohio residents who then volunteer their time to provide gardening assistance and education. Through a research grant awarded by Air Force Headquarters, Wright-Patterson AFB Medical Center partnered with GCMGV to establish a Garden Clinic to empower diabetic and prediabetic patients “make lifestyle and behavioral changes essential to the prevention and treatment of diabetes” (2012 OSUE Outstanding Master Gardener Volunteer Project, 2012). Dedicated

on July 12, 2012, the Garden Clinic 3-year study has proven so successful to include over 800 volunteer hours in the first year and patient interest increasing so much to now require a waiting list of participants. The success of this program presents an ideal opportunity to expand the partnership to include additional horticultural activities and locations beyond the Clinic Garden, such as a new Heritage Display Garden at the HPFFIC.

FIVE RIVER'S METRO PARKS

WPAFB and Five River's Metro Parks maintain collaborative management of Huffman Prairie, which was declared a State of Ohio Natural Landmark in 1986. The primary mission of MetroParks is "to protect and provide stewardship of Greater Dayton's natural heritage and to inspire appreciation and understanding of these treasures through nature-based outdoor recreational and educational opportunities and experiences" (Cooperative Agreement, MetroParks, 2013). There may be additional opportunities to partner with Five River's Metro Parks for mitigation strategies involving education and outreach programs at Huffman Prairie.

THE PROPOLIS PROJECT LLC

The Propolis Project was established as a public/private consortium of interested parties to establish a honey bee pollinator Queen Yard at Huffman Prairie to increase pollinator sustainability in Ohio. The need for such collaborative relationships was identified by presidential memorandum in June 2014 titled, "Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators." Implementation of this project includes placing 4 rows of 20 bee-hives inside an existing fenced area in Huffman Prairie to "supply a quality and vigorous stock of bees with known genetic traits required to survive the southwest Ohio climate" with a long-term goal of developing "an education program to conduct periodic training for apiarists around the state" (Warner 2015). As this project proceeds, there may be additional opportunities to enhance this partnership to include additional educational and outreach programs, augmenting several proposed mitigation strategies.

DAYTON LIEDERKRANZ-TURNER

This is Dayton, Ohio's oldest German organization whose purpose is "the cultivation, furtherance and maintenance of German song, dance, customs, culture and language, the promotion of good fellowship among its members, and participation in civic affairs" (Dayton Liederkraza-Turner n.d.). This organization is particularly interested in seeing the long-term preservation and interpretation of the German POW Mural, presently located in Building 10280 that historically served as a dining hall for approximately 400 German POWs held at WPAFB during WWII. Some of the POWs were artists who painted four walls depicting images from German folklore, only one of which remains.

OTHER PARTNER ORGANIZATIONS AND STAKEHOLDERS

Huffman Prairie Aviation History Society

Military Heritage Chapter of the League of WWI Aviation Historians, Dayton Area Chapter

Fairborn Historical Society

CONSIDERING LIFE-CYCLE VALUE OF HISTORICAL RESOURCES

We tend to value our historic buildings solely for their association with aspects of architectural and/or cultural significance. While this is an important and noble justification for the continued preservation and use of our built heritage, historic buildings also represent a significant investment of embodied energy, to which a true cost value can be attributed using the Life Cycle Assessment methodology outlined in *The Greenest Building* study conducted by Preservation Green

Lab in 2011. According to this report, The Brookings Institution estimates that between 2005 and 2030, approximately 82-billion square feet of buildings will be demolished and replaced, which is roughly one-quarter of today's total building stock (Preservation Green Lab 2011, 13), and according to the Environmental Protection Agency (EPA), this results in approximately 136-million tons of construction and demolition waste added to our landfills each year (Merlino 2014, 81). These cyclic trends of demolition and new construction have a quantifiable cost that is often not considered when we appraise the "value" of historic properties. Though we, as a society, have embraced recycling in a monumental way, we fail to consider building "recycling" as a viable environmental preservation strategy.



Figure 8: Demolition of Building 20126 in 2010 to make way for a new Information Technology Complex. Originally constructed in 1944 as the Headquarters Building Engineering Division, the building once featured the mural titled "Wright Field."



Figure 9: 1980 Preservation Week Poster – Reusing America's Energy, National Trust for Historic Preservation

The Green Building movement tends to emphasize new construction over historic preservation, suggesting that new buildings can be constructed to be more energy efficient and more sustainable than old ones, but according to a 2003 study by the U.S. Energy Information Administration, commercial buildings constructed between 1946 and 1969 consume equal amounts of energy as brand new buildings, and the energy demand of historic buildings constructed before 1945 is as much as 40% less than modern buildings (Preservation Green Lab 2011, 18-19).

"The process of rehabilitating a historic facility to meet current operational standards consumes less energy than new construction. Even when major repairs, additions, or alterations are needed to achieve use and energy conservation goals, they generally require less energy than demolition and replacement of a historic structure" (CEHP Incorporated and John Cullinane Associates 1994). Likewise, *The*

Greenest Building study concluded that over a commercial building's average 75-year lifespan, continued use of a historic building will result in an overall 13% energy savings as compared with the total life cycle cost to demolish and build a new commercial building of equal size (Preservation Green Lab 2011, 66). Excellent examples of rehabilitating historic buildings to increase energy-efficiency and sustainability are documented in a Legacy report titled, *Strategies for Greening Historic Properties* (Van Citters: Historic Preservation, LLC 2010). This report outlines multiple examples of sustainability improvement projects involving historic buildings, provides pertinent information to assist DoD personnel in applying sustainability principles in historic preservation, and also identifies several low-cost sustainable strategies that are relatively easy to implement with little to no impact to a building's historic integrity.

The U.S. Department of Defense report on *The Benefits of Cultural Resource Conservation* further supports this position in stating that:

"Each building within our inventory represents a significant amount of 'embodied energy' – the amount of energy invested in the [construction] and improvements to the facility... The replacement of that building results in the loss of that 'embodied energy,' plus the added energy cost to demolish the building, remove and dispose of the debris, and manufacture, deliver and place materials for a new building. DoD, the Services and the nation benefit when we conserve our energy investment by reusing historic structures. The process of rehabilitating a historic facility consumes less energy than new construction. And, the energy costs of operating a rehabilitated structure vs. a new structure are effectively equal."

(CEHP Incorporated and John Cullinane Associates 1994)

HISTORICAL BACKGROUND SUMMARY

This historical background summary focuses on general trends of development and destruction that have cyclically occurred at WPAFB over the last 100-years. These trends illustrate changing mission needs over time that occurred as a result of National and Local directives. The cumulative effect of these mission impacts on the historical resources at WPAFB are the crux of this Mitigation Plan, and this historical summary serves to illustrate how repeated trends of development, followed by periods of demolition, have impacted WPAFB's built heritage.

This historical background summary begins with the Wright Brothers' early flight experiments at the site in 1904-05 and the establishment of Huffman Prairie Flying Field, concluding in the 1970s to encompass the full breadth of National Register eligible history within the bounds of today's Wright-Patterson Air Force Base. It is important to note that WPAFB is obligated under Section 110 of NHPA to evaluate the eligibility of properties 50-years of age or older that are identified within the Area of Potential Effect (APE) for a proposed undertaking. In the case of the FY14-FY20 Plant Reduction Initiative, this includes all properties base-wide up to and including those constructed in 1970. However, both the Ohio SHPO and the Advisory Council on Historic Preservation (ACHP) are now recommending that all Air Force bases (not just in the State of Ohio) conduct 100% surveys of all buildings to determine potential eligibility in order to guide current and future work and planning efforts.

The content of this Plan focuses on the area's built history since 1904; however the history and significance of WPAFB's archeological record is of equal importance in the continued protection and management of the base's cultural resources. Of particular note are the Wright Brothers Memorial Mound Group (33-GR-30), located on land acquired by the Air Force in 1978; and the WPAFB Mound (33-GR-31) on land acquired by the Air Force in the 1940s, both of which are listed on the National Register of Historic Places (NRHP). Based on past archeological and geophysical surveys of these sites, it was concluded that these mounds likely served, in part, as mortuary mounds. Given that there is no evidence of habitation in and around these mounds further suggests that they were sacred sites and may also have served other important functions in the lives of the people who built them (Lynott 1997, V-5). These Mounds are protected archeological sites, which are not threatened by any past or current undertakings.

Before Wright-Patterson Air Force Base, and indeed even before the Wright Brothers', this region was mostly farmland with private farmsteads, two remnants of which remain, including the Arnold House and Foulis House. The Arnold House, was originally built by Henry Hebble in 1842, but then acquired by the Fairfield Air Depot as part of the Dayton Air Service Committee land acquisition in 1924. This historic farmhouse (Facility 30008) is the oldest building on WPAFB. In 1984, the house was converted into the Heritage Center for Wright-Patterson AFB and formally dedicated as the Arnold House Heritage Center in 1986 in honor of Major Henry "Hap" Arnold, the Air Forces' only five-star general who lived in the house 1929-31. The Arnold House continued to serve as the Base Heritage Center and VIP Reception Center until its closure in 2014, and now contains office space. Likewise, the Foulis House (Facility 30088) was originally constructed in 1872, and up until 1917 it was a simple farmhouse surrounded by agricultural fields. It was sold to the Miami Conservancy District in 1917 and became part of the base as part of the land donation from the Dayton Air Service Committee in 1924. The house was modified and enlarged multiple times during its history and over the years has primarily been senior officer housing, except for

a brief hiatus during World War II when it served administrative functions. It was officially named the Foulois House in honor of Major General Benjamin Delahauf Foulois in 1989 and still serves today as senior officer housing.

In addition to the Arnold and Foulois Houses, the base also acquired the Mather Farmhouse and Andes Farmhouse during the 1924 land acquisition. Both farmhouses were initially adaptively reused for office space, but then later demolished. The 1874 Mather Farmhouse was demolished in 1937-38, while the 1840 Andes Farmhouse (Facility 30025) was demolished by 1998.

Wright Brothers, 1904-1905

The Wright Brothers established their experimental flying field on an 84-acre parcel now known as the Huffman Prairie Flying Field. The Wrights' physical improvements to the site were minimal, and there are no remaining buildings dating from this earliest era. However, a replica of the 1905 hangar was constructed onsite in 1990 and a replica catapult installed in 2002. Due to its association with Wilbur and Orville Wright's earliest efforts in planning and testing the first practical airplane, the Wright Flyer III, Huffman Prairie Flying Field was listed as a National Historic Landmark in 1990.

Wright Brothers Pilot Training School, 1910-1916

After successfully securing a patent for their flying machine, the Wright Brothers started the Wright Company of America in Dayton, OH to sell their airplanes, and also the Wright School of Aviation at Huffman Prairie to train pilots and continue testing new airplane designs. Almost all of the airplanes manufactured by the Wright Company between 1910 and 1916 were tested at Huffman Prairie. In 1916, the Wright School of Aviation was closed and in 1917 Huffman Prairie became part of Wilbur Wright Field. Built improvements to Huffman Prairie were limited, including only a couple of hangars and a derrick and weight launching system. No original structures remain from Wright School of Aviation.

Wilbur Wright Field and McCook Field, 1917- 1927, World War I

Following the United States entry into World War I, three military installations were established in this area: the Wilbur Wright Field, which continued use as a pilot training school, mechanics school, and armorer's school; the Fairfield Aviation General Supply Depot (FAGSD), which provided logistical support; and McCook Field, which served as a major center for research and testing of military aircraft.

The ca 1918 plan for Wilbur Wright Field was based on Albert Kahn's design for the Signal Corps' standard two unit flying school: The Medical Reserve Corps and the 19th and 20th Aero Squadrons (Taylor, Fairfield Air Depot CLR 2000, 46). Each unit featured 12 hangars, barracks and officer's quarters, mess halls, schools, officer's club, hospital, Quartermaster supply, post exchange, dope house, repair buildings, boiler houses and coals sheds, as well as supporting infrastructure and small-scale buildings aligned parallel with the flying field (Taylor, Fairfield Air Depot CLR 2000, 46). The buildings were considered "standard Signal Corps construction," which meant they were "temporary wood frame structures with horizontal wood siding and a mix of roof styles" (Taylor, Fairfield Air Depot CLR 2000, 50). Due to their temporary nature, none of the original Wilbur Wright Field buildings are still extant.

In order to support Wilbur Wright Field's flight training school, a supply depot was necessary to receive and issue supplies and equipment for the airfield, planes, and staff. Fairfield Aviation General Supply Depot initially consisted of a large, one-story, U-shaped, brick warehouse building (Facility 30001), which was completed in January 1918, and supplemented with temporary warehouses, which were later modified as one larger permanent structure (Facility 30002) (Hardlines Design Company 2011, 61). A minimal number of barracks and mess halls accompanied construction of 30001, but many of the men working at FAGSD were actually housed at adjacent barracks on Wilbur Wright Field. This is just one of many examples of the cooperative relationship between the two entities, which eventually resulted in the merger of the Fairfield Aviation Supply Depot and Wilbur Wright Field in January 1919, becoming the Wilbur Wright Field Air Service Depot (WWASD). In response to growing storage needs for the depot, additional warehouses and hangars were constructed onsite on an as needed basis. Until 2001, three (3) of the original 1918 Fairfield Air Depot buildings remained: Building 30001 (noncontributing due to unsympathetic alterations in 1984-85), Building 30002 (significant contributing building to the Fairfield Air Depot Historic District), and Building 30054 (demolished in 2001).

The 1917 Mission Charter for the third installation, McCook Field, describes its purpose as follows: "engine and plane development, the installation of cameras on experimental planes, and work pertaining to the synchronization of machine guns is assigned to McCook Field" (History Office, Aeronautical Systems Division 1979). Originally, McCook Field was considered a "temporary experimental installation" for which architectural studies and drawings were prepared by Albert Kahn, and construction began October 10, 1917 (Taylor, Wright Field CLR 1998, 41). Due to its "temporary" nature, its facilities quickly became inadequate and unsafe. None of the original McCook Field buildings remain today.

Post-World War I Military Reduction

Immediately following the end of WWI, Congress enacted a slim defense budget forcibly reducing military funding by half, which resulted in a mass disposition of wartime surplus items as Army Air Service training fields and stations were closed all over the world. In response to a 1921 Directive from the Office of the Chief of the Air Service to close some airfields and convert other temporary ones to more permanent airfields, all of the temporary structures originally constructed as part of Unit Two on Wilbur Wright Field were demolished, dismantled and/or relocated to Unit One, or sold as excess property. In the summer of 1922, supplies previously stored by WWASD in 77 temporary buildings were moved to more permanent structures. Adding to this, a fire broke out in February 1926 destroying three buildings at WWASD: the Oil Reclamation building and storage (Facility Nos. 48 & 53) as well as an Engine Repair Building (No. 54), all of which were replaced in some manner with new buildings completed by the mid-1930s. Demolition of temporary World War I structures continued over the next several years as they either outlived their useful life or were replaced by more permanent structures.

Likewise, the vast majority of McCook Field's original temporary buildings were demolished, which included approximately 35 main buildings and several ancillary structures. Some salvageable materials, especially steel trusses doors, windows, plumbing and lighting fixtures, and sheet metal, were saved for reuse in construction of a the new Wright Field designed in 1924 (Taylor, Wright Field CLR 1998, 77). It was reported that by March 1927, the contents of a total of 69 McCook Field buildings were emptied and moved to Wright Field (Taylor, Wright Field CLR 1998, 77). Included in this wholesale demolition campaign were buildings initially associated with Mather's

farm, with the exception of main two-story brick farmhouse which was rehabbed for offices (Taylor, Wright Field CLR 1998, 69) (The Mather farmhouse was later removed circa 1937-38).

Meanwhile, many years of planning and deliberation over site selection and site layout for a new Air Service installation were underway, and ultimately Dayton, OH was selected for its longstanding commitment to aeronautical engineering on behalf of the Army Air Corps. Thus in 1920, a “Proposed Plan for the Experimental Station for the Air Service” was prepared by Urban C. Thies. As you might imagine, those initial plans underwent several more revisions, but ultimately the spatial organization for a new installation harkened back to Thies’ 1920 plan, and the Secretary of War offered final approval on March 20, 1924.

Wright Field, 1927 - 1932 – research facility

The official dedication of Wright Field was held on October 12, 1927 under provisions of the 1926 Air Corps Act (Taylor, Army Air Forces CLR 2002, 54), whose Engineering Section’s mission was to “initiate all the experimentation, designing, testing, and development use in connection with aircraft” (Taylor, Army Air Forces CLR 2002, 58). By this date, many of the main buildings originally planned for Wright Field were now complete, as were a number of smaller structures and landscape features. In addition to the Main Laboratory building, the following buildings were also constructed during the 1930s at Wright Field: Propeller Test Lab and Rigs, 5-Foot Wind Tunnel, Assembly Building and Shops, Static Test Laboratory, Dynamometer Lab and Storage buildings, Torque Stands, Foundry, Armament Lab and gun ranges, and Armament Storage (Taylor, Army Air Forces CLR 2002, 59). These aircraft test facilities “were considered to be the most modern and extensive facilities available” (Taylor, Army Air Forces CLR 2002, 59). Designed as an aeronautical engineering research facility, Wright Field



Figure 10: May 17, 1931. General layout of Wright Field, looking south. Note construction of concrete apron in front of hangars and three new hangars behind (north of) the original hangars. (Photo courtesy of WPAFB 88th ABW History Office).

became synonymous with development of the United States' military aviation. Many of WPAFB's most notable historic properties date to this period and are significant for their association with noteworthy historical events and aeronautical advancements. Technologies researched, tested, and acquired by Wright Field personnel include air-cooled radial engines, superchargers and turbochargers, controllable-pitch and full-feathering propellers, high-octane fuels, pressurized cabins, blind-flying instrumentation, free-fall parachutes, and helicopters and autogiros, all of which worked together to form the modern high-altitude, single-engine, aircraft (Woodruff, NHL Point Paper n.d.).

At least 42 buildings, including both permanent and temporary structures, were constructed during the Wright Field era, full realization of which continued up until 1932. The 1932 Annual Report states that "except for one hangar and other minor projects, the original plan of construction for Wright Field has been practically complete" (Taylor, Wright Field CLR 1998, 95). It should be noted that many of these Wright Field buildings were constructed using salvaged building materials from the demolition of McCook Field (Taylor, Army Air Forces CLR 2002, 71). Buildings remaining today from the original construction of Wright Field include:

Building No.	Description	Year Built
20011	Administration Building	1927
20012	Technical Data Building	1935
20016	Main Laboratory	1927
20017	Radio Laboratory	1927
20018	Power Plant Laboratory	1928
20018G	Dynamometer Laboratory	1928
20020	Propeller Test Laboratory	1928
20021	Armament Laboratory	1928
20023	Static Test Laboratory	1934
20031	Final Assembly Building	1927
20032	Shops	1927
20035	Maintenance Building No. 1(now 39)	1929
20038	Automotive Repair	1932
20046	Foundry (now building 51)	1927
20056	Supply Warehouse	1928
20057	Oil Storage (now part of bldg. 56)	1928
20071	Torque Stand Building	1929
20076	Fire Station	1931
20081	Guard House – Main Gate	1931
20082	Passenger Station – Main Gate	1931
20086	Main Pump House	1927
20087	Auxiliary Pump House	1927
20091	Laundry	1927

(Woodruff, WPAFB Historical Contexts 1940-2015 2015, 24)

The area comprising these historic buildings and additional density of growth during World War II took on a decidedly urban feel and appearance that lends itself to the popular term, “Downtown Area B” (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 25). Many of these primary buildings devoted to important and highly complex aeronautical engineering were constructed of “six-course American bond brick with low-pitched gambrel and gable roofs, copper entablature and rakes, and multi-pane steel sash windows,” which colloquially became known as the “Wright Field Style,” (Taylor, Wright Field CLR 1998, 67). However, a few of these early structures deviate from the Wright Field Style, instead exhibiting Art Deco and even Mission Revival architectural features (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 27). The original construction of Wright Field also included a triangular, grass-covered flying field comprising 520-acres with two 1-mile long grass runways crossing each other and three hangars with concrete aprons clustered at the northeast corner.

Air Corps Act and 5-Year Expansion Program, 1926-1933

A number of new buildings were planned for the Wright Field and Fairfield Air Depot during the early-to-mid-1930s as part of the Air Corps Expansion program, but the Great Depression impacted the overall goals of the program by reducing duplicity and limiting expansion to mission essential departments. Nevertheless, the Fairfield Air Depot (soon to be renamed Patterson Field) still experienced a limited number of construction projects including buildings for the Engineering Department; including Factory, Assembly, and Disassembly Buildings, built on the site where a fire destroyed previous Engineering Department buildings in 1926. Also included during this expansion program was a new Patterson Field Headquarters building, water tower, Hangar A, Fire Station, Quartermaster buildings, maintenance buildings, utility/water buildings, electrical substation, and central heating plant, many of which were designed in the now-familiar Wright Field style (Taylor, Fairfield Air Depot CLR 2000, 74-77).

Fairfield Air Depot renamed Patterson Field, 1931

Concurrent with the declared completion of Wright Field, the total allocated land was divided, retaining all land west of Huffman Dam as Wright Field, and land east of the dam as Patterson Field, renamed in honor of Lieutenant Frank Patterson who died in a crash at Wilbur Wright Field in 1918. Though renamed, Patterson Field continued to provide logistical and supply support (Taylor, Wright Field CLR 1998, 91) for 28 out of the total 50 Air Corps stations in the United States (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 35).

Public Works Improvements, 1934-1940

Most of the projects completed between 1934 and 1940 were funded by Public Works Programs such as the PWA, CWA, and WPA. Much of the work completed by these groups was minor construction and/or landscape improvements, including plans for a 46-acre Officer’s Recreation Center on a wooden hillside near Wright Field, plans for which date to McCook Field, but were not realized until 1938 when six “camps” were established with their associated small-scale park features (Taylor, Wright Field CLR 1998, 100). A great deal of major construction also occurred during the 1930s at both Wright Field and Patterson Field, included the Physiological Research Laboratory, Static Test Laboratory, Technical Data Building, new hangar, warehouses, barracks, hospital, and an experimental bombing range. True to form with the ebb and flow of construction and deconstruction that has occurred at Wright and Patterson Fields, more than 60 temporary buildings were demolished by 1937, leaving large areas of open space where the temporary buildings once stood (Taylor, Fairfield Air Depot CLR 2000, 80). Included in these counts is the Mather farmhouse, which had previously been adaptively reused as office space, but was torn down in 1937-38 (Taylor, Wright Field CLR 1998, 98).

At this time, Patterson Field was sorely lacking in accommodations for officers, so in response to *Presidential Special Order Number 32*, new quarters for Wright Field and Patterson Field personnel were constructed on the previous site of Wilbur Wright Field's Unit 2, whose temporary structures had been demolished in 1922 (Taylor, Fairfield Air Depot CLR 2000, 79). What is now known as the "Brick Officers' Quarters," featuring 92 single and duplex Tudor-style housing units, was built in 1934-35 and funded by the Public Works Administration (PWA). According to Woodruff's Historical Context study, the Brick Quarters is the best preserved historic district at WPAFB (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 39).

1938 Naval Expansion Act & 1939 Public Law 18 for an expanded Air Corps Program

National directives in 1938-39 pertaining to rearmament and expansion of the Air Corps included needs for additional aircraft, modernization and expansion of the Experimental and Development Plant, and yet another phase of boom construction to include warehouses, shops, temporary military and civilian quarters, and related facilities (Taylor, Fairfield Air Depot CLR 2000, 83).

1940 Selective Service Act & 1940 Air Corps construction authorization

Together, the Selective Service Act and President Roosevelt's 1940 Protective Mobilization Plan led to increased military funding and rapid expansion of existing facilities, with an emphasis on temporary construction to meet the expanding needs of the military to provide necessary facilities and associated infrastructure. For instance, a provision of the Selective Service Act specifically states that "no man could be conscripted until shelter, sanitary facilities, water supplies, heating and lighting arrangements, medical care, and hospital accommodation had been provided for them" (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 45).

World War II

Even with the influx of funding and support due to the rise of European hostilities, the Chief of the Air Corps implemented a construction policy in 1939 that emphasized speed and efficiency, specifying that only industrial facilities, research and development facilities, and medical facilities were to be constructed of brick-and-concrete (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 45). Typically, permanent buildings were reserved for buildings whose intended use would continue after the War, and were thus constructed of masonry. Whereas semi-permanent buildings were those buildings whose function was expected to outlive the War effort, but whose construction was hampered by either a shortage of time or materials. Semi-permanent buildings were constructed of cinderblock, clad wood frame, or a mix of wood and masonry. Temporary construction was not intended for use after the War and was thus limited to simple wood frame construction (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 44). Troop housing is an example of standardized "temporary mobilization-type wooden structures" constructed during World War II that became known as the 700 Series and larger 800 Series, which were actually based on the earlier 600 Series of temporary buildings designed in 1917 for World War I training cantonments. In order to accommodate the influx of troops during WWII, several temporary housing areas were scattered all over the base, each featuring a rectangular layout of large buildings around a central parade ground. Each plan included barracks, mess halls, lavatories, administration buildings, guardhouses, Post Exchange, and fire station, as well as additional recreational and service buildings. After 1942, the War Department sought to eliminate all but the bare essentials of construction, thus directing that all new construction

be “theatre of operations” type of construction, which in the case of housing typically consisted wood frame houses clad with tar paper. One of the new temporary housing locations was on the original site of temporary World War I barracks (Taylor, Fairfield Air Depot CLR 2000, 84-87) sited to the east of State Route 4 and nicknamed “Wood City” because all of the buildings were constructed of wood and all the streets were named after species of trees (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 50).



Figure 11: The Wood City complex at Patterson Field, located east of Route 4, contained a large cantonment hospital, military housing, and recreation facilities.

In June 1941, Army Air Corps was reorganized as the Army Air Forces. In 1943, Wright Field became the Materiel Command headquarters and testing facility, and Patterson Field became the headquarters for the Air Service Command. In support of these efforts, a great deal of new land acquisition and new construction occurred between 1940 and 1945, notably expanding development of the base into historically open areas to the north, east, and south. Of particular note, is the 20-Foot Wind Tunnel and its associated complex, including a Power Building, Sonic Fatigue Facility, and Shop and Engineering Building. Backed by a 40,000 horsepower motor, the 20-Foot Wind Tunnel was the most powerful large tunnel in the world (Taylor, Wright Field CLR 1998, 103). Another 10-Foot Wind Tunnel and Vertical Wind Tunnel also provided specialized experimental facilities during this era, as did the Flight Test Laboratory complex and other notable permanent structures, many of which were unified by their “Art Deco design, which is defined as ‘poured or cast-in-place concrete in large massed volumes with simple reveal lines, windows placed in a ribbon effect on the building mass, some large-scale aircraft admitting doors, generally with flat roofs’” (R. Christopher Goodwin and Associates, Inc. 1997, 329). Similarly, the Fairfield Air Depot became the central air depot training center for technical and mechanical skills (Taylor, Fairfield Air Depot CLR 2000, 95) and pioneered important advances in modern logistics systems (Taylor, Fairfield Air Depot CLR 2000, 93).

Despite all of the new construction into previously undeveloped areas, the exponential expansion needs of the Army Air Force led to some of our earliest examples of adaptive reuse, including remodeling parking sheds as offices; additional parking structures and storage buildings were reused as laboratories; and a former shed became the Printing Shop (Taylor, Army Air Forces CLR 2002, 101). It is notable too that a few of the original 1918 buildings were still being actively used, including Buildings 30001, 30002, and 30054; as well as a few World War I temporary buildings, which also remained serviceable throughout the early-1940s (Taylor, Fairfield Air Depot CLR 2000, 91). These included a garage, repair warehouse, the “old gym,” and a World War I Hangar.

The need for paved runways also came to fruition in 1941 with the anticipation of heavy bombers and the increased air traffic for all-weather flying in the buildup of wartime research efforts. Construction of the first two

legs of the paved Triangular Runway system at Wright Field began in May 1941 and was completed in August 1942. The third runway, completing the triangle, was concluded in November 1943. Over the next two years, the paved runway system was expanded to connect each of the legs, adding a 75-foot wide taxiway and an “unbroken avenue of apron extending for over a mile from the original hangars to the north (circa 1930) to the newest cluster of five hangars (Facility 20004)” (Pacific Environmental Services, Inc. 1999). Depressions and fractures resulting from long-range aircraft carrying heavy munition loads made Wright Field an ideal location to research and test new runway materials and construction methods which were used to enhance the runways. It was during these



Figure 12: Wright Field hangars, circa 1940

latter stages of runway improvement during 1944-45 that four of the original six hangars were removed (the last 2 hangars were demolished circa 1952). During WWII and in the years immediately following, the Triangular Runway continued to support experimental aircraft, but as the next generation of jet-powered aircraft required longer and longer runways, Wright Field was closed to jet aircraft in 1958, and to all traffic in 1976, except for the southernmost runway that remains for limited support of the National Museum of the United States Air Force (Pacific Environmental Services, Inc. 1999).

Up until 1942, construction and expansion was implemented on an as-needed basis with very little in the way of comprehensive planning. But in December 1942, an outside firm was hired to prepare a master plan for Wright Field, and then just a few weeks later they were also hired to prepare a concurrent master plan for Patterson Field.

The Wright Field Master Plan identified critical needs, especially addressing exponential growth of personnel and space requirements: growing from “1054 employees and 704,221 square feet of floor space in 1931 to 1200 employees and 1,290,000 square feet of floor place in 1938. At the end of 1942, 18,150 people were employed at the field and there were 3,178,880 square feet of floor space” (Taylor, Army Air Forces CLR 2002, 109). The resulting 1943 Master Plan expounded upon seven major areas of improvement which guided all future development during this era. Approximately 304 buildings were constructed at WPAFB during this major period of growth between 1940 and 1946 (R. Christopher Goodwin and Associates, Inc. 1997, 323) transforming Wright Field from its former life as a research and development facility to a vast, wartime installation (Taylor, Army Air Forces CLR 2002, 121). In fact, Wright Field was one of only eight installations in the nation performing critical research, development, and repair functions during World War II, and proved essential in the development of weapons, equipment, and aircraft that precipitated the Allied victory (R. Christopher Goodwin and Associates, Inc. 1997, 328). By 1943 “over 800 major and thousands of minor technological projects” were being conducted at Wright Field (Taylor, Army Air Forces CLR 2002, 160). Due to the specialized nature of research and development work occurring at Wright Field, many of the buildings were constructed to exact standards to meet specific research needs, and as organizational structures and engineering programs changed, new permanent buildings

had to be constructed to meet the unique needs of each program. Thus many more permanent buildings were constructed at Wright Field than Patterson Field.

Post-War Demobilization, 1942-1946

With the official conclusion of World War II, the architectural landscape of WPAFB changed once again as the result of military demobilization and the reallocation of resources for new research programs and strategies. Significant administrative changes precipitated the physical changes on base, including the 1944 merger of the two onsite commands: Materiel Command and Air Service Command became the new Army Air Forces Air Technical Service Command, and in 1945 the two airfields were administrative merged (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 19). In the months following the victory over Japan in September 1945, depot activities at Fairfield Air Depot were substantially reduced and eventually selected for deactivation on January 1, 1946, ending a nearly 30-year history of storage, supply, and repair serving the entire eastern United States during the 1930s and expanding to support air operations throughout the world during World War II (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 6).

At the same time, however, new research and development missions were redefining the post-War period, necessitating specialized construction to meet specific research needs. For example, new technology developments in cast-in-place, heavily reinforced, concrete permitted the construction of the new Static Structural Test Laboratory (Facility 20065) designed by Hazelet & Erdal in 1943-44, the Acoustical Enclosure for the Propeller Laboratory (Facility 20020A) designed by Allen & Kelley in 1944, and the Engineering Shops (Facility 20005), a long-barrel, thin-shell reinforced concrete structure designed by Anton Tedesko in 1943. (Weitze 2003). And yet, in the years following World War II, the most dramatic physical change to Wright Field was the nearly-wholesale removal of all temporary buildings between 1946 and 1952. After that time, only a handful of temporary buildings remained, including the Gymnasium, Mess Hall and Service Club, Theater, Post Exchange, and Library, as well as a few of the Quartermaster buildings (Taylor, Army Air Forces CLR 2002, 168). The demolition of temporary WWII structures at Patterson Field was not quite so dramatic, yet by 1957 most of the temporary buildings were no longer needed and thus demolished (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 72). Several temporary and permanent buildings remained within “Wood City,” but they too were eventually demolished in the 1990s. In the 1947 *Analysis of Existing Facilities, Building Data* (Civil Engineering Record Drawings 1940-1945), it identifies more than 57 temporary structures (noted because a “T” proceeds the building number) spread across both Areas A and B proposed for removal or replacement with new permanent buildings. The list includes a number of temporary quarters and mess halls, gate/guard houses, warehouses, small general storage buildings, and a couple of utility buildings, all dating to 1940-45. The only exceptions are a permanent 1934 1-Ton Incinerator and a permanent 1938 Servants Quarters, both of which had obviously become obsolete by 1947 and were slated for removal.

Cold War, 1947-1989

In 1947, the United States Air Force was established as a separate branch of the military equal to that of the Army and Navy. With the Air Force now able to direct aeronautical engineering of their own accord, Wright Field and Patterson Field merged on January 13, 1948 to form Wright-Patterson Air Force Base. In combining these two installations, Wright-Patterson Air Force Base became a unique host for both the headquarters for Air Materiel Command (later Air Force Logistic Command) and a leader in aeronautical research, development, testing, and

evaluation. “Placing two distinctly different (albeit intertwined) major organization structures at one physical location remained a challenge for the air base from 1945 onward. Somewhat hidden from historical observation was also a rich layering of technical and engineering precedents and accomplishments at the Dayton installation when World War II concluded” (Weitze 2003, 467).

1948 Master Plan

Much of the 1948 Master Plan focuses on the needs for acquiring additional land surrounding the base. It highlights examples of substandard housing, inadequate Post Exchange and Commissary facilities, as well as the temporary nature of existing hospital facilities. Emphasizing the need for new land acquisition, the Master Plan recommends, among other things, new permanent housing areas, a “Community Welfare Center,” new hospital, upgrades to Patterson Field runway, an Air Force Institute of Technology (AFIT) campus, and redevelopment of Wood City; plans for which presume, though do not explicitly dictate, demolition of all former temporary and dilapidated facilities. According to Paul Woodruff, Cultural Resources Manager and author of the WPAFB Historical Context 1940-2015, the 1948 Master Plan “set the tone and direction of development on base for the next fifty years and is in many ways responsible for the current configuration of the base” (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 72).



Figure 13: Aerial view of Wright-Patterson Air Force Base, c. 1952, showing Applications Laboratory (20017), Acoustic Enclosure for Propellor Test Stands (20020A), Environmental Testing (20032), Foundry/Garage (20051), Materials Lab (20056), Nuclear Testing (20057), Fuel and Oil Testing Lab (20070), X-Ray Computer Tomography facility (20071), Engine Test Stands (20071A), Engineering Shops (20005), Static Structural Test Lab (20065), and Rotor Test Tower (20250).

In keeping with the now-typical ebb and flow of construction/deconstruction at WPAFB, the wholesale demolition of WWII temporary structures was immediately followed by new research and development programs during the late-1940s and early-1950s, which necessitated the construction of at least 10 new research buildings and the establishment of the Wright Air Development Center (WADC) in 1951.

One of the more notable research facilities constructed following WWII, was the Radar Test Laboratory (20821) designed by Hazelet & Erdal in 1946 as an all-wood barn-like structure that allowed radar to penetrate its walls. Radar technology advancements quickly outpaced the building's radar invisibility, so the Radar Test Anechoic Chamber was added in 1953, which was the first of its kind for the Air Force and the "genesis and testbed of innovative radar signature reduction (stealth) technology" (Zug-Gilbert, et al. 1996, 115). Originally, a seven-story concrete tower stood at the southwest corner of this building, but it was demolished in 1971 (Zug-Gilbert, et al. 1996, 108).

Elements of the WADC included Engineering, Flight Test, and All-Weather Flying, and Office of Air Research. A new Supersonic Wind Tunnel facility also became operational at this time, rendering the old 20-Foot Wind Tunnel obsolete, resulting in its deactivation and demolition in 1960 (Taylor, Army Air Forces CLR 2002, 172). The new Sonic Fatigue test lab facility (buildings 20461-463) was designed by Daniel, Mann, Johnson & Mendenhall (DMJM) in ca. 1963 (Moore, Jr., Edgington and Payne 2010, 97), and constructed on the site of the former 20-Foot Wind Tunnel (Taylor, Army Air Forces CLR 2002, 172).

Another institution of importance in the mid-1950s for the WADC was the Aero Medical Research Laboratory, which included among others: accelerator, decelerator, ejection, and equilibrium test facilities in Building 20023; temperature-altitude chamber in Building 20029; a human centrifuge, spin table, and isolation chamber in Building 20033; high-altitude test chamber in Building 20248; and a bioacoustics research facility in 20441 (Weitze 2003, 501).

New initiatives in the mid-1950s continued to focus on research and environmental testing, for which 25 new buildings and structures were planned, including Aerial Reconnaissance, Aeronautical Accessories, Aircraft laboratories, and Propulsion Laboratory (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 70-75). WPAFB also worked to develop a nuclear-powered aircraft, resulting in the construction of the Nuclear Engineering Test facility (30470) in 1956, which continued to operate and expand throughout the 1960s. In 1965, the Air Force Institute of Technology (AFIT) assumed responsibility for the reactor and continued to conduct significant research as the only light water cooled test reactor in the Air Force. The nuclear reactor was officially decommissioned in June 1971 (Taylor, Army Air Forces CLR 2002, 175).

According to Karen J. Weitze's *Keeping the Edge: Air Force Material Command Cold War Context*, one of the research initiatives that uniquely defined Cold War efforts at WPAFB was the establishment of the Air Defense Control Center (ADCC) and Air Defense Direction Center (ADDC) (Weitze 2003, 493). In fulfillment of their mission for an effective defense network, a handful of buildings were erected at WPAFB in the late-1950s for the ADCC, including 11455 and 11456, and then later adding Building 11457 in 1965-66 (11456 was demolished in 2013) (Weitze 2003, 496). "The air defense mission was a very important early Cold War tenant activity at Wright-Patterson, not only due to the role of Headquarters Air Materiel Command in the design and engineering for air

defense command posts nationwide and to the presence of an ADCC on base, but also due to the parallel role of the alert FIS network” (Weitze 2003, 496). Beginning in June 1951, the north end of the Patterson Field runway was configured for an alert area that eventually included the Butler alert hangar (30152), ready crew dormitory (30151), maintenance hangar (30153), and munitions storage (30147). Of these, only the Butler alter hangar remains today.

The Air Defense Command fighter alert mission was deactivated in 1960, but by that time WPAFB had acquired a major Strategic Air Command (SAC) tenant mission instead, whose facilities were constructed on land acquired by WAPFB in 1954, commonly referred to as the “West Ramp.” The first SAC crews used an existing alert dormitory (30151), but soon moved into their new facilities, encompassing 14 major buildings and 10 support structures including the Alert Scramble Facility “molehole” (34004), operations and industrial buildings (34010 & 34012), a warehouse (32014), fuel and maintenance nose docks (34202, 34022, 34024, 34026, & 34028), Hound Dog/Quail service and run-up shops (34042, 34046, & 34044), two Hound Dog magazines (34062 & 34064), and Hound Dog checkout and assembly building (34066) (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 76-77).

Other construction during the 1950s and 60s included the USAF Medical Center, Electronic Warfare Research Facility (20620), Kittyhawk Center and Page Manor housing complexes, Visiting Officers Quarters, and the Air Force Institute of Technology, much of which was constructed in fulfillment of the 1948 Master Plan (Woodruff, WPAFB Historical Contexts 1940-2015 2015, 75-80).

Though WPAFB experienced many operational and administrative changes during the 1960s and 70s there were not a lot of dramatic changes in the building stock, with the exception of the new multi-million dollar National Museum of the United States Air Force constructed on and immediately adjacent to the original Triangular Runway Area in 1971 and a few engineering buildings, research test buildings, and an Experimental Aircraft Parts Warehouse. Only one new building was constructed within the historic Wright Field area during this era - a modern unsympathetic reconstruction of Building 20046 on the site of the former building that burned down in 1975 (Taylor, Army Air Forces CLR 2002, 176).

A major change, however, occurred in 1980 with the demolition of the last of the Wright Field-era hangars to make way for the ASD Fuels and Lubricants Laboratory Facility (20490), constructed in 1982. Demolition of these hangars and the 1976 closure of the Triangular Runway signaled the end of an important chapter in the history of Wright Field. While significant research and development missions continue at WPAFB, the installation’s remarkable first 50-years is still embodied in the historic buildings and structures of Wright and Patterson Fields.

In summary, the overwhelming trend of WPAFB’s built history illustrates repeated periods with a flurry of construction, oftentimes resulting in an abundance of temporary buildings that quickly outlive their usefulness and/or useable life, which are then torn down during periods of military demobilization and inactivity or during subsequent campaigns of new construction. Large-scale new construction initiatives are themselves often temporary, thus perpetuating this constant ebb and flow of construction/deconstruction throughout WPAFB’s 100+ year history.

Figure 14: Number of Buildings Constructed Relative to the Number of Buildings Demolished in a Given Year, 1920-2020

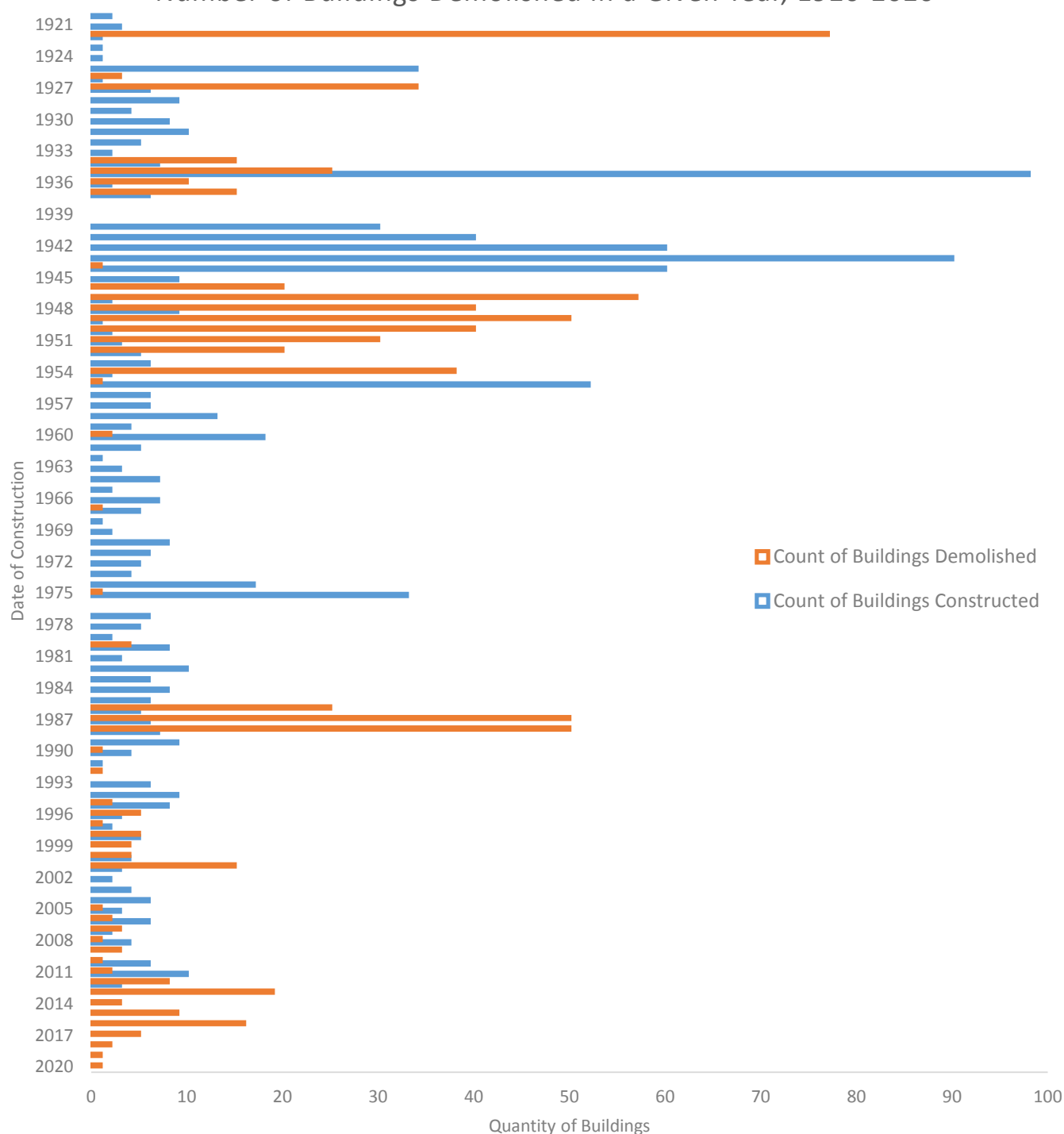


Figure 14 illustrates the ebb and flow of construction and demolition at WPAFB

Using available data extrapolated from the historical summary above, this graph shows repeated periods of concentrated growth followed by comparable periods of demolition. Using the best available data, this graph is included as an illustrative model displaying construction and demolition trends occurring over the last 100-years. Through the first half of the 20th-century, sustained periods of growth are repeatedly followed by rapid periods of demolition. A notable deviation occurs following passage of the Military Construction Authorization Bill of 1983 and related Programmatic MOA for the wholesale demolition of WWII temporary buildings in the mid-1980s. And it is important to note that since the mid-1990s, federal initiatives emphasizing the reduction of physical infrastructure and operating costs has resulted in demolition trends outpacing construction for the first time since 1922.

PROJECT HISTORY

The following annotated list essentially serves as a continuation of the historical summary after passage of the National Historic Preservation Act by summarizing negotiations and management actions taken in response to findings of adverse effect to historic properties at Wright-Patterson Air Force Base when changing missions necessitated the demolition of historic properties. This annotated list of agreement documents is also interspersed with descriptions of relevant Air Force policies and directives, as well as descriptions of cultural resource management initiatives, National Register nominations, and Cultural Landscape Reports implemented by WPAFB over time.

Obviously, building demolitions occurring prior to establishment of the National Historic Preservation Act of 1966 (NHPA) would not have been documented to the degree they are today (except in cases of National Historic Landmarks), nor were they subject to the requirements of NHPA Section 106 (36 CRF §800). Traditionally, demolishing properties less than 50 years of age also did not incur Section 106 evaluation except in cases of exceptional significance. However, current guidelines established by the Ohio SHPO and ACHP now recommend eligibility evaluations for all properties prior to demolition. It must also be noted that prior to 2000, Section 106 regulation did not explicitly require an analysis of cumulative impacts when assessing the impacts of federal undertakings, and therefore mitigation strategies negotiated prior to 2000 were often project-focused and the accompanying mitigation stipulations vary in their level of consideration of cumulative effects for past, current, and foreseeably future impacts.

The following annotated record of undertakings subsequent to passage of NHPA illustrates WPAFB's treatment of historic buildings and the implementation of various mitigation strategies to date. As is outlined below, the majority of historic buildings at WPAFB have already received an appropriate level of HABS/HAER documentation as stipulated by the various agreement documents. Recent Memoranda of Agreement (MOA) stipulate mitigation actions with notable public benefits. As mentioned above (see pages 8-9), the guiding principles of NHPA Section 106 stipulate that mitigation provide a public benefit that is greater or equal to the total "value" lost when an historic property is intentionally or inadvertently destroyed. WPAFB should therefore strive to resolve all future adverse effects by incorporating tangible public benefits into all mitigation strategies.

1966 – Passage of the National Historic Preservation Act

"The historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people..." (16 USC 470).

1983 - Military Construction Authorization Bill of 1983 (Pub.L. 98-115)

In response to the Military Construction Authorization Bill of 1983, a *Programmatic MOA* was prepared in 1986 by DoD, ACHP, and NCSHPO *Regarding the Demolition of World War II Temporary Buildings* (DoD, ACHP, NCSHPO 1986), in which it acknowledges that even though some of the temporary WWII buildings (1939-46) may be eligible for the National Register, they are still to be demolished in order to comply with the latest Authorization Bill, and therefore the MOA stipulates documentation requirements to be undertaken by HABS/HAER for the recordation of notable examples for each major building type and prepare a narrative overview of WWII military construction.

A complete list of properties demolished at WPAFB as a direct result of the 1983 Authorization Bill is no longer available, however, the 1997 Historic Context Study of WWII Construction notes “304 buildings were constructed at Wright-Patterson between 1940 and 1946... [and] According to the 1947 master plan, 61 of the World War II-era buildings were temporary mobilization construction.” (R. Christopher Goodwin and Associates, Inc. 1997, 323). As stipulated in the Programmatic MOA, all temporary WWII buildings were henceforth deemed noncontributing (except in cases of exceptional significance), and therefore the vast majority of WWII temporary buildings, i.e. any facility with a “T” designation, were summarily demolished without any further evaluation of significance.

1990 – Huffman Prairie Flying Field designated a National Historic Landmark

This site was listed as a National Historic Landmark under Criterion 1 and 2 for its “outstanding role in the development and testing of the world’s first practical airplane, the Wright Flyer III” (NHL nomination, 1990, 8-1). The site retains integrity as a large open field of 84.41-acres.

1990-91 – Aeronautical Systems Division (ASD) for Tomorrow /1991 Development Plan

The objective of this plan was to “satisfy facility needs for Acquisition Management functions” involved with designing, developing, and acquiring weapon systems and associated equipment while limiting personnel within the Accident Potential Zone (APZ) (3D/International 1991, 2-3). The plan identified existing facilities as unsuitable and inflexible, lacking in security provisions, and too dispersed across 40 separate building to be efficient in their ability to support the Systems Program Offices. The ASD Tomorrow Development Plan notes that while improvements could be made to existing facilities, the program goals could not be fully satisfied through rehabilitation and adaptive reuse, and thus a new acquisition management complex was required. This initial ASD Tomorrow plan proposed demolishing a 2-block area within downtown Area B.

ACHP voiced concerns in 1990 regarding demolitions proposed by the ASD Tomorrow plan, citing potential adverse effects that would render Area B ineligible as a National Historic Landmark District in the future. It was therefore determined that Design Guidelines for Area B were needed in addition to documenting historic Wright Field buildings as a “remarkably intact complex of administrative and industrial buildings containing a significant amount of the specialized facilities and equipment used in aviation research and development” (letters between John Nepute, WPAFB and John Burns, HABS/HAER & Anthony Sculimbrene, WPAFB and Robert Kapsch, HABS/HAER 1990-91).

In consideration of ACHP’s concerns, the final plan for ASD Tomorrow relocated the Acquisitions Complex on the flightline away from the historic core of Area B, thereby incorporating recommendations contained within the *Area B Downtown Exterior Architectural Development Plan* that mitigated potential impacts to the historic character and viewshed of Wright Field (Edge & Tinney Architects, Inc. 1991).



Figure 15: View of Area B showing Acquisitions Complex in foreground

A PA between the United States Air Force, the ACHP, and the Ohio SHPO was signed in August 1991 to implement several resource management strategies and plans for the long-term management of the historic resources at WPAFB (USAF, ACHP, SHPO 1991). The stipulations of this PA included development of a *Historic Resource Management Plan*, development and submission of National Register nomination forms for all potential historic properties and districts affected by the undertaking, initiating at least Level 2 HABS/HAER documentation of all early aeronautical testing and engineering facilities in Area B, and a standing commitment to the SHPO to inform them anytime a historic building being used by Acquisition Management was vacated, and submitting to SHPO any plans for rehab, adaptive reuse, or demolition of said properties within 6-months, and finally it was stipulated that an archeological survey be conducted of all areas to be disturbed by new construction. See the 1994 MOA below for the ultimate list of historic buildings demolished as a result of implementation of ASD Tomorrow.

1992 MOA Regarding the Demolition of the Vehicle Maintenance Garage (old Building 51)

In 1955, the 1927 Vehicle Maintenance Garage (20051) and 1930 Foundry (20046) were combined into a single property to be henceforth known as Facility 20051 serving a variety of functions over time. The 1992 MOA specifies partial demolition of Facility 20051, which was in fact the old Maintenance Garage (20051), while retaining the entirety of the historic Foundry (20046) (USAF, ACHP 1992). HABS/HAER documentation of both buildings was one mitigation measure, and retention and rehabilitation of the Building 46 portion of the building was noted as another mitigating stipulation. However, the old Foundry portion of the building, which was retained, confusingly remained recorded as Facility 20051, rather than reverting to its history designation as 20046, which had already be reallocated to another facility.

1993 Historic Resources Management Plan

The culmination of documentation and negotiation from 1990-1993 resulted in a *Historic Resources Management Plan* prepared by the United States Army Construction Engineering Research Laboratories (USACERL). It was in this report that four potential historic districts were first identified: Fairfield Air Depot, Wright Field, Brick Quarters, and Army Air Forces; as well as significant architectural themes and styles present at WPAFB. USACERL inventoried a total of 395 properties at WPAFB that were more than 50-years of age.

1993 Engineering of Flight: Aeronautical Engineering Facilities of Area B, Wright-Patterson Air Force Base, Ohio
Sponsored by Wright-Patterson Air Force Base's Office of Environmental Management and the Aeronautical Systems Center of Area B, a team of six architects, two historians, and a photographer were hired by the Historic American Engineering Record (HAER) to conduct a 2-year study to survey and document the historic buildings of Area B, which resulted in a detailed study of 56 individual structures built by the Army Air Corps Materiel Division in the late-1920s and the Army Air Forces in 1941-44. "This publication summarizes the results for all to share in the rich heritage of Wright Field – the true cradle of military aviation!" (Historic American Buildings Survey/Historic American Engineering Record 1993, iii). Summaries of these efforts were captured in a series of brochures titled, "The Legacy of Wright Field" and "Wright Field and World War II," both of which were produced by HAER and widely distributed throughout the country. Upon publication of the companion book, *Engineering of Flight: Aeronautical Engineering Facilities of Area B* in 1993, it too was reportedly widely distributed and is now archived at the Library of Congress under UG634.5 as a Catalog Record Only, not available for download.

1993 - Interim Guidance: Treatment of Cold War Historic Properties for U.S. Air Force Installations
With this *Interim Guidance* document (U.S. Air Force 1993), DoD provided the necessary Section 106 guidelines for identifying and nominating Cold War era properties that represent "operational missions and equipment of unmistakable *national importance* [with] a direct, not merely temporal, Cold War relationship" (Air Force Center for Environmental Excellence 2000, 3-11). Examples of this included, but were not limited to, buildings that hosted crucial code-breaking or intelligence-gathering operations as well as buildings that housed nuclear weapons testing. In compliance with this directive a number of surveys were conducted at WPAFB, 1993-2008, by several different entities, who concluded that there were as many as 26 National Register eligible Cold War-era buildings at WPAFB.

1993/94 MOA Regarding the Cessation of Railroad Operations
This MOA between the United States Air Force and the Ohio SHPO identifies WPAFB's intention to demolish approximately 40,000 linear feet of railroad track, while retaining the historic Locomotive Shed (Facility 30123) for adaptive reuse (USAF, SHPO, ACHP 1994). The MOA further stipulates that a history of the railroad, including graphics and maps, would be produced and distributed to SHPO, Greene County Library, the Fairborn Library, Wright State University Library, and the WPAFB History Office. In fulfillment of this MOA and prior to removal of the railroad track and related features, Hardlines: Design & Delineation (now Hardlines Design Company) completed documentation of WPAFB's railroad network in 1995.

1994 MOA Concerning the Demolition of Structures within the Wright Field Historic District, which was initiated as part and parcel of the ASD Tomorrow program. This MOA between the United States Air Force and the Ohio SHPO documents WPAFB's intent to demolish 5 buildings: 20017, 20036, 20057, 20066, and 20067 (USAF, SHPO, ACHP 1994). Stipulations of the MOA state that an unidentified number of buildings within the "model block" area of the Wright Field Historic District will be rehabilitated and documented by HAER as mitigation for demolition of the other 5 facilities. It further stipulates that Facility 20057 will be retained as mitigation for demolition of Buildings 66 and 67. The MOA also notes that facilities 20017 and 20036 are slated for demolition, but that WPAFB will make a good faith effort to identify alternative uses for these facilities. In the end, 20017 and 20057 were retained; and 20066, 20067, and 20036 (see 1996 MOA below) were demolished.

1995 MOA Regarding the Demolition of Building 25, Area C

In accordance with this MOA, WPAFB stipulates that it will document the history and significance of Building 30025, the Andes Farmhouse and the farmstead it once served, as well as prepare Level 2 HABS drawings to be archived at local libraries (USAF, SHPO, ACHP 1995). Additionally, an archeological data recovery plan for the yard around Building 25 is to be developed and carried out prior to any new construction on the site. CEMML was unable to locate copies of the history and HABS drawings during the course of this investigation, but copies are archived at the Greene County Historical Society. According to WPAFB personnel, completion of all provisions of this MOA are still pending future development of the Building 30025 site.

1995 - Base Realignment and Closure Commission (BRAC)

WPAFB was not negatively impacted by BRAC, instead assuming new missions associated with aerospace medicine research, human performance, and sensors research. However, as WPAFB assumed these new and expanded missions, approximately \$332-million was allocated for new construction and renovation, which conversely necessitated demolition of some historic buildings now deemed excess because they no longer met mission needs. The best example of this is the 1-million sq.ft. Human Performance Wing (HPW) Medical Center, constructed in 2011, and it is because of this new facility that the historically significant Aero-Medical Complex (20196-20198) is now considered obsolete and slated for demolition.

1996 MOA Concerning the Demolition of The Patterson Pool, Area A

The United States Air Force and the Ohio SHPO entered into this MOA in 1996 regarding filling in the Patterson Pool located within the Brick Quarter's Historic District (USAF, SHPO, ACHP 1996). The MOA states, "Once the Patterson Pool has been filled in, the Air Force shall create a plaza in the area where the pool formerly was, utilizing the classical and formal features of the original pool area. The plaza shall be sympathetic to the character of the Brick Quarters Historic District. The plaza design shall be developed in consultation with SHPO." It was later agreed that the pool be filled-in, leaving an outline of brick demarcating its original location.

1996 MOA Concerning the Demolition of Building 28A, Area C

Also in 1996, the United States Air Force and Ohio SHPO signed an MOA to demolish the historic Medical Laboratory, Building 28A (Facility 21620), located within the Wright Field Historic District. As stipulated in the MOA, WPAFB was to ensure Building 28A received Level 3 HABS documentation and be included as a supplement to the HAER project titled *The Engineering of Flight: Aeronautical Engineering Facilities of Area B, Wright-Patterson Air Force Base, Ohio* (see above) (USAF, SHPO, ACHP 1996).

1996 MOA Concerning the Demolition of Building 1716, Area C

Entered into by the United States Air Force and the Ohio SHPO, this MOA documents WPAFB's intent to demolish the historic Water Tower (31716), which was a contributing element to the Fairfield Air Depot Historic District. As is standard practice, it was stipulated that the Water Tower receive HABS/HAER Level 2 documentation prior to demolition and it was further stipulated that additional documentation of the Fairfield Air Depot Historic District be completed in the near future (USAF, SHPO, ACHP 1996).

1996 MOA Concerning the Demolition of Building 36, Area B

Though technically an amendment to the 1994 *MOA Concerning the Demolition of Structures within the Wright Field Historic District, Area B*, this MOA stipulates that Building 20036 is to be demolished and Building 20017 be retained as mitigation. The 1996 MOA between the United States Air Force and the Ohio SHPO further stipulates that the Air Force shall work with SHPO to develop master planning for the Wright Field Historic District, incorporating interpretative signs and exhibits and how best to “recreate the visual feel of the district in its heyday (late 1920s and 1930s) while still making it appropriate to today’s largely administrative work force” (USAF, SHPO, ACHP 1996). Not all of the terms of this MOA were completed before the MOA expired in 2001, yet the stipulations of this MOA are noted in the 2011 ICRMP as “currently under development.”

1997 Fairfield Air Depot Historic District National Register Nomination (DRAFT)

When this District nomination was first prepared in 2007, it included 30 contributing properties and 13 noncontributing buildings, significant under National Register Criterion A as one of only four repair and supply depots in the nation during the birth of modern military aviation in the United States. “From 1917 to 1945, the facility kept the aviation arm of the Army in the air” (Hardlines: Design & Delineation 1997, 8-4).

1997 Cultural Landscape Report, Wright Brothers Hill

Produced for the new Dayton Aviation Heritage National Historical Park to guide NPS’s treatment of this site (National Park Service September 1997). Much of the research for the CLR was actually conducted in preparation of a National Register nomination for Wright Brothers Hill/Memorial (see below), which was recently submitted for AFCEC review by the 88th Air Base Wing and Installation Command.

1998 EIS for Demolition of Multiple Historic Facilities at Wright-Patterson Air Force Base

In response to AFMC’s downsizing efforts to cut operating costs and consolidate facilities in order to reduce overall square footage at all installations, a total of 54 buildings were slated for demolition at WPAFB; 21 of which were determined eligible for the National Register. Of those 21, 6 had already been demolished under prior undertakings (see above MOAs pertaining to the demolition of buildings 20036, 20051(partial), 20066, 20067, 21620, 30025, and 31716); leaving 15 eligible historic properties proposed for demolition: the Aircraft radio lab (partial demolition of building 20028), Automotive Repair (20038), Dispensary (20040), Aero-Medical Centrifuge (20055), Dynamometer storage (20059), Wright Field headquarters (20125), Special Weapons Buildings (20193, 20194, 20195), Fuel Pumping (21620(28A)), Jet Propulsion lab and stands (21626, 21625, 21628), Blueprint and Cafeteria (30054), and a Central Heating Plant (30170). The EIS evaluated a series of alternatives, including demolition (preferred alternative), adaptive reuse, rehabilitation, mothballing, stabilization, and pickling, as well as a combination of alternatives. In the end, an MOA was prepared for the demolition of all 15 buildings (see 1999 MOA below), but the EIS also outlined a number of proposed mitigation measures for the individual buildings as well as the Historic Districts, which naturally included HABS/HAER documentation of all buildings affected by the undertaking, as well as salvage of historic doors, windows, and other architectural details. Uniquely, this EIS also proposes a public benefit component for the interpretation of the affected historic districts:

“Because the buildings are part of the nation's engineering and aeronautical heritage, the exhibit must be accessible to the public. For exterior exhibits, poster-sized photos, original drawings, and historic interpretations could be incorporated on upright kiosks. (Exhibit locations could include the USAFM or Buildings 20081 and 20082 in the Area B bus stop.)

These costs would be specific for each building. Similarly, video tapes detailing the history and significance of the Fairfield Air Depot Historic District, the Wright Field Historic District, and the Army Air Forces Historic District could be produced. The videos could be made available to the public and institutions and could be shown, and/or distributed” (EIS: Demolition of Multiple Historic Facilities 1997, 4-12).

1998 Wright Field Cultural Landscape Report

Completed by the Technical Center of Expertise for Historic Structures and Buildings, U.S. Army Corps of Engineers, the Wright Field CLR was prepared to satisfy stipulations of a 1994 MOA between USAF, the Ohio SHPO, and the ACHP *Concerning the Demolition of Structures within the Wright Field Historic District*. As noted in this report, prior to completion of the CLR “maintenance of Wright Field historic landscape resources has been limited primarily to buildings with little guidance provided for other significant landscape resources” (Taylor, Wright Field CLR 1998, 1).

1998 MOA Regarding Demolition of the Area B Runways at Wright-Patterson Air Force Base

This MOA documents WPAFB’s intent to remove the triangular runway pavement from the Area B Flightline. This MOA stipulates that the triangular runway system be documented to include history, maps, and photographs, which was completed by Pacific Environmental Services, Inc. in 1999. It further stipulates that relevant portions of this documentation shall be incorporated into interpretative material and displays, which has yet to be produced (USAF, SHPO, ACHP 1998).

1999 MOA Concerning the Demolition of 15 Historic Buildings, Areas B and C, Wright-Patterson Air Force Base, Ohio - AMENDED in 2009

This MOA was prepared in follow-up to the 1998 EIS for *Proposed Demolition of Multiple Historic Properties*. Fifteen (15) historic buildings were identified in the MOA as being affected by this undertaking: 20028 (partial), 20038, 20040, 20055, 20059, 20125, 20192, 20193, 20195, 20061A, 20079A, 20079B, 20079D, 30054, and 30170 distributed across all three historic districts at WPAFB: Wright Field, Army Air Forces, and Fairfield Air Depot Historic Districts (USAF, SHPO, ACHP 1999). The SHPO concurred with WPAFB’s assessment that there was no feasible reuse potential for 10 of the 15 identified buildings. The MOA stipulates that original building features, including copper trim, doors/windows/hardware, machinery, and other architectural details would be salvaged from these buildings prior to demolition for reuse in future renovations. Additionally, redevelopment plans for sites cleared by the demolition will be prepared and submitted to the SHPO for review. Of the remaining buildings, 30170 and 30054 were initially to be retained for a number of years while further attempts were made to identify potential adaptive reuse opportunities (30054 was demolished in 2001; 30170 was demolished in 2015). Additional stipulations specified completion of HABS/HAER documentation for not only the buildings to be demolished, but all contributing structures within the Army Air Forces and Fairfield Air Depot Historic Districts; and National Register nominations for the Fairfield Air Depot and Wright Field Historic Districts; as well as preparation of a *Building Maintenance Plan for Historic Buildings*. Interpretative materials and exhibits were also to be prepared and shared with the public, as proposed by the 1998 EIS (see above). The location and extent of exhibits was not specifically identified in the MOA, but the 1998 EIS provides general guidance with an estimated cost of \$25,000 to produce exterior exhibits and videos detailing the history and significance of the affected historic districts (EIS: Demolition of Multiple Historic Facilities 1997, 4-12). In partial fulfillment of

these stipulations, WPAFB collaborated with NPS in the production of the Wright-Patterson history film shown at the Huffman Prairie Flying Field Interpretive Center.

The MOA also specified development of a *Fairfield Air Depot Historic District Management Plan* to help maintain the integrity of the District with its balance of historic buildings and open space. It was further stipulated that 20038, 20040, and 20055 were to be retained as mitigation measures for demolition of the other 10 buildings. Some general mitigation measures were also identified including completion of a *Cultural Resources Management Plan* (CRMP) as well as development of a process for review of vacant building use/treatment alternatives.

However, increasing O&M costs as well as evolving missions at WPAFB were cited as reasons to amend the MOA in 2009, instead retaining only Building 20038 as mitigation for demolition of the original 10 buildings, including demolition of 20040 in 2009 and 20055 in 2012. Additional mitigation measures for demolition of all 14 buildings included implementation of a formal *Maintenance Procedures for Vacant Historic Buildings* in accordance with the *Maintenance Plan for Historic Buildings* that was developed and implemented as part of the *Facility Demolition Operating Instruction*, while also making a commitment to involve WPAFB's Cultural Resource Program Manager in all base demolition and facilities strategic planning processes. And finally, the amended MOA stipulated that WPAFB will replicate the historic cast-concrete turtle statues at the 1936 Turtle Pond located within the Brick Quarters Historic District.

1999 – Wright Field Historic District officially determined eligible for listing as a National Register Historic District

2000- MOA Regarding Replacement of Windows in the Housing Units at the Brick Quarters, Area A

In 2000, WPAFB initiated a project to replace the original window sashes in the housing units at the Brick Quarters (USAF, SHPO 2000). The Ohio SHPO concurred with WPAFB's determination of adverse effect and entered into an MOA at that time, but no action was taken. Following expiration of that original MOA, a new agreement was written in 2010 with participation on behalf of the Advisory Council on Historic Preservation (ACHP), containing specifications for wood window sash replacements. A National Register nomination for the Brick Quarters Historic District was also to be completed in accordance with the stipulations of the original MOA. Notably added to the 2010 MOA was a stipulation regarding public awareness and education, including a pamphlet for residents of the affected buildings outlining the history and significance of those properties with a goal of instilling in them a sense of pride by educating residents about the value of preserving local history (USAF, SHPO, ACHP 2010). To this day, copies of these pamphlets are included in all welcome packets given to new Brick Quarters' residents.

2000 – Cold War Needs Assessment

This study was prepared by the Air Force Center for Environmental Excellence to clarify and further iterate eligibility and evaluation standards that were first identified by the 1993 *Interim Guidance: Treatment of Cold War Historic Properties*. The Cold War period of significance is officially defined as a series of "international military, diplomatic, and political events that occurred over the 43-year period from 1946 to 1989" (Air Force Center for Environmental Excellence 2000, 2-1). This report goes on to lay out a detailed methodology for evaluation specifically with respect to "exceptional significance" for those properties less than fifty years of age. "Per the guidance... Cold War districts would include those that hosted crucial code-breaking or intelligence-gathering

operations during the Cold War, a group of buildings built for nuclear weapons testing, or an entire installation constructed for a specific Cold War mission” (Air Force Center for Environmental Excellence 2000, 3-12).

2000 – Fairfield Air Depot Cultural Landscape Report

Completed by the Technical Center of Expertise for Historic Structures and Buildings, U.S. Army Corps of Engineers, the Fairfield Air Depot CLR captures some of the historical evolution of Area B not addressed in the 1998 Wright Field CLR and expands guidance for management and maintenance of cultural landscapes to include the Fairfield Air Depot (Taylor, Fairfield Air Depot CLR 2000).

2001 MOA Regarding Demolition of Facilities 30002 (partial), 20007 (Partial), 20061, 20079C, 20095, 20194, 20433, and the 10-Foot Wind Tunnel Tube, Wright-Patterson Air Force Base, Ohio

As part and parcel of the Historic Building Reutilization Study conducted under the Department of Defense Legacy Resources Management Program in 1999, an MOA was entered into by the United States Air Force and the Ohio SHPO for the demolition of contributing properties within the Fairfield Air Depot and Army Air Forces Historic Districts. It was stipulated that all properties identified for demolition receive HABS/HAER Level 2 documentation (20007 & Wind Tunnel HAER documentation already existed) (USAF, SHPO 2001). This MOA also uniquely stipulates that the Air Force undertake measures to increase public awareness of the historic resources at WPAFB by providing information on websites and producing cultural resource brochures for distribution to base visitors, dignitaries, and staff. In partial fulfillment of this MOA, a set of Heritage Tour brochures were produced (updating an earlier version from the 1980s). These brochures were most recently updated in 2012 featuring historic properties of Area A, Wright Field Early Years, Wright Field Expansion and WWII, the Cold War Era, and the Brick Quarters. A publically-accessible website was also developed as part of the 2001 MOA, but due to staffing shortfalls, the website is no longer available.

2002 – Cultural Landscape Report for Huffman Prairie Flying Field

Prepared for Wright-Patterson Air Force Base, Environmental Management by the National Park Service and Olmsted Center for Landscape Preservation, this report is actually a combined Cultural Landscape Report, Landscape Implementation Plan, and Interpretation Plan addressing the history and significance of the site, treatment options, and implementation recommendations for landscape treatment and management, transportation alternatives, as well as interpretation (National Park Service 2002).

2002 – Army Air Forces Cultural Landscape Report

Completed by the Technical Center of Expertise for Historic Structures and Buildings, U.S. Army Corps of Engineers, the Army Air Forces CLR captures some of the historical evolution of Area B not addressed in the previous CLRs and expands guidance for management and maintenance of cultural landscapes to include areas to the east and southeast of those previously documented (Taylor, Army Air Forces CLR 2002). No documentary evidence was located to suggest completion of this CLR was stipulated by an agreement document.

2002 – Realignment of Gate 1B; relocation of historic Wright Field Gate Houses

A conditional finding of no adverse effect was granted by the Ohio SHPO in 2002 regarding relocation of the historic Wright Field Gate Houses (buildings 20081 & 20082) from their original location near the junction of A Street and Springfield Pike to the new 1B Gate on Nineth Street, approximately 950-feet to the southwest. The

finding of no adverse effect was subject to reconstruction of the historic gate houses and pillars in accordance with applicable Preservation Briefs (Mark J. Epstein, Ohio State Historic Preservation Office 2002-2004).

2003 – Preserve America, Executive Order 13287

This executive order affirms federal agencies' responsibility to identify, manage, and use historic properties in support of the agency's mission, and contribute to the economic well-being of local communities through inter-agency, state and local, and private sector partnerships to efficiently and effectively advance historic preservation objectives.

2004 MOA Regarding the Demolition of the Garages Associated with the Brick Quarters Historic District

This MOA between the United States Air Force and the Ohio SHPO pertains to the demolition of the historic one-car, two-car, and three-car garages that were eligible contributing elements to the Brick Quarters Historic District (USAF, SHPO 2004). As stipulated in the MOA, the garages were to receive individual Level 3 HAER documentation supplemental to the overarching record completed by HAER in 1993. It was further stipulated that WPAFB would finalize the National Register nomination for the Brick Quarters Historic District within 90-days (nomination was finalized but not yet submitted to the Keeper of the National Register; see 2012 Nomination below). All existing garages were to be replaced by new two-car garages. This project is currently awaiting final outcome of the Air Forces Military Housing Privatization Initiative (see below).

2004 Brick Quarters Historic District National Register Nomination (DRAFT)

This historic district nomination was initially prepared in 2004 and included 122 contributing properties under criterion A and C (Hardlines Design Company 2004). This nomination was prepared as a stipulation of the 2000 MOA *Regarding Replacement of the Windows in the Housing Units at the Brick Quarters* but not finalized until 2012 (see 2000 MOA above).

2005 PA Regarding the Privatization of Military Family Housing

In response to the Air Forces Military Housing Privatization Initiative (MHPI), the fee ownership and above-ground improvements of all housing units shall be obligated to a Private Real Estate Development for 48-years. This PA specifically pertains to those units determined eligible for the National Register including 68 facilities within the Brick Quarters Historic District and one unit known as the Foulois House. The PA stipulates a number of detailed covenants regarding improvement and temporary/routine maintenance actions that would be furthermore exempt from SHPO review. It was, however, stipulated that all said work must comply with the Secretary of the Interior Standards. As of this writing, privatization of the Brick Quarters is still under review including some alternatives that consider demolishing some or all of the Brick Quarters.

2006 – MOA Regarding the National Air and Space Intelligence Center (NASIC) Expansion, Facility 10828

This MOA outlines a mitigation strategy for the construction of a large addition to NASIC's Facility 10828, a National Register eligible building (USAF, SHPO 2006). An illustrated pamphlet on the history of the building and NASIC's significant role in national defense over the past sixty years was produced as mitigation for this adverse effect.

2006 – ACHP Program Comment Regarding Department of Defense Historic Properties Management

In compliance with NHPA, DoD identified a programmatic approach for the treatment of three common property types on military installations: Cold War era Unaccompanied Personnel Housing (1946-74), World War II and Cold War era Ammunition Storage Facilities (1939-74), and World War II and Cold War era Army Ammunition Production Facilities and Plants (1939-74). This Program Comment establishes a programmatic approach to Section 106 compliance for the approximately 45,000 buildings and structures covered under the agreement. The companion Environmental Assessment (EA) identifies a total of five (5) Unaccompanied Personnel Housing Units and eleven (11) Ammunition Storage Facilities at WPAFB for which the Program Comment allows all management activities affecting these properties to proceed without further Section 106 review, including demolition (U.S. Army Environmental Command 2007).

2007 - Wright Brothers Hill (also known as Wright Brothers Memorial) National Register nomination

Completed by Hardlines Design Company, this nomination includes the Wright Memorial and associated features as a memorial landscape site (Kennedy and Colburn 2007). This nomination was recently submitted for AFCEC review by the 88th Air Base Wing and Installation Command.

2007 – Wright Field Historic District National Historic Landmark Nomination (Draft)

The NHL nomination for Wright Field includes 120 properties: 74 contributing buildings, structures, and sites with an additional 46 non-contributing properties. Wright Field Historic District is considered nationally significant under NHL Criteria 1 and 5 for its association with broad themes in Experimentation, Science, and Technology with a stated period of significance between 1925 and 1947. According to the nomination, “Wright Field was the centerpiece for test-flying and improving the performance of virtually all military aircraft designs for the U.S. Army Air Corps and U.S. Army Air Forces” (Salvatore, Wright Field Historic District 2007). The NHL nomination was initially prepared by the National Park Service as part of the American Aviation Heritage Theme Study (see below) and partially funded by AFMC/CC. The NHL nomination for Wright Field Historic District is still pending

2009 – Air Force Demolition Policy

In 2007, the Office of the Secretary of Defense directed each of the military services to establish a 6-year program for eliminating excess facilities. In response to the DoD’s established goal for the Air Force to eliminate 15-million square feet of facility space, the Air Force Civil Engineer developed a plan coined the “20/20 by 2020” policy, directing each installation to eliminate 20% of its physical plant by the year 2020 (Waltrina Davis, HQ ACC/A7PD 2009). In implementing the Air Force 20/20 by 2020 initiative, operations will be consolidated into “right-sized facilities and demolishing those that fail to meet space utilization criteria outlined in Air Force Handbook (AFH) 32-1084” (FONSI, Demolish Multiple Buildings November 2013).

2009 – Maintenance Plan for Historic Buildings, Wright-Patterson Air Force Base

This plan establishes base-wide protocols for the planning and management of over 250 historic buildings listed in, or eligible for, the National Register of Historic Places. This includes routine monitoring of occupied and vacant historic facilities, procedures for identifying and responding to submitted work requests, complying with Secretary of the Interior Standards for treatment of historic properties, and implementation of preventative maintenance procedures.

2010 MOA Regarding the Proposed Explosive Ordnance Disposal Proficiency Training Range

Though no demolitions were proposed as part of this undertaking, it is pertinent to note that as mitigation for affects to the Huffman Prairie Flying Field National Historic Landmark, Dayton Aviation Heritage National Historical Park, and Brick Quarters Historic District, the MOA stipulated that WPAFB would fund and install an interpretative display explaining the purpose of the Explosive Ordnance Disposal, investigate concrete foundation remnants recently discovered by the National Park Service at Huffman Prairie Flying Field, and design and install an interpretative sign for the National Aviation Heritage Area, all of which were completed in a timely manner and in accordance with stipulations of the MOA (USAF, SHPO 2010).

2011 – American Aviation Heritage: A National Historic Landmark Theme Study

As part of the *Centennial of Flight*, a partnership between the National Park Service and the U.S. Air Force was forged in 2003 to initiate an *American Aviation National Historic Landmarks Theme Study*, which among other things, identified Wright Field Historic District as a potential National Historic Landmark. Due to some concerns on behalf of Air Force Command regarding the potential limitation of future Air Force operations with respect to NHPA Section 106, the Wright Field NHL nomination was never finalized (see 2007 NHL nomination above). A series of documents between the WPAFB Chief, Operations Branch; HQ AFMC; and NPS in 2010 document these concerns, attempting to alleviate them by revising the list of contributing buildings to include only those most significant properties, and incorporating an integrity analysis that would allow for future modifications, especially on the interiors of ancillary buildings. In the end, Wright Field is noted in the *American Aviation Heritage Theme Study* as one of the “Properties Recommended for Further Study” (Lord 2011, 251), and the NHL nomination for Wright Field Historic District is still pending.

2011 – Integrated Cultural Resources Management Plan

To quote from the document: “ICRMP fulfills the legal requirements of the Air Force that are incurred under various public laws as of January 2011 and will form the basis for the negotiation of a Programmatic Agreement (PA) among the Air Force, the SHPO, and the Advisory Council on Historic Preservation (ACHP)” (Labat Environmental Incorporated 2011, iv). The ICRMP notes that as of 2011, a baseline inventory was complete for all standing structures dating up to 1962, including 256 historic facilities, most of which are contained within the identified three historic districts: Brick Quarters, Fairfield Air Depot, and Wright Field. The ICRMP goes on to identify an additional 26 buildings possessing Cold War significance (Labat Environmental Incorporated 2011, iii). The Five-year plan for the Future Year Defense Plan, as noted in the ICRMP, identifies 4 of these Cold War eligible buildings for demolition: 10880, 20194, 30199, and 30256.

2011 MOA Regarding the Demolition of Facilities 30168 and 30169, Area A

In keeping with mandates dictated by the *National Defense Authorization Act of 2009, Military Construction, Veterans Affairs and Related Agencies*, WPAFB plans demolition of 30168 and 30169 to be replaced by a new Security Forces Squadron operations facility (USAF, SHPO 2011). Since Level 3 HAER documentation was previously completed for these properties in accordance with the 1999 MOA, a myriad of mitigation measures were stipulated in this MOA, including salvage of representative limestone caps from each demolished building, rehabilitating the interior of 30206 and upgrade its fire suppression system, retain and rehabilitate 30163, and upgrade windows and siding at 30088. This seemingly disconnected list of mitigation items was justified as representing a “substantial financial investment by WPAFB in the Fairfield Air Depot Historic District that

combined with the recent [rehab and improvement projects] ...demonstrate WPAFB's continuing commitment to seek opportunities for extending existing operations or placing new operations in historic buildings throughout the district".

2011 MOA Regarding the Renovation of Facility 20019, Area B

Signatories to this MOA include WPAFB, the Ohio SHPO, HAER, Dayton Aviation Heritage National Historical Park, and the National Aviation Heritage Alliance, and the purpose of this project was to document and then disassemble the Five-Foot Wind Tunnel located within Building 20019 prior to rehabilitation of the facility (WPAFB, SHPO, HAER, NPS, NAHA 2011). The Wind Tunnel was to be disassembled, removed from the facility, and stored within Building 20252 until such time as a new location to house and display the Wind Tunnel could be identified. The MOA further stipulates that museum-quality exhibits would be produced for installation on both the interior and exterior of Facility 20019 interpreting the Wind Tunnel and its significance, both of which are presently in production. Archival records pertaining to the operation and testing of the Wind Tunnel that were located during the course of the project will also be curated as a stipulation of this MOA.

2012 MOA Regarding the Demolition of Two Additions Attached to Facility 30206, Area A

In accordance with the stipulations of the MOA, WPAFB planned to demolish one historic and one non-historic addition to Facility 30206. Stipulations of this MOA specify removal of additions on the East and North facades of 30206 and restoration of the exterior to its original appearance (WPAFB, SHPO 2012).

2012 – Brick Quarters Historic District National Register nomination

The Brick Quarters nomination was completed in 2004, approved by the SHPO, and transmitted through AFMC to the Air Staff in February 2005. This nomination underwent revisions in 2010 and was resubmitted and signed by the Ohio SHPO on May 4, 2012 (Hardlines Design Company 2012). It was submitted to AFCEE/TD MidWest Regional Support Office in September 2012 for review but has yet to be forwarded to the Keeper of the National Register due to unresolved issues pertaining to Housing Privatization of the Brick Quarters (see above).

2012 EA for the Consolidation of 88th Air Base Wing Civil Engineer Operations

The Environmental Assessment (EA) for the relocation and consolidation of 88th Air Base Wing, Civil Engineer Operations identified four non-contributing historic buildings for demolition: 20745, 30017, 30021, and 30029 (Labat Environmental, Inc. September 2012). The associated EA concluded that there would be no adverse effect to listed or eligible historic properties, and therefore this undertaking would have no cumulative effect on cultural resources. And while the evaluation of potential effects was enacted in full compliance with NEPA; the EA failed to mention that Facility 20745 (Quartermaster Laundry) constituted the last remaining, albeit non-significant and noncontributing, temporary WWII building in Area B (Taylor, Army Air Forces CLR 2002, 231).

2012 EA for the National Museum of the United States Air Force Addition

This EA was prepared for the construction of a new hangar at the National Museum of the United States Air Force. This new structure is the fourth in a series of hangars constructed along the west side of the Triangular Runway within the Wright Field Historic District, and its proposed construction was determined to have no adverse effect on the historic flight line (88th ABW, Civil Engineer Directorate February 2013). Justin M. Cook, with the Ohio SHPO, noted that the first hangar, Facility 20489, is eligible for the National Register as "an excellent example of

American modernist architecture of the 1970s, as one of the major works of internationally recognized architects Roche and Dinkeloo” (Ohio Historic Preservation Office, Justin M. Cook 2012). He went on to concur with the finding of no adverse effect saying, new construction will be “in keeping with the existing museum building and the purpose of the new facility will be in keeping with the mission and use of the existing museum facilities” (Ohio Historic Preservation Office, Justin M. Cook 2012).

2013 - Demolish Multiple Buildings, Wright Patterson Air Force Base, Ohio

As part and parcel of the 20/20 by 2020 initiative, WPAFB initially identified 25 buildings for demolition in FY2013. Consultation for this undertaking was initiated with the Ohio SHPO in October 2012, identifying up to 25 buildings to be demolished (four of which were covered under a previous undertaking; leaving 21 for consideration). WPAFB determined that four (4) out of the 21 buildings were eligible for the National Register (20062, 20250, 30153, 30256), and that therefore the undertaking would have an adverse effect on just those 4 buildings (Correspondence between Paul F. Woodruff, CRM with 88 ABW/CEAN and Mark Epstein, Ohio Historic Preservation Office 2012-2013). Despite a good-faith effort on behalf of all parties to identify eligible properties and consider the effects of the undertaking in accordance with 36 CRF 800.4, a series of misunderstandings and errors resulted in the demolition of 14 buildings prior to consultation being concluded, SHPO terminated consultation, and comments from the ACHP agreed with SHPO that “there would be no value in further consultation under Section 106 given that adequate measures for avoiding, minimizing, or mitigation affects to historic properties are no longer available” (Advisory Council on Historic Preservation, Reid J. Nelson 2013).

2014 MOA and 2015 PA Regarding Demolitions for Physical Plant Reduction

In compliance with the 20/20 by 2020 Air Force initiative, WPAFB’s initial FY14-15 reduction is outlined in the MOA of the same title, but the overarching demolition plan for FY14-FY20 includes a total of 53 buildings (totaling more than 703,000 square feet) (Barder 2014), 10 of which are non-historic buildings less than 50-years of age, 15 were previously determined ineligible for the National Register, 13 are eligible for the National Register, 3 are non-contributing buildings located in a Historic District, and the remaining 12 are yet to be evaluated (United States Air Force and Ohio State Historic Preservation Office 2014). This undertaking will adversely effect historic properties contributing to both eligible historic districts: Wright Field Historic District and the Fairfield Air Depot Historic District. Stipulations of the 2014 MOA include development of a Mitigation Plan to be created by “an objective outside contractor to identify and prioritize potential mitigation for ongoing adverse effects ... to take into account past, current, and future cumulative effects.” The MOA also identifies the preservation and continual active use of building 30199 as mitigation for demolition of the other 10 properties slated for disposal in FY14-15. This MOA also stipulates initiation of a geo-spatial mapping project to portray historical development of the base. The companion PA for Physical Plant Reduction of FY16-FY20 specifically stipulates that demolitions proposed for each year of the project will be consolidated as a single undertaking for SHPO review, including appropriate mitigation to address the adverse effects of proposed demolitions (WPAFB, SHPO 2015). This report addressing *Strategies for Mitigating Adverse Effects at Wright-Patterson Air Force Base* is being prepared in accordance with the stipulations of these agreements.

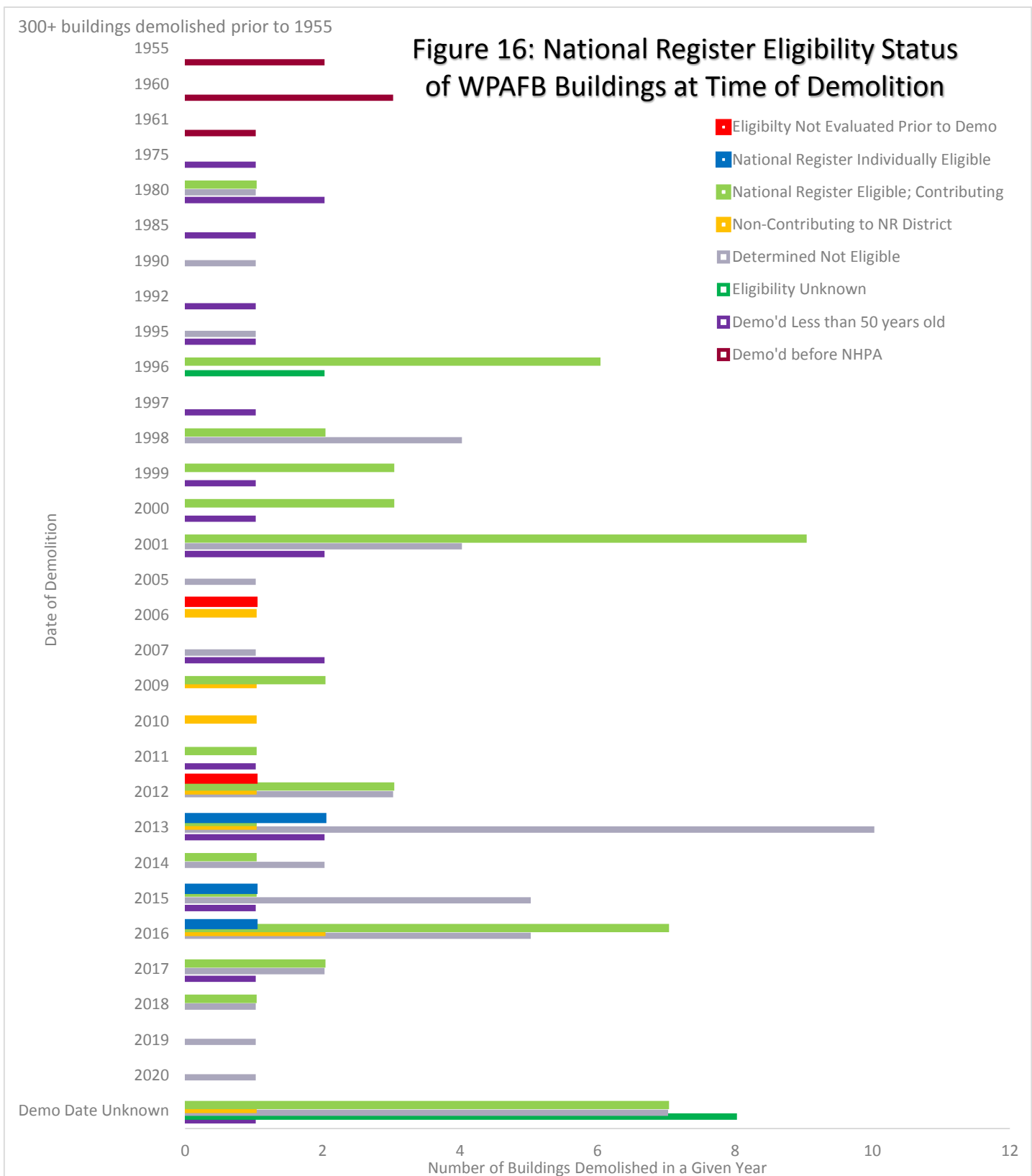


Figure 16 shows the eligibility status of buildings at the time of demolition (see Appendix B for details)

Of particular note is the combined number of Individually Eligible and Contributing buildings demolished or slated for demolition over the last 50+ years, which irrefutably illustrates the increasing impact these demolitions are having on the historic integrity of WPAFB. It is equally important to note that no individually-eligible buildings of national significance were slated for demolition prior to 2013, and yet four (4) have been, or are proposed to be, demolished between 2013 and 2020.

INTEGRITY ASSESSMENT

“Cultural resources are not a revolutionary engineering concept or a pattern of crop rotation... Cultural resources are physical entities with qualities such as mass, color, and texture,” and integrity addresses the degree to which these physical entities can express their historical or cultural associations (National Park Service 2008, 2-13). The ability of a property or historic district to convey its historical or cultural association (otherwise known as significance) is defined by seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. While a property or district does not need to possess all seven aspects, it is generally understood that in order for a property to be deemed eligible for the National Register of Historic Places, it must retain at least three out of the seven, and the level of importance for one aspect of integrity or another is generally based on its history. It must too be noted that “integrity” is not the same as “condition.” As is popularly noted: “condition is a matter of rot and rust; integrity is a matter of age and authenticity” (National Park Service 2008, 2-14).

Wright Field and Area B

In the case of Wright Field Historic District, the critical aspects of integrity to be retained include location, setting, design, materials, feeling, and association. It should be noted that, in this case, integrity of workmanship shall be defined as the physical evidence of technology or research being conducted in a particular building during the period of significance (1925-47), and though important to the overall history of Wright Field, workmanship is not imperative to maintain the outward architectural integrity of the District. As long as the key physical materials used in construction of these buildings remains intact, mainly that which is characterized as the Wright Field style, then the Historic District shall retain integrity of materials. An Integrity Assessment completed in concert with the Historic District nomination for Wright Field in 2010 notes that the District “maintains its location and setting as the place where the army conducted research and development,” and it remains so today. Many of these facilities are still used for aviation research and development, and even if some of the original interior equipment has been replaced with modern technology, the physical building can still convey integrity of design and association with a particular component of aeronautic research as long as the architectural character of the building and the District are retained. The 2010 Integrity Assessment goes on to say that “these test facilities played pivotal roles in advancing airframe, propeller, and engine development... Some resources remain unchanged while other have undergone equipment, window, and interior design changes to varying degrees. Both the exterior and interior designs, along with equipment, convey the district’s significance” (Salvatore, Re: Integrity Assessment 2010).

The single greatest impact to the integrity of the Wright Field Historic District to occur within the last 30-years was the demolition of four (4) original buildings at the northeast corner of Downtown Area B during the 1990s, including the Maintenance Shop (20036), Central Heating Plant (20066), Electric Power Plant (20067), and partial demolition of the Garage/Foundry (20051). Demolition of these buildings has notably eroded the integrity of Wright Field Historic District by effectively removing those buildings comprising the District’s northernmost boundary. In fact, the 1998 EIS addresses the cumulative impacts of these demolitions as follows:

“The loss to the Wright Field Historic District would be greatest at the northern boundary, along the north and south sides of Third Street. The approved demolitions of Buildings 20036, 20066, 20067, and part of Building 20051 have had an adverse impact on the Third Street district boundary, especially at the northwest corner of Third and E Streets. With the demolition of Buildings 20066 and 20067, there are no structures on or near the northwest corner. The entire fabric of the district--architecturally, historically, and visually--would change if all these buildings are demolished. The proposed demolition of Building 20038 would leave only Buildings 20012 and 20039 from the Wright Field Historic District on the north side of Third Street. Consequently, the character of the district would be compromised.”

(EIS: Demolition of Multiple Historic Facilities 1997, 4-8)

As noted in the 1997 EIS, should the Automotive Repair Building (20038) also be demolished, the character of the Historic District will be compromised. Add the proposed demolition of the Technical Data Annex (20030), Wright Field Laundry (20091), the Aero-Medical Centrifuge (20055- demolished in 2009),⁵ and the Aero-Medical Complex (20196, 20197, 20198), and this will leave only three (3) historic buildings on the north edge of Third Street. The demolition of these eleven (11) historic buildings will compromise the integrity of setting and feeling at the District’s north end.

Past demolitions of the Ordnance Storage (20062), Dispensary (20040), and Dynamometer Storage (20059), along with the proposed demolition of the Rotor Test Stand (20250), Fire Station (20076), and Instrument Test and Calibration Lab (20435); as well as a series of past and proposed demolitions concentrated to the south of Downtown Area B, including the Art Deco Special Weapons buildings (20192, 20193, 20194, 20195), Jet Propulsion Laboratory complex (21625, 21626, 21627, 21628), Equipment Research Testing (20093), Ramjet Operations (20095), Flight Dynamics Laboratory (20063), Lumber Storage (20064), Ordnance Aircraft Service (20190), and Dynamic Sight & Computer Test facility (20434); are further eroding the integrity of setting, design, feeling, and association of the Historic District. These recent demolitions have impacted the integrity of the Historic District in a manner never previously undertaken. Should the demolition of all 31 historic buildings (19 contributing; 12 noncontributing) occur as proposed, then it will adversely impact the urban sense of place and historic streetscape of Wright Field, thereby eroding integrity of setting, design, feeling, and association to such a degree as to threaten the eligibility of the entire Historic District.



Figure 17: Street view of Third Street, Downtown Area B, in 1944 showing the urban character of the District (Zug-Gilbert, et al. 1996, 153).

⁵ The Aero-Medical Centrifuge (20055) was previously saved as mitigation for the demolition of 10 other historic buildings (see 1999 MOA), but evolving mission requirements necessitated amending the MOA to demolish facility 250055.

It is important to note that the only major new construction to occur within the Historic District -- the ASD Fuels and Lubricants Laboratory (20490) and the Acquisitions Complex (~20553-20560) -- was outside the core of Downtown Area B, and therefore did not have a direct adverse effect on the historic integrity of Wright Field Historic District.

Outside of the Wright Field Historic District, the remainder of Area B retains few buildings associated with the early history of the installation or World War II even though much of Area B was historically littered with World War II temporary structures. All of the temporary WWII structures were subsequently demolished as their usefulness waned and dilapidated condition increased, the last of which (Library T-430 and Quartermaster Laundry T-745) were demolished in 2008 and 2014 respectively.

There are also a number of buildings within Area B whose exceptional significance and association with the Cold War was documented by Archeological and Historical Consultants, Inc. in 1996, and whose significance was later confirmed by the *Cold War Needs Assessment* in 2000 (Air Force Center for Environmental Excellence 2000). These exceptionally significant Cold War buildings are an important part of Wright Field's history that should be retained: the Modification Hangar (20004), Acoustical Enclosure for Propeller Test Stands (20020A), Cold Chamber and Power Buildings for the 10-Foot Wind Tunnel (20025A & 20025C), the Research Lab (20033), Allis-Chalmers reactor (20470), Sensors Directorate (20620), AF Research Lab (20653), and Base Transportation Material Handling (20821) (Zug-Gilbert, et al. 1996, 240). None of these buildings are slated for demolition under the Physical Plant Reduction initiative.

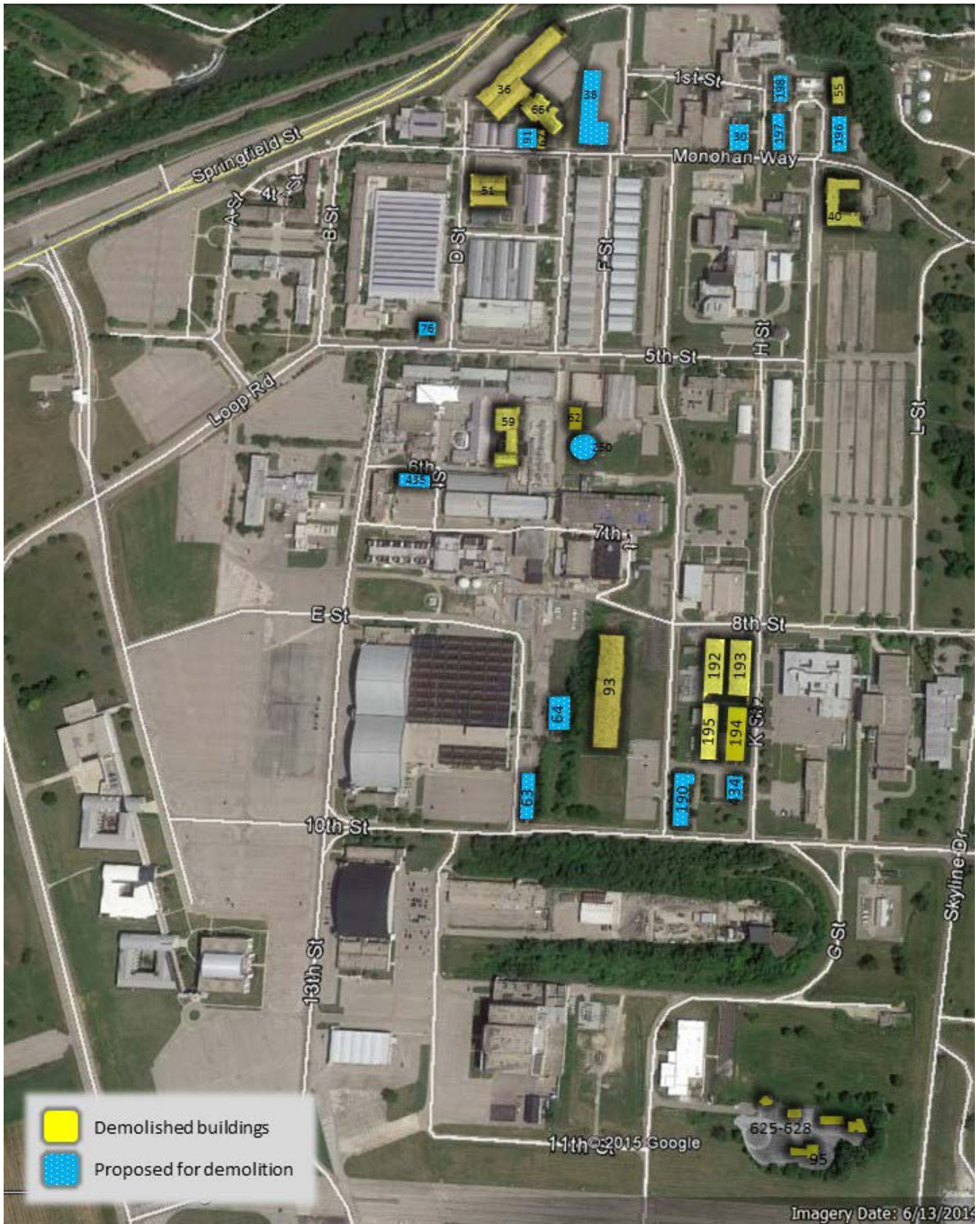


Figure 18: Area B Aerial, showing demolished buildings and those proposed for demolition

Patterson Field and Area A

Building demolitions have also had a widespread and negative impact on the integrity of Fairfield Air Depot Historic District and other historically significant areas of Area A. While the majority of buildings demolished in recent years were less than 50-years of age and/or previously determined not eligible, the cumulative loss of both contributing and non-contributing historic buildings actually has had a more deleterious effect on the integrity of the potential Historic District than additions or modifications to those buildings would have had. While Downtown Area B maintains an urban feel with a core of buildings united in design and materials, the historic core of Fairfield Air Depot (FAD) lacks this same cohesive “feel.”

At its height, the historic core of the FAD was characterized by large, brick, “Wright Style” permanent buildings interspersed with groups of temporary wood buildings comprising a typical working airfield (R. Christopher Goodwin and Associates, Inc. 1997, 329). The density of parallel warehouses in the Supply area of the Depot is a character defining feature that has thus far been maintained. However, the historic integrity of the area historically associated with Engineering and Maintenance grouped around Building 30013 and sited roughly in line with the original layout of Patterson Field, is being steadily eroded due to demolitions.



Figure 19: Patterson Field in 1943 showing the buildup that occurred in the early years of WWII. Notice the numerous parallel depot maintenance and storage buildings.

Though the historic core of FAD has cycled along with the general ebb and flow of build-up/tear-down that has occurred throughout WPAFB’s history, the large number of historic buildings demolished or proposed for demolition is adversely impacting the integrity of the Fairfield Air Depot Historic District. The drafted Historic District nomination includes 24 contributing properties; but as a result of unsympathetic alterations, building demolitions, and new construction, Fairfield Air Depot Historic District, as originally described in that nomination, no longer meets the 51% contributing buildings requirement for a Historic District. Historic Districts must typically comprise at least 51% contributing properties, leaving no more than 49% of buildings within the District deemed non-contributing. If WPAFB wishes to proceed with the nomination of the Fairfield Air Depot Historic District, then the District boundary will need to be revised to encompass the greatest number of eligible properties, thereby excluding most of the buildings around Facility 30013 that already have been, or will be, demolished including: 30053, 30054, 30089, 30119, 30168, 30169, 30170, 30201, 30209, 30210, and 30256.

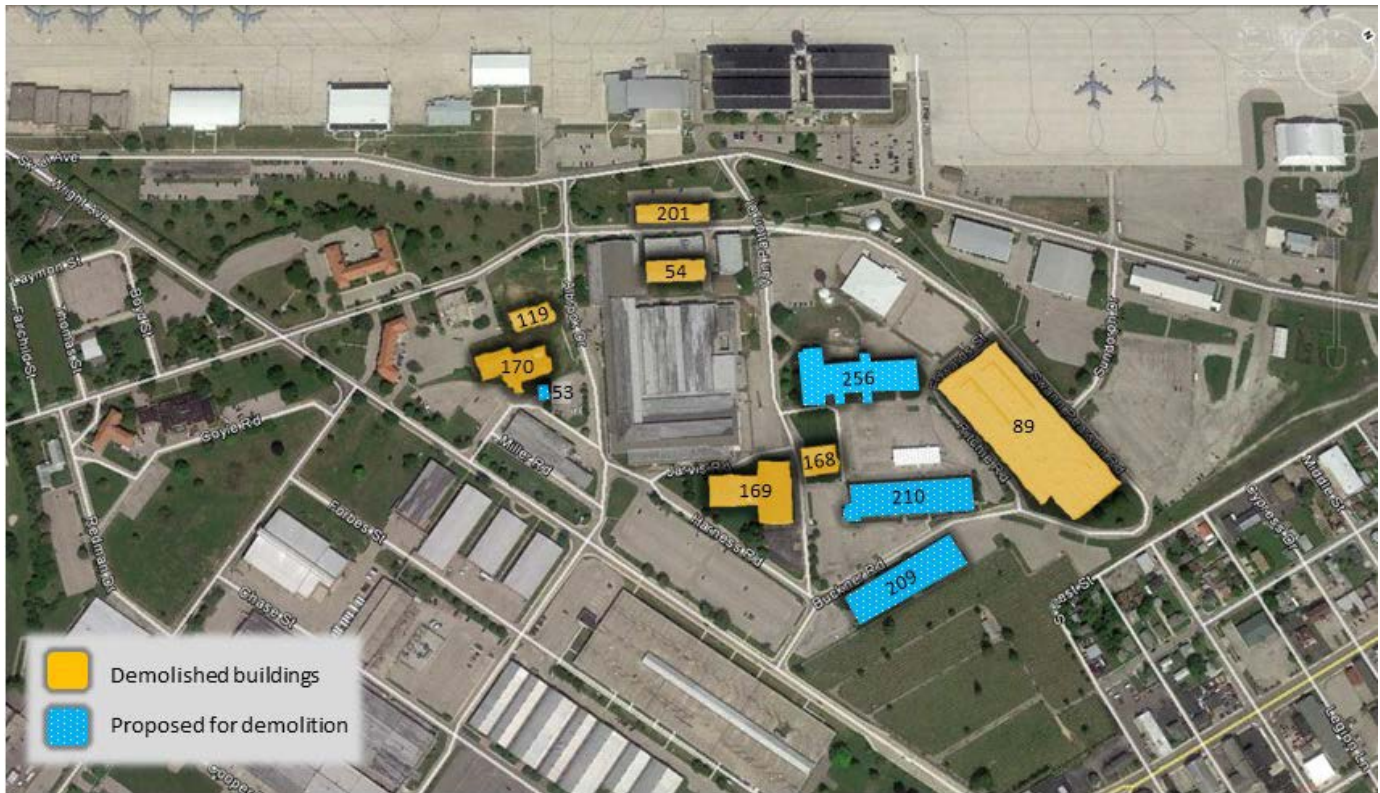


Figure 20: Area A Aerial, showing demolished buildings and those proposed for demolition

Another significant region of Area A, referred to as West Ramp, was constructed in 1960 for the Strategic Air Command (SAC). The major buildings of this area are hangar-type with steel frames clad with metal siding and today possess significance associated with the Cold War. Exterior modifications to some of these buildings and the modern addition of two large C-5 aircraft hangars (34015 & 34016) have, according to the 2009 Hardlines Design Company inventory, adversely impacted the integrity of this area to such a degree as to render it no longer eligible as an exceptionally significant Historic District less than 50-years of age (Hardlines Design Company 2009, 52). Given that all of the buildings comprising the SAC are now over 50-years of age, it is recommended that they be reassessed for Historic District eligibility in accordance with the Air Force guidelines established by the 2000 *Cold War Needs Assessment* (Air Force Center for Environmental Excellence 2000).

Nevertheless, a number of SAC buildings retain individual historic integrity and are thus deemed eligible for the National Register and are treated accordingly by WPAFB. These include the only two remaining Alert buildings (30153 & 34004), two Cold War ammunition bunkers (34062 & 34064), Corrosion Control Facility (34024), Maintenance



Figure 21: 1990s Aerial of Strategic Air Command, Area A

Hangar (34026), the SAC Nose Dock Hangar (34020), and four shop buildings (34042, 34044, 034046, 34066). The Plant Reduction Initiative has identified 34020 and 34026 for demolition. As one of the few SAC historic buildings that still retains historic integrity, demolition of the SAC Nose Dock Hangar (34020) will further erode WPAFB's historic association with the Cold War.

It is important to note that there are a few additional buildings scattered around Area A that represent exceptional significance for their association with the Cold War: a Cold War-era Hangar (30152) and the Cold War-era NASIC buildings (10828, 10829, 10853, 10856), all of which retain integrity and have been determined eligible for the National Register. None of these buildings are slated for demolition under the Physical Plant Reduction initiative.

One other notable group of buildings within Area A fully retaining integrity is the Brick Quarters Historic District, which contains 122 contributing properties, and only 4 noncontributing buildings. The Historic District is considered nationally significant under National Register criterion A and C for the U.S. Army's adaptation of civilian planning principles and popular suburban architectural styles applied to a military setting (Hardlines Design Company 2012, 8).

CUMULATIVE EFFECTS ANALYSIS

The following **cumulative effects analysis (CEA) of historic resources** was prepared by CEMML consistent with the terms of our contract and in accordance with the National Environmental Policy Act (NEPA), to which NHPA defers in defining cumulative effects.

National Environmental Policy Act (NEPA) defines **cumulative impacts** as resulting from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes them. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR 1508.7)

The Council on Environmental Quality (CEQ) has further established that the most devastating effects do not typically result from a single action, but rather the combined effect of multiple minor actions over time (Council on Environmental Quality 1997, 1). Using NEPA's basic CEA framework, the following analysis is provided, outlining the cumulative effects to historic resources at Wright-Patterson Air Force Base.

Scoping: The Scope of this analysis is base-wide and encompasses the base's full breadth of history; however, we shall focus on the cumulative effects of undertakings adversely affecting historic resources only since 1990. As the proceeding **Historical Background and Significance** section illustrated, WPAFB's built history embodies a number of nationally-significant events that represent noteworthy achievements in American aeronautical and military history. WPAFB has received several awards and formal recognition for its proactive documentation of eligible resources and integration of NHPA and Cultural Resource regulations into routine operations.

Affected environment: A number of undertakings over the years have resulted in determinations of adverse effect to the integrity of individual historic buildings and districts at WPAFB. Described in the **Project History** section above are sixteen (16) separate Planning/Agreement Documents regarding the proposed demolition of fifty-five (55) eligible historic properties and 57 noncontributing or non-eligible historic buildings over the last 30-years. This does not even take into account the undocumented number of temporary World War II structures that were demolished as a result of the 1986 Programmatic MOA for demolition of said structures. These numbers alone illustrate the cumulative impact WPAFB undertakings have had on the base's built history and supports the contention that WPAFB's history is being slowly and inexorably eroded. And while WPAFB has successfully implemented NHPA Section 106 into the project planning process, the follow-through in justly compensating for the loss of historic properties and/or fulfilling all stipulations of each MOA has not always been quite so successful.

Consequences: At WPAFB, the cumulative effect of demolishing more than 50 historic buildings has adversely impacted the Fairfield Air Depot and Wright Field Historic Districts, as well as the base's built history as a whole. Past and current demolitions have impacted the Fairfield Air Depot to such a degree that the District, as originally defined, no longer retains the requisite number of eligible properties within its boundaries; demolitions and unsympathetic alterations to Cold War-era properties has erased enough of the character defining features that Hardlines Design Company concluded there were no longer a sufficient number of contiguous buildings to even

consider nominating a National Register District; and the cumulative erosion of Wright Field's integrity of setting, design, feeling, and association due to past and current demolitions is threatening the viability of that well-established District as well. Proposed future demolitions, as identified by the 20/20 Plant Reduction Initiative, include 14 eligible historic properties and 14 noncontributing historic buildings, the cumulative effect of which will adversely impact the urban sense of place and historic character of these Districts. It is important to note that "non-contributing" does not equal "insignificant" (Stansberry 2006, 14). Even noncontributing historic buildings can serve to maintain a sense of place within an historic district by preserving an urban streetscape, maintaining a rhythm of fenestration or setback, and sustain a balance of development versus open space.

Realizing, of course, that the exact number of buildings to be demolished in the future remains uncertain, it is however certain that the continued erosion of historic integrity as a result of these demolitions is having a deleterious effect on the nationally-significant built history of WPAFB. This heritage is important to the history of this nation, which should not simply disappear behind the fence where it can no longer tell the amazing stories of the people, places, and events that occurred at Wright-Patterson Air Force Base and shaped our nation.

Four of the MOAs/EISs noted below address demolition of multiple buildings, and oftentimes only one building was "saved" as mitigation for demolition of 5-15 others. And although those same MOAs often also stipulate HABS/HAER documentation for all demolished buildings (often expanded to include documentation of other buildings as well), HABS/HAER documentation alone is no longer considered "just mitigation" for the irreversible loss of nationally significant historic buildings unless there is a true "public benefit" component of the mitigation. As W. Ray Luce, the Deputy GA SHPO, noted at the 2006 DoD Cultural Resources Workshop, too often "we do a knee jerked reaction that we need to record the property... Those reports are too often filed away and the actual usefulness to the public is much less than it should be." He goes on to advise that "The options available for the public good from mitigation are much broader, and need to be examined to ensure that the public is getting its money's worth" (Luce 2006, D-8).

This Mitigation Strategies Report exposes an undeniable pattern wherein the cumulative "value" of the properties being demolished at WPAFB has not been justly offset by the value/public benefit of the particular mitigations being proposed. At its very core, mitigation should be the public benefit that balances the loss of a historic resource.

COST ESTIMATES

The following cost estimates are provided for each of the proposed mitigation strategies identified in this report.

Mitigation Options I: Documentation

Task	Estimated Cost
I.A. comprehensive evaluation of historic building data & update of OHI forms	\$120,486.00 ¹
I.B. Historical Mapping Project	\$150,000.00*
I.C. Re-evaluate eligibility of Strategic Air Command Historic District	\$35,129.50 ¹
I.D.1. Geo-physical survey of Huffman Prairie Flying Field & Indian Mounds	\$37,815.80 ²
I.D.2. Geo-physical survey of Osborn town site	\$93,843.80 ²
I.E. Facilities Database Development for Historic Properties	\$14,000.00 ¹

¹ Estimate prepared by CEMML

² Estimate prepared for CEMML by Archaeo-Physics LLC

* Government estimate

Strategy for minimizing O&M Costs

There are no physical plant O&M costs associated with these data management strategies. The only long-term costs will be those associated with maintaining accuracy within the database and maps, which may be absorbed as a collateral duty of existing base personnel or partnering entities.

Mitigation Options II: Historical Interpretation

Task	Estimated Cost
II.A. Interpretive Center Alternatives	
1. Expanded HPFFIC with WPAFB Heritage Addition	1. \$4,620,000.00*
2. Replace HPFFIC with new, larger Interpretive Center	2. \$4,900,000.00*
3. Construct new WPAFB Heritage Center	3. \$4,000,000.00*
II.A.1. Wind Tunnel Reassembly within HPFFIC	\$240,000.00*
II.A.2.a. POW Mural preservation and relocation to HPFFIC	\$140,000.00*
II.A.2.b. POW Mural laser scanning	\$26,837.47 ¹
II.A.3. Wright Field Mural restoration for display at HPFFIC	\$46,000.00 ²
II.A.4. Classroom/Gathering Space	see II.A. cost estimate
II.A.5. HPFFIC parking lot	\$90,000.00*
II.B. Outdoor Heritage Garden Design and Installation at HPFFIC	\$75,000.00 ³
II.C.1. Wayfinding signage to Huffman Prairie Flying Field	\$63,250.82 ⁴
II.C.2. Transportation Link, Kauffman to Marl Road	\$3,500,000.00*

* Government estimate

¹ Estimate prepared for CEMML by CyArk, a 3D laser scanning non-profit organization

² Estimate prepared for HQ/AFMC/HO by Rick Herter

³ Estimate prepared by CEMML

⁴ Estimate prepared by CEMML; includes both design and fabrication of 11 directional and orientation signs

⁵ Estimate prepared by CEMML; includes both design and fabrication of 8 interpretive wayside exhibits

Strategy to minimizing O&M Costs

By employing sustainable materials and design principles, including renewable energy systems, passive solar design, and daylighting; the new HPFFIC addition can limit energy consumption and minimize long-term O&M costs. And, what little maintenance may be incurred for preservation of the historic pieces and plantings/landscaping in a Heritage Display Garden proposed for the HPFFIC, can be maintained by previous garden class members as a legacy to those they are mentoring with guidance/assistance from the Master Gardeners. Proper selection of materials for use in the orientation exhibits will ensure the long-term durability of displays requiring little to no annual maintenance.

Mitigation Option III.A: Education and Outreach

Task	Estimated Cost
III.A.1. interactive cultural resources website on WPAFB history	\$45,454.00 ¹
III.A.2. WPAFB full-color calendar; design and production of 1000 calendars	\$9,099.20 ²
III.A.3. Base Tours	\$0 ³
III.A.4. Self-Guided Heritage Tour design, development, and installation	\$57,268.61 ²
III.A.4. WPAFB documentary film	\$200,000.00 ²
III.A.5. Reprint <i>Splendid Vision</i> and <i>Home Field Advantage</i>	\$8,406.00 ⁴

¹ Estimate prepared for CEMML by Colorado State University Web Communications team

² Estimate prepared by CEMML

³ Estimate prepared by CEMML in consultation with Whiteman and Edwards Air Force Bases

⁴ Estimate based on original Government Printing Office (GPO) costs from 2002 and 2004 for 250 copies of each book

Strategy for minimizing O&M Costs

There are no physical plant O&M costs associated with these outreach strategies. The only long-term costs will be those associated with maintaining and updating a website, costs for which will be minimal and may be offset with partnerships and/or volunteer efforts. Stocking and supply of salable items, including calendars, DVDs, and books may also need to be considered as a long-term cost.

According to the Public Affairs POCs at Edwards and Whiteman Air Force Bases, their mission is to “tell the story of the base,” and Base Tours are a very cost-effective means of satisfying this mission. Base Tours would provide an added opportunity to enhance partnerships with NPS and/or NAHA with little to no additional cost for WPAFB. That said, bus tours incur zero facility costs and minimal O&M aside from routine gas and vehicle maintenance.

Proper selection of materials for use in the wayside exhibits will ensure the long-term durability of displays requiring little to no annual maintenance. Long-term costs to maintain a cell phone tour associated with the wayside exhibits will also be minimal, especially if employed in partnership with other agencies and organizations.

Mitigation Option: III.B: Partnerships

Task	Estimated Cost
III.B.1. Adaptive Reuse of Historic Gate 1B as Visitor Center	\$50,000.00*
III.B.2.a. Adaptive Reuse of Gate 16B as informational kiosk	\$25,000.00*
III.B.2.b. Fence Relocation at Gate 16B	\$37,260.00*
III.B.3. Mothball Hooppole School House	\$10,000.00 ¹
III.B.4. Preservation Maintenance of Wright Field Taxiway	\$879,200.00

* Government estimate

¹ Estimate prepared by CEMML

Strategy to minimize O&M Costs for Adaptive Reuse of Gate 1B as Welcome Center (NAHA)

Adaptive Reuse of the historic gate houses at Gate 1B as a NAHA-staffed Welcome Center is an ideal mitigation strategy. Maintenance costs for Facility 20082 are the responsibility of the base regardless of its occupants; even if the facility were to be mothballed, continued monitoring and maintenance is required for preservation. Since utility costs for this building are so minimal (estimated to be \$727/annually), it may be possible to pass these costs onto a future tenant. Likewise, it is important to note that Section 111 of NHPA (54 U.S.C. 306121. Lease or Exchange) gives Federal agencies the authority to use proceeds from out-leasing historic properties to defray historic preservation costs, and to generate income for their preservation programs. For all of these reasons, leasing Gate 1B to NAHA presents a cost-effective partnership opportunity.

Alternatively, moving the historic gate houses from Gate 1B to Bong St., on the entry road to the National Museum of the United States Air Force, may be an alternative worth considering if security and/or parking concerns prove too great of an obstacle for reuse of these buildings in their current location. The historic Wright Field Gate Houses were previously relocated during the 2003 reconfiguration of Gate 1B; nevertheless, moving them to Bong St. would still likely result in a determination of adverse effect, which may be deemed appropriate, if and only if, no other viable use is identified.

Strategy to minimize O&M Costs for Adaptive Reuse of Gate 16B as Information Kiosk (NPS)

Adaptive Reuse of the 16B gate house presents another great partnership opportunity. O&M costs for this facility are the responsibility of the base even if it remains vacant, but partnering with NPS or other potential occupant may offset some of these costs.

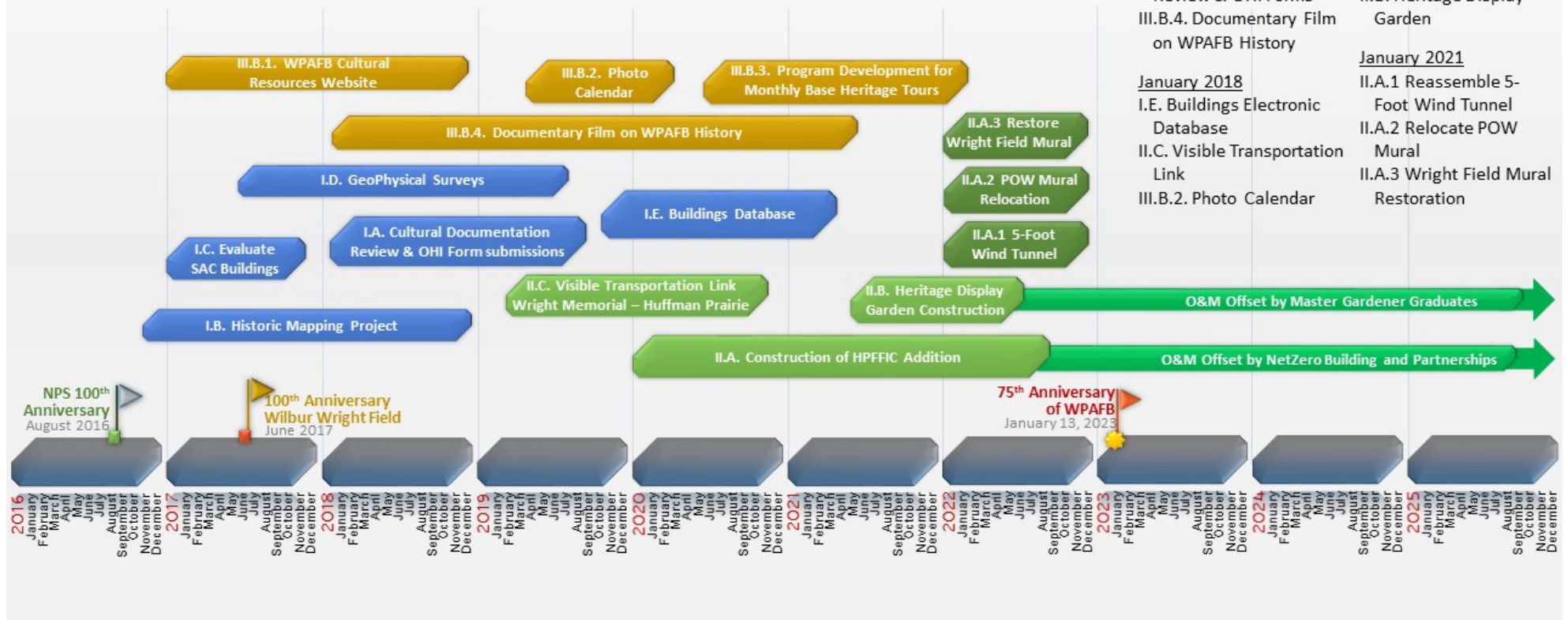
Strategy to minimize O&M Costs for Wright Field Taxiway Preservation Maintenance

Specs for installation of 3" asphalt overlay on existing taxiways is expected to extend the useful life of a traditional taxiway by 12-years under normal use. Because the Wright Field Taxiway's actual use is significantly less, the proposed overlay could be estimated to last as much of 20-years with routine maintenance and crack sealing, as needed. Annual O&M is estimated to be approximately \$500/year.

MITIGATION WORK PLAN AND PROJECT IMPLEMENTATION SCHEDULE (FY15-FY20)

Wright-Patterson Air Force Base Historic Resources Mitigation Strategies Flow Chart

Flow chart outlines a potential implementation schedule for FY2015-FY2020 Plant Reduction Mitigation Strategies
Completion of proposed schedule is subject to funding availability



ADAPTIVE MANAGEMENT STRATEGIES

This Mitigation Plan is not a strictly static document, and it is anticipated that the scope and number of buildings identified for Plant Reduction may change over time due to changing fiscal conditions and facility space requirements. As is stipulated in the associated Programmatic Agreement, each year for which this PA is in effect, the Cultural Resource Manager (CRM) shall establish a new Area of Potential Effect (APE) and make a reasonable and good faith effort to identify all buildings proposed for demolition, *both eligible and non-eligible properties*, to be submitted to SHPO for review and comment at the earliest time possible for the coming FY. This will ideally coincide with the annual December 1st deadline by which WPAFB shall submit an annual report to SHPO summarizing the activities carried out under the terms of the Plant Reduction PA.

It is therefore advisable, that an Adaptive Management Strategy be implemented to continuously improve upon these mitigation strategies in order to achieve the highest possible benefit/value for each mitigation item. With each phase outlined in this Mitigation Plan, it is important to conduct proper planning, deploy the project in accordance with specifications, evaluate results, and improve upon them in planning each successive year's mitigation strategies, for which the Physical Plant Reduction Initiative PA is in effect.

REASONABLE AND GOOD FAITH EFFORT

In complying with the stipulations of the PA Regarding Demolitions for Physical Plant Reduction, WPAFB has made a commitment to identify historic properties and consult in good faith with stakeholders, the State Historic Preservation Office, and others. In order to demonstrate a "good faith effort," NHPA Section 106 Regulations (36 CFR §800.4(b)(1)) specify that federal agency officials must consider the magnitude and extent of effects to historic properties by not only identifying National Register eligible historic properties within the APE, but also considering the cumulative impacts of past, current, and reasonably foreseeable future undertakings (40 CFR §1508.7). ACHP further advises that a reasonable and good faith effort must include *some level of effort*, which at a minimum, means reviewing *existing information* on historic properties that are or may be located within the APE, ensuring that *enough information* is provided to accurately determine the undertaking's effect [emphasis added] (Advisory Council on Historic Preservation 2011).

PROGRAMMATIC RECOMMENDATIONS

- Comply with Section 110 of NHPA (54 USC 306101), ensuring all facilities greater than 50-years of age, as well as those less than 50 that may be exceptionally significance, are evaluated for National Register eligibility prior to demolition.
- Recognize the benefits of avoiding and minimizing impacts to individual historic properties and historic districts. As noted in AFI 32-7065, "proponents of actions shall maximize the reuse of historic buildings and structures, where justified by an objective economic analysis, before considering their disposal" (U.S. Department of the Air Force 2014, 3.3.5.).

- Always strive to identify mitigation solutions that are as enduring and long-lasting as the impacts. If a building is to be permanently demolished, then the corresponding mitigation strategy should have an equally profound preservation and/or public benefit.
- Continue to use the “mitigation banking” model for preservation of significant remnants of architectural and engineering history that can be interpreted or reused as part of the proposed WPAFB Interpretive Center and Heritage Display Garden.
- Understand that MOAs are legal obligations (36 CFR §800.6(c)), compliance with which fulfills WPAFB’s NHPA Section 106 obligation. And, as noted in the CRM Playbook, “The CRM must ensure the [mitigation] agreement is honored” (U.S. Department of the Air Force 2014, 1.4.1.19.).
- Ensure continued funding of mitigation strategies to compensate for unintended consequences and their impact on the historic integrity of Wright-Patterson AFB and its nationally-significant heritage. “The Proponent is responsible for funding any mitigation actions developed in planning the activity” (U.S. Department of the Air Force 2014, 1.4.1.19.).

SUMMARY OF PUBLIC INVOLVEMENT

“At this time of rapid change, objects are disappearing or being discarded, buildings are being torn down, and records are being lost or thrown away. The people responsible for DoD’s material culture are confronted with a daunting task in deciding how to protect and preserve this evidence of the military’s [heritage]...”

(Coming in from the Cold: Military Heritage in the Cold War 1995, 41).

Section to be included with Final Report

MONITORING REQUIREMENTS

TREATMENT OF HISTORIC PROPERTIES

ICRMP: Identify, retain, and preserve: “The basic treatment of all historic buildings consists of identifying, retaining, and preserving the form and detailing of those architectural materials and features that define the historic character. In the Guidelines portion of the *Secretary of the Interior’s Standards for Rehabilitation*, these actions are always listed first under the "Recommended" heading. The material under the "Not Recommended" heading lists the actions that are most likely to cause the diminution or even loss of the building's historic character. Note that such loss of character is just as often caused by the cumulative effect of a series of actions that would seem to be minor interventions. Thus, the guidance under all of the "Not Recommended" headings must be viewed in that larger context of the total impact on a historic building.”

ICRMP: E.1.4 Reuse of historic properties: The installation shall seek to retain historic properties in active use for their original purposes, where applicable, or for new purposes under AFI 32-7065 (see “B.5.2.1 Air Force Instruction 32-7065” and Appendix A). For example, given a choice between rehabilitating a historic building to provide housing or demolishing the historic building and constructing a new one, rehabilitation shall be given priority. When historic buildings are slated for demolition, the justification and evaluation of alternatives shall be carefully documented by a Civil Engineering/Environmental Management team.

ICRMP D.2.2.5 Treatment of historic facilities: Unlike archaeological sites, historic facilities (such as buildings, structures, and objects) are used, occupied, and exposed to the elements on a daily basis. In addition to demolition, these types of resources are also subject to changes as a result of alterations and repair. The goal then of routine management of historic facilities is to maintain the historic character of these NRHP-eligible resources while allowing WPAFB to use the facilities without undue hardship. WPAFB has implemented a *Maintenance Plan for Historic Buildings* which references the *Secretary of the Interior’s Standards for Rehabilitation*.

ICRMP D.2.2.2.3 Treatment of archaeological sites: The general goal of the regular management of archaeological sites on WPAFB is their continual protection. Ideally, archaeological sites should be left in the ground and disturbed only as a last resort. Protection is emphasized because, unlike the procedures for investigating historic buildings, the process of extracting significant data from archaeological sites usually involves severe disturbance or even destruction through excavation. Properly monitored, sites left in the ground may survive for years, possibly to a time when more advanced technology enables methods of extracting site information without using destructive excavation.

ROUTINE MONITORING

ICRMP: Routine Monitoring: If avoidance/protection procedures are carried out, the significant sites at WPAFB will be left in situ potentially for years to come. These sites need regular monitoring to avoid damage by man-made causes such as looting and vandalism, as well as natural ones such as erosion and fire. WPAFB security personnel should patrol NRHP-eligible sites on a regular basis, similar to the way they currently patrol the operations and housing areas of the base. Any signs of disturbance should be reported to the CRM at once.

Maintenance Plan: Inspection procedures for occupied historic facilities. Cultural resources personnel from the Environmental Management Division, 88 ABW/CEA, have been and will continue to conduct annual inspections of all historic facilities, both occupied and vacant. This is accomplished by inspecting approximately 20 historic buildings each month.

Maintenance Plan: Inspection procedures for vacant historic facilities. Both CEC and CEA personnel will inspect all vacant historic buildings each month... During the inspections, if maintenance issues are identified, CEC and CEA personnel will jointly complete an AF Form 332. It will be annotated on the AF Form 332 that the

building is historic and all work shall be completed in accordance with the *Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings*.

MITIGATION

Cultural Resources Playbook, Step 1.4.1.15 – Negotiate appropriate mitigation strategies: The CRM, as the installation representative, documents and files correspondence from SHPO/THPO and other consulting parties regarding attempts to avoid or minimize adverse effects. The CRM/IST should also notify the Council of negotiations if it is not participating in consultation to this point and provide required documentation (36 CFR §800.11[e]). The CRM/IST and SHPO/THPO/Consulting Parties must consult until a plan is developed to fully mitigate the adverse effects of the revised undertaking. Throughout the negotiation process, the CRM/IST communicates with the Proponent regarding project goals, limitations, and requirements to ensure that any strategies are in the best interest of the Air Force mission.

UNFORESEEN CONDITIONS DURING CONSTRUCTION

As noted in **ICRMP D.2.4**, WPAFB should maintain the necessary protocols to handle an inadvertent or unanticipated discovery in cases where a previously unknown resource is discovered, an unevaluated resource will be affected, or it is determined that historic properties will be affected in a previously unanticipated manner by an undertaking. The National Park Service's *Preservation Tech Notes* on Temporary Protection recommend a monitoring program be established during construction or demolition projects to ensure adjacent historic properties are not inadvertently impacted. "When historic structures are exposed to adjacent construction or demolition work, a protective plan including documentation, monitoring and specific safeguards should be implemented to prevent damage and loss of historic fabric" (Randl 2001, 1). A successful monitoring program will detect, gauge, and record effects of neighboring construction/demolition.

PA for Physical Plant Reduction, 4.3 Discoveries: Should any historic properties or archaeological material be discovered during implementation of an action under this PA, the contractor shall stop work in the immediate area of discovery and immediately contact the CRM. The CRM, will consult with the SHPO to develop an appropriate treatment of the material and location. Work in the area of the discovery shall not resume until appropriate treatment for the affected historic properties has been implemented by the contractor. Discovery of human remains shall be treated in a manner that fully complies with the Native American Graves Protection and Repatriation Act (NAGPRA) procedures as spelled out in 43 CFR §10.

EMERGENCY WORK

In cases of imminent danger from major natural disaster or emergency, imminent threat to national security, or other imminent threats to life and/or property, WPAFB's historic preservation requirements may be waived in accordance with standard operating procedures outlined in the ICRMP: E.7 Natural emergencies affecting historic properties.

AFI 32-7065 3.4.8.7: Historic Preservation Waivers: The Secretary of the Air Force may waive historic preservation requirements in situations of imminent danger from major natural disasters or an imminent threat to the national security, or in response to emergency situations described at 36 C.F.R. § 800.12. The AFCEC/ANG/AFRC CRM must ensure that standard operating procedures (SOP) are included in the ICRMP for imminent disaster preparedness (Section 110 Waiver), and post-disaster recovery (Section 106 Waiver).

16 USC 470h-2(j): Waiver of provisions in event of natural disaster or imminent threat to national security. The Secretary shall promulgate regulations under which the requirements of this section may be waived in whole or in part in the event of a major natural disaster or an imminent threat to the national security.

§ 800.12 (a): Emergency situations: The agency official, in consultation with the appropriate SHPOs/THPOs, affected Indian tribes and Native Hawaiian organizations, and the Council, is encouraged to develop procedures for taking historic properties into account during operations which respond to a disaster or

emergency declared by the President, a tribal government, or the Governor of a State or which respond to other immediate threats to life or property. If approved by the Council, the procedures shall govern the agency's historic preservation responsibilities during any disaster or emergency in lieu of §§ 800.3 through 800.6.

PA for Physical Plant Reduction, 4.4 Emergencies: In the event that the Wright-Patterson AFB Installation Commander proposes an Emergency Action as an essential and immediate response to a disaster or emergency declared by the President of the United States, by the Governor of the State of Ohio, or by the installation commander, the CRM shall notify the SHPO within seven days of its intent to take emergency action. Emergency actions are assumed to occur within 30 days of a declaration of an emergency. In the event of an emergency that requires immediate action which does not permit advance notification, the CRM shall notify the SHPO of the action's effects on historic properties. Immediate search, rescue, and salvage are exempt from requesting SHPO comment; however the CRM shall notify the SHPO of the necessity of any immediate emergency operation and its effect on historic properties.

MOTHBALLING

Maintenance Plan: Mothballing. Along with the new monthly inspections of vacant historic facilities, this plan will also implement new procedures for preventive maintenance of vacant historic facilities. When all means of finding a productive use for a historic building have been exhausted or when funds are not currently available to put a building into a useable condition, it will be necessary to close up the building temporarily to protect it from deterioration. This process, known as mothballing, can be a necessary and effective means of protecting the building while planning the property's future, or waiting until funds are available for a preservation, rehabilitation or restoration project.

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APPENDICES

APPENDIX A: TABLE OF PROPOSED FACILITY DEMOLITIONS, FISCAL YEAR 2015 THROUGH FISCAL YEAR 2020

Programmed Year	Facility	Year Constructed	OHI Form Available	Nation Register Eligibility/Date	Within Historic District?
2015	10297 (Admin)	1943	Yes	DNE/91	No
2015	20068	1967	No	NEV	Yes
2015	20096 (Test Range)	1989	No	NEV	Yes
2015	20130 (Comm Hut)	1943	Yes	DNE	No
2015	20189	1952	Yes	DNE/98	No
2015	30150	1942	Yes	DNE/98	No
2015	30199	1940	Yes	NREC/91	No
2015	30230 (Conf Ctr)	1941	Yes	DNE/91	Yes
2015	30882 (WTC Shed)	1988	No	NEV	No
2015	34020 (Dock)	1961	Yes	MRS Eligible	No
2015	40841 (Radar Test Site)		No	NEV	No
2016	30053	1928	Yes	NREC/99	Yes
2016	20097	1972	No	NEV	Yes
2016	10279	1942	Yes	DNE/91	No
2016	20064	1942	Yes	NREC/91	Yes
2016	20196	1944	Yes	NREC/91	Yes
2016	20197	1944	Yes	NREC/91	Yes
2016	20198	1944	Yes	NREC/91	Yes
2016	20434	1955	Yes	NREI/04	Yes
2017	20107	1989	No	NEV	Yes
2017	20111	1989	No	NEV	Yes
2017	20115	2000	No	NEV	Yes
2017	20435	1955	Yes	DNE/04	Yes
2018	10867	1943	Yes	DNE/91	No
2018	20030	1942	Yes	NREC/91	Yes
2018	30060	1944	Yes	DNE/91	No

2018	30069	1944	Yes	DNE/91	No
2018	20076	1931	Yes	NREC/91	Yes
2018	20091	1934	Yes	NREC/99	Yes
2018	20168	1971	No	NEV	Yes
2018	20190	1944	Yes	DNE/91	Yes
2018	20455	1984	No	NEV	No
2018	20456	1980	No	NEV	No
2018	20458	1987	No	NEV	No
2018	30055	1973	No	NEV	No
2018	30118	1944	Yes	DNE/91	No
2018	30209	1941	Yes	DNE/91	No
2018	30210	1941	Yes	DNE/91	No
2018	30250 (Gate 1A)	1974	No	NEV	Yes
2018	31235 (Child Dev Ctr)	1980	No	NEV	No
2018	34000 (Gate 26A)	1960	Yes	DNE/08	No
2018	34026	1959	No	DNE/07	No
2018	34035	1991	No	NEV	No
2018	34065	1971	No	NEV	No
2019	10286	1943	Yes	DNE/91	No
2019	20038	1936	Yes	NREC/91	Yes
2019	30921 (Gate 15 A)	1980	No	NEV	No
2020	20063	1943	Yes	NREC/91	Yes
2020	30072	1982	No	NEV	No
2020	20094	1975	No	NEV	Yes
2020	20098	1970	No	NEV	Yes
2020	20100	1982	No	NEV	Yes
2020	31214	1957	No	DNE/07	No
Acronyms: DNE = Determined Not Eligible for National Register HD = Historic District NEV = Not Evaluated (as of this date)			NREC = National Register Eligible as contributing resource of HD NREI = National Register Individually Eligible OHI = Ohio Historic Inventory		

Historic Properties Demolished (1928-1970) - List for WPAFB

(Modified CEMML 8/28/2015)

Legend: NREI - National Register Individually Eligible; NREC - National Register District Contributing; NRNC - National Register District Not Contributing; DNE - Determined Not Eligible; NEV - Not Evaluated

	Facility #	Year Built	Status	Historic Status Code	Original Use	Last Known Use	Date of Demolition	Documentation of Demolition Status	Comments
1	08404	1967	DEMOLISHED				2013	WP Deleted Facilities List	
2	08423	1941	DEMOLISHED		Huffman Prairie Memorial		1990	ICRMP / CRM Building List	
3	10064	1937	DEMOLISHED	BQ, NRNC	Kindergarden		2010	CRM Building List	
4	10262A	1942	BURNED/DEMOLISHED	Demo'd before NHPA	AMC Command HQ	same	1961	ICRMP	Burned down in Nov 1961, replaced by 10266
5	10279	1942	PROPOSED DEMO	DNE	Substation		2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
6	10286	1943	PROPOSED DEMO	DNE			2019	FY14-FY20 Plant Reduction	FY19 Demolition proposed
7	10297	1943	PROPOSED DEMO	DNE			2015	FY14-FY20 Plant Reduction	FY15 Demolition proposed
8	10867	1943	PROPOSED DEMO	DNE			2018	FY14-FY20 Plant Reduction	FY18 Demolition proposed
9	11456	1956	DEMOLISHED	DNE	Storage	Storage	2013	2013 Demo FONSI	
10	20002	1929	DEMOLISHED	Demo'd Less than 50 years old	Hanger	Hangar	1980	WF CLR	
11	20003	1929	DEMOLISHED	Demo'd Less than 50 years old	Hanger	Hangar	1980	WF CLR	
12	Hangar #4	1929	MOVED / DEMOLISHED	NEV	Hanger (see 20156)	Museum Annex/Offices	Moved 1944	WF CLR / AAF CLR	Moved and renumbered 20156; demolished in 1995
13	20010	1920	DEMOLISHED	DNE	Hanger Headhouse	Hangar	1980	WF CLR	
14	20016A	1934	DEMOLISHED	NREC	Engineering Records Vault (not brick)	Offices	1970s or 80s	WF CLR	
15	20016B	1941	BURNED/DEMOLISHED	NREC	South Wing, Laboratory Building	BURNED DOWN IN 1975	1975	AAF CLR	
16	20017	1927	RETAINED		Radio Laboratory	Offices		ICRMP / 1994 MOA / ASD Tomorrow	Retained as mitigation for Demo of 20036
17	20019	1930	PARTIAL DEMOLITION	NREC	5-Foot Wind Tunnel	INVENT Lab	Tunnel: 2011	2011 MOA	Building Renovated, 5-Foot Wind Tunnel dismantled
18	20024	1942	DEMOLISHED	Demo'd before NHPA	Massie Memorial 20-Ft Wind Tunnel	Laboratory	1960	AAF CLR	
19	20025	1945	DEMOLISHED	NREC	10-Foot Wind Tunnel	Laboratory	unknown	ICRMP / 2001 MOA	
20	20028	1942	PARTIAL DEMOLITION	NREC	Aircraft Radio Laboratory	Offices	1999	1999 MOA	Partial demolition of middle wing on the back of the building

21	20030	1942	PROPOSED DEMO	NREC	Technical Data Annex	Audiovisual Facility	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
22	20036	1929	DEMOLISHED	NREC	Maintenance Shop		1996	ICRMP/ WF CLR / AAF CLR / 1994 MOA / ASD Tomorrow / 1996 MOA / 1998 EIS	
23	20037	1931/32	DEMOLISHED	Demo'd before NHPA	Maintenance Service Building		1960s	WF CLR	
24	20038	1932	PROPOSED DEMO/ RETAIN	NREC	Automotive Repair	Vehicle Maintenance	2017	1999 MOA /1998 EIS / FY14-FY20 Plant Reduction	NREC - FY17 Demolition proposed; previously retained as mitigation for demo of 20040 and 20055
25	20040	1944	DEMOLISHED/RETAINED	NREC	Dispensery	Occupational Medicine	2012	ICRMP / 1998 EIS / 1999 MOA	Demolished, but previously retained as mitigation for demolition of 10 other buildings.
26	20042	1943	DEMOLISHED	Demo'd Less than 50 years old	Fireproof Instrument Lab		1992	AAF CLR	
27	20044	1940s	DEMOLISHED	Demo'd before NHPA	Photometric Tunnel		1960s	AAF CLR	It's possible eligibility not evaluated prior to demo
28	20046/51	1930	RETAINED		Foundry (see also 20051)			1992 MOA	Retained as mitigation for Demo of 20051. This was the original building 46 re-designated as 51 after demoliton of bldg. 51
29	20047	1943	DISPOSAL	NRNC	Jet Propulsion Lab / ASTIA Library	Offices	2013	WP Deleted Facilities List / 2013 Demo FONSI	Non-contributing to WF; Contributing to AAF
30	20048	1940s	DEMOLISHED	Demo'd Less than 50 years old	Fuel Tank Vibrator		before 1994	AAF CLR	It's possible eligibility not evaluated prior to demo
31	20049	1940	DEMOLISHED	Eligibility Unknown	Automotive Repair	Automotive Repair	unknown	CRM Building List	It's possible eligibility not evaluated prior to demo
32	20051/46	1927	DEMOLISHED	NREC	Maintenance Garage (see 20046)	Vacant - electric/water shops	1996?	ICRMP / WF CLR / 1992 MOA / 1998 EIS	NREC. 20051 still shown on map, but it's actually the retained 20046
33	20055	1942	DEMOLISHED/RETAINED	NREC	Centrifuge	Clothing Research Facility	2009	ICRMP / 1998 EIS / 1999 MOA	Demolished, but previously retained as mitigation for demolition of 10 other buildings.
34	20057	1942	RETAINED		Supply Warehouse	Offices		ICRMP / 1994 MOA / ASD Tomorrow	Retained as mitigation for Demo of 66 & 67
35	20058	1931	DEMOLISHED	Demo'd before NHPA	Lumber Storage (not brick)		1945-46	WF CLR	
36	20059	1932	DEMOLISHED	NREC	Dynamometer Storage	Fuels Research & offices	2001	ICRMP / 1998 EIS / 1999 MOA	
37	20060	1931	DEMOLISHED	Demo'd before NHPA	Armament Storage Magazine		by 1944	WF CLR	
38	20061	1941	DEMOLISHED	NREC	Oil Storage		2001	ICRMP / AAF CLR / 2001 MOA	
39	20062	1942	DEMOLISHED	NREC	Ordnance Storage	Vacant	2013	2013 Demo FONSI	

40	20063	1944	PROPOSED DEMO	NREC	Ordnance Storage	Flight Dynamics Laboratory	2017	FY14-FY20 Plant Reduction	NREC - FY17 Demolition proposed
41	20064	1924	PROPOSED DEMO	NREC	Lumber Storage	Base Service Stores	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
42	20066	1930/1944	DEMOLISHED	NREC	Central Heat Plant		1996	ICRMP / WF CLR / 1994 MOA / ASD Tomorrow / 1998 EIS	
43	20067	1929? 1942?	DEMOLISHED	NREC	Electric Power Plant		1996	ICRMP / AAF CLR / 1994 MOA / ASD Tomorrow / 1998 EIS	
44	Bldg 68	1944	DEMOLISHED		Representatives Building		1980s	AAF CLR, p. 130	WWII temp bldg that was demolished and the number reused for the following building which was constructed in 1967.
45	20068	1967	PROPOSED DEMO	Demo'd Less than 50 years old	AFRL Storage Building	Same	2015	FY14-FY20 Plant Reduction	FY15 Demolition proposed
46	20071C	1944	DEMOLISHED	NREC	Engine Test Stands		1996	AAF CLR / 1996 MOA	Note: Exhaust Mufflers on 20071 removed/ DEMOLISHED in 1996 (see 1996 MOA)
47	20074	1943	DEMOLISHED	DNE	Street Light Control		1990s	AAF CLR	
48	20076	1931	PROPOSED DEMO	NREC	Fire Station	Fire Station	2018	FY14-FY20 Plant Reduction	NREC - FY18 Demolition proposed
49	20086A	1941	DEMOLISHED	NREC	Water Pump Station (Well No. 7)	Electric Switch Station	unknown	AAF CLR	
50	20086D	1940	DEMOLISHED	NREC	Water Pump House (Well No. 10)		unknown	AAF CLR	
51	20086E	1940	DEMOLISHED	NREC	Water Pump House (Well No. 11)		unknown	AAF CLR	
52	20086F	1940	DEMOLISHED	NREC	Chlorination Building		unknown	AAF CLR	
53	20086H	1940	DEMOLISHED	NREC	Chlorination Building		unknown	AAF CLR	
54	20088A	1943	DEMOLISHED	Eligibility Unknown	Water Pump Station		unknown	AAF CLR / CRM Building List	
55	20088B	1940s	DEMOLISHED	Eligibility Unknown	Aqua System Control		unknown	AAF CLR	
56	20089	1943	DEMOLISHED	NRNC	Fuel Storage Building		unknown	AAF CLR	
57	20090	1948	DEMOLISHED	NEV Prior to Demo	Drum Storage Shelter		2006	AAF CLR / WP Deleted Facilities List	Eligibility not evaluated prior to demolition
58	20091	1927	PROPOSED DEMO	NREC	Wright Field Laundry	Offices	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
59	20093	1937	DEMOLISHED	DNE	Equipment Research Test/Office		2005	AAF CLR	
60	20095	1949	DEMOLISHED	NREC	Ramjet Operations		1999	ICRMP / 2001 MOA	
61	20098	1970	PROPOSED DEMO	Demo'd Less than 50 years old	Range A –Indoor Ballistic Research Range, Air Vehicle Survivability Facility	Same	2017	FY14-FY20 Plant Reduction	
62	20125	1944	DEMOLISHED	NREC	Wright Field Headquarters	Offices	2000	ICRMP / 1998 EIS / 1999 MOA / 2004 EA for IT Center	Demolished for new IT Complex. Part of AAF

									Administrative Center; Contributing to AAF
63	20126	1944	DISPOSAL	NRNC	HQ Engineering Building		2012	WP Deleted Facilities List / 2004 EA for IT Center	Used to house "Story of Wright Field" mural. Demolished for new IT Complex. Part of AAF Administrative Center; Contributing to AAF
64	20127	1944	DEMOLISHED	DNE	Cafeteria		2001	Undocumented / 2004 EA for IT Center	Demolished for new IT Complex. Part of AAF Administrative Center; Contributing to AAF
65	20130	1943	PROPOSED DEMO	DNE	Comm Hut	Same	2015	FY14-FY20 Plant Reduction	FY15 Demolition proposed
66	20156	1944	DEMOLISHED	Demo'd Less than 50 years old	Flight Section Shop		1996	AAF CLR	Was 20004, moved in 1944
67	20189	1952	PROPOSED DEMO	DNE	Airborne Radar System Test Bldg	Base Restaurant	2015	FY14-FY20 Plant Reduction	FY15 Demolition proposed
68	20190	1944	PROPOSED DEMO	NRNC	Ordnance Aircraft Service	Human Effectiveness Offices	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
69	20192	1944	DEMOLISHED	NREC	Special Weapons Bldg #1	Offices	1999	ICRMP / AAF CLR / 1998 EIS / 1999 MOA	
70	20193	1944	DEMOLISHED	NREC	Special Weapons Bldg #2	Offices	2000	ICRMP / AAF CLR / 1998 EIS / 1999 MOA	
71	20194	1944	DEMOLISHED	NREC	Special Weapons Bldg #3	AFIT Advanced Technology Lab	2015	ICRMP / 1998 EIS / 2001 MOA	Demolition status unknown; still shown on map
72	20195	1944	DEMOLISHED	NREC	Special Weapons Bldg #4	Offices	2000	ICRMP / AAF CLR / 1998 EIS / 1999 MOA	
73	20196	1943	PROPOSED DEMO	NREC	Oxygen Research Lab	Human Engineering Lab	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
74	20197	1943	PROPOSED DEMO	NREC	Oxygen Research Lab	Human Engineering Lab	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
75	20198	1943	PROPOSED DEMO	NREC	Shops for Aeromedical Lab	Support Services for Lab	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
76	20221	1942	DEMOLISHED	DNE	Valve Chamber		unknown	AAF CLR	
77	20235	1940	DEMOLISHED	DNE	Utility Building	Telecommunications Center	2013	2013 Demo FONSI	Non-contributing to WF; underground shed
78	20250	1950	DEMOLISHED	NREI	Rotor Test Stand	Decommissioned/Vacant	2013	2013 Demo FONSI	
79	20305	1942	DEMOLISHED	Demo'd Less than 50 years old	Film Vault		late-1990s	AAF CLR	
80	20329	1924	DISPOSAL	NEV Prior to Demo	pre-installation Farm	Hunter's Lodge	2012	WP Deleted Facilities List	Eligibility not evaluated prior to demolition
81	20429	1955	DISPOSAL	Demo'd Less than 50 years old			2001	WP Deleted Facilities List	
82	20430	1944	DEMOLISHED	NCRC	Library	Library	2008	undocumented	Contributing to AAF
83	20433	1953	DEMOLISHED	Demo'd Less than 50 years old	Radiological Instrument Lab		2001	ICRMP / 2001 MOA	
84	20434	1955	PROPOSED DEMO	NREI	Universal Dynamic Sight & Computer Test	Human Effectiveness Offices	2016	FY14-FY20 Plant Reduction	NREI/CW - FY16 Demolition proposed

85	20435	1955	PROPOSED DEMO	NRNC	Instrument Test & Calibration Lab	AFRL Propulsion Lab	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
86	20450	1958	DISPOSAL	DNE	Aircraft Dynamic Research Lab	AFRL General Research Facility	2013	WP Deleted Facilities List / 2013 Demo FONSI	
87	20451	1960	DISPOSAL	DNE	Mechanical Equipment Support for Lab	Same	2013	WP Deleted Facilities List	
88	20462	1966	DISPOSAL	Demo'd Less than 50 years old			2007	WP Deleted Facilities List	
89	20682	1953	DISPOSAL	DNE	Motion Picture Lab		2007	WP Deleted Facilities List	
90	20684	1944	DISPOSAL	DNE	Gymnasium Building		2001	WP Deleted Facilities List	
91	20745	1944	DEMOLISHED	DNE	Quartermaster Laundry	CE Pavement & Grounds	2014	WP Deleted Facilities List / 2013 Demo FONSI	
92	21610 (28A)	1943	DEMOLISHED	NREC	Medical Laboratory	Offices	1996?	ICRMP/ AAF CLR / 1996 MOA / 1998 EIS	
93	21620 (61A)	1941	DEMOLISHED	NREC	Fuel Pumping	Fuels control facility	2001	ICRMP / AAF CLR / 1998 EIS / 1999 MOA	
94	21625 (79A)	1944	DEMOLISHED	NREC	Jet Propulsion Laboratory	Toxic Hazards Laboratory	2001	ICRMP / 1998 EIS/ 1999 MOA	
95	21626 (79B)	1944	DEMOLISHED	NREC	Jet Propulsion Stand	Chemical Storage/workshop	2001	ICRMP / 1998 EIS/ 1999 MOA	
96	21627 (79C)	1944	DEMOLISHED	NREC	Jet Propulsion Stand		2001	ICRMP / 1998 EIS/ 2001 MOA	
97	21628 (79D)	1944	DEMOLISHED	NREC	Jet Propulsion Stand	Wind tunnel testing	2001	ICRMP / 1998 EIS/ 1999 MOA	
98	30002	1918	PARTIAL DEMOLITION	NREC	Storage Facilities	Warehouses/Offices		ICRMP / 2001 MOA	
99	30005 (T-5)	1921	DEMOLISHED	Demo'd before NHPA	Garage		1950s	1940s Historic Map Comparisons/ FAD CLR	moved from Wright Field to Fairfield in 1921
100	30006 (T-6)	1921	DEMOLISHED	Demo'd before NHPA	Warehouse		1947	FAD CLR	moved from Wright Field to Fairfield in 1921
101	30007 (T-7)	1921	DEMOLISHED	Demo'd before NHPA	Old Gym		1947	FAD CLR	moved from Wright Field to Fairfield in 1921
102	30017	1948	DEMOLISHED	DNE	Base Engineering Maintenance Shop	Base Engineering Maintenance Shop	2013	2013 Demo FONSI	
103	30020	1943	DISPOSAL	DNE	Cement Warehouse		2001	WP Deleted Facilities List	
104	30021	1943	DEMOLISHED	DNE	Motor Facilities Bldg	Base Engineering Maintenance Shop	2013	2013 Demo FONSI	
105	30025	1840	DEMOLISHED	NREC	Andes Farmhouse		1998	ICRMP / 1994 MOA / 1998 EIS	
106	30029	1943	DEMOLISHED	DNE	Post Warehouse, Utilities	Civil Engineering Storage	2013	2013 Demo FONSI	
107	30046 (T-46)	1942	DEMOLISHED	Eligibility Unknown	Paper Salvage Warehouse		after 1996	1940s Historic Map Comparisons/ FAD CLR	It's possible eligibility not evaluated prior to demo
108	30052	1928	DEMOLISHED	Eligibility Unknown	Dope House		unknown	1940s Historic Map Comparisons	Moved in 1940 when 30013 expanded; It's possible

									eligibility not evaluated prior to demo
109	30053	1928	PROPOSED DEMO	NREC	Paint and Dope Shop	Water Supply Building	2016	FY14-FY20 Plant Reduction	NREC - FY16 Demolition proposed
110	30054	1930	DEMOLISHED	NREC	Cafeteria/Airplane Fabric Dept	Electronics Research	2001	ICRMP / 1998 EIS / 1999 MOA	
111	30058	1944	DEMOLISHED	DNE	Engine Maintenance Shop	Vehicle Maintenance	2013	2013 Demo FONSI	
112	30059 (T-59)	1943	DEMOLISHED	DNE	Automotive Repair		1998	1940s Historic Map Comparisons	
113	30060	1944	PROPOSED DEMO	DNE	Automotive Repair	Vehicle Maint. Shop	2017	FY14-FY20 Plant Reduction	FY17 Demolition proposed
114	30065 (T-65)		DEMOLISHED	Demo'd before NHPA			1947	FAD CLR	
115	30069	1944	PROPOSED DEMO	DNE	CE Storage Building	Same	2017	FY14-FY20 Plant Reduction	FY17 Demolition proposed
116	30071 (T-71)	1943-44	DEMOLISHED	DNE	Warehouse		2012	1940s Historic Map Comparisons/ FAD CLR	
117	30087 (T-87)		DEMOLISHED	Demo'd before NHPA	WWI Officer's Club	WWII Post Exchange	1950s	FAD CLR	
118	30089 (T-89)	1943	DEMOLISHED	DNE	Engine Repair		2012	1940s Historic Map Comparisons	
119	30098 (T-98)		DEMOLISHED	Demo'd before NHPA	WWI Flightline Hanger		1947	FAD CLR	
120	30105 (T-105)	1943	DEMOLISHED	DNE	Paint & Dope		unknown	1940s Historic Map Comparisons	
121	30106 (T-106)	1943	DEMOLISHED	DNE	Paint & Dope Storage		unknown	1940s Historic Map Comparisons	
122	30114 (T-114)	1943	DEMOLISHED	DNE	Chemical Warehouse		1998	1940s Historic Map Comparisons	
123	30118	1944	PROPOSED DEMO	DNE	Transformer Building	Same	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
124	30119	1957	DEMOLISHED	Eligibility Unknown	Transformer Building		unknown		
125	30123	1942	RETAINED		Locomotive Roundhouse	Vacant - used for storage		1993/94 MOA	Retained as mitigation for demo of 40,000LF railroad track
126	30140 (T-140)		DEMOLISHED	Eligibility Unknown	Civilian Dispensary		unknown	1940s Historic Map Comparisons	It's possible eligibility not evaluated prior to demo
127	30147	1955	DISPOSAL	Demo'd less than 50 years old			1999	WP Deleted Facilities List	
128	30150	1942	PROPOSED DEMO	DNE	Regimental Chapel	Chapel	2015	FY14-FY20 Plant Reduction	
	30151	1952	DEMOLISHED	Demo'd less than 50 years old	Alert crew dormitory		ca. 1999	Weitz, <i>Keeping the Edge</i>	Demo'd before 2003
129	30153	1952	DEMOLISHED	NREI	Alert Hanger	Aero Club/ Hangar	2015	CRM Building List / 2013 Demo FONSI	Individually eligible for CW
130	30161	1956	DISPOSAL	NRNC			2009	WP Deleted Facilities List	
131	30162 (T-162)	1943	DEMOLISHED	Eligibility Unknown	Solvent Reclamation Building	Dispatcher's Office	after 1996	FAD CLR	It's possible eligibility not evaluated prior to demo
132	30163	1933-34	RETAINED/REHABBED		Fire Station	EOD Facilities		2011 MOA	Retained/Rehabbed as mitigation for demo of 30168 & 30169

133	30167	1934	DEMOLISHED	Eligibility Unknown	Electric Substation		after 1996	ICRMP / CRM Building List	It's possible eligibility not evaluated prior to demo
134	30168	1934	DEMOLISHED	NREC	Maintenance Building		2009	ICRMP / 2011 MOA	
135	30169	1934	DEMOLISHED	NREC	Garage		2012	ICRMP / 2011 MOA	
136	30170	1937	DEMOLISHED	NREC	Central Heating Plant	Heating Plant	2014	ICRMP / 1998 EIS / 1999 MOA	
137	30174 (T-174)	1943	DEMOLISHED	DNE	Medical Supply		1998	1940s Historic Map Comparisons	
138	30199	1940	PROPOSED DEMO/ RETAIN		Radio Transmitter Building	Offices		ICRMP / FY14-FY20 Plant Reduction	Proposed demolition, to be retained as mitigation for proposed demolition of other FY14/15 buildings
139	30201 (T-201)	1943	DEMOLISHED	NRNC	Engineering Office		2006	1940s Historic Map Comparisons	
140	30203	1941	DEMOLISHED	DNE	Deep Well Pump House		unknown	1940s Historic Map Comparisons	
141	30206	1940-41	PARTIAL DEMOLITION	NREC	Airplane Repair Dock	Flight Ops/Terminal	2012	2012 MOA	removed 1 historic, 1 non-historic additions
142	30209	1941	PROPOSED DEMO	DNE	Quartermaster Warehouse	Offices	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
143	30210	1941	PROPOSED DEMO	DNE	Quartermaster Warehouse	Offices	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
144	30230	1941	PROPOSED DEMO	DNE	Barrack Quarters		2015	FY14-FY20 Plant Reduction	
145	30238	1964	DISPOSAL	Demo'd less than 50 years old	Barrack Quarters		2013	WP Deleted Facilities List	
146	30256	1941	DEMOLISHED	NREI	Vertical Engine Test Facility	Storage	2013	ICRMP / 2013 Demo FONSI	Individually eligible & contributing to FAD
147	30260	1942	PROPOSED DEMO	DNE	Gate House	Gate House 1C		1940s Historic Map Comparisons	Demolition proposed as part of the gate realignment MILCON
148	30267 (T-267)	1942	DEMOLISHED	Eligibility Unknown	Engine Storage		after 1996	1940s Historic Map Comparisons/ FAD CLR	It's possible eligibility not evaluated prior to demo
149	30899	1969	DISPOSAL	Demo'd less than 50 years old	Riding Stables		2007	WP Deleted Facilities List	
150	31044	1942	DISPOSAL	DNE	Civilian School		2001	WP Deleted Facilities List	
151	31083	1943	DEMOLISHED	DNE	Mess Hall	Vacant	2013	2013 Demo FONSI	
152	31197	1945	DEMOLISHED	DNE	Latrine	Vacant	2012	WP Deleted Facilities List / 2013 Demo FONSI	
153	31214	1957	PROPOSED DEMO	DNE			2020	FY14-FY20 Plant Reduction	FY20 Demolition proposed
154	31234	1966	DEMOLISHED	DNE	Gate Guard Shack	Gate Guard Shack	2014	CRM Building List	
155	31244	1966	DISPOSAL	Demo'd less than 50 years old	Hobby Shop		2011	WP Deleted Facilities List	
156	31712	1928	DEMOLISHED	DNE	Water System Building		unknown	CRM Building List	
157	31715	1917	DEMOLISHED	NREC	Flag Pole	Flag Pole	unknown	ICRMP / CRM Building List	
158	31716	1928	DEMOLISHED	NREC	Water Storage Tank	Water tower	1998	ICRMP / 1996 MOA / 1998 EIS / CRM Building List	
159	34000	1960	PROPOSED DEMO	DNE	SAC Gate House	Gate 26A	2016	FY14-FY20 Plant Reduction	FY16 Demolition proposed
160	34020	1961	PROPOSED DEMO	NREC	SAC Nose Dock Hangar	Flight Systems Maint. Dock	2015	FY14-FY20 Plant Reduction	FY15 Demolition proposed

161	34026	1959	PROPOSED DEMO	NREC	SAC Hangar	Aircraft General Purpose Bldg	2015	FY14-FY20 Plant Reduction	FY16 Demolition proposed
162	34041	1963	DISPOSAL	Demo'd less than 50 years old			2000	WP Deleted Facilities List	
163	34046	1960	DEMOLISHED	DNE	Hound Dog and Quail Run-up Shop	Vacant	2013	WP Deleted Facilities List / 2013 Demo FONSI	
	???		DEMOLISHED	NREC	Patterson Pool	Patterson Pool	filled-in 1996	1996 MOA	Replaced with brick outline
	???		PARTIAL DEMOLITION	NREC	Triangular Runway	Triangular Runway		1998 MOA	

Text in Black are taken from CE's Historic Structures Demolished List
Text in Blue are line items added by CEMML from cited sources
Text in Purple are/were buildings Retained as mitigation for past demolition of other structures
Text in Orange were part of the 2013 Demolitions when SHPO terminated consultation
Text in Green are line items taken from the WP Deleted Facilities List dating from 1928-1970
These line items are being proposed for Demolition under FY14-20 Physical Plant Reduction

APPENDIX C: CULTURAL RESOURCES PUBLIC OUTREACH AND INTERPRETATION SOURCE BOOK:

4.7 CROSS CATEGORY ANALYSIS

*DoD Legacy Resource Management Program Project 10-127
Cultural Resources Public Outreach and Interpretation Source Book
by Chad Blackwell and Margorie Nowick*

“The NHPA also declares one of the policies of the federal government and its agencies to be administering cultural resources under its care “in a spirit of stewardship for the inspiration and benefit of present and future generations.” In other words, federal agencies are not only charged with being good stewards of historic properties under their care, they are also charged with administering them in ways that benefit and inspire the public...

Interpretation and public outreach are two means through which these goals can be achieved. Interpretation is the act of explaining specific historic events, historic persons, and historic sites to a general audience. Interpretation may come in many forms, including guided tours, on-site signs, brochures and booklets, and websites and videos. Public outreach is a broader concept that may include interpretation as an educational aspect, but more generally includes involving the public in an agency’s stewardship and management of its historic properties...

Increasingly, the Department of Defense (DoD) has undertaken and sought creative projects that involve public interpretation and outreach as a means of making management and compliance efforts more meaningful than traditional recordation projects. DoD recognizes that it is a steward of these resources on behalf of the American public; accordingly, it is imperative to ensure that interpretation and outreach efforts are done for public benefit. Indeed, by proactively implementing these types of projects, DoD can fulfill other public benefit mandates and foster relationships and connections with the public and outside organizations. Through proactively interpreting historic properties under its stewardship and reaching out to the public regarding the stewardship, management, and appreciation of their historic properties, DoD seeks to fulfill broader, idealistic mandates that are the foundation for all historic property and preservation legislation—namely promoting a public interest and appreciation in our nation’s history...

Three areas in which federal agencies can involve and engage the public in historic preservation are through the **interpretation** and communication of information about archaeological and historic resources, **public outreach** efforts that provide transparency and involvement in agency actions and management of historic properties, and **partnerships** with local communities and organizations related to historic preservation. **Interpretation** of archaeological and historic resources is the translation of the significance of a resource into a form that is accessible and readable by a wider audience. For example, the excavation of an archaeological site, the research and analysis of the site and artifacts, and conclusions about the site may be communicated to the public in a signage program, an educational booklet, a poster, a video, or a website. All of the data compiled regarding the site is distilled down to the essential elements and presented in a way that is understandable and enjoyable for someone who has no prior knowledge of the site. **Public outreach** consists of involving the public in the management of cultural resources. Examples of public involvement may be a hands-on volunteer labor opportunity or workshop associated with an archaeological excavation or historic building maintenance. Other forms may be the development of a classroom curriculum or a classroom visit. **Partnerships** with local communities and organizations have the potential to establish long-term relationships that are mutually beneficial and contribute to historic preservation public education or awareness, management of historic properties, and even economic development. Agencies may partner with local governments, non-profit organizations, or local museums to develop a project or programs that fulfill the historic preservation goals of all parties involved.

In a 1999 article titled “A Framework for Creative Mitigation,” then Deputy SHPO for Pennsylvania Brenda Barrett discussed standard forms of mitigation and various types and forms for creative mitigation. The essence of

mitigation is to “off-set” the adverse effect to or loss of a historic property by creating something beneficial and meaningful. Creative, or alternative, mitigation is a term used to describe mitigation measures that include more than data collection and documentation of the resources. Creative mitigation measures often have a public component that also fulfills the goals of promoting public education and involvement about our nation’s history and historic properties.

Barrett’s article listed “Public Benefit Measures” as one category under creative mitigation (Barrett 1999). These measures included: popular publications, educational curriculum, interpretive signage, exhibits, lectures, and tours. Generally, these types of projects fall under the category of *Historical Interpretation and Education*. Interpretation and education projects have a primary goal of educating a public audience (school children, heritage visitors, local citizens, etc.) about the history and significance of a resource or place. Such projects may take many forms—from the written word to a guided tour to interactive applications for smartphones or iPods.

Other potential mitigation efforts listed by Barrett include: contributions to a local historic preservation effort, relocation of historic properties, development of historic contexts and NRHP nominations, preparation of preservation plans or preservation ordinances, establishment of a fund for future preservation activities, restoration or preservation of a similar resource, and offsite mitigation (Barrett 1999). All of these efforts involve public outreach, partnerships with communities and organizations, or both, depending on the scope of the mitigation.

Public Outreach projects have a major goal to involve or educate the public about the agency and its efforts to manage cultural resources under its stewardship. Public outreach efforts are often intertwined with historical interpretation efforts because it makes sense to discuss the history and significance of a historic building or archaeological site along with what an agency is actively doing to preserve the resource or the agency’s cultural resource management program. Similarly, interpretation and public outreach efforts may be made more effective by partnering with a local community, organizations, or groups. **Partnerships** involve collaborating with outside organizations, governments, or groups to promote a public benefit. Most often partnerships help facilitate or improve an interpretation or public outreach project. However, in some instances, the partnership itself may provide the public benefit that off-sets the adverse effects of an undertaking on one or more historic properties.”