





This plan was prepared under contract with Layton City, Utah, with financial support from the Department of Defense Office of Local Defense Community Cooperation. The content reflects the views of the key CUP partners involved in the development of this plan and does not necessarily reflect the views of the Office of Local Defense Community Cooperation.

HILL AIR FORCE BASE COMPATIBLE USE PLAN

Prepared for



Community & Economic Development
437 N Wasatch Drive
Layton, Utah 84041

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Acknowledgements

The Hill Air Force Base Compatible Use Plan (CUP) was developed through a collaborative partnership of representatives from varied stakeholders including local communities and regional entities. Two CUP committees – the Policy Committee and the Advisory Committee – provided direction and technical oversight on the document and were composed of representatives from the stakeholder groups. Together, the groups worked toward a consensus on the issues and recommendations, and participants provided comments at every stage of the drafting process. The following pages identify the individuals that formally participated in the development of the Hill Air Force Base CUP.



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Layton City served as the overall project management agency and the administrator of the Office of Local Defense Community Cooperation grant that helped to fund the plan.



Hill AFB CUP Consultant Team



Matrix Design Group, Inc. composed the project consultant team hired to conduct the project through coordination with and assistance from Layton City, the Policy Committee, the Advisory Committee, the public, and other stakeholders.

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A

AAM	Advanced Acoustic Model
AC	Advisory Committee
AFB	Air Force Base
AFI	Air Force Instruction
AGL	above ground level
AICUZ	Air Installation Compatibility Use Zones
APHIS	Animal and Plant Health Inspection Service
APZ	accident potential zone
APZ I	Accident Potential Zone I
APZ II	Accident Potential Zone II
AQ	Air Quality
ARW	Air Refueling Wing
ATCAA	Air Traffic Control Assigned Airspace
ATFP	Anti-Terrorism / Force Protection

B

BAH	Basic Allowance for Housing
BASH	Bird/Wildlife Aircraft Strike Hazard
BIO	Biological Resources
BLM	Bureau of Land Management
BMP	Best Management Practice
BYU	Brigham Young University

C

CAA	Clean Air Act
CC	Changing Climate
CED	Community and Economic Development
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIP	capital improvement plan
COG	Council of Governments
COM	Communication/Coordination
CNEL	Community Noise Equivalent Level
CR	Cultural Resources
CUP	Compatible Use Plan
CWA	Clean Water Act
CZ	clear zone

D

dB	decibel
DNL	day-night average sound level
DoD	Department of Defense
DODI	DoD Instruction
DOT	Department of Transportation
DSS	Dust/ Smoke/Steam
DWG	Utah Division of Water Quality



E

EA	Environmental Assessment
ECZ	Explosive Clear Zones
ED	Energy Development
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESPC	Energy Savings Performance Contract

F

FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FCC	Federal Communications Commission
FLPMA	Federal Land Policy and Management Act
FSC	Frequency Spectrum Capacity
FSI	Frequency Spectrum Interference / Impedance
FW	Fighter Wing

G

GBSD	Ground Based Strategic Deterrent
GIS	Geographical Information System

H

HA	Housing Availability
HCP	Habitat Conservation Plan
HQ	headquarters
HUD	Department of Housing and Urban Development

I

I-15	Interstate 15
ICBM	Intercontinental Ballistic Missile
ICEMAP Action Plan	Installation Complex Encroachment Management
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
IE	Infrastructure Extensions
INRMP	Integrated Natural Resource Management Plan
IR	Instrument Route
IT	Information Technology

J

JLUS	Joint Land Use Study
------	----------------------

L

LAS	Land/Airspace Competition
LEG	Legislative Initiatives
Ldn	See DNL
LG	Light and Glare
LU	Land Use

M

MCA	Military Compatibility Area
MCAOD	Military Compatibility Area Overlay District
MIDA	Military Installation Development Authority
MILCON	Military construction
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Small Municipal Separate Storm Sewer Systems
MTR	Military Training Route
MW	Megawatts

N

N/A	Not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NGO	Non-governmental Organizations
NLR	Noise level reduction
NOAA	National Oceanic and Atmospheric Administration
NOI	Noise

O

OEА	Office of Economic Adjustment
OE/AAA	Obstruction Evaluation/Airport Airspace Analysis
OLDCC	Office of Local Defense Community Cooperation
OO-ALC	Ogden Air Logistics Complex
OPM	U.S. Office of Personnel Management



P

PAO	Public Affairs Office
PC	Policy Committee
PFAS	Polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PS	Public Services
PT	Public Trespassing

R

RC	Roadway Capacity
RCS	Recovery Credit System
RE	Resiliency
REPI	Readiness and Environmental Protection Integration
RPF	Request for proposal

S

SA	Safety
SDWA	Safe Drinking Water Act
SFS	Security Force Squadron
SIP	State Implementation Plan
SITLA Administration	State of Utah School and Institutional Trust Lands
SLUCM	Standard Land Use Coding Manual
SNR	Scarce Natural Resources
SNRPC	Southern Nevada Regional Planning Coalition
SR	State Route
STC	Sound transmission class
STIP	Statewide Transportation Improvement Program
SUA	Special Use Airspace

T

TCE	Trichloroethylene
TLC	Transportation and Land Use Connection

U

UAS	unmanned aerial system
UCA	Utah Code Annotated
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation
UFC	Unified Facilities Criteria
USAF	U.S. Air Force
USAHAS	U.S. Avian Hazard Advisory System
USFWS	U.S. Fish and Wildlife Service
UTA	Utah Transit Authority
UTTR	Utah Test and Training Range

V

V	Vibration
VFR	visual flight rules
VO	Vertical Obstructions
VR	Visual Route

W

WFRC	Wasatch Front Regional Council
WQQ	Water Quantity/Quality
WSU	Weber State University



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1 Introduction

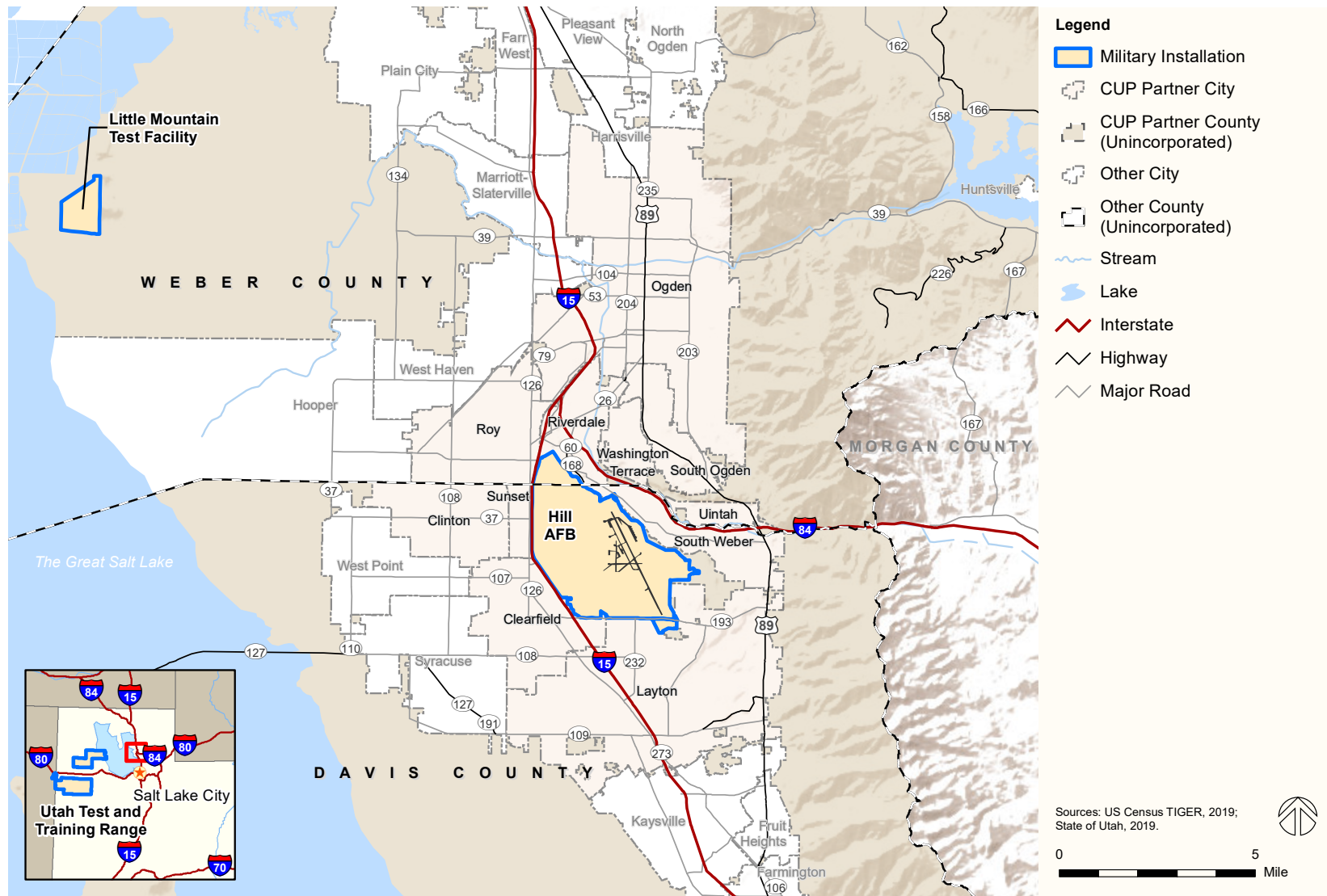
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Military installations are critical to local economies, generating thousands of jobs and millions of dollars in economic activity and tax revenue annually. Compatibility, in relation to military readiness, can be defined as the balance or compromise between the needs and interests of the community and military. The growth of incompatible development around military installations, often referred to as encroachment, has been a leading factor in the loss of operations at military sites across the country and has resulted in realignment of mission-critical components between installations. Existing levels and types of encroachment are key factors that are evaluated by the Department of Defense (DoD) and other federal agencies when considering future missions and the realignment of assets from one installation to another. To protect the missions of military facilities and the health of economies and industries that rely on them, encroachment must be addressed through mutual information sharing

and joint planning efforts by installations and local communities. This Hill Air Force Base (AFB) Compatible Use Plan (CUP) identifies and strives to mitigate existing compatibility issues, as well as prevent future issues, while strengthening coordination between Hill AFB, Utah Test and Training Range (UTTR), Little Mountain Test Facility, and surrounding communities.

Along with the project sponsor - Layton City – a total of 14 communities participated as stakeholders in this CUP – Clearfield City, Clinton City, Layton City, Ogden City, Riverdale City, Roy City, South Ogden City, South Weber City, Sunset City, Uintah City, Washington Terrace City, Davis County, Tooele County, and Weber County. These participating communities were integral stakeholders in the development and continual reference of the CUP for future development. Figure 1-1 shows the regional location of Hill AFB within the State of Utah.



1.1 What is a Compatible Use Plan?

A Compatible Use Plan (CUP) is a planning tool that is developed through the collaborative efforts of a set of stakeholders from a defined project study area for managing growth and mitigating existing and future land use conflicts between military installations and surrounding communities and stakeholders. These stakeholders include local, state, and federal government officials, tribal government representatives, government and non-governmental agencies and organizations, local property and business owners, and the military. Community members, such as residents and business owners, also play a vital role in the development and review of a CUP.

The intent of the CUP program is to establish working relationships between military installations and nearby stakeholders and to encourage them to work as a team to plan for compatible development. To do this, the CUP process culminates in an agreed-upon set of recommended strategies that can be implemented by the military and stakeholders to achieve:

- Compatible development,
- Improved communication, and
- Improved positive relationships between the installations and neighboring communities, now and into the future.

This CUP is an important tool for preserving long-term compatibility between Hill AFB and the surrounding areas, where its effort will benefit both the installation and the surrounding region by:

- Protecting the health and safety of proximate residents and workers by preserving long-term land use compatibility between Hill AFB and surrounding communities;
- Promoting comprehensive community planning that addresses compatibility issues by enhancing a cooperative spirit between Hill AFB and the community; and
- Integrating surrounding local jurisdiction growth policy plans with Hill AFB's plans.

This CUP effort was funded through a grant from the DoD, Office of Local Defense Community Cooperation (OLDCC), with additional contributions provided by Layton City. While the OLDCC was the primary source of funding, the Hill AFB CUP was produced by and for the local stakeholders. Layton City served as the managing agency for the project.



1.2 Compatible Use Plan Goal and Objectives

The goal of the CUP is to reduce potential conflicts between Hill AFB and surrounding communities while accommodating new compatible growth and economic development. The following are the objectives of the CUP program:



Understanding. Bringing together community and military representatives to discuss compatibility issues in an open forum that considers both community and military perspectives and needs.



Collaboration. Encouraging cooperative land use and resource planning among the military and surrounding communities to ensure compatible community growth while reducing operational impacts on lands within the CUP Project Study Area.



Actions. Providing a set of mutually supported tools and procedures from which local jurisdictions, agencies, the military, and other stakeholders can implement appropriate recommendations that are developed during the CUP.

1.3 Why Prepare a Compatible Use Plan?

Although military installations and nearby communities may be separated by a fenceline, they often share natural and manmade resources such as land and infrastructure. Despite the many positive interactions among local jurisdictions, agencies, and the military and because so many resources are shared, the activities or actions of one entity can unintentionally impact another, resulting in conflicts. As communities develop and expand in response to growth and market demands, they can potentially locate incompatible development closer to military installations and associated operational areas. Uncoordinated incompatible development can generate new, or exacerbate existing, land use conflicts and other compatibility issues, often referred to as encroachment. Encroachment can have negative impacts on community safety and economic development as well as impact the sustainability of military activities and readiness; therefore, addressing encroachment issues is currently one of the military's greatest operational challenges.

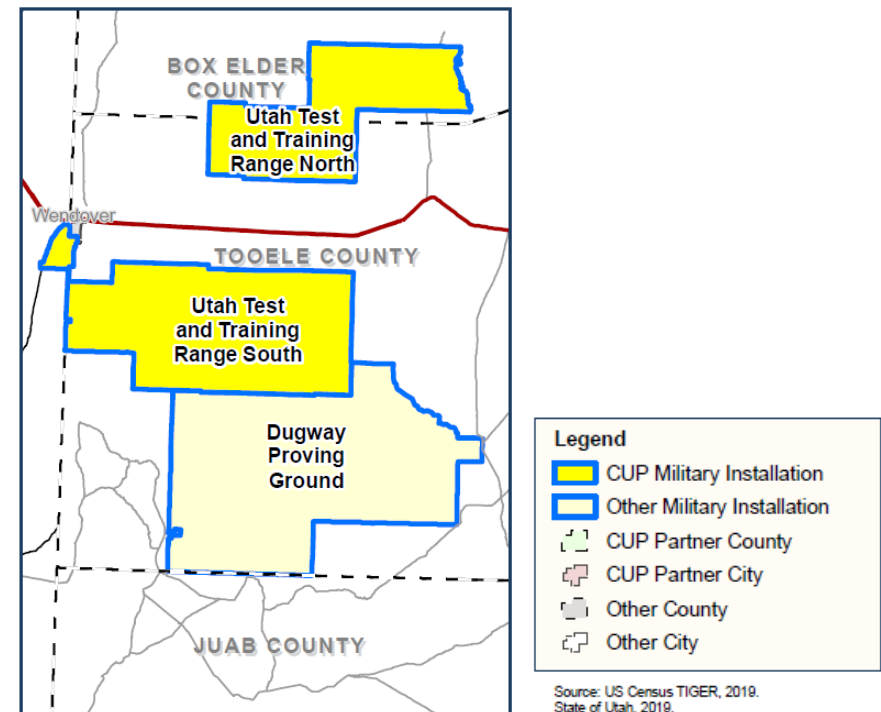
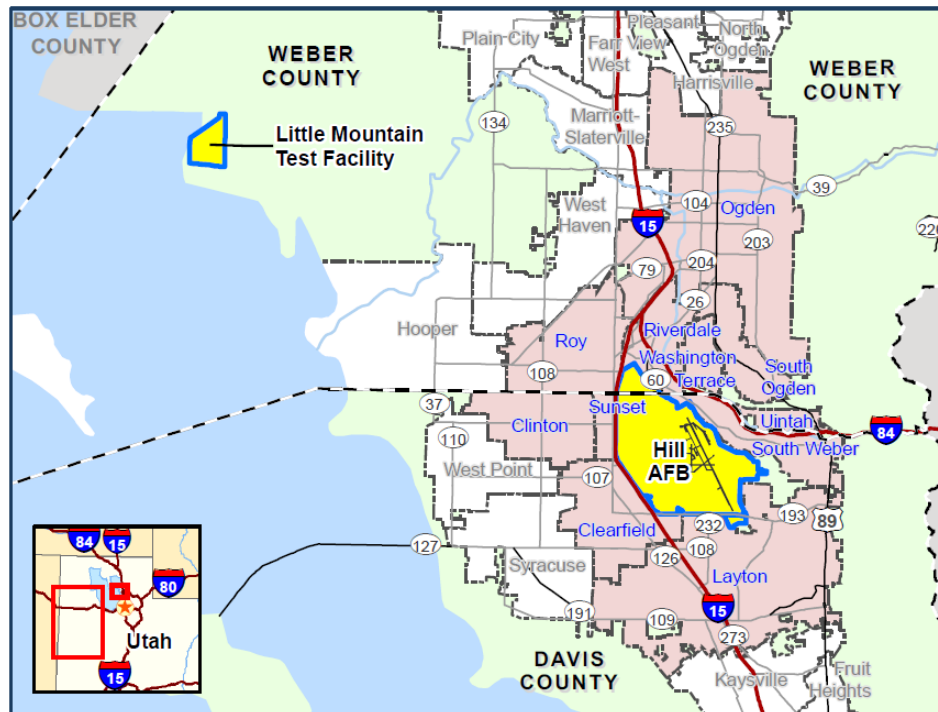
Collaborative planning among military installations, local communities, agencies, and other stakeholders should occur to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies in the communities before incompatible uses become an issue. In recognition of the close relationship that should exist between installations and adjacent communities, the OLDCC implemented the CUP program to mitigate existing and future conflicts and to enhance communication and coordination among all affected stakeholders. This program aims to preserve the economic viability and quality of life of all community and installation stakeholders.



1.4 Compatible Use Plan Project Study Area

Hill AFB is located east of Great Salt Lake in Davis County, Utah, approximately 30 miles north of Salt Lake City. The Hill AFB CUP Project Study Area centers on Hill AFB and includes the surrounding communities. The project study area is shown on Figure 1-2.

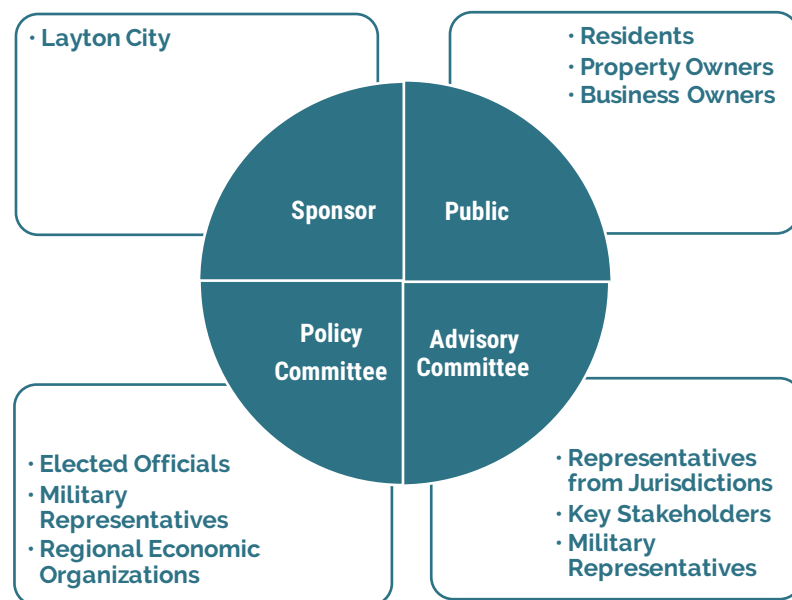
Figure 1-2 Project Study Area



1.5 CUP Organization and Stakeholder Outreach

The CUP process is designed to create a locally relevant study that builds consensus and obtains support from the various stakeholders involved. The organization of the CUP reflects this collaborative approach as shown in Figure 1-3.

Figure 1-3 CUP Collaboration



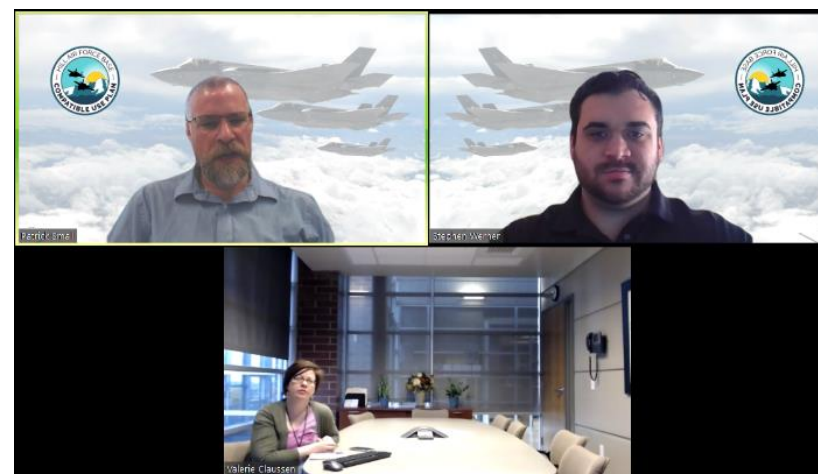
The CUP process included a stakeholder and public outreach program that provided a variety of opportunities for interested parties to contribute. The following sections outline the stakeholders involved, and the public outreach components that were a part of the CUP process.

14
Cities and counties
involved

47
Stakeholder interviews
conducted

115
Policy and Advisory
Committee Members

39
Community Questionnaire
Responses



One of the 47 Hill CUP Stakeholder interviews held over Zoom in 2020.



Stakeholders

Early and ongoing stakeholder involvement is instrumental in identifying compatibility issues that need to be addressed and resolved through the development of integrated strategies. Stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the CUP project. Stakeholders identified for the Hill AFB CUP included, but were not limited to:

- Local jurisdictions (Layton City, Clearfield City, Clinton City, Ogden City, Riverdale City, Roy City, South Ogden City, South Weber City, Sunset City, Uintah City, Washington Terrace City, Davis County, Tooele County, Weber County);
- Team Hill (Hill AFB, Utah Test and Training Range, Little Mountain Test Facility);
- DoD officials;
- Pertinent local, regional, state, and federal planning, regulatory, and resource management agencies;
- Organizations and associations (i.e. EDCUtah, Wasatch Front Regional Council);
- The public (including property owners, business owners, and residents); and
- Other special interest groups.

Policy Committee and Advisory Committee

The development of the Hill AFB CUP was guided by two committees, the Policy Committee (PC) and the Advisory Committee (AC), composed of representatives from participating communities and other local and regional stakeholders.

	Policy Committee	Advisory Committee
Description	■ Provided key insights into the local and regional issues. ■ Assisted with refinement of all recommendations to fit local needs and capabilities. ■ Was important for developing and maintaining relationships between key stakeholders, interested community members, and the project consultant team. ■ Served as liaisons to their respective stakeholder groups, conveyed committee activities and other information to their organizations and constituencies, and in turn, relayed stakeholder comments and suggestions back to the committees for consideration.	■ Provided technical expertise, feedback, and real-world experience to the project consultant team ■ Served as communications liaisons for their respective stakeholder groups on the Policy Committee. ■ Served as liaisons to their respective stakeholder groups, conveyed committee activities and other information to their organizations and constituencies, and in turn, relayed stakeholder comments and suggestions back to the committees for consideration.
Responsibilities	■ Guided CUP direction and strategy development ■ Served as liaison for communities/organizations ■ Attended and participated in: Policy Committee meetings; stakeholder interviews; public meetings ■ Reviewed major deliverables ■ Accepted the Final Compatible Use Plan	■ Served as liaison to PC member ■ Attended and participate in: Advisory Committee meetings; Stakeholder interviews; Public meetings ■ Provided relevant and current data ■ Assisted in identifying compatibility issues and strategies ■ Provided technical expertise on issues and recommendations ■ Reviewed draft and major deliverables
Participants	■ Clearfield City ■ Clinton City ■ Davis County ■ Layton City ■ Ogden City ■ Riverdale City ■ Roy City ■ South Ogden City ■ South Weber City ■ Sunset City ■ Tooele County ■ Uintah City ■ Washington Terrace City ■ Weber County ■ Team Hill	■ Clearfield City ■ Clinton City ■ Davis County ■ Layton City ■ Ogden City ■ Riverdale City ■ Roy City ■ South Ogden City ■ South Weber City ■ Sunset City ■ Uintah City ■ Washington Terrace City ■ Weber County ■ Team Hill ■ Utah Defense Alliance ■ FAA ■ Salt Lake International Airport ■ EDC Utah ■ Governor's Office of Economic Opportunity ■ North Davis Fire District ■ North Davis Sewer District ■ Rocky Mountain Power ■ Top of Utah Military Affairs Committee ■ Utah Department of Transportation ■ Utah Transit Authority ■ Utah State Senate District 22 ■ Utah Department of Veterans and Military Affairs ■ Wasatch Front Regional Council ■ Wasatch Integrated Waste Management District ■ Weber Basin Water Conservancy District ■ Weber State University



Committee meetings were held throughout the CUP process to ensure the CUP identified and appropriately addressed local issues. The following are the meetings that were held with the committees.

Meeting PC/AC 1 February 2020	The project kick-off meeting was conducted as joint meeting with the PC and AC to educate all stakeholders about the Hill AFB CUP, including the process, goals, and its importance. The meeting also included the identification of the roles, responsibilities, and expectations of the stakeholders participating in the CUP. Additional goals for the meeting included finalizing the Project Study Area and receiving input on initial compatibility issues to be addressed.
Meeting PC/AC 2 October 2020	The second meeting conducted with the PC and AC included a review of potential data gaps, compatibility issues, and draft findings identified to date. Any additional issues were added and summarized along with general notes on issues, goals, and concerns.
Meeting PC/AC 3 March 2020	The third meeting was held to garner input from the PC and AC on potential strategies for mitigating and/or preventing compatibility issues and discussing proposed solutions.
Meeting PC/AC 4 July 2021	These meetings were conducted to present the Committee Draft CUP and recommendations to the AC and PC. Prior to these meetings, the PC and AC received the Committee Draft CUP, which included all comments, input, and recommendations received to date, and a comment tracker for the committee members to log their comments ahead of the meetings.
Meeting PC/AC 5 December 2021	This joint meeting was conducted to present the Public Draft CUP to the AC and PC after the public review period. The committees were presented with the Public Draft CUP, which incorporated comments received from the AC and PC on the Committee Draft CUP prior to the meeting. The purpose of the meeting was to review public comments received during the public review period.

Prior CUP Coordination Meetings

Prior to the compatible use plan contract, the following meetings were conducted in preparation for the CUP:

Initial Meeting Spring 2018	Jay Sweat - the U.S. Office of Local Defense Community Cooperation (formerly Office of Economic Adjustment), Secretary of State, DoD – met with Layton City Mayor, City Manager, CED Director and Economic Development Manager and introduced the Joint Land Use Study (JLUS), now known as the Compatible Use Plan, and Grant Application opportunity to develop a Joint Land Use Study (later changed to Compatible Use Plan) and helped all involved throughout the grant application process.
Resolution Adoption July 2018	Layton City Council adopted a Resolution supporting the CUP effort, as did other communities in this group of 10 cities, 2 counties surrounding the base.
Community Grant Application Kick-off Meeting October 2018	Meeting with elected officials, administration, and planning staff for 10 surrounding communities and 2 counties to introduce the Grant and CUP opportunity. * Following this meeting, Ogden City was included by request, and Tooele County specific to the UTTR. ** Those in attendance unanimously supported moving forward with a grant application, which was significant as the grant requires both political support and a 10% financial match.
RFP Development December 2018	Volunteer group (invited from all involved to date) assembled to help Layton City develop an RFP and help define the Scope for the project.
Grant Application Submitted March 2019	Grant application was submitted to OLDCC
Grant Awarded July 2019	Grant was awarded for \$384,641 by OLDCC
RFP Advertised August 2019	RFP was advertised for Consultant
RFP Review August 2019	Volunteer group reviewed each submitted RFP and ranked them based on pre-selected criteria
Consultant Interviews September 2019	Volunteer group interviewed 3 companies and ranked each company based on the results of the interviews
Consultant Selection December 2019	Layton City Council selected Matrix Design Group per the recommendation of both volunteer groups and approved an agreement



Public Outreach

Public outreach efforts were made to ensure the community's voice was heard throughout the CUP process. To achieve this, a series of public meetings were held to meet members of the community and to hear their input related to compatibility. The following is a list of the meetings that were held with the community.

Public Meeting 1 October 2020 Project Initiation	Public Meeting 2 March 2021 Interim Findings and Preliminary Recommendations	Public Meeting 3 December 2021 Final Recommendations
The first public meeting introduced the community to the CUP planning process, the purpose and function of the CUP, and the value of participation; established relationships with residents; and provided an overview of the military operations at Hill AFB and the UTTR. The virtual format of this meeting included a presentation, interactive mapping exercises, and a questionnaire to receive input on potential compatibility issues. The Project Overview Fact Sheet was made available online to provide the public a tool for completing an online compatibility issues exercise. Attendees were able to visit the virtual meeting online for a two-week period from October 20-November 4, 2020.	The second public meeting was held virtually and provided an opportunity for the community to provide their perspectives on compatibility issues and on the resolution of conflicts and impacts. Results from the community questionnaire conducted as part of the first public meeting were presented and discussed. The meeting included a presentation and an online interactive exercise to prioritize the compatibility issues identified for the Hill AFB CUP. In conjunction with the exercise, the project consultant team discussed and solicited ideas on how best to resolve community conflicts in small groups of public attendees.	The third and final public meeting was held virtually. Attendees were presented with the Draft CUP recommendations and had an opportunity to provide feedback on the recommendations. During the meeting, participants were encouraged to provide comments and ask questions.

Stakeholder Interviews

Stakeholder interviews were conducted at the onset of the project to get initial thoughts, input, and background information related to compatibility issues in the Project Study Area. In total, 47 interviews were conducted.

Public Outreach Materials

Various public outreach materials were generated throughout the CUP process to maintain public engagement and awareness and to allow the public to provide input on issues or concerns that should be addressed in the CUP. The outreach materials were posted on various media outlets, including the project website, and CUP partner communities' websites, and social media platforms.

Fact Sheets

Three fact sheets were developed and distributed to the PC, AC, and the public during the CUP development. These informational fact sheets were also be made available through the project website.



Fact Sheet #1 Project Overview

Described the purpose, goals, and objectives of the CUP program and methods to provide input on the process.

Provided an overview of the standard compatibility factors (such as land use, noise, etc.) that could occur in the Project Study Area. While not all the factors listed applied to the Hill AFB CUP, this looked at potential compatibility factors to ensure the CUP was comprehensive in its approach.

Used to brief stakeholders participating in interviews and the first public meeting.

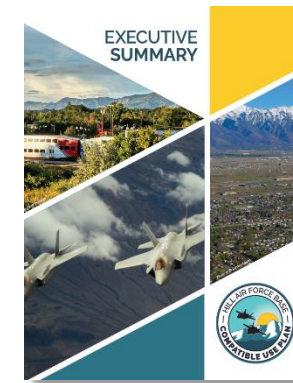


Fact Sheet #2 CUP Strategy Toolbox

Provided an overview of the strategy types that could be considered when addressing compatibility issues.

Used to discuss possible approaches to addressing issues with the PC/AC and the public.

Distributed on the project website during the second public meeting.



Fact Sheet #3 CUP Project Overview

Provided a summary of the Hill AFB CUP.

Used as a handout at meetings to provide information on the project.

Can be distributed through the media to increase awareness and support of the CUP in the future.

Distributed in conjunction with the Final CUP documents.

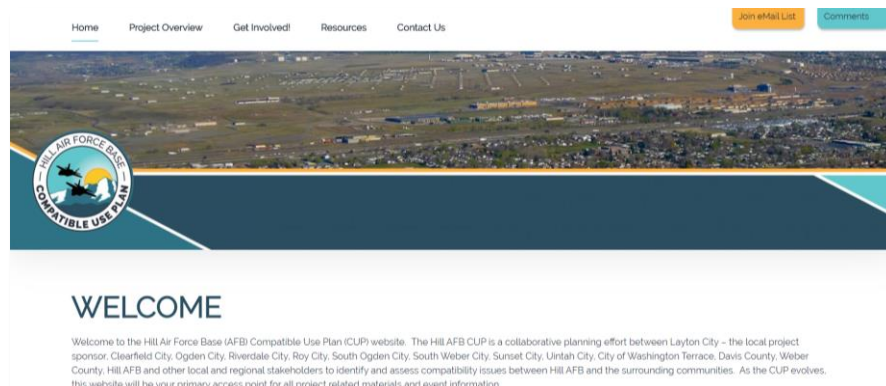


Website

A project website was developed and maintained to provide stakeholders, the public, and media representatives easy access to project information for the duration of the project. Information on the website included project points of contact, schedules, documents, maps, and public meeting information.

The website also allowed site visitors to participate in the community questionnaire, submit comments on the project, and sign up for email notifications regarding project events, such as public meetings and the public review period of the CUP.

The project website was www.HillAFBCUP.com.



1.6 Compatible Use Plan Organization

The following is a brief overview of the organization of the Hill AFB CUP documents: The CUP Report and Executive Summary Fact Sheet.

Chapter 1: Introduction

Chapter 1 provides an overview of the Hill AFB CUP. The chapter describes the background and intent of the CUP, the CUP Project Study Area, and the objectives that were used to guide the development of the CUP. Other information presented includes a list of the stakeholders involved in developing the CUP, the CUP Project Study Area, and public outreach methods.

Chapter 2: Community Profiles

Chapter 2 introduces the local jurisdictions that are within the CUP Project Study Area and gives an overview of their past and current conditions, including population, housing characteristics, economic outlook, and growth and development trends. The chapter also includes an overview of the transportation system and natural resources within the CUP Project Study Area.

Chapter 3: Military Profiles

Chapter 3 provides an overview of Team Hill included the military missions and operations that take place at Hill AFB, Little Mountain Test Facility, and the UTTR. This information was used to understand how existing and possible future military operations at Hill AFB could potentially impact or be impacted by the surrounding communities. For this reason, Chapter 3 includes a discussion and associated maps describing the military footprint within the Project Study Area.

Chapter 4: Compatibility Tools

Chapter 4 details the existing plans, programs, and studies that can help address compatibility issues in the area. These tools were reviewed to assess the effectiveness of each existing plan or program relative to the compatibility issues that are identified and described in Chapter 5.

Chapter 5: Compatibility Assessment

Chapter 5 presents the compatibility issues identified for the Hill AFB CUP. These issues were identified based on input from the Policy Committee and Advisory Committee, members of the public, stakeholder interviews, existing plans and technical reports, and an evaluation by the project team.

Chapter 6: Implementation

The Implementation chapter includes the recommended strategies to mitigate or prevent encroachment and proactively achieve compatible land uses. It is important to note that once the CUP process is completed, the final document is not an adopted plan but a set of recommended strategies to be used by local jurisdictions, agencies, and organizations in the Hill AFB CUP Project Study Area to guide their future compatibility efforts. Acceptance of the study by stakeholders (e.g. jurisdictions, agencies, etc.) will confirm their collective support for identified implementation efforts. For instance, local jurisdictions may use the recommended strategies to guide future changes in subdivision regulations, zoning updates, and to assist in the review of development proposals in the project study area. Hill AFB can use the CUP to guide its interaction with local jurisdictions on future projects and manage internal planning processes with a compatibility-based approach.



Compatible Use Plan Executive Summary Brochure

The CUP Executive Summary brochure provides a brief overview of the CUP project and process and highlights the major compatibility issues and recommended strategies to address them. It also includes the Hill AFB military influence area maps and descriptions.

2 Community Profiles

Inside Chapter 2...

2.1	Hill AFB and the Surrounding Area.....	2-2
2.2	Population Trends.....	2-3
2.3	Economic Trends and Growth Potential.....	2-8
2.4	Existing and Future Land Uses.....	2-16
2.5	Housing Trends.....	2-22
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2.7	Hill AFB Community Contributions.....	2-32
2.8	Transportation.....	2-35
2.9	Natural Resources.....	2-38

This chapter provides information about the surrounding communities that participated in the Hill AFB Compatible Use Plan (CUP), which are Layton City, Clearfield City, Clinton City, Ogden City, Riverdale City, Roy City, South Ogden City, South Weber City, Sunset City, Uintah City, Washington Terrace City, Davis County, Tooele County, and Weber County. Capturing and describing certain demographic characteristics of these communities provides a baseline context from which informed decisions can be made when assessing compatibility strategies. The goal is to provide information that enables stakeholders to understand population and development trends that have the potential to affect the future of Hill AFB. This information is intended to be considered with other factors to help decision-makers generate coherent, informed, planning policies and make decisions about future development and economic growth to mitigate compatibility issues. The objective of this chapter is to foster an understanding about the types of activities occurring “outside the fence” when considering future missions and operations.

Information presented includes population trends, housing trends, economic trends, current development, transportation, and natural resources within the region to better appreciate the communities within the CUP Project Study Area and their relationship to Team Hill.

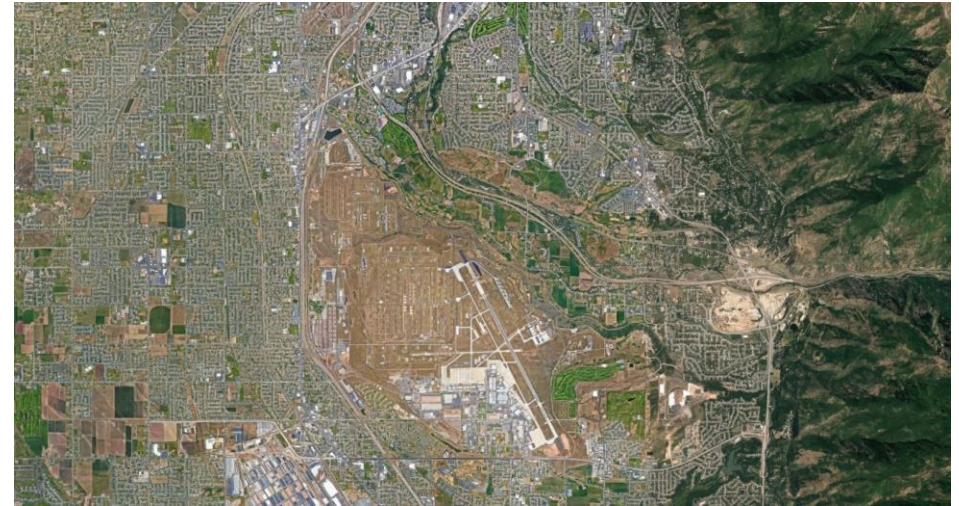


2.1 Hill AFB and the Surrounding Area

Hill AFB has had a presence in the community since 1939 when it was first established as the Ogden Air Depot. Since then, Hill AFB has grown in geographical size and mission. Hill AFB is now the largest employer in the State of Utah, employing over 22,000 military and civilian personnel.

Hill AFB is comprised of multiple sprawling facilities, creating a unique military environment that is embedded in the community. Hill AFB is located in an urbanized area approximately 30 miles north of Salt Lake City. The installation sits on approximately 7,000 acres in Davis County and Weber County and is surrounded by several cities along the Wasatch Front. The Little Mountain Test Facility is managed by the Intercontinental Ballistic Missile (ICBM) Systems Directorate at Hill AFB, but is located 20 miles northwest of the base. In addition to the base and the Little Mountain Test facility, Hill AFB also operates the Utah Test and Training Range (UTTR), which is a 2,624 square nautical mile range in rural northwest Utah with an airspace of 19,000 square nautical miles.

As Hill AFB has been growing, the surrounding communities have experienced organic growth. The Wasatch Front is the population center of Utah and includes Box Elder, Davis, Morgan, Salt Lake, Tooele, Weber, Summit, and Utah Counties. The Wasatch Front lies west of the Wasatch Mountains, a prominent natural characteristic of Northern Utah. As an urbanized area, the Wasatch Front, and the Project Study Area specifically, have experienced population and economic growth, creating development pressures that pose potential challenges to the military mission at Hill AFB.



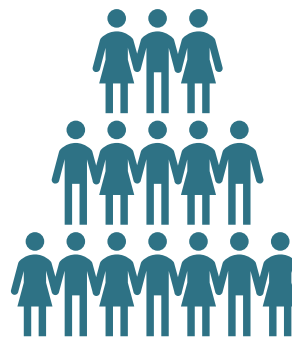
Aerial view of Hill AFB.

Source: Google Maps, 2020.

2.2 Population Trends

Population trends outline the regional context for projecting growth and development in the Project Study Area. These trends can help highlight areas of potential future compatibility issues between Hill AFB and surrounding communities.

Identifying where population is clustered, or where it is the densest, is also important for planning future growth and development. Figure 2-1 shows the change in population density between 2010 and 2019. As the map shows, the greatest population changes, areas of over 100% growth, from 2010 to 2019 occurred in the area surrounding the junction of Highway 79 and Highway 126, parts of Layton, and parts of Clearfield. Areas that had a 50% to 100% population growth between 2000 and 2019 were parts of unincorporated Davis County and parts of unincorporated Weber County by Little Mountain Test Facility. There is moderate population growth surrounding Hill AFB with some pockets of population loss, particularly in Riverdale, Roy, Sunset Clearfield, and Layton. While there is population decline in neighborhoods in the cities surrounding Hill AFB, it should be noted that overall, each of these cities experienced a population increase between 2010 and 2019. The only city that experienced a decline in population between this timeframe was Uintah City.



304,399

2019 Project Study Area* Population

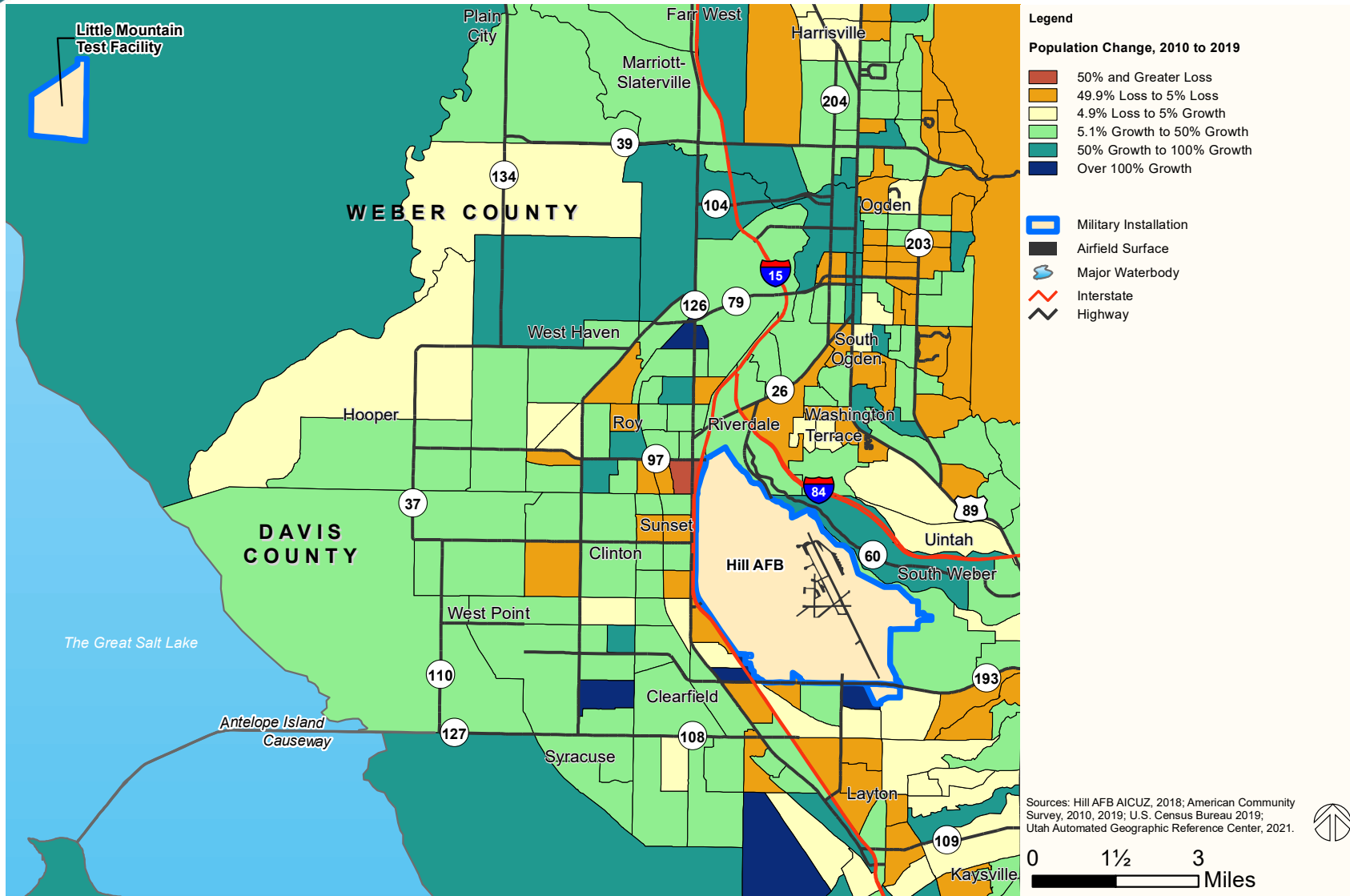
**Does not include county-wide population*

Source: 2019 American Community Survey 5-Year Estimate, 2010 U.S. Census.

Table 2-1 Population Change by Jurisdiction, 2010-2019

Jurisdiction	2010 Population	2019 Estimated Population	2010 to 2019 Percentage Change
Clearfield City	29,510	31,364	6%
Clinton City	19,031	21,890	15%
Layton City	65,674	76,197	16%
Ogden City	81,054	86,833	7%
Riverdale City	8,189	8,752	7%
Roy City	35,843	39,040	9%
South Ogden City	15,970	17,063	7%
South Weber City	5,707	7,381	29%
Sunset City	5,129	5,278	3%
Uintah City	1,535	1,439	-6%
Washington Terrace City	8,917	9,162	3%
Davis County	294,532	345,767	17%
Weber County	222,849	251,498	13%

Source: 2019 American Community Survey 5-Year Estimate, 2010 U.S. Census.

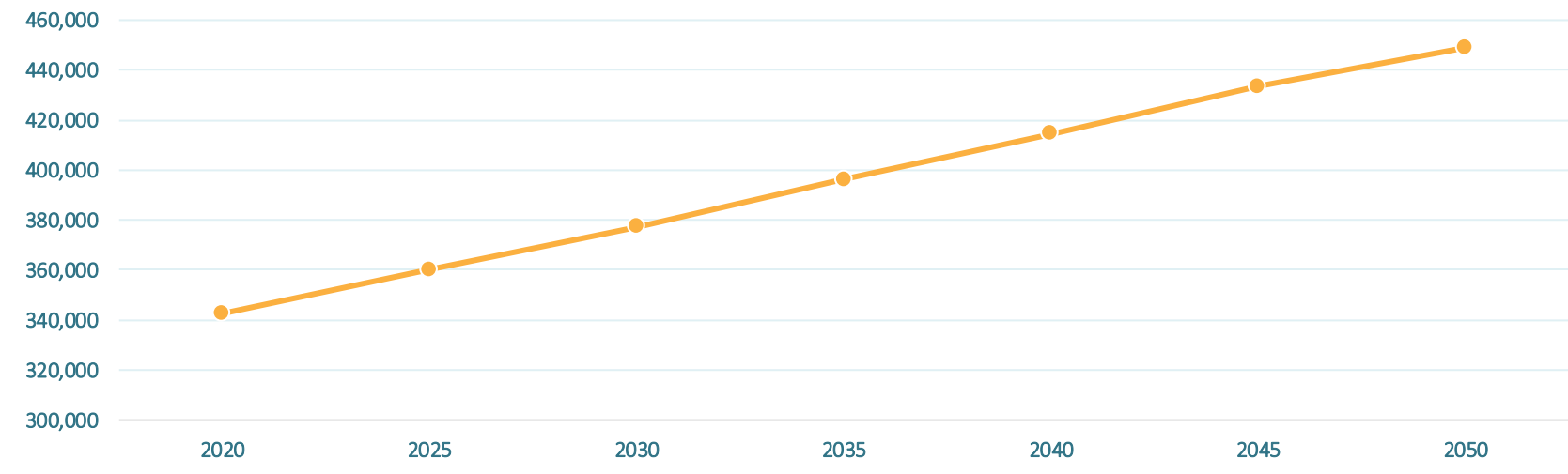


Population Projections

Population projections can illuminate potential growth in a geographical area. Population projections are based on the overall population trends that have been observed in an area. While projections of population are not exact, the numbers are estimated to help jurisdictions plan for and manage growth and development. This is also an important consideration for Hill AFB as it plans for its own growth. The projection, as shown on Figure 2-2 and listed in Table 2-2, indicate that the Project Study Area will continue to see growth in population between now and 2050.

32%
Project Study Area
population growth
between 2020 and 2050
*Source: Wasatch Front
Regional Council, Population
Projections, 2020.*

Figure 2-2 . Project Study Area Population Projections, 2020-2050



Source: Wasatch Front Regional Council, Population Projections, 2020.

**Population projections exclude the potential population growth from the development of the Ground Based Strategic Deterrent program and the F-35/Software Development from Hill AFB, which will add approximately 10,000 new jobs to the region.*



Table 2-2 Project Study Area Population Projections by Jurisdiction, 2020-2050

Jurisdiction	2020 Population	2025 Population	2030 Population	2035 Population	2040 Population	2045 Population	2050 Population
Clearfield City	31,410	32,416	33,431	34,607	36,000	37,990	39,774
Clinton City	22,729	23,131	23,499	24,069	24,824	25,429	25,915
Layton City	88,891	96,362	104,092	110,930	112,732	121,057	128,726
Ogden City	92,380	98,036	102,527	105,738	106,493	110,467	113,904
Riverdale City	9,981	11,759	13,457	14,670	15,084	16,857	17,757
Roy City	38,053	38,992	39,431	40,122	40,529	41,063	41,826
South Ogden City	20,010	20,977	21,559	21,956	22,070	22,573	23,028
South Weber City	5,914	6,216	6,482	6,804	7,380	7,816	8,227
Sunset City	5,896	5,946	5,994	6,020	6,031	6,246	6,357
Uintah City	1,209	1,259	1,331	1,439	1,460	1,584	1,660
Washington Terrace City	8,931	9,000	8,987	8,969	8,971	8,958	8,954
Unincorporated Davis County	706	880	1,032	1,147	1,263	1,338	1,423
Unincorporated Weber County	14,515	15,065	15,486	15,908	16,296	19,101	22,466
Total	340,626	360,040	377,308	396,074	414,470	433,534	448,929

Source: Wasatch Front Regional Council, Population Projections, 2020.

While not a part of the immediate area surrounding Hill AFB, the Tooele Valley population projections are also important in relation to the UTTR. Tooele Valley population projections were available through 2040 through the Tooele County General Plan, 2016. According to the General Plan, the population of Tooele Valley in 2040 will be almost 150,000. This will be approximately 60% greater than the population that was projected for 2020, which was approximately 69,000.



2.3 Economic Trends and Growth Potential

Economic trends can help identify growth potential for the Project Study Area and how some of that growth may relate to Hill AFB. Economic trends include projected jobs in the area, median household income, the population that is currently in the labor force, and the top industries in the Project Study Area.

Job Projections

The Wasatch Front Regional Council projects the number of jobs that will be available in the Wasatch Front. These numbers help to indicate the population that will be either moving to the area or commuting to the area for employment. Figure 2-3 shows the upward trend for job growth in the Project Study Area from 2020 to 2050.

By 2050, it is projected that there will be a total of approximately 270,000 jobs in the Project Study Area. As a comparison, in 2019, there were approximately 138,000 people in the Project Study Area cities that were a part of the labor force.

On average, there was a 2.6% unemployment rate in the Project Study Area cities in 2019. The increase in projected jobs will provide additional opportunity for employment in the Project Study Area.

270,000

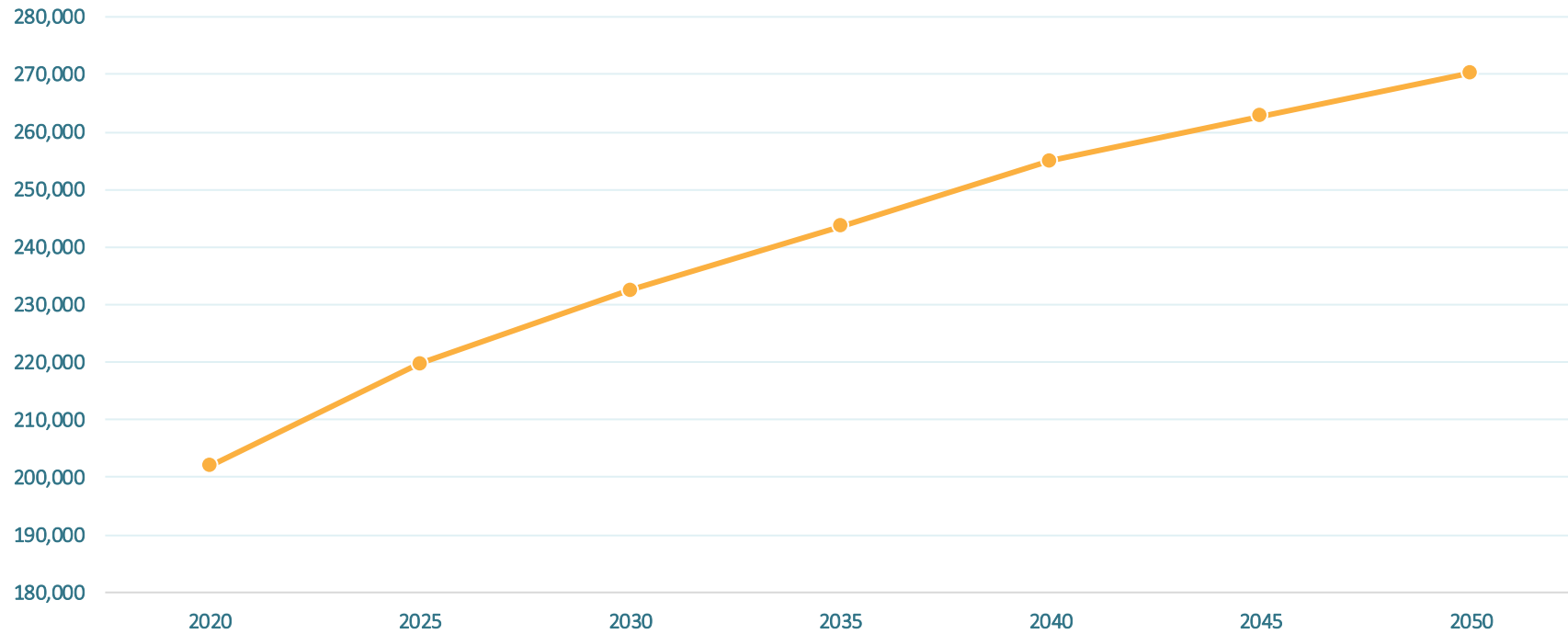
Projected number of jobs in the Project Study Area in 2050
Source: Wasatch Front Regional Council, Population Projections, 2020.

2.6%*

Average unemployment rate in the Project Study Area in 2019
Source: 2019 American Community Survey 5-Year Estimates.

**County data not included*

Figure 2-3 Project Study Area Job Projections, 2020-2050



Source: Wasatch Front Regional Council, Job Projections, 2020.

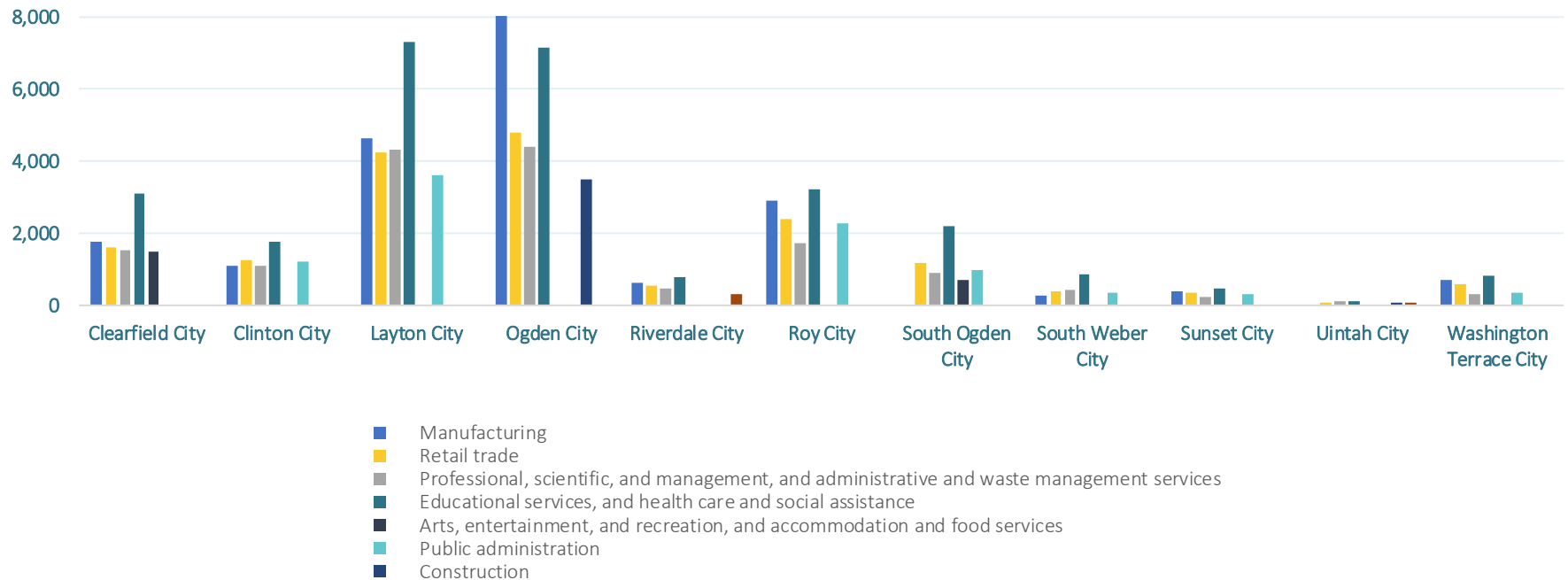
*Job projections exclude the potential population growth from the development of the Ground Based Strategic Deterrent program and the F-35/Software Development from Hill AFB, which will add approximately 10,000 new jobs to the region.



Top Industries and Employers

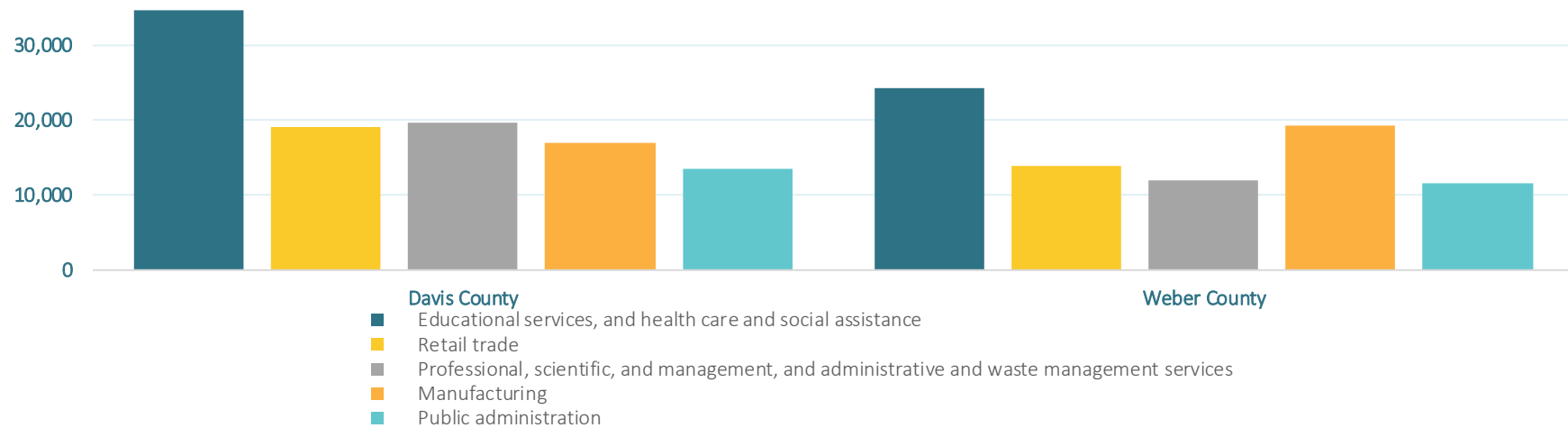
The projected job growth in the Project Study Area will likely be in the major economic industries that are present today. Currently, the top industries in the Project Study Area include: Manufacturing; Retail trade; Professional, scientific, and management, and administrative and waste management services; Educational services, and health care and social assistance; and Public administration. Figures 2-3 and 2-5 show the top industries by employment in each city and county in the Project Study Area, respectively.

Figure 2-4 Top Five Industries by City and Employment, 2019



Source: 2019 American Community Survey 5-Year Estimate.

Figure 2-5 Top Industries by County and Employment, 2019



Source: 2019 American Community Survey 5-Year Estimates.

Table 2-3 lists the top employers in Davis and Weber Counties based on Utah Department of Workforce Services. As the table shows, the federal government provides the most amount of employment between the two counties. The second leading employer in both counties are their respective school districts. The next three leading employers for Davis County are centered on aerospace whereas the next three leading employers for Weber County are centered on healthcare. This indicates that many of the major employers in the area are compatible with the mission at Hill AFB.



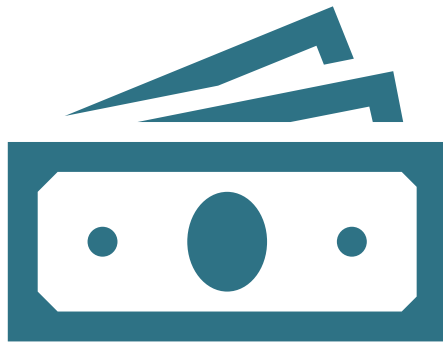
Table 2-3 2018 Major Employers by County

Company	Industry	Average Annual Employment
Davis County		
United State Government	Federal Government	10,000-14,999
Davis County School District	Elementary and Secondary Schools	7,000-9,999
ATK Launch Systems	Aerospace Manufacturing	2,000-2,999
Kroger Group Cooperative	Retail	2,000-2,999
Lifetime Products	Sporting and Athletic Goods Manufacturing	1,000-1,999
Wal-Mart Associates	Warehouse Clubs and Supercenters	1,000-1,999
Ralcorp Frozen Bakery Products	Cookie and Cracker Manufacturing	1,000-1,999
Lagoon Corporation	Amusement and Theme Parks	1,000-1,999
Utility Trailer Manufacturing	Truck Trailer Manufacturing	1,000-1,999
Davis Hospital & Medical Center	General Medical	500-999
Weber County		
United State Government	Federal Government	5,000-6,999
Weber County School District	Elementary and Secondary Schools	4,000-4,999
Intermountain Health Care	General Medical	3,000-3,999
Weber State University	Higher Education	3,000-3,999
Autoliv	Manufacturing	2,000-2,999
State of Utah	State Government	2,000-2,999
Fresenius USA Manufacturing	Surgical and Medical Instrument Manufacturing	1,000-1,999
America First Credit Union	Credit Unions	1,000-1,999
Ogden City School District	Elementary and Secondary Schools	1,000-1,999
Wal-Mart Associates	Warehouse Clubs and Supercenters	1,000-1,999

Source: Utah Department of Workforce Services, 2018.

Median Household Income

One measurement of economic growth is the change in median household income for the jurisdictions in the Project Study Area. All jurisdictions, except one, had an increase in median household income from 2010 to 2019. South Weber City experienced the greatest percentage in median household income change, at 30%. South Weber City also had the greatest median household income in 2019 at \$107,848.



\$73,845

2019 Median Household Income in
the Project Study Area

*Source: 2019 American Community Survey
5-Year Estimate.*

Economic Development Centers Around Hill AFB

Economic growth, including employment opportunities and increases in household income, will be influenced by economic centers that are currently being developed in the surrounding area. The following are major developments that are currently in the development process in the area immediately surrounding Hill AFB.



Falcon Hill

Falcon Hill is a private commercial development built under an Air Force Enhance Use Lease. The Falcon Hill project is the largest commercial enhance use lease within the Department of Defense. Through the Enhance Use Lease Program, Hill AFB can lease out their land to other entities. The project is a total of 550 acres located directly off I-15 on the east side of the interstate and will have capacity for over two million square feet of commercial space in its first couple of phases. There are additional phases planned, with a total capacity of eight million square feet.

As part of the program, the Air Force will be developing new Class-A office spaces and demolishing obsolete World War II-era Air Force buildings. Intended uses at Falcon Hill include Information Technology (IT); aerospace, military, and government contracting; commercial retail; and hospitality. Additional information about Falcon Hill is in Chapter 3, Military Profiles.



Falcon Hill rendering

Source: Davis County, Community and Economic Development Website.

East Gate Business Center

The East Gate Business Center is a business and research park located in Layton City, at the East Gate of the Hill AFB East Gate. With proximity to Hill AFB, uses at the East Gate Business Center are intended to support operations at the installation. The focus of the business park is aerospace, advanced composites, defense, and research. Janicki Industries, KIHOMAC, WesTest, and Raytec are current tenants.

The business park is 650 acres, with 280 acres currently available for development.



KIHOMAC at East Gate Business Center

Source: Layton City Economic Snapshot 2019.

Northrop Grumman Roy Innovation Center

The Roy Innovation Center is a site that is being developed for Northrop Grumman, which will house the Department of Defense's Ground Bases Strategic Deterrent program. At present, the United States land-based ballistic missile force is made up of approximately 400 Minutemen II intercontinental ballistic missiles. Through the Ground Base Deterrent program, the Air Force will be modernizing these missiles. This 30-year program is slated to cost over \$80 billion and bring over 2,500 employees to the area. This is being funded by the National Defense Bill for 2021.

The Roy Innovation Center is located south of the Hill Aerospace Museum, just north of Hill AFB. The Roy Innovation Center will be made up of four buildings, comprising approximately 850,000 square feet. The first building being constructed is 231,000 square feet and began construction in August 2019. The whole project will result in a total of over a million square feet of office and laboratory facilities split into six buildings.

Northrop Grumman has a presence throughout the state with different offices throughout Utah including Promontory, Ogden, Clearfield, and Salt Lake. In total, Northrop Grumman has an employ base of over 5,000 employees in Utah.

Runway at East Gate

The Runway at East Gate project is an enhanced use lease project that was approved by the Military Installation Development Authority (MIDA) board in 2014. The project area is 90 acres on Hill AFB, near the East Gate of Hill AFB, and is intended to be used by private businesses in the aerospace or defense industries. The Runway at East Gate project is a partnership between Layton City and Hill AFB.



2.4 Existing and Future Land Uses

Existing and future land uses can help determine existing and future encroachments on Hill AFB. This section describes the existing and future land uses planned for the communities surrounding Hill AFB and the UTTR. Further analysis of land use compatibility is found in Chapter 5, Compatibility Assessment.

Existing Land Use Around Hill AFB

Existing land uses indicate the current use of a property. As indicated in other sections, Hill AFB is located in a predominantly urbanized area and as such, land uses vary throughout the Project Study Area. Land uses surrounding Hill AFB are shown on Figure 2-7 and are summarized on Figure 2-6.

The area to the north of Hill AFB has a mix of land uses from single-family and multi-family residential to commercial along I-15 and Highway 26. At present there are residential and commercial uses located directly north of the installation. There are also institutional uses north of the installation, including the Ogden-Hinckley Airport in Ogden City. Further east of the Ogden-Hinckley Airport in Ogden is Weber State University.

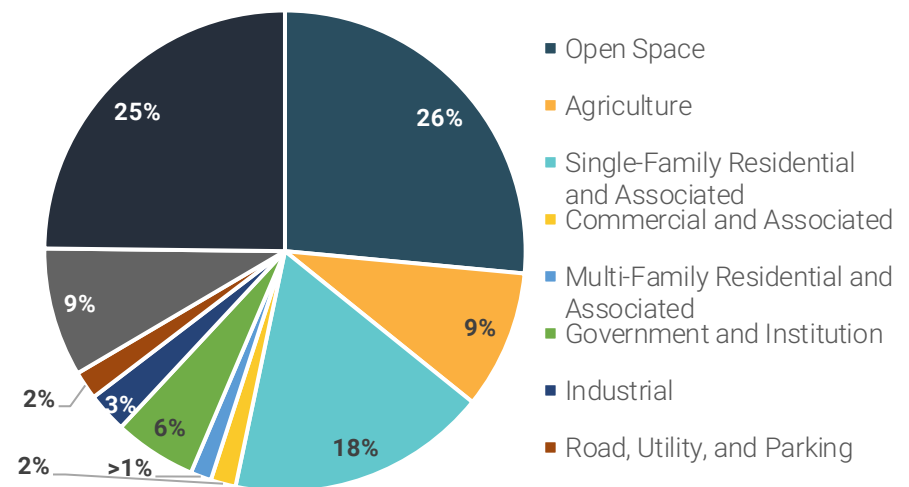
Directly to the west of Hill AFB are Roy, Sunset, and Clearfield cities. The most prominent land uses within this area is residential; however, there is also a presence of manufacturing and industrial uses. The Falcon Hill development is in the western portion of Hill AFB near Clearfield City and the Roy Innovation Center development is located north of Hill AFB. It should be noted that Falcon Hill is being developed and maintained by the Military Installation Development Authority (MIDA); however, it adopts the tax rates from Clearfield City. This public-private partnership is further described in Chapter 3. The land that is being developed for

Falcon Hill was annexed into Clearfield City from Hill AFB. While the land is within Clearfield City, the City has no land use regulations over the development. Other commercial land uses line Interstate 15 (I-15) and Highway 126 west of the installation. One of the largest existing industrial land uses, the Freeport Center, is located approximately one mile southwest of the installation in Clearfield City along the Union Pacific rail line.

Layton City is the only city that directly neighbors Hill AFB to the south. While the areas immediately surrounding Hill AFB are mostly built out, it is anticipated that Layton City will reach build-out around the year 2040.

To the east of Hill AFB is South Weber City. Land use in the city has predominantly been agriculture; however, within the last approximately ten years, residential growth has been occurring throughout. While residential is the predominant land use in South Weber, commercial development is mainly present in the east side of the city.

Figure 2-6 Existing Land Use Distribution in Project Study Area



Source: Wasatch Front Regional Council, 2018.

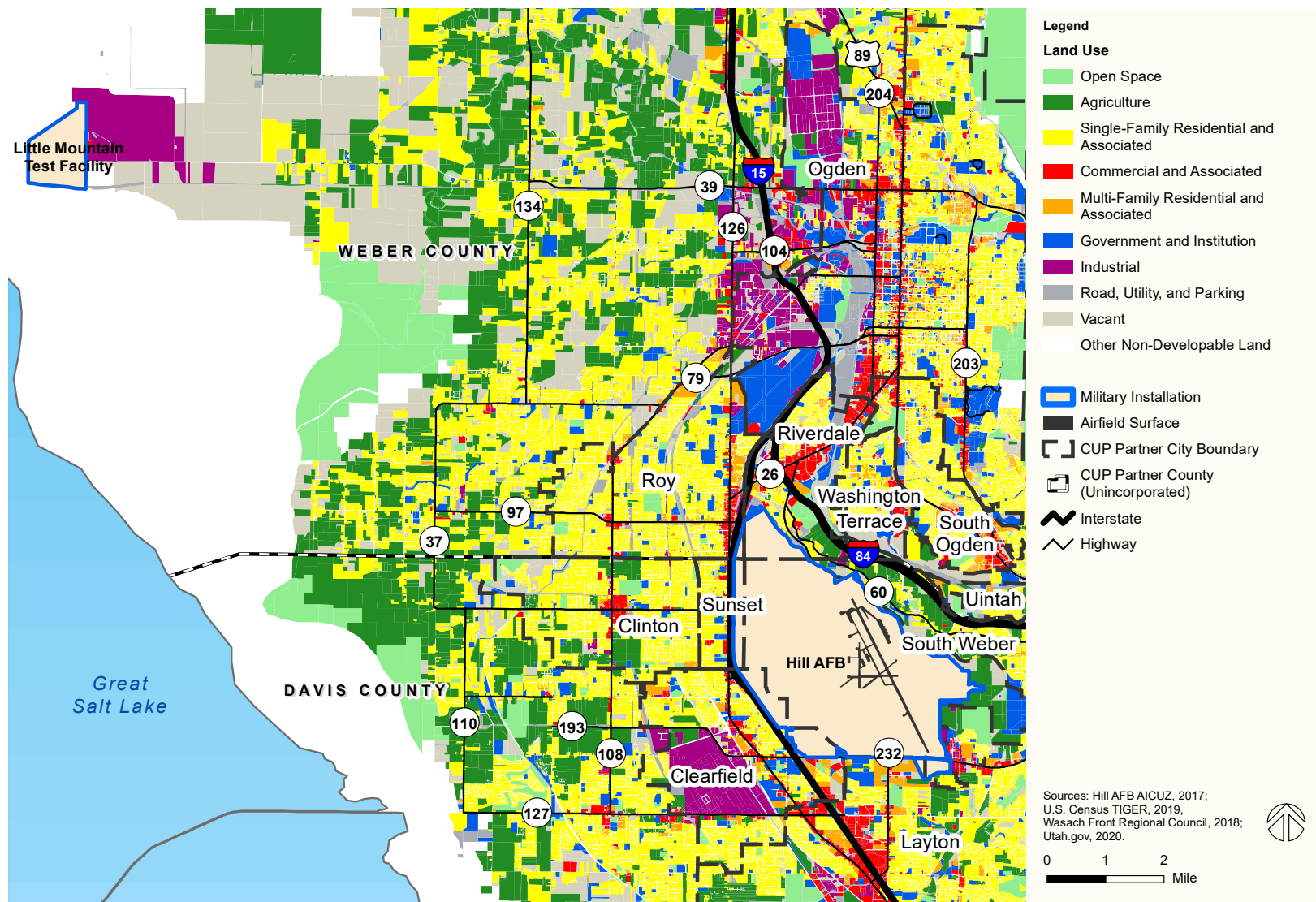


Figure 2-7
Existing Land Use in Hill AFB Vicinity



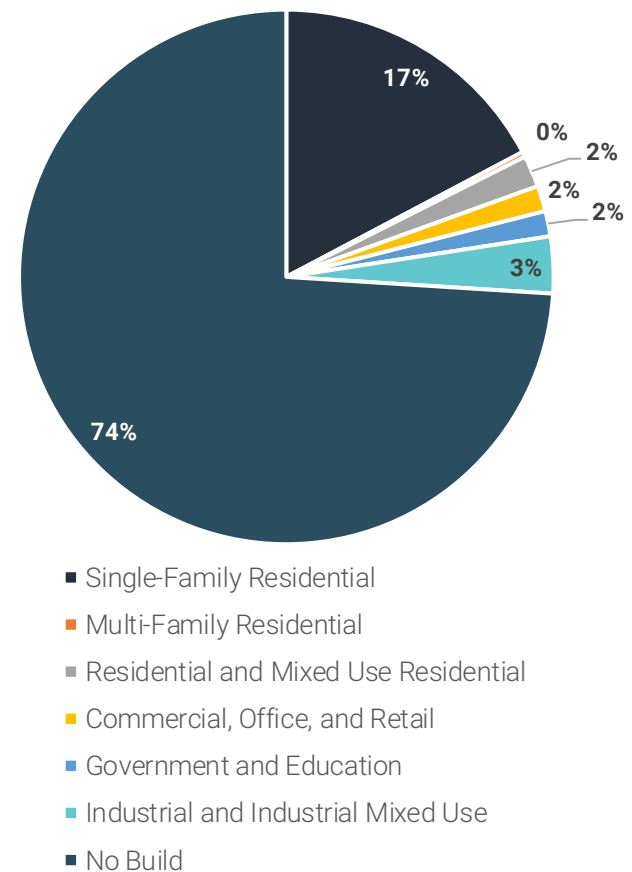
Future Land Use around Hill AFB

Future land uses planned for the area around Hill AFB are shown on Figure 2-9 and summarized in Figure 2-8. Ogden is a major city located north of Hill AFB. Future land use planning in Ogden indicates that the area north of Ogden-Hinckley Airport will continue to be an industrial area, supporting light and heavy industry, warehousing, and office and retail. The area to the east of the airport in Ogden is planned for an Urban Center along the Ogden Downtown. This will have a mix of land uses including residential and retail.

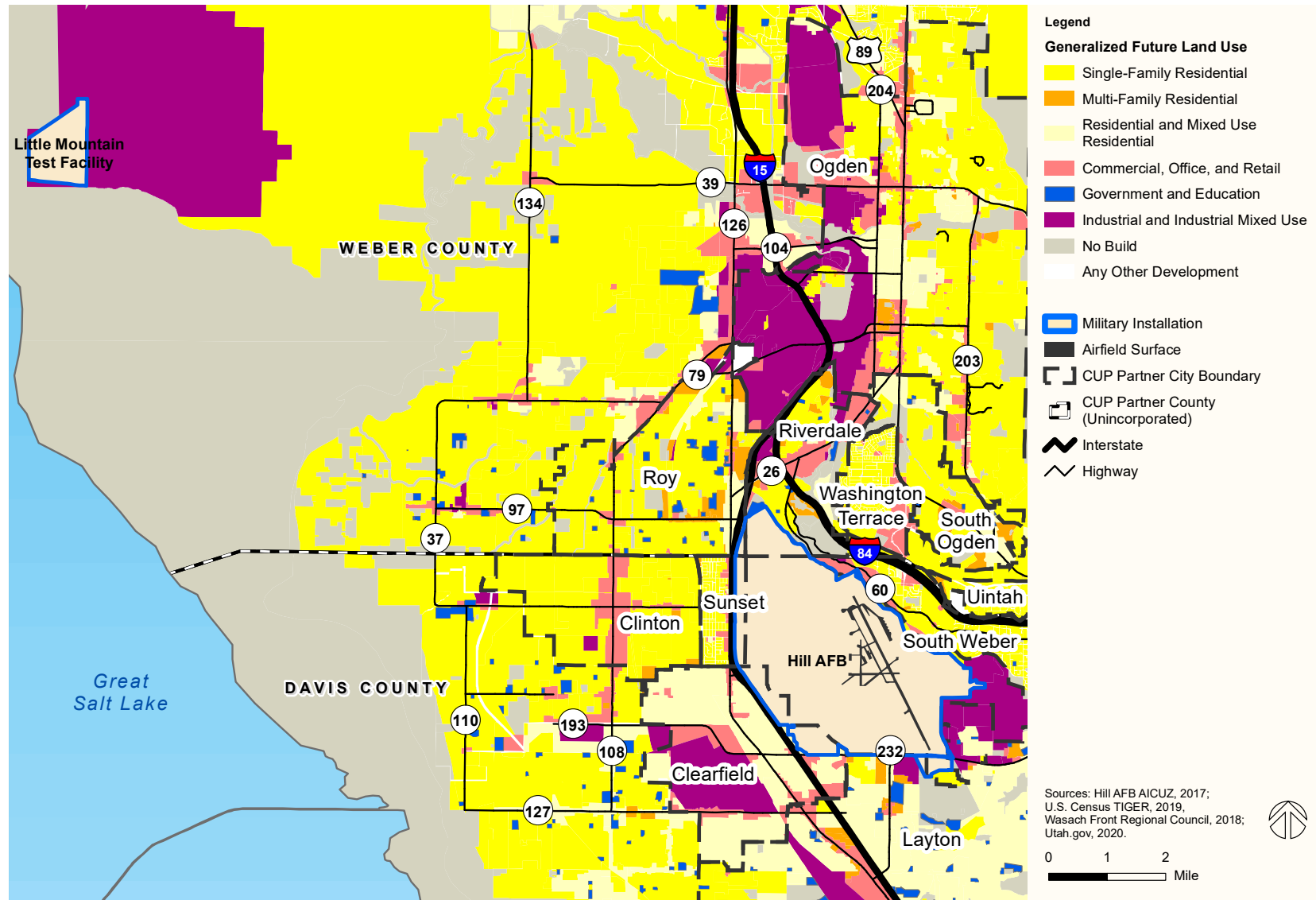
Immediately north of Hill AFB is Riverdale City. The area within Riverdale City that is closest to Hill AFB is planned for institutional uses. Per the Wasatch Choice 2050, land uses along I-15 and Highway 26 in Roy and Riverdale are planned to be City Centers. City Centers promote a mix of land uses including residential and commercial. This land use continues down the west side I-15 and along Highway 126 in Clearfield City. The east side of I-15, directly adjoining Hill AFB is planned as a Special District for Falcon Hill. While Falcon Hill is planned for a mix of uses, it is not planned for any residential land uses. There are other City Centers located further west of Hill AFB along Highway 108 and to the east of Hill AFB along State Route 89 (SR 89).

To the south of the installation is Layton City. In the west side of Layton City, at Layton Parkway and 2700 West, there is a million square feet of office planned. The area of Layton to the southeast of the installation is planned for an Industrial District. This is the location of the East Gate Business Park. The industrial district will accommodate light manufacturing and industrial uses, as well as warehousing, and associated office and retail.

Figure 2-8 Future Land Use Distribution in Project Study Area



Source: Wasatch Front Regional Council, 2018.

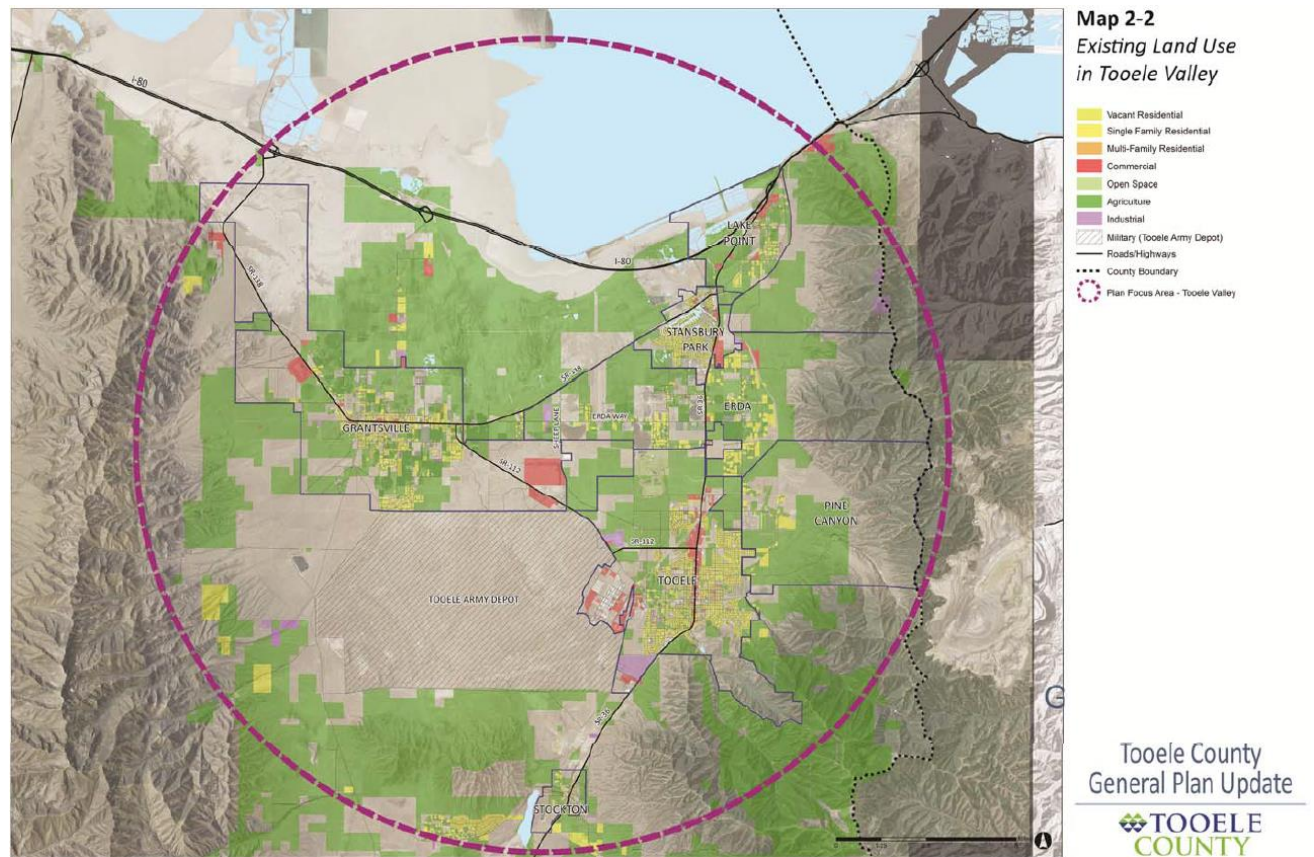


Land Use Around UTTR

The UTTR is located in both Tooele and Box Elder Counties. The southern part of the UTTR is in Tooele County, while the northern part of the UTTR is in Box Elder County. The UTTR is located west of the Great Salt Lake in an area that is predominantly undeveloped. Developed areas nearby the UTTR are concentrated in Tooele Valley, the geographical region encompassing the urbanized areas of Tooele County, including Grantsville City and Tooele City. Existing land use in Tooele Valley are shown on Figure 2-10, which is the existing land use map from the Tooele Valley General Plan. The extent of the existing land use shown on the map does not extend to the UTTR. The area shown, the Tooele Valley, has a predominance of agriculture with some residential and commercial uses.

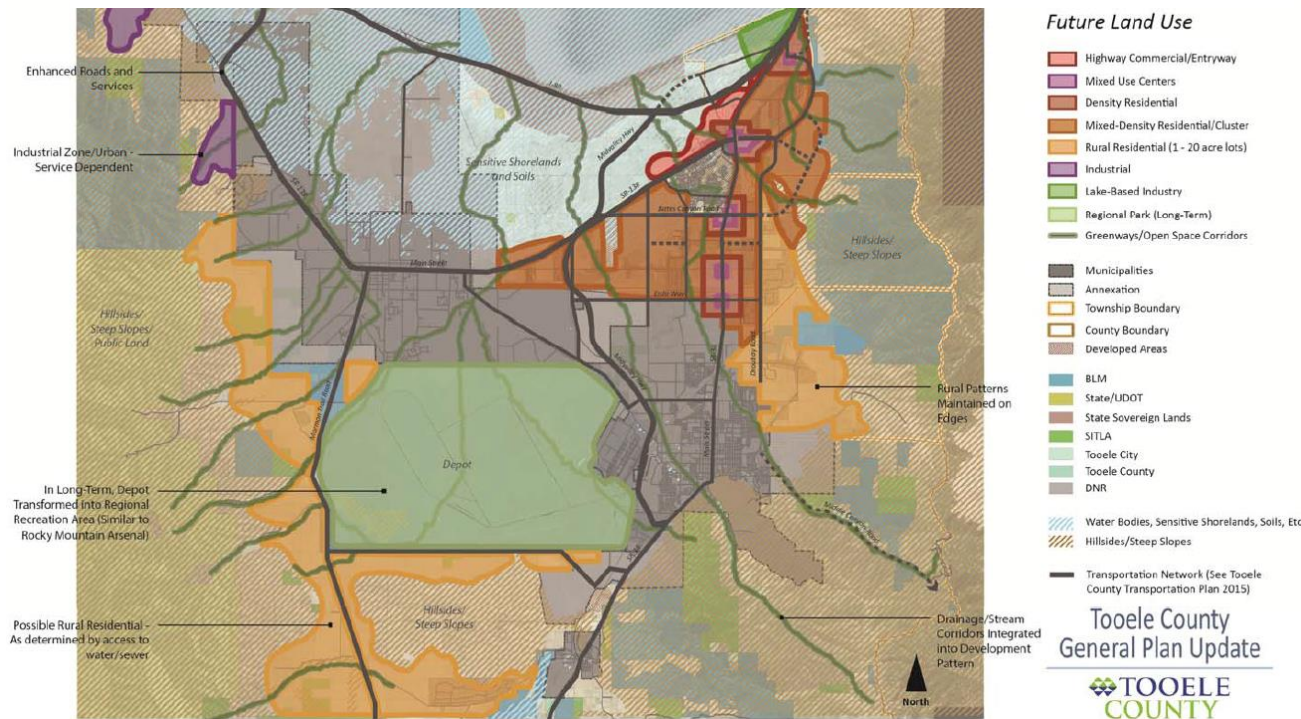
The Tooele Army Depot is located directly west of Tooele City, south of the UTTR. Parts of the Army Depot have been closed and are now an industrial park in Tooele City. Manufacturing is present northwest of the Tooele Valley, along I-80 up to the Great Salt Lake. Existing land uses between the southern and northern portions of the UTTR are limited; however, there are some industrial uses present. These include technological industries, and mining and excavation. The portion of Box Elder County west of the Great Salt Lake is undeveloped.

Figure 2-10 Existing Land Use in Tooele Valley



Source: Tooele County General Plan Update, June 2016.

Figure 2-11 Future Land Use in Tooele Valley



Source: Tooele County General Plan Update, June 2016.

Future Land Use

Future land uses planned for the area around the UTTR are shown on Figure 2-11. Existing and future development is likely to occur in the Tooele Valley, which is southeast of the UTTR. The Tooele Valley is classified as the area south of I-80 and east of Highway 196. According to the Utah Department of Transportation, the greatest amount of growth will occur in Tooele City, outside of Tooele City to the east, and Grantsville City by 2040. Land uses that are planned for Tooele Valley include mixed-density residential along SR 138 and SR 36 north of Erda Way. Rural residential uses are planned for the areas on the outer edges of Tooele Valley along the mountain ranges.



2.5 Housing Trends

Housing trends typically coincide with population growth and as such, can indicate economic activity and vitality in an area. Rapid housing growth or slow-growing areas may reveal population increases or decline or out-migration in specific neighborhoods. The rate of housing development is an indicator of the overall rate of development occurring in the region which should be considered for compatibility with operations at Hill AFB.

Housing Units

Between 2010 and 2019, there was an overall increase in housing units in the Project Study Area. Despite this increase, some cities within these counties experienced a decrease in housing units. These cities include Clearfield City, Sunset City, and Uintah City. Despite a loss of housing units in these cities, all but Uintah City, experienced an increase in population during this timeframe. Conversely, South Weber City, which had the greatest population growth rate in this timeframe, also had the greatest growth rate of housing units at almost a 30% growth. This growth is greater than the overall housing growth rate in Davis County and in the State of Utah as a whole. Despite South Weber City having the highest growth rate during this timeframe, the greatest amount of housing units in the Study Area were added to Layton City.

Housing Values

Housing value trends illustrate the changes in land and home values relative to market fluctuations, which can be indicative of the level of development occurring throughout the Project Study Area. These fluctuations can also highlight desirable locations for home buying. Rent trends also provide insight into the local market conditions.

Table 2-4 shows the median housing value and median monthly gross rent between 2010 and 2019 for the communities in the Project Study Area and the State of Utah. Both median home value and median gross rent increased across the Project Study Area.

Similar to median housing values, the median gross rents for all jurisdictions within the Project Study Area experienced an increase between 2010 and 2019; however, median gross rents saw greater growth than median housing values.



106,400

2019 Housing Units in the Project Study Area*

47% increase

In housing units between 2010 and 2019

**Does not include unincorporated county numbers*

Source: 2019 American Community Survey 5-Year Estimate, 2010 U.S. Census.

Table 2-4 Change in Median Housing Value and Median Gross Rent, 2000-2019

Jurisdiction	Median Housing Value			Median Gross Rent		
	2010	2019	2010 to 2019 % Change	2010	2019	2010 to 2019 % Change
Clearfield City	\$151,400	\$194,300	28%	\$846	\$1,098	30%
Clinton City	\$185,600	\$243,400	31%	\$1,084	\$1,348	24%
Layton City	\$207,200	\$260,400	26%	\$788	\$1,022	30%
Ogden City	\$133,200	\$170,100	28%	\$655	\$818	25%
Riverdale City	\$159,200	\$206,900	30%	\$717	\$854	19%
Roy City	\$156,000	\$191,800	23%	\$836	\$1,061	27%
South Ogden City	\$169,300	\$213,800	26%	\$711	\$963	35%
South Weber City	\$253,800	\$337,800	33%	\$918	\$1,341	46%
Sunset City	\$133,800	\$166,700	25%	\$741	\$858	16%
Uintah City	\$230,700	\$274,000	19%	\$885	\$1,125	27%
Washington Terrace City	\$134,900	\$172,800	28%	\$686	\$820	20%
Davis County	\$224,400	\$290,300	29%	\$820	\$1,105	35%
Weber County	\$168,300	\$220,600	31%	\$702	\$891	27%

Source: 2019 American Community Survey 5-Year Estimate, 2010 U.S. Census.



2.6 Project Study Area Community Profiles

Davis County

Davis County is in northern Utah, adjacent to the southeastern portion of the Great Salt Lake. The county is the third largest county in population, with a population of 345,767. There are fifteen communities that are a part of Davis County:

- | | |
|-----------------|-------------------|
| ■ Bountiful | ■ North Salt Lake |
| ■ Centerville | ■ South Weber* |
| ■ Clearfield* | ■ Sunset* |
| ■ Clinton* | ■ Syracuse |
| ■ Farmington | ■ West Bountiful |
| ■ Fruit Heights | ■ West Point |
| ■ Kaysville | ■ Woods Cross |
| ■ Layton* | |

*CUP partner communities

Davis County was incorporated in 1850. Prior to its incorporation, Davis County was occupied by the Shoshone Indians and was one of first areas settled by members of the Church of Jesus Christ of Latter-day Saints, who arrived in the Great Salt Lake Valley in 1847. Today, the county is 634 square miles, with 299 square miles of land and 335 square miles of water. Weber County is directly north of Davis County, Salt Lake County is to the south, and Morgan County is to the east.

Davis County settlers were attracted to the area for its lush pastures and fertile soils. Davis County experienced slow growth during the first half of the century. Manufacturing began to prosper with the introduction of the Utah Central Railroad, now called the Union Pacific. Through the railroad came mechanized agriculture and commerce. New roads, water systems, and electricity in homes during this time also contributed to growth in the county. Access to road and rail created opportunities for increased mobility, creating opportunity for Ogden and Salt Lake City to be centers for employment.

The defense industry was introduced to the county during World War II when Hill AFB was established in the northern part of the county. Hill AFB and other nearby installations created a surge of employment for members of the community. Hill AFB was and still is one of Utah's largest employers.

Davis County operates under an elected Board of Commissioners, which is the governing body. Commissioners serve four-year terms. The Commissioners have oversight to ensure compliance with County rules, policies, and ordinances. Aside from the commissioners, there are several other elected officials who direct and supervise their respective offices. These elected officials also serve four-year terms.



345,767

2019 Estimated
Population

1850

Year Incorporated

Weber County

Weber County is in northern Utah, bordering the Great Salt Lake to the west. The County occupies a stretch of 576 square miles of the Wasatch Front and part of the Wasatch Mountains. In 2019, the population was 251,498. The following communities are a part of the County:

- Farr West City
- Harrisville City
- Hooper City
- Marriott-Slaterville City
- North Ogden City
- Ogden City (county seat) *
- Ogden Valley Township
- Plain City
- Pleasant View
- Reese Township
- Riverdale City*
- Roy City*
- South Ogden City*
- Town of Huntsville
- Uintah City*
- Washington Terrace City*
- Warren Township
- Weber Township
- West Haven City
- West Weber Township

*CUP partner communities

Long before Weber County was incorporated into a county, the area was inhabited by the Ute and Shoshone Indians. The location was favored for its fishing streams and mountainous hunting areas. Permanent settlement in the area occurred in the mid-1800s in the area that is now known as Ogden. Around this time, the nation's first transcontinental railroad was located in Ogden, providing opportunity for passenger and freight transfer. Industries, such as woolen mills, canneries, flour mills, banks, and hotels flourished.

Similar to Davis County, population and industry growth grew again during WWII with the building of the Defense Depot Ogden in northern Weber County, the Ogden Air Logistics Complex, and Hill AFB in Davis County. The military installations provided numerous jobs for residents in the area. Today, Weber County has a diverse economy, with major companies in the manufacturing industry, six different universities and colleges, and numerous recreational opportunities.

Weber County operates under a Commission, comprised of three Commissioners elected at-large. Each Commissioner serves for four years. The role of the Commission is to develop policies for the County and administer functions impacted by such policies.



251,498

2019 Estimated
Population

1850

Year Incorporated



Clearfield City

Clearfield City is located in Davis County, with Clinton City and Sunset City located directly to the north and Layton City to the south. Syracuse, West Point, and the Great Salt Lake are located to the west of the city and Hill AFB is located directly to the east. Clearfield City sits along I-15. Clearfield is 7.6 square miles and has a population of 31,364.

While water was initially a concern in the area, irrigation created opportunity for agriculture and agriculture-related businesses, such as canneries. Like other communities in the area, Clearfield had additional industry growth with the introduction of the defense industry. In the early 1940's Clearfield became home to the Clearfield Naval Supply Depot, located on the southwestern side of the city. The location of the Supply Depot was ideal due to its proximity to Hill AFB and the nearby railroads and highways. By the early 1960s the depot was phased out with many civilian workers taking new employment at Hill AFB and other nearby government agencies. The depot facility is now referred to as the Freeport Center and used as a transload station for the railroad serving and proving space for private businesses' manufacturing, warehousing, and distribution. Today, Clearfield continues to thrive in its farming, defense, and manufacturing roots as well as being an active community due to its proximity to the Wasatch Mountains. Clearfield City functions under a Mayor and Council government, with five council members representing the city.



31,364

2019 Estimated
Population

1922

Year Incorporated

Clinton City

Clinton City was incorporated in 1936. Prior to its incorporation, the area was part of Layton City. The 5.9 square mile city is located north of Clearfield City and south of Roy City. Clinton City sits west of Sunset City and east of the Great Salt Lake. Today, the city has a population of 21,890.

Clinton's roots stem from agriculture; however, the city is now a mix of farming, commercial, and residential. While much of the agriculture land has since been converted for housing, the community maintains a rural feel. Clinton's recreation program, parks, and safe community make it a family-oriented city with a high quality of life. Clinton City operates under a Mayor and five councilmembers, who serve as the legislative body of the City.



21,890

2019 Estimated
Population

1936

Year Incorporated

Layton City

Layton City is the largest city within Davis County with a population of 76,197 and an area of 22 square miles. The city is located south of Ogden and north of Salt Lake City, between the Wasatch Mountains to the east and the Great Salt Lake to the west. Layton is located directly south of Hill AFB and borders the southern boundary of the base. Due to its proximity to the Hill AFB runway, part of the Hill AFB safety zones and noise contours are located in Layton City.

Layton was once a part of Kaysville, but broke away from Kaysville in 1902, and became incorporated in 1920. Prior to its incorporation, Layton became a business district, with many commercial businesses and a flour mill. Agriculture was also a prominent part of Layton's economy early on due to the construction of canals and the East Canyon Dam and Reservoir, which provided a reliable water supply.

Today, agriculture is no longer the largest economic contributor to the city as little agriculture land remains due to the growth of the city. The introduction of Hill AFB in the 1940s had an impact on the city as an influx of workers, servicemembers, and their families moved to the area. Hill AFB continues to be an economic generator for the city, and the region. Layton is also an important commercial center in the area with many shopping and business centers throughout.

The City of Layton is governed by a City Council and Mayor. The City Council is made up of five councilmembers and a Mayor. Each member of the City Council, including the Mayor, serves a four-year term. The Mayor and Council set city policy and the City Manager is responsible for the day-to-day operations of the city.



Ogden City

Ogden is located in Weber County, west of the Wasatch Mountains and east of the Great Salt Lake, the city sits between South Ogden and North Ogden. Ogden is one of the most populous cities in the region with 86,833 residents. It is also the largest city in terms of area in the Project Study Area at 27 square miles.

The Union Pacific and Central Pacific railroads contributed to Ogden's growth in the early 1900s to WWII. During this time, Ogden's Union Station was the transfer point between the two rail stations. The railroad and stockyards brought industry opportunity to Ogden and Ogden became a shipping and commerce center. As WWII came into focus, the Ogden Chamber of Commerce worked to get Hill AFB built in the area. This region of Utah quickly became military and government centered, with the Naval Supply Depot being built in Clearfield, the Utah General Depot in Ogden, and Hill AFB in Davis County.

Since then, Ogden has experienced community rebuild and revitalization, especially in Downtown Ogden. Today, Ogden has diverse industry from Information Technology, to aerospace and advanced manufacturing, to outdoor recreation. Ogden is home to the Ogden-Hinckley Airport, a municipal airport with commercial and general aviation services. Outdoor recreation has been and continues to be an important aspect of Ogden life. Ogden hosted the 2002 Winter Olympics and continues to support outdoor recreation.

Ogden is the county seat for Weber County. The city operates under a City Council and Mayor. There is a total of seven council members, four of which represent four different districts, and three that represent Ogden at-large. Each councilmember serves a four-year term.





Riverdale City

Riverdale City is located in south central Weber County, between South Ogden and Roy, south of Ogden, and directly north of Hill AFB. Riverdale has a population of 8,752 on an area of 4.6 square miles.

Development first began in Riverdale City in the mid-1850s. Settlers were predominantly farmers, farming hay, potatoes, and other fruits and vegetables. This was possible due to the construction of a canal which brought water from Riverdale City from the Weber River. During this time, there was also construction of a grist mill, which grinds grain into flour.

Today, the economy in Riverdale encompasses diverse industries. As a border community to Hill AFB, many residents of Riverdale work at the installation. In addition to this, Riverdale has a business district and has become a retail center in the area. Riverdale City is operated by a Mayor and City Council. There are five councilmembers on the City Council.



8,752

2019 Estimated
Population

1946

Year Incorporated

Roy City

Roy City is in Weber County, with a population of approximately 39,000 and an area of almost eight square miles. Roy City is situated along Interstate 15, with Hill AFB directly to the east, Hooper City to the west and West Haven and Clinton and Clinton to the north and south. While land in Roy was originally thought to be less than optimal for settling, the establishment of a well then, a canal made development possible.

Like the other nearby communities in the area, Roy transformed with the establishment of Hill AFB, then called Hill Field. This led to the construction of a school building to accommodate the influx of families moving to the area to work at Hill Field. The influx of families, which moved to the area for Hill Field, as well as the Navy Supply Depot and Defense Supply Depot, also led to an increase of stores and offices in Roy to accommodate the increase of residents. Roy City is governed by a Mayor and City Council. There are five councilmembers which are elected by residents of Roy at-large. Each council member serves a four-year term.



39,040

2019 Estimated
Population

1937

Year Incorporated

South Ogden

South Ogden is in Weber County, between Ogden City on the north and east, Uintah to the south, and Riverdale and Washington Terrace to the west. South Ogden is approximately four-square miles and has a population of approximately 17,000.

Prior to its incorporation in 1936, the area that is now South Ogden was called Burch Creek. Burch Creek was a farming community for much of its early history. In the mid-1930s, Burch Creek concluded that it needed more services, such as sewer, water, and roads. Instead of being annexed into Ogden, Burch Creel became incorporated as was renamed South Ogden.

The proximity of South Ogden to Hill AFB led to an influx of housing in the early 1940s. South Ogden continued to experience residential growth. South Ogden continues to have many residences with a mix of shopping centers, businesses, and city amenities. The City operates under a Mayor and five city councilmembers.



17,063

2019 Estimated Population

1936

Year Incorporated

South Weber

South Weber is a 4.7 square mile city located in Davis County along I-89. Washington Terrace City and Uintah City are located north of South Weber, and Layton City is located to the south. Weber County is located east of the city and Hill AFB is located directly east. Due to its proximity to the installation, the Hill AFB noise contours overlays about half of the city, and part of the northern safety zone overlays the west end of the city.

The area that is now South Weber was first settled in 1851 by a couple of families. At the time, the area was known as one town, but in 1855, the area was split in two, creating Uintah and South Weber. Also, at this time, the Weber River became the jurisdictional lines between Weber County and Davis County, placing South Weber in Davis County. The city has historically been rural, with a predominance of agriculture; however, within the last approximately ten years, residential growth has occurred throughout the city. Today, the city is largely built out. The City operates under a Mayor and five councilmembers.



7,381

2019 Estimated
Population

1938

Year Incorporated



Sunset City

Sunset City is a 1.3 square mile city, located along I-15. The city is one of the northern most cities in Davis County, bordering the Weber County boundary, which is directly north of Sunset City. Clinton City is located west of Sunset and Hill AFB is directly east of Sunset.

In its early years, Sunset was a part of Clinton, but separated from Clinton and became incorporated in 1935. Sunset City has historically been a residential community. Shortly after becoming incorporated, the city saw more residential growth as a result of World War II and the development of Ogden Air Depot and Hill AFB. Due to its size and rapid residential growth, the city is mostly built out. The City has a mayor and five councilmembers.

5,278
2019 Estimated
Population
1935
Year Incorporated

Uintah City

Uintah City is a 1.25 square mile city, nestled between I-84 and Highway 89, in Weber County. The city is located at the mouth of Weber Canyon on the east South Weber to the west. Uintah City is bordered by South Ogden City to the north and the Weber River to the south.

As with South Weber City, Uintah City was originally a part of the town of Easton. Easton's population experienced a boom with the introduction of the railroad through Weber Canyon. This area had a strong agricultural industry and relied on farming for most of its early years. The railroad brought in new industry, such as charcoal manufacturing; however, when the Utah Central Railroad opened between Salt Lake City and Ogden in the 1870s, the population boom in Uintah ended with residents and business owners moving away.

Uintah City was incorporated 1937 due to the need for a modern water system. The water system in Uintah City was expanded in the 1970's, creating a desirable place for people to move to. Today, Uintah remains a primarily rural area; however, many residences have been built, reducing the amount of farmland left in the city. Uintah City operates under a Mayor and four city councilmembers.



1,439
2019 Estimated
Population
1937
Year Incorporated

Washington Terrace City

Washington Terrace is a residential community located between I-85 and Highway 89 in Weber County. The 1.97 square mile city has a population of approximately 9,000 and is located on the north side of the Hill AFB runway. Riverdale City is located to the north and west of Washington Terrace City and South Ogden City is located to the east.

Washington Terrace City is the result of the Terrace Housing Project, a temporary WWII housing project. The housing project was built in 1942 in response to people moving to the area to work at the government installations. The housing project was eventually converted into single family housing and became its own city. After the war, many families decided to stay in the area, and from there Washington Terrace continued to grow. Washington Terrace operates under a Mayor and five city councilmembers.



9,162

2019 Estimated
Population

1942

Year Incorporated



2.7 Hill AFB Community Contributions

One of the major contributions from Hill AFB to the community is the economic impact. In 2020, there were 22,566 personnel working at Hill AFB making Hill AFB Utah's largest single-site employer. On top of being the largest employer in Utah, Hill AFB's total economic impact is \$4.55 billion, with a federal payroll of \$1.44 billion, annual expenditures of \$589 million, and approximately \$2.52 billion in indirect jobs.

In addition to Hill AFB's major economic contribution to the community, Hill AFB actively contributes to the community and has long had a relationship with surrounding communities. In 2020, Davis County and Weber County were a part of the five communities that were named to the 2020 class of Great American Defense Communities through the Association of Defense Communities. This program, which is in its fifth year, recognizes military communities that work towards improving the quality of life for service members and their families. This recognition is indicative of the positive relationship that military and community have in Wasatch Region.

Hill AFB has multiple programs and objectives in place to encourage the strong relationship between the installation and the community. The following are examples of the partnerships between Hill AFB and surrounding communities. Additional partnerships are further described in Chapter 5, Compatibility Assessment.



Thunderbirds from the 3600th Demonstration Unit performing in 1956 as part of Hill AFB's first open house and air show.

Source: Hill AFB, <https://www.hill.af.mil/News/Photos/>.

- **75th Wing Strategic Plan.** An objective of the 75th Wing's Strategic Plan is to build and maintain a strong community and local ties to maintain support and understanding of the military mission and challenges that may come with military service.
- **Warriors Over the Wasatch Air and Space Show.** Hill AFB has annually hosted the Warriors over the Wasatch Air and Space Show since 1956. For this show, Hill AFB invites the community to an open house to watch air shows every two years. The two-day event was estimated to have 600,000 visitors and generate \$50 million in economic stimulus throughout surrounding communities. Due to the COVID-19 outbreak, the 2020 airshow was cancelled and is anticipated to occur next in 2022.
- **Team Hill Honorary Commanders Program.** The Team Hill Honorary Commanders program pairs community leaders with specific units on base to support relationship, increase understanding of Hill AFB's mission, and increase military involvement in civic activities and organizations. At the beginning of 2020, 38 community members and business leaders were appointed as Honorary Commanders. Honorary Commanders serve a two-year term in which they are invited to participate in events and activities on Hill AFB, meet installation leaders and Airmen, and witness operations at Hill AFB.



Honorary Commanders induction ceremony at Hill AFB.

Source: Hill Air Force Base.



- **Stand Up USA.** In March 2020, Hill AFB partnered with Stand Up USA, a non-profit organization, to offer a new sponsorship program to junior Airman at the installation. The program, Home Base, pairs junior Airmen with volunteer families in the community to provide a support system for the Airmen. The program encourages the volunteer families to share activities with the Airmen regularly and especially during the holidays and other special occasions.
- **Hill Aerospace Museum.** The Hill Aerospace Museum is located on the northwest corner of the installation. There are more than 70 aircraft on display and thousands of artifacts, illustrating the history of aviation in the Air Force. The museum is planned to undergo an expansion in which an additional gallery will be added to house aircraft. The museum is supported by the Air Force and the Aerospace Heritage Foundation of Utah. The museum attracts approximately 160,000 visitors annually from every state and many different countries, bringing in additional business to the area.



Hill Aerospace Museum

Source: Hill AFB, <https://www.hill.af.mil/News/Photos/igphoto/2002238195/>.

- **Air Force Community Partnership Initiative.** Hill was one of the first active-duty bases to participate in this initiative which was an effort to form intergovernmental collaborations as a means to increase shared efficiencies and resources with the community. The program is designed to explore public-private partnership and intergovernmental collaboration opportunities for shared services with local communities, government agencies, and businesses. These partnerships are facilitated through meetings between the community, private organizations, and Hill AFB.
- **Pandemic Response.** In the Spring of 2020, Hill AFB showed appreciation to healthcare workers, first responders, military members, and essential personnel who were a part of the workforce against COVID-19 by conducting a formation flyover through Utah on April 30, 2020. The flyover was conducted by the F-35 Lightning II Demonstration and the 388th Fighter Wing.

Hill AFB has taken various measures to respond to the COVID-19 global pandemic. Medical response was provided by the 75th Medical Group. Beginning in March 2020, the 75th Medical Group Satellite Pharmacy began providing curbside service. Through this service, patients could pick up their prescriptions' curbside. The 75th Medical Group also provided COVID-19 drive thru screening and testing for active duty, reserve, civilian personnel, and family members via prescription. The installation continues to proactively enforce all federal guidelines pertaining to the prevention and spread of COVID-19 and other medical contingencies.

2.8 Transportation

The transportation network and land uses in the Project Study Area are intrinsically connected. Land uses influence the transportation network and vice versa. The transportation network in the region can also have impacts on Hill AFB operations and accessibility. This section describes the existing transportation network, which is shown on Figure 2-12. Analysis of the transportation network as it relates to compatibility with Hill AFB is found in Chapter 5.

Roadway Network

The Project Study Area is supported by a network of interstate, state highway and local roadways.

- **Interstates.** Interstate 84 and Interstate 15 are the two interstates that provide access into the Project Study Area surrounding Hill AFB. Interstate 84 enters the Project Study Area on the east through the Wasatch Mountains. It passes through the Project Study Area on the east side of Hill AFB and provides a connection into Idaho.

Interstate 15 provides access to the Roy Gate on the north side of the installation and to the West Gate and Falcon Hill near Clearfield City. Interstate 15 connects the Project Study Area to Salt Lake City to the south of the Project Study Area and passes through the Project Study Area, to the west of Hill AFB, ultimately continuing northbound into Idaho. In Salt Lake City, I-15 connects to I-80, which passes through Tooele County in an east-west direction.

- **Highways.** Highway 89 provides north-south connectivity on the eastern side of the Wasatch Front. Like I-15, Highway 89 connects Salt Lake City to Idaho. The connection into Idaho is in the eastern side of the state and ultimately connects to Wyoming. Within the Project Study Area, Highway 89 intersects with I-84 east of Hill AFB.

There are many State Highways that provide additional connectivity through the Project Study Area. One such example is State Highway 193 which connects I-15 to Highway 89 in an east-west direction. State Highway 193 provides access to the South Gate at Hill AFB. State Highway 232 also provides access to the South Gate from I-15 in a north-south direction.

Transit

The transit network in the Project Study Area is a system of bus routes, vanpools, paratransit, and FrontRunner, Utah's commuter train. The Utah Transit Authority is a Special District charged with providing transit services throughout the counties of Box Elder, Davis, Salt Lake, Tooele, Utah, Weber, and some parts of Summit. The service area serves more than 80% of the population in Utah.

- The **FrontRunner** extends from Ogden in the north to Provo in the south. The route passes by the western side of Hill AFB. While there are no stops at the installation, there are stops in Layton, Clearfield, Roy, and Ogden. The Roy Station, Clearfield Station, and Layton Station provide connections to bus lines that go to Hill AFB. There are many bus routes that travel along the border of the installation including Routes 470, 627, and 640.
- The **UTA vanpool program** provides connections to the installation. Through the vanpool program, riders can organize a vanpool with other riders that have a similar starting point and destination, such as Hill AFB.

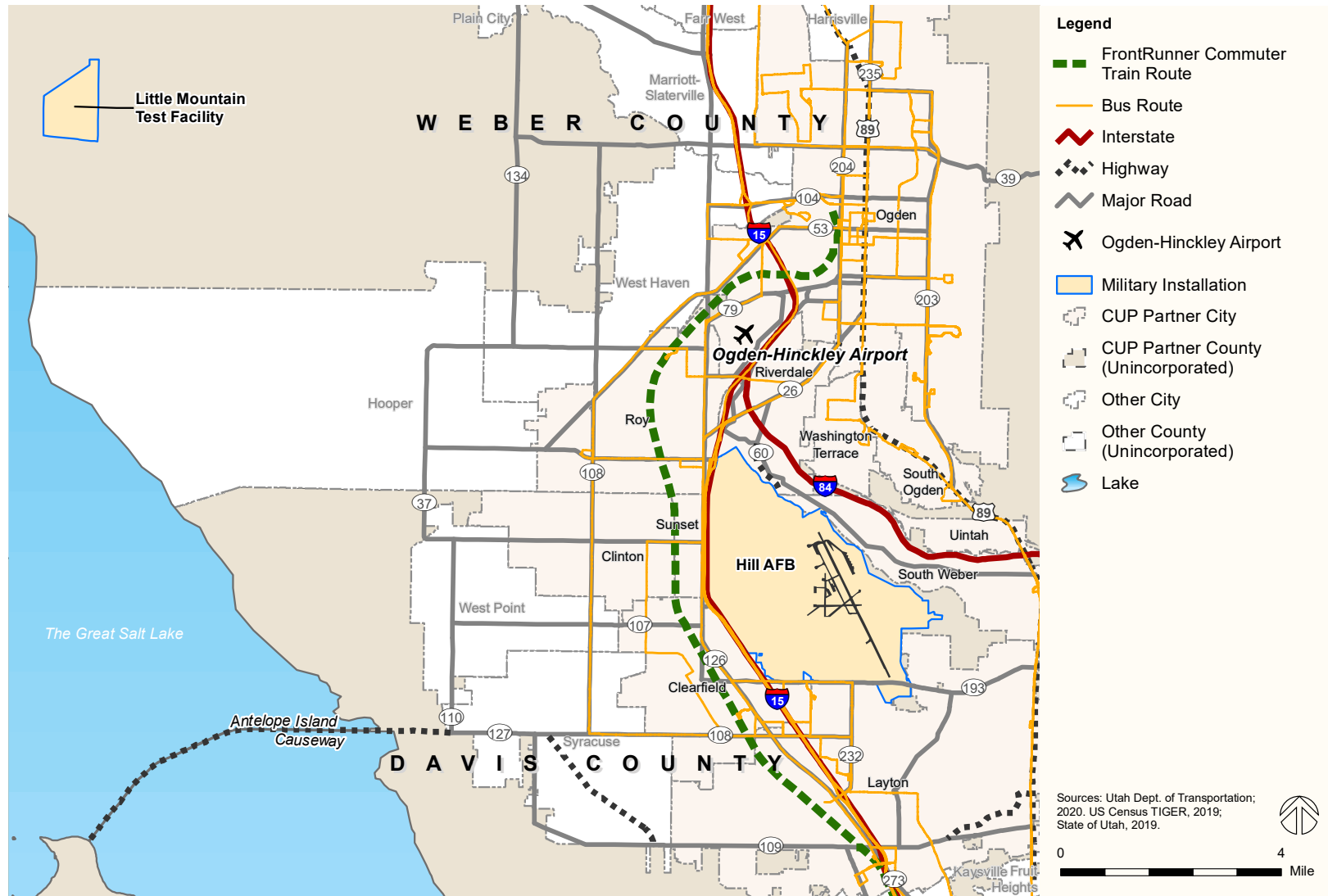


Figure 2-12
Project Study Area Transportation Network

Local Airports

Airports are important to regional and international connectivity as well as to the regional economy; however, they are also important when considering the flying operations that occur at Hill AFB and the UTTR.

- **Ogden-Hinckley Airport** is the closest airport to Hill AFB. Ogden-Hinckley Airport is a municipal airport with commercial flights and general aviation services. Commercial flights are currently offered from Ogden to Arizona with charter services to many national parks in the West. Additionally, Ogden-Hinckley Airport is the busiest municipal airport for private planes in Utah. In 2019, the airport averaged 311 aircraft operations per day. This airport is used by Hill AFB pilots for weekly practice of simulated flameouts. In 2019, military operations made up less than 1% of the airport operations at Ogden-Hinckley Airport, while transient general aviation made up 59% and local general aviation made up 37%. The remaining operations comprise of air taxi (3%) and commercial (less than 1%).
- **Wendover Airport** is located in western Utah (not within the Project Study Area) and operated by Tooele County. In 2018, this airport averaged 90 aircraft operations per day. The airport can accommodate military, commercial, and civilian uses and serves as an emergency landing site for pilots, utilizing the UTTR, in the event of a mechanical failure. In 2018, military operations made up 6% of the airport operations at Wendover Airport, while transient general aviation made up 76%, commercial was 17%, and local general aviation was 1%.
- Although not located in the Project Study Area, **Salt Lake City International Airport** is the largest airport in the region. The airport provides international commercial aviation services. The airport is the 23rd busiest airports in North America with more than 370 flights departing daily. Salt Lake City International Airport is operated by the Salt Lake City Department of airports, which also operates the Tooele Valley Airport.
- **Tooele Valley Airport** is in Tooele County, southeast of the UTTR. Current aviation services at Tooele Valley Airport include sky diving, law enforcement services, recreational flying, and flight training.

2.9 Natural Resources

The Hill AFB Project Study Area is located along the Wasatch Front, between the Wasatch Mountains and the Great Salt Lake.

- **Wasatch Mountain Range.** The Wasatch Mountain Range was formed between 12 and 17 million years ago and extends 160 miles from Idaho to Central Utah. The mountain range has a sharp ridgeline and alpine lakes, creating an optimal environment for outdoor recreation. In 2002, the Winter Olympics were hosted in Ogden, showcasing the mountain range.
- **Great Salt Lake.** The Great Salt Lake lies to the west of Hill AFB and to the east of the UTTR. The Great Salt Lake is a body of saltwater – it is one of the most saline inland bodies of water in the world. The lake is surrounded by sand, salt land, and marsh, creating a space for recreation and wildlife habitat. In total, there are 4,400 acres of habitat along the Great Salt Lake that make up the Great Salt Lake Shorelands Preserve. The lake serves as a feeding ground for migratory shorebirds and waterfowl, supporting four to six million migratory birds annually.

In addition to its importance for wildland habitat, the Great Salt Lake provides recreational opportunities in northern Utah, including opportunities for swimming, hiking, mountain biking, and enjoying the natural scenery.



Wasatch Mountains

Source: Layton City



The Great Salt Lake

Source: Utah.com

3 Military Profiles

Inside Chapter 3...

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This chapter provides an overview of the Hill AFB military profile, including a summary of the history, a description of the installation, and an overview of the missions and operations that occur there. This section also includes the military operational footprints that extend beyond the installation’s boundary to understand the broader military influence area.

Identifying and describing the various activities performed at Hill AFB provides valuable insight into the importance as a regional, state, and national strategic asset and as a part of the fabric of the surrounding communities. This information is provided to supply context of the military activities in the Project Study Area and to help stakeholders make informed decisions about future development and economic growth within communities around Hill AFB that could potentially be impacted by military activities or impact the military’s viability and future missions.



3.1 Hill AFB

Technical Background Information

Hill AFB has a critical and multi-faceted mission. Hosted by the 75th Air Base Wing, it is home to three aircraft squadrons operating state-of-the-art F-35 aircraft. It is also headquarters for the Ogden Air Logistics Complex and the Intercontinental Ballistic Missile (ICBM) Systems Directorate. The Ogden Air Logistics Complex provides war-winning expeditionary capabilities for actively flying, mature, and proven weapon systems. The ICBM Systems Directorate is responsible for sustaining the current Minuteman weapon systems. The Directorate is responsible for a \$7 billion-dollar Future Year Defense Program portfolio and executes 33 programs valued at approximately \$22 billion dollars.

As of the 2020 Hill Air Force Base Economic Impact Statement, there were 22,566 personnel working at Hill AFB. The total economic impact of Hill AFB was \$4.55 billion, with a federal payroll of \$1.44 billion, annual expenditures of \$589 million, and approximately \$2.52 billion in indirect jobs.

Team Hill Personnel

22,566 Hill AFB Total Personnel Employed



Active Duty
4,942



Guard / Reserve
901



Civilian
16,723



Dependents
6,144

Annual Economic Impact



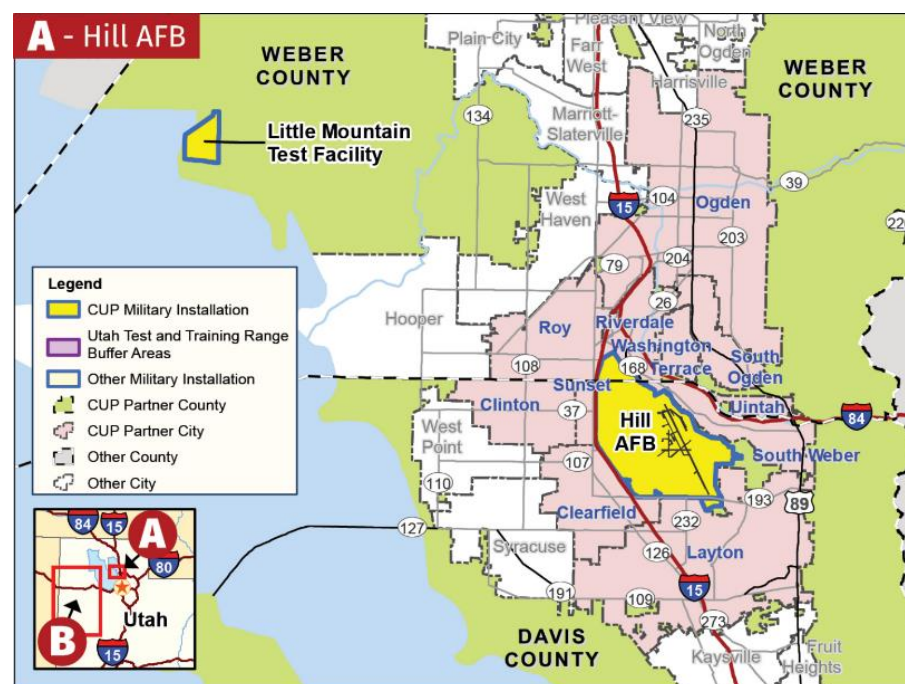
Hill Air Force Base Economic Impact Statement 2020.

Installation Setting

Hill AFB is located in an urbanized area of northern Utah in the Wasatch Front. The installation is located adjacent to multiple cities within Weber and Davis Counties and is approximately 25 miles from Salt Lake City. Access to the area is generally via Interstate 15 (I-15). The Wasatch Front has become known for its quality of life and is projected to grow in population.

Hill AFB spans 6,607 acres in Davis County, with the northernmost part of the installation in Weber County. The installation geographically sits on a plateau with terrain sloping down from all sides of the runway. Major population centers surrounding Hill AFB include Ogden City and Layton City; however, the installation is surrounded by cities on all sides. Hill AFB is the second largest Air Force base in terms of population and geographic size.

Hill AFB has one runway (14/32) that measures 13,500 feet by 200 feet wide, accommodating takeoffs and landings. The installation is comprised of the airfield and flight line, open space, industrial complexes, munitions storage, and mission support facilities. The base includes 11 aircraft hangars, housing and dormitories, a shopping area, dining facilities, recreational facilities, and the Hill Aerospace Museum. On the base there are over 200 miles of roads, almost 30 miles of rail lines, and almost 1,500 buildings.





Land Use

The 2016 Installation Development Plan (IDP) describes the past, present, and future physical state of the installation. It identifies development principles for maximizing long-term capabilities and project recommendations for Hill AFB. The plan is intended to be the guiding document for development at Hill AFB for the next 20 to 30 years. The installation land use and planning districts include the Airfield District, Community District, Enhanced Use Lease District, East Side District, Industrial District, Munitions District, and Residential District. According to the IDP, there is developable and redevelopable land in all districts except the Residential District, for a total of almost 1,300 acres.

- **Airfield District:** The Airfield District is composed of the areas immediately adjacent to the airfield. Facilities include aircraft hangars, aircraft maintenance facilities, back shops, squadron operations, aerospace ground equipment, the air traffic control tower and support facilities dedicated to maintenance, training, administration, and simulators related to the 514 Flight Test Squadron, 86 Fight Weapons Squadron, United State Forest Service, 388 Fighter Wing (388 FW) and 419 Fighter Wing (419 FW). Future development of this area will continue to be focused on retaining the ability to expand aircraft parking.
- **Munitions District:** The Munitions District encompasses the areas where there is munitions and missile storage. This area includes explosive clear zones (ECZs). The total area encompassed by the ECZs totals 44% of the Hill AFB area. Due to the nature of these safety zones, ECZs impact land development and growth potential.
- **Enhanced Use Lease District:** The Enhance Use Lease District comprises the Falcon Hill Research Park. More information about this project is detailed in Section 3.5.
- **East Side District:** The East Side District is located on the eastern side of the installation and includes various facilities, including an indoor range, fire training area, fire station, and golf course. The East Side District is the least developed district on the installation. Due to its lack of development, this area represents the primary growth opportunity area on Hill AFB. Future plans for this district include new aircraft hangars and associated support facilities.
- **Industrial District:** The Industrial District includes facilities that support the 309 Maintenance Groups, 388 FW, 419 FW, and 75 Logistics Readiness Squadron. Future development within this district is projected to be in relation to OO-ALC future projects; however future development opportunity is limited within this district.
- **Community District:** The Community District includes buildings that are primarily used to support personnel who live on the installation. This includes administrative building, housing (accompanied and unaccompanied), Commissary, Base Exchange, fitness center, medical clinic, education center, and other community facilities which are located in the central area of the installation.
- **Residential District:** The Residential District comprises accompanied housing within the southwestern portion of the installation. This include a total of 350 acres of privatized housing, or approximately 1,000 housing units. This housing is available to all ranks from all branches of service.

Aircraft Operations

Aviation activities at Hill AFB are conducted by the 419th Fighter Wing and the 388th Fighter Wing. Hill AFB has approximately 40,000 operations annually, making it one of the busiest airfields in the Air Force. There are various aircraft that are permanently and temporarily assigned at the installation to support the air mission at Hill AFB. Information to the right illustrates an overview of the type of aircraft at Hill AFB.

Hill AFB is also a location for transient aircraft. Some of the common transient aircraft include the F-15 Eagle, which is a fourth generation, two-engine, all-weather fighter and the KC-135 Stratotanker designed to provide aerial refueling support. The aircraft can also support aeromedical evacuations. Table 3-1 shows the number of average flight operations by aircraft type. The daytime operations are characterized as occurring between 0800 to 2400 Monday through Friday and 0900 to 1700 Saturday and Sunday, whereas night operations are characterized as occurring between 2200 and 0700. As Table 3-1 indicates, most of the flight operations occur during the day. These flight operations are being conducted mostly with the F-35A aircraft.



F-35 Lightning II

Single-seat, single-engine, all-weather, stealth multi-role 5th generation fighter aircraft

Will provide the majority of manned tactical airpower to the Air Force, Navy, and Marine Corps in the coming decades



F-16 Fighting Falcon

4th generation single-seat, single engine, all-weather fighter aircraft

Provides air-to-air and air-to-ground roles in combat operations



A-10 Thunderbolt II

Single-seat, dual engine, attack aircraft

Provides close air support, forward air control, and combat search and rescue roles



F-22 Raptor

5th generation, single-seat, two-engine fighter aircraft

Air-to-air and air-to-ground mission support



C-130 Hercules

Four-engine turboprop military transport aircraft

Provides troop transport, gunship, airborne assault, search and rescue, scientific research support, weather reconnaissance, aerial refueling, maritime patrol, and aerial firefighting

Source: Hill AFB AICUZ, 2018.



Table 3-1 Average Annual Flight Operations at Hill AFB

Aircraft	Departures			Arrivals			Closed Patterns			Totals		
	Day	Night	Total	Day	Night	Total	Day	Night	Total	Day	Night	Total
F-35A	11,340	56	11,396	11,291	105	11,396	8,182	8	8,190	30,813	169	30,982
F-22	60	0	60	60	0	60	240	0	240	360	0	360
F-16C	200	0	200	200	0	200	800	0	800	1,200	0	1,200
A-10C	120	0	120	120	0	120	720	0	720	960	0	960
C-130	80	0	80	80	0	80	800	0	800	960	0	960
Adversary Air Aircraft	764	4	768	761	7	768	508	0	508	2,033	11	2,044
Transient	1,770	0	1,770	1,767	3	1,770	0	0	0	3,537	3	3,540
Grand Total	14,334	60	14,394	14,279	115	14,394	11,250	8	39,863	39,863	183	40,046

Source: Hill AFB AICUZ, 2018.

Airfield Flight Patterns

Flight patterns are developed using information gathered from air traffic controllers, pilots, and other sources and are based on several factors, including avoiding heavily populated areas as much as possible, US Air Force criteria for speed, rate of climb, and turning radius of the specific type of aircraft, minimizing noise impacts, and coordination with the FAA to avoid conflicts with civilian aircraft. While the identified flight patterns represent typical flight operations, they may vary depending on circumstances, such as weather, mission requirements, and other air traffic. For example, when winds are high, flight operations shift to the north instead of the south end of the runway.

According to the Hill AFB AICUZ, the following are the basic flight patterns that occur at Hill AFB:

- Takeoff
- Departure
- Straight-In Arrival
- Overhead Break Arrival
- Pattern Work
- Low Approach
- Touch and Go
- Box Pattern
- Radar Approach
- Simulated Flame-Out

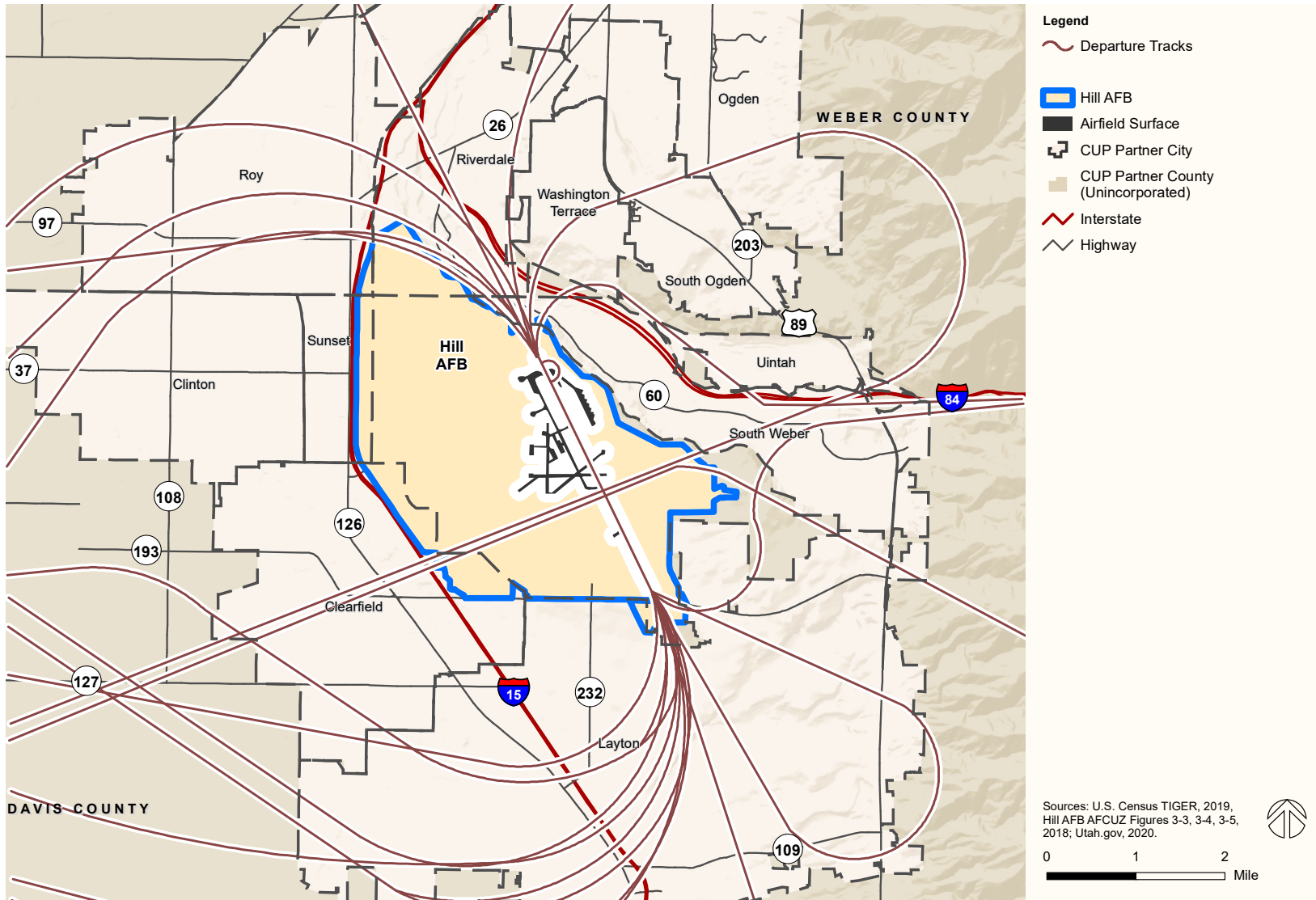
Figures 3-1-Figure 3-3 illustrate flight patterns used by Hill AFB aircraft. For aircraft operations, Runway 32 is used 4% of the time, while Runway 14 is used 96% of the time. The utilization of the runway depends on various factors including, but not limited to: the airfield environment, direction of prevailing winds, location of natural terrain features, wildlife activity, number of aircraft in the pattern, and the preference of a runway for the purpose of safety and noise abatement. Major factors influencing the flight paths at Hill AFB include the presence of Salt Lake City International Airport located to the south and the Wasatch Mountain Range to the east.

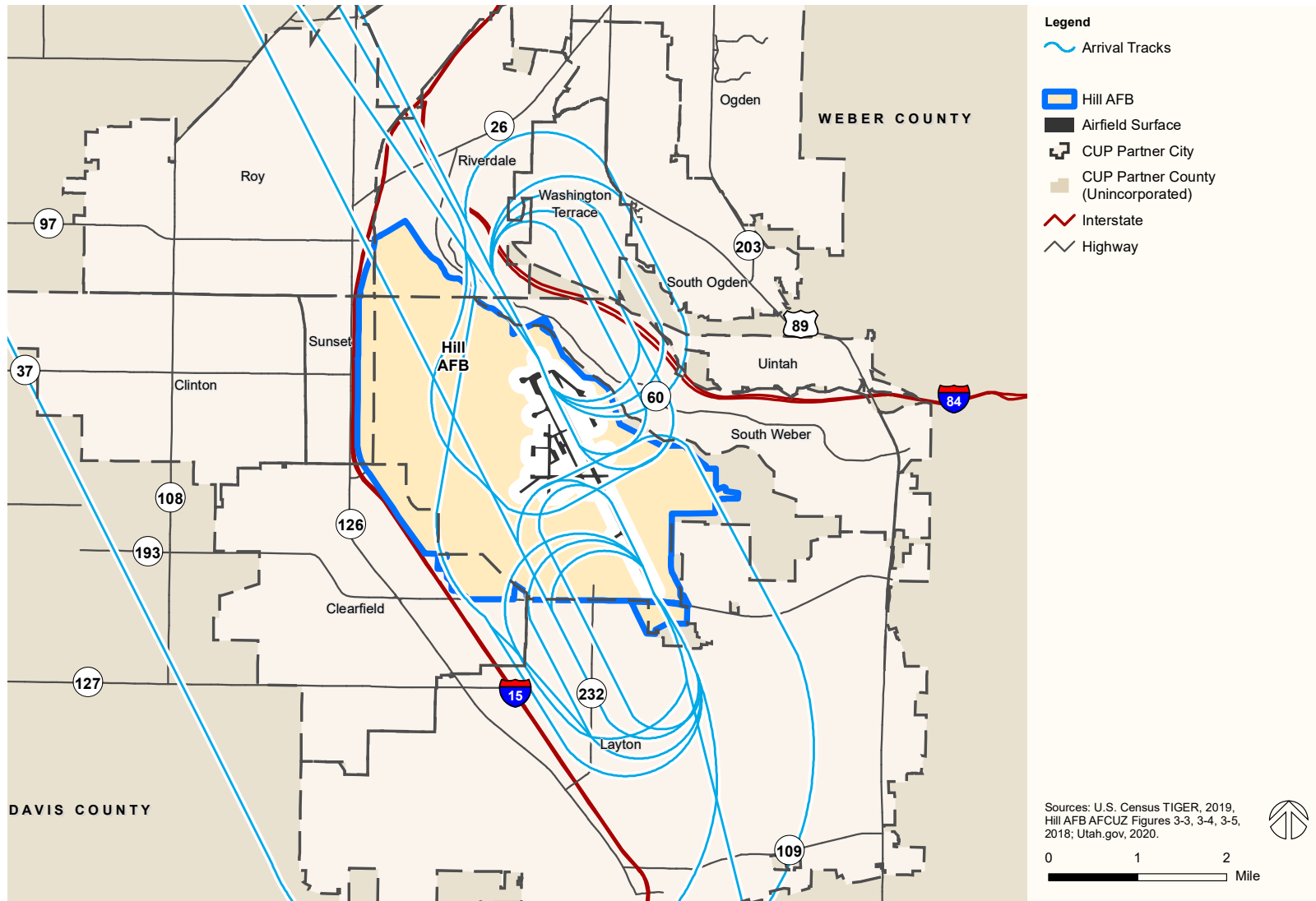
Military Training Routes

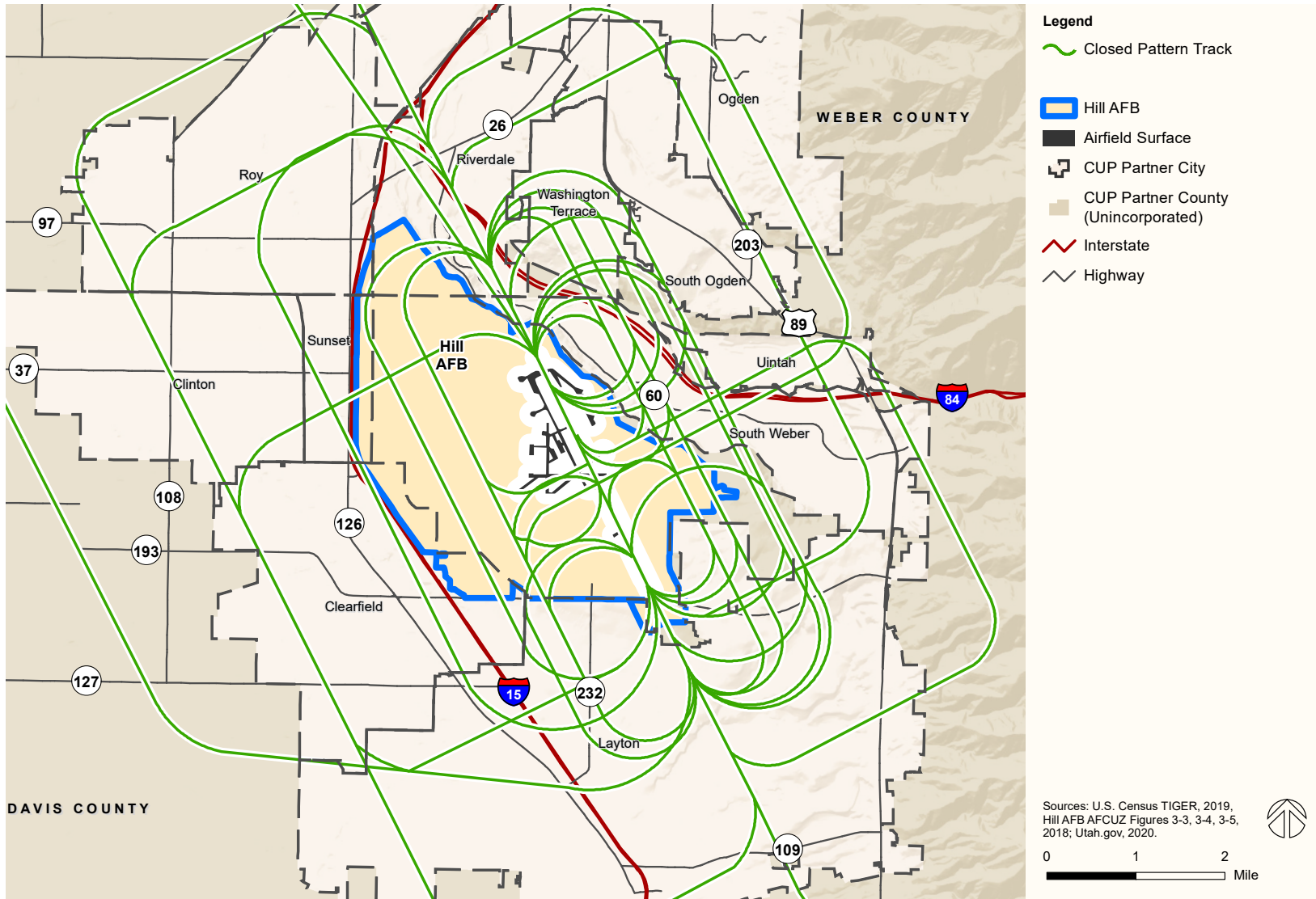
Hill AFB controls seven Military Training Routes (MTR) including four Visual Flight Rules and three Instrument Flight Rules Routes. The lowest section within the Military Training Routes is 100 feet above ground level. The MTRs are mostly located in Utah; however, there is an Instrument Flight Rules Route and Visual Flight Rules Route that extend into Nevada. Military training routes are shown on Figure 3-4.

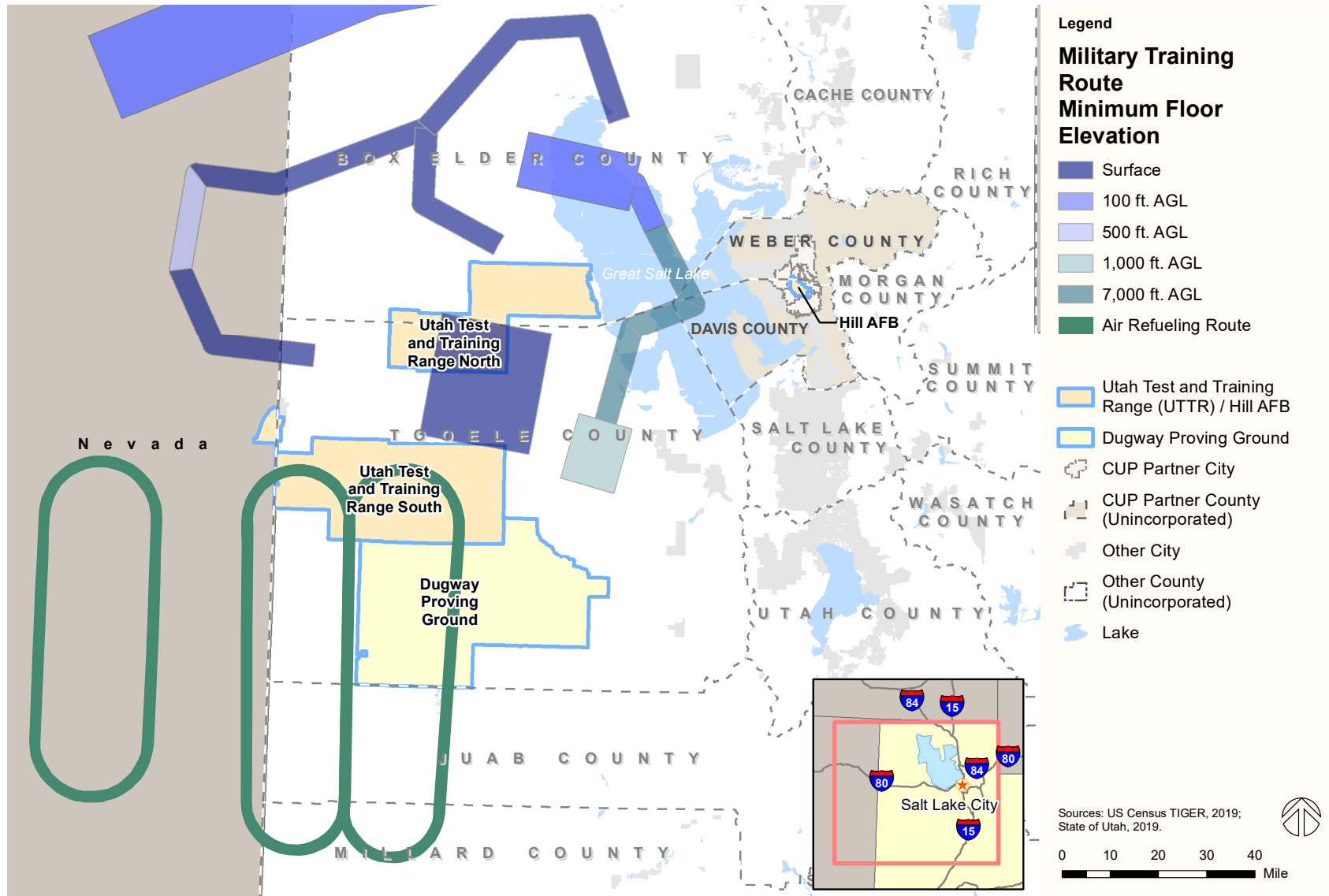
Aerial Refueling Route

Aerial refueling routes are used by 151 Air Refueling Wing (ARW). The 151 ARW trains regularly on the Hill AFB airfield and within the Hill AFB/UTTR airspace. The 151 ARW supports multiple combat wings with air refueling operations to support testing, evaluation, and training missions at Hill AFB. There are three aerial refueling routes that are utilized by the 151 ARW, which are shown on Figure 3-4.











Imaginary Surfaces

Federal Aviation Regulations, Part 77 and DoD UFC 3-260-01, Airfield and Heliport Planning and Design, specify a series of imaginary height restriction surfaces surrounding military use airfields to mitigate vertical obstructions relative to the airspace around a runway. The imaginary surfaces of an active runway are used to define the required airspace that must remain free of vertical obstructions near aviation operations to optimize safe flight operations. The various imaginary surfaces build upon one another and are designed to guide the height of structures so that there are no vertical obstructions to air navigation and operations, whether they be natural or manmade. The imaginary surfaces for Hill AFB are:

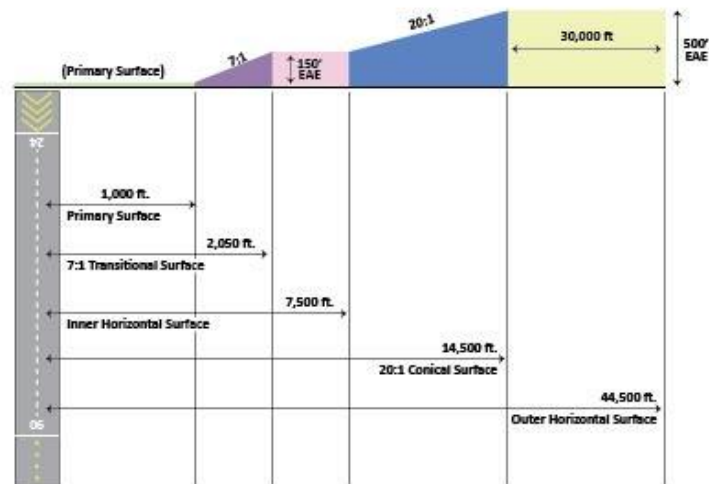
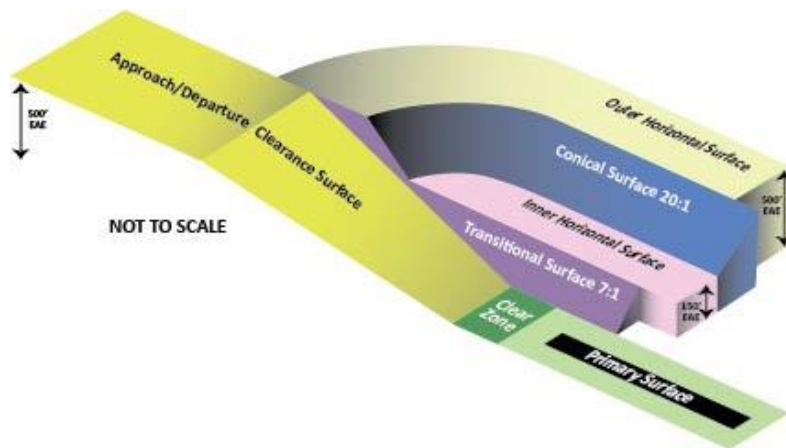
- **Primary Surface** - An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end that define the limits of the obstruction clearance requirements in the vicinity of the land area. The width of the primary surface is 2,000 feet, or 1,000 feet on each side of the runway centerline.
- **Approach-Departure Clearance Surface** - The approach-departure clearance surface is symmetrical about the runway centerline and begins as an inclined plane (glide angle) 200 feet beyond each end of the primary surface of the centerline elevation of the runway end and extends for 50,000 feet. The slope of the approach-departure clearance surface is 50:1 outward and upward along the extended runway (glide angle) centerline until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to a point 50,000 feet from the start of the glide angle. The width of this surface at the runway end is 2,000 feet; it flares uniformly, and the width at 50,000 feet is 16,000 feet.
- **Inner Horizontal Clearance Surface** - This surface is an oval-shaped plane 150 feet above the established airfield elevation. The inner boundary intersects with the approach-departure clearance surface and the transitional surface. The outer boundary is formed by

scribing an arc with a radius of 7,500 feet above the centerline at the end of the runway and interconnects with tangents.

- **Conical Surface** - This is an inclined surface extending outward 7,000 feet and upward from the outer periphery of the inner horizontal surface to a height of 500 feet above the established airfield elevation. The slope of the conical surface has a ratio of 20 horizontal feet for one vertical foot (20:1). The conical surface connects the inner and outer horizontal surfaces.
- **Outer Horizontal Surface** - This surface is a plane located 500 feet above the established airfield elevation. It extends horizontally for 30,000 feet from the outer periphery of the conical surface.
- **Transitional Surfaces** - This surface extends outward and upward at right angles to the runway centerline and extended runway centerline at a slope of 7:1. The transitional surface connects the primary and the approach-departure clearance surfaces to the inner horizontal, the conical, and the outer horizontal surfaces.

Figure 3-5 illustrates a three-dimensional cross-section of the imaginary surfaces for runways and shows the slope of the surfaces that help guide military/community planners in land use planning around an airfield. Structures should not exceed these heights to protect the navigable airspace associated with the airfield, the safety of pilots and people, and the land uses on the ground. This is especially important in the clear zone and the approach-departure surfaces. The imaginary surfaces for the Hill AFB runways are shown on Figure 3-6.

Figure 3-5 Imaginary Surfaces Cross Section



Source: DoD Unified Facilities Criteria 3-260-01 Airfield and Heliport Planning and Design

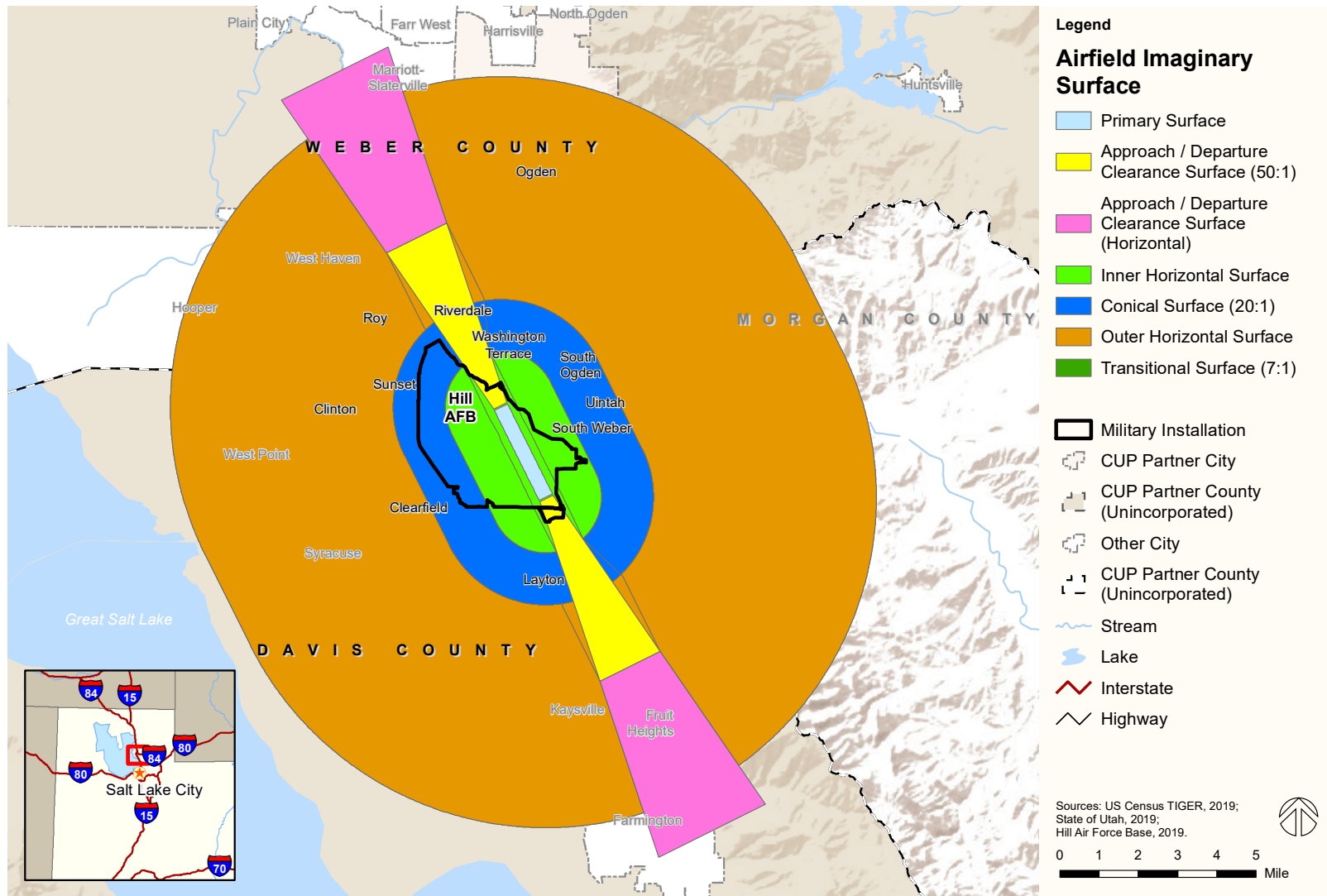


Figure 3-6
Hill AFB Airfield Imaginary Surfaces

FAA Part 77 Vertical Obstruction Compliance

Federal Aviation Regulation Title 14, Part 77 provides the basis for the evaluation of vertical obstruction compatibility. This regulation provides information to assess the potential for a vertical obstruction based on the elevation of the airfield, the height and resulting elevation of the proposed structure or facility, and the location of the structure or facility relative to the airfield in question. For reference, the field elevation (the highest point) of the Hill AFB runway is 4,789 feet.

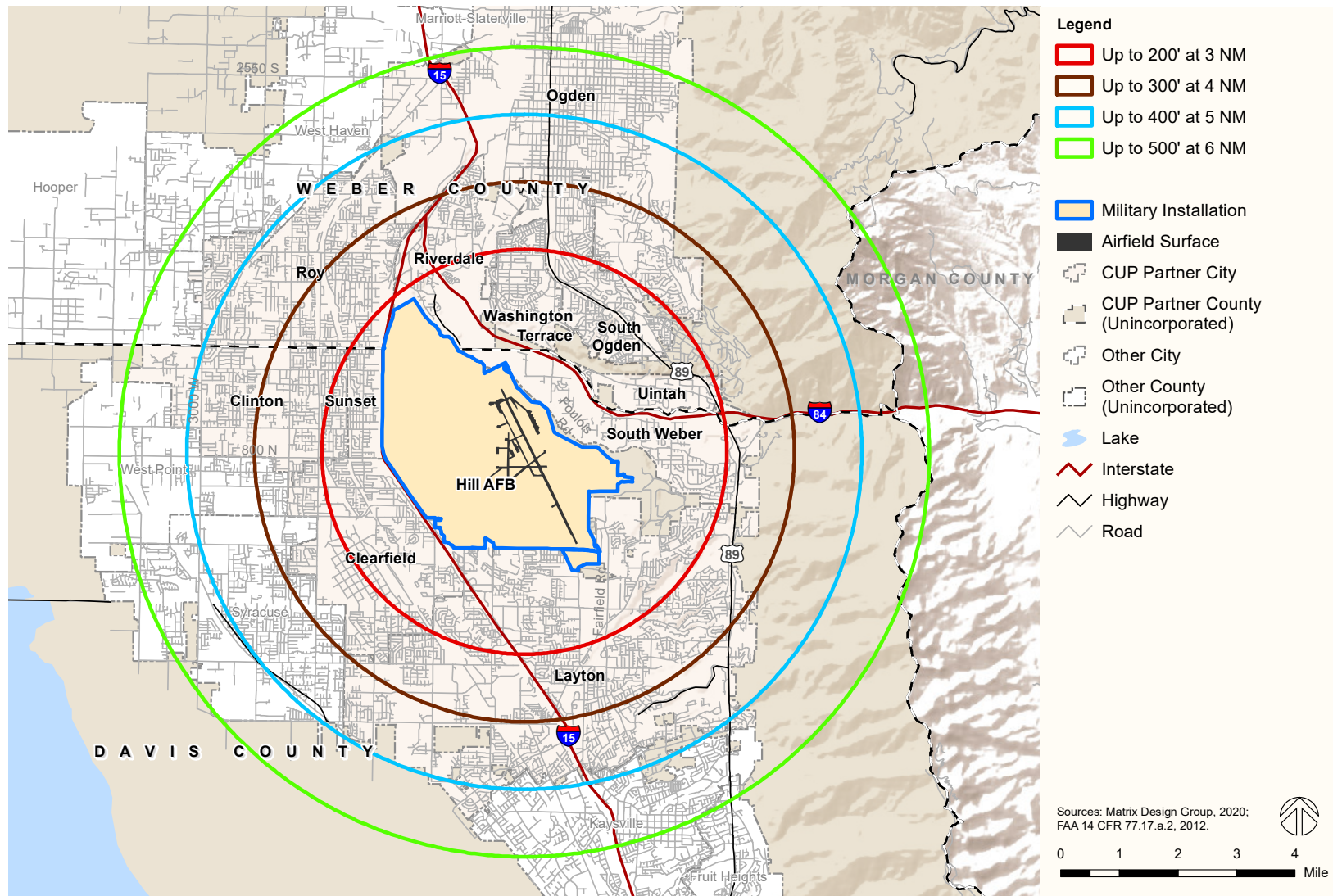
This regulation determines compatibility based on the height of proposed structures or natural features, relative to their distance from the ends of a runway. Using a distance formula for this regulation, local jurisdictions can assess the height restrictions near airfields. The regulation defines an obstruction to air navigation as an object that is of greater height than any of the following heights or surfaces in the following manner:

- A height of 499 feet above ground level (AGL) at the site of the object.
- A height that is 200 feet AGL or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
- A height within an en-route obstacle clearance area, including turn and termination areas of a federal airway or approved off-airway route that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, Department of Defense (DoD): 77.21, and heliports: 77.2; however, no part of the takeoff or landing area itself will be considered an obstruction.
- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
 - 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.
 - 15 feet for any other public roadway.
 - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
 - 23 feet for a railroad.



Projects which trigger Part 77 review are required to undergo an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), in which the FAA reviews a proposal and identifies potential hazards to aviation. Where FAA identifies concerns, it may require avoidance or minimization, lighting, or other measures to ensure airspace safety for military and civilian purposes. If potential impacts to military operations are identified, the project must also undergo formal or informal review by the US Department of Defense Siting Clearinghouse, to evaluate the compatibility of the proposed project with military missions.

Figure 3-7 provides an illustration of this measure of vertical obstruction around Hill AFB. Note that this is in addition to, not a replacement of, the imaginary surface discussed previously.





Airfield/Runway Safety Zones

Hill AFB safety zones are associated with its runway to limit and guide development and protect the safety of the public and aircrews while simultaneously allowing for continued economic growth. The DoD has created safety zones around runways and landing areas based on historical data where an aircraft accident is most likely to occur. These safety zones are clear zones (CZ), accident potential zone I (APZ I), and accident potential zone II (APZ II) and are based on the dimensions of the runway. The safety zones for Hill AFB are illustrated on Figure 3-8. As the map shows, the Hill AFB safety zones stretch over Layton City, Riverdale City, South Weber City, and unincorporated areas of Weber County and Davis County.

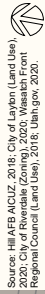
Within these zones, there are restrictions on types, densities, and heights of land uses. For safety reasons, CZs should be entirely clear of any obstructions, whether they are man-made or natural, unless they are necessary for aircraft landing. It is generally the DoD's policy to either acquire the land or a long-term lease or easement, when possible, to prevent any development or growth within these zones. The guidelines for development within APZ I are less stringent than in the CZ, but development should be limited, and residences are generally not recommended. The dimensions of the CZs and APZs for the runways are per the requirements of UFC 3-260-1 for Airfield and Heliport Planning and Design and are described as follows:

- **The CZ** is the area where is most likely for an aircraft mishap is most likely to occur. The CZs for runways measure 3,000 feet long from the end of the runway, with a width of 3,000 feet. Permitted land uses within this zone are substantially limited and include transportation, communication, and utilities infrastructure necessary for airfield operations, as well as unoccupied open space and limited agricultural.

- **APZ I** is located adjacent to the CZ boundary and for the runway extends for a length of 5,000 additional feet with a width of 3,000 feet. This area typically experiences fewer accidents than the clear zone and has less restrictions. Permitted land uses within this zone are limited to non-occupied structures, thus residential land uses are prohibited.
- **APZ II** begins at the outer boundary of APZ I and for the runway extends for a length of 7,000 feet with a width of 3,000 feet. The APZ II is where development is the least restricted due to the lower risk of accidents as it is further from the runway. Warehouse and maintenance facilities are permitted within the footprint, as well as single family residential properties up to two dwelling units per acre maximum, as recommended by DoD guidelines for APZ II.

While the above descriptions of the safety zones are standards, they have been modified at Hill AFB to reflect local operations and land use considerations. The north end of the runway has a CZ, APZ I, and APZ II and the south end of the runway has a CZ and APZ I.

The northern APZ I is 5,000 feet long by 3,000 feet wide and the northern APZ II is 3,000 feet by 3,000 feet. The south APZ I is curved to account for 80% of the operations which follow a curved departure to the west. There is no southern APZ II as departing traffic from Runway 14 initiate a turn prior to the southern boundary of APZ II to avoid entering the airspace for Salt Lake City International Airport.



Matrix



Aircraft Noise

Aircraft noise is produced from flight operations, such as overflight, take-offs, landings, and engine maintenance run-ups, which are a procedure performed on the airfield to test for proper engine performance. The Air Force considers how its operations impact the local community by calculating an average-weighted noise level measured as a day-night average sound level (DNL). Whether or not the noise from flight operations is considered to be a nuisance depends on the land uses that are receiving the noise. Noise associated with aircraft is usually considered a nuisance where land uses are incompatible with the aircraft activity.

In 2018 Hill AFB prepared an Air Installations Compatible Use Zones (AICUZ) study as an update to its study in 1993. The Hill AFB AICUZ uses the DoD NOISEMAP program to produce noise contours indicating noise exposure levels from aircraft operations. The noise contours are based on an average of all types of aircraft at Hill AFB with consideration for the beddown of the F-35A Lightning II. The contour lines developed in the model range from 65 decibel (dB) DNL to 80+ dB DNL and increase in increments of five dB. The 80+ dB DNL is the loudest contour line computed and the 65 dB DNL is the quietest. The DNL measure has been determined to be a reliable measure of community sensitivity to aircraft noise and has become a standard metric used to map aircraft noise impacts.

The 2018 AICUZ noise contours are illustrated on Figure 3-9. As the map shows, the noise contours stretch over developed areas of Layton City, South Weber City, Riverdale City, Washington Terrace City, South Ogden City, and unincorporated areas of Weber County and Davis County. Due to the terrain and topography of the area, there are two sets of noise contours for Hill AFB – one set is directly over the Hill AFB runway and the other is over an area geographically separated from the base to the northeast. These noise contours are over some noise sensitive uses, such as housing within the 70 dB DNL contours. Noteworthy is that such are annual averages, and noise exposure at any given time will vary based on several factors including weather, such as wind patterns and temperature, and the type of aircraft. For example, low cloud cover can trap and amplify sounds from aircraft operations.

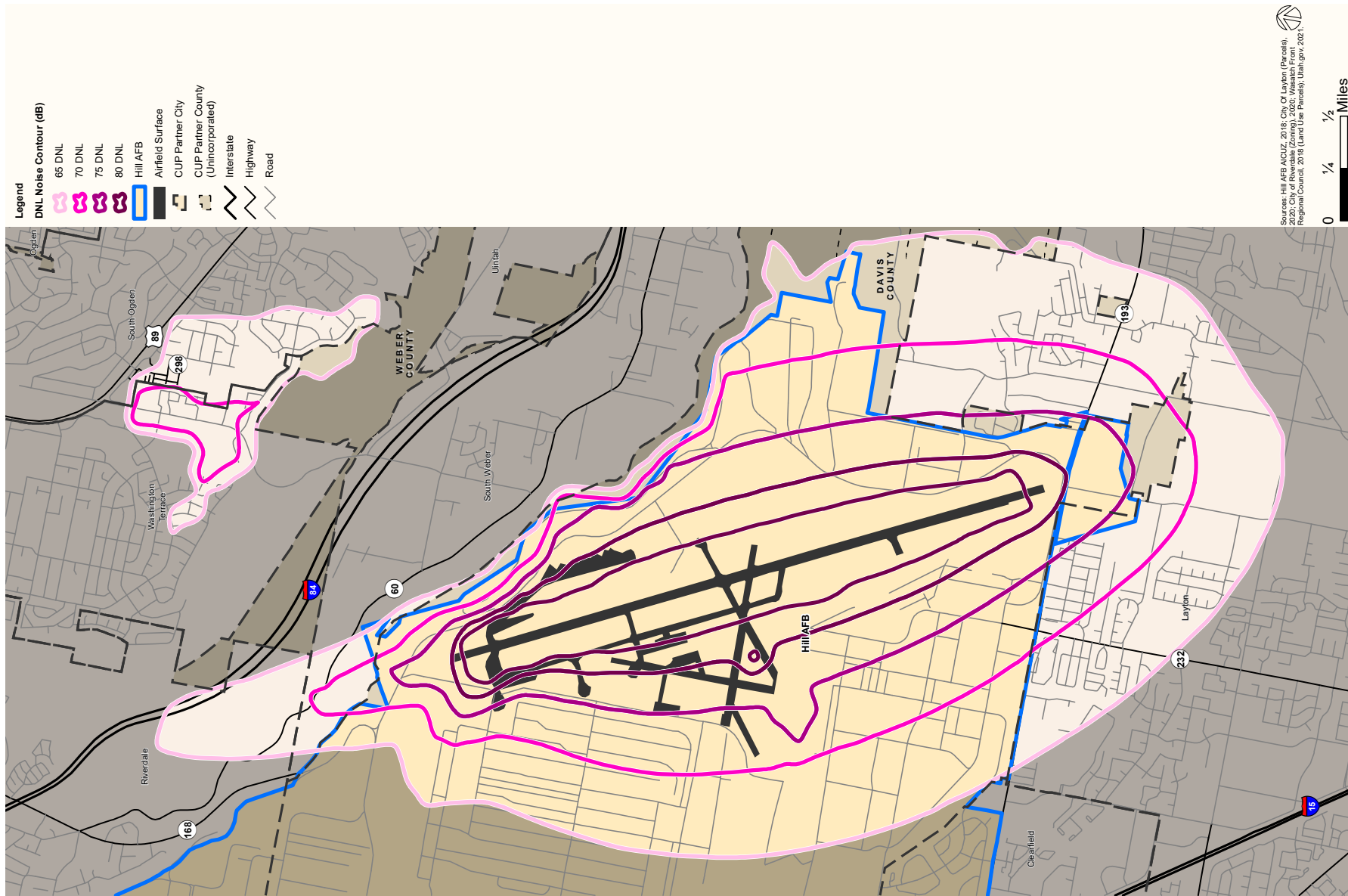


Figure 3-9
Hill AFB Noise Contours



Bird/Wildlife Aircraft Strike Hazard Relevancy Area

Birds and animals can present a significant hazard to military flight operations. While fatal accidents resulting from bird or wildlife strikes have been limited, impacts can be a safety concern and cause significant damage to aircraft. According to the DoD Partners in-flight Program, strikes involving military aircraft cause approximately \$75 million in DoD damages annually.

Figure 3-10 shows the FAA 5-mile BASH relevancy area around Hill AFB. The BASH Relevancy Area is where the FAA makes recommendations regarding land use and control measures to reduce the risk of BASH incidents. The Air Force recommends that bird-attracting land uses not be located near installations with an active air operations mission. This includes golf courses, landfills, transfer stations, storm water ponds, amongst other land uses.

Airports, due to the nature of their operations, typically have large, open, grassy areas where various wildlife congregate. The airfield at Hill AFB totals 1,700 acres, comprising of various species of grass and weeds, attracting insects and foraging birds. Additionally, some land uses, like golf courses, are often situated near airports because they can easily meet the height and density restrictions imposed by aircraft activity. According to the Avian Hazard Advisory System, there are at least five golf courses neighboring Hill AFB, one of which is owned by the Air Force. Unfortunately, golf courses have large, open, grassy areas and oftentimes also feature water – another wildlife attractant. Hill AFB also has surrounding vegetation and trees, creating roosting areas for various birds. Given the ramifications that can occur as a result of a bird and/or wildlife strike, the FAA set forth recommendations for managing these types and other types of bird and wildlife attractants near airports.

The primary recommendation made by the FAA is to create and manage a minimum horizontal separation distance between an airfield and wildlife attractants. The minimum separation distance extends five miles out from the entire perimeter of the airfield operations areas based on the statistical probability of bird and wildlife strikes occurring. These areas include paved and unpaved areas associated with aircraft movement including runways, taxiway, and aprons. This area was determined to be significant by the FAA as aircraft are more likely to strike birds and wildlife due to descending altitudes and decreasing aircraft speed. This area cannot be physically seen similar to the previously mentioned imaginary surfaces. In contrast to the imaginary surfaces, the area measuring five miles out from the air operations area does not include a height aspect since it deals with the management of terrestrial features like land use and water features.

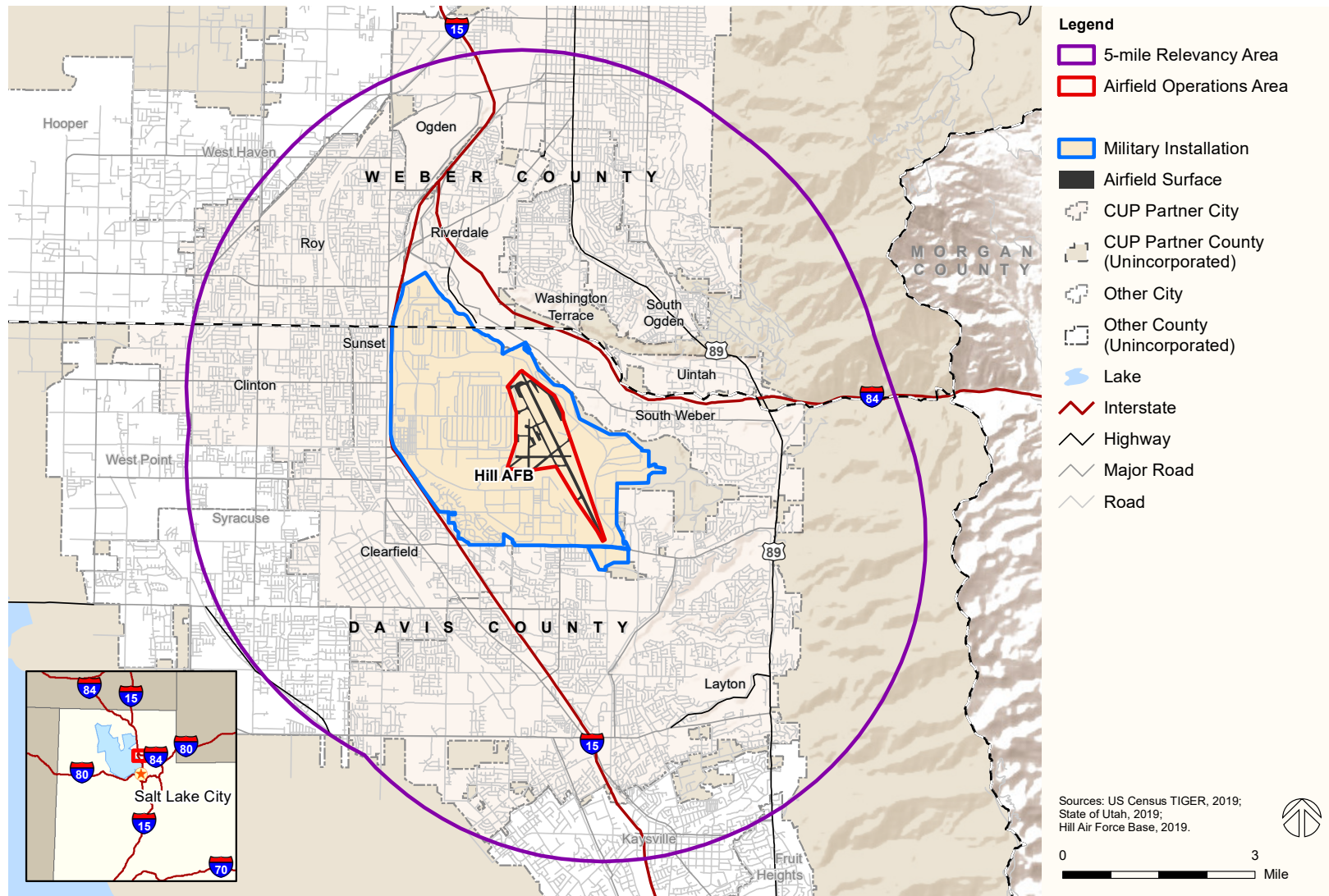


Figure 3-10
Hill AFB Bird Air Strike Hazard Area (BASH)



3.2 Little Mountain Test Facility

Technical Background Information

Installation Setting



The Little Mountain Test Facility is also a component of Hill AFB and is located 15 miles away from Hill AFB in Weber County. The facility is located on 700-acres on land that is primarily rangeland, surrounding Weber County that is mostly rural and undeveloped. The test facility is located along the Great Salt Lake, north of the

Ogden Bay Waterfowl Management Area. The Test Facility is government-owned however, managed by private contractual agreement.

The Little Mountain Test Facility is an Air Force Material Command laboratory. The facility is managed by the ICBM Systems Directorate at Hill AFB and operated in conjunction with a defense contractor. This facility is used for simulation testing of nuclear hardness, survivability, reliability, and electromagnetic compatibility of defense systems with test labs capable of simulating environments for nuclear radiation, air blast, shock and vibration, electromagnetic pulse, electromagnetic interference, and compatibility testing. The facility employs approximately 70 civilians.

3.3 Utah Test and Training Range

Technical Background Information

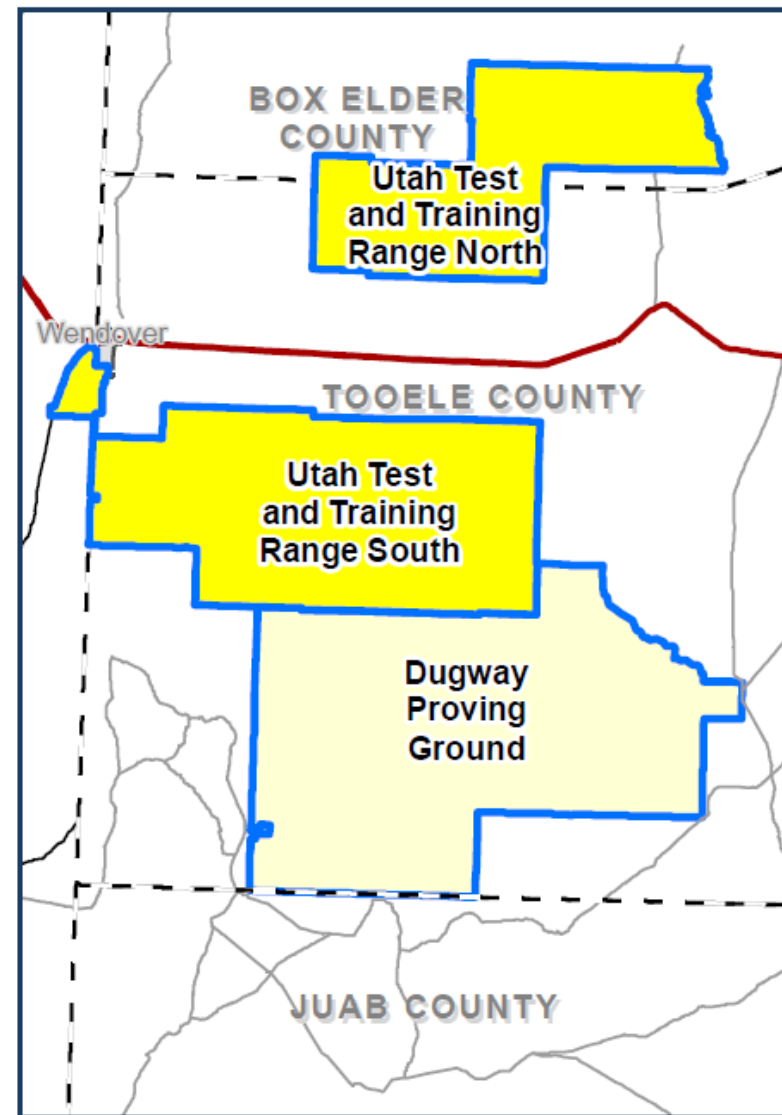
Installation Setting

The UTTR is under the Air Combat Command, a command of the Air Force. The UTTR provides training capabilities for combat air forces and test and evaluation of new and existing DoD weapons. The UTTR is operated by military personnel, civilians, and technical services support personnel assigned to the Headquarters (HQ) Utah Test and Training Range (UTTR). The mission is: "Providing war fighters with a realistic training environment and provide test and evaluation of overland, large footprint weapons to enhance combat readiness, superiority, and sustainability."

The UTTR is located 100 miles west of Hill AFB in the West Desert of Utah and eastern Nevada. The UTTR comprises 19,000 square nautical miles of airspace. The UTTR is split into a UTTR North and UTTR south which is separated by Interstate 80 (I-80). The UTTR is comprised of various major target and operational areas.

Due to its vast training area, the UTTR can accommodate a variety of testing capabilities from the Air Force, Army, Navy, Marine units, and militaries worldwide. The UTTR can also be utilized by other U.S. government agencies, state and local governments, and commercial entities.

The UTTR averages 16,000 aircraft annually for training and 300 sorties annually for testing. In Fiscal Year 2019, there were 85 operational tests conducted at the UTTR by 26 different customers. These tests were made up of 446 sorties and over 420 weapons. In addition to in Fiscal Year 2019, such tests contributed to over 9,300 total training sorties.





Land Use

In Utah, the UTTR comprises over 2,624 total square nautical miles (or 3,475 square miles) of land, split between Box Elder County and Tooele County. The area surrounding the UTTR is mostly rural – the Great Salt Lake is located to the east with mostly undeveloped areas on all other sides. As noted in Chapter 2, the nearest population center is the Tooele Valley, which is southeast of the UTTR.

The UTTR includes a northern portion and southern portion. The northern portion serves as the largest ICBM destruction plant in the U.S. This area is critical for military readiness as it is the only facility in the U.S. to allow detonations over a certain yield. ICBMs are transportation to UTTR via trucks, making the roadway system an important component of the UTTR. To ensure limited impacts to the surrounding area, weapons are stored and inspected at the UTTR prior to detonation and are detonated under favorable wind and atmospheric conditions which direct shockwave away from the Wasatch Front.

The northern and southern portions of the UTTR are both used for flight training. Hill AFB uses the UTTR daily. The UTTR has training capacity for air-to-air combat, air-to-ground inert, and live practice bombing and gunnery training. Additionally, the UTTR is the only location capable of supporting overland testing of cruise missiles. The UTTR has the largest contiguous block of overland supersonic-authorized restricted airspace in the contiguous U.S. In total, the UTTR airspace of 19,000 square miles. Other characteristics of the UTTR, which make it an asset for DoD training and testing, including its extensive shoot box, large safety footprint area, varying terrain, and remote terrain. The UTTR also includes a full spectrum range and two emergency airfields. Other critical facilities include radar and communication sites.

UTTR Growth

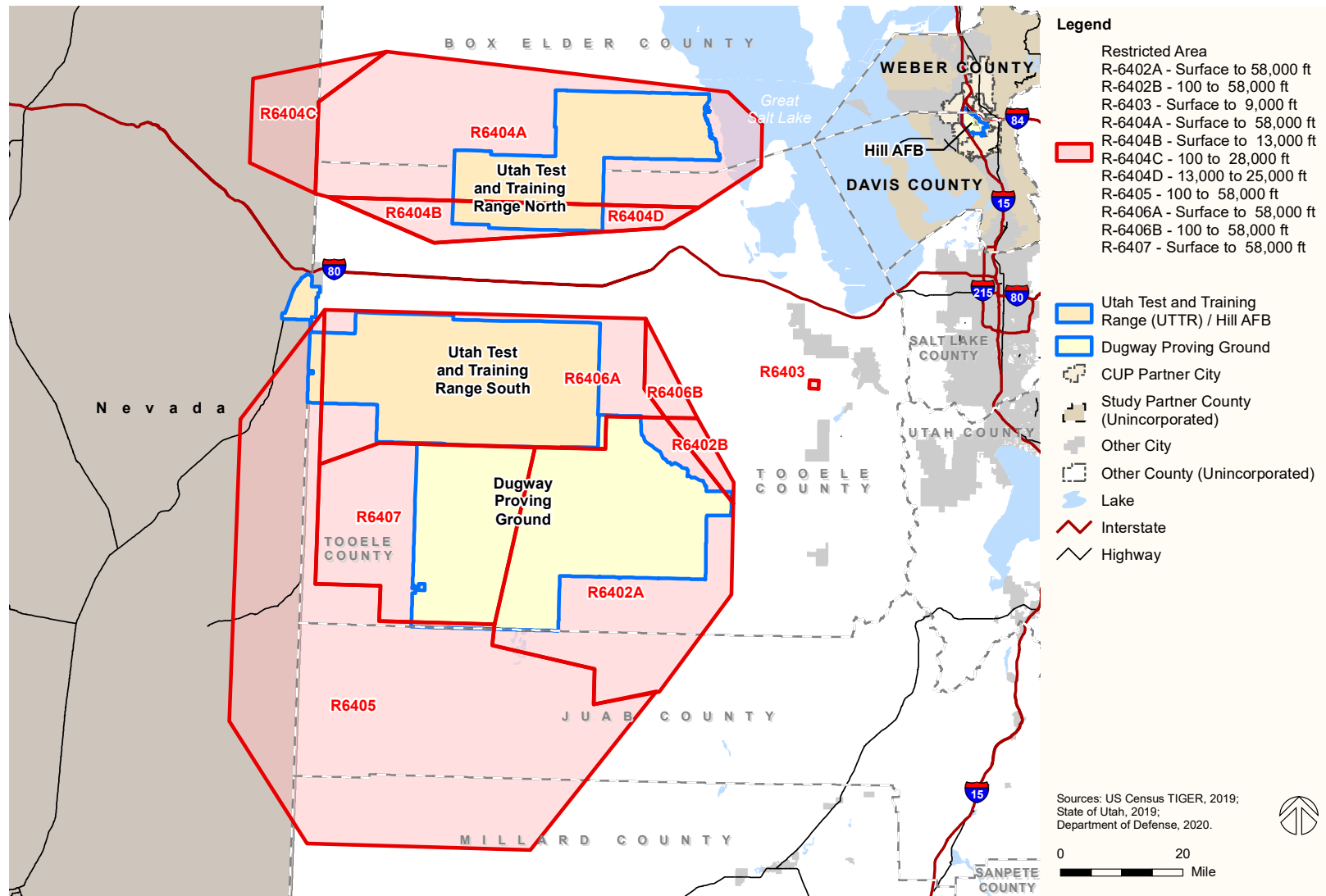
Future plans for the UTTR include additional test and training customers between 2020 and 2022. To support existing and future customers, there are plans to expand the airspace over the UTTR.

Airspace

The UTTR airspace is owned by Hill AFB and used by the UTTR. The UTTR airspace comprises 19,000 square nautical miles and spans Utah and Nevada. Of this special use airspace, 6,000 are restricted airspace while the remaining is split between Military Operations Area and Air Traffic Control Assigned Airspace. The restricted airspace is shown on Figure 3-11. There are nine MOAs, which are shown on Figure 3-12.

This airspace spans over 2,624 square nautical miles of DoD land between the Air Force and the Army (Dugway Proving Ground). 1,490 square nautical miles of this land is owned by the Air Force and 1,130 square nautical miles is owned by the Army.

The airspace over UTTR and includes the airspace over Dugway Proving Ground. The block of airspace allows for training from low level flight to supersonic testing and training. Airspace restrictions require deconflictions with civilian traffic. The restricted airspace over the UTTR extends from the land surface to 58,000 feet above ground level. The UTTR also has three sections of Air Traffic Control Assigned Airspace (ATCAA) which can be activated for a specified length of time when necessary. The ATCAA includes an "extreme altitude". The UTTR ATCAA is shown on Figure 3-13.



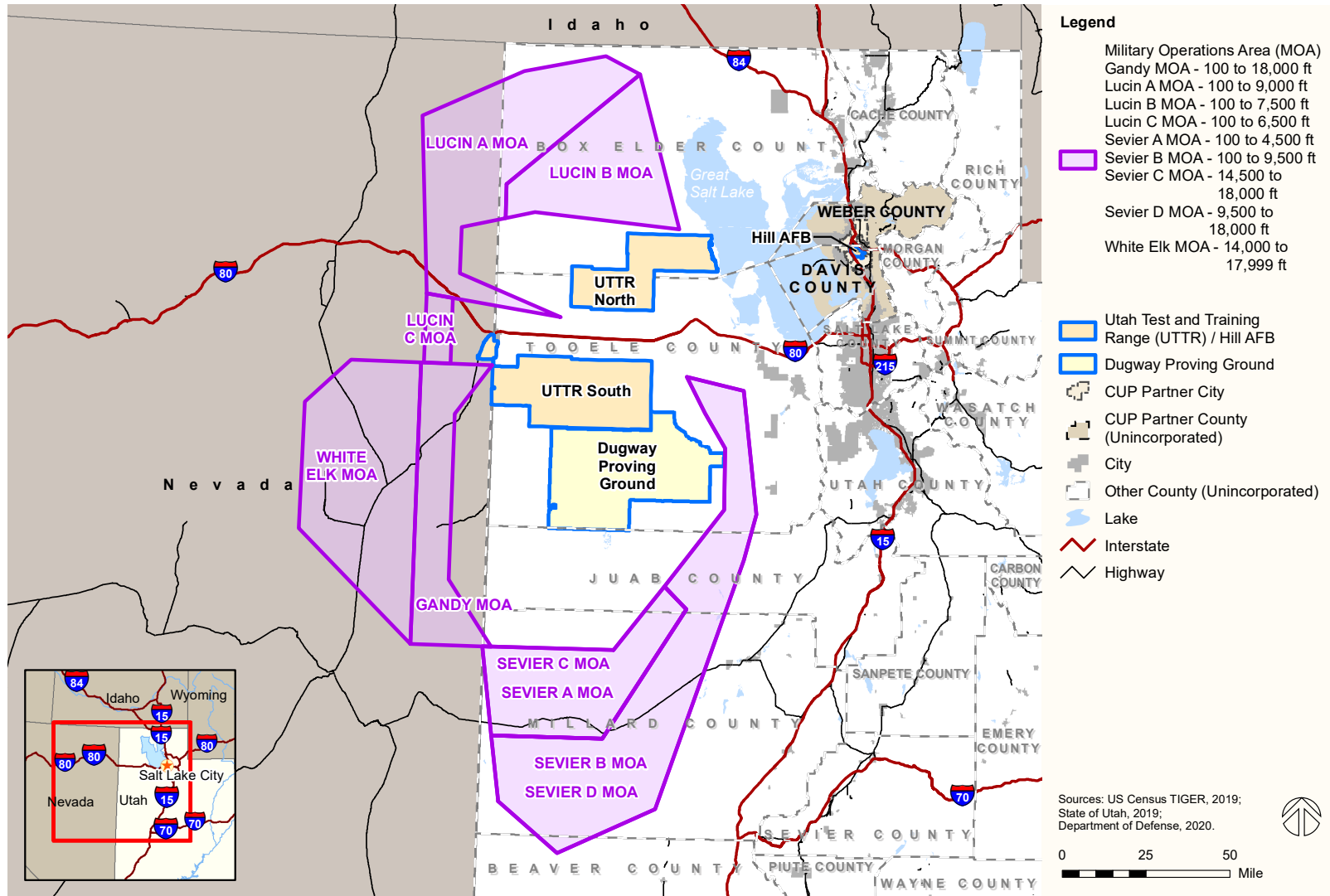
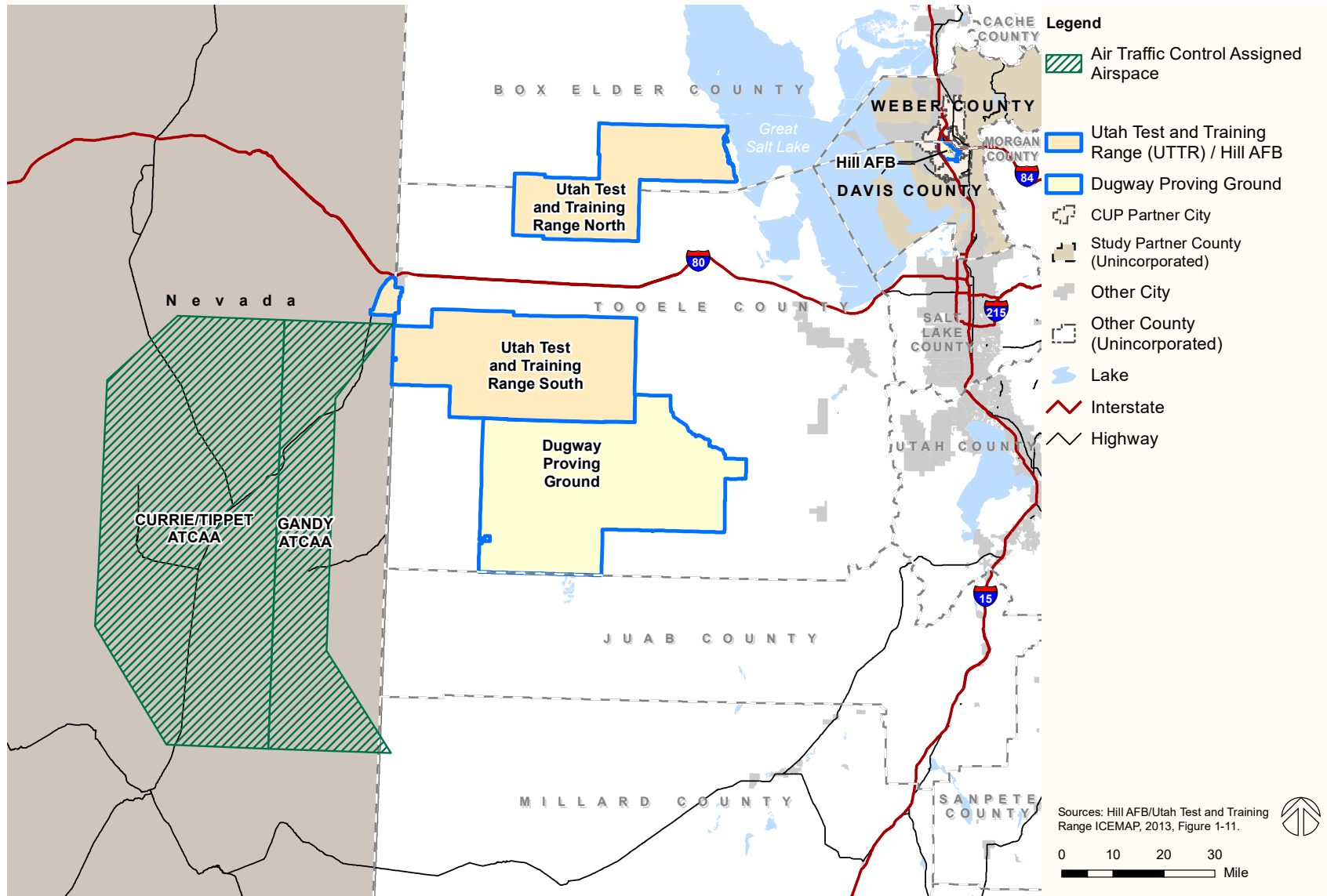


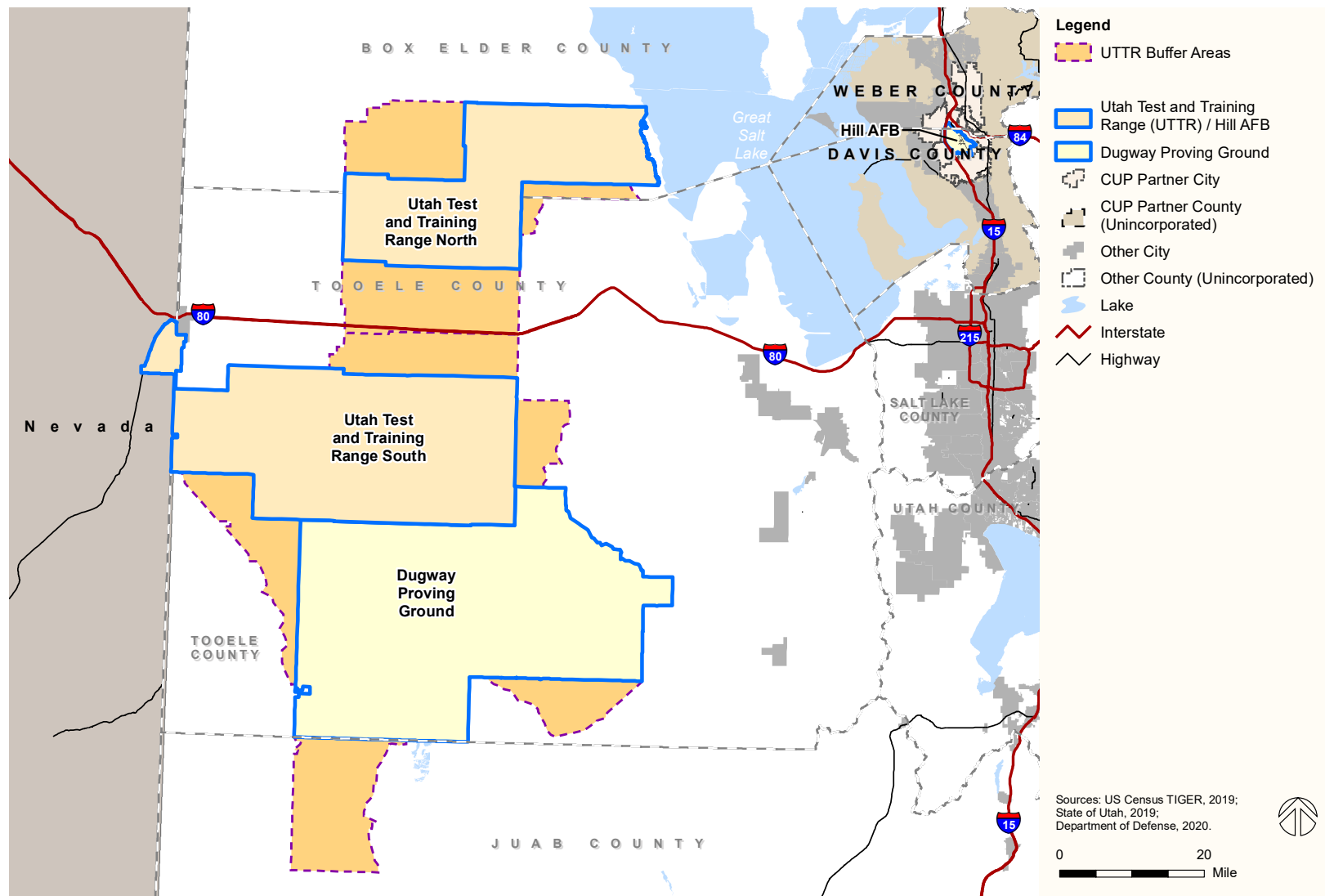
Figure 3-12
Utah Test and Training Military Operations Areas





UTTR Buffer Zones

There are eight buffer zones surrounding the UTTR, which were authorized by the 2017 National Defense Authorization Act. The buffer zones allow the UTTR to close public lands for up to 100 hours per year, except for on weekends and federal holidays. Per the Act, the UTTR must provide 30-90-day notice. The Act also created a community Resource Advisory Group which the UTTR coordinates closures with. Closures are done when there are training operations that have the potential to have debris go off range. Also mitigates encroachments that occur on these lands. Anything that BLM does on these lands needs to be coordinated with the UTTR. Buffers are shown on Figure 3-14.





3.4 Dugway Proving Ground

Dugway Proving Ground is part of the UTTR complex, but is a U.S. Army facility. Dugway Proving Ground is managed by the U.S. Army's Test and Evaluation Command and therefore, does not fall within the Hill AFB complex. The Proving Ground is a Major Range and Test Facility Base for chemical, biological, radiological, nuclear, and high-yield explosives, comprising approximately 798,000 acres in Tooele County.

The Dugway Proving Ground is also a part of the UTTR; however, it is a U.S. army facility, managed by the U.S. Army's Test and Evaluation Command, and therefore, is not included as part of the Hill AFB installation complex. While not managed by the Air Force, the Air Force uses Dugway Proving Ground to support operations.

3.5 Military Installation Development Authority

The Military Installation Development Authority (MIDA) is State Authority, created by Utah legislature in 2007 to facilitate the development of Military land in Utah. MIDA is governed by a seven-member board, five of which were appointed by the Governor of Utah, one of which was appointed by the State Speaker of the House, and one appointed by the State President of the Senate. The goals and objectives of MIDA are as follows:

- Promote the development of military land;
- Bring new jobs and tax base to Utah;
- Assist military so that existing missions are more secure; and
- Help create environment for new missions to come to Utah.

MIDA is involved in many projects throughout Utah, including Runway at Eastgate, which was discussed in Chapter 2 Community Profiles, and the Falcon Hill Enhanced Use Lease Project, which is further described in the following section.

Falcon Hill Enhance Use Lease

Falcon Hill is a public-private partnership for commercial development focused on attracting commercial and office projects both inside and outside the Hill AFB fenceline, which directly support the mission of the Base. The agreement for the EUL project was signed in 2008 with a 50-year lease through the Hill AFB Enhances Use Lease Program. Per the agreement, construction at Falcon Hill is based on market demand. The infrastructure and facilities that are built through this development are done so at no cost to the Air Force.

Falcon Hill is projected to be the largest enhanced use lease project in DoD history. The project is a total of 550 acres, extending on the eastern side of I-15 from approximately south of the Hill AFB West Gate to the Hill Aerospace Museum. Development is also projected on the west side of I-15 at the 1800 N interchange I-15 realignment. In total, there will be capacity for eight million square feet of commercial space. Commercial uses include commercial business buildings, retail, hospitality, and restaurant. The master plan also includes some open space in the form of parks and a detention pond. Per the EUL Master Plan, development is phased into four different timeframes for completion.

Falcon Hill is a partnership through the EUL Program Office at Hill in partnership with Sunset Ridge Development Partners and the Military Installation Development Authority. For this project, the Air Force is charged with project management, design and construction oversight, and utilities and services for properties within the fenceline. Sunset Ridge Development Partners is responsible for construction and project and property management. For Falcon Hill, MIDA is responsible for providing typical government services outside of the Hill AFB fenceline. This includes providing regulations, land use permits, and utilities. MIDA is also the payment in-kind trustee for the Air Force.



3.6 Salt Lake City International Airport

Although not located in the Project Study Area, the Salt Lake City International Airport is the largest airport in the region and is located 20 miles south of Hill AFB. The airport provides international commercial aviation services and is the 23rd busiest airport in North America with more than 370 flight departing daily. Salt Lake City International Airport is operated by the Salt Lake City Department of airports, which also operates the Tooele Valley Airport.

The airport has significance to Hill AFB as it controls airspace a few miles south of Hill AFB. Due to this, aircraft departing Hill AFB, turn westward soon after leaving the runway. This prevents Hill AFB aircraft from entering the Salt Lake City International Airport airspace, which could disrupt aircraft operations at the airport. This makes it important to understand and plan for any potential changes to Salt Lake City International Airport airspace as this could influence operational procedures at Hill AFB.

The Salt Lake City International Airport is in the process of updating its Airport Master Plan. This Plan will be an update to the 1998 Airport Master Plan. The purpose of the Plan is to assess whether airport facilities are accommodating existing and future needs. The Plan includes alternative development options and culminates into an implementation plan to achieve the objectives of the Plan through funding, identifying stakeholder needs, FAA safety and design standards, operational efficiencies, and impacts to level of service.

The airspace over Salt Lake International airport is Class B. Per the Master Plan, Hill AFB and three public airports are also located under Class B airspace. Under this airspace, any traffic coming into the Class B airspace over the Salt Lake International Airport must obtain clearance with the airport's Air Traffic Control, establish and maintain radio communication with the Air traffic Control at the airport, and have operational, all navigational equipment required of Class B and the authorized published flight procedures to be flown.

4 Compatibility Tools

Inside Chapter 4...

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There are existing tools that can be used to encourage, promote, and manage compatibility/recommended land use between military installations and their neighboring communities. This chapter provides an overview of compatibility tools currently used or applied in evaluating and addressing compatibility issues in the Hill Air Force Base (AFB) Compatible Use Plan (CUP) area. Relative to compatibility there are several existing plans and programs which are either designed to address compatibility/recommended land use directly or which indirectly address compatibility issues through the topics they cover. This summary provides an overview of key plans and programs that impact compatibility/recommended land use planning organized by level of government. This review is meant to provide an overview of applicable planning tools and determine how each may apply to compatibility issues identified by the Hill AFB compatible Use Plan process, as presented under the compatibility factors discussed in Chapter 5, Compatibility Assessment.



4.1 Federal Laws and Regulations

Federal policy, laws, and programs have evolved to impact almost every aspect of land use. This is particularly true in metropolitan areas that host major military facilities such as Hill AFB. A broad range of federal plans, programs, and actions impact Hill AFB both directly and indirectly. Federal programs and policies are carried out by the various arms of the federal government, although in some cases these tools also authorize state, county, regional or local governmental agencies to implement related policies, programs, and regulations. The following federal programs and policies were evaluated to assist in determining where areas of improvement could enable better compatibility/recommended land use planning at the local level.

The following does not attempt to provide an exhaustive accounting of every relevant Federal law or program, but simply attempts to capture those considered to be most relevant to the assessment of compatibility issues and to the potential strategies stakeholders might employ to avoid or mitigate conflicts. The federal plans and programs that are included in this section are:

- Air Force Instruction 90-2001
- Air Installation Compatible Use Zone Study Program
- Clean Air Act
- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Department of Defense (DoD) Conservation Partnering Initiative
- DoD Energy Siting Clearinghouse
- DoD Operational Noise Manual
- Department of Housing and Urban Development Noise Regulation
- Endangered Species Act
- Federal Land Policy and Management Act of 1976
- Federal Aviation Act
- National Environmental Policy Act
- National Pollutant Discharge Elimination System
- Noise Control Act of 1972
- Partners in Flight Program
- Proposed Protection of Military Airfields from Wind Turbine Encroachment Acts
- Safe Drinking Water Act
- The Sikes Act
- Telecommunications Act of 1996 and the Federal Communications Commission
- US Avian Hazard Advisory System

Air Force Instruction 90-2001

Air Force Instruction 90-2001 was published in September 2014 to implement the Encroachment Management Program. The Instruction applies to all Air Force installations to address encroachment issues and prevent or reduce the impacts of encroachment. The Instruction includes an Encroachment Management Framework, which has four elements (Organize, Assess, Act, and Monitor) to address the variety of challenges. Organization requires leadership involvement, a cross-functional management structure, an issue evaluation structure, a designated Executive Director at the installation level, and a geographic scope. Assessment includes studying internal and external relationships and developing encroachment studies, such as an Installation Complex Encroachment Management Action Plan (ICEMAP). Action involves implementation of programs. Lastly, monitoring involves maintaining awareness of mission needs and encroachment issues.

Clean Air Act

The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources to control air pollution. Under the CAA, the Environmental Protection Agency (EPA) establishes limits on six criteria pollutants through the National Ambient Air Quality Standards (NAAQS). Standards are established to protect public health and public welfare. The CAA also gives EPA the authority to limit emissions of air pollutants originating from sources such as chemical plants, utilities, and steel mills. Individual states may have more stringent air pollution laws, but they may not have weaker pollution limits than those set by EPA. Under the law, states must develop State Implementation Plans (SIPs) that outline how each state will control air pollution under the CAA.

Hill AFB is in an area of non-attainment for ozone as of July 2021.

Clean Water Act

The Clean Water Act (CWA) governs the management of water resources and controls and monitors water pollution in the US. The CWA establishes goals for eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet high quality standards. In so doing the CWA prevents the contamination of nearshore, underground and surface water sources.

Comprehensive Environmental Response, Compensation, and Liability Act

This law was designed to assist in the clean-up of sites with hazardous contaminants to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The Comprehensive Environmental Response, Compensation, and Liability Act:

- established prohibitions and requirements concerning closed and abandoned hazardous waste sites,
- provided for liability of persons responsible for releases of hazardous waste at these sites, and
- established a trust fund to provide for cleanup when no responsible party could be identified.

The Comprehensive Environmental Response, Compensation, and Liability Act has relevance as a potential Compatible Use Plan tool through the Superfund environmental program, established to address hazardous waste sites. Hazardous waste is sometimes present in or around military installations, particularly where munitions and ordnance are stored and used for training purposes, and if not disposed of properly could be potentially harmful to the installation tenants and surrounding communities. While the Superfund cleanup process may be complex, it protects communities and the environment from further contamination.



Department of Defense Conservation Partnering Initiative

In 2003, Congress amended Title 10 U.S.C. §2684a and §2692a (P.L. 107-314), the National Defense Authorization Act, to add authority to the DoD to partner with other federal agencies, states, local governments, and conservation-based Non-Governmental Organizations (NGOs) to set aside lands near military bases for conservation purposes and to prevent incompatible/not recommended development from encroaching on, and interfering with, military missions.

This law provides an additional tool to support smart planning, conservation, and environmental stewardship on and off military installations. The purpose of the program is to acquire real property interests, such as conservation easements or development rights to address current and potential encroachment or compatibility threats to an installation's mission.

Department of Defense Readiness and Environmental Protection Integration

To implement the authority provided by the Department of Defense Conservation Partnering Initiative, the DoD established the Readiness and Environmental Protection Integration (REPI) Program. This initiative enables the DoD to work with state and local governments, NGOs, and willing landowners to limit encroachment and incompatible land use.

REPI funds are used to support various DoD partnerships that promote compatible/recommended land use. By relieving encroachment pressures, the military can test and train in a more effective and efficient manner. By preserving the land surrounding military installations, habitats for plant and animal species are conserved and protected.

It is important for Hill AFB to ensure that military activities are not encroached upon by incompatible/not recommended land uses. The REPI gives local agencies an opportunity to partner with the military and

other local agencies. This will allow for buffers around the base to be established to help further protect its mission.

Department of Defense Energy Siting Clearinghouse

Section 358 of the 2011 National Defense Authorization Act authorized the study of the effects of new construction and obstructions on military installations and operations. The Energy Siting Clearinghouse serves to coordinate the DoD review of existing applications for energy projects. Several key elements of Section 358 include designation of a senior official and lead organization to conduct the review of energy project applications, a specific timeframe for completion of a hazard assessment associated with an application (30 days), specific criteria for DoD objections to projects and a requirement to provide an annual status report to Congress. This legislation facilitates procedural certainty and a predictable process that promotes compatibility between energy independence and military capability.

Department of Defense Operational Noise Manual

The Operational Noise Manual was prepared by the US Army Center for Health Promotion and Preventive Medicine and released in November 2005. It provides a practical reference for military and civilian personnel with duties and responsibilities in operational noise management so that they can work together to be good neighbors and reduce noise issues. The manual assists personnel in understanding and implementing current DoD environmental policy and guidance. The majority of the manual is devoted to the following subjects: Characteristics of Sound; Effects of Noise; Military Noise Sources; Noise Monitoring; Reduction of Noise Conflicts; and more.

Department of Housing and Urban Development Noise Regulation

The United States Department of Housing and Urban Development (HUD) has instituted policies through Section 24 Code of Federal Regulations (CFR) Part 51 that are designed to promote the creation of controls and standards for community noise abatement by state and local governments. The focus of these regulations is to reduce noise levels within residential developments funded by HUD. Included among the various policies are:

1. A requirement that noise exposure and sources of noise be given adequate consideration as an integral part of urban environment in connection with all HUD programs, which provide financial support to planning;
2. A withholding of HUD assistance for the construction of new dwelling units on sites which have or are projected to have unacceptable noise exposure, or are in runway Clear Zones or incompatible/not recommended uses in Accident Potential Zones;
3. Encouragement of modernization efforts for existing buildings in noise environments; and
4. Grants and allowances to state and local governments to provide acoustical privacy in multifamily dwellings through building design and acoustical treatment.

Generally, external noise exposure within Noise Zone 3 (as identified in an installation's AICUZ Study) is considered unacceptable without exception and within Noise Zone 2 exposure is normally unacceptable with respect to new construction. HUD funds may also be available to encourage noise abatement planning and acoustical treatment for

proposed and existing incompatible/not recommended land uses within the AICUZ.

HUD may fund residential construction within certain noise contours, provided sound attenuation is accomplished. The added construction expense of sound attenuation, however, may make siting in these noise exposure areas financially less attractive. Since the HUD policy is discretionary, variances may also be permitted, depending on regional interpretation and local conditions. HUD also has a policy (24 CFR 51D) that prohibits funding for projects in runway Clear Zones and Accident Potential Zones, unless the project is compatible/recommended with any applicable AICUZ recommendations.

Endangered Species Act

The Endangered Species Act (ESA) establishes a program for the conservation of threatened and endangered plants, animals, and their habitats. The US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) are the lead implementing agencies of the ESA. The ESA requires federal agencies, in consultation with the USFWS and/or the NOAA Fisheries Service, to ensure that actions they "authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species." The law also prohibits any action that causes a taking of any listed species of endangered fish or wildlife. ESA provides a platform for the protection of critical habitat and species that may be at risk of extinction.

Section 7 of the ESA, called Interagency Cooperation, provides the mechanism to ensure that actions taken by federal agencies do not jeopardize the existence of any listed species. As required by Section 7, federal agencies must consult with the USFWS when any action the agency funds, authorizes, or carries out may affect a listed endangered or threatened species. Section 7 consultation is the main way that federal agencies manage takings of species.



The ESA prohibits the "take" of listed species through direct harm or habitat destruction. In the 1982 ESA amendments, Congress authorized the USFWS (through the Secretary of the Interior) to issue permits for the "incidental take" of endangered and threatened wildlife species (Section 10a(1)(B) of the ESA). Thus, permit holders can proceed with an activity that is legal in all other respects, but may result in the "incidental" taking of a listed species.

There is a variety of permits for the removal of an endangered or threatened species (incidental take permits, enhancement of survival permits, and recovery and interstate commerce permits). Each type of permit has a number of prerequisites.

Incidental take permits are required when non-federal activities will result in take of threatened or endangered species. A habitat conservation plan (HCP) must accompany an application for an incidental take permit. The HCP associated with the permit ensures that the effects of the authorized incidental take are adequately minimized and mitigated. The 1982 amendment requires that permit applicants design, implement, and secure funding for the HCP that minimizes and mitigates harm to the impacted species during the proposed project. HCPs are legally binding agreements between the Secretary of the Interior and the permit holder.

Enhancement of survival permits are issued to non-federal landowners participating in Safe Harbor Agreements or Candidate Conservation Agreements with Assurances. These agreements encourage landowners to take actions to benefit species while also providing assurances that they will not be subject to additional regulatory restrictions as a result of their conservation actions.

Recovery and interstate commerce permits are issued to allow for take as part of activities intended to foster the recovery of listed species. A typical use of a recovery permit is to allow for scientific research on a listed species in order to understand better the species' long-term survival needs. Interstate commerce permits also allow transport and

sale of listed species across state lines (e.g., for purposes such as a breeding program).

However, because some species listed are subject to the Migratory Bird Treaty Act, it is illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. The migratory bird species protected by the Migratory Bird Treaty Act are listed in 50 CFR 10.13.

As authorized by the Migratory Bird Treaty Act, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, educational, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. Migratory bird permit policy is developed by the Division of Migratory Bird Management and the permits themselves are issued by the Regional Bird Permit Offices. The regulations governing migratory bird permits can be found in 50 CFR part 13 (General Permit Procedures) and 50 CFR Part 21 (Migratory Bird Permits).

Recovery Credit System

The Recovery Credit System (RCS) program was created by the USFWS. An RCS is an optional tool available to federal agencies to promote and enhance the recovery of listed species on non-federal lands. Using RCSs, federal agencies are able to more clearly show how benefits accrued on non-federal lands offset unavoidable effects of federal actions elsewhere. However, in an RCS, the combined effects of both adverse and beneficial actions must achieve a net benefit to the recovery of the species.

A recovery credit is a unit of measure established by an RCS that quantifies the contribution that an agency's action makes toward the recovery of a listed species. Credits are based on, and linked with, the implementation of specific conservation measures identified in a

species' approved recovery plan. If there is no final approved recovery plan, an RCS may employ an equivalent service-approved document that describes specific measures that will contribute to the downlisting or delisting of endangered or threatened species.

The RCS program is a new program, which has thus far only been implemented at one military facility in central Texas. In this case, the RCS is comprised of leases for a term ranging from 5 to 25 years. Landowners are provided confidentiality and, therefore, no public comment is allowed on the merits of RCS credits for particular tracts. Also, the leases may be organized in terms of repayment schedules and a penalty clause. In a rapidly growing region, temporary leases may not be suitable if the intent is to execute conservation requirements. Traditional conservation easements (which are not revocable and run in perpetuity) may be a more preferable approach.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) established the authority for public agencies that possess public lands to manage and plan according to national and local interests. The law mandates that public lands identified for development shall uphold and protect the scientific, scenic, historical, ecological, environmental, and other values unique to specific geographies. This law provides the impetus for the various resource management plans developed and prepared for public agencies.

Federal Aviation Act

The Federal Aviation Act was enacted in 1958 to provide methods for overseeing and regulating civilian and military use of airspace over the United States. The Act requires the Secretary of Transportation to make long-range plans that formulate policy for the orderly development and use of navigable air space. The intent is to serve the needs of both civilian aeronautics and national defense, but does not specifically address the needs of military agencies. Military planning strives to work alongside local, state, and federal aviation law and policies but sometimes must supersede these and other levels of government due to national security interests. The Federal Aviation Administration (FAA) was created as a result of the Act and serves a variety of purposes, including the management of airspace over the US.

The 500-foot rule, promulgated by the FAA, states that every citizen of the United States has "a public right of freedom of transit in air commerce through the navigable air space of the United States." The rule was formally announced in the 1963 Court of Claims ruling in *Aaron v. United States*, and states that flights 500 feet or more above ground level (AGL) do not represent a compensable taking because flights 500 feet AGL enjoy a right of free passage without liability to the owners below.

Another important outcome of the Act is FAA Regulation Title 14 Part 77, commonly known as Part 77, which provides the basis for evaluation of vertical obstruction compatibility. This regulation determines compatibility/recommended use based on the height of proposed structures or natural features relative to their distance from the ends of a runway. Using a distance formula from this regulation, local jurisdictions can easily assess the height restrictions near airfields. Additional information on Part 77 is located on the FAA Internet site at <http://www.faa.gov/>.

The main focus of Part 77.17 is to establish standards to determine obstructions within navigable airspace, typically within a certain distance



from an airport or airfield. It defines an obstruction to air navigation as an object that is of greater height than any of the following heights or surfaces in the following manner:

- A height of 499 feet AGL at the site of the object.
- A height that is 200 feet AGL or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet; see Figure 3-6 for an illustration of this portion of the FAA Part 77 Vertical Obstruction Compliance.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
- A height within an en route obstacle clearance area, including turn and termination areas, of a federal airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, Department of Defense (DoD): 77.21, and heliports: 77.2. However, no part of the takeoff or landing area itself will be considered an obstruction.
- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile

objects only after the heights of these traverse ways are increased by:

- 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.
- 15 feet for any other public roadway.
- 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
- 23 feet for a railroad.
- For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

The FAA has identified certain imaginary surfaces around runways to determine how structures and facilities are evaluated and identify if they pose a vertical obstruction relative to the airspace around a runway. The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 is a federal law establishing a US national policy to promote the protection and enhancement of the environment and requiring federal agencies to analyze and consider the potential environmental impact of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by making detailed information concerning significant environmental impacts available to both agency leaders and the public.

All projects receiving federal funding, requiring a federal permit, or occurring on federal property require NEPA compliance and documentation. NEPA is applicable to all federal agencies, including the military. Not all federal actions require a full Environmental Impact Statement (EIS). In some cases, an action may not cause a significant impact, whereby an agency is only required to prepare an Environmental Assessment (EA).

A NEPA document can serve as a valuable planning tool for local planning officials. An EA or EIS can assist in the determination of potential impacts that may result from changing military actions or operations and their effect on municipal policies, plans and programs, and the surrounding community. Public hearings are required for all EIS documents released under NEPA. NEPA requires publishing a draft EA and subsequent Finding of No Significant Impact (FONSI) and allowing public comment for a period of 30 days. An EA may result in a FONSI or Record of Decision concluding that the action will have a significant impact and an EIS is required. The information obtained by the EA/EIS is valuable in planning coordination and policy formation at the local government level.

NEPA mandates that the military analyze the impact of its actions and operations on the environment, including surrounding civilian communities. Inherent in this analysis is an exploration of methods to reduce any adverse environmental impact. The EIS is a public process that welcomes participation by the community.

National Pollutant Discharge Elimination System

Pursuant to the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into US waters. Point sources are discrete conveyances such as pipes or man-made ditches. According to the law, individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need a NPDES permit, but industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Noise Control Act of 1972

The Noise Control Act of 1972 identified that noise not adequately controlled has the potential of endangering the health and welfare of people. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the federal government were needed to ensure that the objectives of the Act were met. Concurrently, military installations were experiencing the impacts from encroaching urban development located adjacent to the installation and the resulting complaints regarding noise from military flight operations. In 1973, the DoD responded by establishing the AICUZ program.

The Noise Control Act and the AICUZ program are important because encroaching development and increased population near military installations often creates compatibility concerns. As communities grow, it is important that the military installation, developers, and the communities work together to mitigate the issue of noise and develop ways to coexist compatibly.



Partners in Flight Program

The DoD has implemented a program entitled Partners in Flight that sustains and enhances the military testing, training, and safety mission through habitat-based management strategies. The program assists natural resource managers in monitoring, inventory, research, and management of birds and their habitats. As part of the Partners in Flight program, a strategic plan is created that can be incorporated into a Bird/Wildlife Aircraft Strike Hazard (BASH) plan. This program reaches beyond the boundaries of the installation to facilitate community partnerships and determine the status of bird populations to prevent the further endangerment of birds.

Proposed Protection of Military Airfields from Wind Turbine Encroachment Acts

Two bills were proposed in late 2016 to protect military airfields from future wind turbine development. On September 28, 2016, Senator John Cornyn from Texas introduced Senate Bill S. 3428 to the US Senate. If passed, the bill would amend the Internal Revenue Code of 1986 to render new wind turbine projects located within a 30-mile radius of an active military airfield or airbase, or DoD air traffic control radar site, weather radar site, or aircraft navigation aid ineligible for the renewable electricity production credit and the energy credit. A similar bill was introduced into House of Representatives by Congressman Chris Collins of New York. House Bill H.R. 6397 was identical to Senate Bill S. 3428 except that it used a 40-mile radius around an active military airfield or airbase, or DoD air traffic control radar site, weather radar site, or aircraft navigation aids. Neither of these bills were enacted during the 114th Congress in which they were introduced and they expired on January 3, 2017. As of January 2017, both bills have been reintroduced and are under consideration.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of drinking water in the United States. The SDWA authorizes the EPA to set national health-based drinking water standards to protect against both naturally occurring and man-made water contaminants. The SDWA applies to every public water system in the US.

The Sikes Act

The Sikes Act requires the DoD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations. The INRMPs are prepared in cooperation with the USFWS and state fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs. The Sikes Act requires INRMPs to be reviewed at least every five years by the military and the states. Air Force Instruction 32-7064, Integrated Natural Resources Management, guides the Air Force implementation of the Sikes Act.

Telecommunications Act of 1996 and the Federal Communications Commission

The Telecommunications Act of 1996 was the first comprehensive update to federal telecommunication law in over six decades and was in large part intended to open the marketplace to greater competition. Changes in the means through which information is produced, accessed, stored, and shared made the federal government response imperative. The increasing use and development of personal mobile phones, satellite transmission, high speed fiber optics, and other related factors are often pushing demand beyond the system capacity.

New telecommunication tower siting requires compliance with the Federal Communications Commission's (FCC) environmental review standards and procedures, including NEPA and ESA compliance, National Historic Preservation Act compliance, adherence to any applicable FAA requirements, and structure registration with the FCC.

The actual approval of physical installations is subject to state and local permits and approvals; however, state and local authority is limited by FCC law. For instance, states and local jurisdictions cannot base their decisions on any purported environmental effects of radio frequency transmissions.

Telecommunications towers have the potential to cause vertical obstruction issues near Hill AFB. Requirements for tower placement can help to reduce potential incompatibility/not recommended uses.

US Avian Hazard Advisory System

The US Avian Hazard Advisory System (USAHAS) is a geographic information system-based bird avoidance model developed by the US Air Force used for “analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data.” The model provides up-to-date information – “near real-time” – about bird activity and movements to assist pilots and flight planners in the scheduling and use of flight routes. The model can also be used as a forecasting tool to estimate bird strike risk. Information from the North American Breeding Bird Survey, Audubon Christmas Bird Count, bird refuge databases, and the US Air Force Bird-Aircraft Strike database as well as public domain information regarding landfill locations is used to formulate the bird activity and movement data. The model is available for use by agencies and the general public, accessible from the USAHAS website at <http://www.usahas.com/>.



4.2 State Laws and Regulations

The state tools listed in this section authorize or mandate local counties and cities to provide for the protection of the State's valuable industries including the DoD. In addition, the State's tools require communities and developers to protect and preserve the State's natural resources, including land and water, by establishing further regulatory measures to ensure the natural environment is preserved and protected from excess consumptive practices.

Statewide Energy

Utah's Energy Action Plan Through 2020

Utah's Energy Action Plan was released in 2018 to help the Utah meet its objectives relative to energy. The Action Plan sets ten new energy goals for the state, which are:

- Target rural business development
- Support energy research, demonstration, and development initiatives
- Expand education initiatives
- Continue to organize energy and minerals events
- Continued improvement in Utah Energy Efficiency Investments
- Infrastructure Development for alternative fuels
- Engage in policy and regulatory matters
- Expand regional engagement
- Increase all-of-the-above energy communications

- Advance the air-energy nexus

These goals will support the goals that are listed in the 10-Year Strategic Energy Plan 2.0.

Energy Initiatives & Imperatives, Utah's 10-Year Strategic Energy Plan 2.0

The 10—Year Strategic Energy Plan was developed in 2011 and updated in 2014 to address energy resource needs in Utah. The Energy Plan was developed by a Task Force appointed by the Governor, and involved stakeholder input throughout the process. The Energy Plan outlines ten goals to strengthen Utah's economy though a focus on energy, as well as recommendations and actions to meet these goals.

Statewide Transportation

Utah's Unified Transportation Plan 2019-2050

the Utah Unified Transportation Plan is Utah's statewide transportation plan for meeting statewide and local transportation needs. The Plan was a collaborative effort between transportation agencies throughout Utah including UDOT, Utah Transit Authority, Wasatch Front Regional Council, and other Metropolitan Planning Organizations. The result of the plan is a set of common goals, planning time horizons and performance measures and financial assumptions that the agencies can utilize to plan consistency throughout the state.

Utah Department of Transportation Statewide Rural Long-Range Transportation Plan 2019-2050

The Utah Statewide Rural Long-Range Transportation Plan identified transportation improvements to meet the needs of rural Utah. The Plan identified projects to be implemented within three different timeframes based on anticipated growth in the state. The online map of the Statewide Rural Long-Range Transportation Plan identifies corridor

improvements in rural areas of Weber County within the Project Study Area.

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is UDOT's six-year plan for highway and transit projects throughout the state of Utah. Transportation projects in the STIP include projects on the state, city, and county highway system, as well as project in national parks, national forests, and Indian reservations. Projects in the STIP use federal and state funding programs. The STIP is used as UDOT's work plan for the development of transportation projects. There are STIP projects within the Project Study Area for the years 2018 through 2021. The Statewide Transportation Improvement Program is currently being developed for 2022-2027 and is in the public review process. The 2022-2027 STIP should be approved by September 2021.

State Code

The following are regulations through the State of Utah Code that provide land use guidance throughout the state. The following are regulations that pertain to military compatibility.

State of Utah Code Military Base Easements Act

Utah Code Title 63M, Chapter 6, entitles Military Base Easements, provides regulations for easements associated with the military. Per the Act, the Governor's Office of Economic Opportunity may acquire easements for the establishment, maintenance, and operations of a restrictive use area for the operation of aircraft to and from Hill AFB. Additionally, the Governor's Office of Economic Development may delegate its purchase power to other state agencies. Easements must restrict land uses that are listed as not being acceptable in the Hill AFB 1982 AICUZ.

Open and Public Meetings Act

Utah Code, Title 52, Chapter 4, entitles "Open and Public Meetings Act" sets requirements for the state, its agencies, and political subdivisions to take action and conduct deliberations openly. All meetings of municipal and county governing bodies must be held in compliance with this Act. The Act provides requirements for public notices for meetings, written meeting minutes, electronic meetings, and closed meetings.

Municipal Land Use Development and Management Act

Per the Utah Code Annotated (UCA) Title 10, Chapter 9a, entitled "The Municipal Land Use Development and Management Act," cities and counties are required to develop land use plans and zoning regulations for the purpose of accommodating urban and rural growth and protecting the safety and general welfare of the public. Parts 4 and 5 of the Act describe the role of General Plans and Land Use Regulations

Per the Act, municipalities shall prepare and adopt a general plan for present and future needs of the municipality and for the growth and development of land within the municipality. Additionally, municipalities may enact land use regulations by ordinance. Such ordinance may be adopted to create or amend a zoning district and designate uses within zoning districts.

Utah Code 10-2-4 Annexation

This chapter of the Utah Code give municipalities the authority to annex county islands into their jurisdiction. A municipality may be annexed to municipality if the area to be annexed is contiguous to the municipality, will not leave or create an unincorporated island, or the area is within the municipality's expansion area. Exceptions to these criteria are outlined in the code.



Per Utah Code 10-2-418 Annexation of an island or peninsula without a petition – notice- hearing.

Per this section of the Code, a municipality may annex an unincorporated area within a county without an annexation petition if it meets certain requirements. One such requirement is that the area to be annexed is contiguous to the municipality and the majority of the island consists of residential or commercial development, the area require municipal-type services, and the municipality has provided most or all municipal-type services to the island for more than one year. A municipality may also annex without a petition if the unincorporated island to be annexed is contiguous to the municipality and has fewer than 800 residents, and the municipality has provided one or more municipal-type services to the area for at least one year. Other scenarios in which a municipality may annex without petition is: the area is no more than 50 acres, and the area is within the expansion area of a municipality and the county will hold a public hearing.

4.3 Military Regulations

Military regulations provide guidance for land uses and development activities on and adjacent to the installation. These tools govern land use decisions that occur inside the fence line or within the boundary of the military mission footprint in relation to the military mission or proposed military mission. There are various installation tools that are instrumental in assisting and guiding land use decisions in regard to base operations.

Air Installations Compatible Use Zones Study

The U.S. DoD initiated the Air Installations Compatible Use Zones Study (AICUZ) program in 1973 to assist government entities and communities in anticipating, identifying, and promoting compatible land use and development, specific to noise and safety hazards associated with military aircraft activity.

The three primary elements of the AICUZ are:

- **Health, Safety, and Welfare.** These elements seek to reduce the nuisance of excessive noise generated by aircraft operations and public danger by discouraging the development of incompatible/not recommended land uses such as businesses and housing in Accident Potential Zones.
- **Public Investment.** Promoting compatibility/recommended uses between a military installation and local communities safeguards military operations and protects the public's investment in the installation.
- **Public Awareness and Communication.** By working with the community and informing local citizens and property owners of operations and safety measures, the military can promote safety for community residents. As local leaders work with military officials and residents/property owners to consider compatible/recommended development practices, their relationship is strengthened through the resolution of mutual concerns.

The AICUZ program has two objectives. The first is to assist local, regional, state and federal officials in protecting and promoting the public health, safety, and welfare by promoting compatible development within the AICUZ area of influence. The second is to protect Air Force operational capability from the effects of land use that are incompatible with aircraft operations. The AICUZ contains two main profiles on Hill AFB operations: noise and safety.

Noise is the cornerstone of the AICUZ Study. The noise generated by military aircraft operations and the effects of that noise on local communities are presented in a variety of ways in the study (e.g., written text, graphically, etc.). To fully appreciate the findings and recommendations presented in the AICUZ Study, it is beneficial to provide an understanding of how military aircraft noise is measured, evaluated, and graphically illustrated. Day night average sound level (DNL) is a measure of noise commonly used surrounding a military installation. The main sources of noise at airfields are flight operations, which include take-offs, landings, touch-and-go operations, and engine maintenance run-ups. The Air Force considers how its operations impact the local community by calculating the DNL. The DNL averages the noise levels of all aircraft operations that occur within a 24-hour period. The DNL is depicted as a contour around a noise source connecting points of equal value, usually in 5-dB increments.

As part of the AICUZ program, and to aid in land use planning surrounding military bases, the DoD established safety zones. These are defined as Clear Zones (CZ), Accident Potential Zone I (APZ I), and Accident Potential Zone II (APZ II). These zones are determined by using



a statistical analysis of all DoD aircraft accidents. APZs follow departure, arrival, and pattern flight tracks and are based on historical data. The CZ is a square area that extends directly beyond the displaced threshold and outward along the extended runway centerline.

The 2018 Hill AFB AICUZ Study is an update to the Hill AFB AICUZ Study completed in 1993. It reaffirms the Air Force policy of promoting public health, safety, and general welfare in areas proximate to Air Force installations.

This study identifies changes in flight operations that have occurred since the 1993 study, and provides current noise zones and compatible use guidelines for land areas adjacent to the installation. It is provided as a tool to assist local communities in future planning and zoning activities. Changes that required an update of the AICUZ study include:

- Changes in based aircraft, including the basing of F-35A aircraft and the departure of F-16 aircraft;
- Changes in operational procedures and temp;
- Changes in noise modeling software;
- Changes in AICUZ Air Force policies; and
- Changes in off-base land use.

Installation Complex Encroachment Management Action Plan

The Installation Complex Encroachment Management Action Plan (ICEMAP) is designed for managing encroachment challenges and their impacts on the operations at Hill AFB and the UTTR. The last ICEMAP was developed in 2013. The 2013 ICEMAP includes two volumes: the Commander's Action Plan and the Reference Book, which provides background information. The ICEMAP identifies encroachment challenges related to Air Force operations. Some examples include spectrum encroachment, airspace and land restrictions, water resource competition, and urban growth.

Integrated Cultural Resources Management Plan

DoD Instruction 4715.3 and Air Force Instruction (AFI) 32-7065 require installations to develop an Integrated Cultural Resources Management Plan (ICRMP) as an internal compliance and management tool integrating the entirety of the cultural resources program with ongoing mission activities. As a component of the installation master plan, the ICRMP is the base commander's decision document for conducting cultural resources management actions and specific compliance procedures. It also allows for ready identification of potential conflicts between the U.S. Air Force mission and cultural resources and identifies compliance actions necessary to maintain the availability of mission-essential properties and acreage. Hill AFB last updated its ICRMP in 2016.

Installation Development Plan

The Installation Development Plan (IDP) was last updated for Hill AFB in 2016. The IDP describes the past, present, and future physical state of the installation. It identifies development principles for maximizing long-term capabilities and project recommendations for Hill AFB. The plan is intended to be the guiding document for development at Hill AFB for the next 20 to 30 years.

Integrated Natural Resources Management Plan

The Integrated Natural Resources Management Plan (INRMP) was created to ensure that long range habitat protection and natural resource management occurs at the installation and supports mission readiness. The INRMP outlines various natural resources including, when applicable, threatened and endangered species and important habitat, management of noxious weeds, grasslands and wildland fire, wildlife and riparian management, water resources and water rights, inter-agency responsibilities and coordination efforts, and the overall management plan for natural resources at Hill AFB to ensure no loss of capability for training exercises. The INRMP serves as a planning tool for future activities at Hill AFB and as a road map for the stewardship of natural resources found on the base.



4.4 Regional Policies and Plans

Wasatch Choice 2050 Vision Plan

The Wasatch Front Regional Council is the Metropolitan Planning Organization (MPO) for the northern Wasatch Front. As the MPO, the Wasatch Front Regional Council is responsible for coordinating transportation planning that is coordinated with land uses and economic development.

Wasatch Choice 2050 is the regional plan for the Wasatch Front. The plan provides a shared vision for transportation investments, development patterns, and economic opportunities in the region to enhance quality of life in the region. Key strategies for the plan are providing transportation choices, supporting housing options, preserving open space, and linking economic development with transportation and housing decisions. These strategies are implemented through a comprehensive economic development strategy, local planning, and a regional transportation plan. The Wasatch Choice is implemented through the Comprehensive economic Development Strategy, localized planning, and the Regional Transportation Plan.

2018-2023 Comprehensive Economic Development Strategy

The 2018-2023 Comprehensive Economic Development Strategy was developed by the Wasatch Front Regional Council for the Wasatch Front Economic Development District. The Strategy provides a framework for improving and maintaining regional economies in Davis, Morgan, Salt Lake, Tooele, and Weber Counties. Key strategies for the 2018-2023 Comprehensive Economic Development Strategy are:

- Link development with transportation and other infrastructure

- Create fiscally sustainable places
- Provide amenities
- Attract and retain businesses, and encourage innovation

Transportation and Land Use Connection Program

The Transportation and Land Use Connection program is a partnership between the Wasatch Front Regional Council, Salt Lake County, Utah Department of Transportation, and Utah Transit Authority to provide technical assistance to local communities. The goals of this program are to:

- Maximize the value of investment in public infrastructure.
- Enhance access to opportunities.
- Increase travel options to optimize mobility.
- Create communities with opportunities to live, work, and play.

2019-2050 Regional Transportation Plan

The 2019-2050 Regional Transportation Plan, adopted by the Wasatch Front Regional council in May of 2019, sets a 31-year strategy for regional transportation investments for all modes of transportation. This includes local and regional growth and infrastructure; transportation system maintenance; regional road system; and active transportation networks. This planning is done to ensure that travel demand for a growing population is met.

The RTP identifies system improvements for the roadway system, transit system, and active transportation. In addition to identifying system improvements, the RTP provides policies to guide the decision-making process at the Wasatch Front Regional Council. Policies include: linking planning with project development, mitigating growth of travel

demand; exploring pricing to improve mobility; improving the fit between transportation and adjacent land uses; considering long-term needs of other modes of travel; preparing for resiliency; maximizing the value of emerging technologies; increasing street connectivity; solving the first-last-mile challenge; supporting the state freight plan; enhancing the Intelligent Transportation System; ensuring a state of good repair; and improving mobility management.

There are multiple roads surrounding Hill AFB that are identified for project improvements. This includes operational improvements on Hill Field Drive, South Weber Drive, SR 193, and Fairfield Road. New construction is planned east of the installation. Road widening projects are planned for parts of SR 193, Highway 89, and I-15 around Hill AFB.

Salt Lake City International Airport Master Plan

The Salt Lake City International Airport is in the process of updating its Airport Master Plan. This Plan will be an update to the 1998 Airport Master Plan. The purpose of the Plan is to assess whether airport facilities are accommodating existing and future needs. The Plan includes alternative development options and culminates into an implementation plan to achieve the objectives of the Plan through funding, identifying stakeholder needs, FAA safety and design standards, operational efficiencies, and impacts to level of service.

Ogden-Hinckley Airport Master Plan

The Ogden-Hinckley Airport Master Plan is in the process of being updated. The Master Plan is an update to the 1994 airport master plan. The Plan will include a review of demand forecasts, development alternatives, airport improvements, and an airport layout plan. The updated Plan is being completed in response to changes in airport activity, a recent focus on large aircraft maintenance, refurbishment and overhaul operations, new FAA design standards and guidance, and economic and community changes surrounding the airport. The plan will provide guidance for the operation of the airport in compliance with Federal requirements.



4.5 Local Policies, Codes and Ordinances

In Utah, counties and municipalities have the authority to regulate land uses. Counties and cities regulate land uses through various regulations and planning efforts. One such planning effort are cities' and counties' general plans, which set the land use framework for the jurisdiction in the future. General plans also contain policies for jurisdictions to achieve the vision planned for the community. Some of these policies include recommendations for land uses associated with the military. Table 4-1 lists the general plans and the policies related to Hill AFB, if any.

Table 4-1 General Plan Applicability to Compatibility

General Plan	Goal/Policy Number	Goal/Policy Description
Clearfield City General Plan 2017	Land Use Goal 2	Facilitate the Development of Falcon Hill at Hill Air Force Base.
	Policy	Continue to work with the Military Installation Development Authority (MIDA), Hill Air Force Base, and the Falcon Hill developers to begin construction of the Falcon Hill project.
	Implementation Measure #1	Continue to be actively involved in all Falcon Hill discussions and meetings with MIDA, Hill AFB, and the developers.
	Implementation Measure #2	Develop processes for efficient review and administration of MIDA building permits, sign permits, development, and business license applications.
Clinton City General Plan 2013	No goals or policies identified; however, the General Plan references the need for the 1800 N interchange to support traffic at Falcon Hill.	
Layton Forward Our General Plan 2019	No goals or policies; however, the General Plan references Hill AFB throughout including the identification of the Accident Potential Zone and Crash Zone and recommended land uses; support for the development of a Joint	

General Plan	Goal/Policy Number	Goal/Policy Description
	Land Use Study (here called a Compatible Use Plan), and support for a multi-modal access to Hill AFB.	
Involve Ogden General Plan 2002	None	
Riverdale City General Plan 2019	No policies related to Hill AFB; however, the Hill AFB AICUZ Noise and Safety Table is included in the General Plan	
Roy City General Plan 2002	No goals or policies, but acknowledges that Hill AFB has been a significant factor in growth, and coordination with Hill AFB regarding unnatural hazards.	
South Ogden City General Plan Update 2016	Socio-Economic Goal 1	Maintain and strengthen the strong economic base in South Ogden City
	Objective 3	Promote office development along key transportation corridors.
	Policy 1	Cooperate with adjacent communities to plan for commercial and office development along key transportation corridors. Capitalize on major employment centers in the area such as Weber State University, McKay Dee Hospital, and Hill Field.
South Weber City General Plan Update 2020 Draft	No goals or policies, but identifies environmental concerns, noise hazards, and accident potential zones related to Hill AFB,	

General Plan	Goal/Policy Number	Goal/Policy Description
Sunset City General Plan 2019	No goals or policies, but identifies Hill AFB as the basis for its growth.	
Uintah City General Plan 2017	None	
Washington Terrace City 2006	None	
Davis County General Plan 2006	None	
Weber County West Central General Plan	None	
Tooele County General Plan Update 2016	None	

Source: Clearfield City General Plan updated 2017; Clinton City General Plan 2013; Layton City, Layton Forward Our General Plan 2019; Ogden City, Involve Ogden General Plan 2002; Riverdale City General Plan 2019; Roy City General Plan 2002; South Ogden City General Plan Update 2016; South Weber City General Plan Update 2020 Draft; Sunset City General Plan 2019; Uintah City General Plan 2017; Washington Terrace City General Plan 2006; Davis County General Plan 2006; Weber County West Central General Plan; Tooele County General Plan Update 2016.

In addition to policies that jurisdictions' may have in their general plans, cities and counties also employ land use regulations through ordinances. Table 4-2 lists the regulations that each jurisdiction employs and their applicability to operations at Hill AFB.



Table 4-2 Existing Tools and Applicability to Compatibility

Community	General Plan	Military Development Review	Land Use Overlays	Density Regulations	Intensity Regulations	Height Regulations	Sound Attenuation Regulations	Lighting Regulations	Tower Regulations	Temporary Crane Tower Regulations	Renewable Energy Regulations	Subdivision Regulations
Clearfield City	■ Goals and policies related to coordination with MIDA, Hill AFB, and developers related to Falcon Hill.	■ Per Land Use Regulations, the following must be sent to each "affected entity", which may include Hill AFB: adoption or modification of general plan or map; adoption or modification of Land Use Ordinance or zoning map; approval or modification of subdivision preliminary plat; vacation, alteration, or amendment of a subdivision final plat or any portion of a recorded subdivision final plat; vacation alteration or amendment of any public street or alley, right-of-way, or easement.	■	■	■	■	■	■	■	□	□	■
Clinton City	■	□	■	■	■	■	■	■	□	□	□	■

Table 4-2 Existing Tools and Applicability to Compatibility

Community	General Plan	Military Development Review	Land Use Overlays	Density Regulations	Intensity Regulations	Height Regulations	Sound Attenuation Regulations	Lighting Regulations	Tower Regulations	Temporary Crane Tower Regulations	Renewable Energy Regulations	Subdivision Regulations
Layton City	■ Future Land Use map in the General Plan includes Hill AFB safety zones but does not include noise contours.	□	■	■	■	■	□	■	■	□	□	■
Ogden City	■	□	■	■	■	■	■	■	■	□	□	■
Riverdale City	■ Includes the Hill AFB AICUZ Noise and Safety Table.	□	■	■	■	■	■	■	■	□	□	■
Roy City	■	□	■	■	■	■	■	□	□	□	□	■
South Ogden City	■ Includes goals and policies related to improving the economic base in the city, including capitalizing on existing employment centers, such as Weber State University and Hill AFB.	□	■	■	■	■	■	■	■	□	■	■



Table 4-2 Existing Tools and Applicability to Compatibility

Community	General Plan	Military Development Review	Land Use Overlays	Density Regulations	Intensity Regulations	Height Regulations	Sound Attenuation Regulations	Lighting Regulations	Tower Regulations	Temporary Crane Tower Regulations	Renewable Energy Regulations	Subdivision Regulations
South Weber City	■	□	■	■	■	■	■	■	■	□	■ Zoning Regulations include design standards for small wind energy systems, requiring lighting to comply with FAA standards. Article B. Large Wind Energy Systems provides regulations for wind energy systems, including telecommunication interference. States that Hill AFB must be notified of any large-scale wind system and provide the opportunity to review plans.	■

Table 4-2 Existing Tools and Applicability to Compatibility

Community	General Plan	Military Development Review	Land Use Overlays	Density Regulations	Intensity Regulations	Height Regulations	Sound Attenuation Regulations	Lighting Regulations	Tower Regulations	Temporary Crane Tower Regulations	Renewable Energy Regulations	Subdivision Regulations
Sunset City	■	□	□	■	■	■ Zoning Regulations has Height Limiting Zones for land nearby Hill AFB.	■	■	□	□	□	■
Uintah City	■	□	■	■	■	■	■	■	■	□	□	■
Washington Terrace City	■	□	■	■	■	■	■	■	■	■	■	■
Davis County	■	□	□	■	■	■	□	■	□	□	□	■
Weber County	■	□	■ County Code Chapter 104-30 Large Solar Energy System Overlay Zone sets regulations for solar energy systems. Per regulations, the use of lenses or mirrors to reflect sunlight is prohibited.	■	■	■	■	■	■	■	■ Sect 108-7-24 Wind Energy Conversion Systems provides height limitations for wing energy systems, in compliance with FAA regulations.	■



Table 4-2 Existing Tools and Applicability to Compatibility

Community	General Plan	Military Development Review	Land Use Overlays	Density Regulations	Intensity Regulations	Height Regulations	Sound Attenuation Regulations	Lighting Regulations	Tower Regulations	Temporary Crane Tower Regulations	Renewable Energy Regulations	Subdivision Regulations
Tooele County	■	□	□	■	■	■	■	□	□	□	■	■

Legend



The tool exists and addresses land use issue(s) related to military compatibility.



The tool is utilized but does not address land use issue(s) related to military compatibility.



The tool is utilized but only partially addresses land use issue(s) related to military compatibility.



The jurisdiction does not employ this tool.

5 Compatibility Assessment

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5.1 Compatibility Factor Overview

In relation to military readiness, compatibility can be defined as the balance or compromise between community needs and interests and military needs and interests. The goal of compatibility planning is to promote a collaborative environment in which both community and military entities communicate and coordinate in the identification and implementation of mutually supportive actions that allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through a CUP Implementation Plan.

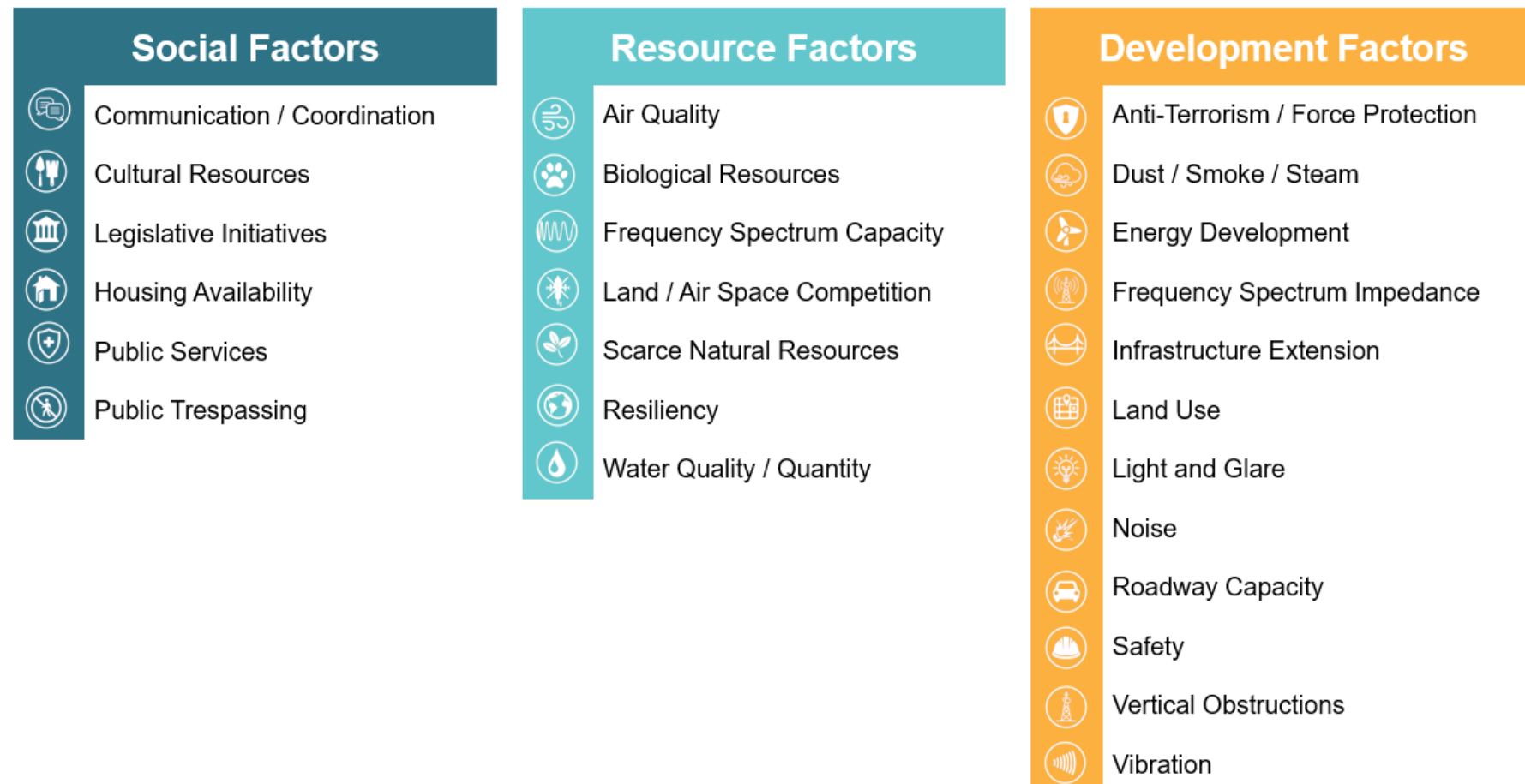
Several variables determine whether military and community plans, programs, and activities are compatible or in conflict. For the Hill AFB CUP, 25 compatibility factors, or general types of compatibility problems were used to identify, assess, and establish the specific set of compatibility issues that are occurring in the Project Study Area. These factors, listed in Figure 5-1, are organized into three categories: social factors, resource factors, and development factors.



A compatibility issue is defined as something that impacts, hinders, or presents obstacles for either the military mission(s) or to nearby communities and that requires an action to be resolved or effectively mitigated.

Figure 5-1 Compatibility Factors

This chapter provides an assessment of each compatibility issue that was identified for the Hill AFB CUP. The issues are evaluated in terms of the existing or potential impacts they have or may have on the military and/or surrounding communities and in terms of the severity of those impacts.



5.1.1 Compatibility Factor Evaluation Methods

This section outlines the methodology that was used in assessing the 25 compatibility factors for compatibility issues of specific concern for Hill AFB and surrounding communities.

The assessment of compatibility issues consisted of a comprehensive and inclusive discovery process to identify significant stakeholder issues relative to the 25 compatibility factors. During the beginning phase of the project, an interview process took place where representatives from various key stakeholder groups were interviewed to discuss the CUP process and identify any compatibility issues they felt existed or could exist in the future. Additional compatibility issues were identified through meetings with the CUP Policy Committee and Advisory Committee, public workshops, and based on the technical evaluations and experience of the project consultant. Opportunities for additional stakeholder input were provided on the project website.

The development of strategies that address the identified compatibility issues was both directly and indirectly affected by the evaluation process. Issue assessment included determining the severity of each issue's impact(s) on both the military missions at Hill AFB and its facilities, and the quality of life of nearby residents. The severity of impacts was also used to help prioritize implementation.

When reviewing the assessment information that is provided in this chapter, it is important to note the following:

- This chapter provides technical background on the identified compatibility issues that are relevant to the Hill AFB CUP. The intent is to provide appropriate information for stakeholders to be sufficiently aware of and knowledgeable about the issues and the potential mitigation strategies to assess specific, viable CUP recommendations. The discussion is not designed or intended to be utilized as an exhaustive technical evaluation of existing or future conditions within the CUP Project Study Area.

- Of the 25 compatibility factors considered, five were determined to be inapplicable to this CUP based on a lack of associated issues, stakeholder and public concern, and CUP project team experience. They include social, resource, and development factors:

Social Factors

- Cultural Resources
- Legislative Initiatives
- Public Trespassing

Resource Factors

- Frequency Spectrum Capacity
- Scarce Natural Resources

Development Factors

- Infrastructure Extensions

Although there were no compatibility issues identified relating to these five factors, they are defined and briefly summarized in this section to represent the analysis that was conducted for all 25 factors.

Social Factors



Cultural Resources. Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include pre-contact period and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs. 'Historic properties' are cultural resources that are listed or eligible to be listed on the National Register of Historic Places and are protected under the National Historic Preservation Act (NHPA) and other federal and state laws.



Legislative Initiatives. Legislative initiatives are proposed changes in relevant policies, laws, regulations, or programs that could have a significant impact on one or more substantive areas of concern to both the military installation and to stakeholder groups.



Public Trespassing. Public Trespassing addresses both intentional and unintentional public trespassing on a military installation. The potential for trespassing increases with the proximity of public use areas such as hiking, and off-roading areas.

Resource Factors



Frequency Spectrum Capacity. Frequency spectrum refers to the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels for radio, cellular phones, and television. In a defined area, the frequency spectrum is limited, and increasing demand for frequency bandwidth from commercial applications such as cellular phones, computer networks, GPS units, and mobile radios is in direct competition with the military's need for capacity sufficient to maintain existing and future.



Scarce Natural Resources. Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water resources) that are located on military installations, within military training areas, or on public lands historically used for military operations can impact land utilization and military missions.

Development Factors



Infrastructure Extension. Infrastructure plays an important role in land use compatibility. It can enhance the operations of an installation and nearby communities by providing needed services, while eliminating competition for those resources. Conversely, infrastructure can create encroachment issues if facilities are expanded without considering the consequences of future development. The extension or expansion of community infrastructure to areas adjacent to an installation can induce growth that may result in incompatible uses and conflicts between a military mission and community activities and needs. Within general planning efforts and through appropriate consideration and guidance, infrastructure extensions can serve as a mechanism to guide development toward appropriate areas, protect sensitive land uses, and improve compatibility between community land uses and military missions.

5.2 Social Factors

There are four compatibility factors in the social factor category that were found to have issues. These are:

- Communication/Coordination
- Housing Availability
- Public Services

5.2.1 Communication/Coordination

Communication/coordination (COM) refers to programs, plans, and partnerships that promote interagency communication and coordination and dissemination of information to the public, as well as other stakeholders. Interagency communication serves the general welfare by promoting a more comprehensive planning process, inclusive of all affected stakeholders. Interagency coordination also supports the development and inclusion of mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans. Providing relevant and timely information to the public keeps them informed of activities and instills a sense of confidence and support.



Need for a formalized development review process between Hill AFB and surrounding communities

COM-1

Many neighboring communities and some regional agencies do not engage in formalized communication with Hill AFB regarding development and planning processes. Some communities do engage in formalized coordination with Hill AFB, but it is specific to certain types of development. This can result in inconsistent coordination of development proposal review.

Hill AFB and the community have both formal and informal methods of communication to discuss and share information about various topics. One such important topic for coordination is development proposals in the community. While the communities have formalized processes for reviewing development proposals, these processes do not generally include coordination with Hill AFB. Formally integrating Hill AFB into existing community development review processes provides an opportunity for Hill AFB to identify any potential compatibility issues before a development approval is rendered.



Currently, the only community that coordinates with Hill AFB on development proposals is Layton City; however, this coordination is not formalized. Staff at Layton City sends development reviews to Hill AFB only if the development is located within the Hill AFB accident potential zone (APZ). This process is not codified within the Layton City Code.

Formalized communication is also important for coordinating land uses with regional planning agencies. Regional and state agencies generally plan for larger areas than cities, which could cover more of the Project Study Area. The plans and programs that these regional and state agencies implement can have an impact on the installation by setting the framework for development to occur. Examples of regional agencies that would be beneficial to have ongoing communication with include: Wasatch Front Regional Council, which develops regional plans, such as Wasatch Choice 2050; Utah Department of Transportation (UDOT) which plans and programs roadway improvements; and the Utah Transit Authority (UTA) which plans and programs public transit improvements. Integrating Hill AFB into existing regional and state agency planning processes provides an opportunity for Hill AFB to proactively inform regional development decisions before physical development can potentially create compatibility issues.

While information sharing is beneficial for all stakeholders involved, informal communication is often based on relationships that individuals have with one another. Because there are no regulations codified for communication or coordination between cities, and regional and state planning agencies and the installation, there is potential for new community/installation staff to not understand the compatibility issues or when to consult with the installation/communities when there is potential for compatibility concerns. Additionally, informal communication is discretionary; therefore, there is potential for incompatible development to occur if such developments are not communicated in advance and if Hill AFB is not included in the review of development plans.

Formalized communication between the installation base planner and the communities should outline roles and points of contact for communicating development proposals to the installation and methods for installation review, which should include timeframe for review.



Need for mutual communication between City staff and Hill AFB

COM-2

There is a need for enhanced communication between jurisdictions and Hill AFB for long-range planning goals and initiatives. There are city staff members who do not have a point of contact at the Base to communicate and share information with.

Most of the communities in the Project Study Area do not have formalized communication with staff at Hill AFB to discuss long-range planning goals and visions for community growth. Formalized communication processes would set clear roles and responsibilities for how and who to communicate with at each city and at Hill AFB when compatibility issues and concerns arise related to community growth.

The only codified communication and coordination practices regarding this type of coordination at the city level is with Clearfield City. Clearfield City has a regulation in the land use ordinance that states, that any adoption or modification of the general plan or map; adoption or modification of land use ordinance or zoning map; approval or modification of subdivision preliminary plat; vacation, alteration, or amendment of any public street or alley, right-of-way, or easement shall be sent to each "affected entity", which includes Hill AFB. By codifying this coordination process, Hill AFB will be aware of future development potential within the city and can coordinate with the city if there is potential for incompatible land uses.

Other communication methods between Hill AFB and neighboring cities are informal and discretionary, such as Layton City's development review process with Hill AFB when development proposals are within or adjacent to the Hill AFB APZ, which is further described in COM-1. While this type of communication supports a level of coordination between the communities and the installation, there is opportunity to formalize this level of communication.



Ongoing desire for mutual communication between elected officials in the community and Hill AFB leadership

COM-3

There is generally a positive relationship between City elected officials and Base leadership; however, there is an opportunity to create formalized communication processes between the Base Commander and City and County elected officials.

Communication between Base leadership at Hill AFB and elected officials throughout the Project Study Area exists and is generally positive. Although there are good relationships between elected officials and Base leadership, communication protocols are not codified in city codes or memorandums of agreement. At present, all but one community in the Project Study Area has a level of communication between elected officials and the base commander. While much communication is not formalized, city elected officials and base leadership have some forms of formalized communication through various programs.

Most of the formalized communication between elected officials and the base commander is participation in the Davis County or Weber Area Council of Governments (COG). Both COGs comprise elected local leaders including city mayors and county commissioners. Hill AFB leadership attends both COG meetings to understand current events and future endeavors in the community. Another formal community program is the Top of Utah Military Affairs Committee. The committee meets once a month with mission partners, which includes senior local leadership.

Another program in which both parties participate in is the Hill AFB Civic Leaders Program. Hill AFB runs and hosts this program, which includes organized meetings. The Program includes community leaders, Congressional delegation, district directors, military liaisons, MIDA, as well as mission leadership. Through these meetings, military leadership and community leadership can communicate issues related to Hill AFB. These meetings help to build relationship between Hill AFB and community leadership

Although these committees, programs, and COG meetings are ongoing, there is no agreement between the base commander and elected officials to regularly meet and discuss/coordinate compatibility concerns. A formal agreement between the community and installation would ensure that lines of communication are understood when there are changes in Base commanders and elected officials.

One way in which Hill AFB works to communicate community partnerships is through the Hill AFB/UTTR Installation Complex Encroachment Management Action Plan (ICEMAP). Through the ICEMAP, Hill AFB developed the Partners in One Community¹ document, which highlights existing partnerships that the installation has with the community. By documenting these partnerships, both installation and community leadership have a clear understanding of the actions and relationships that are in the place and can use this document for reference and to expand upon partnerships regardless of who the commander is or of who is staffed at the installation or community agencies.

¹ Hill AFB Partners in One Community 2014.



Need for greater Hill AFB outreach with the public

COM-4

There is a desire from the public to receive additional information and notification from Hill AFB regarding military activities that impact the community.

Hill AFB conducts operations that have the potential to impact the community. As such, it is important for these operations to be communicated to the public often to help answer questions that members of the community may have. Ongoing communication will also help to limit complaints related to nuisances, such as noise.

The community receives communication about Hill AFB and its facilities through the Hill AFB Public Affairs Office (PAO), which is a part of the 75th Air Base Wing Staff Agencies. The Hill AFB PAO communicates with the community through various outlets, including press and media releases, social media, and the Hill AFB website. These communication methods are both direct and indirect.

Community notices from the PAO are provided through news releases for certain operations that occur at Hill AFB facilities, especially when the operations have a potential to disrupt the community. For example, the PAO provides notices when detonations occur at UTTR. The PAO sends these releases to local municipalities to post on their respective websites in addition to posting the releases on the Hill AFB website. The PAO also sends media releases to their media contacts, which distribute information through their respective media outlets. These media outlets include newspapers, local tv stations, local radio stations, and local magazines.

In addition to press and media releases, the PAO also uses social media as a tool to communicate information to communities. Hill AFB has its own Facebook, Instagram, and Twitter accounts. In addition to utilizing their own social media pages to distribute information, the PAO also reaches out to local municipalities to post Hill AFB-related content on their respective social media platforms.

The Hill AFB website is also an outlet for distributing information, resources, and notices to the community. Resources include Team Hill Video, Economic Impact Statement, and information about noise concerns, which is described in NOI-1. The Hill AFB website also includes a separate webpage for the UTTR in which additional activities, such as public land and road closures, are noticed.



COM-5

Need for enhanced coordination between Team Hill and local academic institutions to align educational curriculums to train a workforce that meet the skillsets needed at Hill AFB

Team Hill has employment opportunities in emerging industries that require a workforce with certain technical skills. There is a need for Team Hill to effectively communicate and coordinate these workforce needs, and changes in needs, with local higher education institutions to support incoming aeronautical, advanced manufacturing, software, and scientific industries.

Mission and operations are growing amongst Team Hill partners. Major growth is anticipated at the Ogden Air Logistics Complex (OO-ALC), and with the Air Force Nuclear Weapons Center, Minuteman III Systems Directorate, and the Ground Based Strategic Deterrent Systems Directorate.

The Ogden Air Logistics Complex is responsible for engineering, logistics support, and sustainment for weapons systems, including aircraft materials. Ogden Air Logistics Complex supports the following aircraft: F-35 Lightning II, F-22 Raptor, F-16 Fighting Falcon, A-10 Thunderbolt II, T-38 Talon, and C-130 Hercules. Additionally, the Ogden Air Logistics Complex provides maintenance for other weapon systems, including the Minutemen III ICBM. The OO-ALC is one of the leading providers of software, pneumatics, secondary power systems, composites, and rocket motors for the DoD. The OO-ALC employees more than 9,000 military, civilian, and contract personnel at Hill AFB in over 150 job series within seven units². With these growing operations, there is also a need for workforce growth. The OO-ALC is

anticipating major growth in the software and industrial programs. In the software program alone, it is anticipated that there will be an influx of 200 software professionals annually for the next five years, and possibly beyond the five years. This need for additional professionals will require a workforce that is trained in computer science and software to fill this job need at the OO-ALC.

The Air Force Nuclear Weapons Center is also experiencing growth and restructure to improve nuclear capability. Formerly the Intercontinental Ballistic Missile System Directorate, the Minuteman II Systems Directorate and the Ground Based Strategic Deterrent Systems Directorate focus on sustaining the Minuteman III and acquiring the new Ground Based Strategic Deterrent System. This program is a modernization to the aging Minuteman III ICBM, which has been in operation since 1970. The new program will increase the accuracy, security, and reliability to the ICBM system³. This modernization program will also require a professional and skilled workforce. There is an anticipated need for a professional workforce of approximately 3,000-4,000. In addition to this increase in workforce from Northrop Grumman, it is anticipated that there will be over 700 government civilians and 500 civilian/contractors supporting the GBSD Directorate⁴.

With this growth at Team Hill and income new jobs, there is a need for a technical workforce to fulfill the positions at Hill AFB. While some of the workforce needs will be fulfilled by an out of state workforce (e.g. much of the GBSD workforce is coming from out of state because Northrop Grumman is moving their headquarters from California to Utah), some of this technical workforce demand can be fulfilled by the regional workforce. Currently, as noted in Chapter 2, some of the top employers in Davis and Weber County are in the aerospace industry. This indicates that there is a labor force in the region that could

² <https://www.hill.af.mil/About-Us/Fact-Sheets/Display/Article/397018/ogden-air-logistics-complex/>

³ <https://www.hill.af.mil/News/Article-Display/Article/2341002/departments-of-the-air-force-awards-contract-for-new-icbm-system-that-enhances-s/>

⁴ GBSD MMII Interview 2020 06 10

support these needs to some extent. Despite there being a local labor force in these industries, there will be a continuous need for an additional labor force to fill in the gaps that are not being filled by the local economy.

Additional workforce needs can be filled by those who are entering the workforce or those who are studying/training to enter the workforce. There are local and regional universities that have programs to support this type of workforce. Hill AFB should continue to communicate these needs to the universities to ensure that the curriculums and training aligns with the needs of Hill Team Partners. In addition to communicating educational needs with schools and universities, Hill AFB must also communicate a need for curriculum flexibility. This is necessary as technologies related to missions are constantly changing at Hill AFB and those needs need to be met. Hill AFB has communicated this challenge with technical schools, but must continue to do this as effectively as possible with universities as well. As discussed in a stakeholder interview, Hill AFB recruits from across the U.S. to fill these, but most of the talent comes from the local region, including Brigham Young University (BYU) and Weber State University (WSU).

While there are opportunities to fulfill workforce needs at Hill AFB, there is also some competition with other industries. Northern Utah is competing with technical hubs that are located south of Salt Lake City in Silicone Slopes. This tech hub has generated numerous software programming or related, and other digital technology jobs, which has attracted many professionals to this area. Silicon Slopes is a nonprofit organization, supporting the entrepreneurial and tech community. The competitive industry will require continued focus on workforce growth, attraction, and retention⁵.

There are many opportunities for partnerships throughout the region the workforce needs. The OO-ALC has already begun communication efforts with academia to coordinate this training/education at universities and there is existing collaboration between Weber State University, Ogden City, and Hill AFB. Hill AFB developed an agreement to occupy space at the Weber State University building in downtown Ogden, creating a presence in the community. Hill AFB is also in the process of working with universities and technical schools to change/update curriculum and training to better suit needs. An example of this is Hill AFB working with schools to provide internships with the installation to provide experience. These internships are beneficial as the majority (75%) of internships have translated into full time positions at the installation.

⁵ <https://siliconslopes.com/>



COM-6

Need for improved information sharing between the 75th Medical Group at Hill AFB and State and County officials during times of medical emergencies

The 75th Medical Group at Hill AFB may not be recognized as a medical agency in state and local public health departments, creating limitations for information sharing. This is a concern during times of medical emergencies, such as the COVID-19 pandemic.

The 75th Medical Group at Hill AFB provides full-spectrum, healthcare and support to approximately 16,500 enrollees and more than 71,000 TRICARE beneficiaries within four states. The 75th Medical Group provides primary support to the 388th Fighter Wing, 419th Fighter, and other Team Hill partners. During this ongoing COVID-19 pandemic, the 75th Medical Group has provided medical response to active duty, reserve and civilian personnel, and family members. This has been done through testing/screening and providing curbside pharmacy services. The 75th Medical Group is also responsible for answering questions related to COVID, and other health topics, through a Public Health Hotline. While the 75th Medical Group is responding to the pandemic, the group is not always provided with complete information from state and local public health departments to make informed and efficient decisions.

The State of Utah has a statewide Hazard Mitigation Plan, last updated in 2019⁶, and an Emergency Operations Plan⁷, which was last updated in 2016. The Emergency Operations Plan established organizational structure for disaster response, but does not include Hill AFB. The Hazard Mitigation Plan identifies a pandemic outbreak as one of the

two hazards that would have the greatest impact on the public. In addition to these two plans, the Utah Department of Health also has an Infectious Disease Emergency Response Plan⁸, which was last updated in 2018. This plan was developed to provide the state a framework for response to infectious disease incidences. Like the other plans, Hill AFB is not included in this plan for response.

Local jurisdictions in the Project Study Area also have their own Emergency Operations Plans that include acknowledgement of pandemics as a potential emergency. These plans could be updated to include coordination policies related to the 75th CEG at Hill AFB for information sharing and other operations as needed.

6 Utah Division of Emergency Management, 2019 Utah State Hazard Mitigation Plan: <https://hazards.utah.gov/wp-content/uploads/Utah-State-Hazard-Mitigation-Plan-2019.pdf>

7 State of Utah Emergency Operations Plan, 2016: <https://site.utah.gov/bemsp/wp-content/uploads/sites/34/2017/04/Utah-EOP-ESF8-Public-Health-and-Medical-June-2016.pdf>

8 Utah Department of Health Infectious Disease Emergency Response Plan, November 2018: https://site.utah.gov/bemsp/wp-content/uploads/sites/34/2018/11/IDER_2018.pdf

5.2.2 Housing Availability

Local housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel stationed at an installation, and the supply of military family housing provided by the DoD.



HA-1

Need for available, affordable housing to accommodate future increases in the number of civilian contractors and military personnel at Hill AFB

Within the next four to five years, there is an anticipated increase in population in the region as a result of thousands of civilian and defense contractors and military personnel moving to the area to work at new employment bases in the community and at Hill AFB. Hill AFB provides military housing and dormitories, which will accommodate some of the incoming military population; however, there will be a need for additional housing that is affordable for military personnel and defense contractors.

As described in COM-5, there is mission growth occurring at Hill AFB. It is anticipated that there will be 3,000-4,000 new jobs with Northrop Grumman headquartering at Hill AFB to support the GBSD program at the OO-ALC. There is also anticipated growth on the software side of the OO-ALC, which is anticipated to gain 200 software professionals every year for the next five years. While some of this demand will be filled by the local workforce, it is anticipated that job positions will also be filled by defense contractors, military personnel, and their families who will be relocating to the area. These professionals and their families will require housing at Hill AFB and within the community.

Housing options for military personnel are military housing at Hill AFB or housing within the community. On Hill AFB, there are dormitories and privatized housing available to military personnel. Privatized housing has been provided through Boyer Hill Military Housing, which is responsible for maintaining, repairing, constructing, and managing the housing community, since 2005. There are currently 1,082 homes that are part of the housing community.

While on-base housing is an option for military personnel, there are also housing options in the community for both military personnel and civilian contractors. The Military Housing Office at Hill AFB provides information about housing availability in the community by providing a listing of houses for sale and rent in the community through www.Homes.mil and by posting flyers in the office.

As of 2020, there were over 2,300 Hill AFB personnel living off-base within different communities in the state. Table 5-1 lists where personnel live in Utah. As the table shows, the city with the most military personnel from Hill AFB is Layton City. Other cities with a high number of military personnel from Hill AFB are Ogden and Roy.



Table 5-1 Where Hill AFB Personnel Live in Utah

Bountiful	16	Lindon	1	Smithfield	1
Brigham City	2	Logan	4	South Jordan	3
Centerville	9	Marriott Slaterville	2	South Ogden	54
Clearfield	252	Mendon	1	South Weber	20
Clinton	166	Morgan	4	Springville	3
Dugway	2	Mountain Green	8	Sunset	18
Eagle Mountain	1	North Ogden	37	Syracuse	168
Eden	3	North Logan	1	Taylorsville	3
Farmington	46	North Salt Lake	13	Tooele	3
Farr West	2	Odgen	316	Tremonton	6
Fruit Heights	5	Orem	2	Utah	3
Harrisville	17	Park City	1	Vineyard	2
Herriman	1	Payson	1	Washington Terrace	15
Hooper	23	Plain City	9	West Bountiful	3
Huntsville	2	Pleasant View	12	West Haven	109
Kaysville	27	Provo	1	West Jordan	6
Kearns	1	Richmond	1	West Point	46
La Verkin	1	Riverdale	44	West Valley City	2
Layton	482	Roy	305	Westpoint	1
Lehi	1	Salt Lake	45	Willard	5
Lewiston	1	Sandy	1	Woods Cross	2
Liberty	3				

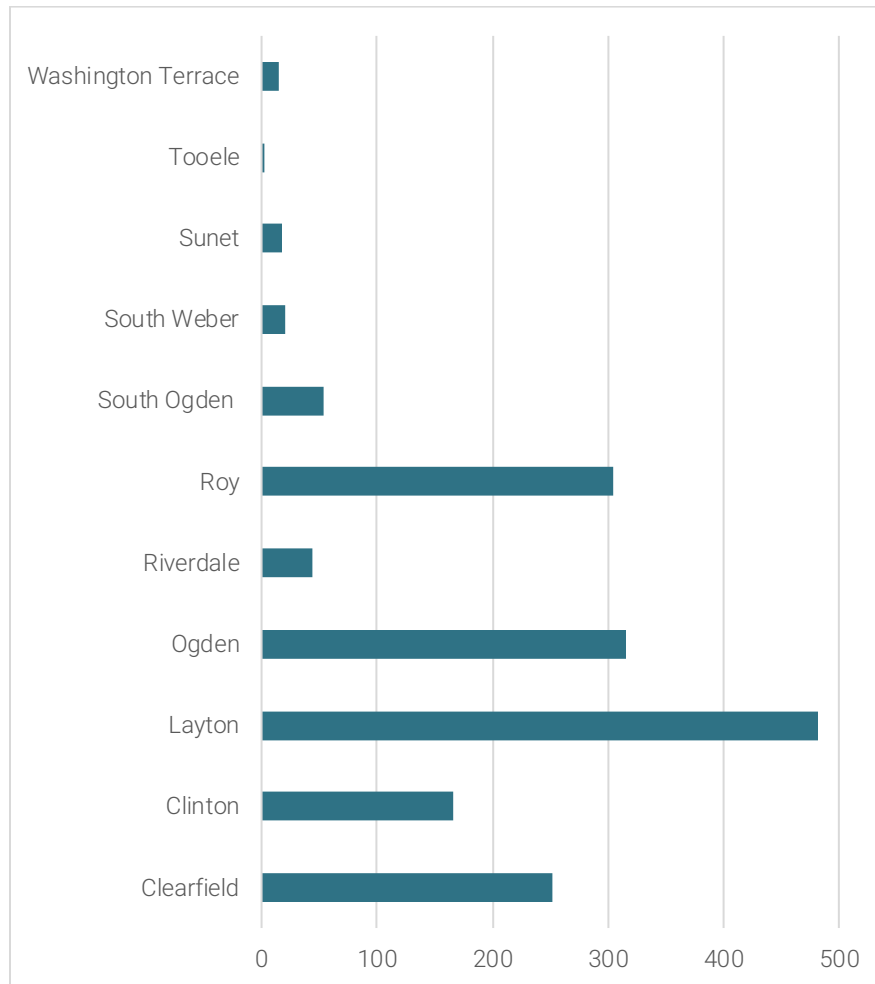
Note: Personnel that work at Hill AFB, but do not live in Utah are not included in this listing.

Source: Hill AFB Housing Office, 2020.

The top four cities where personnel live in Utah are: Clearfield, Layton, Ogden, and Roy, all of which are within the Project Study Area. In comparison, there has been a trend of increasing housing units in Layton and Ogden, whereas housing units have experienced a decrease in housing units in Roy and Clearfield.

There are 1,675 military personnel that live in the Project Study Area. Figure 5-2 shows the breakdown of where military personnel live in the Project Study Area.

Figure 5-2 Where Military Personnel Live in the Project Study Area



Source: Hill AFB Housing Office, 2020.

As described previously, there are thousands of civilian contractors that will be moving into the region to work at Hill AFB. At present, there are approximately 16,700 civilians working at Hill AFB. An additional workforce of 4,000 civilians will be a 24% increase in civilian employment. Unlike, Hill AFB military personnel, the location of where civilians and contractors live is not provided. For this reason, it is difficult to determine where this increase in civilian employees will choose to live; however, the Wasatch Front Regional Council population projections for 2050 indicate that the cities with the greatest population increase from 2020 to 2050 are unincorporated Davis County, Riverdale City, and unincorporated Tooele County. The population increases for each jurisdiction are listed on Table 5-2. Based on this growth, it is projected that these communities will be where incoming civilians and contractors will be moving.

The Wasatch Front is a growing region, and as such, military personnel and civilian contractors living in the region and relocating to the region, will be competing with others who are also moving to the Wasatch Front for employment opportunities. As described in Chapter 2, Community Profile, it is projected that the Project Study Area will have a 32% increase in job growth between 2020 and 2050. This equates to approximately 66,000 jobs that are projected to be added to the Project Study Area by 2050. This will likely contribute to the region's population growth and will also create a need for housing. Like the population projections, the areas that are anticipated to see an increase in housing between 2020 and 2050 are unincorporated Davis County, unincorporated Tooele County, and Riverdale City. Household forecasts for all cities within the Project Study Area are listed in Table 5-2. This is another indicator of where incoming civilians and defense contractors will live in the Project Study Area. Additionally, it is estimated that the Wasatch Front will be built out by the year 2040⁹. Once this occurs, new housing will likely take the form of vertical development or redevelopment. Due to housing demands, housing

⁹ <https://www.laytonecon.org/new-growth-in-layton-city-a-good-thing/>



prices will likely also be impacted, which is further described in this section.

Table 5-2 Household Forecast in the Project Study Area 2020–2050

Jurisdiction	2020	2030	2040	2050	Percent increase from 2020 to 2050
Clearfield	10,874	12,425	13,978	15,661	44%
Clinton	7,266	8,048	8,869	9,374	29%
Layton	29,769	37,365	45,378	51,370	73%
Ogden	35,591	41,401	46,500	49,964	40%
Riverdale	3,857	5,409	7,031	7,861	104%
Roy	13,407	14,630	15,734	16,538	23%
South Ogden	7,873	8,871	9,653	10,180	29%
South Weber	1,860	2,203	2,629	2,997	61%
Sunset	2,035	2,220	2,428	2,567	26%
Uintah	420	487	606	680	62%
Washington Terrace	3,469	3,652	3,784	3,853	11%
Unincorporated Davis County	220	339	433	494	125%
Unincorporated Tooele County	6,742	9,678	12,636	15,263	126%
Unincorporated Weber County	3,366	3,944	4,475	4,853	44%
TOTAL	126,749	150,672	174,134	191,655	51%

Source: Wasatch Front Regional Council, 2020.

Table 5-3 Housing Tenure in the Project Study Area, 2019

City	Total Housing Units 2019	Occupied Housing Units	Vacant Housing Units	% Renter Occupied	% Owner Occupied
Clearfield City	10,324	9,644	680	44%	56%
Clinton City	6,515	6,304	211	16%	85%
Layton City	24,982	24,061	921	30%	70%
Ogden City	33,377	30,556	2,821	42%	58%
Riverdale City	3,481	3,320	161	27%	73%
Roy City	13,087	12,773	314	16%	84%
South Ogden City	6,726	6,153	573	28%	72%
South Weber City	2,164	2,075	89	11%	89%
Sunset City	1,772	1,678	94	25%	75%
Uintah City	465	654	11	12%	88%
Washington Terrace City	3,514	3,165	349	33%	67%

Source: 2019 American Community Survey 5-Year Estimates.

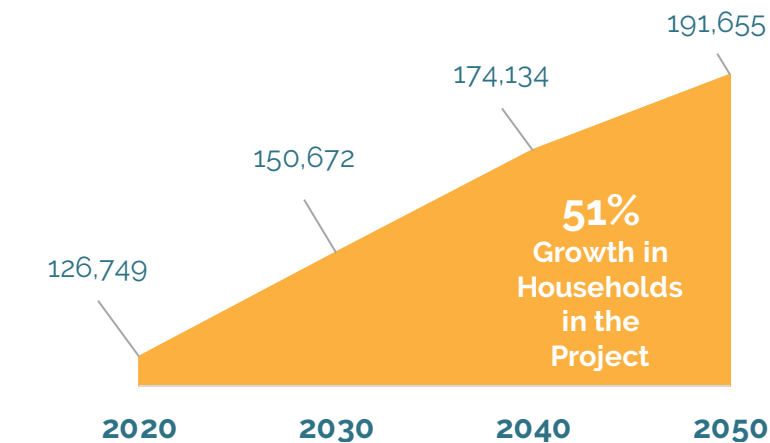
Within the Project Study Area, not including the unincorporated county areas, there were approximately 106,000 housing units in 2019. Between 2010 and 2019, there was a 47% increase in housing units in the Project Study Area. While the overall housing units increased in the Project Study Area as a whole, some cities experienced a decrease in housing units. These cities include Clearfield City, Sunset City, and Uintah City. Despite a loss of housing units in these cities, all but Uintah City, experienced an increase in population during this timeframe, indicating that there could potentially be increased competition for housing in these cities in the present day. However, in

the future, as Table 5-2 indicates, households are projected to increase for all Project Study Area jurisdictions.

Of the occupied housing units in the Project Study Area, approximately one-third of the housing units were renter occupied and two-thirds were owner-occupied. Some cities have more diverse housing in terms of renter versus owner occupied housing. For example, almost half of the housing units in Clearfield and Ogden cities are renter occupied. Generally, there are options for both rentals and opportunities for ownership throughout the Project Study Area.

In terms of housing availability, there were 6,224 vacant housing units in 2019. The amount of vacant housing units is greater than the amount of incoming personnel and civilian contractors. Table 5-3 shows the housing tenure in the Project Study Area.

In addition to there being diversified housing tenure throughout the Project Study Area, there is also a diversity in housing types. Table 5-4 shows the breakdown of housing types in the project study area. As the table shows, the approximately 70% of the housing type is single-family units.



Source: Wasatch Front Regional Council, 2020.

Table 5-4 Housing Types in the Project Study Area, 2019

Housing Type	Number of Units
Single-family housing units	72,606
Multi-family housing units	29,448
Manufactured homes	4,294
Other (RVs, etc.)	59
Total housing units	106,407

*Data set does not include unincorporated county numbers

Source: 2019 American Community Survey 5-Year Estimate.

Due to the anticipated influx of professionals to the region, there is concern that the increase in population will create a greater demand for housing in the partner communities. Furthermore, there is concern that the greater housing demand will create a more competitive housing market, driving housing prices up within the region. Military personnel have Base Allowance for Housing (BAH) rates to assist with housing costs, while civilian personnel must rely on locality pay to ensure that salaries and hourly wages are sufficient to afford housing.

Personnel who live off-base are provided with housing compensation called a Base Allowance for Housing (BAH). BAH for each military installation is based on geography, pay grade, and number of dependents. BAH rates do not necessarily cover the entirety of housing costs, but rather, military personnel are expected to pay 5% out of pocket. Additionally, the BAH rates are created to cover the average cost of housing in the area.

The BAH rates for Hill AFB are shown in Table 5-5. The BAH rates for Hill AFB were last raised in January 2021.



Table 5-5 Hill AFB 2020 BAH Rates

Hill AFB BAH Rates 2020	BAH with dependents	BAH w/o dependents
E1	\$1,509	\$1,203
E2	\$1,509	\$1,203
E3	\$1,509	\$1,203
E4	\$1,509	\$1,203
E5	\$1,599	\$1,335
E6	\$1,620	\$1,419
E7	\$1,674	\$1,512
E8	\$1,743	\$1,608
E9	\$1,827	\$1,614
W1	\$1,632	\$1,485
W2	\$1,704	\$1,605
W3	\$1,785	\$1,617
W4	\$1,845	\$1,626
W5	\$1,917	\$1,689
O1E	\$1,689	\$1,599
O2E	\$1,773	\$1,611
O3E	\$1,854	\$1,623
O1	\$1,608	\$1,413
O2	\$1,617	\$1,572
O3	\$1,782	\$1,620
O4	\$1,938	\$1,674
O5	\$2,049	\$1,710
O6	\$2,064	\$1,764
O7	\$2,079	\$1,794

Source: Hill AFB, 2021. <https://www.hill.af.mil/News/Article-Display/Article/2457774/hills-airmen-to-see-increase-in-2021-bah-rates/>

To understand how BAH rates relate to the community, they can be compared to the median housing value and rents in the community. Table 5-6 lists the median housing value and median gross rent for the Project Study Area communities. BAH rates for personnel without dependents ranked E5 and higher are greater than the top median gross rent in the Project Study Area which is \$1,348 in Clinton City. Although most of the BAH rates are greater than the median gross rents in the community, personnel choosing to live-off base will incur additional costs associated with housing, such as utilities, internet access, renter's insurance, deposits, and other costs that can increase the cost of live off-base.

Table 5-6 Median Housing Value and Median Gross Rent, 2019

City	Median Housing Value 2019	Median Gross Rent 2019
Clearfield City	\$194,300	\$1,098
Clinton City	\$243,400	\$1,348
Layton City	\$260,400	\$1,022
Ogden City	\$170,100	\$818
Riverdale City	\$206,900	\$854
Roy City	\$191,800	\$1,061
South Ogden City	\$213,800	\$963
South Weber City	\$337,800	\$1,341
Sunset City	\$166,700	\$858
Uintah City	\$274,000	\$1,125
Washington Terrace City	\$172,800	\$820

Source: 2019 American Community Survey, 5-Year Estimates.

It is important to note that BAH rates are for military personnel only and are not for the thousands of civilian contractors that work at Hill AFB. Civilian federal employee salaries are determined by the Office of Personnel Management, which provides leadership on Governmentwide pay programs for Federal employees. In partnership with the U.S. Office of Personnel Management (OPM), the Federal Wage System was developed to ensure that appropriated fund and non-appropriated fund hourly employees pay is comparable to the private sector rates in the local area. Non-appropriated fund¹⁰ are monies derived from sources other than congressional appropriations and commissary surcharge funds, primarily from the sale of goods and services to DoD military and civilian personnel and their family members that are used to support or provide Morale, Welfare, and Recreation programs. Appropriated fund¹¹ are monies allocated by legislations passed by Congress and signed by the President.

As a note, the Federal Wage System does not include employees in private sector contracting firms. Employee pay for Federal salary employees in professional, technical, administrative, and clerical positions, is covered through the General Schedule, which is separate from the Federal Wage System¹².

Table 5-7 shows the breakdown of civilian contractors at Hill AFB and the pay based on the Hill AFB Economic Impact 2020.

Table 5-7 Civilian Contractors at Hill AFB and Pay

Employees	Civilians and Contractors		
	Appropriated fund civilians	Non-appropriated fund contract civilians and private business	Total Civilians
Total Employees	14,074	2,649	16,723
Total Pay	\$1,076,517,258	\$18,201,107	\$1,094,718,365
Average Pay per Employee annually	\$76,490	\$6,871	\$65,462
Average pay per employee per month	\$6,374	\$573	\$5,455

Source: Hill AFB Economic Impact 2020.

According to the Utah Informed 2020 report from the Gardner Institute, Davis County had one of the top monthly mortgage payments by county in the state in the third quarter of 2019 at \$1,503¹³. In comparison, the monthly mortgage payment for Weber County in the third quarter of 2019 was \$964. Typically, homeowners pay less than 30% of their monthly gross income on mortgage payments to maintain affordability. Thirty percent of the average monthly salary (\$5,455) for the total civilians at Hill AFB is \$1,667. This is greater than the monthly mortgage payments for both Davis County and Weber County, indicating that there are affordable housing options for civilians and contractors working at Hill AFB.

10 DoD 4105.67. <https://www.acq.osd.mil/dpap/ccap/cc/jcchb/html/Topical/naf.html>

11 <https://www.federalpay.org/articles/fund-types>

12 <https://www.opm.gov/about-us/>; <https://www.opm.gov/policy-data-oversight/pay-leave/pay-systems/federal-wage-system/facts-about-the-federal-wage-system/>; <https://www.opm.gov/policy-data-oversight/pay-leave/pay->

<https://www.dcpas.osd.mil/BWN/WageIndex>; <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/>

13 Utah Informed, Visual Intelligence for 2020, Page 47, Kem C. Gardner Policy Institute, <https://gardner.utah.edu/wp-content/uploads/Utah-Informed-2020.pdf>



5.2.3 Public Services

Public services include the assurance that adequate services such as police, fire, emergency services, parks and recreation, schools, and water/wastewater/stormwater infrastructure are of good quality and adequately available for use by the military and surrounding communities. The supply and demand of these public services in the event of emergency situations is also considered.



No formal agreement between Layton City and Hill AFB for maintenance of shared storm drainage

Layton City and Hill AFB share stormwater drainage conveyance located in Layton City. The City and the Base coordinate stormwater problems that arise with this pipe; however, there is no formal agreement between the Base and City outlining coordination and responsibilities.

Hill AFB has an Industrial Stormwater Discharge Permit for industrial operations that occur on the base. Some parts of the installation have been determined by the Utah Division of Water Quality (DWQ) to have similarities to municipal operations, therefore, Hill AFB also has a Small Municipal Separate Storm Sewer Systems (MS4) permit. The MS4 permit requires that the installation continually implement a Stormwater Management Plan with the intention to reduce the discharge of pollutants from the storm drain system and the to maintain water quality requirements of the Utah Water Quality Act.

According to the Stormwater Management Plan 2016, the stormwater system at Hill AFB controls storm drainage by: 1) Infiltration of runoff into the ground through overland flow or ditches which discharge to

large unoccupied areas (appropriate in areas that are not heavily developed on Hill AFB), and 2) transportation of surface runoff to 14 detention or retention ponds within Hill AFB through a drainage system (appropriate in areas that are developed). Stormwater from Hill AFB drains into Kays Creek, which ultimately leads to the Great Salt Lake, Fife's Ditch, and a UDOT drainage line into the Great Salt Lake.

Layton City last updated its Storm Water Management Program in 2016. According to this plan, the stormwater system in Layton is comprised of curb and gutters, inlet boxes, piping, open channels, swales, canals, and detention ponds. The stormwater facilities mostly drain through piping into Kays Creek and Holmes Creek, which ultimately drain into the Great Salt Lake. Both Hill AFB and Layton City have drainage into Kays Creek.

The storm drain system for Hill AFB is mostly internal to the installation; however, there is a storm drain line that traverses into Layton City. Per the Hill AFB Stormwater Management Plan, this storm drainpipe runs past 3000 N and south into Layton City¹⁴. While this is identified within the Stormwater Management Plan, during the stakeholder interview with Layton City, another line was identified as extending into Layton City on Angel Street to Kays Creek.

Layton City helps to maintain this shared drainpipe. Stormwater problems associated with this drainage system have been well coordinated between Layton City and Hill AFB over the years. It was communicated during a stakeholder interview that there are no current concerns regarding stormwater from Layton City that would impact stormwater permitting at Hill AFB¹⁵.

While there is a general communication process in place for the pipe, there is no formalized coordination between Hill AFB and Layton City for maintenance and monitoring of the drainpipe. A formalized agreement could be a memorandum of agreement that outlines roles and responsibilities for maintaining the drainpipe. Coordination could

¹⁴ Hill AFB Stormwater Master Plan, Pg 20, Figure 3, Storm Drain System

¹⁵ Layton City Interview; 75 CEG interview

also be outlined in the Hill AFB and Layton City stormwater management plans. Without this formalized coordination, there is potential for missed opportunities regarding communication when it comes to future water problems. This is especially a concern if/when there are changes in staffing at the city or installation. Formalized lines of communication would also be beneficial if the storm drain permit for Hill AFB is modified in a way that would impact stormwater management in Layton City or vice versa.



PS-2

Lack of internal transit on Hill AFB impacts the Team Hill use of public transit

The Utah Transit Authority's vanpool program provides transportation to Hill AFB; however, there are no last-mile options to move Team Hill personnel around the installation once they are on base. This may influence how Team Hill personnel commute to the installation.

Public transit is an integral part of regional transportation infrastructure as it provides an alternative to single-occupancy vehicle transport, which may not be an option for every member of the community or military. At present, there are no on-base transit options to facilitate mobility on Hill AFB. Despite this, there are public transit options to get Team Hill personnel from their homes in the community to the installation.

The Utah Transit Authority provides various transit services throughout the state, including rail, bus, and vanpools. FrontRunner is the commuter rail train which operates along the Wasatch Front. The FrontRunner line is located west of Hill AFB. There are no stops at the installation, but there are stops in Layton, Clearfield, Roy, and Ogden. The Roy Station, Clearfield Station, and Layton Station provide connections to bus lines located¹⁶ near Hill AFB. These bus routes include Routes 470, 604, 627, and 640; however, there are not stops at Hill AFB. These routes run every 30 or more minutes and include a stop at the Clearfield Station. While these transit options do not provide direct access to Hill AFB, the UTA offers a vanpool program that can be used to access the installation.

¹⁶ https://www.rideuta.com/-/media/Files/System-Maps/2020/Weber_Davis_System_Map_August2020xx.ashx



The Utah Transit Authority (UTA) offers a vanpool program for the region. The UTA vanpool program leases vans to people who are traveling to and from similar locations. Typically, the vans have capacity for seven to 15 passengers, who all split the cost of the vanpool evenly. Ridership costs are dependent on the number of passengers and the distance traveled. The cost of ridership includes fuel, maintenance, insurance, and leasing of the vehicle. According to a 2018 audit, the vanpool program has been a significant rideshare program in the Wasatch Front, with over 380 active vanpool groups (almost a third of which are used to access Hill AFB) and carrying over 14 million passengers annually¹⁷.

The vanpool program is used by military personnel and civilian employees to access the installation; however, once they are on base, there is not an option to fulfill last mile needs to get from the gates to other parts of the installation. Prior to the COVID-19 pandemic, there were a total of 560 vanpool riders who were being transported to Hill AFB annually. This totaled 96 traditional vanpools and two RideVanPlus vanpools. The breakdown of the location of these vanpools is listed in Table 5-8. RideVan Plus vanpools are different to the tradition vanpools in that they are made up of vans that are parked at the Clearfield FrontRunner Station where riders can access the vanpools after taking the train. Riders can then use these vans to access the installation. The traditional Van Pools program is made up of the typical vans, but are driven by a base employee from their neighborhood.

Table 5-8 Utah Transit Authority Vanpool Ridership

Location	Number of Vanpools
Oneida County, Idaho	3
Box Elder County	23
Cache County	17
Davis County - Traditional	6
Davis County - Ride Van Plus	2
Morgan County	2
Salt Lake County	18
Tooele County	2
Utah County	4
Weber County	21

Source: Utah Transit Authority, 2019 (email correspondence from April 23, 2020 from Luwanna Fitzgerald – Vanpool Specialist).

The vanpool program is an option for direct public transit access to the installation. While the vanpool program brings commuters to the installation, the lack of internal transit on base to fulfil last-mile needs may deter commuters from utilizing the public transit options in the community. This could impact overall transit ridership throughout the community.

¹⁷ Vanpool webpage, UTA, 2020, <https://www.rideuta.com/Rider-Info/Vanpool>; Vanpool Operations Internal Audit Report, 2019, page 1



Need for formalized coordination between some surrounding communities and Hill AFB for emergency services and law enforcement

PS-3

Though Hill AFB provides emergency medical services (EMS) to Ogden City and the Clinton City Police Department provides services on Hill AFB as needed, these activities are not formalized in an MOU to ensure continued coordination and clear roles and responsibilities in the event of an emergency related to Hill AFB.

Hill AFB has existing relationships with various emergency response and law enforcement departments throughout the Project Study Area. Although there are partnerships between the installation and communities for these services, these relationships are not formalized. Memorandums of understanding (MOU) or memorandums of agreement (MOA) provide the ability to share resources and expertise amongst different agencies. In the event of an emergency, the different agencies can coordinate responses in an efficient manner that does not compromise hours of training or resources.

Hill AFB provides EMS support to Ogden City as needed; however, this relationship is not formalized through an MOU. Like many of the EMS departments in the Project Study Area cities, Ogden City has resources for responding to emergencies through Emergency Medical Services, which is a part of their Fire Department. As part of EMS at Ogden City, the Fire Department has First Responder Medical on five fire engines¹⁸. These resources should be communicated and coordinated with Hill AFB for emergency services as needed.

Currently, there is an MOU¹⁹ between Hill AFB and different jurisdictions and agencies for fire investigations for fires that occur in

¹⁸ <https://www.ogdencity.com/182/Fire-Department>

¹⁹ Memorandum of Understanding Between Clinton City Fire Department, Farmington City Fire Department, Kaysville City Fire Department, Layton City Fire Department, South Weber Fire Department, and Syracuse City Fire Department, North Davis Fire District, South Davis Metro Fire Service Area, and Hill AFB Fire Department

Davis County, but it does not include emergency medical services. This MOU is between the Fire Departments for Clinton, Farmington, Kaysville, Layton, South Weber, and Syracuse Cities, North Davis Fire District, South Davis Metro Fire Service Area, and Hill AFB Fire Department. Although this MOU is for fire-related services, a similar MOU can be established for EMS, which is often provided through city fire departments.

Similar to EMS, Hill AFB has existing relationships with police departments throughout the Project Study Area, such as with the Clinton City Police Department and Hill AFB. Through stakeholder interviews, it was noted that the Clinton City Police Department provides occasional law enforcement services on Hill AFB. The police department also conducts joint training with law enforcement and has some mutual aid, but there is not a formal agreement that outlines the roles and responsibilities for both parties²⁰.

In addition to the relationship between Clinton City and Hill AFB, there is also a relationship between Layton City Police Department. Unlike the relationship between Hill AFB and Clinton City, this relationship is formalized through an MOU. The MOU is between the Layton City Police Department and the 75th Security Forces Squadron (75 SFS) for “mutual support in force protection and police incident response”. The purpose of the MOU is to formalize procedures followed by each jurisdiction in the event there is a violation of state and local laws that occur in the areas near or approaching Hill AFB near the boundary of both jurisdictions. There is also a mutual aid agreement between Davis County and Hill AFB. This mutual aid agreement is for Emergency Mutual Air Force Protection and Police Incident Response. A similar MOU could be developed for other jurisdictions that have similar, but not formalized relationships with Hill AFB.

²⁰ Stakeholder interviews 4/15/20



5.3 Resource Factors

There are five compatibility factors in the resource factor category that were found to have issues. These are:

- Air Quality
- Biological Resources
- Land/Airspace Competition
- Resiliency
- Water Quality/Quantity

5.3.1 Air Quality

Air quality is defined by numerous components that are regulated at the federal and state level. For compatibility, the primary concerns are pollutants that limit visibility, such as particulates, ozone, etc. and potential non-attainment of air quality standards limiting future operations at the installation or in the area.



AQ-1

Concern that the designation of Ozone and Particulate Matter 2.5 nonattainment in Davis and Weber Counties could have impacts on the military mission and operations

Davis County and western Weber County are designated nonattainment areas by the State of Utah for Ozone and Particulate Matter 2.5. Regional air quality can restrict development and potentially impact the Hill AFB operating permit.

The Utah Department of Environmental Quality (UDEQ) is responsible for issuing air quality permits, such as Title V permits, for the State of Utah. Title V permitting is part of the Clean Air Act and allows for a specified amount of major source air emissions for criteria air pollutants (ozone, particulate matter, carbon monoxide, lead, sulfur dioxide, nitrogen dioxide). Through the Title V permit, emitting sources are required to obtain a permit, operate in compliance with the permit, and annually certify that they comply with permit requirements.

Hill AFB and the UTTR have a Title V permit through UDEQ, which covers operations that occur at Hill AFB, the UTTR, and Little Mountain Test Facility. The permit (Permit # 1100007003) was issued in August 2016 and was revised in January 2018. The permit is up for renewal in August 2021 when it will expire. The permit undergoes annual certification in October of every year. The most recent amendment to the Title V permit was submitted in January 2020.

Operations permitted for Hill AFB and its facilities under this Title V permit include maintenance, testing activities, ordnance disposal, and industrial depot operations. As listed in the permit, the following are the air emission operations that occur at Hill AFB and the UTTR: industrial facilities for painting paint stripping, plating, parts warehousing/distribution, and wastewater treatment; conventional air munitions, solid propellants, landing gear and training devices. Per the permit, Hill AFB is a major source of air pollution for: Particulate Matter 2.5, Particulate Matter 10, Nitrogen Oxides, Carbon Monoxide, Volatile Organic Compounds, and Hazardous Air Pollutants.

UDEQ provides regional air quality monitoring at multiple sites throughout the state. The closest monitoring sites to Hill AFB facilities are: Harrisville in Weber County, Bountiful #2 in Davis County, and Erda in Tooele County²¹.

Within the general region of the Project Study Area, Davis County is in nonattainment for ozone in the northern Wasatch Front Area. In Weber County, the northern Wasatch Front is in nonattainment for ozone, and the Ogden area is in nonattainment for PM10.²²

Air monitoring is done at a regional level and as such, there are many industries that impact the air quality in the region. While Hill AFB and the UTTR emit certain pollutants, other facilities in the region also emit pollutants and contribute to the regional air quality. Other Title V permit holders located by Hill AFB are: Wasatch Integrated Waste Management-Davis County Landfill, ATK Launch Systems-Clearfield Plant, and American Nutrition Incorporated-Ogden Grain Elevator Station. Other Title V permit holders located by the UTTR are: Tooele Power-Desert Power Plant, Chemical Lime Company-Delle Lime Facility and Delle Quarry, and Wasatch Regional Landfill-Skull Valley Landfill²³.

Due to the regional aspect of air quality, it is important to ensure that all permit holders and other polluters are held accountable to ensure that conditions do not worsen as this could lead to potential increases in air quality regulations. Increasing air quality regulations have the potential to impact future mission operations if they are such that the installation, as well as other economic generators in the region, can no longer perform certain operations.

To ensure air quality compliance, Hill AFB developed Hill Air Force Base Instruction 32-104 (January 9, 2018)-Air Quality and Resource Management. This Instruction defines responsibilities, processes, and procedures for ensuring air quality compliance during daily operations involving air emission equipment at Hill AFB, including the Ogden Air Logistics Center, UTTR, and Little Mountain Test Facility. The Instruction focuses on actions and responsibilities assigned to the Hill AFB Civil Engineer air quality function and the Industrial Organizations owning, maintaining, or operating equipment producing air emissions. In total, Hill AFB has over 4,000 air processes which are governed by various air quality rules and regulations²⁴.

²¹ Utah Department of Environmental Quality: <https://enviro.deq.utah.gov/>

²² https://www3.epa.gov/airquality/greenbook/anayo_ut.html

²³ <https://enviro.deq.utah.gov/>

²⁴ Hill Air Force Base Instruction 32-104 (January 9, 2018) – Air Quality and Resource Management



5.3.2 Biological Resources

Biological resources include species that are listed by federal and/or state agencies as threatened or endangered, as well as those species' habitats. Biological resources may also include "species of concern" that are living organisms in need of concentrated conservation efforts and areas such as wetlands and migratory corridors that are critical to the overall health and productivity of an ecosystem. The presence of sensitive biological resources in an area where increased use or development is planned, may prompt special considerations and protective measures and should be identified as a concern early in the planning process.



BIO-1

Sensitive species are located on and around Hill AFB and the UTTR. If their status is upgraded to threatened or endangered and protections are enhanced, military operations could be impacted.

There are several sensitive species located on or around land under airspace that is owned by Hill AFB and the UTTR. The protection of sensitive species is anticipated to require a regional conservation approach to ensure that these species' status does not get upgraded, which could prompt additional measures that could limit or halt military operations at Hill AFB facilities.

At present, there are no threatened or endangered species on lands owned and managed by Hill AFB; however, there are several species of concern that have been found underneath airspace that is owned and operated by Hill AFB. The presence of these species of special concern will require future development at Hill AFB facilities to avoid, minimize, and mitigate any impacts to the species.

The species of special concern, identified in the Hill AFB ICEMAP, are the greater sage-grouse and the golden eagle. According to the U.S. Bureau of Land Management (BLM), the greater sage-grouse is located in various counties, including Tooele County and Weber County, and the golden eagle has been found in all counties in Utah. The greater sage-grouse does not have documented habitat on lands owned by Hill AFB; however, there is habitat for the bird under Hill AFB airspace. The BLM describes the greater sage-grouse as relying on sagebrush for its habitat to survive. The urbanization of this habitat, invasive species, and wildfire have impacted the habitat and the greater sage-grouse population²⁵. The BLM provides policy guidance for greater sage-grouse habitat management and currently manages tens of millions of acres of safe landscape for the species. Additionally, while no longer on the threatened or endangered species list, the golden eagle is currently protected under the federal Bald and Golden Eagle Protection Act. This Act protects bald and golden eagles and nests by prohibiting the taking of these eagles and nests with a permit²⁶.

The Hill AFB Integrated Natural Resources Management Plan (INRMP) for 2017-2021²⁷, required under the Sikes Act, sets policy and provides guidance for natural resources on Hill AFB and its facilities. The INRMP was developed in coordination with the U.S. Fish and Wildlife Service and the Utah Division of Wildlife Resources and was developed under the 75th Air Base Wing Natural Resources Program. The INRMP acknowledges that special care, emphasis, and management is required for species of special concern. Management actions include identifying critical habitats that are associated with the species of special concern, conducting species population surveys, and identifying and enhancing the ecosystem to support requirements for species sustainability. The INRMP also notes that the Hill AFB Natural Resources Program can avoid, minimize, or mitigate impacts to

²⁵ <https://www.blm.gov/programs/fish-and-wildlife/sage-grouse>

²⁶ <https://www.blm.gov/policy/im-2017-040>

²⁷ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021.

sensitive species if future project proposals threaten the habitat of sensitive plants and animals.

In addition to the plans and programs that Hill AFB has to protect sensitive species, the U.S. Fish and Wildlife Service has an online tool, called IPaC²⁸, to help identify threatened and endangered species. Although there are none in the Project Study Area at this time, this tool can be utilized to identify whether special species of concern are elevated to a threatened or endangered status. If they are, this tool provides information about the species and associated critical habitat.

²⁸ U.S. Fish and Wildlife Service, IPaC Information for Planning and Consultation, <https://ecos.fws.gov/ipac/>



5.3.3 Land/Airspace Competition

The military manages and uses land and air space to accomplish testing, training, and operational missions. These resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military and civilian land and air operations can compete for limited land and air space, especially when the usage areas are near each other. Use of these shared resources can impact future development and operations for all users.



Concern for airspace congestion and competition between Hill AFB and surrounding airports

LAS-1

Airports in the Project Study Area and Hill AFB coordinate to make sure there are no airspace conflicts; however, there is community concern that future general aviation operations at airports and future mission changes at Hill AFB will be impacted if there is airspace congestion.

Hill AFB is located in between two major airports for the region - Salt Lake City International Airport and Ogden-Hinckley Airport, which both have a Class B airspace²⁹. With the presence of these airports, there is concern that the demand for existing and future air operations at the airports and Hill AFB facilities will create airspace congestion and competition.

Salt Lake City International Airport is the largest airport in the region and has four runways, three of which are air carrier runways and one of which is a general aviation runway³⁰. Salt Lake City International Airport controls the airspace south of Hill AFB and the airport, making it important for coordination and communication between Hill AFB and the installation. The airport provides international commercial aviation services and has more than 370 flights departing daily (during pre-COVID conditions) and 340 based aircraft. While Hill AFB and Salt Lake City International Airport do not share the airspace, the airspace for the airport is in proximity.

The Ogden-Hinckley Airport is the closest airport to Hill AFB. Ogden-Hinckley Airport is the busiest municipal airport for private planes in the state, averaging approximately 300 aircraft operations daily in 2019³¹ and has 241 based aircraft. The airport has an FAA control tower, two runways, and all-weather, 24-hour precision instrument landing system approach capability. Table 5-9 lists operation statistics for Ogden-Hinckley Airport and Salt Lake City International Airport.

²⁹ <https://skyvector.com/>

³⁰ <https://slcairport.com/about-the-airport/>

³¹ <https://www.ogdencity.com/446/Airport>

Table 5-9 Operational Statistics at Ogden-Hinckley Airport and Salt Lake City International Airport as of July 2021

Operational Statistics	Ogden-Hinckley Airport	Salt Lake City International Airport
Total aircraft	241	340
Single engine airplanes	191	190
Multi engine airplanes	25	69
Jet airplanes	8	47
Helicopters	12	25
Gliders	2	0
Ultralights	3	0
Military aircraft	0	9
Total aircraft operations per day	311	944
Commercial	<1%	67%
Air Taxi	3%	17%
Local General Aviation	37%	14%
Transient General Aviation	59%	1%
Military	<1%	1%

Source: AirNav, <https://www.airnav.com/airport/KOGD>,
<https://www.airnav.com/airport/KSLC>, July 2021

Potential airspace competition could occur if there are additional or new operations with new aircraft at these airports without coordination with Hill AFB facilities. The competition for airspace could affect the scheduling of operations for both the regional airports and Hill AFB facilities, impacting military readiness. To mitigate these concerns, Hill AFB has developed its flight paths to circumvent the Salt Lake City International Airport airspace. Additionally, as described in the Ogden-Hinckley Airport Master Plan, last updated in March 2020³², the altitude for traffic patterns at Ogden-Hinckley Airport is lower than the aircraft overflight from Hill AFB. No other considerations for coordination with Hill AFB related to airspace competition are provided in the master plan. Additional concerns are related to frequency impacts to the Hill AFB facilities. As noted in LAS-2, increases in operation could require additional frequencies to manage the aircraft traffic.

³² Ogden-Hinckley Airport Master Plan Update, March 2020

https://www.ogdencity.com/DocumentCenter/View/12538/OGD_AirportMasterPlan_Draft?bidId=



Potential for future air space competition between Tooele Valley Airport and the UTTR

LAS-2

Although not a current issue, there is a concern for potential future airspace competition with the UTTR if future operations at Tooele Valley Airport include larger aircraft or a longer runway.

The Tooele Valley Airport is located in Tooele County, southeast of the UTTR. The airport is operated by the Salt Lake City International Airport, which also operates South Valley Regional Airport. Current aviation services at Tooele Valley Airport include sky diving, law enforcement services, recreational flying, and flight training. The primary users of the airport are Skydive Utah, which has operations active during April-November each year, and BLM Fire, which is active June-November each year.

The airport has one runway that measures 6,100 feet long by 100 feet wide. An Airport Master Plan is currently being developed for the Salt Lake City International Airport. While the plan is not complete as of the development of this CUP, the Facility Requirements chapter of the draft Airport Master Plan indicates that general aviation growth is anticipated across all three airports, including Tooele Valley Airport. Furthermore, the Master Plan notes that implementation of the strategies in the Master Plan will likely results in operational growth at both the South Valley Regional Airport and the Tooele Valley Airport³³. While the South Valley Regional Airport is not in the Study Area, growth at this airport is important to monitor since it is a part of the Salt Lake City Department of Airports.

Due to the proximity of the Tooele Valley Airport to the UTTR, there is potential for operational growth at the airport to impact the existing or future operations at the UTTR. It was noted during a stakeholder interview that there is potential for Salt Lake City International Airport to move small aircraft operations to Tooele Valley Airport. Currently, small aircrafts take off at Salt Lake City International Airport, but by moving these to Tooele Valley Airport, airspace would be available for larger aircraft at Salt Lake City International Airport. The increase in aircraft traffic at Tooele Valley Airport would require additional frequency to manage, which could impact frequencies at the UTTR³⁴.

Salt Lake City International Airport is currently in the process of developing an overlay ordinance for Tooele County to protect Tooele Valley Airport from growth in the development in the surrounding area. The Tooele Valley Airport Overlay Zone Model Code, Version 2.1 was developed in April 2020 for the Salt Lake City Department of Airport. The purpose of the overlay zone is to ensure that airport hazards to human life and property are reduced, if not eliminated and that the health, safety, and welfare of people and property are not comprised. An additional purpose of the overlay is to ensure that obstructions to navigable airspace and incompatible development is limited. Within the overlay, uses should comply with Federal Aviation Administration (FAA) Part 77 height restriction and should not create electrical interference that could impact aircraft operation or airport instrumentation. While this overlay was developed to protect the Tooele Valley Airport, the benefits of compliance with this overlay zone, if adopted, would also extend to the UTTR due to its proximity to the airport³⁵.

³³ <https://slcairport.com/about-the-airport/general-aviation/tooele-valley-airport/>

³⁴ Salt Lake City interview 4/17/20

³⁵ Tooele Valley Airport Overlay Zone Model Code, Version 2.1, April 2020



Security and safety concerns from civilian drone activity

LAS-3

The use of civilian drones creates security and safety concerns for Hill AFB facilities and aircraft. Drones can pose operational threats from intentional or unintentional overflight of Hill AFB and UTTR to surveil activities and create potential flight hazards and mid-air collision risks for military aircraft.

The use of drones, or unmanned aerial systems (UAS), has increased across the U.S. in recent years due to their availability in terms of cost, use, and size. As of November 2020, there are over 1,700,000 UASs registered with the FAA³⁶. Approximately two thirds of the registered drones are recreational drones and approximately one third are commercial drones. Both recreational and commercial drones create security concerns for military personnel and equipment as many drones have built in cameras. Drone operations near military installations can create security risks for the military if the drone is used to capture photographs of federal property, operations, activities, and/or facilities. In addition to these security concerns, there is potential risk associated with improper use of drones near airports creating potential mid-air collisions and posing a hazard to aircraft safety. Whether these actions are done intentionally or unintentionally, UAS activity is a concern to Hill AFB.

The FAA regulates UASs in active airspace and requires that UASs meet certain size and weight requirements to be registered for authorized use. Additionally, the FAA creates no-fly zones, or restricted flight areas, for UASs, such as around airports or over military installations and monitors and tracks UASs flying in unauthorized areas. The FAA Administration receives more than 100 reports of unauthorized drone flights a month nationwide³⁷.

Within the Project Study Area, between June 2019 and June 2020, there were four unauthorized drone sightings, all of which were in Ogden. In all four instances, the Salt Lake City Airport Police Department was notified. Additionally, although not unauthorized, drone sightings have occurred by the UTTR at the Knolls Off-Road Site. The off-roading site is approximately 36,000 acres of sand dunes, hills, and mud flats. Due to the recreational nature of the site, drones are often used at the recreational site to video themselves on their off-road vehicles.

As shown on Table 5-10, there are over 300 drones registered in the Project Study Area (as of Q3 2020). These include both commercial drones and recreational drones. Only cities are reported in FAA registration, therefore the total number of drones in unincorporated Weber and Davis County are not included in this list.

³⁶UAS by the Numbers, Federal Aviation Administration, https://www.faa.gov/uas/resources/by_the_numbers/

³⁷ UAS Sightings Report, Federal Aviation Administration, https://www.faa.gov/uas/resources/public_records/uas_sightings_report/



Table 5-10 Drone Registrations in the Project Study Area

Jurisdiction	Drones registered by recreational flyers and modeler community-based organizations (Sec 336 Registrations)	Drone registered by certified remote pilots including commercial operators (Part 107 Registrations)
Clearfield	36	133
Clinton	32	116
Hill AFB	5	15
Layton	142	443
Ogden	199	447
Riverdale	11	2
Roy	39	194
South Weber	18	42
South Ogden	21	54
Sunset	2	11
Tooele	55	141
Uintah	1	4
Washington Terrace	4	14

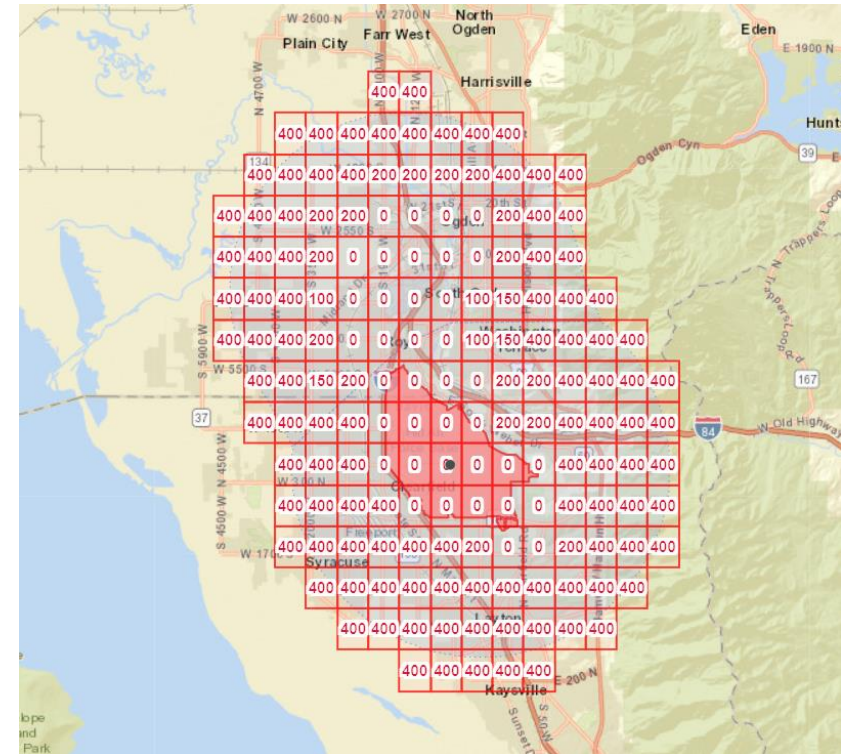
Source: Federal Aviation Administration, Geographic listing of hobby/non-hobbyist sUAS registry enrollments and registrants³⁸.

Figure 5-3 shows the FAA drone restricted area around Hill AFB. The numbers on the figure are the drone ceiling altitudes permitted around the installation. There are no restricted areas mapped for the UTTR. Despite this, the UTTR has “no drone” information posted on their website³⁹.

38 https://www.faa.gov/foia/electronic_reading_room/#geo_list

39 <https://www.hill.af.mil/Portals/58/documents/No-Drone-Zone-Flyer.PDF?ver=2018-01-17-115644-580>

Figure 5-3 Drone Restrictions over Hill AFB



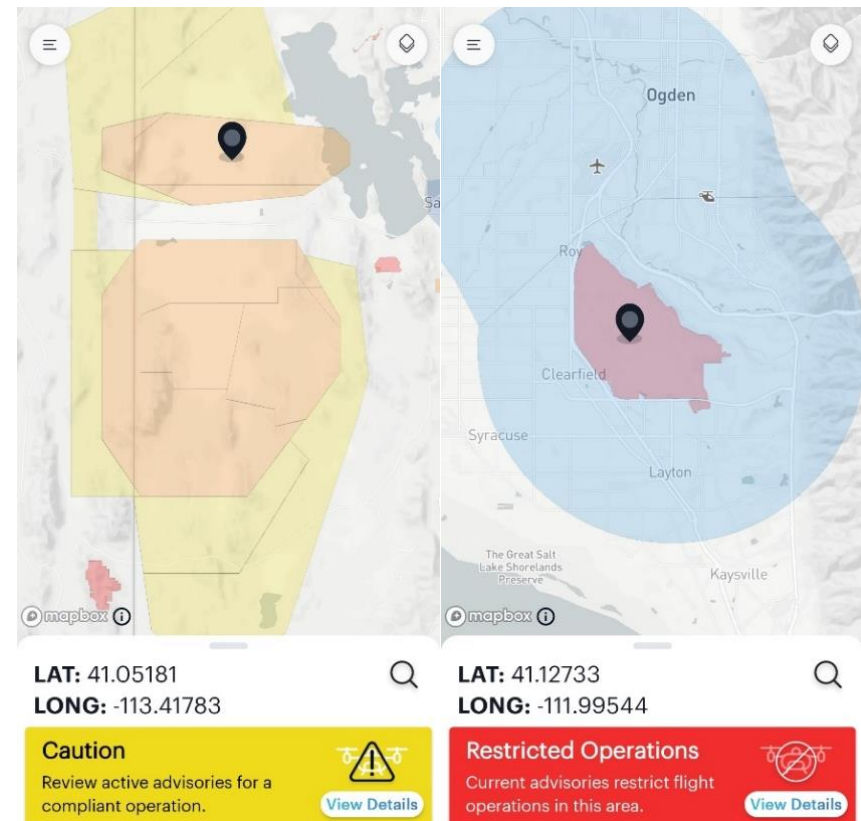
Source: Visualize it: See FAA UAS Data on a Map⁴⁰.

40 <https://www.arcgis.com/apps/webappviewer/index.html?id=9c2e4406710048e19806ebf6a06754ad>

To provide information and education regarding these restricted areas for drone use, the FAA has developed the B4UFLY mobile app⁴¹. The free app provides information on FAA restrictions and interactive maps to assist drone operators with learning where they can and cannot fly their drone. Drone users cannot request or obtain airspace authorization to fly in controlled airspace through this app.

The State of Utah regulates drone use through Senate Bill 111 Unmanned Aircraft Amendments⁴², which was signed by the Governor in 2017. The bill provides regulations for drone use. Per the bill, drone regulations do not apply to a person or business entity operating an unmanned aircraft system in a way that is consistent with the applicable FAA rules. The bill states that “an individual may not operate an unmanned aircraft in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless the operator of the unmanned aircraft has prior authorization from air traffic control” and “an individual may not operate an unmanned aircraft in a manner that interferes with operations and traffic patterns at any airport, heliport, or seaplane”. The bill also states that local ordinances for unmanned aircraft may not be enacted.

In addition to federal and state regulations, technology applications, such as geofencing, or limiting the range a UAS can fly, can keep UASs out of areas of concern and thereby limit hazards. Geofencing uses GPS or radio frequency identification to create a geographic boundary that location-aware devices avoid. However, few manufacturers have incorporated this technology into their UASs, as it is not required by law.



Screenshot from the B4UFLY Mobile App showing UAS flight restrictions over the UTTR and Hill AFB.

Source: Federal Aviation Administration B4UFLY Mobile App.

⁴¹ www.faa.gov/uas/resources/

⁴² <https://le.utah.gov/~2017/bills/static/SB0111.html>



5.3.4 Resiliency

Resiliency pertains to how we prepare for and mitigate shifts in global weather patterns and temperatures. The results of changing conditions may create negative effects and can present operational and planning challenges for the military and communities as resources are depleted and environments are altered. Resiliency also refers to the capability of military installations to ensure continued mission readiness and continuity of operations under a range of natural and man-made disasters.



Need for infrastructure resiliency at Hill AFB facilities

RE-1

While there are redundancies in place for utilities, there is a need for infrastructure resiliency for water availability, energy availability, wastewater treatment, and utilities at Hill AFB, the UTTR, and Little Mountain Test Facility as utility demand increases.

Infrastructure resiliency in this context can be described as having reduced dependency on outside infrastructure such as water, wastewater, and energy to support the mission and operations at Hill AFB, the UTTR, and Little Mountain Test Facility. A component of resiliency is providing redundancies to ensure that any disruptions to any one particular line of infrastructure will not impede military operations.

The Hill AFB Installation Development Plan (IDP), a plan that describes the physical state of the installation, identifies the utilities on the installation, where the utilities are sourced from an outside utility company, from within the installation, or both, if there are redundancies on-base, and if the utilities are sufficient for existing and future installation growth. These utilities include water, energy, wastewater treatment, and utilities.

The following is an overview of the infrastructure at Hill AFB:

- Energy from outside utility is purchased from Rocky Mountain Power
- Supplementary power comes from the Colorado River Storage Project
- 27% of the installation's energy comes from renewable energy on-base
- Energy generation on base comes from gas turbines, methane gas from water wells, solar PV arrays
- There are 9 drinking water well intakes on Hill AFB, which provide most of the drinking water for Hill AFB. The remainder is purchased from the Weber Basin Water Conservancy District
- No wastewater treatment plant. Wastewater is discharged off-installation for treatment and disposal into the North Davis Sewer Districts wastewater treatment plant



Potential for wildfires to be an impediment to future mission growth at Hill AFB facilities

RE-2

There are wildfire risks related to human activities and natural causes in Utah that could impact future mission growth for Team Hill.

Utah has historically been prone to wildfires. According to the State's website, there are between 800 and 1,000 wildfires in the state every year. In 2018, approximately 52% were human caused while the remainder occurred naturally⁴³. In Utah, wildland fires often occur in the summer months, typically from June through October.⁴⁴

According to the Davis County Natural Hazard Pre-Disaster Mitigation Plan, wildland fires have historically been a challenge throughout the county. As growth occurs in wildland areas, fires will continue to be a threat to urban structures. Communities within the county that have been classified as "at risk" for wildland fire are: North Salt Lake, Bountiful, Centerville, Farmington, Fruit Heights, Kaysville, Layton, and South Weber⁴⁵. While the Plan does not include goals and objectives specific to Team Hill, Team Hill participated in the review of the plan.

Like Davis County, Weber County is also at risk for wildland fires. Fire potential is prevalent in both the wildland-urban interface areas, the foothills, and in forested areas, particularly in the summer. Wildfire hazards in the county have increased over the last thirty years as urban development has encroached into the forested foothills and wildland areas⁴⁶.

⁴³ <https://hazards.utah.gov/wildfire/>

⁴⁴ ICEMAP

⁴⁵ Davis County Natural Hazard Pre-Disaster Mitigation Plan, 2016

⁴⁶ Weber County Pre-Disaster Mitigation Plan 2015

Similarly, the majority of Tooele County is at risk to wildfires. Historically, wildfires in Tooele County have occurred in population areas as well as areas where there is dry and dense vegetation⁴⁷. Wildfires that have occurred in the last ten years have been caused by both natural and human activities.

Figure 5-4 shows where there are high risks of wildland fire in the Study Area. As the map shows, the majority of the areas surrounding both the UTTR and Hill AFB are identified as having low to high wildfire potential. The areas to the east of Hill AFB in the undeveloped Wasatch Mountains pose the highest wildfire threats in the region.

Wildland fires are a concern for all Hill AFB facilities; however, the UTTR has experienced the greatest frequency of wildland fires. The UTTR is particularly susceptible to wildland fire due to live-fire exercises that are conducted on the range. Wildland fires can be exacerbated by the dry climate, exacerbated by drought (see WQQ-2), changes in land use, invasive species, and the absence of fire management in the region.

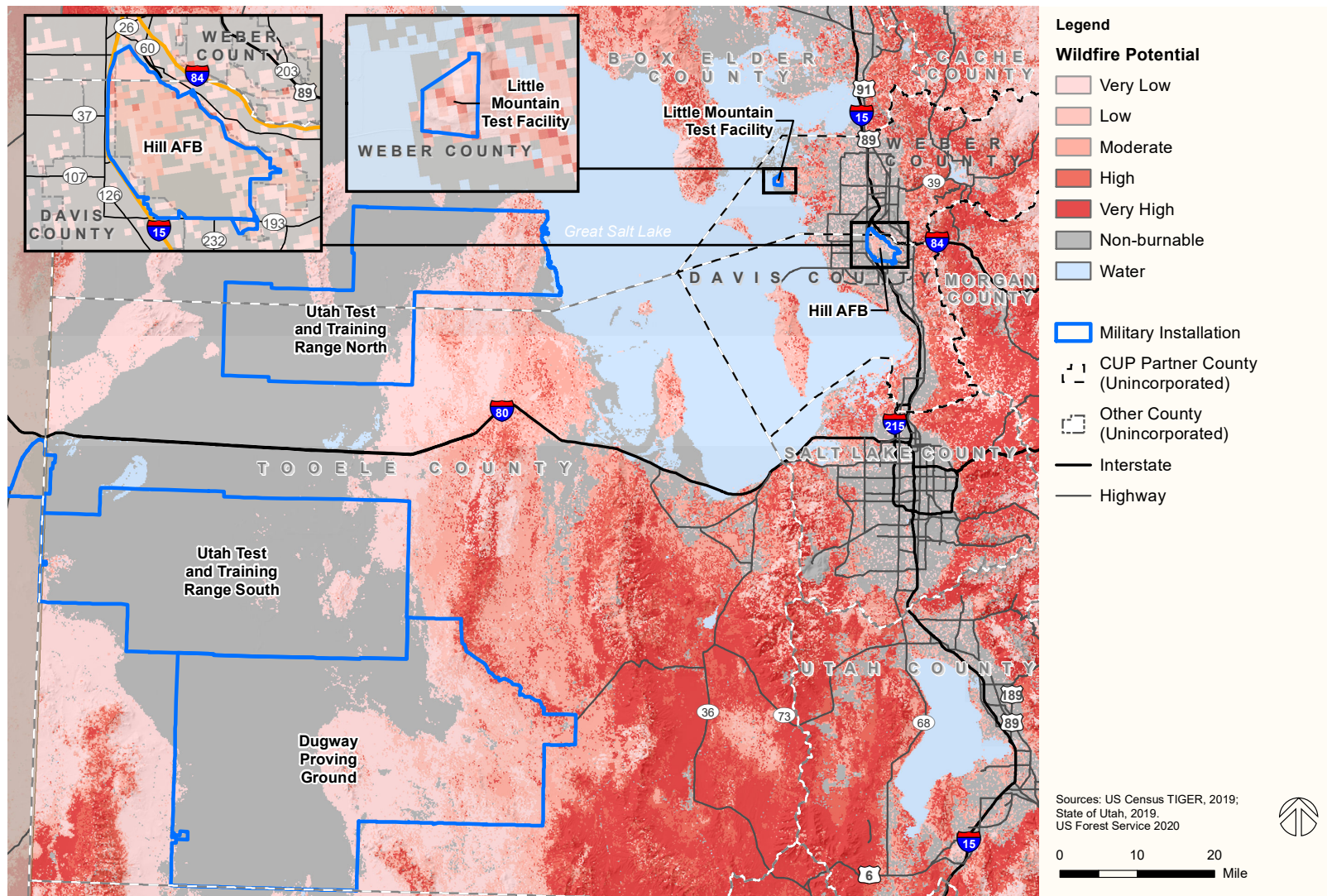
Wildland fires can impact the mission in various ways, including creating smoke that impedes visibility, which can cancel or delay missions⁴⁸, and destroying native vegetation which creates space for invasive species⁴⁹. Additionally, if fires are not controlled, there is also potential for threats to personnel safety.

To mitigate wildland fires, munitions are limited where possible. Team Hill also conducts prescribed burns to remove plant species that create wildland fire hazards. On the UTTR, controlled burns cover approximately 5,000 acres annually.

⁴⁷ Pre-Disaster Mitigation Plan – Tooele County, Utah 2016

⁴⁸ ICEMAP

⁴⁹ INRMP



The Natural Resources staff at Hill AFB plant firebreaks, using a species of plant that remains green during the fire season and thus promotes fire resistance. These plants are strategically placed where repeated fires have historically occurred. The firebreak is used to contain fires and keep them from spreading. These fire breaks help create boundaries around areas of species restoration, giving the species a better opportunity to grow without impacts from fires. Prior to detonations or prescribed burns at the UTTR, the 75 CEG/CEUE Unit Environmental Coordinator inspects fire breaks

Team Hill has a Wildland Fire Management Plan, which includes coordination with the UTTR Fire Department, UTTR Range Squadron and Wildland Fire Center. Team Hill also coordinates with community Fire Departments and agencies for fire investigations. The Davis County Fire Investigation Team was developed through a Memorandum of Understanding between Clinton City Department, Farmington City Fire Department, Hill AFB, Kaysville City Fire Department, Layton City Fire Department, North Davis Fire Department, South Davis Metro Fire Service Area, South Weber Fire Department, and Syracuse City Fire Department. The purpose of the MOU is to define responsibilities to the listed agencies for a multi-agency fire investigation team, called the Davis County Fire Investigation Team.

The Davis County Fire Investigation Team has the purpose of determining the origin and cause of fires at the request of a participating agency or city; develop and share information about arsonists and related criminal activities; and to provide mutual assistance to other agencies for investigation of fires for civil and criminal purposes.

While this MOU is not for wildland fires, it shows potential for additional fire coordination. Additionally, wildland fires can be started by natural or human-made causes.



5.3.5 Water Quality/Quantity

Water quality/quantity concerns include assurance that adequate water supplies of good quality are available for use by the military and surrounding communities to support current needs and future growth. Water supply for agriculture and industrial use is also considered.



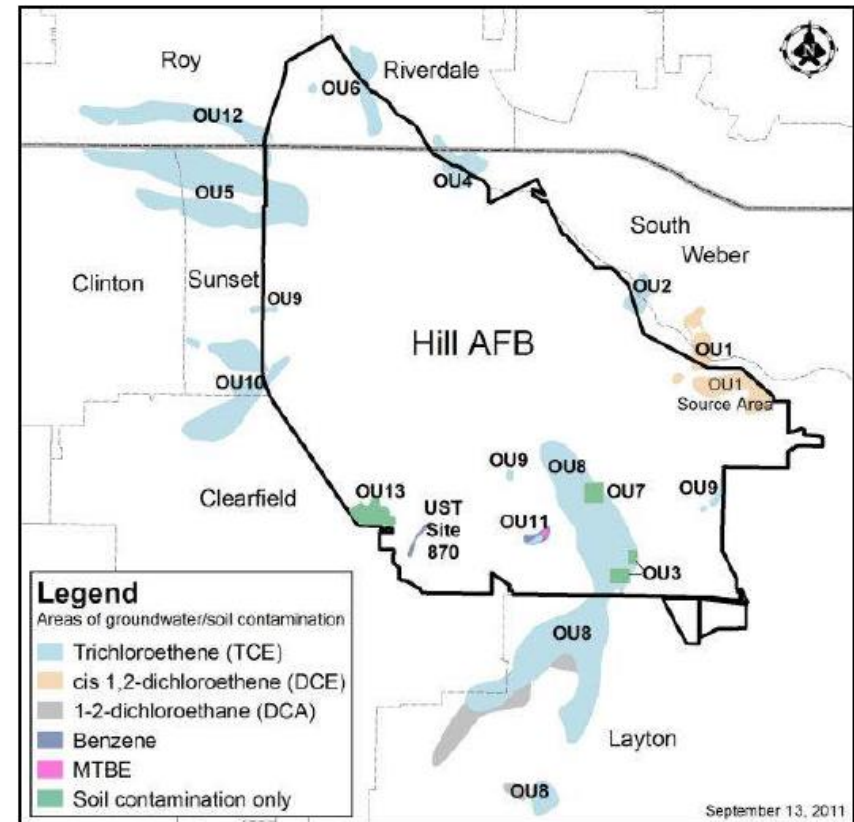
WQQ-1

Community concern for impacts of Trichloroethylene contamination plume from Hill AFB

A trichloroethylene (TCE) plume, generated from Hill AFB, is dispersing through the surrounding communities through shallow groundwater. While remediation efforts are ongoing, there is community concerns for implications of this plume.

Trichloroethylene (TCE) is a solvent used to degrease and clean aircraft parts at Hill AFB. This solvent has been used at Hill AFB for over 50 years and though it is still used today, it is used in a controlled amount. Trichloroethylene is the most widespread chemical emanating from Hill AFB. As Figure 5-5 shows, the TCE plume has contaminated groundwater in Roy, Sunset, Clinton, South Weber, Riverdale, Layton, and Clearfield.

Figure 5-5 Hill AFB Areas of Groundwater Contamination



Source: Hill Air Force Base/Utah Test and Training Range Installation Complex Encroachment Management Action Plan, Volume I, November 2013.

The discovery of TCE in shallow groundwater around Hill AFB goes back to the late 1990s. Through an investigation, it was determined that the leak was tied to Hill AFB. This presence of the chemical in the shallow groundwater creates a concern for residents who use wells as their source for potable water. There is also concern that the TCE can create potential secondary exposure through vapor intrusion, which can also create health risks. While there are health risks associated with the TCE plume, Utah does not require real estate disclosures of the plume as Utah is a “buyer beware” state. In contrast, some residents have also expressed concerns related to disclosures of contamination lowering property values, impeding real estate sales, and limiting opportunities for land development.⁵⁰

Hill AFB has conducted remediation efforts for the presence of TCE in the community. Since the 1990s, Hill AFB has taken action to ventilate homes and prevent TCE vapors from entering homes. Air samples have been collected at off-base residences since 1992 and Hill AFB continues to test homes in the area.

Clean up and mitigation costs for remediation efforts are incurred by the installation and the Air Force and are subject to regulatory oversight. Remediation efforts are done through the Hill AFB Restoration Advisory Board⁵¹. The responsibility of the Board is to guide the management of contaminated sites. The Board does the following: risk assessment, review annual cleanup program budgets, form working groups to study programs, serve in an advisory role for the cleanup process, and advise citizens in public meetings. Members of the board include Hill AFB representation, federal and state regulatory members, Weber Basin Water Conservancy District, and community members, which are selected through an open application process. In addition to remediation efforts, communication will continue to be important for transparency regarding contamination.

This communication will continue to be necessary with community leaders and well as with residents.

Some of the communities that have been impacted by the contamination have included information in their respective planning documents. One such example is South Weber City, which included contamination information in the South Weber City General Plan Update 2020 Draft. This was incorporated by adding “Hill Air Force Base Environmental Impact Areas” to their General Plan Sensitive Lands Map. This map delineates the soil contamination plume and area of indoor air sampling. Roy City also including information regarding groundwater contamination to their general plan. The Roy City General Plan 2002 identifies Hill AFB groundwater contamination as a pollution hazard under the chapter titled “Physical Environment and Hazards”. This chapter includes a map with these hazards mapped, which includes the location of the TCE plume.

The latest groundwater management plan for the region was completed in 1995 by the Utah Division of Water Rights. The Groundwater Management Plan for the Weber Delta Sub Area of the East Shore Area identifies restricted areas where there are no new applications for water appropriation due to contamination from Hill AFB. Once cleaned up, the State Engineer will consider whether new well construction will be allowed in these restricted areas⁵².

⁵⁰ Hill Air Force Base/Utah Test and Training Range Installation Complex Encroachment Action Plan Volume II, 2013.

⁵¹ Hill Air Force Base/Utah Test and Training Range Installation Complex Encroachment Action Plan Volume II, 2013.

⁵² https://waterrights.utah.gov/wrinfo/mmplan/ugw/web_del.htm



Concern for potential PFAS contamination from Hill AFB to impact community water quality

WQQ-2

Recent state analysis indicates that there is PFAS emanating from Hill AFB. Though the PFAS contamination is impacting shallow groundwater and is not anticipated to disperse into the aquifer that supplies municipal potable water, there are some health concerns from residents who use private shallow wells on their property.

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), GenX, and many other chemicals⁵³. PFOS and PFOAs are perfluorinated compounds, which are manmade chemicals used for various residential, commercial, and industrial purposes due to their unique properties that make products resistant to oil, grease, water, soil, and stains. The use of PFAS for commercial purposes began in the 1950s, and in the 1970s, the DoD began using PFAS for various uses, specifically for fire extinguishing foam⁵⁴.

PFOs and PFOA are classified as emerging contaminants by the DoD. Due to its resistance to degradation, the presence of PFAS is pervasive in the environment⁵⁵. Human exposure to PFAS is a health hazard and

as such, PFAS contamination is being monitored and tested throughout the U.S. by the EPA and state agencies⁵⁶.

The Utah DEQ assembled a workgroup to develop a monitoring reconnaissance plan for PFAS in the state in 2018. The workgroup is made up of representatives from the DEQ's Divisions of Water Quality, Environmental Response and Remediation, Waste Management and Radiation Control, Drinking Water, and Communications, and the Department of Health, Bureau of Epidemiology⁵⁷. As of November 2020, the workgroup has developed a draft strategy for evaluating PFAS in Utah. The workforce is currently accepting public comment for the strategy and is also in the first phase of monitoring and sampling drinking water wells. The Sampling and Analysis Plan (SAP)⁵⁸ focuses on water supplies that are known or suspected sources of PFAS. The sites, identified in the SAP, are shown on Figure 5-6. The sites include Hill AFB, which is listed as a known PFAS groundwater contamination site. The SAP identifies some of the South Protection Zones⁵⁹ for Hill AFB, South Weber City, Clearfield City, Roy City, and Weber Basin Water Conservancy District as having the potential to be affected by Hill AFB PFAS.

53 Utah Department of Environmental Quality, Sampling and Analysis Plan, Statewide PFAS Monitoring Phase I: Drinking Water Systems, October 2020, <https://documents.deq.utah.gov/water-quality/standards-technical-services/sts-public-notices/DWQ-2020-020973.pdf>.

54 US Department of Defense Per- and Polyfluoroalkyl Substances (PFAS) 101, December 2019, <https://media.defense.gov/2020/Feb/06/2002245003/-1/-1/1/PFAS-101-V2.PDF>.

55 Hu, X.C., Andrews, A.B., Bruton, T.A., Schaidt, L.A., Grandjean, P., Lohman, R., Sunderland, E.M., (2016). Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants. *Environmental Scientific Letters*. 3, 10, 344-350.

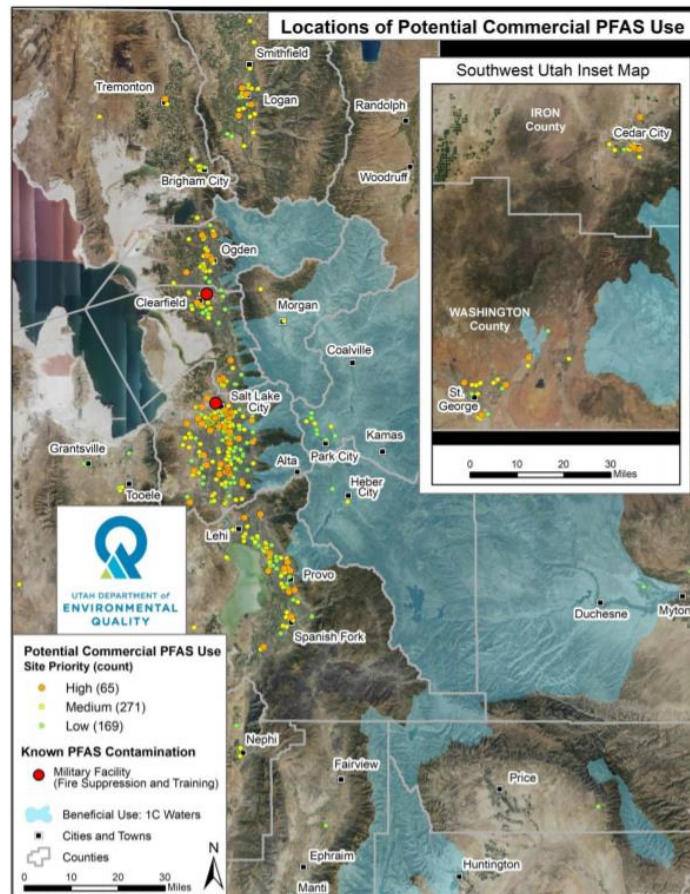
56 Utah Department of Environment Quality, <https://deq.utah.gov/pollutants/per-and-polyfluoroalkyl-substances-pfas>

57 Utah Department of Environmental Quality, PFAS Workgroup <https://deq.utah.gov/pollutants/pfas-per-and-polyfluoroalkyl-substances/pfas-workgroup>

58 Utah Department of Environmental Quality, Sampling and Analysis Plan, Statewide PFAS Monitoring Phase I: Drinking Water Systems October 2020 <https://documents.deq.utah.gov/water-quality/standards-technical-services/sts-public-notices/DWQ-2020-020973.pdf>

59 Source Protection Zones delineate the area where pollution poses the greatest threat to source water quality. <https://www.epa.gov/sourcewaterprotection/delineate-source-water-protection-area>

Figure 5-6 Locations of Known or Potential Commercial Use of PFAS



Source: Utah Department of Environmental Quality, Sampling and Analysis Plan, Statewide PFAS Monitoring Phase I: Drinking Water Systems October 2020.

PFAS contamination in the ground and water is a state-wide concern, however, the PFAS contamination from Hill AFB continues to spread through surrounding communities, whereby PFAS remains to spread in a shallow aquifer, which is a concern for residences that use wells for drinking water. Generally, PFAS contamination from the installation is spreading in the general direction of the TCE plume, towards central and south Davis County.

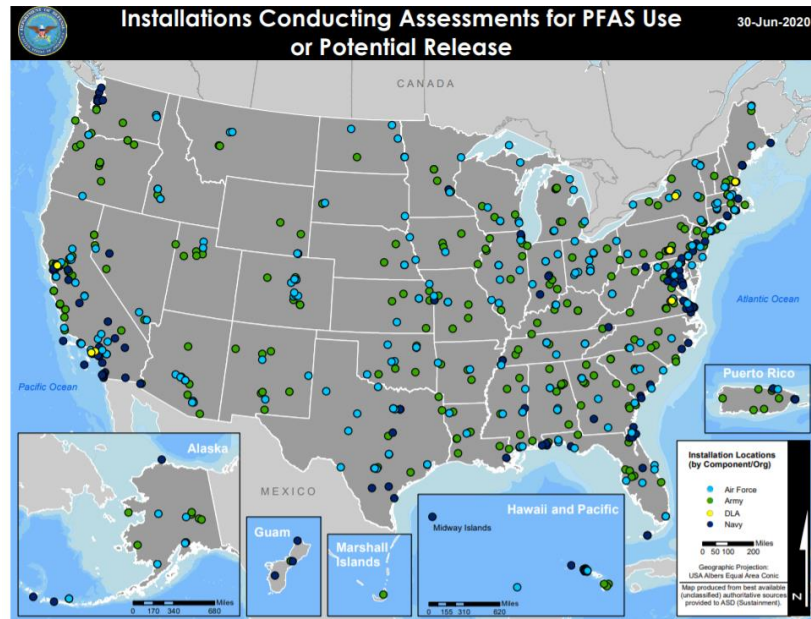
The DoD instituted a PFAS Task Force on July 23, 2019, with the goals of mitigating and eliminating the use of the current Aqueous Film Forming Foam (which contains PFOS/PFOA), understanding the impacts of PFAS on human health, and fulfilling the DoD's cleanup responsibility related to PFAS. According to a DoD list⁶⁰ from June 30, 2020, Hill AFB is one of the installations where the DoD is performing an assessment of PFAS use or potential release. A full list of the locations where the DoD is performing this assessment is shown on Figure 5-7.

45 Installation Where DoD is Performing an Assessment of PFAS Use or Potential Release, DoD, June 2020, <https://media.defense.gov/2020/Mar/17/2002265607/-1/>

1/1/SPREADSHEET_OF_INSTALLATIONS_WHERE_DOD_PERFORMING_ASSESSMENT_OF_PFAS_USE_OR_POTENTIAL_RELEASE.PDF



Figure 5-7 DoD: Installations Conducting Assessments for PFAS Use or Potential Release



Source: Department of Defense, *PFAS: A National Issue That Needs National Solutions*⁶¹.

The Air Force began replacing PFOS-based products with a different formula in the summer of 2016. In 2017⁶², the Air Force completed a sampling of drinking water at all installations to ensure that potable water met EPA guidelines. In 2020, the Air Force is undergoing a resampling of all potable water on Air Force installation. At Hill AFB, personnel have begun preliminary discussions with the community, especially with mayors of impacted cities to communicate mitigation measures if someone from their community should become exposed to such hazards.

61 https://media.defense.gov/2020/Mar/17/2002265608/-1/-1/1/MAP_OF_INSTALLATIONS_CONDUCTING_ASSESSMENTS_FOR_PFAS_USE_OR_POTENTIAL_RELEASE.PDF

62 Air Force Response to PFOS/PFOA Fact Sheet, July 2020, https://www.afcec.af.mil/Portals/17/PFOS-PFOA-Toolkit-Fact%20Sheet-July-2020_FINAL.pdf



Concern for Hill AFB stormwater drainage impacts on surrounding community

WQQ-3

Stormwater from Hill AFB is drained off-base in some parts of neighboring communities. There is concern for the volume and treatment for the runoff that is generated at Hill AFB.

Hill AFB manages storm water through a series of storm water drainage ponds. In total, the installation has 20 storm water drainage ponds, most of which are dry throughout the year. Water in these ponds comes primarily from runoff from parking lots and the flight line. Because water comes from parking lots and the flight line, residue from petrochemicals and antifreeze/coolant are carried into the storm ponds. The spill response team at Hill AFB facilitates the treatment of spills should any occur and end up in the storm ponds.⁶³

The installation has two systems for controlling stormwater drainage. In less developed areas, runoff can infiltrate into the ground through surface ditches or overland flow. In more developed portions, runoff is collected in storm drainage systems that transport storm water flow into the retention ponds on the installation. In addition to the on-installation drainage ponds, there are three off-installation drainage systems which receive stormwater flow from Hill AFB. They are: Kays Creek, located south of the installation; Utah Department of Transportation drainage line; and Fife's Ditch, southwest of the installation. Hill AFB does not discharge into the weber-Davis Canal which nearly encircles Hill AFB.

Stormwater discharge is regulated under the Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activities and the General Utah Pollutant Discharge Elimination System Permit for Discharges from Small Municipal Separate Storm Sewer Systems.

The installation also has a General Permit for Small Municipal Separate Storm Sewer Systems (MS4). Under this permit, the installation is required to implement a Stormwater Management Plan and employ pretreatment, discharge procedures, and limitations for industrial waste in compliance with federal regulations. Pretreatment involves the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a publicly owned treatment plant. Wastewater from aircraft maintenance is pretreated per federal and state requirements and airport hangars containing non-petroleum materials or products are prohibited from discharges into gravity-fed pretreatment Oil/Water Separators and Water Quality Inlets. Hill AFB employs wastewater treatment logs and source and treatment control Best Management Practices (BMPs) for wastewater generated from industrial activities.

The Hill AFB Stormwater Management Plan includes tasks to be implemented over a five-year period with the intent to reduce pollutant discharge from the storm drain system. While there is no policy included for coordinating with jurisdictions where drainage outlets are located, a goal of the Plan is to continue to participate in the Davis County Storm Water Coalition. This Coalition is made up of city representatives who meet monthly to discuss stormwater issues and programs. This is an ongoing strategy for communicating storm water issues between the installation and the community.

Hill AFB employs an education and outreach program for Hill AFB residents and employees to increase awareness of stormwater pollution and provide support for the stormwater program through educational programs and distribution of stormwater educational materials.

⁶³ Hill Air Force Base, Utah Stormwater Management Plan Municipal Stormwater Permit, May 2016.



WQQ-4

Concern for potential groundwater depletion to impact future potable water availability for Hill AFB

Hill AFB depends on groundwater for operations and potable water. Since the 1950s, groundwater levels have declined in the region, creating a concern for long-term water availability at Hill AFB.

Hill AFB relies on groundwater rights for its main source of water, as well as their contract with Weber Basin Water Conservancy District, which source most water from surface waters. At present, the installation does not have surface water rights. Hill AFB gets water from the Delta Aquifer, which is also the primary source of water for the region. Water from the aquifer originates from the Wasatch Mountains and flows westward to the Great Salt Lake. The State of Utah issued Hill AFB a permit which allows the base to draw 5,000 acre-feet of water from the aquifer annually. Although the base is permitted to extract this quantity, the base currently draws less than this due to water conservation programs.

Since 1950, groundwater depths in the Delta Aquifer in the area surrounding Hill AFB has dropped approximately 40 feet, indicating that water is being used at a rate higher than its recharge. This means that Hill AFB could need to increase its well depth if this trend continues since this is the only source of potable water for the installation. This can create impacts to both Hill AFB and the community including new costs associated with water infrastructure improvements and increased competition for water resources. While

there is concern with the decline in water levels, Hill AFB is currently not experiencing mission degradation as a result of the water supply⁶⁴. In addition to the Hill AFB using groundwater as its primary source of water, there are other industries in the region that also depend on this source. One such industry is agriculture, which according to the Weber River Basin: Planning for the Future, uses approximately 67% of the developed water supply. These conditions could change as urbanization replaced agricultural lands along the Wasatch Front.

While Hill AFB mainly sources culinary water from its own wells, other culinary water is purchased through the Weber Basin Water Conservancy District. Weber Basin Water Conservancy District is the primary regional water supplier for treating municipal water, wholesale irrigation water, untreated industrial water, and groundwater replacement water in northern Utah. The district delivers approximately 230,000 acre-feet of treated wholesale municipal water, wholesale and retail agricultural irrigation water, wholesale, and retail secondary irrigation water, treated and untreated industrial water, and replacement water annually. The district provides water to over 700,000 residents in Davis, Weber, Morgan, Summit, and Box Elder counties. In total, the district operates seven large storage reservoirs, three hydro-power generation plants, 21 wells, four water treatment plants, hundreds of miles of canals, tunnels, aqueducts, and pipelines⁶⁵. As population continues to increase in the Wasatch Front, water usage will also continue to rise, creating more demand for water throughout the region. Without forward conservation planning efforts for areas dependent on the groundwater source, continued increases in groundwater consumption may impact the water availability for Hill AFB.

⁶⁴ Hill AFB Partners in One Community, 2014; page 6,

https://maps.waterdata.usgs.gov/mapper/nwisquery.html?URL=https://nwis.waterdata.usgs.gov/ut/nwis/gwlevels?county_cd=49011&county_cd=49057&format=sitefile_output&sitefile_output_format=xml&column_name=agency_cd&column_name=site_no&column_name=station_nm&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=county_cd&column_name=site_tp_cd&column_name=dec_lat_v

https://nwis.waterdata.usgs.gov/ut/nwis/gwlevels?search_criteria=county_cd&submitted_form=introduction

[https://www.usbr.gov/uc/water/basin/index.html#tab-2;](https://www.usbr.gov/uc/water/basin/index.html#tab-2)

<https://groundwaterwatch.usgs.gov/NetMapT1L2.asp?ncd=rtn&sc=49>

⁶⁵ <https://www.weberbasin.com/AboutUs/AboutUs>

Water availability is also impacted by environmental conditions in the region, including drought. Drought can be measured by comparing trends in precipitation, soil moisture, how much water is in snow, levels or flow rate of surface water, levels of water in reservoirs, or groundwater levels⁶⁶.

According to the Drought Monitor⁶⁷, which was developed through a partnership between National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration, the state of Utah is mostly experiencing “exceptional drought”. The state is currently in a State of Emergency due to drought conditions as 100% of the state is experiencing drought and 90% of the state is experience at least extreme drought. Drought conditions in the Study Area and in Utah are shown on Figure 5-8.

According to the State’s website, 2020 was the driest year on record, leading to dry soils⁶⁸. In 2020, Utah had a mild winter resulting in shallow snowpack and lower stream levels than typical. Additionally, the spring of 2021 experienced precipitation levels that were below normal, which resulted in low water levels for most of Utah’s reservoirs.

While most of the state is experiencing exceptional drought, Weber and Davis Counties are experiencing “severe” to “extreme drought”. According to the Drought Monitor, under these conditions in Utah, the following have historically occurred in Utah:

- Severe Drought: Pasture and water is inadequate for cattle; ranching management practices change; air quality is poor, dust is a problem; streams and ponds are dry
- Extreme Drought: fire danger increases, fire bans on public lands are implemented; native vegetation is stressed; streamflow low

According to the impacts reporter, the drought conditions in Weber and Davis Counties have resulted in reduced water allotments for agricultural uses in the spring of 2021⁶⁹. The State of Utah has a Utah Drought Response Plan to address emergency problems that come with drought. This includes impacts related to: water supply and availability, municipal water, agriculture, wildlife, economic impacts, energy, and health. There are no specific actions related to the military presence in Utah.

66 <https://droughtmonitor.unl.edu/About/WhatistheUSDM.aspx>, access online June 21, 2021.

67 <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?UT>, Accessed online on June 18, 2021

68 <https://water.utah.gov/water-data/drought/>, accessed online on June 21, 2021.

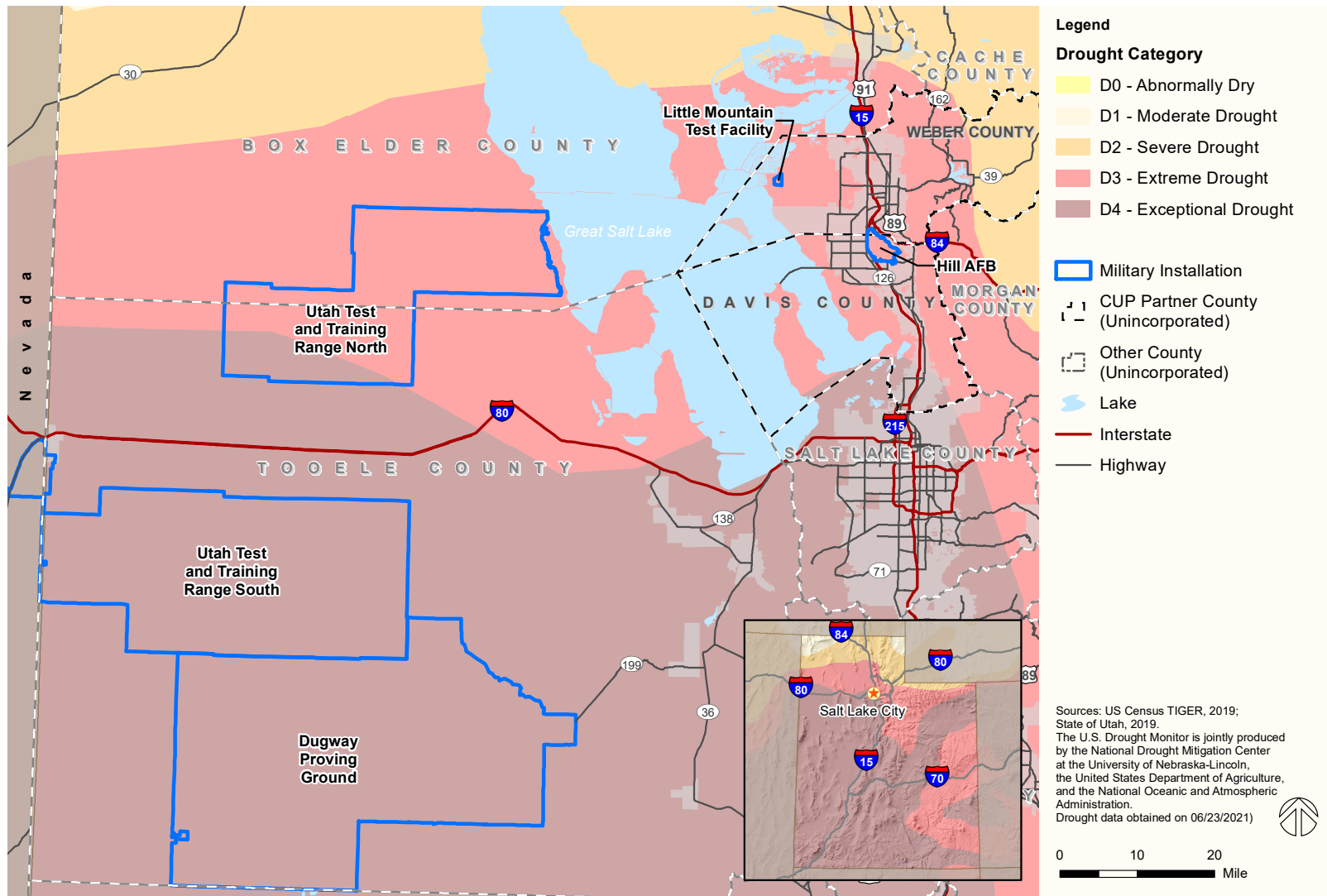


Figure 5-8
Drought Conditions in the Project Study Area

5.4 Development Factors

There are five compatibility factors in the development factor category that were found to have issues. These are:

- Anti-Terrorism/Force Protection
- Dust/Smoke/Steam
- Energy Development
- Frequency Spectrum Impedance
- Land Use
- Light and Glare
- Noise
- Roadway Capacity
- Safety
- Vertical Obstructions
- Vibration

5.4.1 Anti-Terrorism/Force Protection

Anti-Terrorism/Force Protection (AT/FP) relates to the safety and security of personnel, facilities, and information on a military installation. The DoD AT/FP standards require all installation components, such as access gates, adhere to design/planning criteria and minimum construction standards that mitigate vulnerabilities and threats to an installation and its occupants. Important aspects of these criteria and standards include access control and clearance zones around installation perimeters to maintain sightlines and manage access to the installation. Due to current domestic and global conditions, military installations have implemented more restrictive standards to address AT/FP concerns. These measures may vary based on daily activities and include increased security checks and/or the creation of physical barriers at entry points (e.g., gates, spike barriers, tire shredders).



AT-1

Security concerns related to the public parking their vehicle at the end of the Hill AFB south runway to view and photograph aircraft at Hill AFB

There are incidences of the public parking their vehicle at the end of the runway to view or take unauthorized photos of Hill AFB. Despite no-stopping signage and Hill AFB monitoring these activities, they continue to occur and present security concerns.

Hill AFB is located in an urbanized area and as such, is surrounded by highly populated communities and roads that are frequently traveled on. The presence of roadways that are adjacent to the installation present potential concerns related to lines-of-sight. For example, Highway 193, a major roadway owned by UDOT, is located south of the installation and right off the southern end of the Hill AFB runway. Additionally, vehicles traveling north on Fort Lane, a roadway which is managed by Davis County at the northern section, and which



intersects with Highway 193 south of Hill AFB, also have direct view into Hill AFB.

The potential for line-of-sight into the installation is a security concern, especially during heightened times of security. This line-of-sight could allow unauthorized civilians to observe operations on the installation, which could create an undesirable security scenario. There have been past incidences in which vehicles will be parked on the shoulder of Highway 193 along the Hill AFB fenceline. Because the intent is unknown, there are security concerns related to vehicles parking and spending time in these areas. For example, there have been incidences of individuals photographing the installation from this roadway.

There is existing signage along the perimeter of the installation that provides notification of the installation's presence. There is additional signage that provides notice that parking is not allowed on Highway 193. Although Highway 193 is owned by UDOT, the no-parking signage associated with Hill AFB is maintained by Layton City, Davis County, and UDOT. These messages are present along the roadway to deter vehicles from parking and potentially having a line-of-sight into the installation⁷⁰.

Department of Defense Instruction 2000.16 Antiterrorism Standards provides policies and procedures for protecting personnel and assets from acts of terrorism. Under this instruction, Commanders at all levels have the authority to enforce security measures and are responsible for protecting persons and property subject to their control. As such, there are Unified Facilities Criteria (UFC) guidance publications that outline various fencing and security measures appropriate for military installations. UFC 4-022-03, Security Fences and Gates, sets criteria for the design, selection, and installation of security fences and gates at military installations. These criteria should be used when evaluating existing measures and when providing new security fences and gates.

⁷⁰ Stakeholder interview 4/15/20



Warning signage on Highway 193 south of the Hill AFB runway.

Source: Google Maps, 2012.



"No Parking" signage on Highway 193 south of the Hill AFB runway.

Source: Google Maps, 2012.

5.4.2 Dust/Smoke/Steam

Particles of dust and other materials found in the air are referred to as particulate matter. At certain concentrations, particulate matter can be harmful to humans and animals if inhaled and strain is placed on the heart and lungs that provide oxygen to the body. Particulate matter can be generated by many activities, including vehicular traffic on unpaved roads and surfaces, wind in areas with unpaved vacant lots and other unvegetated areas, ground disturbance from vehicle maneuvers, explosions, aircraft operations, and other earth-moving activities such as construction, demolition, and grading. Smoke can be created by fire (controlled burns, agricultural burning, and artillery exercises), industrial activities, or other similar processes. Similarly, steam can be created by industrial and other activities and is more prominent during cooler weather. Dust, smoke, and steam are compatibility issues if sufficient in quantity to impact flight operations, such as reducing visibility or damaging equipment.



Potential for dust that is related to arid conditions to impact operations at the UTTR

DSS-1

Due to the terrain of the region and the location of the UTTR, there is potential for dust conditions to impact military operations, such as weapons testing and flight operations at the UTTR.

Operations at the UTTR require ideal conditions for weapons testing. The northern portion of the UTTR serves as the largest ICBM destruction plant in the U.S. This area is critical for military readiness as it is the only facility in the U.S. to allow detonations over a certain yield. To ensure limited impacts to the surrounding area, weapons are

stored and inspected at the UTTR prior to detonation and are detonated under favorable wind and atmospheric conditions which direct shockwave away from the Wasatch Front. While the UTTR works to ensure that dust as a result of operations have minimal impact to the community, dust from the environment can also impact operations at the UTTR. Dust pollution, unrelated to military operations, could impact weapons testing or specialized radar operations due to limited visibility or instrument interference⁷¹.

The UTTR is in the West Desert of northwestern Utah. This is an arid desert with some mud flats and juniper stands in the desert mountain ranges and is one of the driest places in the U.S.⁷² In addition to the terrain and climate, dry conditions in the area can be a result of diminished groundwater supplies due to increase in water demands in the region. This is likely to be an ongoing issue as population continues to grow along the Wasatch Front. This concern is further described in WQQ-4. These dry conditions, coupled with loose soils, can create dusty conditions, which could impact the operations at the UTTR. Other ways in which dust pollution could be generated in the community is demolition and ground disturbance, construction, and road maintenance,⁷³ all of which are activities that can loosen soils.

The State of Utah developed rules for emission standards that came into effect in January 2020. The purpose of the rule, Rule R307-205. Emission Standards: Fugitive Emissions and Fugitive Dust⁷⁴, is to establish minimum practices and emission standards for fugitive emissions and dust for sources throughout the state. Rules are included for construction and demolition activities, roads, mining activities. While these rules are not specific to ensuring compatibility with military installations in Utah, adherence to these rules will support reductions in dust, benefiting military operations that require limited dust interference.

71 Hill Air Force Base/Utah Test and Training Range Installation Complex Encroachment Action Plan Volume II, 2013, page 158; page 174

72 Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021, page 36

73 Hill Air Force Base/Utah Test and Training Range Installation Complex Encroachment Action Plan Volume II, 2013, page 158; page 174

74 <https://rules.utah.gov/publicat/code/r307/r307-205.htm#T5>



5.4.3 Energy Development

The development of energy sources, including alternative energy sources such as solar, wind, or geothermal could pose compatibility issues related to glare (solar energy), vertical obstruction (wind turbines and geothermal steam plumes), and radar operations (wind generation). It is in the military's interests, as well as in communities' interests, to support alternative energy development for both energy security and economic reasons. The emphasis of this analysis is to identify gaps in coordination and/or communication regarding energy development and to increase understanding of communities' pursuits, opportunities sought by alternative energy developers, and the intersection of these endeavors with military missions in order to improve communication and coordination efforts that ensure mutually compatible development. By identifying potential sources of conflict if uncoordinated or pursued unilaterally by individual communities, private development, or the military, this process serves to highlight the existence of potential conflict and address technological approaches or processes and communication and coordination approaches to prevent any entity from encroaching upon the other.



Alternative energy coordination between Hill AFB and surrounding communities is limited

ED-1

Alternative energy development could have adverse impacts on the operations at Hill AFB facilities if not coordinated. Although some cities surrounding Hill AFB and the UTTR regulate alternative energy development, the regulations do not always include a coordination process with Hill AFB and some cities do not have any alternative energy regulations.

As described in ED-2 and ED-3 there are many ways in which renewable energy development could impact Team Hill operations. To ensure compatible renewable energy development, it is necessary for the community and Team Hill to have early and ongoing coordination.

At present, only South Weber City has formalized methods of coordination with Hill AFB regarding renewable energy development. The South Weber City Code, Chapter 17 Wind Energy System, Article B. Large Wind Energy Systems, provides regulations for wind energy systems. The article states that Hill AFB must be notified of any large-scale wind system proposed and must be provided the opportunity to review plans. Layton City also engages with the installation when renewable energy developments are proposed in the southern Hill AFB safety zones although this is not formalized in the City's zoning ordinance. While this coordination is ongoing, it does not extend to other parts of the city that may also receive development proposals or applications for renewable energy projects.

While this type of coordination exists within these two communities, there is not similar coordination between Hill AFB and the other communities in the Project Study Area. Some of the surrounding communities have regulations related to renewable energy development, while others do not. For jurisdictions that do have such

regulations, coordination with Hill AFB should be included. For those that do not have renewable energy regulations, the jurisdictions should consider developing them to regulate renewable energy development and to coordinate such development with Hill AFB. Table 5-11 is a summary of the renewable energy regulations for each jurisdiction.

Table 5-11 Renewable Energy Development Regulations in the Project Study Area

Jurisdiction	Renewable Energy Development Regulation
Clearfield City	City does not employ this tool
Clinton City	City does not employ this tool
Layton City	Zoning Code 19.05.052 General Development and Lot Requirements for All Zoning Districts specifies that the use of solar energy is encouraged for use in developments where such technology would be appropriate. Does not include regulations specific to coordination with Hill AFB.
Ogden City	Zoning Regulations encourage solar and renewable energy sources, but no other regulations are specified.
Riverdale City	City does not employ this tool
Roy City	City does not employ this tool
South Ogden City	City does not employ this tool
South Weber City	Title 10 Zoning Regulations, Chapter 17 Wind Energy Systems, Article B. Large Wind Energy Systems provides regulations for wind energy systems, including considerations for telecommunication interference. Regulation states that Hill AFB must be notified of any large scale wind system and provide the opportunity to review plans
Sunset City	City does not employ this tool.
Uintah City	City does not employ this tool.
Washington Terrace City	Municipal Code 17.50 Alternative Energy Sources provides regulations for alternative energy sources, but does not include coordination with Hill AFB.
Davis County	County does not employ this tool
Weber County	County Code Section 108-7-27 Solar Energy Systems and Section 108-7-24 Wind Energy



Jurisdiction	Renewable Energy Development Regulation
Weber County continued	Conversion Systems (Small Wind Energy Systems) include regulations for solar and wind energy development. Wind energy regulations include compliance with FAA regulations, but there is no regulation for coordination with Hill AFB.

Source: Layton City Zoning Code; Ogden City Zoning Regulations; South Weber City Title 10 Zoning Regulations, Chapter 17 Wind Energy Systems, Article B. Large Wind Energy Systems; Washington Terrace City Municipal Code 17.50 Alternative Energy Sources; Weber County Code Section 108-7-27 Solar Energy Systems and Section 108-7-24 Wind Energy Conversion Systems (Small Wind Energy Systems).



ED-2

Potential for solar energy facilities to create light and glare impacts on Hill AFB flying operations

Depending on the type of materials used, the size of the facility, and proximity to Hill AFB facilities, there is potential for solar energy developments to create glare, which could impair pilot visibility. There are various solar arrays and other solar energy installations throughout the Project Study Area that could create glare impacts on flying operations at Hill AFB.

Solar energy development is growing in use throughout the U.S. In areas across the country, solar energy development is a practical energy generator. Additionally, federal, state, and local requirements mandating the use of more renewable energy sources are becoming the norm, resulting in efforts by utility providers and users of electrical power to implement green energy projects.

There are existing solar facilities that are in the Project Study Area or nearby military training routes (MTRs). These solar facilities, including the technology being used and capacity in megawatts (MW), are as listed in Table 5-12.

Table 5-12 Solar Facilities in the Project Study Area or Nearby Hill AFB MTRs

Location	Plant Name	Utility Name	Technology	Capacity
Layton City	Weber State University - Davis Camus PV	Tesla Inc.	Solar photovoltaic	1.3 MW
Salt Lake City	Salt Palace Solar Gen Plant	Wasatch View Solar LLC	Solar photovoltaic	1.3 MW
Randolph	Sage Solar I-III	CI III VK I TE Partnership LLC	Solar photovoltaic	57.6 MW

Source: U.S. Energy Mapping System, U.S. Energy Information Administration⁷⁵

Figure 5-9 displays direct normal irradiation. Direct normal irradiation is the direct solar radiation at a perpendicular plan⁷⁶. Areas of high irradiation could be indicative of where future solar energy facilities would be developed if interest arose.

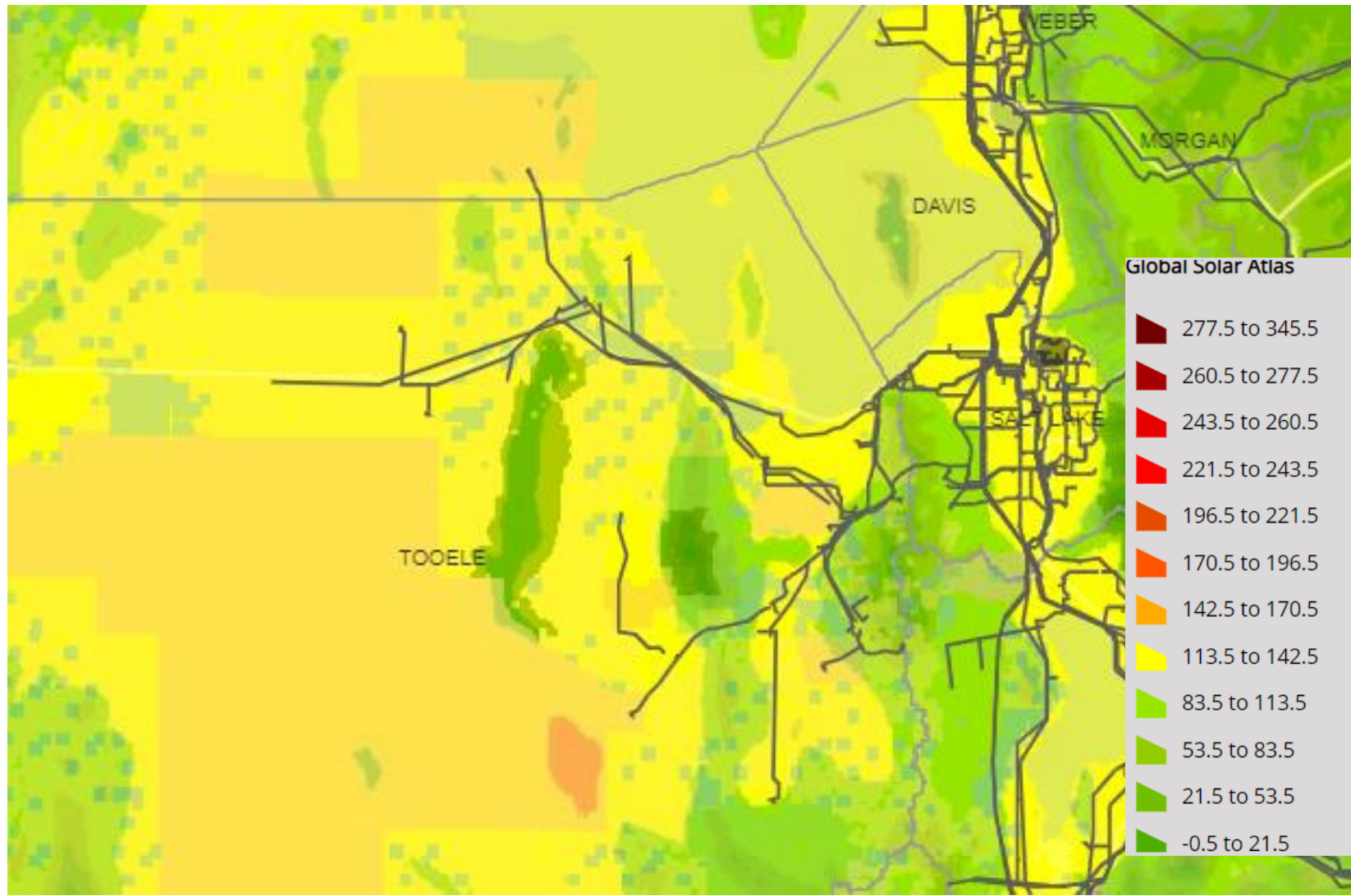
In 2018, solar energy accounted for 50% of the total renewable electric generation in Utah and 5.6% of the total net energy generation in the state. Compared to other sources of renewable energy, solar generated the most electricity⁷⁷.

⁷⁵ <https://www.eia.gov/state/maps.php>

⁷⁶ <https://www.eia.gov>

⁷⁷ <https://energy.utah.gov/about-us/utah-energy-resources/>

Figure 5-9 Solar Facilities in Northern Utah



Source: Utah's Energy Resources, *The Resources Driving Utah's energy Economy*, <https://energy.utah.gov/about-us/utah-energy-resources/> accessed online June 23, 2021.

While solar facilities provide opportunities for alternative energy generation, there are some impacts that solar facilities have on flying operations. Solar photovoltaic panels can create glare depending on their type, location, angle, and direction, resulting in a reduction of a pilot's view, even at a high altitude. The impacts of glare can cause blinding conditions and other secondary visual problems such as temporary after-image or retinal burn. Reflectivity can create glint and glare which can cause a brief loss of vision. The primary issue with this is the potential for the brief loss of vision when operating vehicles or other machinery in the area, including aircraft.

A federal program, DoD Energy Siting Clearinghouse, was established by Congress in 2011 to provide a unified military response in the review of potential alternative energy projects that could impact military activities. The Clearinghouse is now under the Office of the Assistant Secretary of Defense for Sustainment. The purpose of the Clearinghouse is to review development plans prior to construction in order to ensure they will have minimal or no impact to military missions. The goal of the Clearinghouse is to evaluate potential incompatible uses early in the planning process and to collaborate with developers to find solutions to compatibility issues that work for everyone. The Clearinghouse provides both informal and formal reviews of development proposals. For solar facilities, factors that would need to be evaluated include height of solar panels, layout of solar panels, and solar array acreage.

In addition to the federal program, there is one community, Weber County, that has regulations related to solar energy systems and lighting. The Weber County Code Chapter 104-30 Large Solar Energy System Overlay Zone sets regulations for solar energy systems. Per regulations, the use of lenses or mirrors to reflect sunlight is prohibited.

⁷⁸ Stakeholder interview with the UTTR



ED-3

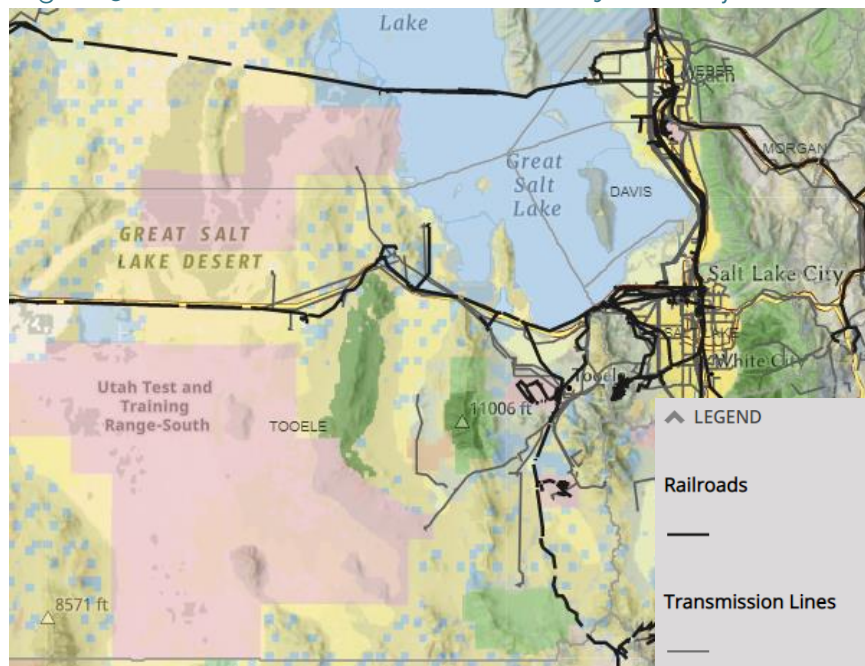
Potential for wind energy development to create frequency interference challenges and vertical obstructions for Hill AFB and the UTTR

Wind energy development has the potential to create vertical obstructions in low-flying areas. Additionally, renewable energy resources necessitate additional transmission lines to transfer power to consumers. If not sited properly, these transmission lines could also become vertical obstructions and impact low-level flying operations. Wind turbines and large transmission lines related to alternative energy can also conflict with frequencies at the UTTR, which can impact the ability to test weapons systems at the UTTR.

Wind energy siting around Hill AFB and the UTTR is a potential concern depending on the location and height of turbines associated with wind energy development. While wind turbines can be vertical obstructions to navigable airspace, frequency impacts of wind energy development facilities can cause spectrum impacts to technologies and weapons systems used at the UTTR. Wind turbines can impact ground-based radar systems by creating clutter – undesirable signals produced by wind turbines due to their height and spinning blades⁷⁸. Wind turbines can also reduce radar detection sensitivity, obscure potential radar targets, and scatter signal returns due to viewshed obstructions and frequency interference. Because weapon systems are sensitive to electromagnetic interference, they are generally assessed for impacts on a case-by-case basis and may require analysis/modeling by the Air Force to determine if navigational aids are deterred.

There are two wind turbines near the Project Study Area in Tooele County, at the Tooele Army Depot. One turbine has a capacity of 1.79 MW and a total height of 431 feet, while the second turbine has a capacity of 1.5 MW and a total height of 389 feet. In addition to these wind turbines, there are also transmission lines located near the UTTR that could also impact spectrum frequencies. The locations of the transmission lines are shown on Figure 5-10.

Figure 5-10 Transmission Lines in the Project Study Area



Source: Utah's Energy Resources, *The Resources Driving Utah's energy Economy*, <https://energy.utah.gov/about-us/utah-energy-resources/> accessed online June 23, 2021.

While there are currently no commercial wind energy generation facilities in the Project Study Area that impact the military missions, it will be important for any stakeholders, including any developers and landowners/land managers considering a proposed wind energy project to coordinate with the DoD to ensure that any potential compatibility concerns are identified and mitigated, if necessary, early in the planning process. The Partners in One Community document acknowledges that early and active engagement with wind development stakeholders is needed to ensure that wind development does not impact missions⁷⁹.

Current coordination processes involve the DoD Energy Siting Clearinghouse and coordination process with Hill AFB and the UTTR spectrum management. The DoD Energy Siting Clearinghouse serves to coordinate the DoD review of existing applications for energy projects. This legislation facilitates procedural certainty and a predictable process that promotes compatibility between energy independence and military capability. Consistent with federal law (10 U.S. Code Section 183a(c)(6)), if a proposed energy project is known to be inside a military training route or in a radar surveillance line-of-sight that the DoD owns or operates, the project must be filed with the Clearinghouse at least one year prior to the construction of the project. The review process pertains to all energy projects greater than 199 feet above ground level that are proposed for construction within military training routes or special use airspace, whether on private, state, or federal property. Informal reviews are encouraged as early as possible to identify potential compatibility concerns and may result in a preliminary determination from the Clearinghouse in advance of filing a formal application.

⁷⁹ Hill AFB Partners in One Community 2014, page 5

Additionally, the UTTR takes proactive measures to review wind proposals to determine how many turbines there are and where they will be located. By conducting this type of review, the UTTR can determine whether the wind facility will be incompatible with the frequency needs at the UTTR. The UTTR also works with State of Utah School and Institutional Trust Lands Administration (SITLA) to ensure that development within ten miles of the installation is compatible.



5.4.4 Frequency Spectrum Impedance

In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies in the use of cellular telephones and other wireless devices on a daily basis. Uses that interfere with frequency transmission can impact the military's ability to perform its missions.



Need to protect frequency spectrum at the UTTR from interference of external sources

FSI-1

The UTTR provides testing, evaluation, and training to various customers and as such, requires a frequency spectrum that is resilient towards outside activities. This is especially important as new technologies and weapons systems emerge, requiring more spectrum for testing at the UTTR, and as outside demand for frequency increases.

The UTTR provides training capabilities for combat air forces and test and evaluation of new and existing DoD weapons. The UTTR averages 16,000 sorties annually for training and 300 sorties annually for testing. In Fiscal Year 2019, there were 85 operational tests conducted at the UTTR by 26 different customers. These tests were made up of 446 sorties and over 420 weapons. In addition to these tests in Fiscal Year 2019, there were over 9,300 total training sorties.

To ensure that these operations continue to occur, the UTTR needs to ensure that there is limited frequency spectrum interference from external sources. Frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which include communication channels used for radio, cell phones, and television. As described in the Hill AFB AICUZ, frequency interference is an electromagnetic disturbance that creates interruptions, obstructions, or degradation that limits the effective performance of electrical equipment⁸⁰. Due to the range of testing and operations that occur at the UTTR, the acceptable level of frequency encroachment varies. Additionally, emerging weapons systems will require additional spectrum, which will also influence encroachments

Impacts to frequency can come from different sources. One such example is cell towers. There is potential for the wrong frequency to be turned on or radios that transmit through a radio during testing. Because of this, the UTTR actively communicates with surrounding communities and the clearinghouse to understand potential development throughout the community.

Because weapon systems are sensitive to electromagnetic interference, they are generally assessed for impacts on a case-by-case basis and may require analysis/modeling by the Air Force to determine if navigational aids are deterred.

⁸⁰ AICUZ page 48

5.4.5 Land Use

The land use planning and regulation is situated in the government's responsibility to protect the public's health, safety, and welfare. Local jurisdictions' general plans and zoning ordinances can be the most effective tools for preventing or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character. Land use separation also applies to properties where the use of one property may adversely impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts from noise, odors, and lighting.

Land use planning proximate to military installations is similarly used to evaluate land use compatibility, as is the case when local jurisdictions consider compatibility factors such as noise when locating residential developments near commercial or industrial areas. As the land between local municipalities is developed, or the land between a local municipality and the perimeter of a military installation is developed, both entities are affected. New residents, tenants, or building owners may not be fully aware of the implications of locating near an active military installation or training areas.

The Air Force instituted Air Force Instruction 32-7063, updated in 2015, which implements the Air Force AICUZ program and DoD Instruction (DODI) 4165.57 Air Installations Compatible Use Zones (AICUZ). The AICUZ includes general land use guidelines related to safety and noise associated with aircraft operations. The 2018 Hill AFB AICUZ Study incorporated the general land use compatibility guidelines per the DoD Instruction.

The land use compatibility assessment in this CUP is based on the land use guidelines adopted in the 2018 AICUZ Study. These guidelines are provided in Table 5-13 for safety and Table 5-14 for noise and referred to in the following land use, noise, and safety factor sections as the basis for compatibility assessment where applicable.

Land uses in the table are based on the US Department of Transportation publication Standard Land Use Coding Manual (SLUCM) for identifying and coding land use activities. Some of the land use guidelines require the user to reference additional information that is included in the Legend and Notes section at the end of the table. While the land uses are based on the DoD Instruction, land uses there may in conflict with other compatibility requirements have been identified as follows:

- BASH potential land use conflicts are identified in red ■
- Dust/Smoke/Steam potential land use conflicts are identified in green ■
- Glint/glare potential land use conflicts are identified in yellow ■
- Frequencies potential land use conflicts are identified in blue ■
- Vertical obstructions potential land use conflicts are identified in orange ■

It is important to note that DoD land use guidance is *recommendations* to facilitate compatible development. Many properties in the communities surrounding Hill AFB are either developed or are subject to zoning which governs use, residential density, and nonresidential intensity of development. Given these conditions, amending zoning to support DoD land use recommendations is a sensitive issue that affects personal property rights, property values, and can result in a taking where beneficial use of a property is affected a property owner seeks compensation for the loss in development potential. For this reason, any changes to the zoning or use of a property, must be conducted with full transparency and input from affected property owners.



Table 5-13 Department of Defense Land Use Compatibility Guidelines for Safety

Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
10	Residential				
11	Household Units				
11.11	Single units: detached	N	N	Y ²	Maximum density of 2 Du/Ac
11.12	Single units: semi-detached	N	N	N	
11.13	Single units: attached row	N	N	N	
11.21	Two units: side-by-side	N	N	N	
11.22	Two units: one above the other	N	N	N	
11.31	Apartments: walk-up	N	N	N	
11.32	Apartment: elevator	N	N	N	
12	Group quarters	N	N	N	
13	Residential hotels	N	N	N	
14	Mobile home parks or courts	N	N	N	
15	Transient lodgings	N	N	N	
16	Other residential	N	N	N	
20	Manufacturing ³				
21	Food and kindred products; manufacturing	N	N	Y	Maximum FAR 0.56 IN APZ II
22	Textile mill products; manufacturing	N	N	Y	Maximum FAR 0.56 IN APZ II
23	Apparel and other finished products; products made from fabrics, leather and similar materials; manufacturing	N	N	N	
24	Lumber and wood products (except furniture); manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
25	Furniture and fixtures; manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II

Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
26	Paper and allied products; manufacturing ■	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
27	Printing, publishing, and allied industries	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
28	Chemicals and allied products; manufacturing ■	N	N	N	
29	Petroleum refining and related industries ■	N	N	N	
31	Rubber and miscellaneous plastic products; manufacturing	N	N	N	
32	Stone, clay, and glass products; manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
33	Primary metal products; manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
34	Fabricated metal products; manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks	N	N	N	
39	Miscellaneous manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
40	Transportation, communication, and utilities ^{3, 4}				
41	Railroad, rapid rail transit, and street railway transportation	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II



Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
42	Motor vehicle transportation	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
43	Aircraft transportation	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
44	Marine craft transportation	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
45	Highway and street right-of- way	Y ⁵	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
46	Automobile parking	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
47	Communication ■ ■	N	Y ⁶	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
48	Utilities ⁷ ■ ■ ■	N	Y ⁶	Y ⁶	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
48.5	Solid waste disposal (landfills, incinerators, etc.) ■	N	N	N	
49	Other transportation, communication, and utilities	N	Y ⁶	Y	See Note 6 below
50	Trade				
51	Wholesale trade	N	Y	Y	Maximum FAR of 0.28 in APZ I & .56 in APZ II
52	Retail trade – building materials, hardware and farm equipment	N	Y	Y	See Note 8 below
53	Retail trade – including, improvement stores, electronics superstores, etc. discount clubs, home	N	N	Y	Maximum FAR of 0.16 in APZ II

Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
53.	Shopping centers-Neighborhood, Community, Regional, Super-regional ⁹	N	N	N	
54	Retail trade – food	N	N	Y	Maximum FAR of 0.24 in APZ II
55	Retail trade – automotive, marine craft, aircraft, and accessories	N	Y	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II
56	Retail trade – apparel and accessories	N	N	Y	Maximum FAR of 0.28 in APZ II
57	Retail trade – furniture, home, furnishings and equipment	N	N	Y	Maximum FAR of 0.28 in APZ II
58	Retail trade – eating and drinking establishments	N	N	N	
59	Other retail trade	N	N	Y	Maximum FAR of 0.16 in APZ II
60	Services ¹⁰				
61	Finance, insurance and real estate services	N	N	Y	Maximum FAR of 0.22 in APZ II
62	Personal services	N	N	Y	Office uses only. Maximum FAR of 0.22 in APZ II.
62.4	Cemeteries	N	Y ¹¹	Y ¹¹	
63	Business services (credit reporting; mail, stenographic, reproduction; advertising)	N	N	Y	Maximum FAR of 0.22 in APZ II
63.7	Warehousing and storage services ¹²	N	Y	Y	Maximum FAR of 1.0 in APZ I; 2.0 in APZ I
64	Repair Services	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II
65	Professional services	N	N	Y	Maximum FAR of 0.22 in APZ II
65.1	Hospitals, nursing homes	N	N	N	
65.1	Other medical facilities	N	N	N	
66	Contract construction services	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II



Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
67	Government Services	N	N	Y	Maximum FAR of 0.24 in APZ II
68	Educational services	N	N	N	
68.1	Child care services, child development centers, and nurseries	N	N	N	
69	Miscellaneous Services	N	N	Y	Maximum FAR of 0.22 in APZ II
69.1	Religious activities (including places of worship)	N	N	N	
70	Cultural, entertainment and recreational				
71	Cultural activities	N	N	N	
71.2	Nature exhibits	N	Y ¹³	Y ¹³	
72	Public assembly	N	N	N	
72.1	Auditoriums, concert halls	N	N	N	
72.11	Outdoor music shells, amphitheaters	N	N	N	
72.2	Outdoor sports arenas, spectator sports	N	N	N	
73	Amusements – fairgrounds, miniature golf, driving ranges; amusement parks, etc.	N	N	Y ²⁰	
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y ¹³	Y ¹³	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
75	Resorts and group camps	N	N	N	
76	Parks	N	Y ¹³	Y ¹³	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
79	Other cultural, entertainment and recreation	N	Y ¹¹	Y ¹¹	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
80	Resource production and extraction				

Land Use		Suggest Land Use Compatibility ¹			
SLUCM NO.	Land Use Name	Clear Zone	APZ-I	APZ-II	Density
81	Agriculture (except live-stock)	Y ⁴	Y ¹⁴	Y ¹⁴	
81.5-81.7,	Agriculture-Livestock farming, including grazing and feedlots	N	Y ¹⁴	Y ¹⁴	
82	Agriculture related activities	N	Y ¹⁵	Y ¹⁵	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
83	Forestry activities ¹⁶	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
84	Fishing activities ¹⁷	N ¹⁷	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
85	Mining activities ¹⁸ ■	N	Y ¹⁸	Y ¹⁸	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
89	Other resource production or extraction	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
90	Other				
91	Undeveloped land	Y	Y	Y	
93	Water areas ¹⁹ ■	N ¹⁹	N ¹⁹	N ¹⁹	

NOTES:

1. A "Yes" or a "No" designation for compatible land use is to be used only for general comparison. Within each, uses exist where further evaluation may be needed in each category as to whether it is clearly compatible, normally compatible, or not compatible due to the variation of densities of people and structures. In order to assist air installations and local governments, general suggestions as to FARs are provided as a guide to density in some categories. In general, land use restrictions that limit occupants, including employees, of commercial, service, or industrial buildings or structures to 25 an acre in APZ I and 50 an acre in APZ II are considered to be low



density. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I, and maximum assemblies of 50 people an acre in APZ II. Recommended FARs are calculated using standard parking generation rates for various land uses, vehicle occupancy rates, and desired density in APZ I and II. For APZ I, the formula is $FAR = 25 \text{ people an acre} / (\text{Average Vehicle Occupancy} \times \text{Average Parking Rate} \times (43560/1000))$. The formula for APZ II is $FAR = 50 / (\text{Average Vehicle Occupancy} \times \text{Average Parking Rate} \times (43560/1000))$.

2. The suggested maximum density for detached single-family housing is two Du/Ac. In a planned unit development (PUD) of single family detached units, where clustered housing development results in large open areas, this density could possibly be increased slightly provided the amount of surface area covered by structures does not exceed 20% of the PUD total area. PUD encourages clustered development that leaves large open areas.
3. Other factors to be considered: Labor intensity, structural coverage, explosive characteristics, air- pollution, electronic interference with aircraft, height of structures, and potential glare to pilots.
4. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or above-ground utility and communications lines should normally be located in Clear Zone areas on or off the air installation. The Clear Zone is subject to the most severe restrictions.
5. Roads within the graded portion of the Clear Zone are prohibited. All roads within the Clear Zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.
6. No above ground passenger terminals and no above ground power transmission or distribution lines. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities, towns, or regional power for unincorporated areas.
7. Development of renewable energy resources, including solar and geothermal facilities and wind turbines, may impact military operations through hazards to flight or electromagnetic interference. Each new development should be analyzed for compatibility issues on a case-by-case basis that considers both the proposal and potentially affected mission.
8. Within SLUCM Code 52, maximum FARs for lumberyards (SLUCM Code 521) are 0.20 in APZ-I and 0.40 in APZ-11; the maximum FARs for hardware, paint, and farm equipment stores, (SLUCM Code 525), are 0.12 in APZ I and 0.24 in APZ II.
9. A shopping center is an integrated group of commercial establishments that is planned, developed, owned, or managed as a unit. Shopping center types include strip, neighborhood, community, regional, and super-regional facilities anchored by small businesses, a supermarket or drug store, discount retailer, department store, or several department stores, respectively.
10. Ancillary uses such as meeting places, auditoriums, etc. are not recommended.
11. No chapels or houses of worship are allowed within APZ I or APZ II.
12. Big box home improvement stores are not included as part of this category.
13. Facilities must be low intensity, and provide no playgrounds, etc. Facilities such as club houses, meeting places, auditoriums, large classes, etc., are not recommended.
14. Activities that attract concentrations of birds creating a hazard to aircraft operations should be excluded.
15. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.

16. *Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zone lands owned in fee will be disposed of in accordance with applicable DoD guidance.*

17. *Controlled hunting and fishing may be permitted for the purpose of wildlife management.*

18. *Surface mining operations that could create retention ponds that may attract waterfowl and present bird/wildlife aircraft strike hazards (BASH), or operations that produce dust or light emissions that could affect pilot vision are not compatible.*

19. *Naturally occurring water features (e.g., rivers, lakes, streams, wetlands) are pre-existing, nonconforming land uses. Naturally occurring water features that attract waterfowl present a potential BASH. Actions to expand naturally occurring water features or construction of new water features should not be encouraged. If construction of new features is necessary for storm water retention, such features should be designed so that they do not attract waterfowl.*

20. *Amusement centers, family entertainment centers or amusement parks designed or operated at a scale that could attract or result in concentrations of people, including employees and visitors, greater than 50 people per acre at any given time are incompatible in APZ II.*

Source: AFI32-7063 18 December 2015.



Table 5-14 Department of Defense Land Use Compatibility Guidelines for Noise

Land Use		Suggest Land Use Compatibility				
SLUCM NO.	Land Use Name	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	80-84 dB DNL	85+ dB DNL
10	Residential					
11	Household units	N ¹	N ¹	N	N	N
11.11	Single units: detached	N ¹	N ¹	N	N	N
11.12	Single units: semidetached	N ¹	N ¹	N	N	N
11.13	Single units: attached row	N ¹	N ¹	N	N	N
11.21	Two units: side-by-side	N ¹	N ¹	N	N	N
11.22	Two units: one above the other	N ¹	N ¹	N	N	N
11.31	Apartments: walk-up	N ¹	N ¹	N	N	N
11.32	Apartment: elevator	N ¹	N ¹	N	N	N
12	Group quarters	N ¹	N ¹	N	N	N
13	Residential hotels	N ¹	N ¹	N	N	N
14	Mobile home parks or courts	N	N	N	N	N
15	Transient lodgings	N ¹	N ¹	N ¹	N	N
16	Other residential	N ¹	N ¹	N	N	N
20	Manufacturing					
21	Food and kindred products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
22	Textile mill products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
23	Apparel and other finished products; products made from fabrics, leather, and similar materials; manufacturing	Y	Y ²	Y ³	Y ⁴	N
24	Lumber and wood products (except furniture); manufacturing	Y	Y ²	Y ³	Y ⁴	N
25	Furniture and fixtures; manufacturing	Y	Y ²	Y ³	Y ⁴	N
26	Paper and allied products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
27	Printing, publishing, and allied industries	Y	Y ²	Y ³	Y ⁴	N

Land Use		Suggest Land Use Compatibility				
SLUCM NO.	Land Use Name	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	80-84 dB DNL	85+ dB DNL
28	Chemicals and allied products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
29	Petroleum refining and related industries	Y	Y ²	Y ³	Y ⁴	N
30	Manufacturing (continued)					
31	Rubber and misc. plastic products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
32	Stone, clay and glass products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
33	Primary metal products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
34	Fabricated metal products; manufacturing	Y	Y ²	Y ³	Y ⁴	N
35	Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks	Y	25	30	N	N
39	Miscellaneous manufacturing	Y	Y ²	Y ³	Y ⁴	N
40	Transportation, communication and utilities					
41	Railroad, rapid rail transit, and street railway transportation	Y	Y ²	Y ³	Y ⁴	N
42	Motor vehicle transportation	Y	Y ²	Y ³	Y ⁴	N
43	Aircraft transportation	Y	Y ²	Y ³	Y ⁴	N
44	Marine craft transportation	Y	Y ²	Y ³	Y ⁴	N
45	Highway and street right-of-way	Y	Y	Y	Y	N
46	Automobile parking	Y	Y	Y	Y	N
47	Communication	Y	25 ⁵	30 ⁵	N	N
48	Utilities	Y	Y ²	Y ³	Y ⁴	N
49	Other transportation, communication and utilities	Y	25 ⁵	30 ⁵	N	N



Land Use		Suggest Land Use Compatibility				
SLUCM NO.	Land Use Name	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	80-84 dB DNL	85+ dB DNL
50	Trade					
51	Wholesale trade	Y	Y ²	Y ³	Y ⁴	N
52	Retail trade – building materials, hardware and farm equipment	Y	25	30	Y ⁴	N
53	Retail trade – including shopping centers, discount clubs, home improvement stores, electronics superstores, etc.	Y	25	30	N	N
54	Retail trade – food	Y	25	30	N	N
55	Retail trade – automotive, marine craft, aircraft and accessories	Y	25	30	N	N
56	Retail trade – apparel and accessories	Y	25	30	N	N
57	Retail trade – furniture, home furnishings and equipment	Y	25	30	N	N
58	Retail trade – eating and drinking establishments	Y	25	30	N	N
59	Other retail trade	Y	25	30	N	N
60	Services					
61	Finance, insurance and real estate services	Y	25	30	N	N
62	Personal services	Y	25	30	N	N
62.4	Cemeteries	Y	Y ²	Y ³	Y ^{4,11}	Y ^{6,11}
63	Business services	Y	25	30	N	N
63.7	Warehousing and storage	Y	Y ²	Y ³	Y ⁴	N
64	Repair services	Y	Y ²	Y ³	Y ⁴	N
65	Professional services	Y	25	30	N	N
65.1	Hospitals, other medical facilities	25	30	N	N	N
65.16	Nursing homes	N ¹	N ¹	N	N	N

Land Use		Suggest Land Use Compatibility				
SLUCM NO.	Land Use Name	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	80-84 dB DNL	85+ dB DNL
66	Contract construction services	Y	25	30	N	N
67	Government services	Y ¹	25	30	N	N
68	Educational services	25	30	N	N	N
68.1	Child care services, child development centers, and nurseries	25	30	N	N	N
69	Miscellaneous Services	Y	25	30	N	N
69.1	Religious activities (including places of worship)	Y	25	30	N	N
70	Cultural, entertainment and recreational					
71	Cultural activities	25	30	N	N	N
71.2	Nature exhibits	Y ¹	N	N	N	N
72	Public assembly	Y	N	N	N	N
72.1	Auditoriums, concert halls	25	30	N	N	N
72.11	Outdoor music shells, amphitheaters	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y ⁷	Y ⁷	N	N	N
73	Amusements	Y	Y	N	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	Y	25	30	N	N
75	Resorts and group camps	Y	25	N	N	N
76	Parks	Y	25	N	N	N
79	Other cultural, entertainment and recreation	Y	25	N	N	N
80	Resource production and extraction					
81	Agriculture (except live-stock)	Y ⁸	Y ⁹	Y ¹⁰	Y ^{10,11}	Y ^{10,11}
81.5-81.7	Agriculture-Livestock farming including grazing and feedlots	Y ⁸	Y ⁹	N	N	N
82	Agriculture related activities	Y ⁸	Y ⁹	Y ¹⁰	Y ^{10,11}	Y ^{10,11}



Land Use		Suggest Land Use Compatibility				
SLUCM NO.	Land Use Name	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	80-84 dB DNL	85+ dB DNL
83	Forestry activities	Y ⁸	Y ⁹	Y ¹⁰	Y ^{10,11}	Y ^{10,11}
84	Fishing activities	Y	Y	Y	Y	Y
85	Mining activities	Y	Y	Y	Y	Y
89	Other resource production or extraction	Y	Y	Y	Y	Y

KEY:

SLUCM – Standard Land Use Coding Manual, U.S. Department of Transportation

Y (Yes)– Land use and related structures compatible without restrictions.

"N (No) – Land use and related structures are not compatible and should be prohibited.

Yx – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.

Nx – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript. "

25, 30, or 35 – The numbers refer to noise level reduction (NLR) levels. NLR (outdoor to indoor) is achieved through the incorporation of noise attenuation into the design and construction of a structure. Land use and related structures are generally compatible; however, measures to achieve NLR of 25, 30, or 35 must be incorporated into design and construction of structures. However, measures to achieve an overall noise reduction do not necessarily solve noise difficulties outside the structure and additional evaluation is warranted. Also, see notes indicated by superscripts where they appear with one of these numbers.

DNL – Day-Night Average Sound Level.

CNEL – Community Noise Equivalent Level (normally within a very small decibel difference of DNL)

Ldn – Mathematical symbol for DNL.

NOTES:

1. General

a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-69 and strongly discouraged in DNL 70-74. The absence of viable alternative development options should be determined and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones. Existing residential development is considered as pre-existing, non-conforming land uses.

b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 decibels (dB) in DNL 65-69 and 30 dB in DNL 70-74 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-79.

c. Normal permanent construction can be expected to provide an NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.

d. NLR criteria will not eliminate outdoor noise problems. However, building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

2. Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

4. Measures to achieve NLR of 35 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

5. If project or proposed development is noise sensitive, use indicated NLR; if not, land use is compatible without NLR.

6. Buildings are not permitted.

7. Land use is compatible provided special sound reinforcement systems are installed.

8. Residential buildings require an NLR of 25

9. Residential buildings require an NLR of 30.

10. Residential buildings are not permitted.

11. Land use that involves outdoor activities is not recommended, but if the community allows such activities, hearing protection devices should be worn when noise sources are present. Long-term exposure (multiple hours per day over many years) to high noise levels can cause hearing loss in some unprotected individuals.

Source: AFI32-7063 18 December 2015.



Need for Hill AFB safety zones to be illustrated on maps within community planning documents

LU-1

Many jurisdictions around Hill AFB have partial or outdated Hill AFB safety zones from the Hill AFB Air Installation Compatible Use Zones Study on their zoning map or General Plan future land use map. The safety zones from the AICUZ define areas where there could be safety impacts on the community from the Hill AFB operational mission. The absence of the safety zones on planning documents could lead to incompatible development around the installation.

As mentioned in the Community Profile, the Wasatch Front continues to experience growth throughout the counties. The Wasatch Front Regional Council projects the entire Project Study Area to have an increase in population growth between 2020 and 2050. The cities and counties that are projected to see the greatest rate of growth are unincorporated Davis County (102% growth) and Weber County (55%), and Riverdale City (86% growth). It should be noted that County ordinances include regulations that require unincorporated areas, with certain limitations, to incorporate. In addition to the growth in population, there is also an anticipated growth in jobs and housing in the area, which is further described in Chapter 2, Community Profiles. Growth in the area will likely lead to new development to accommodate residential and job needs as well as associated services.

Cities and counties in the Project Study Area use general plans and zoning to plan for land uses and growth in their jurisdictions. Each general plan provides a future land use plan which maps out where land uses are projected to be located throughout the city to accommodate growth. As many of the general plans indicate, many of the communities surrounding Hill AFB and Little Mountain Test Facility are anticipated to

continue experiencing high growth rates. Because of this, it is likely that new development will have higher density and intensity to accommodate more people in the least amount of building space. This is a concern as high intensities and densities, which are outlined in zoning ordinances, mean that more people could be impacted by the operations at Hill AFB and Little Mountain Test Facility. This is especially a concern if there is an increased densification and intensification of development with the Hill AFB safety zones and noise contours. An assessment of existing and future land uses within safety zones and noise contours can be found in SA-2 and NOI-1.

Land uses throughout the community impact, or can be impacted by, the presence of Hill AFB operations, especially operations that have the potential to impact safety in the community. For this reason, the presence of the most current Hill AFB AICUZ safety zones on general plan future land use maps can create awareness and guidance for future development within the safety zones. Additionally, density and intensity regulations in zoning ordinances could include the identification of safety zones to establish geographical extent of regulations needed. Zoning maps could also include safety zones to better identify which zoning districts are recommended to have regulations specific to Hill AFB.

Without clear guidance, to discourage incompatible land uses in safety zones, there is potential for additional incompatible land uses to be developed within these safety zones.

Table 5-15 lists the jurisdictions that are located within the Hill AFB AICUZ safety zones and the details related to Hill AFB safety zones that are included in their respective general plan future land use maps and zoning maps.

Table 5-15 Project Study Area Communities in the Hill AFB Safety Zones and Applicability to respective Planning Maps

Safety Zones in General Plan FLUM	Safety Zones in Zoning Map
Layton City	
Layton Forward Our General Plan 2019: The Future Land Use map in the General Plan includes Hill AFB safety zones. Within the General Plan, the preservation of open agricultural land within the southern Hill AFB APZ is encouraged.	The Zoning Map includes the Hill AFB safety zones (2020)
Riverdale City	
Riverdale City General Plan 2019: General Plan Future Land Use map does not include Hill AFB safety zones, but it does include 1993 AICUZ land use compatibility guidance. This information should be updated to include the most current AICUZ information as well as a map of the safety zones from the AICUZ. Furthermore, the future land use map should incorporate the safety zones. Area descriptions of future land development includes the area in which the Hill AFB APZ is located. Per the description of the area (Area Eight), the area in which the PAZ is located is zoned Agriculture and furthermore, the Federal government has purchased development rights and buildings are not allowed to be developed in the APZ. While Agriculture is mapped in this Area, the safety zone is not and furthermore, there is no visual indication on the map that Agricultural land in the APZ cannot be developed.	Safety zones are not included in the Zoning map (2019)
South Weber City	
South Weber City General Plan Update 2020 Draft: The General Plan Projected Land Use map includes a	Safety zones are not

Safety Zones in General Plan FLUM	Safety Zones in Zoning Map
land use for "Hill AFB Restricted Development". This area lines up with the safety zones and noise contours that are 75dB and greater. The map does not include identification of the 70dB and 65dB noise contours that are also present in the city. The General Plan includes a separate map that shows Hill AFB safety zones and noise contours. The description of noise hazards and accident potential related to Hill AFB reference the Hill AFB 1993 AICUZ, which was the most updated version of the AICUZ at the time the South Weber General Plan Update was completed. The General Plan Update should be updated to reflect the most recent AICUZ from 2018.	included in the Zoning map (2018) or zoning ordinance
Davis County	
Davis County General Plan 2006: General Plan does not include Hill AFB safety zones.	Safety zones are incorporated into the zoning map (2011)
Weber County	
General Plan does not include Hill AFB safety zones.	Safety zones are not included in the Zoning map (2020)

Source: Layton City, Layton Forward Our General Plan 2019, Layton City zoning map 2020; Riverdale City General Plan 2019, Riverdale City zoning map 2019; South Weber City General Plan Update 2020 Draft, zoning map 2018; Davis County General Plan 2006, zoning map 2011; Weber County General Plan, zoning map 2020.



Need for Hill AFB noise contours to be illustrated on maps within community planning documents

LU-2

Many jurisdictions around Hill AFB have partial or old Hill AFB noise contours from the Hill AFB Air Installation Compatible Use Zones Study on their zoning map or General Plan future land use map. The noise contours from the AICUZ define areas where there could be noise impacts on the community from the Hill AFB operational mission. The absence of the noise contours on planning documents could lead to incompatible development around the installation.

The Hill AFB 2018 AICUZ establishes noise contours based on the type of aircraft, noise modeling, etc. More information about the noise contours and AICUZ can be found in Chapter 3, Military Profile of this CUP. Because the level of noise coming from Hill AFB can create unfavorable conditions for noise sensitive land uses, the noise contours should be included on general plans and zoning ordinances to ensure that noise is considered during land use planning.

In addition to including noise contours on land use planning documents and ordinances, it will be important for these tools to also be updated on a consistent basis in the event that noise contours are updated in the AICUZ. For example, Hill AFB last updated the AICUZ in 2018 in response to new aircraft at the installation. This has resulted in updated noise contours that need to be communicated to the appropriate jurisdictions. The jurisdictions that have the AICUZ contours incorporated into their planning documents should update their planning documents if their planning documents were developed prior to the AICUZ update.

By including the noise contours in planning documents, communities will have the most updated information to make decisions based on land use compatibility with the installation. The presence of noise contours on general plan future land use plan maps can create awareness and guidance for future development within each noise contour in respective cities. By seeing the visual representation of the noise contours on a land use map, cities can make land use decisions based on guidance from the Air Force. Additionally, zoning regulations may include density and intensity regulations which could include the identification of noise contours to establish the geographical extent of regulations that are needed.

Table 5-16 lists the jurisdictions that are located within the Hill AFB AICUZ noise contours and the details related to Hill AFB noise contours that are included in their respective general plans and zoning ordinances.

Table 5-16 Project Study Area Communities in Hill AFB Noise Contours and Applicability to respective Planning Maps

Noise Contours in General Plan FLUM	Noise Contours on Zoning Map
Layton City	
Layton Forward Our General Plan 2019: The Future Land Use map in the General Plan does not include the Hill AFB noise contours.	The Zoning Map does not include the Hill AFB noise contours (2020)
Riverdale City	
Riverdale City General Plan 2019: General Plan Future Land Use map does not include Hill AFB noise contours, but it does include a separate map that shows the 1993 AICUZ noise contours and land use compatibility guidance. The General Plan should be updated to include the most current noise contours from the most recent AICUZ. Furthermore, the future land use map should incorporate the noise contours in addition to displaying the contours on a separate map.	Noise contours are not included in the Zoning map (2019)
South Ogden City	
South Ogden City General Plan Update 2016: General Plan does not include Hill AFB noise contours.	Noise contours are not included in the Zoning map (2018)
South Weber City	
South Weber City General Plan Update 2020 Draft: The General Plan Projected Land Use map includes a land use for "Hill AFB Restricted Development". This area lines up with the safety zones and noise contours that are 75dB and greater. The General Plan includes a separate	Noise contours are not included in the Zoning map (2018)

Noise Contours in General Plan FLUM	Noise Contours on Zoning Map
map that shows Hill AFB safety zones and noise contours. The description of noise hazards and accident potential related to Hill AFB reference the Hill AFB 1993 AICUZ, which was the most updated version of the AICUZ at the time the South Weber General Plan Update was completed. The General Plan Update should be updated to reflect the most recent AICUZ from 2018.	
Washington Terrace City	
General Plan 2006: Noise contours are not included on the future land use map	Noise contours are not included on the Zoning map (2013)
Davis County	
Davis County General Plan 2006: General Plan does not include Hill AFB noise contours.	Noise contours are incorporated into the zoning map (2011)
Weber County	
General Plan does not include Hill AFB noise contours.	Noise contours are not included in the Zoning map (2020)

Source: Layton City, Layton Forward Our General Plan 2019, Layton City zoning map 2020; Riverdale City General Plan 2019, Riverdale City zoning map 2019; South Ogden City General Plan Update 2016; South Weber City General Plan Update 2020 Draft, zoning map 2018; Washington Terrace City General Plan 2006, zoning map 2013; Davis County General Plan 2006, zoning map 2011; Weber County General Plan, zoning map 2020.



Need for sharing land use documentation related to Hill AFB

LU-3

Hill AFB has easements throughout the Project Study Area related to different impacts in the community, such as water contamination, noise, and safety zones. These easements may place land use restrictions on properties that would be impacted by the effects of operations at Hill AFB. Although some of these have been documented and shared with different government agencies, there have been inconsistencies in the amount of information that is being communicated. This has led to some government agencies not having the information needed to make informed decisions regarding land use.

Within the Project Study Area, easements are used to regulate land use restrictions on certain properties associated with Hill AFB. Easements are granted by a property owner to use land by another entity, such as the public, or a specific purpose. These purposes may include the placement of utilities and roadways.

Per State regulation, State of Utah Code Military Base Easement Act, the Governor's Office of Economic Development has authority to acquire easements for the establishment, maintenance, and operations of a restrictive use area for the operation of aircraft to and from Hill AFB.

Some of the existing easements related to Hill AFB are such that the property owners (grantors) grant the State of Utah (the grantee) a land use easement for the purpose of "protecting the health and safety of the citizens of Utah and assuring the continued operation of Hill Air Force Base as an active military base". These easements regulate the use of the land and set land use restrictions.

Among the entities that have easements related to Hill AFB are South Weber City, Layton City, Davis County, Weber County, and the State of Utah.

Table 5-17 lists the easement types and associated restrictions related to Hill AFB within Davis and Weber Counties. There is documentation of 193 easements related to Hill AFB in Davis and Weber counties. The timeframe for when these deeds were recording is 1995-2005. Of these easements that were recorded, the majority are land use easements related to Hill AFB APZ I. These easements include noise and height restrictions.

Table 5-17 Hill AFB Easements

Easement Type	Count	Notes
Land Use Easement APZI	107	Includes noise, height, land use restrictions. One easement does not specify height restrictions.
Lad Use Easement APZII	2	Includes noise, height, and land use restrictions
Land Use Easement 75 Ldn	25	Includes noise and height restrictions
Land Use Easement 80 Ldn	2	Includes noise and height restrictions
Land Use Easement	2	Not tied to safety or noise zone
Quit claim deed	4	N/A
Non-disturbance agreement	9	N/A
Condemnation	42	Most have noise, height, land use restrictions

Source: Hill AFB 2016.

Because there are multiple agencies involved in easements related to Hill AFB, it is important to ensure that information related to the easements is communicated to the proposer stakeholders when needed. It is important to share information related to easements to all stakeholders that would benefit from this knowledge, including Hill AFB, the jurisdiction in which they are located, the property owner, and the State. Additionally, information sharing between all agencies and property owners will ensure that everyone has the same information to make decisions related to land use.



Need to meet operational space requirements for the Ogden Air Logistics Complex

LU-4

Expanding operations at the Ogden Air Logistics Complex will require additional industrial space, which is limited on Hill AFB and in the surrounding community.

As described in COM-5, the OO-ALC is responsible for the modernization of weapons systems, which will require growth in their industrial programs. With this growth, there is also a need for the OO-ALC to expand its industrial land uses. As expressed in the stakeholder interviews, there is concerns that there is limited real estate on the installation and in the community for the OO-ALC to expansion its physical footprint to accommodate growth⁸¹.

When considering the expansion of industrial spaces to support the OO-ALC, the land on Hill AFB should be evaluated as Hill AFB currently supports industrial land uses to meet mission needs. The IDP, which was last updated in 2016, describes the physical state of the installation, including land uses.

The IDP identifies seven planning districts for planning land uses on Hill AFB. Light Industrial is a permitted land use in the Airfield District, Munitions District (permitted with restrictions), EUL District, East Side District, and Industrial District. While industrial uses are allowed in multiple districts throughout the installation, Hill AFB has a designated Industrial District. The Industrial District allows Industrial and Light Industrial. The Industrial District currently supports the OO-ALC as well as other Team Hill partners.

⁸¹ OO-ALC interview 6/10/2020



According to the IDP, there is a total of 71.9 acres of developable land and 118.1 acres of redevelopable land in the Industrial District, with a total of 190 acres of land that has potential to be redeveloped/developed to meet the needs of the OO-ALC. The redevelopable and developable parcels on the installation are shown on a map in the IDP. Due to the year in which this information was developed and incorporated into the IDP, these numbers should be revisited and updated as necessary to provide a more accurate illustration of the development potential on the installation⁸².

In addition to seeking industrial spaces for growth on the installation, there is also potential to partner with industry outside of the fenceline for industrial space. For example, during a stakeholder interview, it was communicated that there is a parcel directly adjacent to the runway that has opportunity for partnership with Kihomac⁸³.

Due to the lack of available industrial land use space within the Hill AFB fenceline, there is potential for partnerships between Hill AFB and the community (including jurisdictions and institutions) to develop industrial land uses to accommodate the growth within the OO-ALC. Similar to the trends at Hill AFB, available space for industrial use within the communities is limited⁸⁴.

The Wasatch Front Regional Council developed Wasatch Choice 2050, which provides a regional vision for the Wasatch Front communities for 2050. The Wasatch Choice 2050 provides a land use map to display the vision for land uses within the Wasatch Front. The map highlights (in purple) industrial areas within the Wasatch Front. As the map shows, there are industrial centers present throughout the Project Study Area, which could be potential partnership opportunities for industrial uses within the community.

The snapshot shown on Figure 5-11 of the Wasatch Choice Land Use map highlights industrial areas (in purple). The following is a brief description of the industrial areas within the Project Study Area.

- Ogden Airport Industrial District: This district is in Ogden City. Planned typical land uses in this district are light and heavy industrial, warehousing, incidental office and retail.
- Ogden Airport West Industrial District: This district is in Ogden City, west of the Ogden-Hinkley Airport. Planned typical land uses in this district are light and heavy industrial, warehousing, incidental office and retail.
- Freeport Center: This district is in Clearfield City, southwest of Hill AFB. Planned typical land uses in this district are light and heavy industrial, warehousing, incidental office and retail.
- East Gate Business Park (Economic Development Urban Renewal Area): This district is in Layton City outside of the Hill AFB on the southeastern side of the installation boundary. There are 280 acres for industrial growth within the East Gate Business Park in Layton, outside of the Hill AFB East Gate. Planned typical land uses in this district are light and heavy industrial, warehousing, incidental office and retail.
- Layton Industrial Center: This district is in southwestern Layton City. Planned typical land uses in this district are light and heavy industrial, warehousing, incidental office and retail.

⁸² IDP page 3-13

⁸³ OO-ALC interview 6/10/2020

⁸⁴ OO-ALC interview 6/10/2020

Figure 5-11 Industrial Areas, Wasatch Choice 2050



Source: Wasatch Choice Map, Land Use, Wasatch Front Regional Council⁸⁵.

As noted during stakeholder interviews⁸⁶, the OO-ALC has looked at industrial space off-base for the OO-ALC aircraft group. Due to the limited availability of industrial space within the community, obtaining industrial real estate is highly competitive. Similar to other industries in the region, the OO-ALC has to compete with other industries for available industrial land uses but are not successful in obtaining these spaces all of the time.

⁸⁵ <https://wfr.org/wasatch-choice-map/#mapList=vision.transportation.landuse.econdev.recreation.ato&scale=72224&selectedMap=landuse&sideBarClosed=true&x=-12464642&y=5040383>

⁸⁶ Stakeholder interview 6/10/2020



5.4.6 Light and Glare

This compatibility factor refers to man-made lighting (streetlights, airfield lighting, building lights) and glare (direct or reflected light) that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses can cause excessive glare and illumination at night, impacting the use of military night vision devices and aircraft operations. Conversely, high intensity lights in military areas (such as airfield lighting) may have a negative impact on adjacent communities.

LG-1

Light generated from within the community may impact Air Force operations.

Future development surrounding Hill AFB facilities could impact nighttime training and operations if proper lighting regulations are not in place throughout the study area.

As described in Chapter 3, Military Profile, both the 419 Fighter Wing and 388 Fighter Wing at Hill AFB have both daytime and nighttime flying missions. At Hill AFB, approximately 0.5%, or 180, nighttime flights occur (information about flights is listed in Table 3-1).

Due to the nighttime operations at Hill AFB, light at night can create impacts to the Team Hill military mission. Urban development around Hill AFB has increased the amount of ambient light in the area.

According to the 2018 AICUZ, bright light emissions can impair pilots' vision, especially at night. Bright lights can directly shine towards a pilot or be reflected from a source. Additionally, sudden flashes of light can temporarily blind pilots. While adaptation to light in dark settings occurs relatively quick, full adaptation typically takes about 45 minutes. The 2018 AICUZ lists the following examples of light emissions that can

interfere with visibility: Lasers; LED lights, specifically where pilots use night vision goggles.

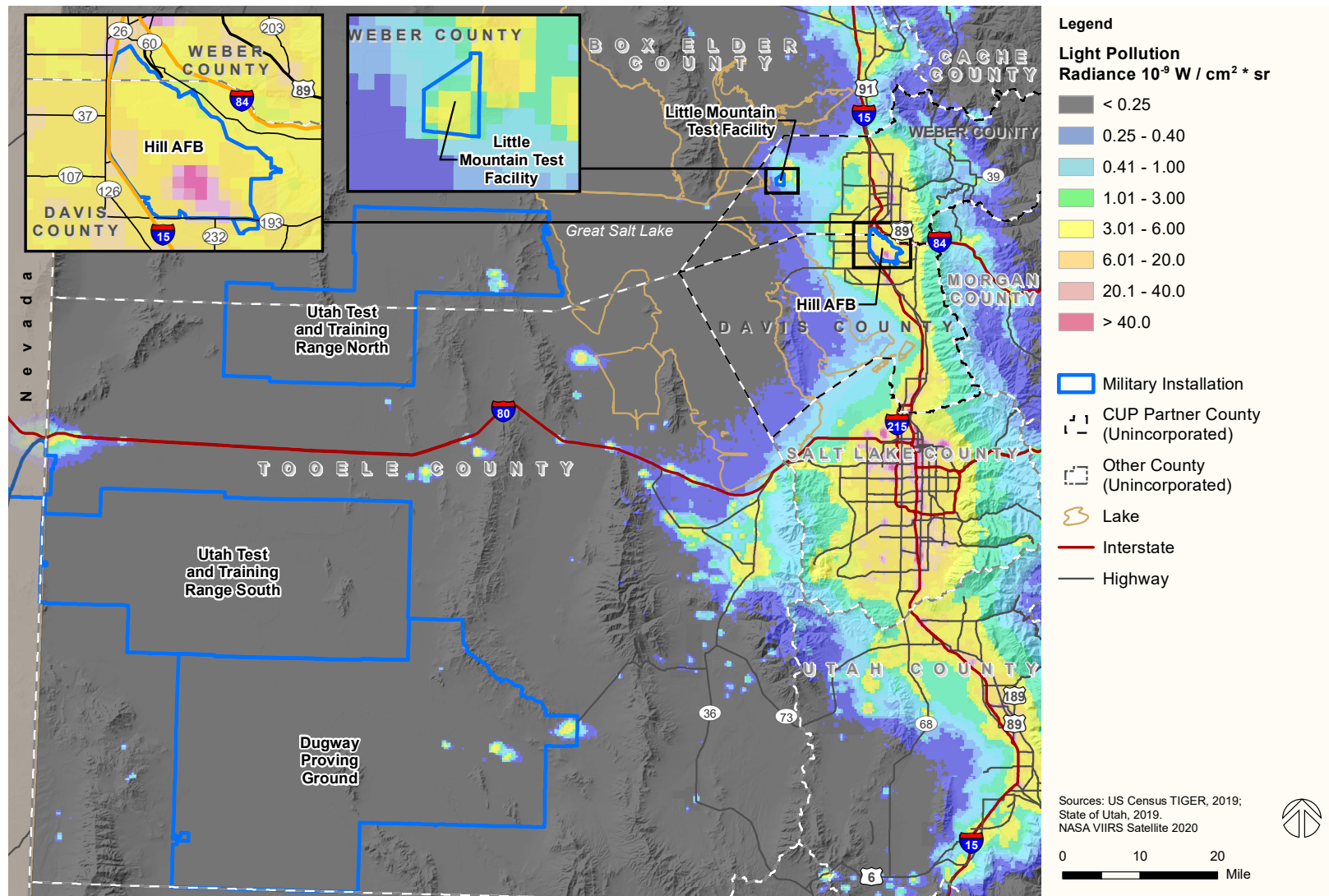
One way to examine light conditions in the community is measuring light pollution. According to the Dark Sky Organization, light pollution is the "inappropriate or excessive use of artificial light⁸⁷". Light pollution is a component of: glare, skyglow, light trespass, and clutter. Descriptions of each of these components is listed below:

- **Glare:** excessive brightness that causes visual discomfort
- **Skyglow:** brightening of the night sky over inhabited areas
- **Light trespass:** light falling where it is not intended or needed
- **Clutter:** bright, confusing, and excessive groupings of light sources⁸⁸

Figure 5-12 shows light pollution in the Study Area. The map shows the light pollution as measured in radiance units ($W/cm^2 * sr$). The larger the radiance number is, the greater the light pollution, which is shown by red shading on the map. Areas of the least light pollution are shown in gray shading. As expected, greater amounts of light pollution are associated with cities and other developed areas. Hill AFB has radiance levels of 3.01 to over 40, while most of the area surrounding the Base has radiance levels between 3.01-20.0, with a few small pockets between 20.1 and 40.0. As the map shows, the areas surrounding the UTTR have low levels of light pollution due to its remote location.

⁸⁷ <https://www.darksky.org/light-pollution/>, accessed online on June 21, 2021

⁸⁸ <https://www.darksky.org/light-pollution/>, access online on June 21, 2021





Light pollution directly from light fixtures or from light reflected off the ground or other surfaces can interfere with military nighttime training activities. The impacts of outdoor lighting in the region around an installation are determined by two primary factors—the amount of developed land (density) and the distance of the developed land from the installation.

Local jurisdictions can employ lighting regulations and dark skies ordinances to reduce the impact of light pollution. In 2018, a State resolution, which “encourages the use shielded outdoor lighting to promote darks skies⁸⁹”, was passed. None of the cities within the Project Study Area have specific dark skies ordinances that are related to protecting nearby military installations; however, most of the cities have regulations for outdoor lighting that encourages the shielding of lights and/or glare prevention.

⁸⁹ State of Utah Concurrent Resolution Encouraging the Use of Shielded Light Fixtures On Outdoor Lights, 2018; <https://le.utah.gov/~2018/bills/static/SCR002.html>

5.4.7 Noise

Sound that reaches unwanted levels is considered noise. The central issue with noise is the impact, or perceived impact, on people, animals (wild and domestic), and general incompatibility with noise-sensitive land uses such as residences, schools, and hospitals. Exposure to high noise levels can have a significant impact on human activity, health, and safety. The decibel (dB) scale is used to quantify sound intensity. To help understand the relevance of decibels, a normal conversation often occurs at 60 dB, while an ambulance siren from 100 feet away is about 100 dB. Noise associated with military operations (overflight of military aircraft, firing of weapons, etc.) may create noises in higher dB ranges.



Incompatible development within Hill AFB noise contours

NOI-1

Aircraft operations at Hill AFB often create noise, which can be heard throughout the Project Study Area. These noise conditions have varying degrees of impacts depending on the geographic location. Additionally, changing circumstances requiring work-from-home situations may create more instances of noise impacts in the community.

Because Hill AFB is located in an urbanized area, the noise that is produced by aircraft operations may be considered by a very small minority to have an impact on surrounding communities. For example, there are land uses that may have more sensitivity to noise levels, such as residential, schools, hospitals, and care facilities. Noise sensitivity may be especially heightened as many residents adapted to work-from-

home situations due to the COVID-19 pandemic and as aircraft changes at Hill AFB, notably the change from F-16s to F-35s.

Through community engagement during the Compatible Use Plan process, 19 comments were received from concerned citizens throughout the Study Area and significantly beyond regarding disruptive impacts from F-35 aircraft operations. Noise concerns related to the F-35 at Hill AFB range from impacts to hearing issues and mental health, vibration impacts on houses, the frequency of loud flights with afterburners, and loss in housing values. Through the comments, residents noted that the noise from F-35s is substantially louder than the previous F-16 aircraft at Hill AFB.

Hill AFB is currently home to the 419th Fighter Wing and the 388th Fighter Wing, both of which have flying missions that occur during the day and night to maintain mission readiness. For this reason, members of the community may hear aircraft both during the day and at night. As Table 3-1 in the Military Profile indicates, there are over 40,000 aircraft operations a year, 0.5% of which are at night. The noise produced by operations at Hill AFB are a result of various factors including weather, such as wind patterns, temperatures, and cloud cover. In addition to noise at Hill AFB, there is also noise that occurs at the UTTR. Noise associated with the UTTR results from low-level flights of aircraft and detonations of ordnance.⁹⁰

The 2018 Hill AFB AICUZ Study is an update to the Hill AFB AICUZ Study completed in 1993. The AICUZ identifies the average day-night noise contours associated with the aircraft that operate at Hill AFB. The updated study identifies changes in the flight operations that have occurred since the 1993 study, including the basing of the F-35A and the departure of F-16 aircraft. More information on the AICUZ and the associated noise contours is found in Chapter 3, Military Profile. According to the AICUZ, there is approximately 2,300 acres within the noise contours and a population of approximately 7,000 within the

⁹⁰ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021, page 52.



noise contours. The following cities and counties are within the noise contours: Layton City, South Weber City, Riverdale City, Washington Terrace City, South Ogden City, and unincorporated areas of Weber County and Davis County.

The Air Force provides land use guidance to determine how different levels of noise can impact different land uses, which is the guidance that is used in the Hill AFB AICUZ. This guidance, Air Force Instruction 32-7063, is a tool that the Air Force uses to help local jurisdictions understand the mission requirements for certain types of military training exercises and provides recommended land use guidelines for land use planning around active military airfields. Tables on the following pages list the existing land use, zoning, and future land use compatibility within the noise contours based on Air Force guidance.

Existing Land Use

Table 5-18 lists the incompatible and conditionally compatible existing land uses by jurisdiction, and Figure 5-13 shows the land uses within the noise contours. Existing land uses considered incompatible or conditionally compatible within the Hill AFB noise contours are within the following cities and counties: Weber County, Davis County, South Ogden City, South Weber City, Washington Terrace City, Riverdale City, and Layton City.

Of the total acreage within the noise contours, 44% is compatible, 17% is conditionally compatible, and 39% is incompatible. Compatible land uses within the noise contours include vacant, agriculture (without residential structures), rights-of-way/roadways, open space, industrial, and some commercial. Existing land uses that are compatible are not listed in Table 5-19.

The majority of the existing land uses that are incompatible within the noise contours are residential land uses. Per the Air Force guidance (see Table 5-13), residential land uses are not recommended in any of the noise contours. It should be noted that many of the residential units have been in place since Hill AFB was established, to support the installation. Changing operations at Hill AFB and growth in the community have now created conditions in which existing land uses are classified as “incompatible”. The majority of the incompatible land uses are in the 65-69 dB noise contour and include the Layton City, South Ogden City, South Weber City, Washington Terrace City, Davis County, and a small part of Weber County. In total, there are 1,046 acres of incompatible land uses within the noise contours.

There are less conditionally compatible land uses within the noise contours than there are incompatible land uses. Conditionally compatible land uses are those that could be compatible with the Air Force land use recommendations if additional action is taken. For the existing land uses within the noise contours, these uses could be compatible if sound attenuation has been incorporated into the structures. In total, there are 472.3 acres of conditionally compatible existing land uses in the noise contours.

While incompatible and conditionally compatible land uses are important to note for future encroachment mitigation, it should be noted that there are also land uses that are compatible with the Air Force land use recommendations for the noise contours.

Table 5-18 Incompatible and Conditionally Compatible Existing Land Uses (in acres) in Hill AFB Noise Contours

Land Use	Compatibility								TOTAL
	Incompatible				Conditionally Compatible				
	65-69 dB	70-74 dB	75-79 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Layton City									
Parks and Open Space	-	-	-	0	61 ¹	8.8 ¹	-	69.8	69.8
Single-Family Residential	216.1 ²	17.6 ²	-	233.7	-	-	-	0	233.7
Multi-Family Residential	195 ²	205 ²	-	400	-	-	-	0	400
Mobile Homes	95.5 ²	81.8 ²	3.6 ²	180.9	-	-	-	0	180.9
Commercial	-	-	-	0	-	18.9 ¹	>1 ¹	18.9	18.9
Industrial and Manufacturing	-	-	-	0	-	84.6 ¹	150 ¹	234.6	234.6
Government and Institution	-	-	-	0	-	5 ¹	-	5	5
Total	506.6	304.4	3.6	814.6	61	117.3	150	328.3	1,142.9
South Ogden City									
Parks and Open Space	-	-	-	0	-	>1 ¹	-	>1	>1
Single-Family Residential and Associated ³	90.9 ²	-	-	90.9	-	-	-	0	90.9
Multi-Family Residential and Associated ³	>1 ²	-	-	>1	-	-	-	0	>1
Government and Institution	-	-	-	0	49.1 ¹	0.8 ¹	-	49.9	49.9
Total	90.9	0	0	90.9	49.1	0.8	0	49.9	140.8
South Weber City									
Single-Family Residential	11.1	0.4	-	11.5	-	-	-	0	11.5
Industrial	-	-	-	0	-	>1	-	>1	>1
Government and Institution	-	-	-	0	6.3	7.5	-	13.8	13.8
Total	11.1	0.4	0	11.5	6.3	7.5	0	13.8	25.3
Washington Terrace City									
Parks and Open Space	-	-	-	0	-	0.1 ¹	-	0.1	0.1
Single-Family Residential	19.5 ²	1.0 ²	-	20.5	-	-	-	0	20.5
Multi-Family Residential	4.6 ²	11.9 ²	-	16.5	-	-	-	0	16.5
Commercial	-	-	-	0	-	16.4 ¹	-	16.4	16.4

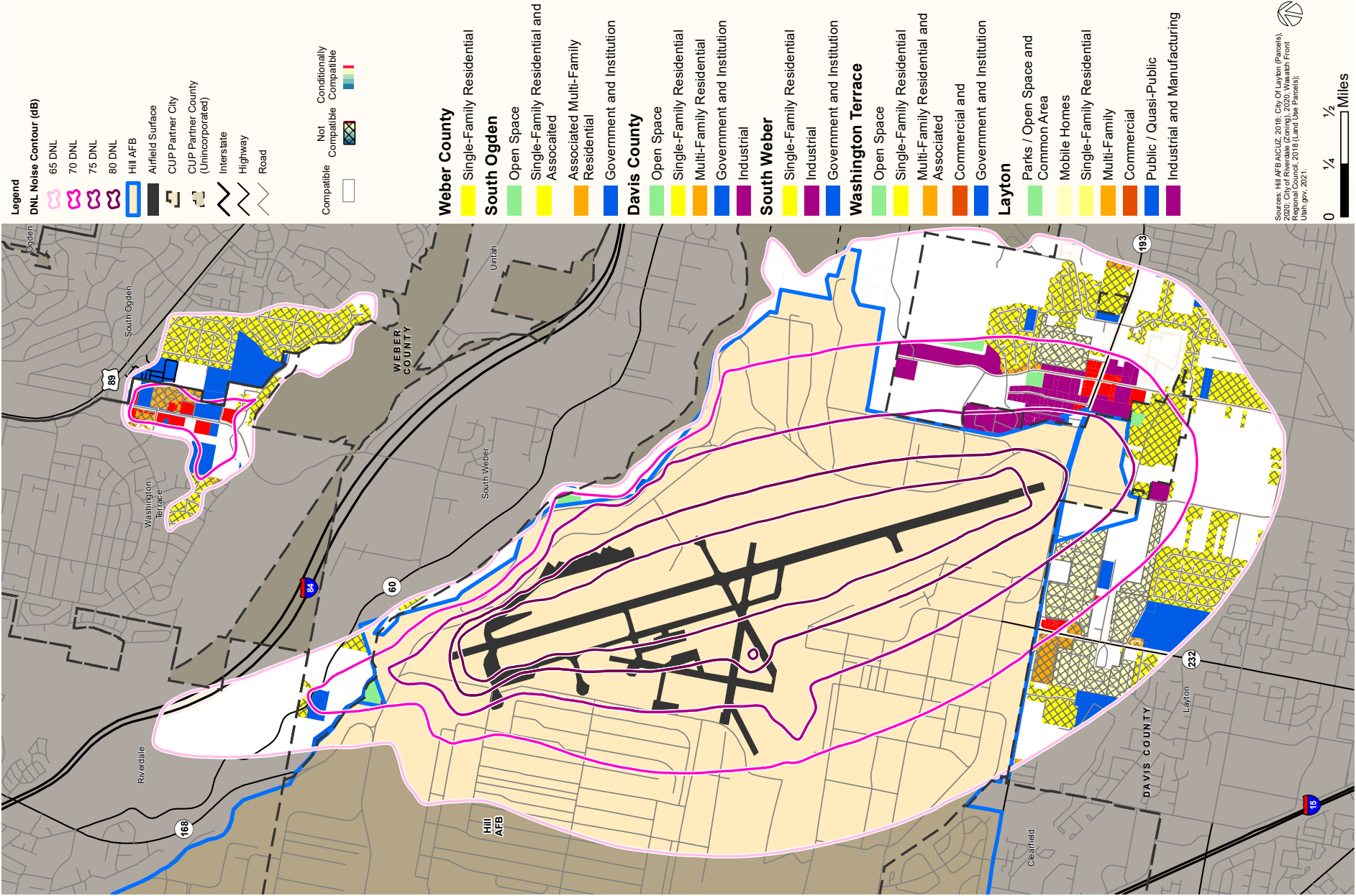


Land Use	Compatibility								TOTAL
	Incompatible				Conditionally Compatible				
	65-69 dB	70-74 dB	75-79 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Government and Institution	-	-	-	0	6.2 ¹	20.1 ¹	-	26.3	26.3
Total	24.1	12.9	0	37	6.2	36.6	0	42.8	79.8
Davis County									
Parks and Open Space	-	-	-	0	-	11.5 ¹	-	11.5	11.5
Single-Family Residential	18.9 ²	71.2 ²	0.8 ²	90.9	-	-	-	0	90.9
Multi-Family Residential	>1 ²	-	-	>1	-	-	-	0	>1
Industrial	-	-	-	0	-	4 ¹	16.5 ¹	20.5	20.5
Government and Institution	-	-	-	0	1.6 ¹	2.4 ¹	1.5 ¹	5.5	5.5
Total	18.9	71.2	0.8	90.9	1.6	17.9	18	37.5	128.4
Weber County									
Single-Family Residential	1.3 ²	-	-	1.3	-	-	-	0	1.3
Total	1.3	0	0	1.3	0	0	0	0	1.3
TOTAL	652.9	388.9	4.4	1,046.2	124.2	180.1	168	472.3	1,518.5

Source: Layton City existing land use data, Riverdale City existing land use data, Wasatch Front Regional Council, Hill AB AICUZ, Matrix Design Group.

Notes:

1. Per Air Force land use guidance, noise level reduction recommended
2. Per Air Force land use guidance residential land uses are not recommended in this noise contour
3. "Associated" uses include common spaces, parking, storage, etc.



Matrix

Figure 5-13
Hill AFB Noise Contours and Existing Land Use



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Future Land Use

Table 5-19 lists the incompatible and conditionally compatible future land uses by jurisdiction, and Figure 5-14 shows the land uses within the noise contours. Future land uses within the noise contours are within the following cities and counties: Davis County, South Ogden City, South Weber City, Washington Terrace City, Riverdale City, Layton City.

Of the total acreage of future land uses within the noise contours, 41% is compatible, 15% is conditionally compatible, and 44% is incompatible. While incompatible and conditionally compatible land uses are important to note for future encroachment mitigation, it should be noted that there are also future land uses that are compatible with the Air Force land use recommendations for the noise contours, including rights-of-way/roadways/utility, parks, open spaces, industrial/manufacturing, and commercial in the 65 dB noise contour. It should be noted that Layton City has a designated Hill AFB Easement Area in which further residential use or development of property owned within the southern APZ is restricted. While this is specific to the Hill AFB APZs, the portions of the APZs that fall within Layton City are also in the Hill AFB noise

contours. Future land uses that are compatible are not listed in Table 5-20.

Most of the future land uses that are incompatible within the noise contours are residential land uses. Per the Air Force guidance (see Table 5-13), residential land uses are not recommended in any of the noise contours. The majority of the incompatible land uses are in the 65-69 dB noise contour and include the Layton City, South Ogden City, Davis County, and a small portion of South Weber City and Washington Terrace City. In total, there were 1,043.5 acres of incompatible land uses within the noise contours.

There are less conditionally compatible zoning districts within the noise contours than incompatible zoning districts. Conditionally compatible land uses are those that could be compatible with the Air Force land use recommendations if additional action is taken. For the future land uses within the noise contours, these uses could be compatible if sound attenuation has been incorporated into the structures. In total, there are 365 acres of conditionally compatible future land uses in the noise contours.



Table 5-19 Incompatible and Conditionally Compatible Future Land Uses (in acres) in Hill AFB Noise Contours

Future Land Use	Compatibility									
	Incompatible					Conditionally Compatible				Total
	65-69 dB	70-74 dB	75-79 dB	80-84 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Layton City										
Agriculture Holding Zone	-	-	-	-	0	52.3 ¹	19.6 ¹	-	71.9	71.9
Commercial	-	-	-	-	0	-	14.3 ²	-	14.3	14.3
Low Density Residential	364.7 ³	46.7 ³	-	-	411.4	-	-	-	0	411.4
Medium Density Residential	64.2 ³	80.4 ³	4.3 ³	-	148.9	-	-	-	0	148.9
High Density Residential	22.4 ³	3.4 ³	-	-	25.8	-	-	-	0	25.8
Manufacturing	-	-	-	-	0	-	175.2 ⁴		175.2	175.2
Mixed Use	24.5 ⁵	-	-	-	24.5	-		-	0	24.5
Open Space\Public Facility	-	-	-	-	0	-	8.7 ²	-	8.7	8.7
Professional Business	19.3	-	-	-	19.3	-	-	-	0	19.3
Total	495.1	130.5	4.3	0	629.9	52.3	217.8	0	270.1	900
Riverdale City										
Residential Overlay Zone	-	-	-	-	-	0.1 ³	-	-	0.1	0.1
Total	-	-	-	-	-	0.1	0	0	0.1	0.1
South Ogden City										
School	-	-	-	-	0	7.7 ²	-	-	7.7	7.7
Single-Family Residential	120.3 ³	-	-	-	120.3	-	-	-	0	120.3
Public	-	-	-	-	0	-	0.8 ²	-	0.8	0.8
Total	120.3	0	0	0	120.3	7.7	0.8	0	8.5	128.8
South Weber City										
Low Density Residential	2.9	>1	-	-	2.9	-	-	-	0	2.9
Highway Oriented Commercial - Specific Locations	-	-	-	-	0	-	>1 ²	-	>1	>1
Total	2.9	>1	0	0	2.9	0	>1	0	>1	2.9
Washington Terrace City										
Single-Family Residential	11.7 ³	0.2 ³	-	-	11.9	-	-	-	0	11.9

Future Land Use	Compatibility									
	Incompatible					Conditionally Compatible				Total
	65-69 dB	70-74 dB	75-79 dB	80-84 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Commercial	-	-	-	-	0	-	26.0 ²	-	26.0	26.0
Public Buildings and Hospital/Institution	-	-	-	-	0	5.1 ²	23.4 ²	-	28.5	28.5
Special Area Plan	-	-	-	-	0	5.6 ²	16.2 ²	-	21.8	21.8
Annex	-	-	-	-	0	10.0 ⁷	-	-	10.0	10.0
Total	11.7	0.2	0	0	11.9	20.7	65.6	0	86.3	98.2
Davis County										
Single-Family Residential	154.4 ³	100.7 ³	23.4 ³	>1 ³	278.5	-	-	-	-	278.5
Total	154.4	100.7	23.4	>1	278.5	-	-	-	-	278.5
TOTAL	784.4	231.2	27.7	>1	1,043.5	80.8	284.2	0	365	1,408.5

Source: Layton Forward Our General Plan 2019, Layton City; Riverdale City General Plan 2019, Riverdale City General Plan; South Weber General Plan Update Draft 2020, City of South Weber; South Ogden General Plan Update 2014, City of South Ogden; Hill AFB AICUZ; Matrix Design Group.

Notes:

1. Per Layton City General Plan, residential land uses are allowed in this future land use. Air Force land use guidelines recommend residential buildings have a noise level reduction of 25
2. Some uses may require noise level reduction to be compatible.
3. Residential development of any density is not recommended in this noise contour per Air Force land use guidelines.
4. Per Layton City General Plan, there are uses allowed in this future land use, that, through the Air Force land use guidelines, recommend measures to achieve a noise level reduction of 25 be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. Per Layton City General Plan, mixed Use encourages residential uses to be mixed with other land uses.
6. Layton City General Plan allows mixed use housing with commercial. The type of housing allowed for the mixed use includes townhomes and apartments, which are not recommended in the noise contours per Air Force land use guidance.
7. Washington Terrace City identifies areas of future annexation in the draft 2019 General Plan update. Per the 2003 Annexation Policy Plan, which is required for cities planning the annexation of an unincorporated area per Part 4, Chapter 2, of Title 10 of the Utah Code, this area may be developed to support residential growth. The status of compatibility is dependent on the actual planned use once this area is annexed.



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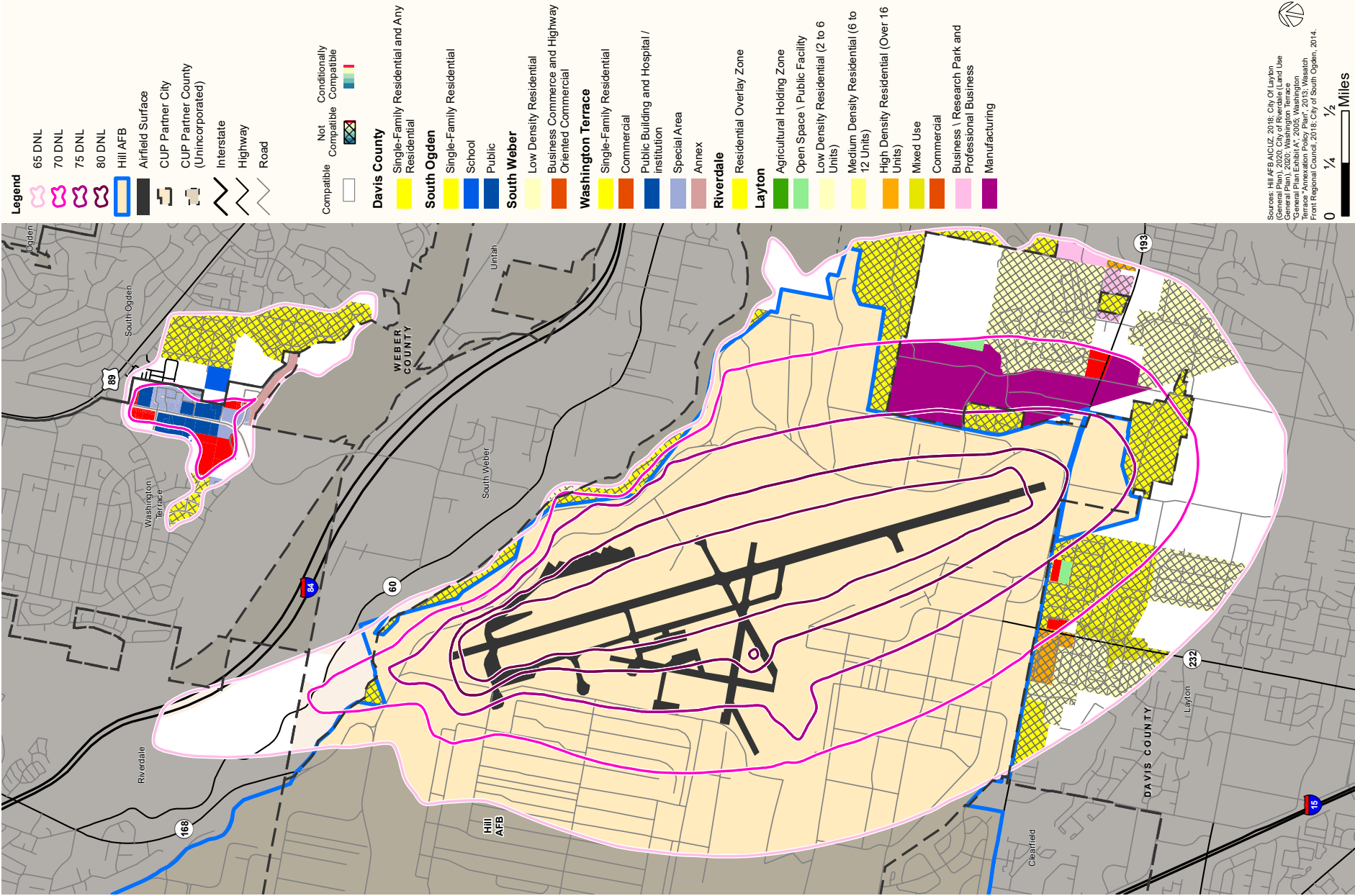


Figure 5-14

Hill AFB Noise Contours and Future Land Use



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Zoning

Table 5-20 lists the incompatible and conditionally compatible zoning districts by jurisdiction, and Figure 5-15 shows zoning within the noise contours.

Zoning districts within the noise contours are within the following cities and counties: Davis County, Weber County, South Ogden City, South Weber City, Washington Terrace City, Riverdale City, Layton City.

Of the total acreage of zoning districts within the noise contours, 16% is compatible, 8% is conditionally compatible, and 76% is incompatible. While incompatible and conditionally compatible zoning districts are important to note for future encroachment mitigation, it should be noted that there are also zoning districts that are compatible with the Air Force land use recommendations for the noise contours, including natural resources/open spaces, commercial, manufacturing/industrial. Zoning districts that are compatible are not listed in Table 5-21.

Most of the zoning districts that are incompatible within the noise contours are residential land uses. Per the Air Force guidance (see Table 5-15), residential land uses are not recommended in any of the noise contours. The majority of the incompatible zoning districts are in the 65-69 dB noise contour and include areas in Layton City, Riverdale City,

South Ogden City, Davis County, and a small portion of South Weber City, Washington Terrace City, and Weber County. In total, there were 1,720.7 acres of incompatible land uses within the noise contours. The high percentage of incompatibility can be attributed to the high amount of residential zoning within the noise contours, which are not recommended in any of the noise contours. Additionally, the majority of the agricultural zoning districts in the noise contours permit residential land uses, making such zoning districts incompatible.

There are less conditionally compatible zoning districts within the noise contours than incompatible zoning districts. Conditionally compatible land uses are those that could be compatible with the Air Force land use recommendations if additional action is taken. For the zoning districts within the noise contours, these uses could be compatible if sound attenuation has been incorporated into the structures. In total, there are 173.7 acres of conditionally compatible zoning districts in the noise contours. The majority of these conditionally compatible zoning districts are zoning districts related to commercial land uses. It should also be noted that there is approximately ten acres of Washington terrace that are slated for future annexation and thus are not yet zoned. These acres are conditionally compatible as the zoning district is unknown to date, and the status of compatibility may change depending on the zoning for the land once annexed.



Table 5-20 Incompatible and Conditionally Compatible Zoning (in acres) in Hill AFB Noise Contours

Zoning District	Compatibility									
	Incompatible					Conditionally Compatible				Total
	65-69 dB	70-74 dB	75-79 dB	80-84 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Layton City										
Agriculture (A)	408.1 ¹	37.7 ¹	1.2 ¹	-	447	-	-	-	0	447.0
Single Family Residential (R-1-6)	62.6 ¹	-	-	-	62.6	-	-	-	0	62.6
Single Family Residential (R-1-6 (PRUD))	4.6 ¹	-	-	-	4.6	-	-	-	0	4.6
Single Family Residential (R-1-8)	169.2 ¹	17.9 ¹	-	-	187.1	-	-	-	0	187.1
Single Family Residential (R-1-8 (PRUD))	18.9 ¹	4.0 ¹	-	-	22.9	-	-	-	0	22.9
Single Family Residential (R-1-10)	17.4 ¹	0.1 ¹	-	-	17.5	-	-	-	0	17.5
Single and Two Family Residential (R-2)	-	2.7 ¹	-	-	2.7	-	-	-	0	2.7
Single and Two Family Residential (R-S)	0.5 ¹	3.6 ¹	-	-	4.1	-	-	-	0	4.1
Low/Medium Density Residential (R-M1)	2.0 ¹	-	-	-	2	-	-	-	0	2.0
Low/Medium Density Residential (R-M1 PRUD)	3.3 ¹	-	-	-	3.3	-	-	-	0	3.3
High Density Residential (R-H)	18.6 ¹	2.6 ¹	-	-	21.2	-	-	-	0	21.2
Mobile Home Parks and Subdivisions (R-MH)	90.7 ¹	80.3 ¹	4.4 ¹	-	175.4	-	-	-	0	175.4
Business and Research Park (B-RP)	-	-	-	-	0	10.6 ²	-	-	10.6	10.6
Highway Commercial (C-H)	-	-	-	-	0	10.1 ³	4.0 ³	>1 ³	14.1 ³	14.1

Zoning District	Compatibility									
	Incompatible					Conditionally Compatible				Total
	65-69 dB	70-74 dB	75-79 dB	80-84 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Planned Neighborhood Commercial (CP-1)	-	-	-	-	0	29.5 ⁴	-	-	29.5	29.5
Planned Community Commercial (CP-2)	-	-	-	-	0	20.8 ⁵	7.4 ⁵	-	28.2	28.2
Total	795.9	148.9	5.6	0	950.4	71	11.4	>1	82.4	1,032.8
Riverdale City										
Agricultural (A-1)	135.8 ⁶	-	-	-	135.8	-	-	-	-	135.8
Total	135.8	0	0	0	135.8	-	-	-	-	135.8
South Ogden City										
Single-Family Residential (R-1-6)	0.5 ⁷	-	-	-	0.5	-	-	-	-	0.5
Single-Family Residential (R-1-8)	86.5 ⁷	-	-	-	86.5	-	-	-	-	86.5
Single-Family Residential (R-1-10)	95.9 ⁷	0.7 ⁷	-	-	96.6	-	-	-	-	96.6
Gateway General	1.7 ⁷	-	-	-	1.7	-	-	-	-	1.7
Total	184.6	0.7	0	0	185.3	-	-	-	-	185.3
South Weber City										
Agricultural (A)	50.6 ⁸	27 ⁸	-	-	77.6	-	-	-	-	77.6
Highway-Commercial (C-H)	9.0 ⁹	>1 ⁹	-	-	9.0	-	-	-	-	9.0
Total	59.9	27	0	0	86.6	-	-	-	-	86.6
Washington Terrace City										
Annexation	-	-	-	-	0	10.8 ¹⁰	-	-	10.8	10.8
Single-Family Residential (R-1-6)	5.4 ¹¹	10.3 ¹¹	-	-	15.7	-	-	-	0	15.7
Single-Family Residential (R-1-8)	5.6 ¹¹	0.2 ¹¹	-	-	5.8	-	-	-	0	5.8



Zoning District	Compatibility									
	Incompatible					Conditionally Compatible				Total
	65-69 dB	70-74 dB	75-79 dB	80-84 dB	Total	65-69 dB	70-74 dB	75-79 dB	Total	
Single-Family Residential (R-1-10)	7.6 ¹¹	-	-	-	7.6	-	-	-	0	7.6
Neighborhood Commercial (C-1)	-	-	-	-	0	-	18.1 ¹²	-	18.1	18.1
Community Commercial (C-2)	-	-	-	-	0	27.4 ¹²	35 ¹²	-	62.4	62.4
Total	18.6	10.5	0	0	29.1	38.2	53.1	0	91.3	120.4
Davis County										
Agriculture (A-10)	208.2 ¹³	98.1 ¹³	4.7 ¹³	-	311	-	-	-	-	311
Total	208.2	98.1	4.7	0	311	-	-	-	-	311
Weber County										
Agricultural (A-1)	22.2	-	-	-	22.2	-	-	-	-	22.2
Total	22.2	0	0	0	22.2	-	-	-	-	22.2
TOTAL	1,425.2	285.2	10.3	0	1,720.7	109.2	64.5	>1	173.7	1,894.4

Source: Layton City Zoning, Riverdale City Zoning, South Weber City Zoning, Washington Terrace Zoning, South Ogden City Zoning, Hill AFB AICUZ, Matrix Design Group.

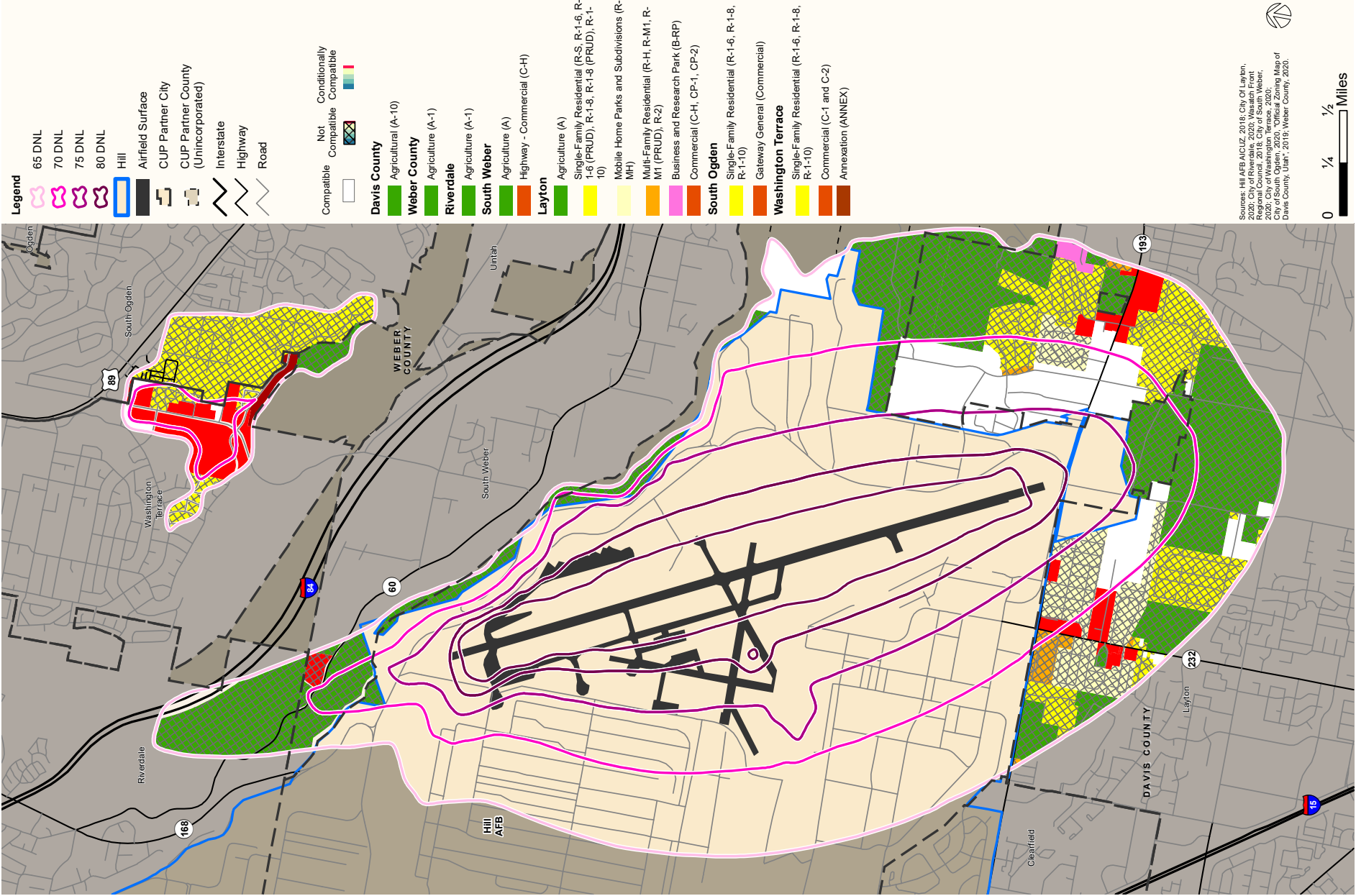
Notes:

1. Per the Layton Zoning Code, this zoning district allows residential land uses, which is not recommended by Air Force land use guidance.
2. Per the Layton Zoning Code, B-RP permits offices, research facilities, and environmentally appropriate assembly uses, and appropriate amenities to support employee activity. Specific uses are not listed. Most uses in the Air Force land use guidance that fall under these categories are suggested as being acceptable in this noise contour with some noise level reduction levels recommended for some uses.
3. Per the Layton Zoning Code, C-H permits commercial services and professional uses, with a primary focus on large retail or merchandise storage areas. Specific uses are not listed. Most uses in the Air Force land use guidance that fall under these categories are suggested as being acceptable in this noise contour with some noise level reduction levels recommended for some uses.
4. Per the Layton Zoning Code, CP-1 permits commercial services for basic trade and personal services. Specific uses are not listed. Most uses in the Air Force land use guidance that fall under these categories are suggested as being acceptable in this noise contour with some noise level reduction levels recommended for some uses.

5. *Per the Layton Zoning Code, CP-2 permits commercial services greater than that of CP-1. Specific uses are not listed. Most uses in the Air Force land use guidance that fall under these categories are suggested as being acceptable in this noise contour with some noise level reduction levels recommended for some uses.*
6. *Per the Riverdale City Zoning Code, A-1 allows Educational institution, single-family dwellings and guest homes, which are not recommended under Air Force land use guidance in this noise contour.*
7. *Per the South Ogden Zoning Code, this zoning district allows residential land uses, which are not recommended under Air Force land use guidance in this noise contour.*
8. *Per the South Weber Zoning Code, this zoning district allows the following land uses, which are not recommended under Air Force land use guidance" dwelling, one family; churches; daycare centers and preschools; group homes; planned dwelling group; planned unit developments; public buildings.*
9. *Per the South Weber Zoning Code, C-H allows dwellings, single-family, only when in the same structure as the businesses or commercial use; transient lodging.*
10. *Compatibility dependent on the zoning district in which land is annexed into.*
11. *Per the Washington Terrace Zoning Code, this zoning district allows residential land uses, which are not recommended under Air Force land use guidance in this noise contour.*
12. *Per the Washington Terrace Zoning Code, Air Force land use guidance recommends that land uses permitted in this zoning district include noise level reduction*
13. *Per the Davis County Zoning Code, this district permits single-family residential uses, which are not recommended under Air Force land use guidance in this noise contour.*



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Matrix

Hill AFB Noise Contours and Zoning Compatibility

Figure 5-15



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While there are incompatible land uses for noise contours throughout the community, Hill AFB works to communicate noise awareness in the community. The Public Affairs Office at Hill AFB communicates noise related information in various ways. One resource the Public Affairs Office has developed and continues to update is the noise FAQ⁹¹, which is posted on the installation's website. The FAQ describes the following: why someone may hear jet noise, where aircraft fly, impacts of weather on noise, what the base does to minimize noise impacts, when jets use afterburners, how low jets may fly, night operations, the role of the UTTR, reasons for noise level increases, reasons for booms, how to file noise complaints. The FAQ also provides video resources for additional information. The Public Affairs Office also provides press releases to the community when there is scheduled operations that will create abnormal levels of noise.

Due to the sensitivity of some land uses that surround Hill AFB, there are often instances where the operations at the installation produce noise that is disruptive to some members of the community. The installation recognizes this and as such, has a method for receiving inputs and noise complaints from members of the community. Noise complaints may be submitted to the 75th Public Affairs via email or through the noise complain hotline. The specific contact information for submitting noise complaints is listed in the noise FAQ brochure, which is linked to the homepage of the Hill AFB website. Additionally, there is a contact form on the website that community members can fill out for other questions and comments. These complaints are logged in a database and are reviewed and investigated as needed. The log goes 10 years back.



NOI-2

Noise impacts from Hill AFB operations extend beyond the designated noise contours

Noise from operations at Hill AFB facilities has the potential to impact land uses surrounding the installation facilities. Although the AICUZ provides noise contours to illustrate noise impacts on the community, often, the noise associated with operations at Hill AFB extend past these contours.

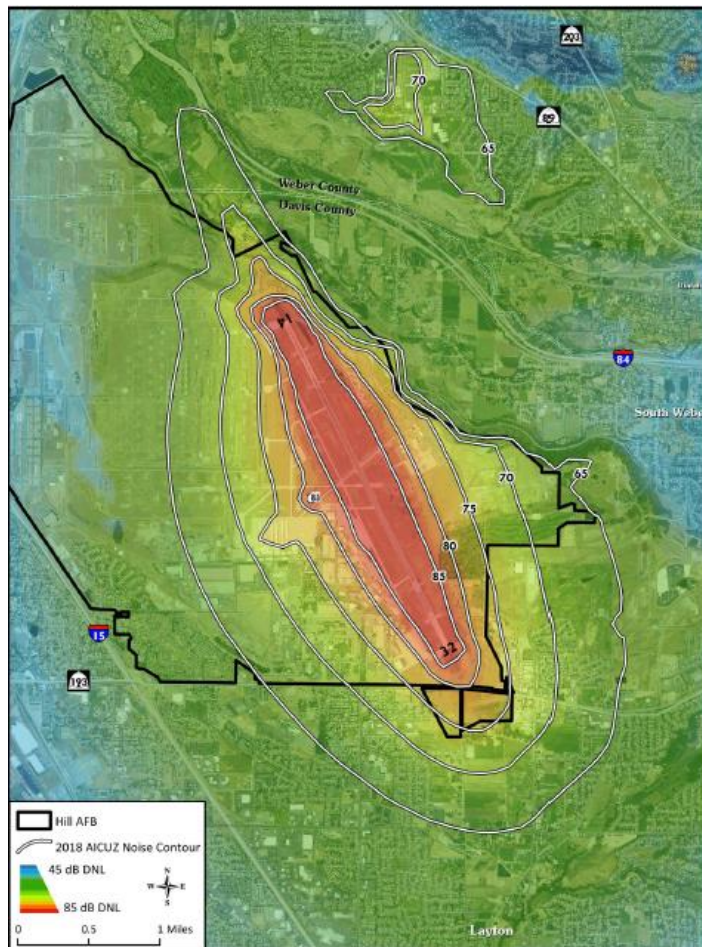
Due to the operations and activities which occur at Hill AFB, many types of development may be impacted by noise and vibration from military exercises. The loudest noises are usually located near the airfield; however, transiting aircraft also produce noticeable noise events. Such examples include low level flights on approach or departure from an airfield. As described in NOI-1, these types of operations can impact noise sensitive land uses that are located under the flight lines.

While the noise contours in the AICUZ model where noise impacts are likely to occur in the community, noise is dynamic and may extend past the AICUZ lines. Because the AICUZ noise contours are centered on the airfield, they may not extend to other areas in the community that experience noise impacts. The 2018 Hill AFB AICUZ includes a noise gradient to illustrate how noise impacts extend past the modeled contours. This is shown on Figure 5-16.

⁹¹ Hill AFB Noise FAQ 2020

<https://www.hill.af.mil/Portals/58/documents/Hill%20AFB%20Noise%20FAQ%202020.pdf>

Figure 5-16 2018 Hill AFB AICUZ Noise Contour with Gradient Shading



Source: Hill AFB, AICUZ, 2018.

These areas may include the communities west of the Hill AFB airfield, where aircraft typically arrive and depart, and in the northeastern communities, where aircraft descend and practice approaches⁹². Low level flights occur in these parts of the community to ensure that the military aircraft does not conflict with private or commercial aircraft using airspace related to the Salt Lake International airport.

While low level flights occur, per FAA guidelines, aircraft cannot fly lower than 500 feet outside of taking off and landing. Additionally, to the extent possible, pilots avoid flying over densely populated areas and sensitive land uses, such as school and churches.

Noise from aircraft can also impact the community if afterburners are used. Afterburners are a part of the jet engine that will provide the full power of the engine to give the aircraft a boost to reach its necessary altitude more effectively⁹³. Typically, afterburners are only allowed during takeoff and emergencies and if used during takeoff, afterburners are extinguished by the time the aircraft gets to the end of the runway; however, they may be used for a little bit longer if the aircraft is carrying heavy equipment.

92 Hill AFB Noise FAQ 2020

93 F-35 Flying Operations at Hill, 11/15/2019, <https://www.dvidshub.net/video/735025/f-35-flying-operations-hill>

5.4.8 Roadway Capacity

Roadway capacity refers to the adequacy of existing freeways, highways, arterials, and local roads in providing sufficient mobility, connectivity, and access to military installations and points of interest in surrounding communities.

As urban development expands into rural areas, roads once used primarily to provide access for agricultural uses and limited local traffic begin to function as urban arterial roadways. These once rural roads often become the main transportation corridors for all types of traffic — from residential to commercial trucking — and can assist or impede access to military installations. As transportation systems grow and provide more capacity, these facilities may induce and encourage growth as rural areas become more accessible.



Traffic congestion related to Hill AFB during peak travel times

RC-1

Communities around Hill AFB experience traffic congestion generated by commuters accessing Hill AFB. Many Hill AFB employees live in surrounding communities and/or travel through other communities to access Hill AFB, creating congestion throughout the Project Study Area.

Traffic into Hill AFB occurs at all hours of the day as operations at Hill AFB are conducted day and night. There are three gates presently open for access into the installation, which are Roy Gate, open 4 a.m.–8 p.m., Monday-Friday (closed on weekends and holidays), South Gate, open 7 days a week, 24 hours a day, and West Gate, open 7 days a week, 24

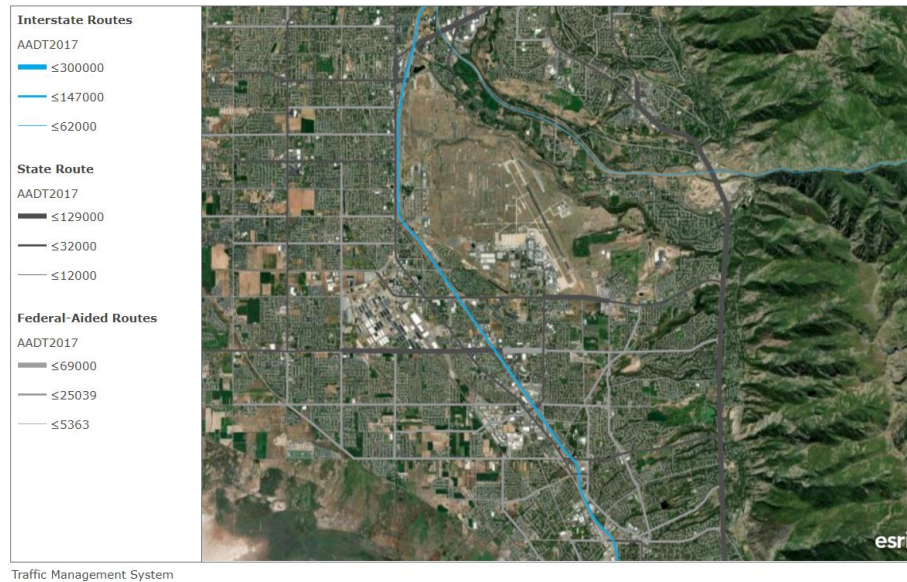
hours a day. To access these gates, commuters must travel through the community. Hill Field Road in Layton City leads directly into Hill AFB at the South Gate; West Gate, located off M Street, from 650 N, is adjacent to Clearfield City; and Roy Gate, located off of W 5600 S, is adjacent to Roy City. Traffic generated from these commuters could create congestion throughout the community, including along I-15, which is the major interstate that many residents in Project Study Area communities use for commuting.

The Utah Department of Transportation (UDOT) provides traffic data through various methods including Annual Average Daily Traffic (AADT). This is a representation of traffic on a typical day of the year, which is calculated by determining the total volume of vehicle traffic on a highway or road for a year then divided by 365 days⁹⁴. The latest AADT data provided by UDOT is from 2017. Figure 5-17 shows the roadways, which include Interstates, State Routes, and other routes, that surround Hill AFB in the community. The figure shows AADT in 2017 for each roadway. As the figure shows, there is a high AADT on roadway segments surrounding the installation, including:

- SR-26, north of Hill AFB;
- SR-193 between Fairfield Road and Hill Field Road;
- SR-89, east of Hill AFB into Uintah City; and
- I-15, west of Hill AFB.

⁹⁴ Utah Department of Transportation, Traffic Statistics, <https://www.udot.utah.gov/connect/business/traffic-data/traffic-statistics/>

Figure 5-17 Annual Average Daily Traffic in the Project Study Area, 2017



Source: Utah Department of Transportation, Traffic Statistics, 2017.

UDOT plans and programs projects to improve roadway conditions throughout the Project Study Area. One key roadway improvement that will impact traffic in the area is the 1800 N Interchange and Widening. This UDOT project is located on W 1800 N in Sunset. The project will add a new interchange to I-15 in the Falcon Hill area. To support this new interchange, 1800 N will be widened from three lanes to five lanes from SR-108 (2000 West) to I-15. UDOT has completed the Environmental Impact Statement for this project. The interchange portion of the project has funding that is projected for Fiscal Year 2024, and the widening portion of the project does not have funding associated with the project as of yet.⁹⁵ The project is being funded through the 2020 National Defense Authorization Act, which authorized over \$700 billion for American defense programs for 2020⁹⁶. The bill includes an Air Force land conveyance measure which will transfer approximately 35 acres of Hill AFB land to MIDA to build a new entry gate as well as the freeway interchange⁹⁷. The new interchange is identified in the Utah Unified Transportation Plan 2019-2050. The Plan also includes widening of I-15 from Weber County line to Farmington. I-15 is a major travel corridor and is used by many commuters to get to the Base. These new projects could improve traffic congestion once completed.

Another major interchange improvement is the I-15 Interchange at 650 North. This project is identified in the Utah Unified Transportation Plan as a top phase project, with funding projected to occur between 2020 and 2030⁹⁸. The project is described as an interchange upgrade and is projected to cost \$18 million. This project could help alleviate traffic concerns around the West Gate. Hill AFB has also expressed commitment to improving traffic on base to support traffic movement outside the West Gate.

⁹⁵ "1800 North SR-37 Interchange & Widening" fact sheet, Utah Department of Transportation.

⁹⁶ FY 2020 National Defense Authorization Act Executive Summary; <https://www.armed-services.senate.gov/imo/media/doc/FY%202020%20NDAA%20Executive%20Summary.pdf>

⁹⁷ The Standard, "Hill AFB land give away needed for gate, UDOT interchange approved by House" December 2019

⁹⁸ <https://uplan.maps.arcgis.com/apps/MapSeries/index.html?appid=3539ee13f5b84dcf84252d43fe9b467f>



RC-2

There is a need for higher prioritization of roadway improvement programming around Hill AFB

There are many roadway projects planned within the Project Study Area through the Utah Department of Transportation; however, there is a need for a higher prioritization of projects to be funded around Hill AFB to improve roadway conditions.

As described in RC-1, commuters travel throughout several communities in the Study Area to access Hill AFB. The use of roadways surrounding Hill AFB to access the installation creates a need to continue to prioritize roadway improvements surrounding Hill AFB to ensure that roadway conditions can support the volumes of traffic associated with Hill AFB. Roadway improvement programming should continue to be coordinated with UDOT, the Utah Transportation Commission, which prioritizes projects and funding, local communities, and the Wasatch Front Regional Council.

There are currently projects under construction in the area surrounding Hill AFB. These projects, as of December 2020, are shown on Figure 5-18⁹⁹. Key projects currently under construction, which are shown on the map, include:

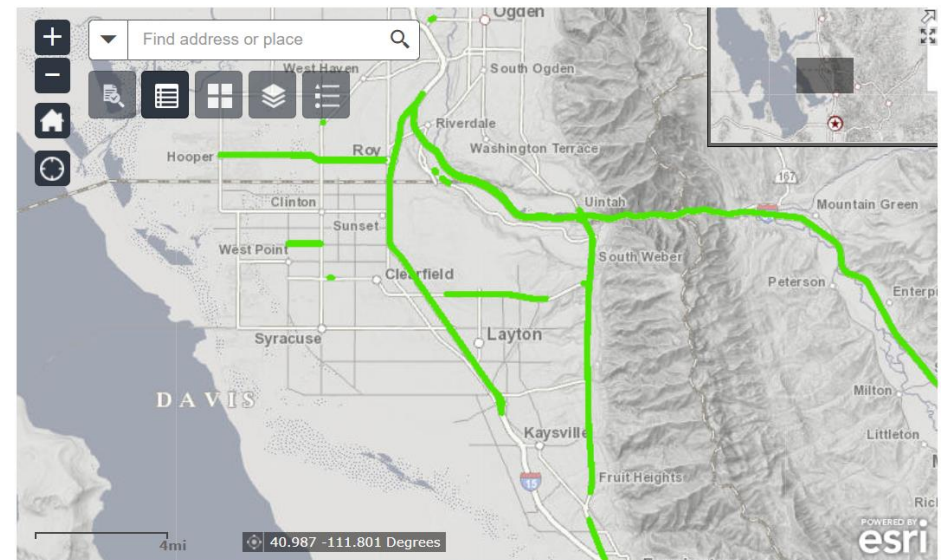
- Extension of I-15 Express Lanes¹⁰⁰ from Layton to I-84;
- Ogden Urban Area Fiber¹⁰¹ to support the Advanced Traffic Management System on I-84, SR-97 and SR-193;
- Widening of U.S. 89 from Farmington to I-84¹⁰²;

⁹⁹ Utah Department of Transportation, Projects, <https://www.udot.utah.gov/connect/projects/>

¹⁰⁰ <http://www.udot.utah.gov/i15express/>

- Reconstruction of 800 North between 2000 W and 3000 W in Clinton City; and

Figure 5-18 UDOT Roadway Projects Under Construction



Source: Utah Department of Transportation, Projects.

In addition to these current projects, UDOT also has planned projects, studies, and upcoming projects. Future projects around the installation should be considered for prioritization if the improvements will impact traffic congestion related to Hill AFB.

¹⁰¹ https://www.udot.utah.gov/projectpages/f?p=250:2007::NO:P2007_EPM_PROJ_XREF_NO,P2007_PROJECT_TYP,E_IND_FLAG:15087,A

¹⁰² <http://www.udot.utah.gov/us89/>



There are congestion concerns at the Hill AFB Roy Gate

RC-3

There is currently congestion that occurs outside of Roy Gate, on the north side of the installation. Congestion is likely to increase with the influx of thousands of contractors and military personnel in the coming years. The opening of the Roy Innovation Center near the Roy Gate at Hill AFB is slated to bring thousands of new employees to the area.

As described in HA-1, it is anticipated that thousands of civilian contractors and military personnel will be moving to the area to support mission needs for Team Hill. The increase in employees accessing the Roy Innovation Center, Falcon Hill, and Hill AFB is likely to create additional strain on the roadways around Roy Gate due to an increase in traffic volumes in the area.

To access Roy Gate, which is only open on weekdays, commuters must travel on 5600 South (SR-97), or 1900 West (SR-126) in Roy City to turn onto 5600 South. This road is also used to access the Hill Aerospace Museum, which attracts 160,000 visitors annually from every state and many different countries.

In 2017, the AADT for 5600 South, leading into Hill AFB was 35,000. This is greater than the AADT in 2017 for M Street, leading to the West Gate, which was 18,000, and comparable to the AADT in 2017 for SR-193, leading to the South Gate, which was 34,000¹⁰³. On this segment of 5600 South, traffic is composed of both vehicles and trucks. In total, 54% of the traffic in 2017 were cars and 46% were trucks.

In support of Falcon Hill, 5600 South was widened and improved in the Spring of 2020. The project included the expansion and improvement of 5600 South from Freeway Park Drive to North Drive near Roy Gate. Improvements to the road included new turning lanes onto North Drive and a controlled intersection at North Drive, which ultimately provides access to the museum.

In addition to these improvements, UDOT has plans to improve the I-15 and 5600 South interchange. The project will also include widening of 5600 South to five lanes between I-15 and 2000 West. According to the UDOT schedule, the project is currently in the environmental study phase, which was completed in 2020¹⁰⁴. To ease congestion in the nearer term, UDOT is planning to add turn lanes at the 5600 South-1900 West intersection. This upgrade is in the design phase and construction is anticipated to begin in 2022. An overview of the planned projects for 5600 S are shown on Figure 5-19. These projects are anticipated to improve the flow of traffic in the area, which will include the increase in traffic related to Falcon Hill.

¹⁰³ Utah Department of Transportation, Traffic Statistics, <https://www.udot.utah.gov/connect/business/traffic-data/traffic-statistics/>

¹⁰⁴ "5600 South Environmental Assessment, June 2020", Utah Department of Transportation

Figure 5-19 UDOT Projects for 5600S



Source: Standard-Examiner via UDOT, December 4, 2020¹⁰⁵.

Hill AFB has also acknowledged that Roy Gate is not in compliance with current DoD anti-terrorism/force protection standards. It is anticipated that Roy Gate will undergo improvements through a MILCON project to bring the gate up to these standards. The new design for the gate will impact roadway conditions leading to the gate.



There is congestion at the Hill AFB South Gate

RC-4

Congestion occurs intermittently at the South Gate through Layton City, and leading to the South Gate from the west along SR-193 through Clearfield City, then Layton City, and from the east along SR-93 through Layton City.

The South Gate at Hill AFB is located on Gate Avenue, which can be accessed by driving north on Hill Field Road or by turning onto Gate Avenue from 3000 North (SR-193). Both access points require travel through Layton City. Hill Field Road and 3000 North have two lanes traveling in either direction.

South Gate is open seven days a week, 24 hours a day; therefore, the neighborhoods nearby the gate may experience traffic during all times of the day and night that is associated with Hill AFB. According to UDOT, traffic volumes were greater on 3000 North (29,000-34,000) than Hill Field Road. This could be an indicator of commuters using Highway 89 to access SR-193 to Gate Avenue (22,000-25,000). Although traffic volumes are greater than the traffic volumes on Hill Field Road, these roads have greater traffic volumes than most roadways in Layton City. The majority (~90%) of the traffic on the roadways leading to South Gate are cars and the remaining traffic are trucks.

The Utah Unified Transportation Plan for 2019-2050 identifies projects for the roadways leading to South Gate. These improvements are listed in Table 5-21.

¹⁰⁵ https://www.standard.net/news/transportation/roy-intersection-focus-of-planned-upgrade-ahead-of-larger-5600-south-overhaul/article_b3ddccab-3fb3-5d8a-9799-e6064dca778b.html#comments



Table 5-21 Utah Unified Transportation Plan 2019-2050 Projects by South Gate

Roadway	Extent	Project type	Timeframe
SR-193	Fort Lane to US-89	Operational improvements	2041-2050
SR-193	I-15 to Fort Lane	Road Widening	2041-2050
Hill Field Road	SR-193 to I-15	Operational improvements	2041-2050

Source: Utah Unified Transportation Plan 2019-2050.

As noted in RC-2, there is a current project on SR-193, which is part of the Ogden Urban Area Fiber Optic Communications project, which is ongoing on other roadways throughout the state. While this project will not increase capacity on the roadways, it will support Advanced Traffic Management System (ATMS) devices.



RC-5

Traffic congestion resulting from temporary gate closures at Hill AFB

When there are gate closures at Hill AFB, traffic congestion increases on roads outside of the installation. This creates safety issues on roadways.

As described in RC-1, there are three out of five Hill AFB gates presently open for traffic access. Roy Gate is open 4 a.m. – 8 p.m., Monday-Friday; South Gate, is open 7 days a week, 24 hours a day; and West Gate, is open 7 days a week, 24 hours a day. Hill Field Road in Layton City leads directly into Hill AFB at the South Gate; West Gate is located off M Street, an extension from 650 N, and is adjacent to Clearfield City; and Roy Gate is located off W 5600 S and is adjacent to Roy City.

During security events and training, Hill AFB may need to temporarily close gates into the installation. Temporary gate closures at the installation can lead to traffic reroutes to other gates, which could create traffic backups at other gates. This could lead to traffic congestion within the neighborhoods that are outside of the gates. This can cause delays for residents commuting through the community. Additionally, high levels of traffic can create public safety concerns if police, EMS, and fire truck restricted access due to neighborhood traffic congested.



Limited access to the Hill AFB East Gate impacts industrial park development potential

RC-6

There is an opportunity to continue discussions regarding the desire for the Hill AFB East Gate to be open for access to the East Gate Business Park in Layton.

The East Gate Business Park is a business and research park located in Layton City, immediately east of the Hill AFB East Gate. It is Layton City's intent that development at the East Gate Business Park will primarily support operations at Hill AFB. The focus of the business park is to support aerospace, advanced composites, defense, and research. The business park is located outside of the Hill AFB East Gate.

The East Gate is not utilized in full capacity in its current condition. Hill AFB has developed a military construction (MILCON) project for this gate, but funding has not been awarded yet. Depending on this project and the personnel available to staff the gate, there may be an opportunity for Hill AFB and Layton City to enter a partnership to create access to the East Gate Business Park.

While the East Gate will support access to the East Gate Business Park, it will also help to alleviate congestion at the South Gate. This will likely improve the traffic conditions at the South Gate in Layton City.



Concern for increased congestion from construction traffic associated with growth and development near Little Mountain Testing Facility

RC-7

Growth along the Wasatch Front has increased development near Little Mountain Testing Facility, increasing roadway congestion near the facility.

Little Mountain Test Facility is located in Weber County. The primary access into and out of the facility is through 900 South. While the area around Little Mountain Test Facility has historically been an undeveloped area of Weber County, growth and development is expanding to the area. development near the Little Mountain Test Facility is shown on Figure 5-20. The areas immediately neighboring the facility are zoned by Weber County as manufacturing, agriculture, or shoreline. Many of the parcels along 900 South are developed; however, there are approximately 875 acres of parcels of manufactured zoned parcels that are currently undeveloped, and thus, have the potential to be developed in the future.

This increase in growth can lead to roadway improvements, which will create temporary roadway construction. Temporary construction on roadways leading to Little Mountain Test Facility can create traffic congestion, impacting those who work at the facility. In 2017, 900 South had an AADT of 5,800, that is 5,800 vehicles per day. While this is a lower AADT than the roadways surrounding Hill AFB, there is potential for this traffic to increase.

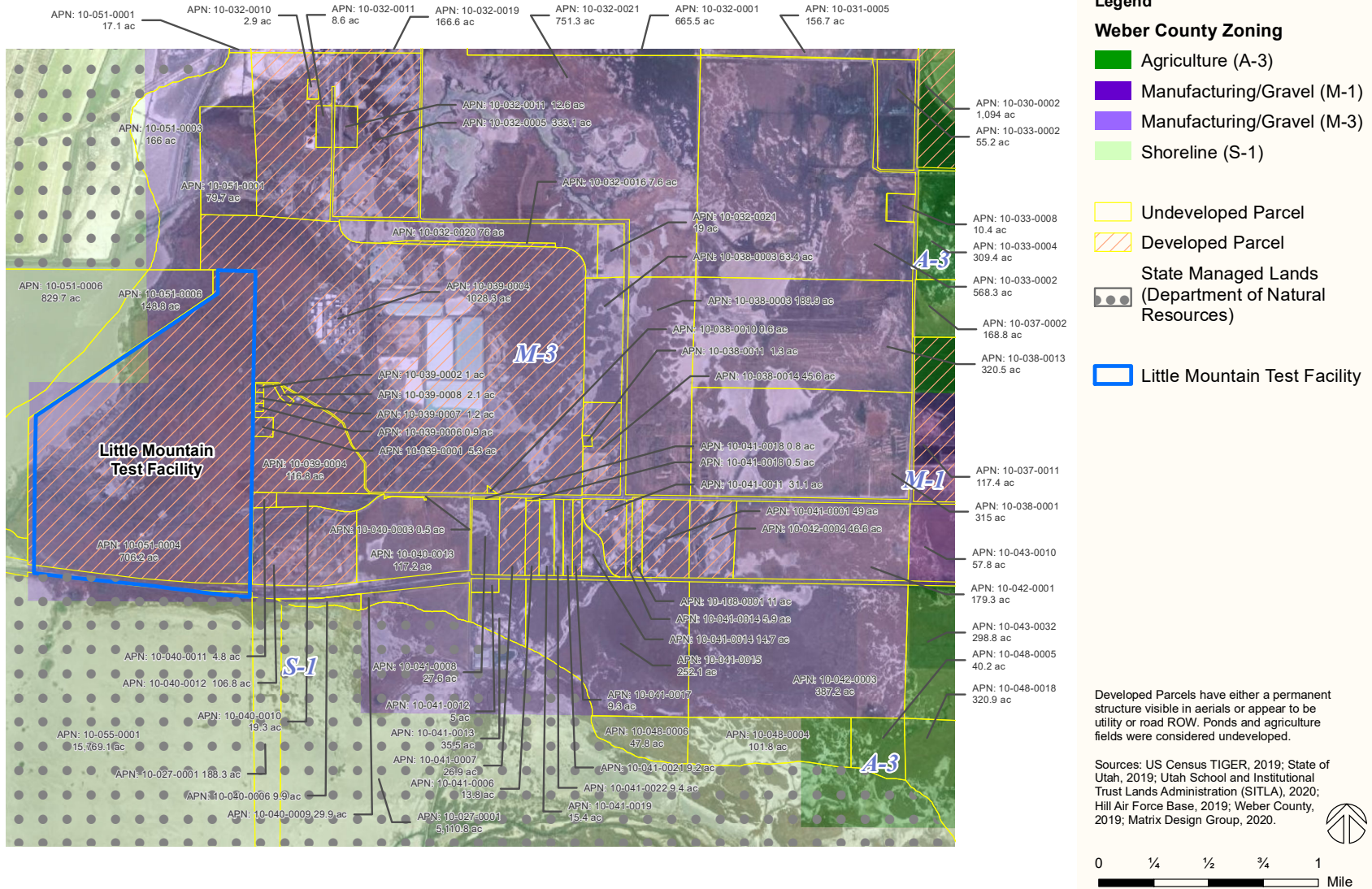


Figure 5-20 Little Mountain Test Facility: Surrounding Parcels, Zoning and Development Status

At present there are no existing projects on 900 South; however, the Utah's Unified Transportation Plan has one project planned for this road. This project is planned to improve operations and is planned for implementation between 2041 and 2050¹⁰⁶. Although this is a long-term roadway improvement, additional improvements have the potential to be prioritized in the future if growth continues in this area. Any planned

roadway improvements in the general area will create construction and hence could impact traffic congestion while construction is ongoing. Although construction is temporary, roadway improvements could create long-term improvements to congestion.

¹⁰⁶ Utah Unified Transportation Plan, Unified Plan Viewer,
<https://uplan.maps.arcgis.com/apps/MapSeries/index.html?appid=3539ee13f5b84dcf84252d43fe9b467f>



5.4.9 Safety

Safety zones are areas in which land uses that concentrate large numbers of people should be restricted due to higher risks to public safety. Activities that can create such a risk and that are considered when defining safety zones include aircraft operations and live fire weapons ranges.

Military installations often engage in activities or contain facilities that, due to public safety concerns, require special consideration by local jurisdictions when evaluating compatibility. It is important to establish compatible land use policies near military airfields and live-fire weapon ranges to minimize risk from potential accidents.



In compatible land uses within Bird/Wildlife Strike Hazard area surrounding Hill AFB

SA-1

Hill AFB is located along the Pacific Flyway and nearby the Great Salt Lake, which is a critical habitat for shorebirds in the Pacific Flyway. Bird attractants in the community, such as drainage ponds and landfills, are located nearby the Hill AFB runway, creating the potential for bird aircraft strikes.

Hill AFB is located near the Great Salt Lake and along the Pacific Flyway, making the installation exposed to various birds, which can create concerns related to the flying mission at Hill AFB. Over the last 25 years, there have been over 69,000 wildlife-aircraft strikes recorded by the Air Force nationwide. These wildlife-aircraft strikes have killed 23 aviators,

destroyed 12 aircraft, and caused \$400 million worth of damage to equipment¹⁰⁷.

Birds of any size can get stuck into the jet engine of an aircraft, creating damages that result in millions of dollars in damages due to structural mechanical damages to aircraft¹⁰⁸. In addition, these damages can result in loss of flight time¹⁰⁹ which can impact mission readiness.

Birds are attracted to various habitat types, including grasses found in the airfield, bodies of water, and even the warm pavement of the runways¹¹⁰. Aside from the attractants found on the installation, there are many bird attractants in the neighboring areas. One major attractant is the Great Salt Lake, which is an important ecosystem for local, regional, continental, hemispheric, and global bird species. The Great Salt Lake is used by various species for breeding, migration, and winter habitat¹¹¹.

Hill AFB, as well as all of Utah, are located within the Pacific Flyway, which is located along western North America. Figure 5-21 displays the different flyways across the U.S.

¹⁰⁷ Avian Hazard Advisory System, <https://www.usahas.com/index.html>

¹⁰⁸ AICUZ page 40

¹⁰⁹ AICUZ page 40

¹¹⁰ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021

¹¹¹ Great Salt Lake's Important to Birds, State of Utah, <https://wildlife.utah.gov/gsl/waterbirds/survey/RPT07Importance.htm>

Figure 5-21 Pacific Flyways in the U.S.



Source: Flyway, U.S. Fish & Wildlife Services¹¹².

Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds was issued in 2001 by President Clinton. The Executive Order directs federal agencies, that take actions that either directly or indirectly effect migratory birds, to develop an MOU with and to work with the U.S. Fish and Wildlife Service and other federal agencies to promote the conservation of migratory bird population¹¹³.

Hill AFB has taken many measures to mitigate BASH incidences. The following is a brief description of the measures taken:

- Stormwater ponds: There are existing stormwater ponds located near the runway at Hill AFB. These stormwater ponds have been cleared of vegetation. They are also sloped so that the ponds can dry quickly after a rain event as dry ponds discourage the presence of birds¹¹⁴.
- Vegetation: Vegetation on the airfield is made up of various grasses and weedy plants. Vegetation near the runway is mowed to ensure that it remains 7-14 inches in length to prevent seed formation, which then discourages foraging. The INRMP states that there is desire for the weedy plants to be replaced with grass species since the weedy plants will continue to produce seeds regardless of how much it is mowed. As the INRMP states, this would be a large project that would be completed over multiple years¹¹⁵.
- Personnel: Hill AFB has a position through the Animal and Plant Health Inspection Service (APHIS), whose responsibility is to monitor and haze wildlife to avoid BASH incidences. Methods for removing BASH threats include: relocating birds to other parts of the state and released; authorization to prevent injury to pilots or damage to aircraft¹¹⁶.

¹¹² <https://www.fws.gov/birds/management/flyways.php>

¹¹³ [https://www.fws.gov/birds/policies-and-regulations/administrative-orders/executive-orders.php#~:text=Executive%20Order%2013186%20\(38.6KB,Clinton%20on%20January%2010%2C%202001.&text=the%20Council%20for%20the%20Conservation,help%20implement%20the%20Executive%20Order](https://www.fws.gov/birds/policies-and-regulations/administrative-orders/executive-orders.php#~:text=Executive%20Order%2013186%20(38.6KB,Clinton%20on%20January%2010%2C%202001.&text=the%20Council%20for%20the%20Conservation,help%20implement%20the%20Executive%20Order)

¹¹⁴ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021, page 48 and 72.

¹¹⁵ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021, page 78

¹¹⁶ Hill Air Force Base Integrated Natural Resources Management Plan 2017-2021, page 58



- BASH Plan: The INRMP cites “Hill Air Force Base, Fight Safety. (2011). Bird/Wildlife Aircraft Strike Hazard (BASH) Plan.” The BASH prevention program was implemented by the DoD to address the reduction of wildlife hazards throughout proactive mitigation of resident bird and wildlife species and proximity to migratory routes

In addition to the practices that Hill AFB takes to mitigate BASH incidences, there are also federal programs to mitigate BASH incidences. The FAA provides guidance for managing bird attractants around airports. The guidance recommends the establishment of a BASH Relevancy Area that is a five-mile radius around the perimeter of an airport’s air operations area. Per FAA guidance the following land uses should not be located with the BASH Relevancy Area: waste disposal operations, wastewater treatment facilities, transfer stations, landfills, golf courses, wetlands, storm water ponds, and dredge disposal sites. The BASH Relevancy Area for Hill AFB is in Chapter 3.

Another federal tool is the U.S. Avian Hazard Advisory System. The USAHAS is a tool, developed by the Air Force, for analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data. The tool is a Bird Avoidance Model that uses Geographical Information System. According to the USAHAS, there is low risk for BASH around Hill AFB and the UTTR. The USAHAS also lists the BASH hazards surrounding the installation. These are listed in Table 5-22. None of the community partners have regulations to mitigate incompatible development that may attract birds.

Table 5-22 BASH Hazards Surrounding Hill AFB and the UTTR

Dams	Landfills	Golf Courses
Hill AFB		
■ Adams ■ Arthur V. Watkins ■ Box Elder Creek (Chatfield) ■ C J Strike ■ Davis County - Stone Creek ■ Dmad ■ Etna ■ Grantsville ■ Gunnison Bend ■ Haight Creek (Upper) ■ Hobbs ■ Holmes ■ Hoover Lake At Las Vegas ■ Long Tom ■ Pineview ■ Pruess ■ Settlement Canyon ■ South Ogden City Burch Creek Debris ■ Tailings Pond ■ Utaba Retarding ■ Vernon ■ Victoria Mine #2 ■ Victoria Tailings ■ Wilkinson (Harry)	■ Apex Regional Landfill ■ Bennet Road Landfill ■ Black Mountain Transfer Station ■ Boulder City Landfill ■ Bountiful City Landfill ■ Cheyenne Transfer Station ■ Davis County Landfill ■ Henderson Transfer Station ■ Laughlin landfill ■ Millard County/Delta Landfill ■ Shelbourne Transfer Station ■ Silver State Recycling Center ■ Tooele County Landfill ■ Weber County Landfill	■ Emerald Green Golf Course ■ Golf Course Estates (subdivision) ■ Ogden Golf and Country Club ■ Rose Park Golf Course ■ Winterwood Golf Course

Dams	Landfills	Golf Courses
UTTR		
■ Dmad ■ Etna ■ Grantsville ■ Gunnison Bend ■ Pruess ■ Settlement Canyon ■ Tailings Pond ■ Vernon ■ Victoria Mine #2 ■ Victoria Tailings	■ Millard County/Delta Landfill ■ Tooele County Landfill	■ N/A

Source: Avian Hazard Advisory System, 2020¹¹⁷.

¹¹⁷ <http://www.usahas.com/>



Existing and potential incompatible development in Hill AFB Safety Zones

SA-2

There are existing and potential encroachment concerns related to land uses surrounding Hill AFB. There are incompatible land uses, such as residential land uses, that are currently located within the Hill AFB safety zones, and future development could increase the number of incompatible land uses within the safety zones.

The DoD has designated safety zones around military airfields comprising the CZ, APZ I, and APZ II that extend out from each end of the runway. Development in these areas is a concern because this is statistically where aircraft accidents have occurred in the past around military installations. The risk to people on the ground in the event of an aircraft accident is small; however, the consequences associated with these incidents are high. Due to this potential impact, the Air Force has identified recommended land uses within the airfield safety zones. The land uses are incorporated in Air Force Instruction (AFI) 32-7063, Air Installation Compatibility Use Zones (AICUZ) Program which defines land uses for studies. These are included in the 2018 Hill AFB AICUZ Study.

The 2018 Hill AFB AICUZ Study identifies the airfield safety zones associated with the runway and aircraft operations that occur at Hill AFB. All safety zones, except the northern clear zone extend outside of the installation boundary over land within surrounding communities. More information about the AICUZ and the airfield safety zones are found in Chapter 3, Military Profile.

Because the Clear Zone is the area of highest probability where an accident is likely to occur, only open space and agricultural uses (without structures) are recommended within the CZ. Due to the potential hazard to the public, an installation may sometimes either acquire property within the CZ or purchase aviation easements on private property within the CZ to ensure the CZ is free from development.

The Accident Potential Zones (APZ I and II), located just at the ends of the CZ, have a lower safety risk potential due to their proximity to the runway. Though still considered a risk, land uses with restrictions are recommended in the APZs to protect the public safety. While there is a APZ I and II at the north end of the runway, there is only and APZ I at the south end of the runway.

According to the AICUZ, there are approximately 1,050 off-base acres within the safety zones with a population of approximately 770 within the safety zones. The following cities and counties are within the safety zones: unincorporated Weber and Davis Counties, Layton city, Riverdale City, South Weber City. The following is an assessment of land use compatibility in the areas for existing land use, future land use, and zoning for land within the safety zones.

Existing Land Use

Table 5-23 lists the incompatible and conditionally compatible existing land uses by jurisdiction, and Figure 5-22 shows the land uses within the safety zones. Existing incompatible or conditionally compatible land uses within the safety zones are located within the following cities and counties: Davis County, South Weber City, Riverdale City, Layton City.

Of the total acreage of existing land uses within the safety zones, 39% is compatible, 14% is conditionally compatible, and 47% is incompatible. While incompatible and conditionally compatible land uses are important to note for future encroachment mitigation, it should be noted that there are also land uses that are compatible with the Air Force land use recommendations for safety zones. Some land uses are compatible in one safety zone and not in another. For example, some types of development are compatible in APZ I and APZ II, but all development is incompatible in the clear zone. The majority of compatible land uses within the safety zones are open space, roads and utilities, some agriculture (without residences), and vacant uses in APZ I and APZ II.

Most of the existing land uses that are incompatible within the safety zones are single-family residential land uses. Per the Air Force guidance (see Table 5-15), residential land uses of any density are not recommended in the clear zone or APZ I and only single-family detached units are compatible in APZ II if limited to a density of two dwelling units per acre. In total, there were 550 acres of incompatible land uses within the safety zones.

There are less conditionally compatible land uses within the safety zones. Some land uses may be either compatible or incompatible depending on the density or intensity of the use. In total, there are 72 acres of conditionally compatible existing land uses in the safety zones, which are in Riverdale City in APZ II.



Table 5-23 Incompatible and Conditionally Compatible Existing Land Uses (in acres) in Hill AFB Safety Zones

Land Use	Compatibility								
	Incompatible				Conditionally Compatible				Total
	CZ	APZ I	APZ II	Total	CZ	APZ I	APZ II	Total	
Layton City									
Single-Family Residential	-	116.3 ¹	-	116.3	-	-	-	-	116.3
Mobile Homes	0.1 ¹	7.7 ¹	-	7.8	-	-	-	-	7.8
Manufacturing	3.1 ²	15.7 ³	-	18.8	-	-	-	-	18.8
Public/Quasi Public	-	30.3 ⁴	-	30.3	-	-	-	-	30.3
Total	3.2	170	0	173.2	-	-	-	-	173.2
Riverdale City									
Parks and Open Space	-	-	-	0	-	-	72.0 ⁷	72.0	72.0
Agriculture	-	169.0 ⁵		169.0	-	-	71.8 ⁶	71.8	240.8
Single-Family Residential	-	-	1.7 ¹	1.7	-	-	-	-	1.7
Total	0	169.0	73.5	170.7	0	0	143.8	72.0	314.5
South Weber City									
Agriculture	-	19.3 ⁵	-	19.3	-	-	-	-	19.3
Single-Family Residential	0.4 ¹	14.2 ¹	-	14.6	-	-	-	-	14.6
Industrial	-	9.1 ³	-	9.1	-	-	-	-	9.1
Government and Institution	1.1 ²	13.9 ⁴	-	15.0	-	-	-	-	15.0
Total	1.5	56.5	0	58.0	-	-	-	-	58.0
Davis County									
Parks and Open Space	3.3 ²	-	-	3.3	-	-	-	-	3.3
Agriculture	-	18.7 ⁵	-	18.7	-	-	-	-	18.7
Single-Family Residential	-	50.3 ¹	-	50.3	-	-	-	-	50.3
Industrial	0.3 ²	0.7 ³	-	1.0	-	-	-	-	1.0
Government and Institution	0.9 ²	0.3 ⁴	-	1.2	-	-	-	-	1.2
Roads and Utilities	1.8 ²	-	-	1.8	-	-	-	-	1.8
Total	6.3	70	0	76.3	-	-	-	-	76.3
TOTAL	11.0	465.5	73.5	478.2	0	0	143.8	143.8	622

Source: Layton City existing land use data, Riverdale City existing land use data, Wasatch Front Regional Council, Hill AFB AICUZ, Matrix Design Group.

Notes:

1. *Residential land uses of any density are not recommended in this safety zone per Air Force land use.*
2. *Building or structure located in the clear zone. Any development or structure is not recommended in the clear zones per Air Force land use guidance.*
3. *Certain types of manufacturing uses are not compatible in safety zone per Air Force land use guidance.*
4. *Public uses are not compatible in safety zones per Air Force land use guidance.*
5. *Agricultural land use includes residential development, which is not recommended in this safety zone per Air Force land use guidance.*
6. *Agricultural land use includes residential development, which is compatible is it is limited to two dwelling units per acre, per Air Force land use guidance.*
7. *Certain types of recreational uses, such as golf courses, are compatible if facilities have low intensity.*



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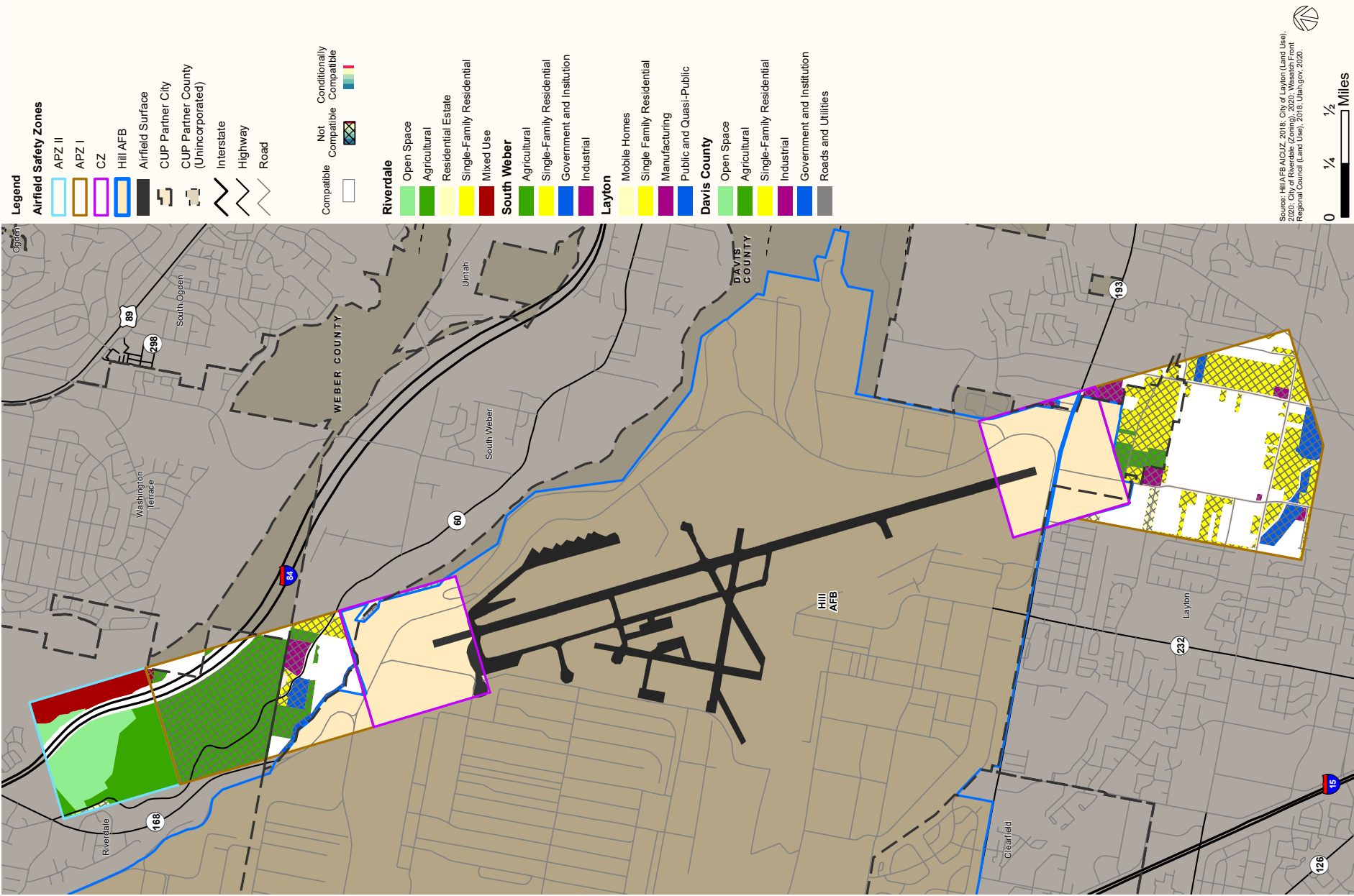


Figure 5-22
Hill AFB Safety Zones and Existing Land Use



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Future Land Use

Table 5-24 lists the incompatible and conditionally compatible future land uses by jurisdiction, and Figure 5-23 shows the land uses within the safety zones. Future land uses within the safety zones are in Weber County, Davis County, Riverdale City, South Weber City, and Layton City.

Of the total future land use acreage within the safety zones, 76% is compatible, 15% is conditionally compatible, and 9% is incompatible. Most of the cities and counties within the safety zones have planned land uses that are compatible within the safety zones. This includes agricultural uses, maintaining open spaces, certain utility/road areas, a no-build area in Davis County, and a Hill AFB Easement Area in Layton City. The Hill AFB Easement Area in Layton City is designated to restrict further residential use or development of property owned within the APZ.

Although safety zones are located within these counties and cities, not all future land uses are incompatible or conditionally compatible. Compatible land uses within these cities and counties are not listed in Table 5-25.

Most of the existing land uses that are incompatible within the safety zones are single-family residential land uses in the clear zone and APZ I in Davis County. Per the Air Force guidance (see Table 5-15), residential land uses of any density are not recommended in the clear zone or APZ I. In total, there are 92 acres of incompatible land uses within the safety zones.

There are less conditionally compatible future land uses within the safety zones. Some land uses may be either compatible or incompatible depending on the density or intensity of the use that are determined through the respective city and county general plans. In total, there are 148 acres of conditionally compatible future land uses in the safety zones, which are in Riverdale City in APZ I and APZ II.

Compatibility Assessment

Table 5-24 Incompatible and Conditionally Compatible Future Land Uses (in acres) in Hill AFB Safety Zones

Land Use	Compatibility								Total
	Incompatible				Conditionally Compatible				
	CZ	APZ I	APZ II	Total	CZ	APZ I	APZ II	Total	
Layton City									
APZ Agriculture	-	-	-	-	1.6 ⁸	338.5 ⁹	-	340.1	340.1
APZ Institutional	-	-	-	-	-	30.4	-	30.4	30.4
APZ Manufacturing	-	-	-	-	2.0 ⁸	79.0	-	81.0	81.0
Total	-	-	-	-	3.6	447.9	-	451.5	451.5
Riverdale City									
Agriculture	-	-	-	-	-	-	49.2 ¹	49.2	49.2
Residential - Low Density	-	-	-	-	-	-	6.4 ²	6.4	6.4
Residential Overlay Zone	-	-	-	-	-	-	46.4 ³	46.4	46.4
Mixed Use	-	1.1 ⁶	-	1.1	-	-	23.7 ³	23.7	24.8
Planned Commercial/Professional Office	-	-	-	-	-	-	1.4 ⁴	1.4	1.4
Weber River Parkway	-	-	-	-	-	3.6 ⁵	17.4 ⁵	21	21
Total	-	1.1	-	1.1	-	3.6	144.5	148.1	149.1
South Weber City									
Highway Oriented Commercial	-	9.4 ⁷	-	9.4	-	-	-	-	9.4
Total	-	9.4	-	9.4	-	-	-	-	9.4
Davis County									
Single-Family Residential	4.9 ⁸	76.9 ⁹	-	81.8	-	-	-	-	81.8
Government / Education	-	-	-	-	0.1 ⁸	-	-	-	0.1
Total	4.9	76.9	-	81.8	0.1	-	-	-	81.9
Weber County									
Single-Family Residential	-	14.0 ⁹	-	14.0	-	-	-	-	14.0
Total	-	14.0	-	14.0	-	-	-	-	14.0
TOTAL4	4.9	101.4	0	106.3	3.7	451.5	144.5	599.6	705.9

Source: Layton Forward Our General Plan 2019, Layton City; Riverdale City General Plan 2019, Riverdale City General Plan; South Weber General Plan Update Draft 2020, City of South Weber; Hill AFB AICUZ; Matrix Design Group.

Notes:

1. *Per the Riverdale General Plan, some agricultural land may remain as agricultural as development rights were purchased by the Federal government to prevent development in the APZ. Additionally, the General Plan describes Agricultural land by I-84 and Adam as having potential to be developed as a Residential Overlay Zone to encourage cluster or small lot development. Although density is not provided, Air Force land use guidance recommends a maximum of 2 du/acre in APZ II.*
2. *Per the Riverdale General Plan, this land use designation allows for single-family subdivisions. Density is not provided in General Plan; however, Air Force land use guidance recommends single family residential to have a maximum density of 2 du/acre.*
3. *Per the Riverdale General Plan, this land use designation allows for residential uses. Density is not provided in General Plan; however, Air Force land use guidance recommends single family residential to have a maximum density of 2 du/acre.*
4. *Riverdale General Plan does not specify uses that are allowed in this FLU, therefore, there is potential that future land uses are incompatible with Air Force land use guidance.*
5. *Some recreational uses in in this land use designation may be conditionally compatible.*
6. *Per Riverdale General Plan, mixed Use land use allows residential land use and commercial land uses, some of which may not be recommended per Air Force land use guidance, although the General Plan does not specify.*
7. *South Weber City General Plan does not specify land uses that are allowed in this FLU; however, most retail land uses are not recommended per Air Force land use guidance.*
8. *Any development or structure is not recommended in the clear zones per Air Force land use guidance.*
9. *Residential land uses of any density are not recommended in this safety zone per Air Force land use.*



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Zoning

Table 5-25 lists the incompatible and conditionally compatible zoning districts by jurisdiction, and Figure 5-24 shows the zoning districts within the safety zones. Zoning districts within the safety zones are located in Weber County, Davis County, Riverdale City, South Weber City, and Layton City.

Of the total zoning acreage within the safety zones, 81% is incompatible and 19% is compatible. Compatible zoning districts include open space, and utility/road areas, and manufacturing in APZ I.

Most of the zoning districts that are incompatible within the clear zone and APZs I and II are agricultural zoning districts, which permit

residential dwellings. Per the Air Force guidance (see Table 5-15), residential land uses of any density are not recommended in the clear zone or APZ I and are not recommended in APZ II if the density exceeds two dwelling units per acre. In total, there are 860.9 acres of incompatible land uses within the safety zones.

There is less conditionally compatible future land uses within the safety zones. Some land uses may be either compatible or incompatible depending on the density or intensity of the use that are determined through the respective city and county general plans. In total, there are 148 acres of conditionally compatible future land uses in the safety zones, which are in Riverdale City in APZ I and APZ II.



Table 5-25 Incompatible and Conditionally Compatible Zoning (in acres) in Hill AFB Safety Zones

Zoning District	Compatibility								
	Incompatible				Conditionally Compatible				Total
	CZ	APZ I	APZ II	Total	CZ	APZ I	APZ II	Total	
Layton City									
Agriculture (A)	-	-	-	-	-	365.1 ²	-	365.1	365.1
Single-Family Residential (R-1-10)	-	4.2 ²	-	4.2	-	-	-	-	4.2
Single-Family Residential (R-1-6)	-	1.0 ²	-	1.0	-	-	-	-	1.0
Single-Family Residential (R-1-8)	-	5.9 ²	-	5.9	-	-	-	-	5.9
Single- and Two- Family Residential (R-S)	-	4.2 ²	-	4.2	-	-	-	-	4.2
Mobile Home Parks and Subdivisions (R-MH)	0.3 ¹	8.0 ²	-	8.3	-	-	-	-	8.3
Professional Office (PB)	-	0.3 ³	-	0.3	-	-	-	-	0.3
Light Manufacturing/Industrial (M-1)	3.8 ¹	-	-	3.8	-	59.0	-	59	62.8
Total	4.1	23.6	-	27.7	-	424.1	-	424.1	451.8
Riverdale City									
Agricultural (A-1)	-	-	-	-	-	169.0 ⁴	71.8 ⁵	-	240.8
Single-Family Residential (R-1-10)	-	-	0.3 ⁶	0.3	-	-	-	-	0.3
Residential Estate (RE-20)	-	-	1.4 ⁷	1.4	-	-	-	-	1.4
Mixed Use (MU)	-	1.2 ²	36.3 ⁸	37.5	-	-	-	-	37.5
Total	-	1.2	38.0	39.2	-	169.0	71.8	240.8	280.0
South Weber City									
Agricultural (A)	-	-	-	-	4.1 ¹	75.1 ⁹	-	79.2	79.2
Residential Low-Moderate Density (R-LM)	-	0.1 ²	-	0.1	-	-	-	-	0.1
Highway-Commercial (C-H)	-	9.1 ¹⁰	-	9.1	-	-	-	-	9.1
Total	-	9.2	-	9.2	4.1	75.1	-	79.2	88.4
Davis County									
Agriculture (A-10)	-	-	-	-	8.5 ¹	77.3 ¹¹	-	85.8	85.8
Total	-	-	-	-	8.5	77.3	-	85.8	85.8

Zoning District	Compatibility								
	Incompatible				Conditionally Compatible				Total
	CZ	APZ I	APZ II	Total	CZ	APZ I	APZ II	Total	
Weber County									
Agricultural (A-1)	-	13.9 ¹²	-	13.9	-	-	-	-	13.9
Total	-	13.9	-	13.9	-	-	-	-	13.9
TOTAL	4.1	47.9	38.0	90.0	12.6	745.5	71.8	829.9	919.9

Source: Layton City zoning data, Riverdale City zoning data, South Weber City zoning data, Hill AFB AICUZ, Matrix Design Group.

Notes:

1. Any development or structure is not recommended in the clear zones per Air Force land use guidance.
2. Residential land uses of any density are not recommended in this safety zone per Air Force land use.
3. Per Layton City Zoning Code, PB permits offices and institutions, many of which are not compatible in APZ I per Air Force land use guidance.
4. Per Riverdale City Zoning Code, A-1 permits educational institutions, single-family dwellings and guest homes, which are not compatible in this safety zone per Air Force land use guidance.
5. Per Riverdale City Zoning Code, A-1 permits educational institutions. Single-family dwellings and guest homes are acceptable at the density permitted for residential uses. Air Force land use guidance recommends single family residential to have a maximum density of 2 du/acre in this safety zone.
6. Per Riverdale City Zoning Code, R-1-10 permits Single family residential uses with a minimum lot area of 10,000 square feet, which exceeds Air Force land use guidance, which recommends a maximum density of 2 dwelling units per acre in this safety zone.
7. Per Riverdale City Zoning Code, RE-20 permits single family residential uses with a minimum lot area of 00,000 square feet, which exceeds Air Force land use guidance that recommends a maximum density of 2 dwelling units per acre in this safety zone.
8. Per Riverdale City Zoning Code, MU permits residential uses at a density (minimum 12,000 square feet per dwelling and maximum of 13 dwelling units per acre), which is greater than the recommended density presented in the Air Force land use guidance for this safety zone. Also allows two-family residential dwellings.
9. Per South Weber Zoning Code, this zoning districts permits dwelling, one family; churches; daycare centers and preschools; group homes; planned dwelling group; planned unit developments; public buildings, which are not recommended in this safety zone per Air Force land use guidance.
10. Per South Weber Zoning Code, C-H permits: dwellings, single-family, only when in the same structure as the businesses or commercial use; eating establishment; laundry and dry cleaning; public buildings; retail sales; transient lodging, which are not recommended in this safety zone per Air Force land use guidance.
11. Per Davis County Zoning Code, A-10 allows one dwelling unit per 10 acres. Residential land uses, at any density, are not recommended in this safety zone per Air Force land use guidance.
12. Per Weber County Zoning Code, A-1 allows for single family dwellings and residential facilities for handicapped and elderly person, all of which are not recommended in APZ I per Air Force land use guidance.



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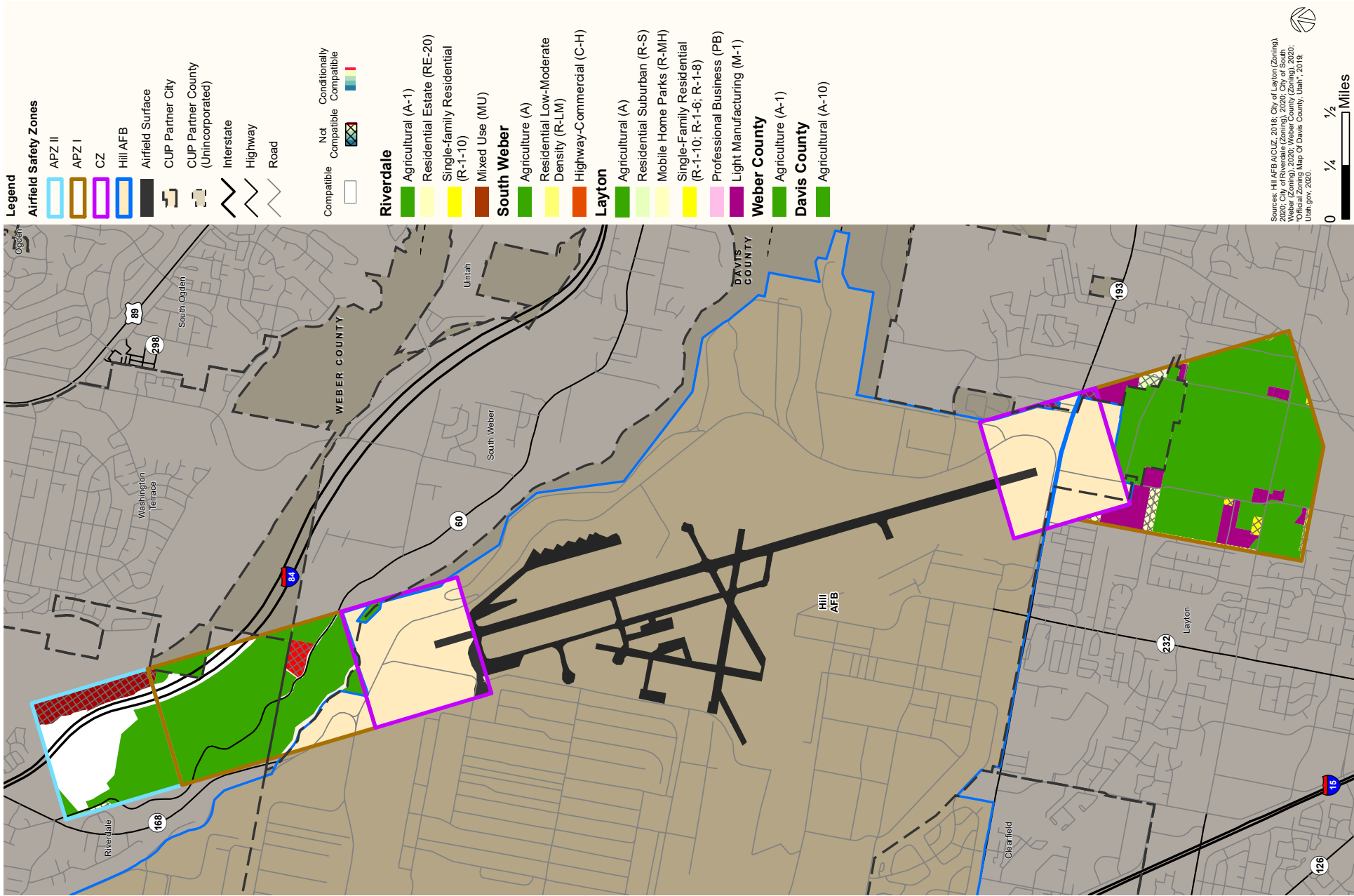


Figure 5-24
Hill AFB Safety Zones and Zoning Compatibility



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5.4.10 Vertical Obstructions

Vertical obstructions comprise buildings, trees, structures, equipment, or other features of varying heights that encroach into the navigable airspace used for military operations. Generally, the height and distance of the object from the nearest airfield or heliport are the two primary factors for an object to be considered a vertical obstruction. These objects, when located at a certain height or in a specific location, can present a safety hazard to both the public and military personnel and potentially impact military readiness.

The objects of greatest concern are those closest to an airfield; however, objects reaching heights of 100 feet or more can compromise low level flight operations by limiting the areas where such operations can occur. These objects can include a range of obstructive features from man-made, such as telephone poles and power lines, to natural, such as tall trees and other land features.

The FAA has identified certain imaginary surfaces around runways that are used to determine how structures and facilities are evaluated to identify if they pose a vertical obstruction relative to airspace around a runway. The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the type of runway around which it is based. Table 5-26 provides the definitions of the runway imaginary surfaces for fixed-wing aircraft, which are the descriptions used in the 2018 Hill AFB AICUZ. These surfaces are mapped in Chapter 3: Military Profile.

Table 5-26 Hill AFB Imaginary Surfaces for Fixed-Wing Aircraft

Imaginary Surface	Description
Primary Surface	An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end that define the limits of the obstruction clearance requirements in the vicinity of the land area. The width of the primary surface is 2,000 feet, or 1,000 feet on each side of the runway centerline.
Approach-Departure Clearance Surface	The approach-departure clearance surface is symmetrical about the runway centerline and begins as an inclined plane (glide angle) 200 feet beyond each end of the primary surface of the centerline elevation of the runway end and extends for 50,000 feet. The slope of the approach-departure clearance surface is 50:1 outward and upward along the extended runway (glide angle) centerline until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to a point 50,000 feet from the start of the glide angle. The width of this surface at the end of the runway end is 2,000 feet. The width then increases uniformly until the end of the surface. At the end of the surface (50,000 feet from the end of the runway), the width is 16,000 feet.
Inner Horizontal Surface	This surface is an oval-shaped plane 150 feet above the established airfield elevation. The inner boundary intersects with the approach-departure clearance surface and the transitional surface. The outer boundary is formed by scribing an arc with a radius of 7,500 feet above the centerline at the end of the runway and interconnects with tangents.
Conical Surface	This is an inclined surface extending outward 7,000 feet and upward from the outer periphery of the inner horizontal surface to a height of 500 feet above the



Imaginary Surface	Description
	established airfield elevation. The slope of the conical surface has a ratio of 20 horizontal feet for one vertical foot (20:1). The conical surface connects the inner and outer horizontal surfaces.
Outer Horizontal Surface	This surface is a plane located 500 feet above the established airfield elevation. It extends horizontally for 30,000 feet from the outer periphery of the conical surface.
Transitional Surface	This surface extends outward and upward at right angles to the runway centerline and extended runway centerline at a slope of 7:1. The transitional surface connects the primary and the approach-departure clearance surfaces to the inner horizontal, the conical, and the outer horizontal surfaces.

Source: 2018 Hill AFB AICUZ Study.



VO-1

Lack of information regarding vertical obstruction requirements for airspace surrounding Hill AFB

There may be a lack of awareness in some CUP Partner Communities regarding height requirements per imaginary surfaces related to Hill AFB. Natural and man-made structures that exceed imaginary surfaces heights can result in vertical obstructions for safe pilot navigation.

Awareness of vertical obstructions and how they can impact Team Hill's operations and mission is necessary to limit encroachment with jurisdictions surrounding a military installation. Structures of a certain height, whether natural or manmade, can degrade an installation's mission capability as vertical obstructions if they conflict with Part 77 and/or imaginary surfaces heights.

In relation to flight operations from an airport, whether it is military or civilian, vertical obstructions are addressed through compliance with FAA Regulation Title 14 Part 77, which establishes standards and notification requirements for objects affecting navigable airspace. Commonly referred to as Part 77, this regulation provides details to evaluate the potential for a vertical obstruction based on the elevation of the airfield, the height of the resulting elevation of the structure or facility, and the location of the structure or facility in relation to the airfield. Part 77 defines imaginary surfaces around civilian and military runways to determine heights at which structures can pose a vertical obstruction related to aircraft operations around an airfield. The heights of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification based on the type of aircraft operating at the airfield.

Imaginary surfaces and Part 77 are described in the Hill AFB AICUZ. The AICUZ recommends that city and county agencies that issue construction permits require developers to submit calculations with an application demonstrating the project meets height restriction criteria per Part 77. The AICUZ also recommends that local governments implement height ordinances that reflect the Air Force and Part 77 requirements. These recommendations should be communicated with surrounding communities¹¹⁸. Determining whether a structure constitutes a vertical obstruction is based on the georeferenced location or proposed location of the structure, the structure height above ground level relative to the airfield, and which imaginary surface the structure is within. Triangulating these variables is a complex manual exercise, but necessary to establishing whether a structure constitutes a vertical obstruction. Automating the process for determining maximum buildable heights using GIS modeling is one way that communities have simplified and demystified the determination process.

At present, many of the Project Study Area communities have height regulations for structures, but most do not include regulations specific to Hill AFB. South Ogden City and Sunset City include height limitations for land surrounding Hill AFB in their zoning. South Weber City and Weber County also have height regulations specific to Hill AFB, but they are limited to wind energy structures and do not apply to all structures in the cities. Table 5-27 lists the regulations related to height for each city within the Hill AFB imaginary surfaces and Part 77 evaluation areas. While not all are specifically related to Hill AFB, they can still impact vertical compatibility with Hill AFB.

Table 5-27 Height Regulations in Project Study Area

Jurisdiction	Height Regulations
Clinton	Title 28, Zoning Ordinance provides height limitations, but does not include specifications related to Hill AFB.
Clearfield City	Title 11 Land Use Ordinance provides height regulations for each zoning district but does not include specifications for Hill AFB. Chapter 20, Small Wireless Facilities in the Public Right-of-Way, has Design Standards for Small Wireless Facilities, which specifies height limitations, but not as they relate to the FAA or Hill AFB.
Layton	Title 19 Zoning Ordinance provides height regulations for buildings and structures in zoning districts, but does not include regulations specific to Hill AFB.
Ogden	Land Use Regulations includes an Airport Overlay Zone for Ogden-Hinckley Airport, which includes height limitations, but does not include limitations related to Hill AFB.
Riverdale	Title 10 Zoning and Subdivision Regulations include height regulations that are established for different zones, but none are specific to Hill AFB. Chapter 17, Wireless Telecommunications Zoning specifies that wireless communication facilities must comply with FCC and FAA regulations.
Roy	Title 10, Roy Zoning Code provides regulations for building heights, but does not include regulations specific to Hill AFB.

¹¹⁸ AICUZ page 39, 57.



Jurisdiction	Height Regulations
South Ogden	Title 10 Zoning Regulations has Height Limiting Zones for land nearby Hill AFB. This zone includes land within fifty thousand feet of Hill AFB and Ogden Municipal Airport. Height limiting zones include the instrument approach zone, non-instrument approach zone, transition zone, horizontal zone, and conical zone. Height limits are not described in the Zoning Regulations and are not displayed on the Zoning Map.
South Weber	Title 10 Zoning Regulations include height regulations for different land uses, but do not include specifications related to Hill AFB. Zoning Regulations allow towers as permitted uses in different land use districts, but does not include specific regulations as they relate to Hill AFB.
Sunset	Title 10 Zoning Regulations includes Height Limiting Zones for land within 50,000 feet of Hill AFB. These are not described in the Zoning Regulations or the Zoning Map.
Uintah	Title 9 Land Use Regulations include height standards for building heights in zoning districts, but are not specific to Hill AFB.
Washington Terrace	Title 17 Zoning Code provides height regulations for some districts, but not specific to Hill AFB. Code also includes recommendations for wireless communication towers, including heights.
Davis County	Title 15 Land Use and Development Management Ordinance, Chapter 15.20 - Land Use and Zoning provides height regulations for buildings in zoning districts but does not include height regulations specific to Hill AFB.

Jurisdiction	Height Regulations
Weber County	Land Use Code provide height regulations for zoning districts, but it does not include height regulations specific to Hill AFB.

**Regulations specific to the height of renewable energy structures are identified in ED-2.*

Source: Clinton City Title 28 Zoning Ordinance; Clearfield City Title 11 Land Use Ordinance; Layton City Title 19 Zoning Ordinance; Ogden City Title 15 Zoning Regulations; Riverdale City Title 10 Zoning and Subdivision Regulations; Roy City Title 10 Zoning Code; South Ogden City Title 10 Zoning Regulations; South Weber City Title 10 Zoning Regulations; Sunset City Title 10 Zoning Regulations; Uintah City Title 9 Land Use Regulations; Washington Terrace City Title 17 Zoning Code; Davis County Title 15 Land Use and Development Management Ordinance; Weber County Land Use Code.



Potential for incompatible development within Hill AFB imaginary surfaces

VO-2

Most communities surrounding Hill AFB do not have regulations related to development height compatibility with Hill AFB, resulting in the development of permanent structures that can pose potential safety concerns for flight operations associated with Team Hill.

There is concern for incompatible development within surrounding communities that penetrates the Hill AFB imaginary surfaces, creating vertical obstructions that may impact flight operations and training. The Hill AFB imaginary surfaces extend outside the installation boundaries overall Project Study Area communities, as described in VO-1.

To determine potential incompatible development with the imaginary surfaces, an assessment of maximum heights of buildings or structures within jurisdiction zoning districts compared to the recommended maximum heights related to each imaginary surface is provided in Table 28. If the maximum heights allowed within each zoning district are less than the heights allowed in each imaginary surface, that zoning district is classified as compatible, meaning that the height of structures built within that zoning district will not be a vertical obstruction. The imaginary surfaces for Hill AFB are described in Table 5-26.



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/ Departure Clearance Surface (50:1)	Approach/ Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Clinton								
Agricultural Zone (A-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Agricultural Estates Zone (A-E)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Single-Family Residential	35'	N/A	N/A	N/A	N/A	■	■	N/A
Multi-Family Residential (R-M)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Mobile Home Park Zone (MHP)	None	N/A	N/A	N/A	N/A	■	■	N/A
Neighborhood Commercial (CP-1)	Subject to City Fire Safety Capabilities	N/A	N/A	N/A	N/A	■	■	N/A
Area Commercial Zone (CP-2)	Subject to City Fire Safety Capabilities	N/A	N/A	N/A	N/A	■	■	N/A
Light Manufacturing Zone (MP-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Performance Zone (PZ)	120'	N/A	N/A	N/A	N/A	■	■	N/A
Clearfield City								
Agricultural Zone (A-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Residential Zone (R-1-9)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Residential Zone (R-1-6)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Residential Zone (R-2)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Residential Zone (R-3)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Mobile Home Residential Zone (R-M)	15'	N/A	N/A	N/A	N/A	■	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Open Residential Zone (R-1-Open)	None	N/A	N/A	N/A	N/A	■	■	N/A
Residential Zone (R-3R)	None	N/A	N/A	N/A	N/A	■	■	N/A
Buffer Zone (B-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Public Facilities Zone (PF)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Commercial Zone (C-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Commercial Zone (C-2)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Commercial Residential Zone (C-r)	Dependent on site plan review	N/A	N/A	N/A	N/A	■	■	N/A
Manufacturing Zone (M-1)	45'	N/A	N/A	N/A	N/A	■	■	N/A
Downtown Redevelopment Zone (D-R)	6 stories	N/A	N/A	N/A	N/A	■	■	N/A
Mixed Use Zone (MU)	Dependent on Master Development Plan	N/A	N/A	N/A	N/A	■	■	N/A
Planned Development Overlay Zone (P-D)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Neighborhood Preservation Overlay Zone (N-P)	Subject to underlying zoning heights	N/A	N/A	N/A	N/A	■	■	N/A



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/ Departure Clearance Surface (50:1)	Approach/ Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Layton City								
Agriculture (A)	35'	N/A	■	N/A	■	■	■	N/A
Single Family Residential (R-1-6, R-1-8, R-1-10)	30'	N/A	■	N/A	■	■	■	N/A
Single Family Residential (R-1-6, R-1-8 (PRUD))	30'-35'	N/A	■	N/A	■	■	■	N/A
Single and Two Family Residential (R-2)	30'	N/A	■	N/A	■	■	■	N/A
Single and Two Family Residential (R-S)	35'	N/A	■	N/A	■	■	■	N/A
Low/Medium Density Residential (R-M1)	35'	N/A	■	N/A	■	■	■	N/A
High Density Residential (R-H)	35'	N/A	■	N/A	■	■	■	N/A
Business and Research Park (B-RP)	100'	N/A	■	N/A	■	■	■	N/A
Planned Neighborhood Commercial (CP-1, CP-2)	40'	N/A	■	N/A	■	■	■	N/A
Planned Regional Commercial (CP-3)	60'	N/A	■	N/A	■	■	■	N/A
Condominium/Townhouse (C-TH)	None	N/A	■	N/A	■	■	■	N/A
Planned Highway Commercial (C-H)	60'	N/A	■	N/A	■	■	■	N/A
Light Manufacturing/Industrial (M-1)	60'	N/A	■	N/A	■	■	■	N/A
Heavy Manufacturing/Industrial (M-2)	100'	N/A	■	N/A	■	■	■	N/A
Mixed-Use (MU)	60'	N/A	■	N/A	■	■	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Mixed-Use Design Overlay District (DO-1)	5 stories	N/A	■	N/A	■	■	■	N/A
Mixed-Use – Transit Oriented Development (MU-TOD)	NA	N/A	■	N/A	■	■	■	N/A
Ogden								
Open space zone	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Single-family residential zone (R-1-10, R-1-8, R-1-6, R-1-5)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Two-family residential zone (R-2, R-2A, R-2EC)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Multiple-family residential zone (R-3, R-3EC)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Multiple-family residential zone (R-4)	None	N/A	N/A	N/A	N/A	N/A	■	N/A
Multiple-family residential zone (R-5)	None	N/A	N/A	N/A	N/A	N/A	■	N/A
Residential manufactured home park zone (RMH-1)	20'	N/A	N/A	N/A	N/A	N/A	■	N/A
Professional/institutional zone (PI)	Lots >10 acres: 35' Lots < 10 acres: none	N/A	N/A	N/A	N/A	N/A	■	N/A
Neighborhood commercial zone (C-1)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Community commercial zone (C-2)	50'	N/A	N/A	N/A	N/A	N/A	■	N/A
Regional commercial zone (C-3)	None	N/A	N/A	N/A	N/A	N/A	■	N/A
Central business district zone (CBD)	None	N/A	N/A	N/A	N/A	N/A	■	N/A



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
CBD intensive district (CBD-I)	None	N/A	N/A	N/A	N/A	N/A	■	N/A
Commercial recreation zone (CRC-1)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Planned commercial recreation zone (PCR)	40'	N/A	N/A	N/A	N/A	N/A	■	N/A
Limited Manufacturing Zone (M-1)	50'	N/A	N/A	N/A	N/A	N/A	■	N/A
Manufacturing and industrial zone (M-2)	None	N/A	N/A	N/A	N/A	N/A	■	N/A
Airport commercial zone (A-C)	Ogden-Hinckley Airport imaginary surfaces and FAA Part 77	N/A	N/A	N/A	N/A	N/A	■	N/A
Airport industrial zone (A-I)	Ogden-Hinckley Airport imaginary surfaces and FAA Part 77	N/A	N/A	N/A	N/A	N/A	■	N/A
Airport overlay zone	Ogden-Hinckley Airport imaginary surfaces and FAA Part 77	N/A	N/A	N/A	N/A	N/A	■	N/A
12 th Street corridor overlay zone (12 th CO)	45'	N/A	N/A	N/A	N/A	N/A	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Limited scale neighborhood commercial ozone (NC-1)	20'	N/A	N/A	N/A	N/A	N/A	■	N/A
Expanded scale neighborhood commercial ozone (NC-2)	35'	N/A	N/A	N/A	N/A	N/A	■	N/A
Riverdale								
Open Space (O)	35'	N/A	■	■	N/A	■	N/A	N/A
Agricultural (A-1, A-2)	35'	N/A	■	■	N/A	■	N/A	N/A
Residential Estate Zones (RE-15, RE-20)	35'	N/A	■	■	N/A	■	N/A	N/A
Single-family Residential Zone (R-1-10, R-1-8, R-1-6, R-1-4.5)	35'	N/A	■	■	N/A	■	N/A	N/A
Single-family Zone (R-2)	35'	N/A	■	■	N/A	■	N/A	N/A
Multiple-family Residential Zone (R-3, R-4, R-5)	35' for nursing homes, none for all other buildings	N/A	■	■	N/A	■	N/A	N/A
Mobile Home Park-Recreational Vehicle Park Zone (RMH-1)	30'	N/A	■	■	N/A	■	N/A	N/A
Commercial Zones (C-1, C-2, C-3)	1 story for C-1, none for C-2, C-3	N/A	■	■	N/A	■	N/A	N/A
Planned Commercial Zones (CP-1, CP-2, CP-3)	2.5 stories for CP-1,	N/A	■	■	N/A	■	N/A	N/A



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
	none for CP-2, CP-3							
Manufacturing Zones (M-1, M-2)	None	N/A	■	■	N/A	■	N/A	N/A
Planned Manufacturing Zones (MP-1, MP-2)	55'	N/A	■	■	N/A	■	N/A	N/A
Landmark Development Zone (LM)	Unlimited	N/A	■	■	N/A	■	N/A	N/A
Mixed Use Zone (MU)	None, except if planning commission deems a height restriction is necessary	N/A	■	■	N/A	■	N/A	N/A
Roy								
Residential Zoning Districts (RE-20, RE-15, R-1-15, R-1-10, R-1-8, R-1-7, R-1-6)	35'	N/A	■	N/A	N/A	N/A	■	N/A
Residential Zoning Districts (R-3, R-4, RMH-1)	40'	N/A	■	N/A	N/A	N/A	■	N/A
Residential Zoning Districts (R-4, RMH-1)	None	N/A	■	N/A	N/A	N/A	■	N/A
Non-residential zoning districts	60'	N/A	■	N/A	N/A	N/A	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/ Departure Clearance Surface (50:1)	Approach/ Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
South Ogden								
All zoning districts within incorporated boundaries and within 50’ of the established airport reference point at Ogden Municipal Airport and Hill AFB	Heights limited to imaginary surfaces	N/A	N/A	N/A	N/A			N/A
South Weber								
Agricultural (A, A-10)	35’	N/A	N/A	N/A	N/A			N/A
Highway-Commercial (C-H)	N/A	N/A	N/A	N/A	N/A			N/A
Residential Moderate Density Zone (R-M)	35’	N/A	N/A	N/A	N/A			N/A
Residential Low-Moderate Density Zone (R-LM)	35’	N/A	N/A	N/A	N/A			N/A
Residential High Density Zone (R-H)	35’	N/A	N/A	N/A	N/A			N/A
Residential Low Density Zone (R-L)	35’	N/A	N/A	N/A	N/A			N/A
Commercial Zones (C, C-H)	35’	N/A	N/A	N/A	N/A			N/A
Natural Resource Zone (N-R)	60’	N/A	N/A	N/A	N/A			N/A
Professional Office Zone (P-O)	35’	N/A	N/A	N/A	N/A			N/A
Residential Patio (R-P)	25’	N/A	N/A	N/A	N/A			N/A



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/ Departure Clearance Surface (50:1)	Approach/ Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Sunset								
Residential Zone (R-1, R-3)	28'	N/A	N/A	N/A	N/A	■	N/A	N/A
Commercial Zone (C-1, C-2)	35'	N/A	N/A	N/A	N/A	■	N/A	N/A
Boulevard Mixed Use Zone (BMU)	5 stories	N/A	N/A	N/A	N/A	■	N/A	N/A
Town Center Zone (TC)	5 stories	N/A	N/A	N/A	N/A	■	N/A	N/A
Uintah								
Residential Districts (RE20, RE50)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Residential mobile/Manufactures Home Park (RMH)	20'	N/A	N/A	N/A	N/A	■	■	N/A
Agricultural District (AG)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Commercial Districts (C1, C2)	40'	N/A	N/A	N/A	N/A	■	■	N/A
Washington Terrace								
Single-Family Residential (R-1-6, R-1-8, R-1-10)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Commercial Zones (C-1, C-2	60'	N/A	N/A	N/A	N/A	■	■	N/A
Open space (O-1)	35'	N/A	N/A	N/A	N/A	■	■	N/A
Planned Residential Unit Developments	1 story	N/A	N/A	N/A	N/A	■	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/ Departure Clearance Surface (50:1)	Approach/ Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Davis County								
Agriculture Estate/Limited Agriculture	35'	N/A	■	■	■	■	■	N/A
Agriculture (A-10)	100'	N/A	■	■	■	■	■	N/A
Agriculture and Farm Industry (A-5)	100'	N/A	■	■	■	■	■	N/A
Neighborhood Commercial (C-1)	30'	N/A	■	■	■	■	■	N/A
General Commercial (C-2)	30'	N/A	■	■	■	■	■	N/A
Forestry (F-1)	24'	N/A	■	■	■	■	■	N/A
General Manufacturing (M-1)	40'	N/A	■	■	■	■	■	N/A
Natural Resources (NR)	35'	N/A	■	■	■	■	■	N/A
Residential Single-Family (R-1)	30'	N/A	■	■	■	■	■	N/A
Residential Two-Family (R-2)	30'	N/A	■	■	■	■	■	N/A
Residential Multifamily (R-3)	35'	N/A	■	■	■	■	■	N/A
Planned Unit Developments	Based on underlying zoning district	N/A	■	■	■	■	■	N/A
Weber County								
Residential Estate Zone (RE-15, RE-20)	35'	N/A	■	■	■	■	■	N/A
Gravel Zone	35'	N/A	■	■	■	■	■	N/A
Agricultural (A-1, A-2, A-3)	35'	N/A	■	■	■	■	■	N/A
Agricultural Valley Zone (AV-3)	35'	N/A	■	■	■	■	■	N/A
Forestry Zone (F-5, F-10, F-40)	35'	N/A	■	■	■	■	■	N/A



Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Forestry Valley Zone (FV-3)	35'	N/A	■	■	■	■	■	N/A
Shoreline Zone (S-1)	35'	N/A	■	■	■	■	■	N/A
Commercial Valley Resort Recreation Zone (CVR-1)	25'	N/A	■	■	■	■	■	N/A
Residential Zone (R-1-12, R-1-10)	35'	N/A	■	■	■	■	■	N/A
Forest Residential Zone (FR-1, FR-3)	35'	N/A	■	■	■	■	■	N/A
Residential Zone (R-2, R-3)	35'	N/A	■	■	■	■	■	N/A
Residential Manufactured Home Zone (RMH-1-6)	14'	N/A	■	■	■	■	■	N/A
Commercial Zone (Neighborhood) (C-1)	35'	N/A	■	■	■	■	■	N/A
Commercial Zone (Limited) (C-2)	None	N/A	■	■	■	■	■	N/A
Commercial Zone (Business District) (C-3)	None	N/A	■	■	■	■	■	N/A
Commercial, Valley Zone (CV-1, CV-1)	35'	N/A	■	■	■	■	■	N/A
Manufacturing Zone (M-1)	None	N/A	■	■	■	■	■	N/A
Manufacturing Zone (M-2, M-3)	35'	N/A	■	■	■	■	■	N/A
Manufacturing Valley (MV-1)	25'	N/A	■	■	■	■	■	N/A
Open Space Zone (O-1)	35'	N/A	■	■	■	■	■	N/A

Table 5-28 Zoning Districts Compatibility with Imaginary Surfaces

Zoning Districts	Max height in zoning district	Imaginary Surfaces						
		Primary Surface	Approach/Departure Clearance Surface (50:1)	Approach/Departure Clearance Surface (Horizontal)	Inner Horizontal Surface	Conical Surface	Outer Horizontal Surface	Transitional Surface
Ogden Valley Destination and Recreation Resort Zone (DRR-1)	55' at elevations > 6,200' above sea level. 75' at elevations of at < 6,200 above sea level	N/A	■	■	■	■	■	N/A
Large Solar Energy System Overlay Zone (SOZ)	25' for accessory building	N/A	■	■	■	■	■	N/A

Legend

- Incompatible
- Potential Compatibility
- Compatible

Source: Clinton City Title 28 Zoning Ordinance; Clearfield City Title 11 Land Use Ordinance; Layton City Title 19 Zoning Ordinance; Ogden City Title 15 Zoning Regulations; Riverdale City Title 10 Zoning and Subdivision Regulations; Roy City Title 10 Zoning Code; South Ogden City Title 10 Zoning Regulations; South Weber City Title 10 Zoning Regulations; Sunset City Title 10 Zoning Regulations; Uintah City Title 9 Land Use Regulations; Washington Terrace City Title 17 Zoning Code; Davis County Title 15 Land Use and Development Management Ordinance; Weber County Land Use Code.



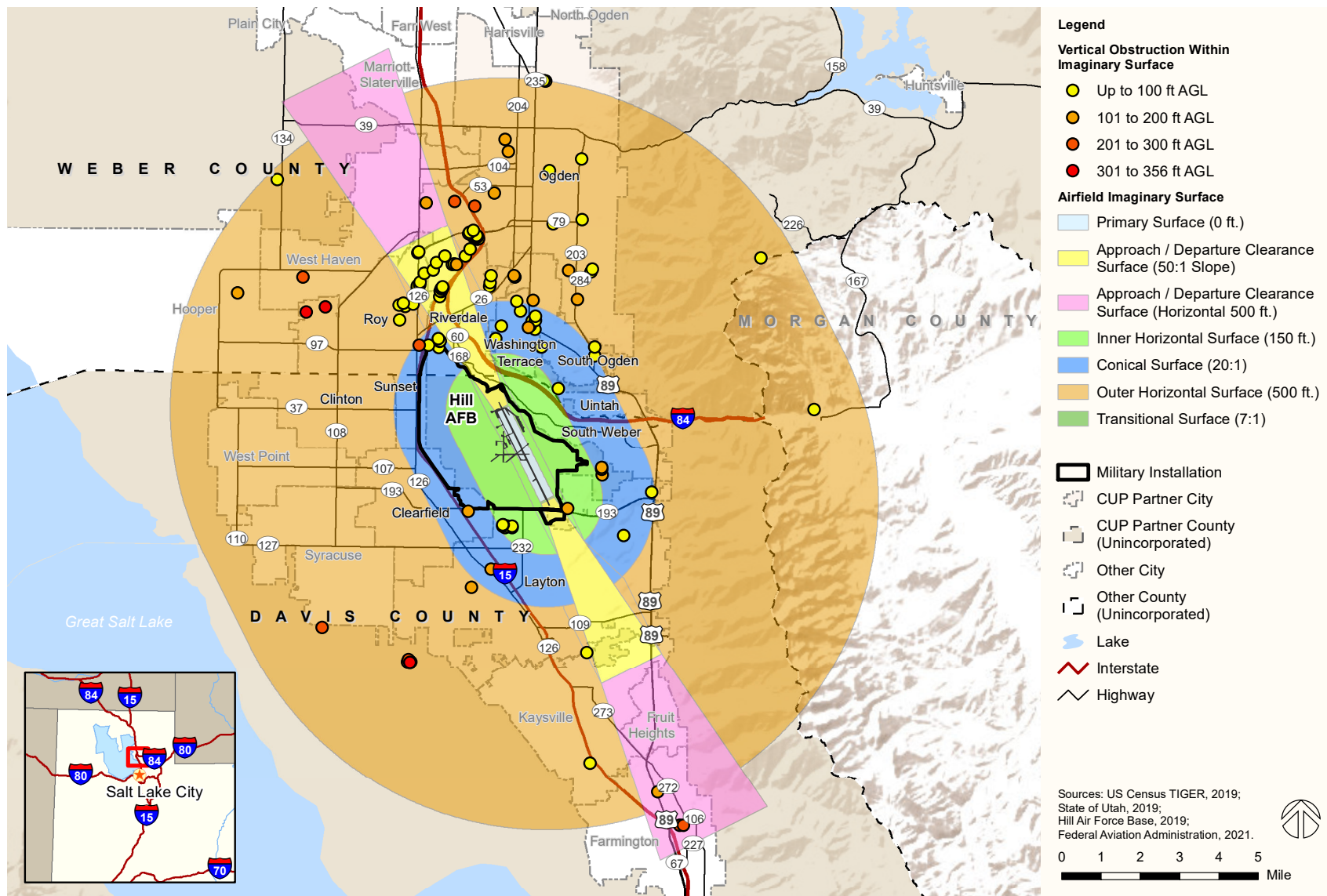
The FAA maintains a repository of vertical obstruction data as part of its Digital Obstacle file system, which is available on the FAA website. This repository includes information on known obstacle across the entire U.S., which may be hazardous to safe flight navigation. The data was reviewed as part of the Hill AFB CUP to identify vertical obstructions within the Hill AFB imaginary surfaces. The assessment was based on the height of the structures relative to ground level at their location site and did not account for differences in the elevation of the Hill AFB airfield and the structure sites. The assessment only includes structures outside the boundary of Hill AFB and classified a structure as being an obstruction if its height above ground level was greater than that of the associated imaginary surface.

Figure 5-25 shows the results on this assessment and Table 5-29 lists the vertical obstructions. As the table shows, there were 120 vertical obstructions within the Hill AFB imaginary surfaces. Most of these obstructions are in Ogden City and are either poles or towers. Additionally, most of the obstructions are located within the outer horizontal imaginary surface.

Table 5-29 Vertical Obstructions

Jurisdiction	Type	Quantity	Average Above Mean Sea Level of Obstructions
Clearfield	Tower	5	4,586'
Farmington	Tower	2	4,447'
	Monument	1	
Huntsville	Tower	1	7,924'
Kanesville	Tower	2	4,455'
Kaysville	Tower	2	4,455'
Layton	Tower	12	4,705'
	Solar Panels	7	
Mountain Green	Tower	1	5,134'
Ogden	Pole	21	4,550'
	Tower	21	
	Building	16	
	T-L Tower	5	
	Sign	3	
	Spire	3	
	Elevator	2	
	Solar Panels	2	
	Control Tower	1	
	Navaid	1	
	Stadium	1	
Riverdale	Tower	1	4,663'
Roy	Tower	2	4,646'
	Solar Panels	1	
South Ogden	Pole	5	4,613'
Washington Terrace	Tank	1	4,690'
	Pole	1	
Total Obstructions		120	4,906'

Source: Federal Aviation Administration, 2021.





5.4.11 Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment. Vibrations may be caused by military and/or civilian activities.



V-1

Concerns regarding vibration impacts from Hill AFB aircraft operations

Aircraft operations at Hill AFB often create vibrations that are felt in areas south of the runway in Layton City and in east Riverdale.

Vibration is the pressure wave that is usually accompanied by sound (noise) and amplified in the lower frequency ranges. Studies have concluded that as frequency decreases, the degree of annoyance or state of irritation from the noise and vibrations increase more rapidly with sound pressure level. A low-frequency signal can go from being audible, to annoying, to oppressive and vibrational with a relatively small change in level. Additionally, low-frequency signals are not absorbed by the atmosphere or blocked by terrain and buildings as effectively as higher frequencies.

As described in Section 5.5.7 Noise, there are many operations at Hill AFB that produce variance levels of noise. The most prominent noise comes from aircraft operations. Most of the concerns associated with vibrations come from the areas that are location south of the runway in Layton City. This is likely due to the low-level aircraft arriving and departing the airfield. Residents also feel vibrations to the north of the runway in eastern Riverdale. This is likely due to departures from the runway that head west when departing on the north side of the runway. While many of the residents living in the area may become accustomed to vibration from aircraft operations, there are many residents who are appreciably affected by vibration. Additionally, there is potential for residents who are new to the area to be concerned about vibration levels from aircraft.

Hill AFB has an annual noise brochure that explains noise from operations related to the installation; however, it does not include information regarding vibrations that are often associated with these noises.

6 Implementation Plan

Inside Chapter 6...

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The Implementation Plan presents the recommended courses of action (strategies) that have been developed through a collaborative effort between project partners. Since the Hill AFB CUP is the result of a collaborative planning process, the strategies represent a true consensus plan and a realistic and coordinated approach to compatibility planning, developed with the support of stakeholders involved throughout the process.

The Implementation Plan is the heart of the CUP and includes a variety of actions to eliminate or significantly mitigate existing and potential compatibility issues arising from civilian/military interface.

It is important to note that the CUP is not an enforceable plan, but rather a recommended set of strategies to be implemented by the stakeholders to address current and potential future compatibility issues. An important step in guiding the implementation of strategies is to establish a Hill AFB Partnership Committee to monitor CUP implementation and address future compatibility issues that may arise. This committee will be a forum for local jurisdictions, Hill AFB and its facilities, and other stakeholders to continue their collaboration to enhance and establish procedures, recommend or refine specific actions, and adjust strategies over time, as necessary.



6.1 Implementation Plan Guidelines

The key to a successful implementation plan is balancing the different needs of all involved stakeholders. To produce an equitable plan, several guidelines were used as the basis for strategy development. These guidelines include:

- Recommended strategies must not result in a taking of property value, meaning rendering the property undevelopable or unable to achieve economic gain by the removal of development rights of the property as defined by state law. Some of the recommended strategies may involve establishment of a conservation easement on private property only if the landowner is willing to engage in such an action. Eminent domain, defined as a government entity taking private property, with compensation, for public use, is not included in any of the recommended strategies.
 - To avoid issues of non-compliance for existing land uses, existing land uses should be grandfathered into any amendments to zoning or regulatory documents.
 - Any proposed changes to regulatory or policy guidance, such as zoning ordinance or master plan amendments, should not affect any properties that have existing entitlements or have been previously approved for development.
 - To minimize regulation, many of the strategies are only recommended within the specific geographic area for which the issue they address occurs (e.g., within identified Military Compatibility Areas), instead of recommended for the whole CUP Study Area.
- Some recommended strategies can only be implemented with new legislation.
 - Any strategy that involves updating existing or developing new regulatory measures, such as amending a zoning ordinance or adding a new zoning overlay district to an existing zoning ordinance, or amends municipal guidance documents, such as community master plans, are required to go through all legal processes, as required by state and local regulations, before being implemented, which may involve notification to affected property owners and/or land management entities and holding of public hearings.
 - Like other planning processes that include numerous stakeholders, the challenge is to create a solution or strategy to achieve an outcome that meets the needs of all parties. In lieu of eliminating strategies that do not have complete buy-in from all stakeholders, it was determined that the strategy may result in the further creation of multiple approaches that address the same issue but tailored to individual circumstances.
 - Since state and federal regulations are subject to periodic change, before implementing the strategies, the implementing jurisdiction or party should ensure there is no conflict between the strategy and any existing local, state, or federal law.

6.2 Military Compatibility Areas

For the CUP, the term Military Compatibility Area (MCA) is used to identify a geographic area where Hill AFB operations may impact local communities and, conversely, where local activities may affect Hill AFB facilities' ability to carry out its missions. An MCA is described as the area in which the combined effects of a specific military operation(s) and/or activity(ies) occur, or could occur, and represents the spatial extent of an installation's impact(s) in a given region.

An MCA can be used as a planning tool for promoting awareness of military activities, establishing compatible development requirements and standards in designated areas, and ultimately, for maintaining military operational capability.

Recommended strategies within the MCAs are designed to accomplish the following:

- protect public health, safety, and welfare
- promote an orderly transition between community and military activities so that land uses remain compatible
- maintain operational capabilities of Hill AFB facilities
- inform the local community of compatibility recommendations within the designated areas that are part of this CUP.

The Hill AFB CUP MCAs are used to target geographic areas where certain CUP strategies are to be applied, ensuring that locations not subject to a specific compatibility issue are not adversely impacted by strategies inappropriate for their location/circumstance.

The composite of all MCAs is the Military Compatibility Area Overlay District (MCAOD), which is the total footprint for all combined MCAs.

Hill AFB

The following MCAs are identified for operations around Hill AFB.

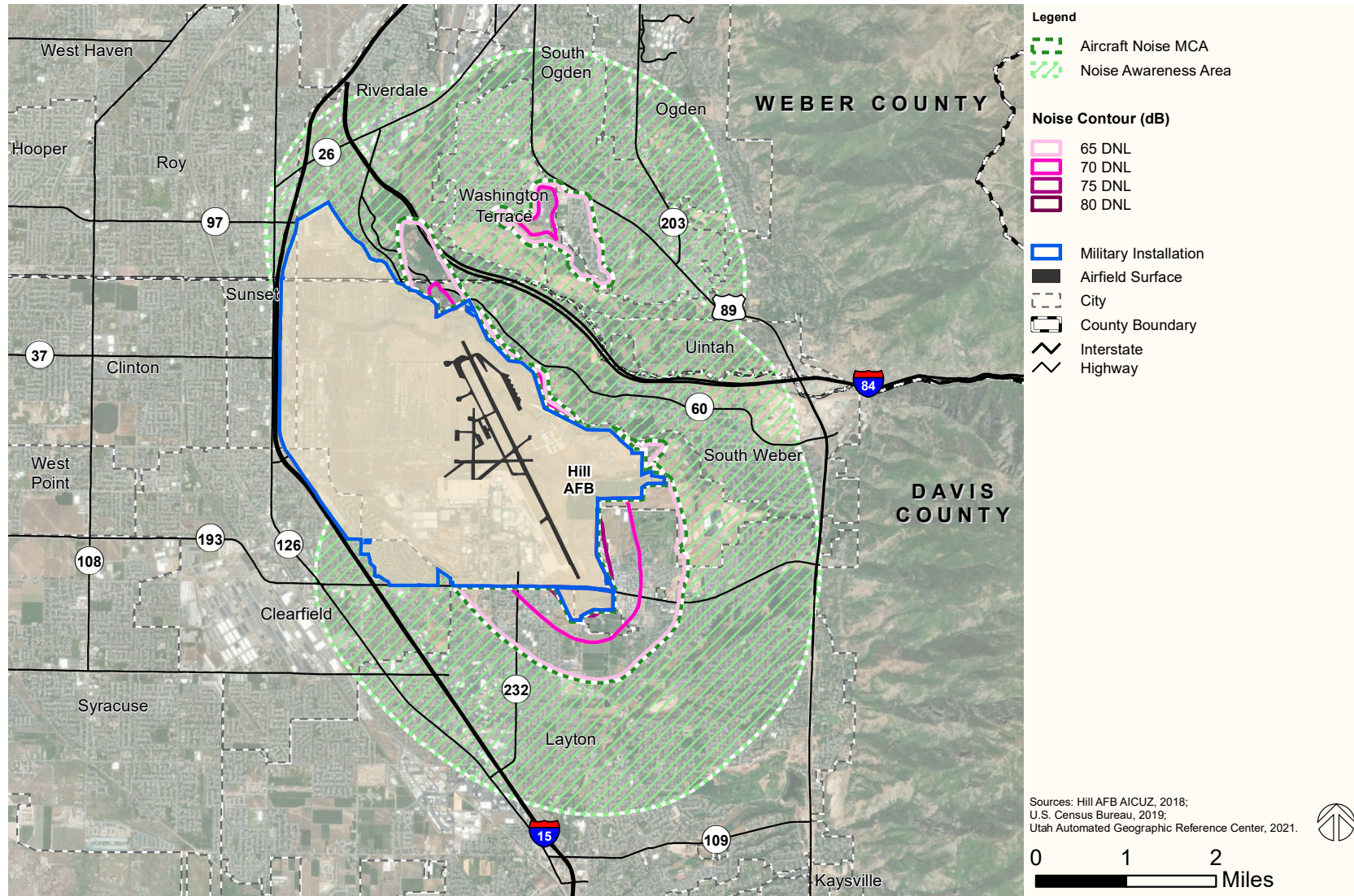
- Hill AFB Aircraft Noise MCA
- Hill AFB Airfield Safety MCA
- Hill AFB Bird / Wildlife Aircraft Strike Hazard MCA
- Hill AFB Vertical Obstructions MCA

Hill AFB Aircraft Noise MCA (Figure 6-1)

The Hill AFB Aircraft Noise MCA includes the land located off the installation within noise contours that are identified in the 2018 Hill AFB AICUZ. The noise contours stretch over developed areas of Layton City, South Weber City, Riverdale City, Washington Terrace City, South Ogden City, and unincorporated areas of Weber County and Davis County.

Existing residential development and other noise-sensitive land uses within the Aircraft Noise MCA are recommended to incorporate sound attenuation measures to reduce interior noise impacts from external noise related to Hill AFB operations.

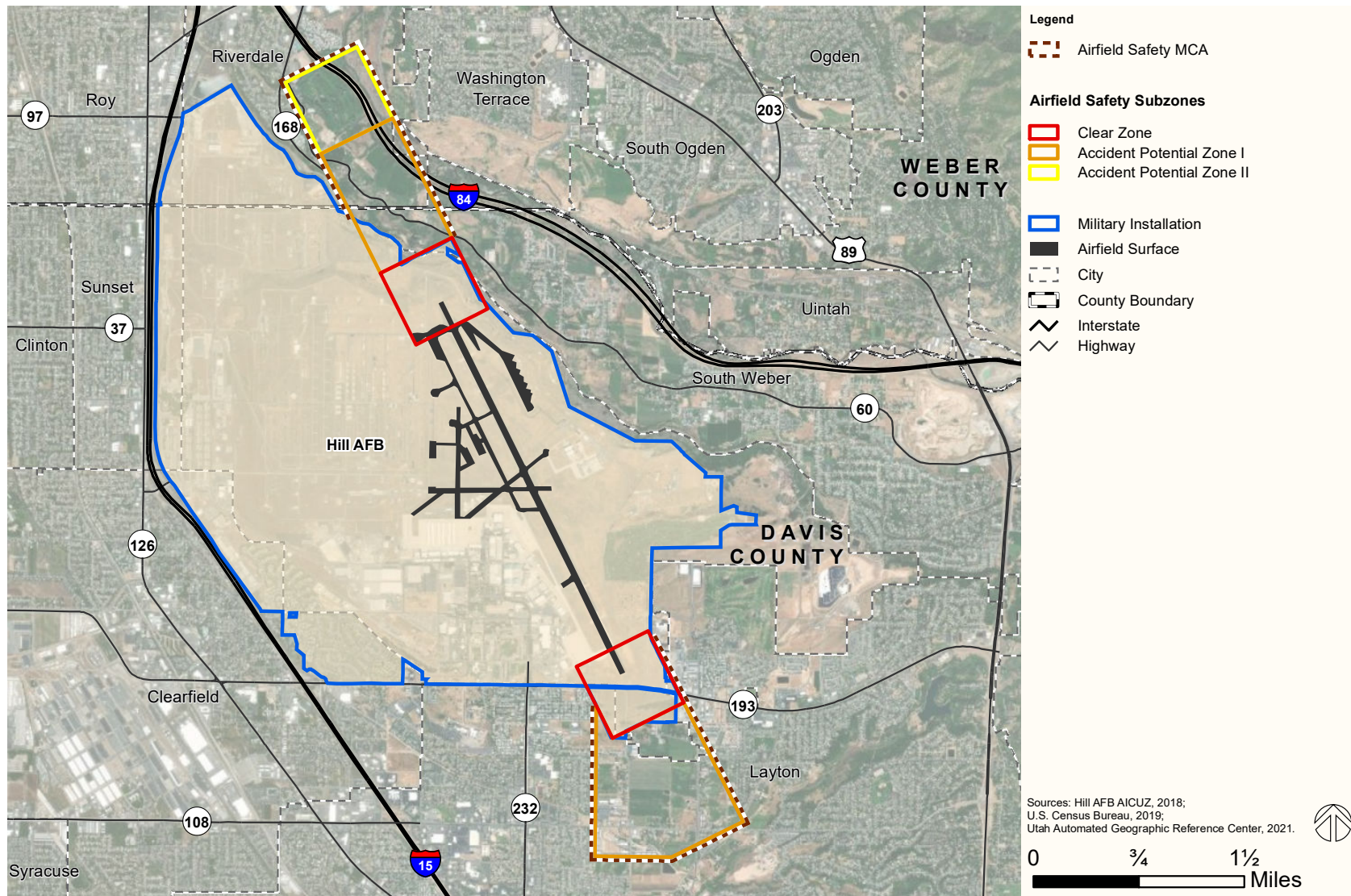
The Hill AFB Aircraft Noise MCA also includes a Noise Awareness Area buffer that extends 1.5 miles outward from the 65 dB noise contour where strategies are recommended to address noise impacts.



Hill AFB Airfield Safety Zone MCA (Figure 6-2)

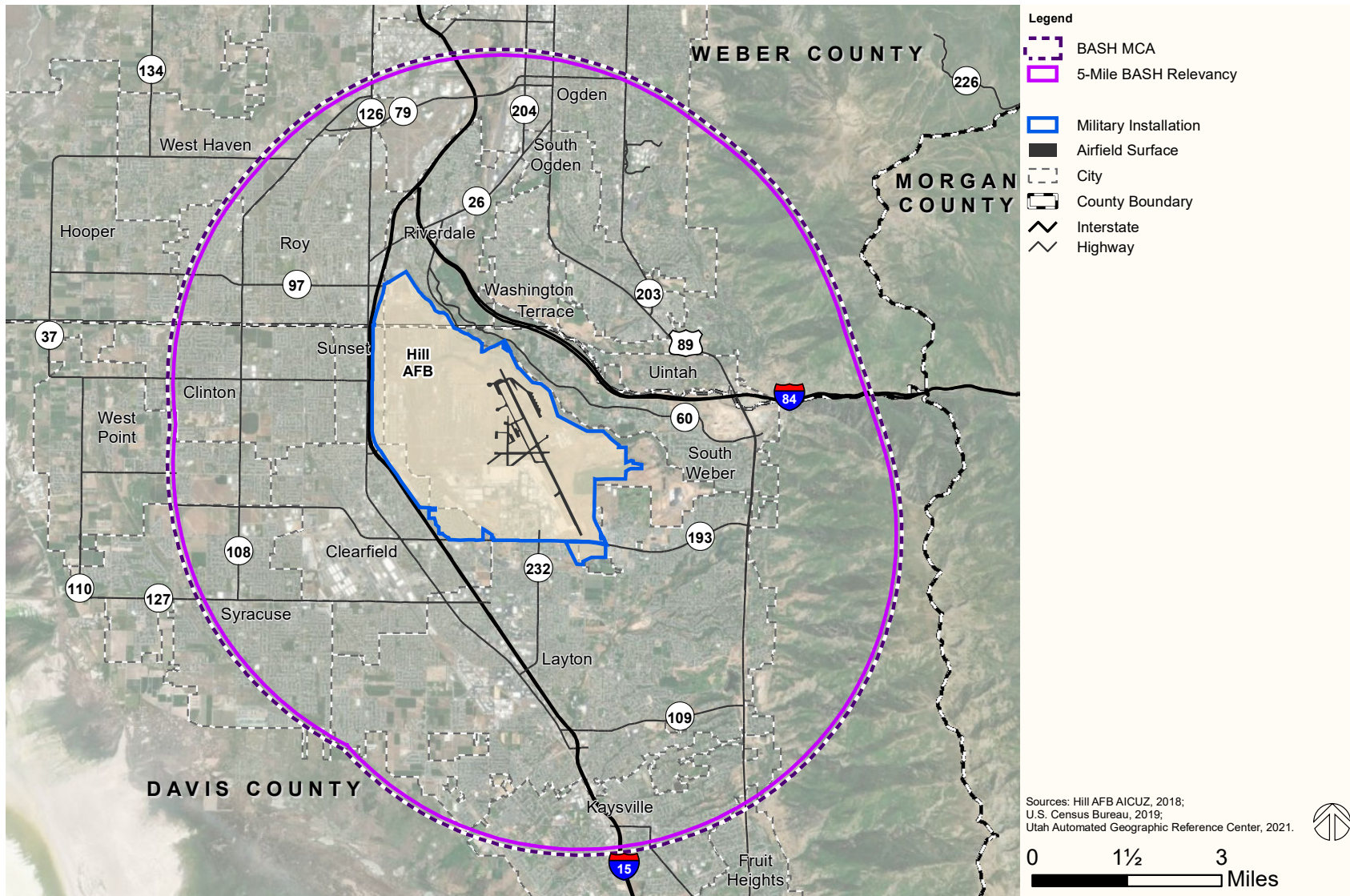
The Hill AFB Airfield Safety MCA includes all land outside Hill AFB's boundaries that is within the Accident Potential Zones (APZs) I and II for the Hill AFB runways as defined within the 2018 AICUZ. This MCA addresses compatible land use types and densities/intensities within the APZs. The AICUZ defines the safety zones as areas where an aircraft mishap is statistically most likely to occur (in the unlikely event that one was to occur at all). The APZs follow departure and arrival tracks and are based on analysis of historical data.

The safety zones primarily cover portions of Layton City, Riverdale City, South Weber City, and unincorporated areas of Weber County and Davis County.



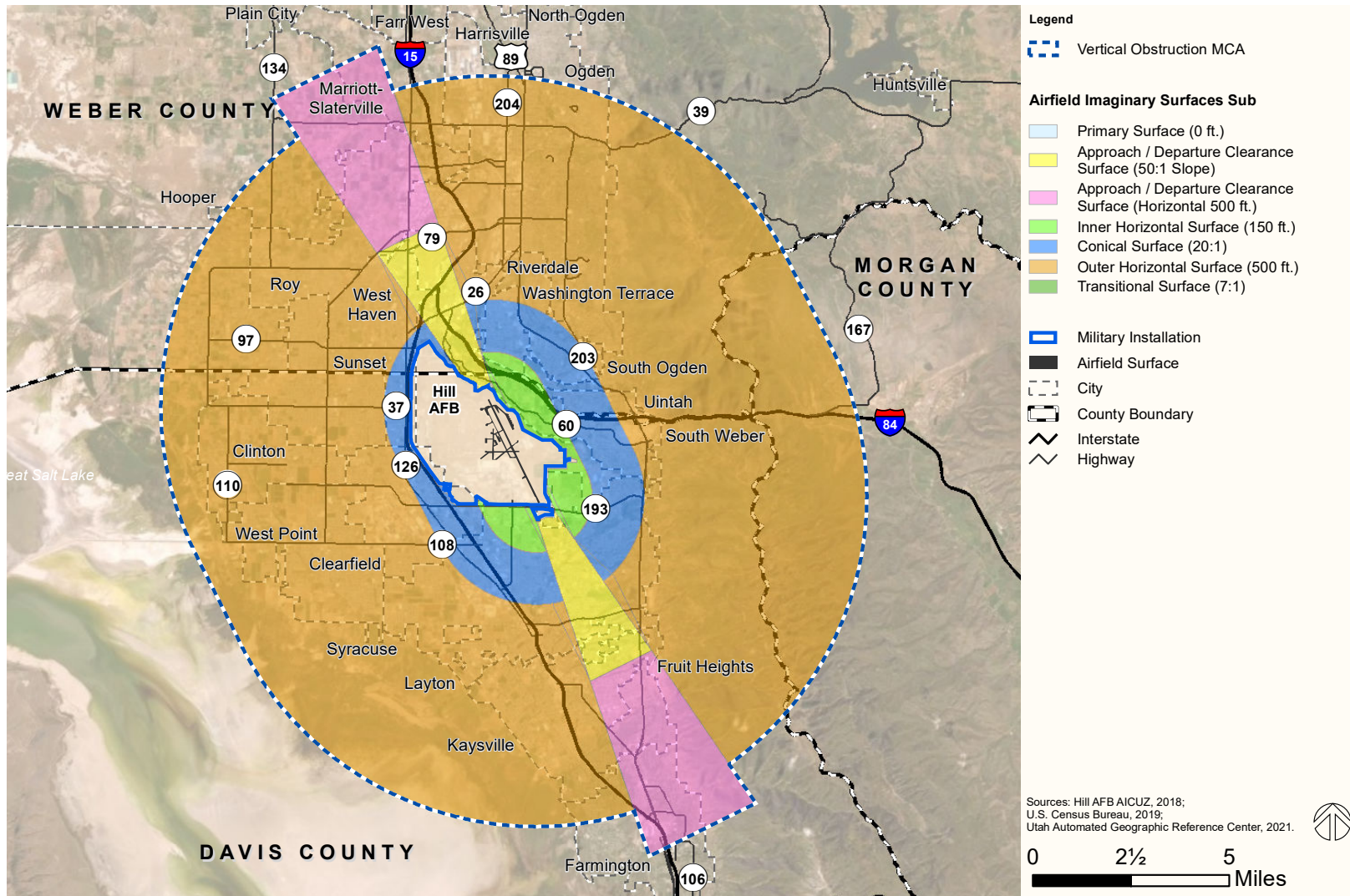
Hill AFB Bird/Wildlife Aircraft Strike Hazard MCA (Figure 6-3)

The Hill AFB Bird/Wildlife Aircraft Strike Hazard (BASH) MCA extends five (5) statute miles around the air operations area at Hill AFB. Bird and wildlife strikes with aircraft can pose serious safety concerns, including the potential for loss of life or aircraft. Even minor bird strikes can cause costly repairs to aircraft and interfere with flying missions. The five-mile distance associated with the BASH MCA is a Federal Aviation Administration (FAA) recommended standard for managing bird and wildlife attractants around airports.



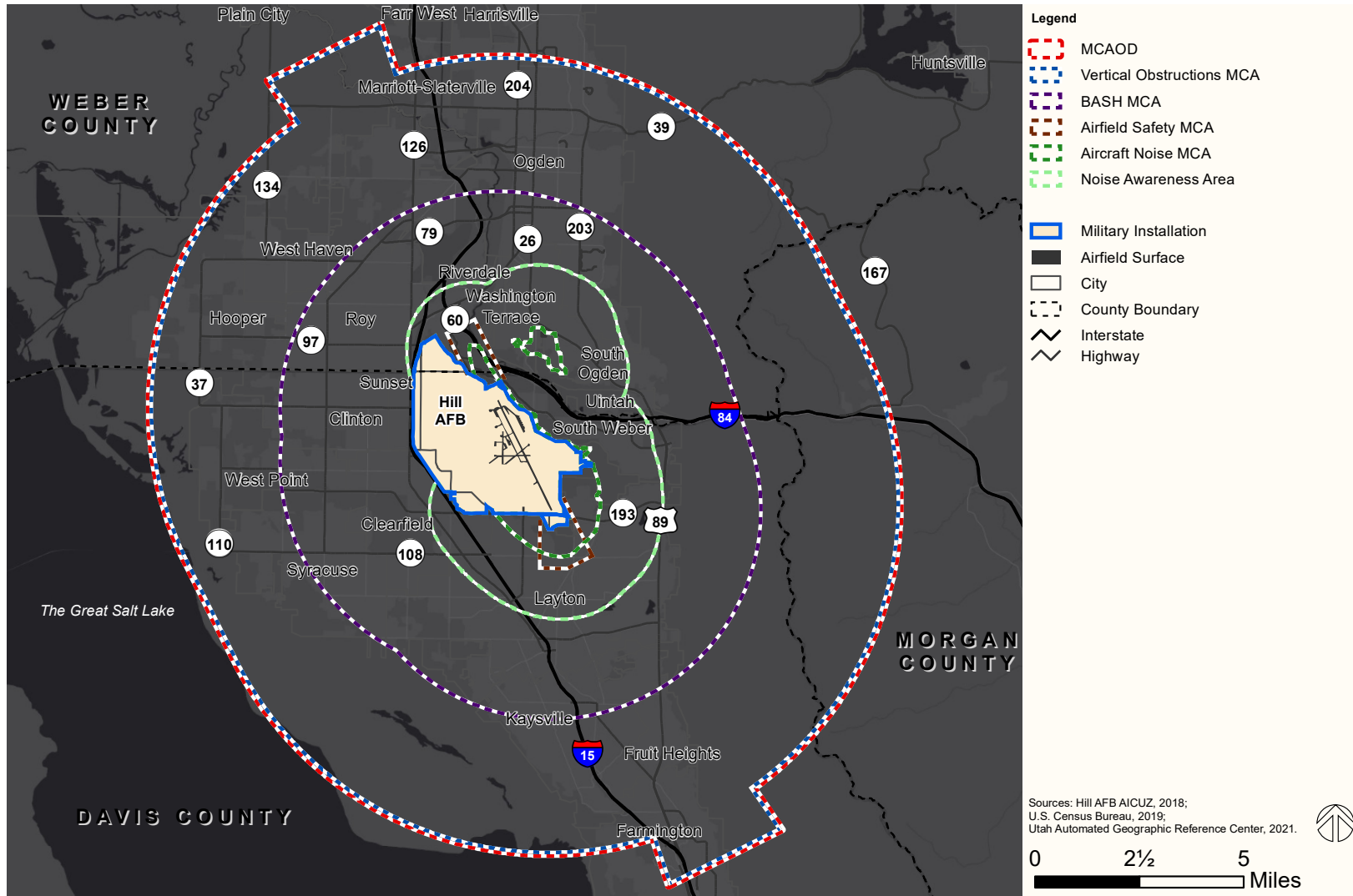
Hill AFB Vertical Obstruction MCA (Figure 6-4)

The Hill AFB Vertical Obstruction MCA is composed of the imaginary surfaces surrounding the airfield at Hill AFB. The Vertical Obstruction MCA serves to educate the community on recommended and allowable heights of structures within the imaginary surfaces. The imaginary surfaces are a series of 3-dimensional geospatial areas comprising approach and departure airspace corridors and other airspace around a runway. Vertical obstructions around runways are a major concern for flight operations and training due to the low-level flights that occur during takeoff and landing. The obstructions that can affect flight safety include, but are not limited to, cell towers, power lines, wind turbines, buildings, and trees, depending on their distance from the runway or location within flight paths.



Hill AFB MCAOD (Figure 6-5)

The Hill AFB Military Compatibility Area Overlay District (MCAOD) is defined by the outermost MCA boundary when all Hill AFB MCAs are combined. The MCAOD is a planning area where strategies can be applied to address specific compatibility issues.



6.3 How to Read the Implementation Plan

The strategies presented in Table 6-1 address the compatibility issues that were identified while preparing the Hill AFB CUP and constitute the Implementation Plan. The purpose of each strategy is to:

- Avoid, where possible, future actions, operations, or approvals that would cause a compatibility issue;
- Eliminate or reduce existing issues considered incompatible where possible; and
- Facilitate enhanced, ongoing communication and collaboration as mechanisms for effective compatibility planning and avoidance of future encroachment.

The strategies include information on when and how they should be implemented and are grouped according to the compatibility factor and issue that each strategy addresses. The following paragraphs provide an overview of how to read the Implementation Plan.

Issue that the associated strategies address. Before each set of strategies is a light blue colored box that identifies the specific compatibility issue that is being addressed.

Strategy rows. Each strategy is composed of two rows in the table. The first row of the strategy contains the strategy text and the responsible parties. The second row identifies the type of strategy, suggested timeframe for implementation, where the strategy applies, and a priority level for implementing.

Strategy box. The title describing the strategy solution is in bold in the strategy box. Each strategy starts with a unique alpha-numeric identifier that provides a reference for that individual strategy and is composed of

the compatibility issue abbreviation and a numeric identifier (e.g., COM-1, COM-1B, etc.). This is followed by the complete strategy statement that describes the recommended action.

Responsible Party column. At the right end of the strategy is a column that identifies the stakeholders who serve as either a “Primary Party” or a “Supporting Party” in implementing that strategy. The Primary Party has the responsibility for implementing the strategy while the Supporting Party plays a supporting role.

Strategy Type box. This box identifies the type of tool (indicated by one of the icons below) that the strategy is.

	Acquisition		Coordination/ Communication
	Education/Awareness		Easement
	Legislative		Master Plan/ General Plan
	Partnership		Planning
	Policies		Process
	Real Estate Disclosure		Regulations
	Study		Zoning



Timeframe box. This box indicates the projected timeframe of each strategy. The timeframes describe the year in which a strategy will be initiated or if it is an ongoing action.



Geographic Area box. This column identifies if the strategy only applies within the MCA. If the strategy is not tied to the MCA, the term "N/A" is used to identify there is no applicable geographic area.

Table 6-1 Implementation Plan

AIR QUALITY (AQ) ISSUES AND STRATEGIES			
Issue			
AQ-1 Concern that nonattainment for Ozone and Particulate Matter 2.5 in Davis and Weber Counties could have impacts on the military mission and operations Davis County and western Weber County are designated nonattainment areas by the State of Utah for Ozone and Particulate Matter 2.5. Regional air quality can restrict development and potentially impact the Hill AFB operating permit.			
Strategies			
AQ-1A	Develop a Memorandum of Agreement between UDEQ and Hill AFB to inform Hill AFB of air permit requests Develop a Memorandum of Agreement (MOA) between UDEQ Division of Air Quality and Hill AFB to establish a process for UDEQ to notify Hill AFB of air permit requests within weber and Davis Counties. The notification will allow Hill AFB to review permit requests and submit comments via the public review process. Hill AFB should identify which pollutants and threshold levels would trigger the need for notification from UDEQ, such as requests for a Title V permit that would allow for greater emissions than through the Hill AFB and UTTR Title V permit. The MOA can be developed in coordination with the Utah Department of Veterans and Military Affairs.		Primary Party: - Hill AFB - Utah Department of Environmental Quality Supporting Party: - Utah Department of Veterans and Military Affairs
	Strategy Type: 	Timeframe: Short 	
		Geographic Area: Weber County Davis County	



AIR QUALITY (AQ) ISSUES AND STRATEGIES

AQ-1B

Monitor the UDEQ website to identify new permit requests that could impact air quality in the region

Hill AFB should establish a point of contact to monitor the UDEQ Air Quality Division air permit request website weekly to identify new requests that may impact air quality in the region. Permit applications should be monitored on the following website:
<https://daqpermitting.utah.gov/>

Primary Party:

■ Hill AFB

Strategy Type:



Timeframe:

Short



Geographic Area:

Weber County
Davis County

ANTI-TERRORISM/FORCE PROTECTION (AT) ISSUES AND STRATEGIES

Issue

AT-1 Security concerns related to the public parking vehicles at the south end of the Hill AFB runway to view and photograph aircraft at Hill AFB

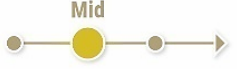
There are incidences of the public parking their vehicle at the end of the runway to view or take unauthorized photos of Hill AFB despite signage and Hill AFB monitoring these activities.

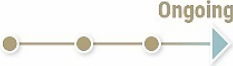
Strategies

AT-1A	Develop a Voluntary Community Watch Program Hill AFB should partner with the Utah Highway Patrol, local law enforcement, and communities to develop a voluntary Community Watch Program whereby citizens and law enforcement officers that witness suspicious activity outside Hill AFB inform a designated point of contact at the Base. This could be done in conjunction with Strategy COM-2B. Strategy Type:  Timeframe: Short  Geographic Area: N/A	Primary Party: ■ Hill AFB ■ Utah Highway Patrol ■ Local law enforcement ■ CUP Partner Communities Supporting Party: ■ Willing landowners
AT-1B	Continue coordination for the maintenance of roadway signage The Utah Department of Transportation, Davis County, and Layton City should continue coordination for maintaining and adding "No Parking" signage, as needed, along Highway 193. All parties should document points of contact for coordination. Strategy Type:  Timeframe: Short  Geographic Area: Highway 193 along Hill AFB perimeter	Primary Party: ■ Utah Department of Transportation ■ Davis County ■ Layton City



ANTI-TERRORISM/FORCE PROTECTION (AT) ISSUES AND STRATEGIES

AT-1C	Continue to maintain and monitor perimeter fencing to discourage trespassing Hill AFB should maintain perimeter fencing and provide timely replacement or repair of damaged sections. Hill AFB should ensure continuous placement, maintenance, and visibility of perimeter signage.			Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	Geographic Area: Hill AFB Perimeter	
AT-1D	Evaluate existing perimeter fencing Hill AFB Anti-Terrorism/Force Protection and Civil Engineering Group, should initiate a work project to evaluate the existing perimeter fencing to determine whether new or updated fencing is needed. Hill AFB should evaluate these needs using the criteria in UFC 4-022-03 Security Fences and Gates. If new or updated fencing is needed, Hill AFB should consider fencing that would eliminate parking on DoD property along roadways, while continuing to maintain pedestrian access.			Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	Geographic Area: Hill AFB Perimeter	

ANTI-TERRORISM/FORCE PROTECTION (AT) ISSUES AND STRATEGIES			
AT-1E	Consider roadway changes to limit access and parking on roadways that have direct view into Hill AFB Davis County and Layton City should discuss and plan for ways in which vehicular access and parking along roadways within direct view of the south runway at Hill AFB, such as on Fort Lane, can be mitigated. This may include roadway projects, initiated by Davis County, such as the installation of curbing, concrete barriers, temporary fencing, and/or other feasible roadway projects.		Primary Party: ■ Davis County ■ Layton City
	Strategy Type: 	Timeframe: 	
		Geographic Area: Hill AFB Perimeter	



BIOLOGICAL RESOURCES (BIO) ISSUES AND STRATEGIES

Issue

BIO-1 **Sensitive species are located on and around Hill AFB and the UTTR. If their status is upgraded to threatened or endangered and protections are enhanced, military operation could be impacted**

There are several sensitive species located on or around land under airspace that is owned by Hill AFB and the UTTR. The protection of sensitive species is anticipated to require a regional conservation approach to ensure that these species' status does not get upgraded, which could prompt additional measures that could limit or halt military operations at Hill AFB facilities.

Strategies

BIO-1A

Continue to monitor the status of the sensitive species and update the Hill AFB Integrated Natural Resources Management Plan if any of the statuses change

The Hill AFB Environmental Branch Natural Resources specialist should utilize the U.S. Fish and Wildlife Service's IPaC online tool to continue to identify the threatened and endangered species and critical habitat within the Project Study Area. This can also be used to monitor whether the status of the great sage-grouse and golden eagle get elevated to threatened or endangered. This tool is available on the U.S. Fish and Wildlife website:
<https://ecos.fws.gov/ipac/>

Strategy Type:



Timeframe:



Geographic Area:

Hill AFB and UTTR Project Study Areas

Primary Party:

- Hill AFB

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES			
Issue			
COM-1 Need for a formalized development review process between Hill AFB and surrounding communities Many neighboring communities and some regional agencies do not engage in formalized communication with Hill AFB regarding development and planning processes. Though some communities engage in formalized coordination with Hill AFB, it is specific only to certain development types. This can result in inconsistent coordination of development application reviews by Hill AFB.			
Strategies			
COM-1A	Establish a Hill AFB CUP Partnership Committee to monitor CUP implementation and address future compatibility issues that may arise Establish a Hill AFB CUP Partnership Committee to: oversee the implementation of the CUP strategies; maintain efficient and effective coordination among the CUP partners and other stakeholders; and enhance long-term coordination on military compatibility issues. The Partnership Committee should monitor and evaluate the compatibility issues identified as part of the CUP process, for potential necessary updates. All members of the Hill AFB CUP Advisory and Policy Committees should be invited to be initial members of the Partnership Committee with additional stakeholders added, as appropriate in the future. The Committee should meet on a regular basis, as agreed upon by the members. For example, the members of the Committee should identify a specific and consistent day of the month or week, and time, to discuss CUP implementation. The Committee should review CUP recommendations and track implementation efforts and accomplishments, as well as monitor emerging issues from both the community and military perspectives to ensure long-term military operational utility and compatibility as missions evolve.		Primary Party: ■ CUP Policy Committee ■ CUP Advisory Committee
	Strategy Type: 	Timeframe: Short 	
		Geographic Area: ■ Hill AFB and UTTR Project Study Areas	



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-1B

Prepare and execute a formal memorandum of agreement for development proposal review

Each CUP partner community should develop and adopt a memorandum of agreement (MOA) with Hill AFB that establishes and formalizes the review process for certain types of development proposals, rezoning applications, and other land use policy or regulatory changes that may impact the military mission at Hill AFB facilities. The MOA should define an effective communication and coordination process. Timelines for review should conform to existing community processes for review and comment processes. The MOA may include:

- Definitions of project types that require review
- Definitions of project types that require military participation at pre-application meetings
- Points of contact necessary for coordinating reviews
- A formal procedure for requesting and receiving comments from Hill AFB
- A mechanism for Hill AFB to present comments
- A standard timeline for responses, with consideration for mandated review time periods as specified by state law and/or local procedures
- Mandated notice to Hill AFB regarding all public hearings for projects that require review

The MOA should also state that Hill AFB may provide technical information on development proposals, but may not directly vote to approve, conditionally approve, or deny a rezoning, project, or development application/proposal.

Primary Party:

- CUP Partner Communities
- Hill AFB

Strategy Type:



Timeframe:



Geographic Area:

- Hill AFB and UTTR Project Study Areas

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES			
Issue			
COM-2 Need for mutual communication between City staff and Hill AFB There is a need for enhanced communication between CUP partner communities and Hill AFB for long-range planning goals and initiatives. There are city staff members who do not have a point of contact at the Base to communicate and share information with.			
Strategies			
COM-2A	Create an interactive web-based GIS portal for regional coordination The CUP Partner Communities, Weber Area and Davis County Council of Governments and Hill AFB, should work with the Wasatch Front Reginal Council (WFRC) to create and maintain an interactive, web-based GIS portal to share up-to-date and pertinent GIS data, such as existing land use, zoning, and other pertinent CUP-pertinent geospatial data, that is hosted on the WFRC GIS portal. The portal should be publicly accessible and serve as a tool to promote enhanced, long-range, and coordinated compatibility planning. Local Councils of Government and the WFRC should assist with disseminating information about how to access and use the portal. Protocol for accessing and updating information should be developed to ensure information accuracy. For example, when missing or new GIS data is identified, the appropriate party should notify the WFRC to make the necessary updates to the GIS portal. Appropriate security measures should also be established to maintain the portal's integrity and effectiveness and to ensure that proprietary information from each agency is not shared.		Primary Party: ■ Wasatch Front Regional Council Supporting Party: ■ CUP Partner Communities ■ Weber Area Council of Governments ■ Davis County Council of Governments ■ Hill AFB
	Strategy Type: 	Timeframe: Short	
		Geographic Area: ■ N/A	



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-2B	Establish internal information liaisons for Hill AFB, through the Hill AFB Community Planner, and communities to be the points of contact for receiving and disseminating information related to compatibility Hill AFB and CUP Partner Communities should each establish a single point of contact to communicate information related to compatibility. These points of contacts and their contact information should be shared with Team Hill (Hill AFB and its tenants) and all CUP Partner Communities.			Primary Party: ■ CUP Partner Communities ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB and UTTR Project Study Areas	

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

Issue

COM-3 Ongoing desire for mutual communication between elected officials in the community and Hill AFB leadership

There is generally a positive relationship between City elected officials and Hill AFB leadership; however, there is a desire to formalize communication between the Hill AFB Commander and City and County elected officials.

Strategies

COM-3A	Create a standing agenda item to discuss compatibility at Council of Governments meetings Create a standing agenda item on the Weber Area Council of Governments and the Davis County Council of Governments Meeting agendas to discuss compatibility issues. Continue to invite Hill AFB representatives to these meetings.	Primary Party: - Weber Area Council of Governments - Davis County Council of Governments Supporting Party: - Hill AFB
COM-3B	Update the Partners in One Community brochure Continuously update the Hill AFB Partners in One Community brochure with new and potential partnership opportunities with the community. Distribute the brochure to CUP Partner Communities for electronic distribution and posting on websites.	Primary Party: - Hill AFB Supporting Party: - CUP Partner Communities



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

Issue

COM-4 Need for greater Hill AFB outreach with the public

There is a desire from the public to receive additional information and notification from Hill AFB regarding military activities that impact the community.

Strategies

COM-4A Utilize social media and CUP partner websites to increase communications with the community

CUP partners should include a link to the Hill AFB and UTTR webpages and social media pages on their respective websites. CUP partner websites should also include contact information for the Hill AFB Public Affairs Office.

Strategy Type:



Timeframe:

Short



Geographic Area:

N/A

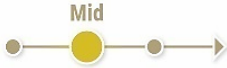
Primary Party:

- Hill AFB

Supporting Party:

- CUP Partner Communities
- Top of Utah Military Affairs Committee
- Utah Defense Alliance
- Governor's Office of Veterans and Military Affairs

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-4B	Develop an Outreach Campaign Plan Develop an Outreach Campaign Plan to identify public outreach goals and action items, metrics and milestones for activities, and responsible parties for conducting outreach activities that reinforce the community understanding of Hill AFB facilities, enhance the military strategic value within the community, and strengthen the community support base. Goals should support a range of activities including public appearances, speaking engagements, educational seminars, open houses, media engagements, exhibits, press and news release, and publication development and distribution. The Outreach Campaign Plan should address current issues, concerns, and potential changes at Hill AFB facilities. Consideration should be given to a broad mix of outreach channels including in person, print, video, and digital tools such as websites, social media, and podcasts and support from area jurisdictions and organizations.			Primary Party: - Hill AFB Supporting Party: - CUP Partner Communities - Top of Utah Military Affairs Committee - Utah Defense Alliance - Governor’s Office of Veterans and Military Affairs
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
COM-4C	Establish an “Official” Public Notification Protocol to Jurisdictions Hill AFB should establish an official public notification protocol to inform the community leaders in advance of aircraft operations activities, including night flights, so the community can inform their residents. The protocol should consider best method to use for public notification, timeframe for advance notification, information about the activity and its duration, information about potential impacts, and a contact number for the installation.			Primary Party: - Hill AFB Supporting Party: - CUP Partner Communities - Top of Utah Military Affairs Committee - Utah Defense Alliance - Governor’s Office of Veterans and Military Affairs
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-4D	Jurisdiction Notification to the Public Based on the notification protocol from Hill AFB in Strategy COM-4C, establish an official and routine public notification protocol to inform residents in advance of changes in aircraft operations at Hill AFB. Consider methods to maximize outreach, e.g., county and city government meetings, government offices, county and city websites, and county and city social media sites.			Primary Party: ■ CUP Partner Communities Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	
COM-4E	Hill AFB Conduct Public Town Halls On a bi-annual basis, Hill AFB should conduct Public Town Hall meetings to provide a platform for a two-way communication where the Air Force can inform the community of any upcoming mission or operational changes that may have a community impact and where members of the public can provide feedback on any issues or questions they may have. Hill AFB should send out letters to notify nearby property owners of Town Hall meetings and plan for this activity as part of Strategy COM 4-B.			Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB and UTTR Project Study Areas	

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES			
Issue			
COM-5	Need for enhanced coordination between Team Hill and local academic institutions to align educational curriculums to meet the skillsets needed at Hill AFB Team Hill has employment opportunities in emerging industries that require a workforce with certain technical skills. There is a need for Team Hill to effectively communicate and coordinate these workforce needs, and changes in needs, with local higher education institutions to support incoming aeronautical, advanced manufacturing, software, and scientific industries.		
Strategies			
COM-5A	Develop military workforce projections Develop an integrated workforce projection for Team Hill to identify future growth and skills that will be needed at Hill AFB. This should be a comprehensive projection not focused solely on individual directorates. This information should be shared with local communities, organizations, and other stakeholders such as local educational institutions and businesses which can use this information to coordinate training programs that align with Team Hill workforce needs.		Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-5B	Coordinate internship opportunities The Hill AFB Education Office should coordinate internship opportunities with local universities, technical colleges and high schools. Coordination should include providing information regarding the education and/or training needed to fulfill the internship responsibilities. <table border="1"> <tr> <td> Strategy Type: </td><td> Timeframe: Short </td><td> Geographic Area: N/A </td></tr> </table>	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	Primary Party: - Hill AFB Supporting Party: - Local institutions, including but not limited to, Weber State University, Davis Technical College, Ogden-Weber Technical College, and area high schools
Strategy Type: 	Timeframe: Short 	Geographic Area: N/A			
COM-5C	Participate in job fairs at local universities and colleges Team Hill in coordination with the Hill AFB Employment Office, should participate in job fairs at local universities and colleges where they communicate the benefits of Hill AFB, including: - employment stability - the Hill AFB work environment - variety of Hill AFB programs - national and local importance of Hill AFB - career opportunities through Hill AFB <table border="1"> <tr> <td> Strategy Type: </td><td> Timeframe: Short </td><td> Geographic Area: N/A </td></tr> </table>	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	Primary Party: - Hill AFB Supporting Party: - Local institutions, including but not limited to, Weber State University, Davis Technical College, Ogden-Weber Technical College
Strategy Type: 	Timeframe: Short 	Geographic Area: N/A			

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES				
COM-5D	Identify potential workspaces for Team Hill throughout the community Hill AFB should continue to identify potential workspaces at universities to fulfill office space needs for Team Hill. Hill AFB should use workspaces in the community to expand their presence, relationship, and value in the community.			Primary Party: - Hill AFB - Local institutions, including but not limited to, Weber State University, Davis Technical College, Ogden-Weber Technical College
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
COM-5E	Conduct coordination meetings with local universities and colleges Hill AFB should schedule a standing meeting with local universities, prior to the beginning of semesters, to discuss any changes in Team Hill workforce needs at Hill AFB. Local universities and college should invite Hill AFB to participate in committees for the purpose of communicating employers' need and discussing educational programs that are consistent with Hill AFB workforce needs.			Primary Party: - Hill AFB - Local institutions, including but not limited to, Weber State University, Davis Technical College, Ogden-Weber Technical College
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	



COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES

COM-5F	Continue to coordinate OO-ALC needs with local universities and colleges The OO-ALC at Hill AFB should continue discussions with Weber State University and other local universities and technical institutions to coordinate training and education needs specific to the OO-ALC. Local universities and college should invite Hill AFB to participate in committees for the purpose of communicating employers' need and discussing educational programs that are consistent with Hill AFB workforce needs.	Primary Party: ■ Hill AFB ■ Local institutions, including but not limited to, Weber State University, Davis Technical College, Ogden-Weber Technical College
Strategy Type: 	Timeframe: Ongoing 	
COM-5G	Coordinate opportunities through the Federal Apprenticeship Programs The Hill AFB Education Office should coordinate apprenticeship opportunities through the Department of Labor's Industry-Recognized Apprenticeship Program or Registered Apprenticeship Program. Coordination should include providing information regarding the apprenticeships needed to fulfill necessary job training.	Primary Party: ■ Hill AFB
Strategy Type: 	Timeframe: Short 	

COMMUNICATION/COORDINATION (COM) ISSUES AND STRATEGIES				
Issue				
COM-6 Need for improved information sharing between the 75th Medical Group at Hill AFB and State and County officials during times of medical events The 75th Medical Group at Hill AFB may not be recognized as a medical agency in state and local public health departments, creating limitations for information sharing. This is a concern during times of medical events, such as the COVID-19 pandemic.				
COM-6A	Coordinate with public health agencies for database information sharing Hill AFB should continue to coordinate with the Utah Department of Health for access to the State's COVID-19 tracker and the State Epidemiology program. Hill AFB should also continue to coordinate with the Davis County Health Department and the Weber-Morgan Health Department to coordinate data related to medical events.			Primary Party: - Hill AFB Supporting Party: 75th Medical Group - Utah Department of Health - Davis County Health Department - Weber-Morgan Health Department
	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	
COM-6B	Update Hazard Mitigation and Emergency Operations Plans The State of Utah should update their Hazard Mitigation Plan, Emergency Operations Plan, and Infectious Disease Emergency Response Plan to include coordination processes with Hill AFB and other information pertinent to Hill AFB. This should be done in coordination with the Hill AFB Emergency Management Office.			Primary Party: - Utah Department of Health - Utah Division of Emergency Management Supporting Party: - Hill AFB
	Strategy Type: 	Timeframe: Mid 	Geographic Area: N/A	



DUST/SMOKE/STEAM (DSS) ISSUES AND STRATEGIES

Issue

DSS-1 Potential for dust that is related to arid conditions to impact operations at the UTTR

Due to the terrain of the region and the location of the UTTR, there is potential for dust conditions to impact military operations, such as weapons testing and flight operations, at the UTTR.

Strategies

DSS-1A	Continue to identify and educate the community about activities that produce high amounts of dust Hill AFB should continue to identify locations where activities that produce high amounts of dust occur surrounding the UTTR. Hill AFB and the UTTR should notify surrounding communities when dust producing activities are impacting military operations.			Primary Party: ■ Hill AFB ■ Tooele County
	Strategy Type: 	Timeframe: Short 	Geographic Area: UTTR Project Study Area	

ENERGY DEVELOPMENT (ED) ISSUES AND STRATEGIES			
Issue			
ED-1		Alternative energy coordination between Hill AFB and surrounding communities is limited Alternative energy development could have adverse impacts on the operations at Hill AFB facilities if not coordinated. Although some cities surrounding Hill AFB and the UTTR regulate alternative energy development, the regulations do not always include a coordination process with Hill AFB and some cities do not have any alternative energy regulations.	
Strategies			
ED-1A	Develop renewable energy development regulations to facilitate coordination CUP Partner Communities that do not have renewable energy development regulations should develop such regulations including guidelines for the heights of renewable energy structures in compliance with FAA regulations and Hill AFB imaginary surfaces. The regulations should include coordination with Hill AFB to ensure that renewable energy development is compatible with military operations.		Primary Party: ■ Clearfield City ■ Clinton City ■ Riverdale City ■ Roy City ■ South Ogden City ■ Sunset City ■ Uintah City ■ Davis County Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	



ENERGY DEVELOPMENT (ED) ISSUES AND STRATEGIES

ED-1B	Update renewable energy regulations CUP Partner Communities with renewable energy development regulations should update their regulations to include coordination with Hill AFB and the UTTR to ensure that renewable energy is compatible with the military mission. These jurisdictions should also update their regulations to include compliance with FAA regulations and considerations for Hill AFB imaginary surfaces, where applicable.			Primary Party: - Layton City - Ogden City - Washington Terrace City - Tooele County - Weber County Supporting Party: - Hill AFB
Strategy Type:		Timeframe: Short	Geographic Area: Hill AFB and UTTR Project Study Areas	
Issue				
ED-2	Potential for solar energy facilities to create light and glare impacts on Hill AFB flying operations Depending on the type of materials used, the size of the facility, and proximity to Hill AFB facilities, there is potential for solar energy developments to create glare, which could impair pilot visibility. Solar arrays throughout the Project Study Area could create glare impacts on flying operations at Hill AFB.			
Strategies				
ED-2A	Update regulations to include guidance for solar energy development CUP Partner Communities within Hill AFB MTRs should update their codes to include regulations for solar energy development that incorporate confirmation of coordination with the DoD Military and Aviation and Installation Assurance Siting Clearinghouse and Hill AFB.			Primary Party: - CUP Partner Communities Supporting Party: - Hill AFB
Strategy Type:		Timeframe: Short	Geographic Area: Hill AFB and UTTR Project Study Areas	

ENERGY DEVELOPMENT (ED) ISSUES AND STRATEGIES				
Issue				
ED-3		Potential for wind energy development to create frequency interference for Hill AFB and the UTTR Wind turbines have the potential to create frequency interference for radars and aircraft in low-flying areas.		
Strategies				
ED-3A	Coordinate with the Utah School and Institutional Trust Lands Administration (SITLA) The UTTR and Hill AFB should continue to work with SITLA to coordinate renewable energy development on state land within ten miles of the installations.		Primary Party: - Hill AFB - UTTR Supporting Party: - Utah School and Institutional Trust Lands Administration	
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB and UTTR Project Study Areas	
For other strategies that address this issue see Strategies ED-1A and ED-1B				



FREQUENCY SPECTRUM IMPEDANCE (FSI) ISSUES AND STRATEGIES

Issue

FSI-1 **Need to protect frequency spectrum at the UTTR caused by interference of external sources**

The UTTR provides testing, evaluation, and training to various customers and as such, requires a frequency spectrum that is resilient towards outside activities. This is especially important as new technologies and weapons systems emerge, requiring more spectrum for testing at the UTTR. Transmission lines conveying power from wind energy projects can cause frequency interference which can impact testing capability at the UTTR.

Strategies

FSI-1A	Share information regarding transmission line development Hill AFB and the UTTR should coordinate with Rocky Mountain Power regarding potential impacts from transmission lines and proposed transmission line proposals within the project area surrounding the UTTR.			Primary Party: ■ Hill AFB ■ UTTR Supporting Party: ■ Rocky Mountain Power
	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	

For other strategies that address this issue see Strategies ED-1A, ED-1B and ED-3A

HOUSING (HA) ISSUES AND STRATEGIES				
Issue				
HA-1	Need for available, affordable housing to accommodate future increases in the number of civilian contractors and military personnel at Hill AFB			
	Within the next four to five years, there is an anticipated increase in population in the region as a result of thousands of civilian and defense contractors and military personnel relocating to work in the community and Hill AFB. Hill AFB provides limited military housing which can accommodate some of the incoming military population; however, there will be a need for housing in the community that is affordable to attract and retain military personnel and defense contractors.			
	Strategies			
HA-1A	Conduct Housing Study Hill AFB in partnership with CUP Partner Communities and the WFRC should conduct a formal study of the local housing market to understand the range of current and anticipated housing needs, identify gaps in supply, and better support off-base housing demand. The housing analysis should consider housing availability, affordability, and housing type, and be conducted in coordination with industry growth projections conducted by the Utah Defense Alliance for northern Utah. The results of the study should be incorporated into CUP Partner Community general plans and housing policies.			Primary Party: - Hill AFB - Wasatch Front Regional Council - CUP Partner Communities Supporting Party: - Utah Defense Alliance
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	



HOUSING (HA) ISSUES AND STRATEGIES

HA-1B	Communicate Team Hill housing needs Hill AFB should continue to quantify and communicate forecasted Team Hill housing needs with surrounding cities, planning agencies, such as the Wasatch Front Regional Council, real estate associations, and landlords. The Military Housing Office should provide information on where Team Hill personnel and their families live and housing needs, including the Basic Allowance for Housing (BAH), and timeframes and quantities for known incoming military personnel. Hill AFB should also provide the contact information for the Military Housing Office to answer questions related to housing needs. Strategy Type:  Timeframe: Short  Geographic Area: Hill AFB Project Study Area	Primary Party: ■ Hill AFB Supporting Party: ■ CUP Partner Communities ■ Wasatch Front Regional Council
HA-1C	Conduct a BAH Study through the DoD The Hill AFB Military Housing Office should coordinate with DoD to conduct a study for the BAH to assess any local disparity between the BAH and housing costs. Strategy Type:  Timeframe: Short  Geographic Area: N/A	Primary Party: ■ Hill AFB Supporting Party: ■ Department of Defense
HA-1D	Communicate Hill AFB housing services The Hill AFB Military Housing Office should establish a relationship with local realtor associations and inform them about the housing services provided through the Hill AFB Military Housing Office. Strategy Type:  Timeframe: Short  Geographic Area: Hill AFB Project Study Area	Primary Party: ■ Hill AFB Supporting Party: ■ Northern Wasatch Association of Realtors and Northern Utah Real Estate Investors Association

HOUSING (HA) ISSUES AND STRATEGIES				
HA-1E	Update General Plans for military housing CUP Partner Communities should include military housing needs in updates to their General Plan. The cities should coordinate with the Hill AFB Military Housing Office on information such as timeframes and quantities for known incoming military personnel, where personnel and their families are living, and BAH rates. Hill AFB should also provide estimates, if possible, of know/projected civilian contractors associated with Hill AFB.			Primary Party: ■ CUP Partner Communities Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	



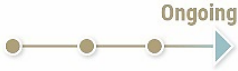
LAND/AIRSPACE COMPETITION (LAS) ISSUES AND STRATEGIES

Issue

LAS-1 Concern for airspace congestion and competition between Hill AFB and surrounding airports
Airports in the Project Study Area and Hill AFB coordinate to make sure there are no airspace conflicts; however, there is community concern that future general aviation operations at airports and future mission changes at Hill AFB will be impacted if there is future airspace congestion.

Strategies

LAS-1A	Coordination during future airport master plan updates Ogden City and Salt Lake City International Airport should coordinate with the Hill AFB Airfield Manager and UTTR on their respective airport master plan updates for Ogden-Hinckley Airport and Salt Lake City International Airport. Both airports should notify the Hill AFB Airport Manager of opportunities to review and comment on the Master Plan updates, including public meetings.			Primary Party: ■ Ogden City ■ Salt Lake City International Airport Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
LAS-1B	Continue to communicate changes in aircraft operations Ogden City, Salt Lake City International Airport, Hill AFB, and the UTTR should continue to communicate changes in aircraft operations for their respective airports, including Tooele Valley Airport, South Valley Regional Airport and Wendover Airport.			Primary Party: ■ Ogden City ■ Salt Lake City Department of Airports ■ Hill AFB ■ UTTR
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	

LAND/AIRSPACE COMPETITION (LAS) ISSUES AND STRATEGIES				
Issue				
LAS-2 Potential for future air space competition between Tooele Valley Airport and the UTTR Although not a current issue, there is a concern for potential future airspace competition with the UTTR if future operations at Tooele Valley Airport include larger aircraft or the airport is expanded with a longer runway.				
Strategies				
LAS-2A	Adopt the Tooele Valley Airport Overlay Zone Tooele County should continue to work with the Salt Lake City Department of Airports to adopt and implement the Tooele Valley Airport Overlay Zone into the County's zoning ordinance.			Primary Party: ■ Tooele County Supporting Party: ■ Salt Lake City Department of Airports
	Strategy Type: 	Timeframe: 	Geographic Area: Tooele County	



LAND/AIRSPACE COMPETITION (LAS) ISSUES AND STRATEGIES

Issue

LAS-3 Security and safety concerns from civilian drone activity

The use of civilian drones creates security and safety concerns for Hill AFB facilities and aircraft. Drones can pose operational threats from intentional or unintentional overflight of Hill AFB and UTTR to surveil activities, and create potential flight hazards and mid-air collision risks for military aircraft.

Strategies

LAS-3A

Partner with the FAA Law Enforcement Assistance Program (LEAP) program to support UAS enforcement

The FAA LEAP program consists of special agents who are the POC for federal, state, local, tribal, territorial, and international law enforcement agencies. LEAP special agents can provide information on drone enforcement and registration matters.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB and UTTR Project Study Areas

Primary Party:

- CUP Partner Communities

LAND/AIRSPACE COMPETITION (LAS) ISSUES AND STRATEGIES				
LAS-3B	Enhance public awareness of safe drone usage and regulations The UTTR currently includes an informational flyer from the FAA regarding drone use on the UTTR website. The Hill AFB Public Affairs Office should include this flyer on the main Hill AFB webpage and consider developing an updated flyer that identifies the areas around Hill AFB facilities where it is not safe to operate UAS devices. Hill AFB should distribute informational materials for safe drone usage to CUP Partner Communities and encourage jurisdictions and other partners to include this information on their respective websites. Another resource that should be shared is the FAA website that shows FAA restrictions with specific airspace.			Primary Party: ■ Hill AFB Supporting Party: ■ CUP Partner Communities
	Strategy Type: 	Timeframe: 	Geographic Area: Hill AFB and UTTR Project Study Areas	



LAND USE (LU) ISSUES AND STRATEGIES

Issue

LU-1 **Need for Hill AFB Safety Zones to be illustrated on maps within community planning documents**

Many jurisdictions around Hill AFB have partial or outdated Hill AFB Safety Zones from the Hill AFB Air Installation Compatible Use Zones Study on their Zoning Map or General Plan Future Land Use Map. The Safety Zones from the AICUZ define areas where there could be safety impacts to the community from Hill AFB aircraft operations. The absence of the Safety Zones on planning documents could lead to incompatible development around the installation.

Strategies

LU-1A

Update community planning documents with Hill AFB Safety Zones

CUP Partner Communities located within Hill AFB Safety Zones should update their respective General Plans and Zoning Maps to include the Hill AFB Safety Zones on the Future Land Use Map. These communities should also update their Zoning Maps to include an Overlay of the Hill AFB Safety Zones.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB Airfield Safety
MCA

Primary Party:

- Riverdale City
- South Weber City
- Davis County
- Weber County

LAND USE (LU) ISSUES AND STRATEGIES				
LU-1B	Add a “Military Element” to General Plans to include policies promoting compatible development around Hill AFB facilities CUP Partner Communities should develop and incorporate a "Military Element" as an update to General Plans. This element should include a description of Hill AFB and its facilities, the military activities that occur there, the relationship between the community and the military, and establish policies for coordinating with the military and promoting compatible development around Hill AFB and its facilities.			Primary Party: ■ CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB and UTTR Project Study Areas	
LU-1C	Ensure future land use planning for all areas within county jurisdictions Weber County should include unincorporated county islands near Hill AFB into the Western Weber Planning Area. Once it is included in the planning area, Weber County should update the West Central Weber County General Plan to include future land use for unincorporated county islands.			Primary Party: ■ Weber County
	Strategy Type: 	Timeframe: Short 	Geographic Area: Weber County	



LAND USE (LU) ISSUES AND STRATEGIES

Issue

- LU-2 Need for Hill AFB noise contours to be illustrated on maps within community planning documents**
- Many jurisdictions around Hill AFB have partial or old Hill AFB noise contours from the Hill AFB Air Installation Compatible Use Zones Study on their Zoning Map or General Plan Future Land Use Map. The noise contours from the AICUZ define areas where noise impacts are experienced from Hill AFB operations. The absence of the noise contours on planning documents could lead to incompatible development around the installation.

Strategies

LU-2A	Update community planning documents with Hill AFB noise contours CUP Partner Communities located within Hill AFB noise contours should update their General Plans to include the Hill AFB noise contours on the Future Land Use Map. These communities should also update their zoning maps to include an Overlay of the Hill AFB AICUZ noise contours.			Primary Party: ■ Layton City ■ Riverdale City ■ South Ogden City ■ South Weber City ■ Washington Terrace City ■ Davis County ■ Weber County
	Strategy Type:  	Timeframe: Short 	Geographic Area: Hill AFB Aircraft Noise MCA	

LAND USE (LU) ISSUES AND STRATEGIES			
Issue			
LU-3 Need for sharing land use documentation related to Hill AFB Hill AFB has easements throughout the Project Study Area related to different impacts in the community, such as water contamination, noise, and safety zones. These easements may also place land use restrictions on properties that would be impacted by the effects of operations at Hill AFB. Although some of these have been documented and shared with different government agencies, there have been inconsistencies in the amount of information communicated. This has led to some government agencies not having the information needed to make informed land use decisions.			
Strategies			
LU-3A	Conduct an Easement Inventory Each jurisdiction should identify the easements that they have related to Hill AFB and communicate these easements to Hill AFB, the Davis County Assessor's Office, and the State of Utah. The State of Utah should assist in this inventory and maintain the repository of easements. Property owners with Hill AFB easements should be notified of the easements. Hill AFB should notify the appropriate jurisdiction if there is additional easement data that the Air Force possesses.		Primary Party: CUP Partner Communities Hill AFB State of Utah Supporting Party: Davis County Assessor's Office
	Strategy Type: 	Timeframe: Short 	
		Geographic Area: Hill AFB Project Study Area	



LAND USE (LU) ISSUES AND STRATEGIES

Issue

LU-4 **Need to meet operational space requirements for the Ogden Air Logistics Complex**

Expanding operations at the Ogden Air Logistics Complex will require additional industrial space, which is limited on Hill AFB and in the surrounding community.

Strategies

LU-4A	Regional Working Group to Identify Partnerships for Industrial Space Develop a working group between the Ogden Air Logistics Complex, industry in the region, and local academic institutions to collaborate on identifying workspace in the community that can leverage synergies between working group members and provide mutual benefits.			Primary Party: ■ Hill AFB ■ Local universities ■ Tech Industries
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
LU-4B	Reassess industrial land on Hill AFB Hill AFB should reassess land available on Hill AFB for industrial development. Hill AFB should update the Installation Development Plan to reflect any changes in available developable or redevelopable land to meet the needs of Team Hill.			Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	Geographic Area: Hill AFB	

LAND USE (LU) ISSUES AND STRATEGIES				
LU-4C	Create a partnership between Hill AFB and community stakeholders to identify available industrial space Hill AFB should work with CUP Partner Communities, the WFRC and State and local economic development partners to identify potential industrial spaces that can be used by Team Hill for future mission expansion. One such consideration is the 250 acres that are available adjacent to, and with access into, Hill AFB in the East Gate Business Park, located in Layton City.			Primary Party: ■ Hill AFB ■ CUP Partner Communities ■ Wasatch Front Regional Council ■ State and local economic development partners
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	



NOISE (NOI) ISSUES AND STRATEGIES

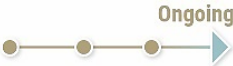
Issue

NOI-1 **Incompatible development within Hill AFB noise contours**

Aircraft operations at Hill AFB often create noise, which can be heard throughout the Project Study Area. These noise conditions have varying degrees of impacts depending on the geographic location. Additionally, changing circumstances requiring work-from-home situations may create more instances of noise impacts in the community.

Strategies

NOI-1A	Update general plans and amend zoning ordinances and municipal codes to include sound attenuation standards CUP Partner Communities should update their respective general plans and amend zoning ordinances and municipal codes to suggest the incorporation of sound attenuation standards, from the land use guidance in the Hill AFB AICUZ, for new development. Strategy Type: Timeframe: Short Geographic Area: Hill AFB Aircraft Noise MCA	Primary Party: ■ CUP Partner Communities Supporting Party: ■ Hill AFB
NOI-1B	Designate a single point of contact for Hill AFB community relations Create a position at Hill AFB that is responsible for community relations to address noise complaints and concerns. Responsibilities for this position would include logging and responding to noise complaints and responding to questions and concerns from the community regarding Hill AFB and its facilities. Contact information for this point of contact should be posted on the Hill AFB website and on jurisdiction websites. This should be done in conjunction with COM-2B. Strategy Type: Timeframe: Short Geographic Area: N/A	Primary Party: ■ Hill AFB

NOISE (NOI) ISSUES AND STRATEGIES			
NOI-1C	Involve communities in future AICUZ updates Hill AFB should involve CUP Partner Community staff and residents in all future AICUZ updates to determine incompatibilities related to existing structures and to ensure that CUP Partner Communities are aware of any changes to noise contours or safety zones that should be updated in General Plans and Zoning regulations (see NOI-1A).		Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	
		Geographic Area: N/A	



NOISE (NOI) ISSUES AND STRATEGIES

NOI-1D	Update the process for receiving noise complaints Team Hill should improve upon the existing process for receiving and addressing noise complaints to include: ■ A common form to complete about the noise nuisance that describes the noise, time the noise occurred, frequency, etc. ■ Points of contact for all communities and the installation ■ Response time for addressing the noise complaint ■ Follow-up to ensure the complaint was either addressed or explanation as to why it was not addressed	Primary Party: ■ Hill AFB
	Strategy Type:  Timeframe: Short  Geographic Area: N/A	
NOI-1E	Adopt and publish procedures for noise complaints CUP Partner Communities should adopt coordinated and formal procedures for noise complaints from residents to ensure that complaints are officially documented, conveyed to Hill AFB, and that there is appropriate feedback to close the loop with complaints.	Primary Party: ■ CUP Partner Communities
	Strategy Type:  Timeframe: Short  Geographic Area: N/A	

NOISE (NOI) ISSUES AND STRATEGIES				
NOI-1F	Require notes on plats and titles that property is within an MCA and Noise Awareness Area CUP Partner Communities should require language on recorded subdivision plats and titles of properties within the Hill AFB noise contours that indicates said properties may be subject to overflight, noise, vibration, and/or other impacts from normal military operations.			Primary Party: - CUP Partner Communities - Davis and Weber County Assessor Supporting Party: - Title companies
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Aircraft Noise MCA and Noise Awareness Area	
NOI-1G	Consider Reduction in Real Property Tax Assessments for noise sensitive land uses within noise contours Weber and Davis Counties should consider adopting and enacting a policy to reduce property tax on real property without a reduction in property value for noise sensitive land uses within Hill AFB noise contours.			Primary Party: - Weber County - Davis County
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Aircraft Noise MCA	



NOISE (NOI) ISSUES AND STRATEGIES

NOI-1H

Prepare an Annual Noise Summary

Hill AFB should prepare an annual noise report or brief that summarizes all noise disturbance calls received during a calendar year. The Noise Summary should describe initiatives to enhance the sustainability of Hill AFB and its facilities to provide useful information to stakeholders at the installation with a vested interest in noise disturbances. The Noise Summary should include:

- A summary of disturbances
- Annual comparison of disturbance calls
- Disturbance calls by county
- Disturbance calls by month
- Disturbance calls by activity
- Mitigation tools
- Noise briefs
- Analysis tools
- Proactive approaches taken such as public notifications

Primary Party:

- Hill AFB

Strategy Type:



Timeframe:

Short



Geographic Area:

- N/A

NOISE (NOI) ISSUES AND STRATEGIES				
NOI-1I	Consider relocating more intense flight procedures at Wendover Airport Hill AFB should consider relocating its noisier flight operations at Wendover Airport including high-intensity take-offs and landings that generate higher than average aircraft noise levels.			Primary Party: ■ Hill AFB Supporting Party: ■ Wendover Airport, Tooele County
	Strategy Type: 	Timeframe: Short 	Geographic Area: ■ UTTR Project Study Area	
NOI-1J	Require Sound Attenuation for Substantial Improvement of Habitable Structures Require sound attenuation for substantial improvement of residential structures (greater than 50% of the replacement value) and changes to structures that increase the number of residential housing units (as defined by the U.S. Census) to reduce exterior to interior noise to 45 dB. This should be done in conjunction with Strategy NOI-1K.			Primary Party: ■ CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: ■ Hill AFB Aircraft Noise MCA	



NOISE (NOI) ISSUES AND STRATEGIES

NOI-1K

Develop Sound Attenuation Building Standards for New Construction

CUP Partner Communities should amend building codes to require sound attenuation measures for all new construction of noise sensitive land uses (e.g., residential uses, hospitals, elderly care facilities, schools, churches) located within the 65 dB or greater noise contour of the Hill AFB Noise MCA. These structures should be designed and constructed to limit their interior noise level to no greater than 45 dB certified by an accredited acoustical engineer.

The minimum sound transmission class (STC) rating of structure components should be provided in compliance with the table shown below. As an alternative to compliance with this table, structures could be permitted to be designed and constructed so as to limit their interior noise level to no greater than 45 dB. Exterior structures, terrain and permanent plantings could be used to meet the alternative design requirement as certified by an acoustical engineer.

Noise Contour dB	STC of Exterior Walls and Roof / Ceiling	STC of Doors / Windows
65-69	39	25
70-74	44	33
> 75	45	38

Strategy Type:



Timeframe:

Short



Geographic Area:

- Hill AFB Aircraft Noise MCA

Primary Party:

- CUP Partner Communities

NOISE (NOI) ISSUES AND STRATEGIES			
NOI-1L	Pursue Assistance through the DoD Office of Local Defense Community Cooperation Community Noise Mitigation program The OLDCC Community Noise Mitigation is an initiative being undertaken as a result of recently enacted Appropriations language to understand noise mitigation needs of communities experiencing 65 decibel or louder noise, and to develop a program that may then support noise mitigation actions by these communities. Maintain communications with the OLDCC and pre-position for developing a competitive application for submission once the program is formally established and applications are solicited.		Primary Party: ■ CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	
		Geographic Area: ■ Hill AFB Aircraft Noise MCA	



NOISE (NOI) ISSUES AND STRATEGIES

Issue

NOI-2 Noise impacts from Hill AFB operations may extend beyond the designated noise contours

Noise from operations at Hill AFB facilities has the potential to impact land uses surrounding the installation facilities. Although the AICUZ provides noise contours to illustrate noise impacts on the community, often, the noise associated with operations at Hill AFB extend past these contours.

Strategies

NOI-2A

Establish a Noise Buffer for Hill AFB

CUP Partner Communities should consider adopting a noise buffer extending 1.5 miles from the outer extent of Hill AFB noise contours, as captured in the Noise MCA, and include it in their general plan future land use maps and zoning maps for public awareness. Consider adopting the land use guidance from the Hill AFB AICUZ for noise sensitive land uses within the buffer in Zoning regulations.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB Noise Awareness Area

Primary Party:

- CUP Partner Communities

NOI-2B

Incorporate military impacts on property disclosures

Utah Association of Realtors should amend the Seller's Property Condition Disclosure to indicate when a property is within the Hill AFB Noise MCA and/or Airfield Safety MCA.

Strategy Type:



Timeframe:

Short



Geographic Area:

- Hill AFB Aircraft Noise MCA
- Hill AFB Airfield Safety MCA

Primary Party:

- Utah Association of Realtors

NOISE (NOI) ISSUES AND STRATEGIES				
NOI-2C	Require noise awareness language on Subdivision Plats CUP Partner Communities should require language on recorded subdivision plats and titles of properties within the recommended Noise Awareness Area buffer that indicates said properties may be subject to overflight, noise, vibration, and/or other impacts from normal military operations.			Primary Party: CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: - Hill AFB Aircraft Noise MCA - Hill AFB Airfield Safety MCA	



NOISE (NOI) ISSUES AND STRATEGIES

NOI-2D	Update the Hill AFB Noise Model using the Advanced Acoustic Model (AAM) The Air Force should update the noise model used to assess noise exposure from military aircraft operations at Hill AFB for the F-35 aircraft using the AAM once approved by the DoD Noise Working Group. The AAM is a time simulation model that produces more physical realism and detail than the traditional integrated NOISEMAP model. The AAM includes the effects of nonlinear sound propagation, terrain, atmospheric gradients and 3-D aircraft noise sources and accounts for propagation of aircraft noise for the characteristics of high-performance military aircraft, including the effects of high thrust, non-round nozzles, dual engine configurations, and thrust vectoring. The AAM for Hill AFB should be run with an actual number of operations using afterburners.			Primary Party: Department of the Air Force
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
NOI-2E	Develop Voluntary Sound Attenuation Retrofit Program Develop a voluntary sound attenuation retrofit program for residential uses that provides guidance on sound attenuation standards for retrofitting existing residential structures. Consider establishing a multi-jurisdictional grant program between affected cities to fund the retrofit program and/or seek out partnership funding from the State of Utah.			Primary Party: - CUP Partner Communities Supporting Party: - Utah Defense Alliance
	Strategy Type: 	Timeframe: 	Geographic Area: Hill AFB Aircraft Noise MCA	

NOISE (NOI) ISSUES AND STRATEGIES				
NOI-2F	Consider a community liaison for noise related to Hill AFB aircraft Local residents should work with their respective city elected officials to establish a community liaison for noise related to Hill AFB aircraft. The community liaison should be involved in the planning process for any land use development within the high noise zones in an effort to communicate experiences related to Hill AFB aircraft. These experiences should be considered by local planning staff and elected officials before decisions are made for developments within the high noise zones.			Primary Party: - CUP Partner - Communities residents
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Aircraft Noise MCA	
NOI-2F	Coordinate a neighborhood site visit for Hill AFB leadership and elected officials Local residents, through the community liaison, should coordinate a site visit in the high noise area of a neighborhood to bring awareness to the impacts of noise associated with Hill AFB aircraft. The community liaison should invite elected officials from their city and leadership and support staff from Hill AFB. The community liaison should coordinate this visit during a date a time when there is a scheduled F-35 flight operation. The community liaison should coordinate with the Hill AFB Public Affairs Office to get a schedule of the flight schedule or should visit the Hill AFB Facebook page to receive flight information.			Primary Party: - CUP Partner - Communities residents
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Aircraft Noise MCA	



NOISE (NOI) ISSUES AND STRATEGIES

NOI-2F	Local residents should document the impacts of vibration from Hill AFB aircraft to personal property. Local residents should consider reaching out to institutions that may have the necessary equipment to conduct vibration assessments to assist with this documentation process. Present these findings to Hill AFB for consideration and to begin dialogue for mitigating vibration impacts.		
	Strategy Type: 	Timeframe: Short 	Geographic Area:  Hill AFB Aircraft Noise MCA

PUBLIC SERVICES (PS) ISSUES AND STRATEGIES				
Issue				
PS-1 No formal agreement between Layton City and Hill AFB for maintenance of shared storm drainage Layton City and Hill AFB share stormwater drainage conveyance located in Layton City. The City and the Base coordinate stormwater problems that arise with this pipe; however, there is no formal agreement between the Base and City outlining coordination and responsibilities.				
Strategies				
PS-1A	Create a Memorandum of Agreement for storm drain maintenance Hill AFB and Layton City should enter into a Memorandum of Agreement that outlines roles and responsibilities associated with stormwater drain maintenance.			Primary Party: - Hill AFB - Layton City
	Strategy Type: 	Timeframe: Short 	Geographic Area: Layton City	
PS-1B	Update Stormwater Management Plans Hill AFB and Layton City should update their Stormwater Management Plans to include information on the shared drainage utility. Each plan should include a map and description of the location of the shared drainage conveyance line; as well as methods of coordination between Hill AFB and the city to ensure continued maintenance. Updates to the Plans should be reviewed by Hill AFB and the city respectively.			Primary Party: - Hill AFB - Layton City
	Strategy Type: 	Timeframe: Mid 	Geographic Area: N/A	



PUBLIC SERVICES (PS) ISSUES AND STRATEGIES

Issue

PS-2 Lack of internal transit on Hill AFB impacts the Team Hill use of public transit programs in the community
 The Utah Transit Authority's vanpool program provides transportation to Hill AFB; however, there are no last-mile options to move Team Hill personnel around the installation once they are on base. This may influence how Team Hill personnel commute to the installation.

Strategies

PS-2A	Promote the Utah Transit Authority vanpool program The Utah Transit Authority and Hill AFB, through the UTA Coordinator and Community Planner, should coordinate to establish more vanpools and should actively promote the use of the program to Team Hill personnel.			Primary Party: - Hill AFB - Utah Transit Authority
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	
PS-2B	Consider transit opportunities on to Hill AFB The Utah Transit Authority and Hill AFB should work together to evaluate dedicated, "pre-cleared" transit opportunities, such as an additional UTA vanpool fleet and other best practices, that can provide transit services on to Hill AFB.			Primary Party: - Hill AFB - Utah Transit Authority
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	

PUBLIC SERVICES (PS) ISSUES AND STRATEGIES			
PS-2C	Promote and incentivize carpool programs and other transit options Hill AFB should promote and incentivize carpool programs that utilize personal vehicles to access the Base and other transit options. Other transit options could include precleared bus systems from the UTA Frontrunner stations in Layton and Clearfield. Hill AFB should identify funding sources and timeframe for implementation.		Primary Party: ■ Hill AFB Supporting Party: ■ Utah Transit Authority
	Strategy Type: 	Timeframe: 	
		Geographic Area: Hill AFB Project Study Area	



PUBLIC SERVICES (PS) ISSUES AND STRATEGIES

Issue

PS-3 **Need for formalized coordination between surrounding communities and Hill AFB for emergency services and law enforcement**

Though Hill AFB provides emergency medical services (EMS) to Ogden City and the Clinton City Police Department provides services on Hill AFB as needed, these activities are not formalized in a Memorandum of Understanding (MOU) to ensure continued coordination and clear roles and responsibilities in the event of an emergency related to Hill AFB.

Strategies

PS-3A	Update the existing Memorandum of Understanding for fire services to include emergency medical services Hill AFB Fire and Emergency services should coordinate updates to existing MOU between the Fire Departments for Clinton, Layton, South Weber, the North Davis Fire District, South Davis Metro Fire Service Area, and Hill AFB Fire Department for fire services to include emergency medical services, as appropriate. The MOU should also be updated to include Ogden City.			Primary Party: ■ Hill AFB Supporting Party: ■ Ogden, Clinton, Layton, and South Weber cities ■ North Davis Fire District ■ South Davis Metro Fire Service Area
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	

PUBLIC SERVICES (PS) ISSUES AND STRATEGIES			
PS-3B	Develop a Memorandum of Agreement for shared emergency medical services Hill AFB, Ogden City and other CUP Partner Communities should develop an MOA to formalize emergency medical services that are shared between the Base and cities.		Primary Party: - Hill AFB - Ogden City and other CUP Partner Communities
	Strategy Type: 	Timeframe: Short	
PS-3C	Develop a Memorandum of Agreement for shared law enforcement services Hill AFB, Clinton City and other CUP Partner Communities should develop an MOA to formalize law enforcement services that are shared between the Base and cities. The MOA should address coordinating sharing of manpower resources, access to resources, and cross training opportunities with Hill AFB to expand response capability, optimize resources, and facilitate training certifications.		Primary Party: - Hill AFB - Clinton City and other CUP Partner Communities
	Strategy Type: 	Timeframe: Short	



ROADWAY CAPACITY (RC) ISSUES AND STRATEGIES

Issue

RC-1 Traffic congestion related to Hill AFB during peak travel times

Communities around Hill AFB experience traffic congestion generated by commuters accessing Hill AFB. Many Hill AFB employees live in surrounding communities and/or travel through other communities to access Hill AFB, creating congestion throughout the Project Study Area.

Strategies

For strategies that address this issue see Strategies RC-2A, RC-3A, RC-3C, and RC-6A.

Issue

RC-2 There is a need for higher prioritization of roadway improvement programming around Hill AFB

There are many roadway projects planned within the Project Study Area through the Utah Department of Transportation; however, there is a need for a higher prioritization of projects to be funded around Hill AFB to improve roadway conditions.

Strategies

RC-2A

Continue to coordinate on future roadway improvements

Team Hill, UDOT, the Utah Transportation Commission, local communities, and the Wasatch Front Regional Council should coordinate on future roadway projects within the project Study Area and ensure that Hill AFB continues to be a part of future planning efforts.

Strategy Type:



Timeframe:



Geographic Area:

Hill AFB Project Study Area

Primary Party:

- Utah Department of Transportation
- Utah Transportation Commission
- Wasatch Front Regional Council
- CUP Partner Communities

Supporting Party:

- Hill AFB

ROADWAY CAPACITY (RC) ISSUES AND STRATEGIES			
Issue			
RC-3 There are congestion concerns at the Hill AFB Roy Gate There is currently congestion that occurs outside of Roy Gate, on the north side of the installation. Congestion is likely to increase with the influx of thousands of contractors and military personnel in the coming years. The opening of the Roy Innovation Center near the Roy Gate at Hill AFB is slated to bring thousands of new employees to the area.			
Strategies			
RC-3A	Develop a Hill AFB growth management plan The Wasatch Front Regional Council should consider developing a growth management plan for Hill AFB to evaluate population growth impacts and potential opportunities associated with anticipated growth at Hill AFB, relative to the transportation system. This could be expanded to evaluate population growth impacts on other regional factors including economic and workforce development, education, and housing.		Primary Party: - Wasatch Front Regional Council Supporting Party: - CUP Partner Communities - Hill AFB
	Strategy Type: 	Timeframe: Short 	
RC-3B	Continue efforts to secure funding for gate improvements Hill AFB should continue efforts to secure funding for Roy Gate and South Gate improvements to improve access onto the Base.		Primary Party: - Hill AFB Supporting Party: - Utah Department of Transportation - Roy City - Layton City
	Strategy Type: 	Timeframe: Long 	



ROADWAY CAPACITY (RC) ISSUES AND STRATEGIES

Issue

RC-4 **There is congestion at the Hill AFB South Gate**

Congestion occurs intermittently at the South Gate through Layton City, and leading to the South Gate from the west along SR-193 through Clearfield City, then Layton City, and form the east along SR-93 through Layton City.

Strategies

For strategies that address this issue see Strategies RC-3B

Issue

RC-5 **Traffic congestion resulting from temporary gate closures at Hill AFB**

Congestion occurs intermittently at the South Gate through Layton City, and leading to the South Gate from the west along SR-193 through Clearfield City, then Layton City, and form the east along SR-93 through Layton City.

Strategies

RC-5A

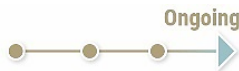
Continue to provide notice of temporary gate closures

Hill AFB should continue to coordinate with surrounding jurisdictions' public information offices when there are scheduled and unscheduled temporary gate closures. Notices should be distributed through the Hill AFB websites and social media accounts, as well as websites and social media accounts of surrounding communities.

Strategy Type:



Timeframe:



Geographic Area:

N/A

Primary Party:

- Hill AFB

Supporting Party:

- CUP Partner Communities

ROADWAY CAPACITY (RC) ISSUES AND STRATEGIES				
Issue				
RC-6		Limited access to the Hill AFB East Gate impacts industrial park development potential There is an opportunity to continue discussions regarding the desire for the Hill AFB East Gate to be open for access to the East Gate Business Center in Layton.		
Strategies				
RC-6A	Funding opportunities for the Hill AFB East Gate Continue to pursue funding for the East Gate military construction (MILCON) project.			Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	Geographic Area: N/A	
Issue				
RC-7		Concern for increased congestion from construction traffic associated with growth and development near Little Mountain Testing Facility There is an opportunity to continue discussions regarding the desire for the Hill AFB East Gate to be open for access to the East Gate Business Park in Layton.		
Strategies				
RC-7A	Increase awareness of the importance of roadway conditions for prioritizing improvement projects at the state level The Utah Department of Transportation should prioritize funding for roadway improvements on roadways surrounding Hill AFB, including 900 S.			Primary Party: ■ Utah Department of Transportation Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	



RESILIENCY (RE) ISSUES AND STRATEGIES

Issue

RE-1 **Need for infrastructure resiliency at Hill AFB facilities**

While there are redundancies in place for utilities, there is a need for infrastructure resiliency for water availability, energy availability, wastewater treatment, and utilities at Hill AFB, the UTTR, and Little Mountain Test Facility as utility demand increases.

Strategies

RE-1A

Continue to pursue projects through the Air Force Civil Engineer Center's Energy Savings Performance Contract Program

Hill AFB has demonstrated success through the Air Force Civil Engineer Center's Energy Savings Performance Contract (ESPC) program, upgrading infrastructure and energy systems at the base. Hill AFB should continue to seek project funding opportunities through the ESPC program to pursue resilience, conservation, and deployment of cost-effective green energy.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB

Primary Party:

■ Hill AFB

RESILIENCY (RE) ISSUES AND STRATEGIES			
RE-1B	Develop a Hill AFB Installation Resiliency Plan Develop a Military Installation Resiliency Plan to develop and implement a series of recommendations that make Hill AFB more resilient to natural and man-made disasters. The Military Installation Resiliency Plan should identify requirements of critical assets, identify mission-critical activities for Hill AFB and surrounding communities, define interdependent infrastructure relationships and essential needs, develop opportunity costs for the implementation of resilient technologies, identify threats from a "no-build" scenario, and develop metrics with which success can be measured for implementation.		Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe:  Short	
RE-2	Potential for wildfires to be an impediment to future mission growth at Hill AFB facilities There are wildfire risks related to human activities and natural causes in Utah that could impact future mission growth for Team Hill.		
Strategies			
For a strategy that addresses this issue see Strategy RE-1B.			



SAFETY (SA) ISSUES AND STRATEGIES

Issue

SA-1

Incompatible land uses within Bird/Wildlife Strike Hazard area surrounding Hill AFB

Hill AFB is located along the Pacific Flyway and nearby the Great Salt Lake, which is a critical habitat for shorebirds in the Pacific Flyway. Bird attractants in the community, such as drainage ponds and landfills, are located near the Hill AFB runway, creating the potential for bird aircraft strikes.

Strategies

SA-1A

Educational materials for BASH attractants

Hill AFB should provide educational information to surrounding communities and landowners in the region regarding best practices to reduce attractants for birds and wildlife that can impede safe aircraft operations.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB BASH MCA

Primary Party:

■ Hill AFB

Supporting Party:

■ CUP Partner
Communities

SA-1B

Incorporate BASH in Zoning

CUP Partner Communities should incorporate BASH land use best practices in zoning regulations.

Strategy Type:



Timeframe:

Short



Geographic Area:

Hill AFB BASH MCA

Primary Party:

■ CUP Partner
Communities

SAFETY (SA) ISSUES AND STRATEGIES			
SA-1C	Continue to implement strategies for BASH from the Hill AFB Integrated Natural Resources Management Plan (INRMP) Hill AFB should continue to implement strategies in its INRMP to mitigate BASH potential.		Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	
SA-1D	Make the Hill AFB Bird/Wildlife Aircraft Strike Hazard (BASH) Plan publicly available Hill AFB should publish the Hill AFB BASH Plan on its website to assist regional partners with informed decision-making related to BASH compatibility.		Primary Party: ■ Hill AFB
	Strategy Type: 	Timeframe: 	



SAFETY (SA) ISSUES AND STRATEGIES

Issue

SA-2 Existing and potential incompatible development in Hill AFB Safety Zones
There are existing and potential encroachment concerns related to land uses surrounding Hill AFB. There are incompatible land uses, such as residential land uses, that are currently located within the Hill AFB safety zones, and future development could increase the number of incompatible land uses within the safety zones.

Strategies

SA-2A	Utilize the Transportation Land Use Connection from the Wasatch Front CUP Partner Communities might consider utilizing the Transportation and Land Use Connection (TLC) program and grant from the Wasatch Front Regional Council to assist with transportation options and potential land use changes near Hill AFB that align with Hill AFB safety zones recommendations.			Primary Party: CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	
SA-2B	Consider employing Overlay Districts to control incompatible development in Hill AFB Airfield Safety Zones Layton, Riverdale, and South Weber cities should consider amending their zoning ordinances for development in the safety zones to incorporate DoD land use recommendations from the 2018 Hill AFB AICUZ study.			Primary Party: Layton, Riverdale, and South Weber cities
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Airfield Safety MCA	

VERTICAL OBSTRUCTIONS (VO) ISSUES AND STRATEGIES

Issue

VO-1	Lack of information regarding vertical obstruction requirements for airspace surrounding Hill AFB There may be a lack of awareness in some CUP Partner Communities regarding height requirements per imaginary surfaces related to Hill AFB. Natural and man-made structures that exceed imaginary surfaces heights can result in vertical obstructions for safe pilot navigation.
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Strategies

VO-1A	Communicate AICUZ height recommendations Hill AFB, through the Community Planner, should educate CUP Partner Communities, located in the Vertical Obstruction MCA, on the height provisions of CFR Part 77 and recommendations for height limitations in the imaginary surfaces, which are identified in the Hill AFB AICUZ. CUP Partner Communities may use this information to make informed decisions regarding the approval of heights of structures.			Primary Party: - Hill AFB Supporting Party: - CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA	
VO-1B	Update zoning ordinances to include height regulations specific to Hill AFB CUP Partner Communities should update zoning ordinances to include height regulations specific to Hill AFB imaginary surfaces and FAA Part 77. These updates should be coordinated with Hill AFB as needed to ensure that accurate information is included. Hill AFB should provide the necessary information and tools related to height to CUP Partner Communities.			Primary Party: - CUP Partner Communities Supporting Party: - Hill AFB - FAA
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA	



VERTICAL OBSTRUCTIONS (VO) ISSUES AND STRATEGIES

VO-1C	Update zoning regulations to include additional information regarding development height limitations related to Hill AFB Sunset City and South Ogden City should update their zoning regulations to include additional information regarding buildable heights related to Hill AFB. These updates should be coordinated with Hill AFB.			Primary Party: - Sunset City - South Ogden City Supporting Party: - Hill AFB
	Strategy Type:	Timeframe: Short	Geographic Area: Sunset City, South Ogden City	
Issue				
VO-2	Potential for incompatible development within Hill AFB imaginary surfaces Most communities surrounding Hill AFB do not have regulations related to development height compatibility with Hill AFB, resulting in the development of permanent structures that can pose potential safety concerns for flight operations associated with Team Hill.			
Strategies				
VO-2A	Coordinate with the Utah Public Lands Resource Development Coordinating Committee The Utah Public Lands Resource Development Coordinating Committee should consider including Team Hill in meetings about development with the potential to create vertical obstruction.			Primary Party: - Utah Public Land Resource Development Coordinating Committee - Hill AFB
	Strategy Type:	Timeframe: Ongoing	Geographic Area: N/A	

VERTICAL OBSTRUCTIONS (VO) ISSUES AND STRATEGIES

VO-2B	Ensure coordination with CFR Part 77 CUP Partner Communities should require development applications to submit proof of coordination with the FAA and DoD Military Aviation and Installation Assurance Siting Clearinghouse for projects subject to CFR Part 77. This can be done by requiring the applicant submit the determination notice from the FAA with their development application or by checking a box on a development application testifying that the applicant has coordinated with the FAA. In a best-case scenario and in conjunction with Strategy VO-2C, the reviewing planner would have the automated tool to determine whether a development is compliant with the imaginary surfaces by simply entering the physical address or Parcel ID. <table border="1"> <tr> <td> Strategy Type:  </td><td> Timeframe: Short  </td><td> Geographic Area: Hill AFB Vertical Obstruction MCA </td></tr> </table>	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA	Primary Party: ■ CUP Partner Communities
Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA			
VO-2C	Seek Grant to Develop a 3-Dimensional Imaginary Surfaces Model for Hill AFB The CUP Implementation Sponsor should seek funding to develop a GIS-based 3-Dimensional model to automate and thereby assist local governments with determining maximum buildable heights within Hill AFB Imaginary Surfaces. The model should be developed in GIS so that it can be integrated in jurisdiction GIS systems, produced in hardcopy maps, and created in an online tool that is publicly accessible and user friendly. The tool may be housed in a central repository or distributed so that each jurisdiction can control how they use it. <table border="1"> <tr> <td> Strategy Type:  </td><td> Timeframe: Short  </td><td> Geographic Area: Hill AFB Vertical Obstruction MCA </td></tr> </table>	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA	Primary Party: ■ CUP Implementation Sponsor
Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Vertical Obstruction MCA			



VIBRATION (V) ISSUES AND STRATEGIES

Issue

V-1

Concerns regarding vibration impacts from Hill AFB aircraft operations

Aircraft operations at Hill AFB often create vibrations that are felt in areas south of the runway in Layton City and in east Riverdale.

Strategies

V-1A

Include vibration impacts in the Hill AFB Noise FAQ Brochure

Hill AFB has a noise brochure that includes noise information and points of contact for noise complaints, which is available on the Hill AFB website. This brochure should be updated to include information on vibrations associated with aircraft noise. Hill AFB should work to distribute this updated brochure to the CUP Partner Communities for online posting.

Strategy Type:



Timeframe:

Short



Geographic Area:

N/A

Primary Party:

- Hill AFB

Supporting Party:

- CUP Partner Communities

V-1B

Adopt procedures for vibration complaints

CUP Partner Communities should adopt coordinated and formal procedures for vibration complaints from residents to ensure that complaints are officially documented, conveyed to Hill AFB, and that there is appropriate feedback to close the loop with the complaints.

Strategy Type:



Timeframe:

Short



Geographic Area:

N/A

Primary Party:

- CUP Partner Communities

WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

Issue

WQQ-1 Community concern for impacts of Trichloroethylene contamination plume from Hill AFB

A trichloroethylene (TCE) plume, generated from Hill AFB, is dispersing through the surrounding communities through shallow groundwater. While remediation efforts are ongoing, there is community concerns for implications of this plume.

Strategies

WQQ-1A	Increase information sharing between Hill AFB and the community regarding ongoing remediation efforts Work with impacted communities to develop educational resources that can be distributed by each jurisdiction to the community. Include a point of contact in the educational materials for citizens to contact if they have questions or concerns related to ongoing remediation. Strategy Type:  Timeframe: Short  Geographic Area: Hill AFB Project Study Area	Primary Party: - Hill AFB Supporting Party: - CUP Partner Communities
WQQ-1B	Update General Plans with information on Hill AFB water contamination When communities conduct General Plan updates, they should consider coordinating with the Hill AFB Community Planner to include the most accurate information regarding the location of the TCE plume within their communities and the ongoing remediation efforts. This could be done by including the location of the contamination plume on a map within the General Plan. This should be timed with other General Plan updates for military compatibility. Strategy Type:  Timeframe: Ongoing  Geographic Area: Hill AFB Project Study Area	Primary Party: - CUP Partner Communities Supporting Party: - Hill AFB



WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

WQQ-1C	Update the Groundwater Management Plan for the Weber Delta Sub-Area of the East Shore Area (Water Right Areas 31 and 35) The Utah Division of Water Rights should update the Groundwater Management Plan for the Weber Delta Sub-Area to reflect Hill AFB remediation efforts. This should be updated in coordination with the Hill AFB Restoration Advisory Board.			Primary Party: ■ Utah Division of Water Rights Supporting Party: ■ Hill AFB
	Strategy Type: 	Timeframe: Short 	Geographic Area: N/A	
Issue				
WQQ-2	Concern for potential PFAS contamination from Hill AFB to impact community water quality Recent state analysis indicates that there is PFAS emanating from Hill AFB. Though the PFAS contamination is impacting shallow groundwater and is not anticipated to disperse into the aquifer that supplies municipal culinary water, there are some health concerns from residents who use private shallow wells on their property.			
Strategies				
WQQ-2A	Develop a process for groundwater evaluation The Hill AFB Restoration Board, in partnership with CUP partner communities, should develop a shared process through which Hill AFB, counties and cities can jointly annotate constraints related to groundwater at the parcel level.			Primary Party: ■ Hill AFB Supporting Party: ■ CUP Partner Communities
	Strategy Type: 	Timeframe: Short 	Geographic Area: Hill AFB Project Study Area	

WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

Issue

WQQ-3 **Concern for Hill AFB stormwater drainage impacts on surrounding community**

Stormwater runoff from Hill AFB flows into some parts of neighboring communities. There is concern for addressing the volume and treatment for the runoff generated by Hill AFB.

Strategies

WQQ-3A **Continue to participate in the Davis County Storm Water Coalition**

Hill AFB should continue to participate in the Davis County Storm Water Coalition to collaborate on stormwater drainage, learn about regional stormwater issues and improvements, communicate stormwater initiatives at Hill AFB to enhance regional awareness, and ensure Hill AFB continues to be a regional partner for achieving mutual stormwater management goals.

Strategy Type:



Timeframe:



Geographic Area:

N/A

Primary Party:

- Hill AFB
- Davis County Storm Water Coalition

WQQ-3B **Update the Hill AFB Stormwater Management Plan**

Hill AFB, through the Environmental Branch, should update the Stormwater Management Plan to include policies to communicate with the jurisdictions where drainage outlets are located. Hill AFB should provide transparency regarding where these are located and runoff volumes.

Strategy Type:



Timeframe:



Geographic Area:

Hill AFB

Primary Party:

- Hill AFB



WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

WQQ-3C	Public Awareness of Hill AFB Stormwater Management Hill AFB employs an education and outreach program for Hill AFB residents and employees to increase awareness of stormwater pollution and provide support for the stormwater program through educational programs and distribution of stormwater educational materials. Consider building on this initiative to educate the public in the surrounding community on Hill AFB stormwater management and Best Management Practices to foster awareness of the actions Hill AFB is taking to address community concerns.	Primary Party: ■ Hill AFB Supporting Party: ■ Davis County Stormwater Coalition
	Strategy Type:  Timeframe:  Geographic Area: Hill AFB	
WQQ-3D	Implement Green Stormwater Management Infrastructure Hill AFB should evaluate opportunities and implement green stormwater infrastructure Best Management Practices and low-impact development practices such as green roofs, bio-retention systems, and permeable pavement systems to reduce water runoff and improve water quality. Such systems have been implemented successfully at other Air Force bases including Robins Air Force Base and Tyndall AFB, and have been shown to improve stormwater quality, reduce capital and maintenance costs, and enhance environmental benefits.	Primary Party: ■ Hill AFB
	Strategy Type:  Timeframe:  Geographic Area: Hill AFB	

WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

Issue

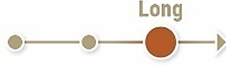
WQQ-4 Concern for potential groundwater depletion to impact future culinary water availability for Hill AFB
Hill AFB depends on groundwater for operations and culinary water. Since the 1950s, groundwater levels have declined in the region, creating a long-term concern for water availability at Hill AFB.

Strategies

WQQ-4A	Conduct a Water Usage Audit and Demand Forecast Study Hill AFB, through the Environmental Branch, should conduct a comprehensive Water Usage Audit and Demand Forecast Study to assess opportunities for water conservation across Hill AFB facilities and to quantify anticipated future demand based on conservation measures and efficiencies. The study should include water conservation techniques, and programs and policies that support the minimization of water consumption and an assessment of future demand programmed by year.	Primary Party: ■ Hill AFB
WQQ-4B	Consider Amending Purchase Agreement with Weber Basin Water Conservancy District for Additional Culinary Water After completion of Strategy WQQ-4A, Hill AFB should contemplate amending the purchase agreement with the Weber Basin Water Conservancy District for consideration of priority programming for future additional culinary water at Hill AFB.	



WATER QUANTITY/QUALITY (WQQ) ISSUES AND STRATEGIES

WQQ-4C	Consider Long-Term Acquisition of Water Rights After completion of Strategy WQQ-4A, Hill AFB should contemplate a long-term strategy to acquire additional water rights to meet any demonstrated future need, keeping in mind that the State of Utah discourages efforts to speculate in or monopolize the resource and it will be placed in beneficial use.			Primary Party: ■ Hill AFB Supporting Party: ■ Utah Division of Water Rights
	Strategy Type:  	Timeframe: 	Geographic Area: Hill AFB	






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