



Hill Air Force Base, Utah

Final

**Environmental Assessment:
Proposed Fiber Optic Cable,
Wendover Radar Site,
Wendover, Utah**

March 26, 2005

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14. ABSTRACT Hill AFB proposes to accommodate current United States Air Force (USAF) missions by installing an underground fiber optic communications cable for use at the Wendover Radar Site. The fiber optic cable would carry electronic data from Wendover Radar Site to Wendover Peak. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and site restoration operations would prevent erosion of the site. Generation of hazardous waste would not be anticipated from the proposed action or the no action alternative; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action or the no action alternative.					
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Final
**Environmental Assessment (EA):
Proposed Fiber Optic Cable,
Wendover Radar Site,
Wendover, Utah**

**Air Force Materiel Command
Hill Air Force Base, Utah 84056**

March 26, 2005

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to accommodate current United States Air Force (USAF) missions by installing an underground fiber optic communications cable from Wendover Radar Site to an existing pole that is located approximately 150 feet to the north of Interstate Highway 80 (I-80). From that location continuing north, the existing overhead fiber optic cable would be retained. The fiber optic cable would carry electronic data from Wendover Radar Site to Wendover Peak.

The proposed action is needed because it will eliminate railroad and highway safety concerns, and it will support continued communications between Wendover Radar Site and Wendover Peak. On or about June 14, 2003, a guy wire anchor supporting a fiber optic pole failed, at a location adjacent to the Union Pacific railroad tracks. In that vicinity, the cable was routed over Union Pacific railroad tracks. An eastbound freight train hit the sagging fiber optic cable, dragging the cable, resulting in interruption of military communications, and damage to the cable and three power poles.

Scope of Review

No solid or hazardous waste is expected to be generated by the project, but accidental spills of fuel, lubricants, or other chemicals during construction could occur. No species of plants or animals listed as threatened or endangered are known to occur in the vicinity of the proposed action. Minor historic properties are known to exist in the area of the proposed action. Hill Air Force Base (AFB) environmental managers are aware of slightly contaminated groundwater in wells beneath the southern portion of the proposed action. Environmental effects of the proposed action and the no action alternative were considered in detail. Two additional alternatives were eliminated from detailed consideration because they did not meet the selection criteria.

Selection Criteria

The future communications service between Wendover Radar Site and Wendover Peak should:

- possess the proper structural design and installed equipment to accomplish the required types of data transfer;
- supply sufficient bandwidth to meet USAF mission objectives;
- eliminate safety concerns related to railroad and highway crossings;
- be permanent in nature; and
- be protective of facilities, human health, and the environment.

Proposed Action

Proposed Action - The proposed action would install an underground fiber optic communications cable from Wendover Radar Site to an existing pole that is located

approximately 150 feet to the north of I-80. From that location continuing north, the existing overhead fiber optic cable would be retained. The proposed cable alignment would be approximately 1.3 miles in length. The fiber optic cable would be buried 5 feet underground, placed in protective plastic conduit, sand bedded, and would most likely need a concrete layer above the cable for purposes of additional protection. Horizontal borings would be completed under the railroad tracks, frontage roads, and I-80 for inserting the conduit and cable in those locations. The deepest point of excavation would be approximately 6 feet below ground surface (bgs).

No Action Alternative – Under the no action alternative, buried fiber optic cable would not be installed. Under this alternative, operational requirements would not be met.

Results of the Environmental Assessment

The proposed action and the no action alternative were considered in detail. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and site restoration operations would prevent erosion of the site. Generation of hazardous waste would not be anticipated from the proposed action or the no action alternative; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action or the no action alternative.

COMPARISON OF ALTERNATIVES

Issue	<u>Proposed Action</u> Install the Proposed Fiber Optic Cable	<u>No Action</u> Do Not Install the Fiber Optic Cable
Air Quality	Minor, short term construction related emissions. Implement dust controls.	No impact.
Solid and Hazardous Wastes	Small amounts of construction debris. No hazardous waste during construction or operations.	No impact..
Cultural and Historical Resources	No impact. Avoid resources, and/or better examples exist elsewhere.	No impact.
Biological Resources	No impact. Optional timing could avoid nesting birds.	No impact.
Surface Soils	Construction-related erosion control measures may be required.	No impact.
Groundwater, and Soils in the Saturated Zone	No impact (contaminated groundwater is below the maximum depth of excavation).	No impact.

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LIST OF ACRONYMS AND TERMS

AFB	Air Force Base
bgs	Below Ground Surface
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DAQ	Utah Division of Air Quality
DOD	Department of Defense
EA	Environmental Assessment
EPA	United States Environmental Protection Agency
FONSI	Finding of No Significant Impact
HAP	Hazardous Air Pollutant
HC	Hydrocarbons
I-80	Interstate Highway 80
IRP	Installation Restoration Program
MCC	Mission Control Center
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO _x	Oxides of Nitrogen
NRHP	National Register of Historic Places
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
PM	Particulate Matter
PM-10	Particulate Matter Smaller Than 10 Microns in Diameter
RANS	Range Squadron
RCRA	Resource Conservation and Recovery Act
RSL	Range Support Logistics
SO ₂	Sulfur Dioxide
UAC	Utah Administrative Code
UDOT	Utah Department of Transportation
US	United States
USAF	United States Air Force
UTTR	Utah Test and Training Range
VOC	Volatile Organic Compound
µg/kg	micrograms per kilogram
µg/l	micrograms per liter

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The Utah Test and Training Range (UTTR) is used for United States (US) Air Force and other US military training operations. UTTR was established in 1941. The current mission of UTTR is to provide unique training and testing facilities to enable the Department of Defense (DOD) to maintain personnel and equipment for use in testing, training and other support services related to military weapon systems.

Primary current users of UTTR are the Air Force Flight Test Center, wings of Air Combat Command, Ogden Air Logistics Command (for explosive ordnance disposal and range support), and Air Force Materiel Command (for environmental management, landing gear, and missiles and motor dissection activities).

The mission of the 388 Range Squadron (RANS) is to provide US and allied forces with an environment that is appropriate for testing weapons systems and training military personnel in the use of those systems. The Wendover Radar Site provides radar, telemetry and communication sites for UTTR. Specifically at Wendover Radar Site, 388 RANS personnel install, maintain, and operate electronic systems that receive, collect, and transmit information to other locations, with the data eventually reaching the Mission Control Center (MCC) for analysis.

This document addresses activities related to replacing an existing above ground fiber optic cable with an underground fiber optic cable. The Range Support Logistics Section (RSL) of the 388 RANS is currently responsible for accomplishing the fiber optic communication activity from Wendover Radar Site to Wendover Peak, in support of testing and training operations at UTTR.

1.2 Purpose and Need

The purpose of the proposed action is to accommodate current US Air Force (USAF) missions by installing an underground fiber optic communications cable from Wendover Radar Site to an existing pole that is located approximately 150 feet to the north of Interstate Highway 80 (I-80). From that location continuing north, the existing overhead fiber optic cable would be retained. The fiber optic cable would carry electronic data from Wendover Radar Site to Wendover Peak.

The proposed action is needed because it will eliminate railroad and highway safety concerns, and it will support continued communications between Wendover Radar Site and Wendover Peak. On or about June 14, 2003, a guy wire anchor supporting a fiber optic pole failed, at a location adjacent to the Union Pacific railroad tracks. In that vicinity, the cable was routed over Union Pacific railroad tracks. An eastbound freight train hit the sagging fiber optic cable, dragging the cable, resulting in interruption of military communications, and damage to the cable and three power poles.

A temporary solution is in place, consisting of a fiber optic cable that is mostly overhead, a few feet lying on the ground, and a few feet where it is routed several inches beneath the railroad tracks. In June of 2003, a Union Pacific representative provided verbal approval to an Air Force contractor for a two-week temporary cable placement under the railroad tracks. As of the writing of this document, the cable is still routed under the railroad tracks.

1.3 Location of the Proposed Action

Wendover Radar Site is located approximately 120 miles west of downtown Salt Lake City and immediately to the east of the Utah-Nevada border (Figure 1). Wendover Radar Site lies south of I-80, and is located in Tooele County, Utah.

The proposed fiber optic cable would be buried on properties owned by the US Air Force, Tooele County, Union Pacific Railroad, Standard Realty and Development, Utah Department of Transportation (UDOT), S.K. Hart Engineering LLC, and Utah Division of Parks and Recreation (Figure 2). A view of the proposed routing of the fiber optic cable superimposed on an aerial photograph is presented in Figure 3.

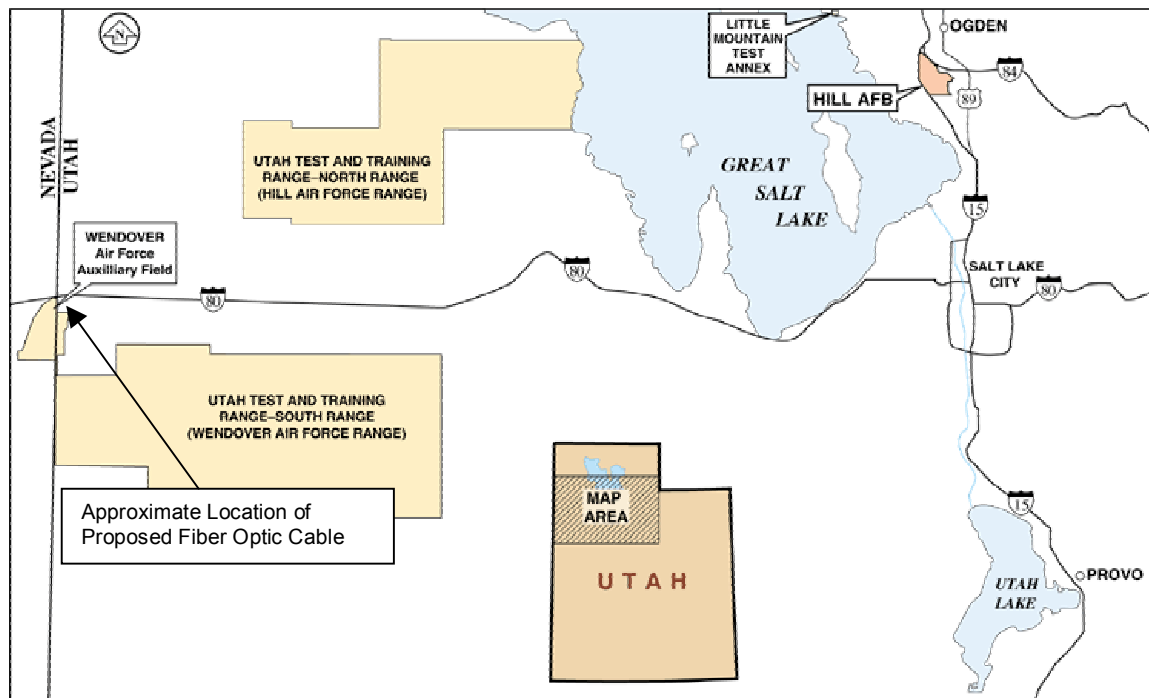
1.4 Scope of the Environmental Review and Anticipated Environmental Issues

The scope of this environmental review is to analyze environmental concerns related to installing an underground fiber optic communications cable on and to the north of Wendover Radar Site. No utilities are required. No hazardous waste is expected to be generated. During construction activities, small amounts of solid wastes may be generated, and hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals occurs.

The proposed project area consists of approximately 4.2 acres of previously disturbed land in existing corridors used for electrical power transmission, a railroad, and highways. No species of plants or animals listed as threatened or endangered are known to occur in the vicinity of the proposed action. Minor historic properties are known to exist in the area of the proposed action.

No surface water resources exist within the area of the proposed action, but a construction stormwater permit would probably be required. Excavation would not proceed deeper than 6 feet, and shallow soil contamination has not been detected in the vicinity of the proposed action. Hill AFB environmental managers are aware of slightly contaminated groundwater in wells beneath the southern portion of the proposed action.

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are: air quality, solid and hazardous wastes, cultural and historical resources; biological resources; and physical environment (surface soils, groundwater). Environmental effects of the proposed action and the no action alternative were considered in detail. Section 2.4 describes 2 additional alternatives that were eliminated from detailed consideration.



Source: <http://www.em.hill.af.mil/restoration/map02/index.html> Current as of 10/07/04

Note: Wendover Air Force Auxiliary Field should be Wendover Radar Site

Figure 1: Wendover Radar Site Location Map

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PARKS AND RECREATION

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Figure 2: Location of the Proposed Fiber Optic Cable

Legend

- Air Force Property
- Flag Markers
- Proposed-New Fiber Route
- Existing Buried Fiber Route
- Existing Fiber Route

Proposed Alignment

Existing Alignment

Well E-104

Well E-101

Scale: 0 to 0.5 Miles

Figure 3: Aerial Photograph Showing the Proposed Fiber Optic Cable

1.5 Applicable Regulations and Permits

Throughout the construction phase of the project, Hill AFB contractors would follow safety guidelines of the Occupational Safety and Health Administration (OSHA) as presented in the *Code of Federal Regulations* (CFR) including, but not limited to trenching, Title 29 Part 1926 Subpart P. Should any Hill AFB employees participate in constructing the proposed action, they would comply with relevant Air Force Occupational Safety and Health Standards.

The proposed action would disturb approximately 4.2 acres. Since the project is predicted to disturb at least 1 acre, a construction stormwater permit would be required for a small construction activity disturbing between 1 and less than 5 acres of land (see Sections 3 and 4 of this document).

A comprehensive cultural resources inventory was conducted for the proposed action in accordance with National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. The proposed installation is not expected to contact any cultural resources (defined as archaeological, architectural, or traditional cultural properties) for which a significant effect or adverse impact would exist (see Sections 3 and 4 of this document). If additional suspected or actual cultural resources should be observed during construction, work in the immediate vicinity would stop, and the Hill AFB cultural resources manager would implement inadvertent discovery procedures in accordance with the Hill AFB *Draft Integrated Cultural Resources Management Plan*.

Hill AFB has completed groundwater investigations in compliance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), beneath the portion of the proposed action owned by the Air Force. Specific discussions related to minor groundwater contamination are presented in Sections 3 and 4 of this document.

The contractor would be required to have a water truck on site as needed during especially dry and windy weather for the purpose of dust suppression. Specific discussions for current air emissions and potential impacts related to the proposed action are presented in Sections 3 and 4 of this document. Air emissions generated by the proposed action must be addressed in accordance with Utah's *State Implementation Plan*, which complies with the Clean Air Act's *General Conformity Rule*, Section 176 (c). A conformity analysis was conducted for this proposed action as specified by "*Determining Conformity of Federal Actions to State or Federal Implementation Plans*," 40 CFR 93, revised July 1, 1998.

The proposed construction is not expected to generate any wastes that are regulated by the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act, or similar law. Hazardous wastes at Hill AFB and related Air Force properties are routinely and properly handled in accordance with RCRA regulations, Utah hazardous waste management regulations contained in the Utah Administrative Code (UAC) Section R315-1, and the *Hill AFB Hazardous Waste Management Plan*. These regulations

control hazardous waste from its origin and storage to ultimate treatment, and/or disposal. In Utah, the above regulations are enforced by the Utah Division of Solid and Hazardous Waste. No chemicals are planned to be used during future use of the fiber optic cable, and no hazardous waste is expected to be generated. No industrial wastewater discharges are anticipated as a result of the proposed action.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes selection criteria, the proposed action, 2 additional alternatives that were considered, and the no action alternative.

2.1 Selection Criteria

As discussed in Sections 1.1 and 1.2, the 388 RANS is responsible for providing US and allied forces with an environment that is appropriate for testing weapons systems and training military personnel in the use of those systems. Specifically at Wendover Radar Site, 388 RANS personnel install, maintain, and operate electronic radar, telemetry and communication sites for military flight operations at UTTR.

Due to these considerations, the following selection criteria were established. The future communications service between Wendover Radar Site and Wendover Peak should:

- possess the proper structural design and installed equipment to accomplish the required types of data transfer;
- supply sufficient bandwidth to meet USAF mission objectives;
- eliminate safety concerns related to railroad and highway crossings;
- be permanent in nature; and
- be protective of facilities, human health, and the environment.

2.2 Proposed Action: Install a Below Ground Fiber Optic Cable

The proposed action includes all work necessary to install an underground fiber optic communications cable from Wendover Radar Site to an existing pole that is located approximately 150 feet to the north of I-80. From that location continuing north, the existing overhead fiber optic cable would be retained.

The proposed cable alignment would be approximately 1.3 miles in length. The fiber optic cable would be buried 5 feet underground, placed in protective plastic conduit, sand bedded, and would most likely need a concrete layer above the cable for purposes of additional protection. Horizontal borings would be completed under the railroad tracks, frontage roads, and I-80 for inserting the conduit and cable in those locations.

The deepest point of excavation would be approximately 6 feet below ground surface (bgs). While open, the sides of any excavations would be sloped at 1.5 horizontal to 1.0 vertical or other such angle as approved by design and geotechnical engineering contractors. Assuming a maximum trench width of 6 feet, the greatest width of disturbed area would therefore be 24 feet. The construction contractor would implement sediment control measures during construction, and restore nearby surfaces to their original condition.

The environmental impacts of the proposed action are summarized in Section 4.4 of this document, and are discussed at greater length throughout Section 4 of this document.

2.3 No Action Alternative: Do Not Install the Fiber Optic Cable

The no action alternative does not meet the selection criteria for being permanent in nature, or eliminating safety concerns related to highway and railroad crossings. The verbal approval for a two-week temporary cable placement under the railroad tracks expired in July of 2003, and it was assumed the Union Pacific Railroad Company would not grant permission for this temporary fix to become a permanent solution. Additionally, compromised poles, ultraviolet degradation of materials, and cables sagging toward highway vehicles and trains would continue to create potential problems, and failure may again be the result. Under the no action alternative, it is predicted that the railroad company may require the temporary cable to be removed, or the cable may again be severed, and subsequently for an unspecified time, 388 RANS would be unable to provide the required data transfer function. However, the framework of an environmental assessment requires that the no action alternative must be considered even if it does not meet all of the selection criteria.

The environmental impacts of the no action alternative are summarized in Section 4.4 of this document, and are discussed at greater length throughout Section 4 of this document.

2.4 Identification Of Alternatives Eliminated From Further Consideration

Hill AFB project managers considered but eliminated 2 other potential alternatives for accomplishing the required data transfer function.

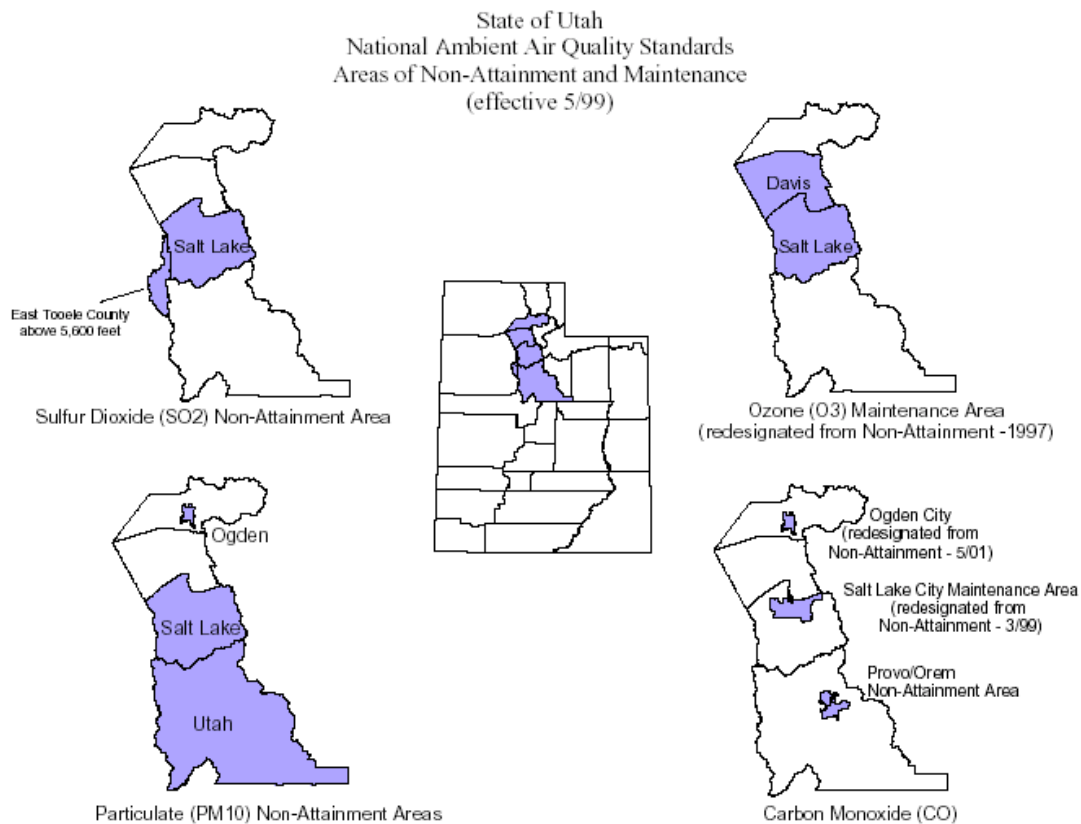
Replace, Repair and Maintain the Above Ground Fiber Optic Cable: This alternative is very similar to the no action alternative, except the section currently under the railroad tracks would be replaced in its original overhead location. This alternative does not meet the selection criterion for eliminating safety concerns related to highway and railroad crossings. Compromised poles, ultraviolet degradation of materials, and cables sagging toward highway vehicles and trains would continue to create potential problems, and failure may again be the result. Under this alternative, it is predicted that the cable may again be severed, and subsequently for an unspecified time, 388 RANS would be unable to provide the required data transfer function.

Use a Microwave Data Transmission Technology: This alternative was eliminated for 2 reasons; (1) current microwave technology would not supply the required bandwidth, and (2) electromagnetic interference would at times degrade the ability of the system to function according to mission requirements.

3.0 EXISTING ENVIRONMENT

3.1 Air Quality

The proposed action is located in Tooele County, Utah. Tooele county is in attainment status with federal clean air standards (Figure 4). Nonattainment areas fail to meet national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NO_x), sulfur dioxide (SO_2), ozone (O_3), particulate matter less than 10 microns in diameter (PM-10), carbon monoxide (CO), and lead.



Source: http://www.airquality.utah.gov/GRAPHICS/MAPS/non_attn.pdf

Figure 4: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective 5/99)

3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Directorate and the Defense Reutilization and Marketing Office. Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

The existing fiber optic activity uses no chemicals, and therefore does not produce solid or hazardous waste.

3.3 Cultural and Historical Resources

The comprehensive cultural resources inventory (Geo-Marine 2004) identified the following 3 linear historic sites that have been recommended or determined eligible for inclusion on the National Register of Historic Places (NRHP):

- the historic Western Pacific Railroad;
- a segment of the “new” Victory Highway; and
- the Wendover aqueduct.

One small historic isolate (a small abandoned trash dump from the 1940s) was identified lying nearby, but outside of the area of potential effects.

3.4 Biological Resources

On March 9, 2004, a site visit was completed to observe the existing environment for the proposed project. Conditions were clear and cool (55 degrees), with no snow on the ground. Forbs were greening at their bases, and spring migration was occurring for several migratory birds species (e.g., bald eagle, sage sparrow, western kingbird).

The vegetation consists primarily of salt desert scrub along the alignment for the proposed fiber optic cable. Principal plant species include greasewood (*Sarcobatus vermiculatus*, 95 percent), cheatgrass (*Bromus tectorum*, 3 percent), and rubber rabbitbrush (*Ericameria nauseosa*, 2 percent). Within previously undisturbed portions of the proposed alignment, total vegetative cover varies between 15 and 20 percent. Climatic conditions have been dry over the past 5 years, such that approximately 95 percent or greater of the greasewood is dead (samples from several individuals suggest that the plants were dead, as opposed to senesced). Vegetation in the immediate area is similar to that along the proposed alignment.

The proposed alignment and its immediate surroundings are too small an area to provide significant habitat for most birds or mammals larger than small rodents (not observed), though coyote or fox tracks were observed (paw indentations in the soft surface were not

clear enough to specifically identify the tracks). No burrows were observed, and the lack of denning sites suggests that the animals use the area on a transient basis. Several lizards were observed on site but could not be identified due to their rapid movement. No bird species were observed during the site visit, though the greasewood and rabbitbrush shrubs probably provide habitat for some birds. No raptors were seen flying overhead, nor were any observed along the cliffs that are located north of the proposed alignment. The lack of groundcover and shrubs probably limits the number of ground-nesting species using the area; however, some of the gravel areas would provide suitable nesting sites for killdeer.

Past disturbances along the proposed alignment include the placement of fill for building pads and right-of-way construction (power line, railroad, and road), as well as access for the dumping of household and industrial trash. Approximately 10 to 20 percent of the proposed corridor is non-vegetated, either as pavement or bare gravel areas (areas that have been disturbed by previous activities, as opposed to mineral flats and/or desert pavement habitat).

There are no plant or animal species that are listed as endangered, threatened, or sensitive by state or federal agencies that are known to occur, nor were any observed, along or in the vicinity of the proposed alignment. Additionally, there is no big game habitat in the vicinity, as documented by the Utah Division of Wildlife.

3.5 Physical Environment

3.5.1 Surface Soils

The surface soils in the vicinity of proposed excavations are flat and covered with occasional gravel and/or pavement. There is no known shallow soil contamination in the vicinity of the proposed action (personal communication, Mr. David Mills).

3.5.2 Groundwater, and Soils in the Saturated Zone

In the vicinity of the proposed action, depth to groundwater is approximately 10-12 feet bgs (personal communication, Mr. Dennis Weder). Hill AFB environmental managers are aware of slightly contaminated groundwater in wells beneath the southern portion of the proposed action (Hill AFB 2004c).

Hill AFB monitoring well E-101 (Figure 3) is located approximately 500 feet to the east of where the proposed fiber optic cable would be placed. At 17.5 feet bgs, volatile organic compounds (VOCs) were identified in the low parts per billion range. The greatest concentration identified in soil was 9.06 micrograms per kilogram ($\mu\text{g/kg}$) for toluene. The greatest concentration identified in groundwater was 3.56 micrograms per liter ($\mu\text{g/l}$) for 2-hexanone in 1993.

Hill AFB monitoring well E-104 (Figure 3) is located approximately 200 feet to the west of where the proposed fiber optic cable would be placed. At 22 feet bgs, VOCs were identified in the low parts per billion range. The greatest concentration identified in soil was 16.4 µg/kg for xylenes. The greatest concentration identified in groundwater was 4.0 µg/l for toluene in 1993.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Impacts of the Proposed Action

Short term air quality impacts of the proposed action would be related to generation of PM-10 during excavation, backfill, and general construction operations, and construction equipment emissions during the same time period.

Emissions of PM-10 would be produced as soil is disturbed during proposed construction activities. The US Environmental Protection Agency (EPA) has estimated that fugitive dust emissions from construction activities produce 0.11 tons of PM-10 per acre per month (EPA 1996). The proposed action would involve approximately 2.5 weeks of excavation and backfill activities for approximately 4.2 acres being disturbed during construction. Fugitive dust emissions of 0.29 tons of PM-10 were therefore calculated for the proposed action. To mitigate emissions of fugitive dust, the construction contractor would be required to have a water truck on site as needed during dry and windy weather for the purpose of dust suppression and reducing the emissions of PM-10.

The internal combustion engines of heavy equipment would also generate emissions of PM-10, VOCs, NO_x, and CO. Fugitive emissions from construction activities should be mitigated according to *Utah Administrative Code, Rule R307-205, Emission Standards: Fugitive Emissions and Fugitive Dust*. Good housekeeping practices should be used to maintain construction opacity at less than 20 percent. Haul roads should be kept wet, and any soil that is deposited on nearby paved roads by construction vehicles should be removed from the roads and returned to the site or appropriate disposal area.

Assumptions and estimated emissions for the construction period are listed in Table 1.

Table 1: Calculated Heavy Equipment Emissions

Data Assumptions							
Equipment Type	Diesel Emission Factor (lbs/hr)						
	VOC (HC)	CO	NOx	PM10	HAPs	SOx	
Asphalt Paver	0.28	1.24	2.96	0.24	0.05	0.25	
Bobcat Loader	0.14	0.67	1.00	0.10	0.01	0.08	
Cable Plow	0.59	3.75	4.49	0.59	0.08	0.38	
Compressor (boring)	0.25	1.62	1.94	0.25	0.04	0.16	
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72	
Crane	2.14	6.96	17.08	2.39	0.33	1.54	
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65	
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49	
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23	
Generator	0.02	0.10	0.12	0.02	0.00	0.01	
Loader/Backhoe	0.87	4.12	6.12	0.64	0.06	0.52	
Motored Grader	0.83	2.01	5.08	0.53	0.06	0.46	
Scraper	0.33	2.31	4.03	0.58	0.13	0.42	
Track Hoe	0.91	6.65	13.75	1.84	0.26	1.19	
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46	
Water Truck	1.10	3.58	12.28	1.02	0.28	1.14	
Wheeled Dozer	0.46	1.48	5.08	0.35	0.08	0.49	
Note: VOCs = Hydrocarbons and HAPs = Aldehydes Source: Industry Horsepower Ratings and EPA 460/3-91-02							
Construct Buried Fiber Optic Cable Line							
EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Asphalt Paver		0	0	0	0	0	0
Bobcat Loader	60	8.4	40.2	60	6	0.6	4.8
Cable Plow	25	14.75	93.75	112.25	14.75	2	9.5
Compressor (boring)	40	10	64.8	77.6	10	1.6	6.4
Concrete Truck		0.0	0.0	0.0	0.0	0.0	0.0
Crane		0.0	0.0	0.0	0.0	0.0	0.0
Dump Truck	100	63.0	204.0	698.0	58.0	16.0	65.0
Flat Bed Truck		0.0	0.0	0.0	0.0	0.0	0.0
Fork Lift		0.0	0.0	0.0	0.0	0.0	0.0
Generator	40	0.8	4.0	4.8	0.8	0.0	0.4
Loader/Backhoe	80	69.6	329.6	489.6	51.2	4.8	41.6
Motored Grader		0.0	0.0	0.0	0.0	0.0	0.0
Scraper		0.0	0.0	0.0	0.0	0.0	0.0
Track Hoe	100	91.0	665.0	1375.0	184.0	26.0	119.0
Vibratory Compactor		0.0	0.0	0.0	0.0	0.0	0.0
Water Truck		0.0	0.0	0.0	0.0	0.0	0.0
Wheeled Dozer		0.0	0.0	0.0	0.0	0.0	0.0
TOTAL ESTIMATED EMISSIONS (lbs)		257.6	1401.4	2817.3	324.8	51.0	246.7
TOTAL ESTIMATED EMISSIONS (tons)		0.13	0.70	1.41	0.16	0.03	0.12

Source of Hours: Discussions With Pete Fletcher, Hill AFB Contractor (JT3)

No chemicals are planned to be used by the fiber optic activity. There would be no operational air quality impacts associated with the proposed action.

Related to conformity with Utah's State Implementation Plan, and therefore the Clean Air Act's General Conformity Rule and 40 CFR 93, the proposed action is expected to emit less than 500 pounds per year of a single HAP and less than 2,000 pounds per year of a combined HAPs. Therefore, it does not require a new source review. Conformity was determined to exist.

4.1.3 Impacts of the No Action Alternative

There would be no short term air quality impacts (construction emissions) or long term air quality impacts related to the no action alternative.

4.1.4 Cumulative Impacts

Air emissions would either be temporary, during the construction period, or in conformance with the Clean Air Act's General Conformity Rule. There are no cumulative impacts to air quality associated with the proposed action or the no action alternative.

4.2 Solid and Hazardous Wastes

4.2.1 Impacts of the Proposed Action

During the proposed construction activities, no solid wastes would be generated except for minor amounts of construction debris that would be treated as uncontaminated trash. It is possible that equipment failure or a spill of fuel, lubricants, or construction-related chemicals could generate solid or hazardous wastes. In such a case, or if excavated soils exhibit suspicious odors or appearance, the following procedures would apply on Hill AFB.

Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in *Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*. All solid non-hazardous waste is collected and disposed on a daily basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.

The proposed action would not generate any solid or hazardous wastes during operations.

4.2.2 Impacts of the No Action Alternative

With respect to solid and hazardous wastes, the no action alternative has no impacts.

4.2.3 Cumulative Impacts

Proper handling of solid and hazardous wastes eliminates releases of contaminants to the environment. There are no cumulative solid or hazardous waste impacts associated with the proposed action or the no action alternative.

4.3 Cultural and Historical Resources

4.3.1 Impacts of the Proposed Action

For the historic Western Pacific Railroad, the fiber optic installation would be accomplished by boring beneath the structure.

For the “new” Victory Highway, less than 1 percent of the original length would be disturbed, and this portion of the highway is already heavily disturbed.

For the Wendover aqueduct, less than 1 percent of the original length would be disturbed, this portion of the aqueduct is already disturbed, and other portions of this aqueduct have already been recorded.

The small historic isolate (small abandoned trash dump from the 1940s) was determined not to be eligible for inclusion in the NRHP.

The report by Geo-Marine, Inc. (Geo-Marine 2004) concluded, “Because of the extent of these sites and the extremely limited impact that would result from fiber optic route installation, and due to the ability to avoid certain structures by boring, determinations of no effect or no adverse effect are recommended.”

As stated in Section 1.5, if additional suspected or actual cultural resources should be observed during construction, work in the immediate vicinity would stop, and the Hill AFB cultural resources manager would implement inadvertent discovery procedures in accordance with the Hill AFB *Draft Integrated Cultural Resources Management Plan*.

4.3.2 Impacts of the No Action Alternative

With respect to cultural and historical resources, the no action alternative has no impacts.

4.3.3 Cumulative Impacts

There are no cumulative impacts to cultural and historical resources associated with the proposed action or the no action alternative.

4.4 Biological Resources

4.4.1 Impacts of the Proposed Action

As stated in Section 3.4, no plant or animal species listed as endangered, threatened, or sensitive by state or federal agencies are known or likely to occur along or in the vicinity of the proposed alignment. Thus, project implementation would not affect these species.

During installation of the buried cable, a swath of vegetation along the exact alignment would be damaged and/or removed, and any animals present would be displaced. The loss of vegetation would not likely be significant, as the alignment consists of habitat that is already heavily impacted by human activities and is in poor condition. Consequently, the proposed project would have little impact on wildlife in the vicinity. However, if vegetation is removed during nesting season, there could be a direct impact to adult and young birds nesting in the area. To avoid this, the right-of way- should be cleared before April 15 or after August 15 if possible. Following the construction phase, optional revegetation with native species along the alignment would provide habitat to wildlife, as well as help prevent wind erosion.

4.4.2 Impacts of the No Action Alternative

With respect to biological resources, the no action alternative has no impacts.

4.4.3 Cumulative Impacts

There are no cumulative impacts to biological resources associated with the proposed action or the no action alternative. The loss of a swath of vegetation, which is already impacted by human activities, would have little impact upon the suitability of the surrounding areas as habitat for species that may use the area.

4.5 Physical Environment

4.5.1 Surface Soils

4.5.1.1 Impacts of the Proposed Action

The surface soils in the vicinity of the proposed excavation are flat and covered with occasional gravel and/or pavement. Construction projects can increase soil erosion. Since the area of proposed construction is flat, the potential for erosion is small. Hill AFB construction specifications would mitigate any erosion potential that does exist by requiring the contractor to monitor the site during construction, and then restore the land to its original condition. In this case, the area disturbed by excavation would be backfilled and restored to prevent soil erosion.

4.5.1.2 Impacts of the No Action Alternative

With respect to surface soils, the no action alternative has no impacts.

4.5.1.3 Cumulative Impacts

There are no cumulative impacts to surface soils associated with the proposed action or the no action alternative.

4.5.2 Groundwater, and Soils in the Saturated Zone

4.5.2.1 Impacts of the Proposed Action

As stated in Section 3.5.2, Hill AFB environmental managers are aware of slightly contaminated groundwater in wells beneath the southern portion of the proposed action (Hill AFB 2004c). Current Hill AFB guidance documents related to groundwater in this area state that the low levels of contaminants detected are below drinking water standards, and corrective actions are not required (Hill AFB 2004b; Montgomery 1999).

In the vicinity of the proposed action, depth to groundwater is approximately 10-12 feet bgs (personal communication, Mr. Dennis Weder). The anticipated depth of excavation would not exceed 6 feet bgs, and no contact with groundwater should exist.

4.5.2.2 Impacts of the No Action Alternative

With respect to groundwater, the no action alternative has no impacts.

4.5.2.3 Cumulative Impacts

There are no cumulative impacts to groundwater resources associated with the proposed action or the no action alternative.

4.6 Summary of Impacts

The proposed action and the no action alternative were considered in detail. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and site restoration operations would prevent erosion of the site. Generation of hazardous waste would not be anticipated from the proposed action or the no action alternative; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action or the no action alternative.

Table 2: Summary Comparison of Alternatives

Issue	<u>Proposed Action</u> Install the Proposed Fiber Optic Cable	<u>No Action</u> Do Not Install the Fiber Optic Cable
Air Quality	Minor, short term construction related emissions. Implement dust controls.	No impact.
Solid and Hazardous Wastes	Small amounts of construction debris. No hazardous waste during construction or operations.	No impact..
Cultural and Historical Resources	No impact. Avoid resources, and/or better examples exist elsewhere.	No impact.
Biological Resources	No impact. Optional timing could avoid nesting birds.	No impact.
Surface Soils	Construction-related erosion control measures may be required.	No impact.
Groundwater, and Soils in the Saturated Zone	No impact (contaminated groundwater is below the maximum depth of excavation).	No impact.

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7.0 REFERENCES

CFR: *Code of Federal Regulations*, US Government Printing Office, Office of the Federal Register (various sections and dates).

DAQ 2004: *State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective May, 1999)*, Utah Division of Air Quality Website, Dec, 2004. http://www.airquality.utah.gov/GRAPHICS/MAPS/non_attn.pdf

EPA 1991: *Nonroad Engine and Vehicle Emission Study - Report*, Table 2-07a, US Environmental Protection Agency, 1991.

EPA 1996: *National Air Pollutant Emission Trends, Procedures Document for 1900-1996*, US Environmental Protection Agency, Page 4-285, 1996.

Geo-Marine 2004: *Draft: Results of a Cultural Resources Inventory of the Proposed Wendover Fiber Optic Route, Air Force Wendover Field Site, Wendover, Utah*, Geo-Marine, Inc., 2004.

Hill AFB: *Construction Specifications, Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*, Hill AFB, UT, current version.

Hill AFB 2004a: *Hill AFB 2001 Environmental Restoration Management Plan (Web Page)*, content as of 10/07/04, <http://www.em.hill.af.mil/restoration/map02/index.html>.

Hill AFB 2004b: *Hill AFB 2001 Environmental Restoration Management Plan (Web Page)*, content as of 12/21/04, <http://www.em.hill.af.mil/restoration/map02/wendover.html>.

Hill AFB 2004c: Locations of monitoring wells (on aerial photograph) and analytical results for wells E-101 and E-104, Hill Air Force Base, received December, 2004.

JT3 2004: Aerial photograph showing existing and proposed fiber optic lines, JT3, LLC, received February, 2004.

Montgomery 1999: *Final Basewide Quality Assurance Project Plan, Hill AFB, Utah*, Montgomery Watson, July, 1999.

FINDING OF NO SIGNIFICANT IMPACT

1. NAME OF ACTION: Install an underground fiber optic cable on and adjacent to Wendover Air Force Radar Site, Utah.

2. DESCRIPTION OF THE PROPOSED ACTION: Hill AFB proposes to accommodate United States Air Force (USAF) missions by installing an underground fiber optic communications cable from Wendover Radar Site to an existing pole that is located approximately 150 feet to the north of Interstate Highway 80 (I-80). From that location continuing north, the existing overhead fiber optic cable would be retained. The fiber optic cable would carry electronic data from Wendover Radar Site to Wendover Peak.

The fiber optic cable would be buried 5 feet underground, placed in protective plastic conduit, sand bedded, and would most likely need a concrete layer above the cable for purposes of additional protection. Horizontal borings would be completed under the railroad tracks, frontage roads, and I-80 for inserting the conduit and cable in those locations. The deepest point of excavation would be approximately 6 feet below ground surface (bgs).

The deepest point of excavation would be 6 feet below ground surface (bgs). While open, the sides of any excavations would be sloped at 1.5 horizontal to 1.0 vertical or other such angle as approved by the design and geotechnical engineering contractors. The construction contractor would restore nearby surfaces to their original condition.

3. SELECTION CRITERIA: The following criteria were used to assemble alternatives. The future communications service between Wendover Radar Site and Wendover Peak should:

- possess the proper structural design and installed equipment to accomplish the required types of data transfer;
- supply sufficient bandwidth to meet USAF mission objectives;
- eliminate safety concerns related to railroad and highway crossings;
- be permanent in nature; and
- be protective of facilities, human health, and the environment.

4. ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:

The following 2 additional alternatives were eliminated from detailed consideration because they did not meet the selection criteria.

- replace, repair and maintain the above ground fiber optic cable; and
- use a microwave data transmission technology.

Under the no action alternative, the new fiber optic cable would not be installed. Under this alternative, operational requirements would not be met.

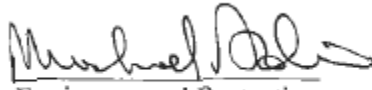
5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

a. Proposed Action: This alternative fully satisfies all applicable regulations and provides for accomplishment of mission objectives without impacts to human health or the environment. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and site restoration operations would prevent erosion of the site. Generation of hazardous waste would not be anticipated from the proposed action; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action.

b. No Action Alternative: The no action alternative would not have any construction related impacts. No other long-term environmental impacts and no cumulative impacts are expected from the no action alternative.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by:


Environmental Protection
Committee Chairman

Date: 10 MAR 05