

**DRAFT**

**ENVIRONMENTAL ASSESSMENT (EA)**

**FOR**

**THE REPLACEMENT OF THE UH-1N AIRCRAFT**

**AT**

**F. E. WARREN AIR FORCE BASE, WYOMING**

**07 JANUARY 2017**

**Prepared by: 90 CES/CEIEC**  
**Francis E. Warren AFB, Wyoming**  
**Point of Contact: Mr. Travis Beckwith, (307) 773-3667**

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## 1. INTRODUCTION

F. E. Warren Air Force Base (FEW) proposes upgrades to the existing UH-1N aircraft with a new airframe. The proposal action includes facility and infrastructure upgrades required for the beddown of up to 14 UH-1N replacement aircraft. The FEW Environmental Planning Function (EPF) conducted the analysis of this proposed action. FEW previously completed an Environmental Assessment (EA) for Minor Construction Projects at FEW. This EA resulted in a Finding of No Significant Impact (FONSI) signed by the 90th Missile Wing Commander on 7 August 2013. The “Environmental Assessment of the Army Aviation Support Facility and Administrative Support Facility and the Joint Forces Headquarters, Readiness Center, and Field Maintenance Shop at Francis E. Warren Air Force Base, Cheyenne, Wyoming” is incorporated by reference. However, this undertaking exceeds the constraints imposed by the Programmatic EA and therefore cannot be tiered from that document. Nevertheless, many of the issues covered in the Programmatic EA for the Joint Forces Headquarters are applicable to this proposed action and the entire document is incorporated by reference.

## 2. PURPOSE AND NEED FOR ACTION

The purpose of this action is to provide facilities and infrastructure improvements related to the beddown of 14 UH-1N replacement aircraft. A new airframe is required to replace the current UH-1N aircraft, which are antiquated and significantly beyond their expected life cycle. The new airframe will increase the capability and reduce response times to meeting security threats to USAF assets.

## 3. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The purpose of this Planning Charrette Report (PCR) is to vet a proposed project site with basic programming and cost requirements for a new Consolidated Helicopter (Helo)/Tactical Response Force (TRF) Operations, Aircraft Maintenance Unit (AMU), and Alert Facility to serve as the primary point of operations for the 37th Helicopter Squadron (37 HS) and 790th Tactical Response Force (790 TRF) at FEW Air Force Base (AFB), WY. This multi-million dollar project is composed of up to 13,238 square meters (142,493 square feet) of vertical construction with supporting site facilities and infrastructure. It is currently being programmed for Fiscal Year 2018 (FY18). The 37 HS is a component of the 582nd Helicopter Group (582 HG) of the 20th Air Force under Global Strike Command (GSC) of the United States Air Force (USAF). The 790th Tactical Response Force is a special component of the 90th Security Forces Group (90 SFG) under the 90th Missile Wing (90 MW) of the 20th Air Force under Global Strike Command of the United States Air Force. Together, 37 HS and 790 TRF run security and operations support to the 90 MW’s Intercontinental Ballistic Missile (ICBM) sites scattered across three states and over 12,000 square miles surrounding FEW AFB.

A description of the proposed action and alternative is as follows:

- a. North Base Option (Preferred Alternative): The Preferred Alternative would bed the new airframe down on a 403.5-acre area on the north side of the installation. The proposed action

would collocate the 90MW aviation facility with the existing Wyoming Army National Guard (WYARNG) Aviation Support Facility. This site is bounded by Rogers Avenue and an unnamed service road to the south and the base boundary to the north and west.

- b. South Base Option: The South Base Option would consist of a 132.8-acre area located in the southern portion of the installation, the current location of the UH-N1 operations complex. This location is bounded by Saber Road to the north, Cheyenne Road to the west and Artillery Road to the South. This option requires the construction of a new nine-bay maintenance hangar, a TRF alert facility, a three-bay alert hangar, a tactical vehicle facility, an AGE facility, a helipad and the expansion of the current ramp.
- c. No action alternative: This alternative would take no action. This alternative would not meet mission objectives as it would not address the shortcomings of the current airframe.

#### 4. SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) is required by the Air Force Environmental Impact Analysis Process (32 CFR §989), the National Environmental Policy Act (Public Law 91-190) and Council on Environmental Quality (CEQ) Regulations (40 CFR §1500-1508). This EA identifies, describes, and evaluates the potential direct, indirect, and cumulative environmental impacts that could result from the construction of the proposed action.

FEW conducted a scoping meeting on 30 November 2016. During the scoping process the EPF determined that the proposed action has the potential to affect Safety and Occupational Health, Biological Resources, Water Resources, Cultural Resources, Auditory Impacts, and Air Quality.

#### 5. AFFECTED ENVIRONMENT

- a. Safety and Occupational Health: The proposed action has the potential to impact safety and occupational health. Specifically, there is a potential to encounter unexploded ordnance (UXO).
- b. Biological Resources: The proposed action has the potential to impact biological resources.
- c. Water Resources: The proposed action has the potential to impact water resources. Specifically, there is the potential to impact storm water run-off.
- d. Cultural Resources: The proposed action has the potential to impact cultural resources. Specifically, there is the potential to impact archaeological resources. The proposed action is not within the boundary or the view shed of the Fort D. A. Russell National Historic Landmark District.
- e. Auditory Impacts: The proposed action has the potential to increase noise pollution in the adjacent residential area. Specifically, the Western Hills Neighborhood which is located on the eastern edge of the installation.
- f. Air Quality: The proposed action has the potential to impact air quality. Specifically, the installation of additional emitting equipment.

#### 6. ENVIRONMENTAL IMPACTS

Environmental Impact analysis includes consideration of direct, indirect and cumulative impacts.

- a. Safety and Occupational Health. There is expected to be a direct impact to base safety and occupational health. These impacts include flight safety and unexploded ordnance (UXO). The primary concern for flight safety is the potential for aircraft accidents and accidental drops over nonmilitary areas. Statistics from the Air Force Safety Center, compiled by the Aviation Safety Division, categorizes helicopter mishaps into two classes; Class A and Class B. Class A encompasses incidents which result in loss of life, property, or substantial financial loss of more than \$2 million. Class B includes helicopter mishaps which result in financial loss of over \$500,000 but less than \$2 million, partial or permanent disability, and hospitalization of three or more personnel. Analysis of statistics for the past decade (FY05 – FY15) concerning helicopter mishaps reflects a very low rate of either Class A or B mishaps with annual rates ranging from 1.64 to 4.92 per 100,000 flight hours (Appendix 4). The possibility of such accidents are minimal and the impact to safety and occupational health negligible.

The northern part of base, including the Preferred Alternative, constitutes an area previously used as an impact area for various munitions. The entire north side of base underwent extensive survey under the Installation Restoration Program under the signed Federal Facilities Agreement with Environmental Protection Agency (EPA) and Wyoming Department of Environmental Quality (WDEQ). The survey included surface and subsurface investigation, excavation, and disposal of any anomalies or potential UXO. Given the extent of this survey, the impact of UXO to safety and occupational health is minimal. Overall, potential impacts to safety and occupational health from the Preferred Alternative would be minor to moderate and are considered insignificant.

- b. Biological Resources. Shortgrass prairie and high plains grasses dominate the northern portion of base, including the Preferred Alternative. Construction and long-term direct loss would result in a decrease of approximately one percent of vegetation based on amount of existing habitat (Black 1995; Pesenti 2006a). The Preferred Alternative neither adversely impacts the two threatened species on base nor their habitats; the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) and the Colorado butterfly plant (*Gaura neomexicana coloradensis*). Other wildlife species may be affected by short-term displacement during construction and relatively marginal loss of habitat. However, species adapted to urban development, such as pronghorn antelope (*Antilocapra americana*) would likely return after project completion. The pronghorns could be affected due to increased traffic around the new facility potentially resulting in car collisions but, with appropriate management of the herd, this impact would be negligible.

Alex Schubert, FEW Natural Resources Program Manager, conducted a field investigation of the Preferred Alternative 7 February 2017 to ensure that biological resources will not be impacted. The field survey confirmed no threatened or endangered species will be endangered and that the Preferred Alternative will have insignificant impacts to biological resources. Furthermore, in compliance with the Endangered Species Act, FEW initiated consultation with the U.S. Fish and Wildlife Service by letter

DATED (Appendix 2). Overall, potential impacts to biological resources from the Preferred Alternative would be negligible and are considered insignificant.

- c. **Water Resources.** The northern portion of FEW AFB consists primarily of rolling grassland. No jurisdictional wetlands, surface water, or riparian areas are located within the Preferred Alternative APE. The Preferred Alternative would neither be located within the 100-year floodplain nor in the vicinity of the perennial stream Crow Creek. The northern portion of base contains some wetlands and experiences periodic flooding, but neither of these water resources occur within the APE. The new airframe would not use local surface water or groundwater in their operations associated with the Preferred Alternative.

New construction has the potential to degrade storm water quality or increase storm water runoff. The negative impacts of storm water runoff are minimized given the presence of large swaths of undeveloped land around the Preferred Alternative APE. Additionally, adherence to all applicable local, state and federal laws regarding storm water mitigates any direct impact. Implementation of Best Management Practices (BMPs) during construction also ensures that construction will not adversely impact water resources. Overall, potential impacts to water resources from the Preferred Alternative would be negligible and are considered insignificant.

- d. **Cultural Resources.** Cultural resources on the northern side of base consist of prehistoric and historic archaeological sites. One archaeological site, 48LA644-NC, lies to the northwest of the Preferred Alternative APE but not directly in the footprint of proposed construction. The site is not eligible for the National Register of Historic Places and the Preferred Alternative would not impact the site. Furthermore, the Preferred Alternative poses no impact to the Fort D. A. Russell National Historic Landmark District. In accordance with the National Historic Preservation Act of 1966, and codified in 36 CFR 800, FEW Base Historic Preservation Office (BHPO) consulted with Wyoming State Historic Preservation Office (WYSHPO) whom concurred with the finding of no adverse effect to historic properties (Appendix 2). If construction uncovers archaeological resources, the BHPO would be contacted in accordance with the FEW Integrated Cultural Resource Management Plan (ICRMP) Standard Operating Procedures for Cultural Discoveries (ICRMP 2016, 7.4). Overall, potential impacts to cultural resources from the Preferred Alternative would be negligible and are considered insignificant.
- e. **Auditory Impacts.** The Preferred Alternative would generate temporary noise impacts during construction. The equipment used for construction generates noise levels up to 80 decibels (dBA) which would only have a minor impact on ambient noise levels. To minimize noise impacts, construction activities would be scheduled on normal workdays and during typical working hours.

Long-term effects of the Preferred Alternative include grounds maintenance activities, vehicular traffic, training operations, and helicopter operations. A concentrated residential area, the Western Hills Neighborhood, is located approximately 0.75 miles

east/southeast of the new airframe. A new approach flies directly over the Western Hills Neighborhood and could cause noise impacts to residents. However, there are a limited number of daily flight activities, summarized in Table 2, which would minimize the occurrences of noise impacts to residents. Specifically, the flight track in question results in just 33% of daily arrivals, which is approximately one arrival per day impacting the Western Hills Neighborhood. There is the potential for noise related to helicopter operations on this particular flight pattern to result in complaints.

Additional approach and departure patterns have been modified to minimize noise impacts by entering/exiting airspace to the north and west of base over areas largely undeveloped. The Preferred Alternative sites the facility within the acceptable noise level according to the Air Installation Compatible Use Zone Study for FEW. The lack of development throughout the northern portion of base both minimizes the amount of noise disturbance experienced by residents with minimal impact to flying operations and mission objectives. Overall, potential noise impacts from the Preferred Alternative would be minor and localized to a specific population in the Western Hills Neighborhood.

- f. **Air Quality.** The Preferred Alternative is expected to impact air quality. Short-term detrimental effects to air quality include those associated with construction. Contaminants from construction activities include particulate matter generated from ground disturbance, vehicle emissions, and fugitive dust. These effects would be localized and negligible.

Long-term effects for air quality include: internal combustion emissions, fuel storage tank emissions, and other emissions associated with operation of the air frame. FEW is a designated attainment zone by the EPA which indicates that the concentrations of criteria pollutants in the area are below thresholds established by the National Ambient Air Quality Standards (NAAQS). The cumulative effects of these emissions fall within acceptable levels for the attainment zone. Permits from the WDEQ would be required both for construction and the address the potential increase of emissions. The construction permit considers both temporary and permanent air emissions and, upon review, WDEQ may issue a waiver if source of emissions is minor. Given current estimations, a waiver is likely to be issued. Therefore, anticipated impacts to air quality would be negligible and are considered insignificant.

## 7. PERSONS AND AGENCIES CONSULTED

The following agencies/individuals were contacted and/or provided a copy of the EA during its original preparation in order to afford an opportunity for comment on the content of the document. Agency consultations are required per 32 CFR 989.14(d).

Wyoming State Historic Preservation Office  
2301 Central Avenue

Barrett Building, Third Floor  
Cheyenne, Wyoming 82002

Wyoming Field Office  
U.S. Fish and Wildlife Service  
5353 Yellowstone Road, Suite 308A  
Cheyenne, Wyoming 82009

## 8. REFERENCES

29 CFR §1910, Occupational Safety and Health Standards

32 CFR §989, Department of the Air Force Environmental Impact Analysis Process (EIAP)

DoDI 6055.06, DoD Fire and Emergency Services (F&ES) Program

Environmental Assessment of the Army Aviation Support Facility and Administrative Support Facility and the Joint Forces Headquarters Readiness Center, and Field Maintenance Shop at Francis E. Warren Air Force Base, Cheyenne, Wyoming, 2016

FEW Air Installation Compatible Use Zone Resource Book, 2014

FEW Engineering Specification Section 01010 Environmental Protection

FEW ICRMP, 2016

FEW Installation Development Plan, 2013

## 9. LIST OF PREPARERS AND REVIEWERS

### a. Preparers

<b>Name</b>	<b>Background</b>
Andy McKinley, Environmental Element Chief	B.S. Environmental Engineering; M.E. Civil Engineering
Travis Beckwith, NEPA Coordinator/ Cultural Resources Manager	B.A. History; M.A. History
Alex Schubert, Natural Resources Program Manager	
Nicole Wittig, Cultural Resource Specialist, CIRE/University of Montana	B.A. Archaeology; M.A. History
Nicole Ng, Environmental Engineer	B.S. Civil Engineering; M.S. Environmental Resources Engineering



b. Reviewers

<b>Name</b>	<b>Agency</b>	<b>Title</b>
Kurt Warmbier	USAF, 90 MW/JA	Attorney Advisor, Environmental Law
Travis Beckwith	90 MW/CEIE	NEPA Coordinator/Cultural Resources Manager

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TABLE 1: COMPARISON OF PREDICTED ENVIRONMENTAL IMPACTS.

	Alternative A: Colocate new facilities with WYARNG	Alternative B: Bedown new airframe on South Side.	Alternative C: No Action
Safety and Occupational Health	Potential, negligible impacts to Safety and Occupational Health.	Potential impacts to Safety and Occupational Health.	No impact.
Biological Resources	Potential, negligible impact to FEW biological resources.	No impact to FEW biological resources.	No impact.
Water Resources	Potential, negligible impact to FEW water resources.	No Impact.	No Impact.
Cultural Resources	No impact.	No impact.	No impact.
Noise	Direct impact to the Western Hills area.	No Impact.	No Impact.
Air Quality	Potential, negligible impact to air quality.	No Impact	No impact.

Table 2: Annual Flight Operations at FEW AFB

Squadron	Aircraft	Operations Per Year			Operations Per Average Annual Day		
		Day	Night	Total	Day	Night	Total
37 HS	UH-1N	4,443	0	4,443	12.17	0.00	12.17
WYARNG	UH-60	1,666	555	2,221	4.56	1.52	6.08
Totals		6,108	555	6,663	16.73	1.52	18.26

Table reproduced from F.E. Warren Air Force Base Air Installation Compatible Use Zone Resource Book, September 2014.

Table 3: Audible Impacts Table

Variation of Sound Exposure Level (SEL) with Speed at 500 ft.						
Speed (Knots)	40	60	80	100	120	140
UH-1H	91.5	88.9	89.6	90.9	96.3	
New Airframe	87.1	87.2	87.7	88.4	89.3	90.3

Table reproduced from Construction Engineering Research Laboratory Technical Report N-131, June 1982.

# APPENDIX 1: LOCATION MAPS

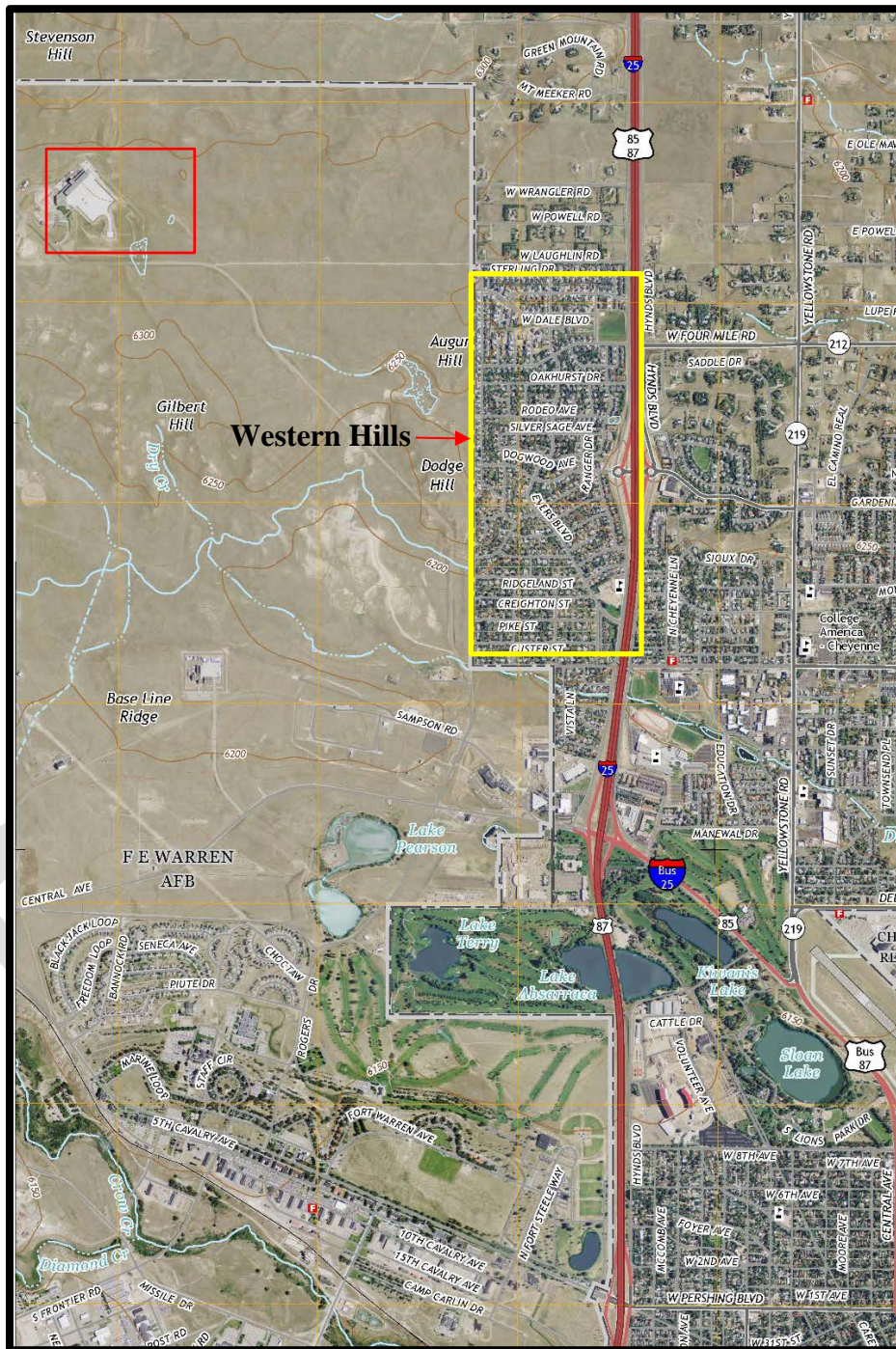


Figure 1: Topographic map illustrating the location of new facilities outlined in red and the Western Hills neighborhood outlined in yellow.

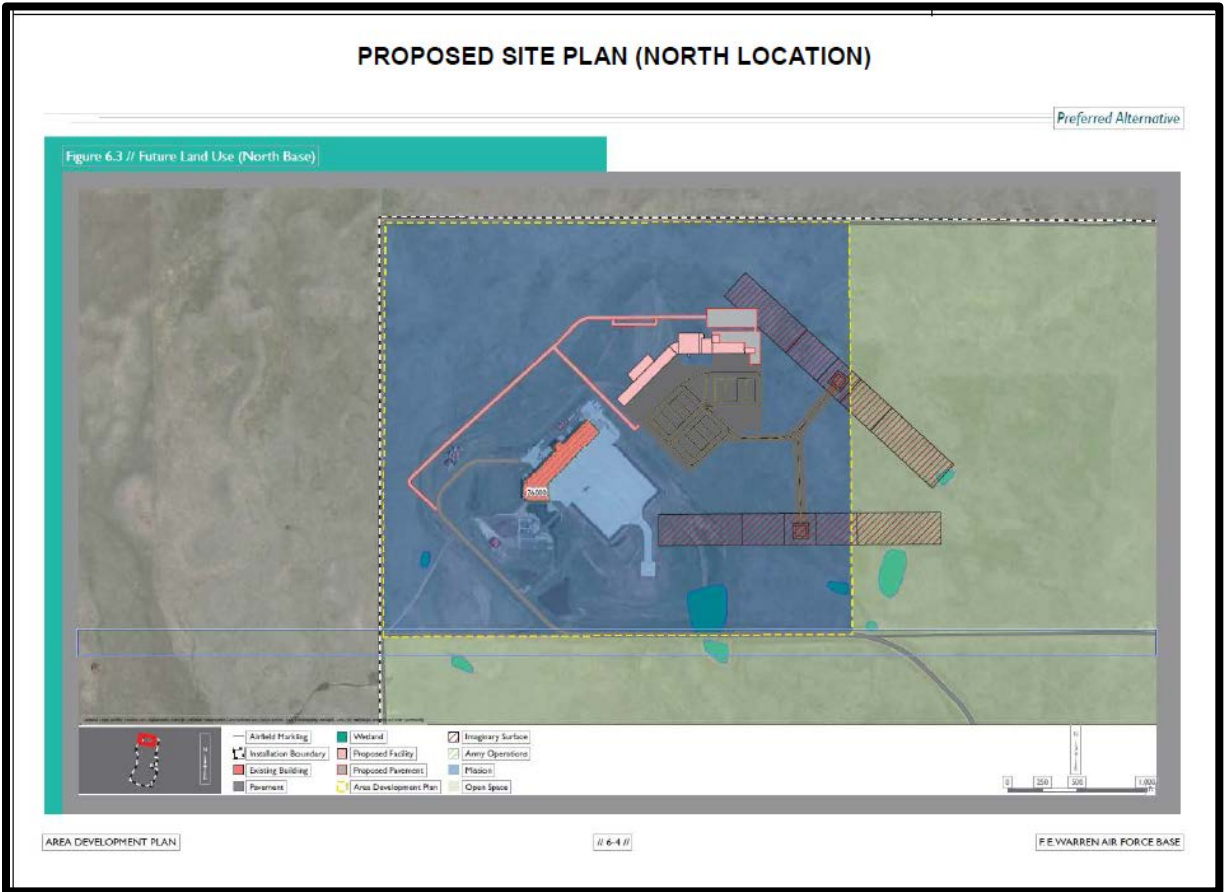


Figure 2: Aerial photograph detailing the location of the proposed action (Photograph 90 CES/CENME)

## APPENDIX 2: AGENCY CORRESPONDENCE



November 21, 2017

RECEIVED NOV-28 2017

LAB

Mr. Travis Beckwith  
Cultural Resources Manager  
300 Vesle Drive, Ste 600  
F.E. Warren AFB, WY 82005

RE: FEW – Proposed Aviation Support Facility (SHPO File #1117LMK003).

Dear Mr. Beckwith:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced undertaking. We have reviewed the associated report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that no historic properties, as defined in 36 CFR § 800.16(1)(1), will be affected by the undertaking as planned. We recommend FEW allow the undertaking to proceed in accordance with state and federal laws subject to the following stipulation:

*If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).*

This letter should be retained in your files as documentation of a SHPO concurrence on your finding of no historic properties affected. Please refer to SHPO project #1117LMK003 on any future correspondence regarding this undertaking. If you have any questions, please contact me at 307-777-7566.

Sincerely,

A handwritten signature in cursive script that reads "Linda Kiisk".

Linda Kiisk  
Historic Preservation Architect  
Wyoming State Historic Preservation Office

Wyoming State Historic Preservation Office  
Barrett Building, Third Floor | 2301 Central Avenue | Cheyenne, WY 82002 | 307-777-7697



Matthew H. Mead, Governor  
Darin J. Westby, P.E., Director

### Appendix 3: UH-1N and New Airframe Safety Statistics since 2005

Year	Aircraft	Class A		Class B		Destroyed		Fatal		Hours	Cumulative Hours
		Total	Rate	Total	Rate	Total	Rate	Pilot	All		
FY05	H-1	0	0	1	3.91	0	0	0	0	25,598	25,598
	New Airframe	5	18.29	1	3.66	2	7.31	0	2	27,344	27,344
FY06	H-1	0	0	2	7.81	0	0	0	0	25,608	51,206
	New Airframe	0	0	2	7.36	0	0	0	0	27,190	54,534
FY07	H-1	0	0	0	0	0	0	0	0	25,860	77,066
	New Airframe	0	0	1	3.89	0	0	0	0	25,703	80,237
FY08	H-1	0	0	0	0	0	0	0	0	26,030	103,096
	New Airframe	2	7.86	1	3.93	0	0	0	0	25,432	105,669
FY09	H-1	1	3.58	0	0	1	3.58	0	0	27,910	131,006
	New Airframe	1	4.03	3	12.09	0	0	0	0	24,817	130,486
FY10	H-1	2	7.12	0	0	1	3.56	0	0	28,071	159,077
	New Airframe	0	0	2	6.82	0	0	0	0	29,328	159,814
FY11	H-1	1	3.53	0	0	1	3.53	0	0	28,325	187,402
	New Airframe	0	0	1	3.75	0	0	0	0	26,668	186,482
FY12	H-1	0	0	0	0	0	0	0	0	28,385	215,787
	New Airframe	1	4.12	1	4.12	0	0	0	0	24,257	210,739
FY13	H-1	1	3.83	0	0	0	0	0	0	26,081	241,868
	New Airframe	1	4.32	1	4.32	1	4.32	0	2	23,169	233,908
FY14	H-1	0	0	1	3.6	0	0	0	0	27,773	269,641
	New Airframe	1	4.26	0	0	1	4.26	1	4	23,471	257,379
FY15	H-1	0	0	1	3.59	0	0	0	0	27,874	297,515
	New Airframe	0	0	1	4.15	0	0	0	0	24,109	281,488

Aircraft	Class A		Class B		Destroyed		Fatal		Hours
	Total	Rate	Total	Rate	Total	Rate	Pilot	All	
H-1	0.45	1.64	0.45	1.72	0.27	0.97	0.00	0.00	27,047
New Airframe	1.00	3.90	1.27	4.92	0.36	1.44	0.09	0.73	25,590

Flight rates are number of mishaps per 100,000 flight hours. Class A Mishap is a mishap resulting in one or more of the following: 1. Direct mishap cost handling \$2M or more (\$1M for mishaps occurring before FY10). 2. A fatality or permanent total disability. 3. Destruction of a DoD aircraft. Class B Mishap is a mishap resulting in one or more of the following: 1. Direct mishap cost totaling \$500K or more but less than \$2M (\$200K-\$1M prior to FY10). 2. A permanent partial disability. 3. Inpatient hospitalization of three or more personnel. Additionally, all aviation-related fatalities count toward fatality rate regardless if they resulted from “flight” (rate-producing) mishap or not. Table created from data retrieved 19 December 2016: <http://www.safety.af.mil/Divisions/Aviation-Safety-Division/Aviation-Statistics>