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This instruction implements Air Force Policy Directive (AFPD) 90-20, *Mission Sustainment*. It provides guidelines for managing and reporting hazards that pose both current and future risks to Air Force mission operations. It applies to all Regular Air Force and Air Force Reserve installations located in the United States, its territories, and possessions, including government-owned, contractor-operated facilities. It also applies to the National Guard Bureau, which will develop supplemental guidance for Air National Guard units. This instruction also applies to Air Force installations outside the United States, its territories, and possessions, but mission sustainment practices at these locations will be consistent with applicable international agreements, including status of forces agreements and other government-to-government agreements, Combatant Command policy, and Lead Environmental Component directives. It does not apply to contingency locations. It may be supplemented at any level, but all supplements must be routed to the Office of Primary Responsibility (OPR) for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the OPR using Air Force Form 847, *Recommendation for Change of Publication*; route Air Force Form 847s from the field through the appropriate functional chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See Air Force Instruction (AFI) 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. Ensure that all records are maintained in accordance with Air Force Manual (AFMAN) 33-363,

Management of Records, and disposed of in accordance with the Air Force Records Information Management System Records Disposition Schedule.

SUMMARY OF CHANGES

This document includes both substantive and administrative revisions to the original AFI 90-2001, *Encroachment Management Program*, dated 03 September 2014. It establishes a risk reporting framework for cross-functional teams at the installation, Major Command (MAJCOM), and headquarters level. Recommended team composition is similar to the original AFI, but this instruction requires direct involvement from operational staff to ensure that mission-related hazards are accounted for and proactively addressed. It also introduces a shareable hazard and control reporting process (Mission Sustainment Risk Report) that consolidates existing encroachment information (e.g., Installation Complex Encroachment Management Action Plans (ICEMAP)) with new risk analyses. Some key terms are modified to emphasize mission relevance. For instance, encroachment management is now mission sustainment, encroachment challenges are mission sustainment hazards, and management actions are controls. This updated policy also aligns mission sustainment with the Air Force risk management model described in AFI 90-802, *Risk Management* and Air Force Pamphlet 90-803, *Risk Management Guidelines and Tools*.

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Chapter 1

INTRODUCTION

1.1. Overview. This instruction provides the procedural guidelines and reporting structure needed to execute the Mission Sustainment Program. The program preserves and protects military readiness by mitigating or preventing current and potential risks caused by hazards within the Installation Complex and Mission Footprint.

1.1.1. The purpose of the Mission Sustainment Program is to preserve mission capability by identifying and assessing hazards that impact Air Force missions.

1.1.2. This instruction establishes mission sustainment teams at the installation, MAJCOM, and headquarters level; referred to respectively as the Installation Mission Sustainment Team, MAJCOM Mission Sustainment Team, and Air Force Mission Sustainment Working Group. These teams work together to identify hazards, assess the probability and severity of mission impacts, and implement controls to reduce, mitigate, eliminate, or prevent risk. Comprehensive mission sustainment requires a diverse, cross-functional team that shares a variety of skills to address hazards across the Air Force enterprise. Each location faces different hazards necessitating unique team compositions; however, all have the common goal of protecting the mission today and in the future.

1.2. Foundational Plans, Programs, and Processes. The Mission Sustainment Program objectives should be accomplished using existing plans, programs, and processes. These may include but are not limited to: the Air Installations Compatible Use Zones (AICUZ) Program; the Readiness and Environmental Protection Integration (REPI) Program; Joint Land Use Studies; ICEMAPs; the Air Force Community Partnership Program; and the Federal Aviation Administration's (FAA) Obstruction Evaluation / Airport Airspace Analysis Process. The Air Force Reserve and Air National Guard also use the FAA's Part 150 Program and Studies for Airport Noise Compatibility Planning when evaluating potential mission sustainment impacts from ground-based development or obstructions. Installation personnel in foreign locations should engage Air Force Civil Engineer Center real estate offices and MAJCOM legal offices to determine appropriate procedures under international agreements before undertaking mission sustainment activities that may involve stakeholders in host nations.

1.3. Waivers. The Office of the Deputy Assistant Secretary of the Air Force for Installations is the waiver approval authority for compliance items above the wing-level. At the wing-level, the Installation Mission Sustainment Team Chair will monitor implementation of this instruction and review authorized waivers anytime the circumstances that prompted the waiver or the impacts of the excepted activity change substantially. (T-3)

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. The Assistant Secretary of the Air Force for Installations, Energy and Environment (SAF/IE):

2.1.1. Maintains primary oversight of the program and gives the Deputy Assistant Secretary (Installations) authority to designate a Chair of the Air Force Mission Sustainment Working Group to assist with developing mission sustainment policy.

2.1.2. Advocates for legislative initiatives to prevent or reduce risk to mission sustainment.

2.2. The Deputy Assistant Secretary of the Air Force for Installations (SAF/IEI):

2.2.1. Designates an individual within this office to Chair the headquarters level Air Force Mission Sustainment Working Group.

2.2.2. Monitors mission sustainment activities across the Air Force while facilitating meetings of the Air Force Mission Sustainment Working Group

2.2.3. Monitors and supports coordination of energy siting projects involving the FAA's Obstruction Evaluation Airport Airspace Analysis and Department of Defense (DoD) Military Aviation and Installation Assurance Siting Clearinghouse.

2.2.4. Maintains situational awareness of installations' Mission Sustainment Risk Reports across the enterprise through routine annual updates and monitors identified hazards requiring headquarters-level attention.

2.2.5. Reviews and comments on DoD and Air Force policy, regulations, guidance, or initiatives related to mission sustainment.

2.2.6. Discusses mission sustainment with visiting community leaders and leverages civic engagement to promote awareness of this program at the local, state, and regional level.

2.2.7. Reviews proposed mission sustainment research needs, endorses recommendations, and advocates for funding through appropriate research programs.

2.2.8. Advocates for mission sustainment education and training requirements throughout the Air Force.

2.2.9. Evaluates, reports, and disseminates information about SAF/IEI engagement on state and federal legislation or regulations related to mission sustainment.

2.2.10. Coordinates integration of mission sustainment requirements into national and international agreements through the United States Department of State, for locations and/or countries that host or authorize DoD operations and airport sponsorship.

2.2.11. Communicates with Headquarters Air Force, MAJCOMs, Air Force Reserve, National Guard Bureau, Field Operating Agencies, Direct Reporting Units, and installations on issues and uses the mission sustainment reporting process to obtain information on hazards, risks to missions, and identified or implemented controls.

2.2.12. Coordinates mission sustainment-related policy developments and changes with other DoD Services.

2.3. The Deputy Assistant Secretary of the Air Force for Environment, Safety, and Occupational Health (SAF/IEE):

2.3.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.3.2. Coordinates with SAF/IEI on current and emerging issues that may influence mission sustainment (e.g., climate adaptation, installation or facility energy security initiatives) to ensure planning and risk mitigation activities are complementary.

2.4. The Deputy Assistant Secretary of the Air Force for Operational Energy (SAF/IEN):

2.4.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.4.2. Coordinates with SAF/IEI when evaluating projects and siting proposals that could influence mission sustainment.

2.5. The Office of the Deputy General Counsel of the Air Force for Installations, Energy and Environment (SAF/GCN):

2.5.1. Provides legal counsel and oversight for the mission sustainment policies and procedures outlined in this instruction.

2.5.2. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.6. The Director, Public Affairs, Office of the Secretary of the Air Force (SAF/PA):

2.6.1. Supports the Air Force Mission Sustainment Working Group as needed for strategic communication associated with hazard management or external stakeholder engagement.

2.6.2. Plans, conducts, and evaluates use of timely, truthful, accurate, and credible communication about Air Force mission sustainment activities to internal and external, military and civilian, domestic and international, audiences.

2.6.3. Develops and implements long-range communication strategies and integrated communication plans to support the Mission Sustainment Program.

2.6.4. Implements procedures that synchronize, integrate, and assess communication efforts within the Mission Sustainment Program to ensure that information from official sources is accurate and consistent with Air Force policy.

2.6.5. Delivers candid, timely, and trusted counsel and guidance to Air Force leaders on the communication implications of key decisions that influence mission sustainment.

2.6.6. Develops field guidance regarding the role of public affairs in the Mission Sustainment Program. This may include advising mission sustainment teams on issues of public concern and risk communication.

2.6.7. Ensures mission sustainment considerations are included in public affairs career field education and training plans.

2.7. The Director, Legislative Liaison, Office of the Secretary of the Air Force (SAF/LL):

2.7.1. Maintains primary authority and responsibility for relations with Congress, the Executive Office of the President and Vice President, Office of the Secretary of Defense, and other governmental agencies for matters related to hazard management legislation in accordance with AFI 90-401, *Air Force Relations with Congress*.

2.7.2. Participates in Air Force Mission Sustainment Working Group meetings as needed to support and advise Air Force personnel who are engaging with state governments, state legislatures, or congress on mission sustainment issues.

2.8. The Deputy Chief of Staff for Intelligence, Surveillance, and Reconnaissance, and Cyber Effects Operations (AF/A2/6):

2.8.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.8.2. Advocates for research and development projects concerning electromagnetic spectrum activities and research to develop alternative measures for hazard avoidance or mitigation application.

2.9. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ):

2.9.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.9.2. Ensures the SAF/AQ Program Offices work with System Leads and Using Commands to identify, document, and fund mission sustainment capability needs for new and modified systems. This should include the Environmental Impact Analysis Process and science and technology needs.

2.9.3. Supports the AICUZ program by identifying funding needs for engine noise modeling early in the acquisition process.

2.10. The Deputy Assistant Secretary of the Air Force (Budget) (SAF/FMB):

2.10.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.10.2. Provides budgeting support to the Mission Sustainment Program and Working Group, and in accordance with Air Force Corporate Structure requirements.

2.11. The Deputy Chief of Staff, Manpower, Personnel and Services (AF/A1):

2.11.1. Supports and implements manpower requirements associated with the Mission Sustainment Program.

2.11.2. Identifies and communicates manpower, personnel, and services education and training requirements related to mission sustainment.

2.11.3. Identifies and fulfills MAJCOM staff and installation manpower, personnel, and services education and training requirements related to the Mission Sustainment Program.

2.12. The Deputy Chief of Staff, Operations (AF/A3):

2.12.1. Designates an individual, at the Division Chief level or above, to serve as Co-Chair of the Air Force Mission Sustainment Working Group.

2.13. The Director of Training and Readiness (AF/A3T):

2.13.1. Analyzes potential mission sustainment hazards and risk to Air Force operations. Integrates hazard identification and control implementation into national and regional airspace and range meetings.

2.13.2. Advocates for, and supports resource preparation and implementation of plans, studies, and programs that share operational and mission sustainment components in AFI 13-201, *Airspace Management* and AFMAN 13-212V1, *Range Planning and Operations*.

2.13.3. Identifies needs for information technology and other resources and tools necessary to address operational risk from identified hazards.

2.14. Air Force Director of Weather (AF/A3W):

2.14.1. Supports SAF/IEI and mission sustainment policy by coordinating and providing climate and weather services in accordance with 15 series AFI's and AFMAN's and identifying capability gaps to help build requirements.

2.14.2. Coordinates with the National Weather Service, other DoD Services, and military partners to evaluate potential impacts of commercial energy or communications projects on weather radars used to support the Air Force mission (including weather support at all Army and Air Force installations). This includes, but is not limited to, collaborating with the National Weather Service to support formal and informal objections to proposed projects that could impact Air Force operations and weather support.

2.14.3. Notifies MAJCOM weather functionals and the Air Force Mission Sustainment Working Group, as appropriate, when ongoing or proposed construction of energy projects have the potential to affect capabilities crucial to weather support for installations and operating areas.

2.14.4. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.15. The Deputy Chief of Staff, Logistics, Installations and Mission Support (AF/A4):

2.15.1. Designates an individual, at the Division Chief level or above, who will serve as Co-Chair of the Air Force Mission Sustainment Working Group.

2.16. The Director of Civil Engineers (AF/A4C):

2.16.1. Integrates mission sustainment considerations when managing Air Force Civil Engineer Programs, as appropriate.

2.16.2. Supports the DoD Office of Economic Adjustment Compatible Use Program through nomination of installations or ranges, as appropriate, for compatibility assessments like the Joint Land Use Study.

2.16.3. Incorporates mission sustainment into civil engineer organizations' training course curricula.

2.17. The Air Force Director of Security Forces (AF/A4S):

2.17.1. Integrates mission sustainment considerations when managing Air Force Security Forces Programs, as appropriate.

2.17.2. Incorporates mission sustainment into security forces education and training course curricula.

2.18. The Deputy Chief of Staff, Strategy, Integration and Requirements (AF/A5):

2.18.1. Considers mission sustainment during strategy, integration, and requirements generation activities.

2.18.2. Provides appropriate personnel to participate in mission sustainment team activities.

2.19. The Deputy Chief of Staff, Plans and Programs (AF/A8):

2.19.1. Considers mission sustainment during planning and programming generation activities.

2.19.2. Provides appropriate personnel to participate in mission sustainment team activities.

2.20. The Director of Test and Evaluation (AF/TE):

2.20.1. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.20.2. Identifies potential mission sustainment impacts and provides any required mission impact assessments for test and evaluation activities.

2.20.3. Advocates for, and supports resource preparation and implementation of plans, studies, and procedures that integrate hazard identification and management into Air Force test and evaluation activities.

2.20.4. Incorporates mission sustainment into test and evaluation training course curricula.

2.20.5. Identifies research and development opportunities that help prevent or mitigate hazards related to test and evaluation operations.

2.21. The Air Force Chief of Safety (AF/SE):

2.21.1. Provides oversight and integration of mission sustainment activities within existing safety programs, such as the Air Force Bird/Wildlife Aircraft Strike Hazard Program and the Mid-Air Collision Avoidance Program.

2.21.2. Coordinates with the Air Force Safety Center to identify and address safety-related mission sustainment hazards.

2.21.3. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.21.4. Incorporates mission sustainment into safety education and training course curricula.

2.22. The Chief Scientist of the Air Force (AF/ST):

2.22.1. Analyzes and advises Air Force senior leadership on technical or scientific solutions related to mission sustainment issues.

2.22.2. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.23. The Air Force Installation Mission Support Center (AF/IMSC):

2.23.1. Manages functional programs consistent with mission sustainment policy.

2.23.2. Provides reachback support to cross-functional teams, to include the Air Force Mission Sustainment Working Group, MAJCOM Mission Sustainment Teams, Installation Mission Sustainment Teams, and the National Guard Bureau.

2.23.3. Advocates for, prepare resources for, and implements mission sustainment-related plans and studies under the Civil Engineer responsibility.

2.23.4. Integrates mission sustainment considerations when managing functional programs, as appropriate.

2.23.5. Manages Air Force security forces requirements consistent with mission sustainment policy.

2.23.6. Evaluates the potential impacts of mission sustainment hazards on force protection and security forces requirements, including, but not limited to, protection level asset clear zones; antiterrorism standoff distances; small arms ranges; and security forces training facilities. Provides guidance on these impacts to MAJCOMs, Direct Reporting Units, and installations.

2.23.7. Ensures mission sustainment responsibilities associated with mutual aid agreements are coordinated, as required, with local law enforcement and homeland defense agencies. For overseas locations, consults applicable international agreements prior to engaging with host nation counterparts.

2.23.8. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.23.9. Develops tools and guidance to support installation-level mission sustainment, as appropriate.

2.23.10. Incorporates mission sustainment into organizations' training course curricula.

2.24. The Air Force Spectrum Management Office (AFSMO):

2.24.1. Provides functional expertise for hazards related, but not limited, to frequency assignments, and system spectrum certification. For electromagnetic environmental effects to personnel, fuels, and ordnance, see AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, and AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*, respectively.

2.24.2. Develops guidance for MAJCOMs, Direct Reporting Units, and installations on mission sustainment hazards related, but not limited, to frequency interference and spectrum access.

2.24.3. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.24.4. Advises MAJCOM Spectrum Management Offices of wind turbine or power plant notifications provided by the National Telecommunications and Information Administration for impact assessment by the Mission Sustainment Team to any installation under their command.

2.25. The Air Force Flight Standards Agency (AFFSA):

2.25.1. Serves as the functional expert for mission sustainment impacts on Special Use Airspace; flight operation standards; airfield and air traffic control; terminal instrument procedure requirements; and air traffic systems such as the FAA's Obstruction Evaluation / Airport Airspace Analysis.

2.25.2. Administers Air Force involvement in the FAA's Obstruction Evaluation / Airport Airspace Analysis including development of policies, procedures, and guidance.

2.25.3. Coordinates with MAJCOMs on standard mission impact statements to support a consistent response to mission sustainment hazards by identifying constraints to airfield flight operations.

2.25.4. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.25.5. Personnel will consider mission sustainment implications when establishing requirements, drafting or revising policy, guidelines, and publications, to include integrating airfield and airspace encroachment and sustainment challenges into the Unit Effectiveness Inspection.

2.26. The Air Force Legal Operations Agency, Environmental Law and Litigation Division (AFLOA/JACE):

2.26.1. Serves as the functional expert on legal aspects of the Mission Sustainment Program, including providing legal opinions and advice on mission sustainment to all levels of the Air Force. The Environmental Law Field Support Center provides reachback legal support on mission sustainment matters.

2.26.2. Coordinates with the Air Force Mission Sustainment Working Group on activities related to mission sustainment.

2.26.3. Provides litigation support and advice related to mission sustainment matters, including administrative hearings and annexation proposals.

2.26.4. Provides legal advice on region-specific matters relating to mission sustainment, including regional, state, and local legislation and rule-making through the Air Force Legal Operations Agency Regional Counsel. Supports engagement with governing bodies, as well as aiding approval for Air Force personnel to testify or make official statements at these forums. Regional Counsel coordinates with the appropriate offices and affected installations to address potential hazards identified in the development of proposed state and local legislation and regulation. Regional Counsel may also support actions affecting multiple installations from different MAJCOMs or DoD Services.

2.26.5. Provides mission sustainment training support and guidance material to members of all legal offices and, when requested, to other functional offices as part of integrated training efforts.

2.27. The National Guard Bureau:

2.27.1. Communicates directly with the Secretary of Defense, the Secretary of the Air Force, and Headquarters Air Force functionals concerning Air National Guard missions and resourcing issues that relate to mission sustainment.

2.27.2. Coordinates with the Director of the Air National Guard as required for host-tenant mission sustainment issues and develops separate guidance for Air National Guard units including those operating at public use airports. Addresses regional airspace and range challenges through the Air National Guard Airspace and Range Council.

2.27.3. Where applicable, the National Guard Bureau will establish mission sustainment teams and adopt the mission sustainment assessment and reporting framework described in [Chapter 3](#).

2.28. MAJCOMs, Air Force Reserve, and Direct Reporting Unit Commanders:

2.28.1. Commanders shall:

2.28.1.1. Establish a MAJCOM-level Mission Sustainment Team.

2.28.1.2. Designate a Chair or Co-Chair for the MAJCOM Mission Sustainment Team, one of which shall be from the A3 Office for Operations, Plans and Requirements. This individual can delegate responsibilities no lower than the Division Chief level and an operational representative, at a minimum, should review the final assessment of hazards. **(T-2)**

2.28.1.3. Identify and provide relevant manpower, personnel, and services education and training requirements to the A1 Director or equivalent for fulfillment.

2.28.2. Chair or Co-Chairs of MAJCOM-level Mission Sustainment Teams shall:

2.28.2.1. Maintain situational awareness of mission sustainment hazards across the command. **(T-2)**

2.28.2.2. Solicit annual Mission Sustainment Risk Reports from installations and Direct Reporting Units and receive updates as needed. Share risk reports with the headquarters-level Air Force Mission Sustainment Working Group at least once each calendar year. **(T-2)**

2.28.3. MAJCOM-level Mission Sustainment Teams shall:

2.28.3.1. Hold meetings (recommend at least quarterly) to promote cross-functional awareness of current and potential hazards and assess sufficiency of Mission Sustainment Risk Reports within the command.

2.28.3.2. Monitor, review, and coordinate as appropriate within the Air Force on proposed federal, state, or local agency activities that could affect mission sustainment. This may include plans, programs, projects, legislation, and regulations. Provide input to the Air Force Mission Sustainment Working Group as requested for integration with other MAJCOMs, Direct Reporting Units, or installation positions.

2.28.3.3. Leverage DoD communication channels to engage industrial energy project developers; these channels may include the Mission Sustainment Team Chair or Co-Chair, the Air Force Mission Sustainment Working Group, and Military Aviation and Installation Assurance Siting Clearinghouse.

2.28.3.4. When functioning as either the Lead Command or a Using Command, work with the headquarters-level acquisition and sustainment program offices to identify, document, and fund mission sustainment capability needs. This may include the Environmental Impact Analysis Process and science and technology needs.

2.28.3.5. Engage key stakeholders at the local, regional, and national level and develop partnerships to address environmental, social, economic, governmental, and administrative matters with potential mission sustainment risks. MAJCOMs with installations in foreign locations may have limited engagement with key stakeholders other than those specified in international agreements. In most cases, engagement concerning mission sustainment risks should start with the host country's Ministry of Defense before engaging other parts of the host government.

2.28.3.6. Assess risks from current and potential hazards that require MAJCOM-level involvement, such as energy projects and internal waivers for existing and proposed airfield criteria violations (e.g., violations of airfield imaginary surfaces, safe clearance, or other established criteria).

2.28.3.7. Provide MAJCOM or unit-specific mission sustainment guidance for integration into education and training course curricula.

2.28.3.8. Advocate for mission sustainment resources throughout Program Objective Memorandum planning deliberations and prioritize budget year investment requirements as needed.

2.28.3.9. Identify research and development needed to address hazards and advocate for associated resources, including those related to systems acquisition, through the Air Force Corporate Structure, as required.

2.29. Installations:

2.29.1. Installation Commanders shall:

2.29.1.1. Establish an Installation Mission Sustainment Team. **(T-2)**

2.29.1.2. Designate a Group Commander (or equivalent) as team chair with the option to delegate no lower than a Deputy Group Commander (or equivalent). **(T-3)** It is recommended that someone with mission expertise such as the Operations Group Commander either fill this role or be included in the final assessment of hazards to ensure current and projected mission equities are considered.

2.29.1.3. Ensure the Team Chair and members are familiar with this instruction and associated mission sustainment guidelines and receive appropriate mission sustainment training. **(T-3)**

2.29.1.4. Engage external partners and stakeholders on mission sustainment issues. This may include, but is not limited to, local jurisdictions, state legislatures, corporations, and non-governmental organizations. **(T-3)**

2.29.1.5. Review host–tenant support agreements annually, and coordinate on proposed or anticipated tenant changes in mission requirements. **(T-3)**

2.29.1.6. Ensure the mission sustainment hazards confronting tenant or supported units are appropriately addressed and managed cohesively by the host/supporting command. **(T-3)**

2.29.2. Installation Mission Sustainment Team Chair shall:

2.29.2.1. Serve as the installation lead for monitoring and coordinating all mission sustainment-related activities at the installation. **(T-3)**

2.29.2.2. Execute the risk management process with the team’s expertise and assistance and provide oversight and maintenance of the installation’s Mission Sustainment Risk Report to ensure hazards and controls are effectively monitored and documented. **(T-3)**

2.29.2.3. Oversee all team meetings (recommended at least quarterly). **(T-3)**

2.29.2.4. Brief the Installation Commander, Tenant Commanders, and other internal stakeholders on the status of the program and mission sustainment risk assessment at least annually, including information on emerging hazards, the status of control implementation, and recommended focus areas for the coming year. **(T-3)**

2.29.2.5. Brief the MAJCOM Mission Sustainment Team at least annually and as needed to maintain situational awareness and support their annual briefs to the Air Force Mission Sustainment Working Group. Additional reasons to engage the MAJCOM Mission Sustainment Team include: elevating hazards and controls that require resolution at the MAJCOM-level and securing waiver approval for existing or proposed airfield criteria violations. **(T-2)**

2.29.2.6. Promote internal and external stakeholder engagement using existing tools like the Joint Land Use Study, AICUZ Program, and REPI proposals. **(T-3)**

2.29.2.7. Maintain situational awareness of proposed federal and state agency legislation, regulations, plans, and rules related to mission sustainment. This involves obtaining approval through the chain of command, when providing formal comments or statements on state/local legislation, ordinances, or other processes that could affect mission sustainment. **(T-3)**

2.29.3. Installation Mission Sustainment Teams shall:

2.29.3.1. Execute the risk management process to identify and assess hazards and develop, implement, and monitor controls. **(T-3)**

2.29.3.2. Provide inputs for the documentation of the Mission Sustainment Risk Report, including a current and accurate Installation Complex/Mission Footprint illustration. **(T-2)** Installations may leverage functional expertise or the MAJCOM Mission Sustainment Team for reachback support as needed.

2.29.3.3. Attend team meetings and provide updates on the status of hazards and controls within team members’ program areas. **(T-3)**

2.29.3.4. Oversee installation inputs to the Mission Compatibility Evaluation Process when the Military Aviation and Installation Assurance Siting Clearinghouse tasks formal and informal project reviews to the Air Force. **(T-3)**

2.29.3.5. Pursuant to MAJCOM guidance, leverage DoD communication channels to engage both renewable and non-renewable energy project developers; these include the Mission Sustainment Team and the Military Aviation and Installation Assurance Siting Clearinghouse.

2.29.3.6. Review and coordinate official comments or submissions on proposed federal, state, or local agency legislation, regulations, guidelines, programs, or plans that could affect mission sustainment. **(T-3)**

2.29.3.7. Incorporate tenant and/or mission partner operations into program activities and include them in the risk management process when applicable. **(T-3)**

2.30. Host or Tenant Units at Joint Bases:

2.30.1. Air Force Commanders at Joint Bases should implement the Mission Sustainment Program where the Air Force is designated the Supporting Component (lead), and request participation of Supported Service Commanders, other tenants, and organizations operating on the installation. Supporting Commanders serve as primary contact for community engagement and official involvement with other government agencies.

2.30.2. Air Force Supporting Commanders should review potential future mission activities and resource requirements (including use of land, air, sea, and spectrum) with appropriate Supported Commanders and staff to identify potential mission sustainment hazards.

Chapter 3

MISSION SUSTAINMENT RISK MANAGEMENT PROCESS

3.1. Introduction. Risks to mission sustainment can come from both internal and external hazards. The risk management process described in this chapter modifies the original Air Force Encroachment Management Program and refines the guidelines and procedures needed to preserve current and future mission capabilities. The Mission Sustainment Program integrates existing Air Force activities in a management structure that relies on organized communication between mission sustainment teams at the installation, MAJCOM, and headquarters level. Existing plans, programs, and processes identify most operational hazards. Consequently, this program integrates existing activities as the teams collaboratively identify, report, and address mission sustainment hazards.

3.2. Risk Management Procedures. The degradation or elimination of certain operations, training, and testing capabilities affects the overall mission readiness of the Air Force. Use the risk management process described in AFI 90-802 to assess the severity of hazards. This process, illustrated in [Figure 3.1](#), is an adaptive cycle designed to identify and assess hazards, develop and implement controls, and evaluate changes over time.

3.2.1. The process requires clear and sustained communication. Mission sustainment teams are established at three levels. At the installation level, teams share knowledge of hazards (i.e., risks to mission) and risk controls in a cross-functional forum. The Team Chair oversees these efforts and results are documented in the Mission Sustainment Risk Report, which is briefed annually to the second level, the MAJCOM Mission Sustainment Team, and then to the third level, the Air Force Mission Sustainment Working Group.

3.2.2. The risk management process begins when a team member recognizes a current or potential hazard and shares it with other members of the Installation Mission Sustainment Team. The team monitors hazards and implemented controls using a tool called the Mission Sustainment Risk Report. Individual hazards should also be elevated for MAJCOM attention as needed throughout the year. The MAJCOM Mission Sustainment team, likewise, has an annual requirement to brief the Air Force Mission Sustainment Working Group on the status of notable hazards and controls. Mission sustainment team members at all levels must also consider implications for mission sustainment when establishing new requirements, drafting or revising policy, guidelines, and publications. **(T-3)**

3.2.3. Installation Mission Sustainment Teams will monitor and assess all risks to mission occurring within the Installation Complex and Mission Footprint. **(T-3)** For most installations, this includes both assets within the fenceline (e.g., airfield, transportation, utility systems) and assets outside the fenceline, including airspace, ranges, and other geographically separated facilities and sites (e.g., missile fields, radar relays, drop zones). Sometimes hazards may be located a long distance from the installation and/or may not be accounted for in the recognized Installation Complex/Mission Footprint.

3.2.4. The Installation Complex/Mission Footprint often includes a larger area that covers other military installations, federal, state, and private lands. Installation Commanders should address hazards across the entire operating area, while engaging other commanders who manage lands, facilities, airspace, and ranges that provide direct mission support to the installation. It is essential to be aware of the users, owners, and operators in associated operating areas, to promote situational awareness.

3.2.5. The Installation Mission Sustainment Team will document their risk management activities in a Mission Sustainment Risk Report. **(T-2)** The report will also include an update on previously identified hazards and the status of control implementing actions. **(T-3)** The risk report format, team roles, and responsibilities are detailed later. Reference [paragraph 3.3. Mission Sustainment Teams](#), and subsequent paragraphs for guidance on team structure, roles, and responsibilities. The sample format for a Mission Sustainment Risk Report is included in [Attachment 3](#).

Figure 3.1. Mission Sustainment Risk Management Process.



3.2.6. **Step 1: Identify Hazards.** Hazards are any actual or potential conditions that can cause mission degradation. A diverse mission sustainment team is essential for identifying the full scope of the hazards that impact or have the potential to impact missions. Team members should have the knowledge and skills to identify actual/potential mission impacts within their functional area. They can identify hazards through the execution of their normal duties. Key aspects of this step include: confirming the extent of the Installation Complex and Mission Footprint, analysis of mission/tasks, and identifying and listing hazards with their associated causes. [Table 3.1](#) lists the mission sustainment hazard categories. See [Attachment 2](#) for detailed definitions for each category.

Table 3.1. Mission Sustainment Hazard Categories.

Hazard Category	Examples
Airspace	Vertical obstructions, airspace congestion, bird/wildlife aircraft strike, unauthorized airspace access, light interference
Land/Sea	Incompatible development around airfield/installation boundaries, airborne noise, incompatible development near remote facilities, impacts to installation ingress/egress
Spectrum	Physical interference with spectrum utilization, reduced in-band utilization, or degradation from adjacent band activity
Water	Impeded installation water supply or quality, changes in water access rights, reduced back-up water supply
Energy	Insufficient energy supply for Air Force assets, unsustainable energy stores, reduced reliability of energy supply or infrastructure
Climate/Weather	Susceptibility to drought, flooding, wildland fires, ecosystem disruption, severe weather, or change in disease vectors
Natural/Cultural Resources	Loss or destruction of natural/cultural resources, pollution/contamination or hazardous material management practices that result in operational changes

3.2.7. **Step 2: Assess Hazards.** The assessment step involves application of quantitative and/or qualitative measures to determine the probability and severity of negative impacts from the hazards identified in **Step 1**. Team members should compile an initial list of identified hazards within their functional areas and inform the rest of the team for situational awareness. The operators on the team will be critical to assessing the severity of potential mission impacts. The team should, at a minimum, utilize the risk assessment matrix (See **Figure 3.2**) found in AFI 90-802, to assess the probability and severity associated with each identified hazard. **Attachment 1** defines probability and severity.

3.2.7.1. This step should result in a complete list of hazards and overall risk assessment levels for those hazards, noted at the bottom of the Risk Assessment Matrix as extremely high, high, medium, or low.

Figure 3.2. Risk Assessment Matrix.

Risk Assessment Matrix			Probability				
			Frequency of Occurrence Over Time				
			Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable, but possible to occur)
Severity	Effect of Hazard	Catastrophic (Death, Loss of Asset, Mission Capability, or Unit Readiness)	EH	EH	H	H	M
		Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	EH	H	H	M	L
		Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	H	M	M	L	L
		Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	M	L	L	L	L
			Risk Assessment Levels:				
			EH – Extremely High	H – High	M – Medium	L – Low	

3.2.8. **Step 3: Develop Controls and Make Decisions.** This step involves the development and selection of specific strategies and controls (e.g., corrective or preventative actions) that reduce or eliminate risk to mission operations. During this step, the entire cross-functional team should contribute in assessing the feasibility of control options, deciding how to develop controls, and choosing whether or not to accept residual risk at the appropriate levels of authority. Key aspects of this step include: identifying control options; determining control effects; prioritizing and selecting risk controls; and making risk control decisions.

3.2.9. **Step 4: Implement Controls.** After the selection of control measures, the team should identify and agree upon the control owner, course of action, timeline, and associated cost. Key aspects of this step include: creating an implementation plan and establishing roles and responsibilities.

3.2.10. **Step 5: Supervise & Evaluate.** Teams should assess the effectiveness of the implemented controls and ensure the responsible office identified in Step 4 is executing their responsibilities. Since conditions constantly change, it is important to maintain this reassessment activity over time. Key aspects of this step include: supervising and monitoring implementation plans, briefing leadership, and evaluating the effectiveness of mission sustainment efforts.

3.3. Mission Sustainment Teams. Successful mission sustainment requires sustained leadership involvement, cross-functional management structures at all echelons, and a well-defined issue elevation structure. Air Force leadership at the headquarters, MAJCOM, and installation levels should execute the Mission Sustainment Program based on the following instructions.

3.3.1. **Air Force Mission Sustainment Working Group.** This cross-functional working group is led by SAF/IEI. It develops and refines courses of action to address mission sustainment hazards across the enterprise.

3.3.1.1. **Membership.** The working group includes leadership at the Colonel (O-6) level, civilian equivalents (GS-15), or their representatives across Headquarters Air Force. The Office of the Deputy Assistant Secretary for Installations oversees and chairs the working group (or appoints an alternate chair as appropriate) and AF/A3T and AF/A4C serve as co-chairs. The working group's leadership determines the Air Force Mission Sustainment Working Group membership.

3.3.1.2. **Responsibilities.** This working group provides principal oversight for the program, monitors implemented controls, and addresses hazards that are elevated through either functional chains or the program's established issue elevation process. Its members can also advocate for policy, legislative, or education initiatives that reduce risk to Air Force missions and they review and comment on subject-related DoD and Air Force policy.

3.3.2. **MAJCOM Mission Sustainment Team.** MAJCOMs also establish mission sustainment teams. The teams engage, as necessary, with both the Air Force Mission Sustainment Working Group and Installation Mission Sustainment Teams for identifying and mitigating hazards. They also support Mitigation Response Team engagement with energy project proponents as needed.

3.3.2.1. **Membership.** In addition to the Commander's designated chair or co-chairs described in [Chapter 2](#), membership should include representatives from the listed directorates, staff offices, and supporting organizations:

Table 3.2. Recommended MAJCOM Mission Sustainment Team Composition.

Operations (Chair or Co-Chair)	Plans and Programs
Communications	Command Surgeon
Public Affairs	Weather
Safety	Spectrum Management Office
Security	Civil Engineering
Judge Advocate	Air Force Installation Mission Support Center Detachments*
*If applicable	

3.3.2.2. **Responsibilities.** The team is responsible for maintaining situational awareness of hazards across the MAJCOM. They should meet quarterly, or as needed, to promote cross-functional awareness of hazards and controls, and to prepare the Team Chair for annual status updates to the Air Force Mission Sustainment Working Group. The team also reviews issues or waiver requests that have been elevated through either the functional chain of command or the program's issue elevation process.

3.3.3. **Installation Mission Sustainment Team.** The Wing (Installation) Commander establishes an Installation Mission Sustainment Team and appoints a chair at the Group Commander level (or equivalent). Wing Commanders should consider the overall mission equities and continuity of staff when appointing this individual.

3.3.3.1. Membership.

Table 3.3. Recommended Installation Mission Sustainment Team Composition.

Civil Engineering (e.g., Environmental, Community Planner, Real Property)	Security/Emergency Management
Bioenvironmental Engineering	Tenant Units
Communications	Weather
Judge Advocate	Wing Plans and Programs
Safety	Spectrum Manager
Public Affairs	Operations (e.g., Airfield or Airspace Management, Air Traffic Control and Terminal Procedures)
Range Management	

3.3.3.2. **Roles and Responsibilities.** Installation Mission Sustainment Teams execute all steps of the risk management process. Individual members use existing activities inherent to their positions to identify and share information regarding current or potential hazards. The team should meet quarterly and collaborate as needed to ensure the Team Chair is prepared to submit a comprehensive Mission Sustainment Risk Report to the MAJCOM once a year. Installations can utilize and augment existing teams or forums such as the Airfield Operations Board, the Facilities Utilization Board, or the Environment, Safety and Occupational Health Council.

3.3.3.2.1. Personnel must obtain approval, when necessary, through the chain of command, for providing official comments or statements on state or local legislation, ordinances, or other rule-making processes that could affect mission sustainment. **(T-3)** Those operating in foreign locations must check with Air Force Civil Engineer Center real estate offices and MAJCOM legal offices to determine appropriate processes within the international agreements under which the installations operate. **(T-2)** In most foreign locations, engagement will be limited to those allowed by the host nation's Ministry of Defense.

3.3.3.3. **Installation Mission Sustainment Team Chair.** The Chair is the installation lead for coordinating or overseeing all Mission Sustainment Program activities for the installation. **(T-2)**

3.3.3.3.1. **Chair Responsibilities.** This individual must brief the installation commander, tenant commanders, and other internal stakeholders on the status of the program at least annually. **(T-2)** The briefing should include information on prioritized hazards and controls, as well as recommended focus areas for the coming year. The Chair is also responsible for scheduling team meetings and overseeing execution of the risk management process for all hazards identified by team members. They monitor the status of the program using the Mission Sustainment Risk Report and share it with the MAJCOM Mission Sustainment Team annually or as needed to maintain situational awareness.

3.4. Mission Sustainment Risk Reports. Mission sustainment risk reporting is required to inform upper echelons of current and potential hazards to mission operations. These reports provide MAJCOMs and SAF/IEI with standardized, accurate information on mission sustainment efforts across the enterprise.

3.4.1. **Data Requirements.** Installation Mission Sustainment Teams shall report on the following three categories: scope, hazards, and controls. **(T-3)** These are the minimum data elements that should be included, and the template will evolve as needed over time. Additional content to support required data requests should be included at installation or MAJCOM discretion. The risk report elements should also include a changelog and an explanation of changes between reporting periods.

3.4.1.1. **Scope.** Installation description; host and tenant units; current and future operations and missions; Installation Mission Sustainment Team status; relevant studies and programs; and Installation Complex/Mission Footprint maps.

3.4.1.2. **Hazards.** A prioritized and categorized list of hazards, assessed by risk to mission sustainment, with hazard description, risk assessment justification, additional internal and external factor considerations, and key stakeholders.

3.4.1.3. **Controls.** A prioritized list of controls, including status, stakeholders, and engagement plans.

3.4.2. **Utilize Resources.** Installation Mission Sustainment Teams should utilize existing encroachment documents and related studies (e.g., planning, environmental, security) to create a comprehensive list of hazards and related controls. Existing reports like the ICEMAP may contain information that helps establish a baseline for risk reporting. The ICEMAP can also be a useful resource for trend analysis and a tool for stakeholder engagement. Additional evaluations may be warranted if there are significant changes to an Installation Complex, Mission Footprint, or operational plans like compatible land use studies or external engagement plans.

3.5. Elevating Issues. Although the installation addresses most mission sustainment hazards, there can be situations when either the MAJCOM or Headquarters can provide assistance. These instances may include topics that are sensitive in the local community, critical mission impacts, or those that could garner negative media attention. Beginning at the installation level, the Installation Mission Sustainment Team Member, in coordination with other members and the Chair, should elevate an issue via both their functional chain of command and the mission sustainment team. This requires direct communication between the installation and MAJCOM Mission Sustainment Teams. The goal is to use both the functional reporting chain and the mission sustainment teams to promote situational awareness early and address issues in a timely manner. The cross-functional composition of the MAJCOM Mission Sustainment Teams should ensure that knowledgeable individuals who are empowered to act address elevated issues quickly. When needed, the MAJCOM Mission Sustainment Team has the ability to contact the Air Force Mission Sustainment Working Group to either share information or seek headquarters-level assistance.

3.6. External Stakeholder Relationships and Engagement. Successful mission sustainment requires all echelons to engage, build relationships, and work collaboratively with communities, states, Native American Tribes, foreign Ministries of Defense, nongovernmental organizations, federal agencies, and individual stakeholders. Mission sustainment team members should engage with stakeholders according to their unique program responsibilities and in keeping with assigned control actions. The Installation Complex/Mission Footprint should be evaluated to identify communities and/or organizations where some level of outreach and engagement may be needed. The team can involve public affairs staff to develop messaging and communication plans and work with civic leaders, media, and key elected officials. Coordinate with the Team Chair on all engagement activities.

3.6.1. Teams can leverage existing engagement channels that may be associated with the AICUZ Program, REPI Program, Joint Land Use Studies, and the Air Force Community Partnership Program.

3.6.2. Installation personnel operating in foreign locations should engage Air Force Civil Engineer Center real estate offices and MAJCOM legal offices to determine how external stakeholder engagement should be conducted within the host nation.

3.6.3. Installation Mission Sustainment Teams should remain aware of proposed changes to legislation, policies, and practices at the local level. The MAJCOM Mission Sustainment Team, along with Regional Environmental Coordinators, should monitor and analyze proposed regional, state, or federal regulations as appropriate.

3.6.4. All mission sustainment teams should monitor the potential for both positive and negative impacts from emerging technology (e.g., wind energy development) that might affect mission readiness and capabilities.

3.6.5. DoD Military Aviation and Installation Assurance Siting Clearinghouse. Previously known as the DoD Siting Clearinghouse, this organization was renamed in Title 10 United States Code Section 183a to highlight the operational implications of industrial energy projects. The Clearinghouse tasks the Air Force with both formal and informal reviews, which can lead to substantive discussions between installation personnel and energy project developers. These discussions address potential mission impacts created by proposed energy projects and support associated mitigation options. Informal reviews proactively identify potential impacts and provide the industry project lead (i.e., developer) with an installation point of contact for further discussion. During the formal review process, a DoD Mitigation Response Team may be established to address perceived mission impacts by working directly with the industry developer. In these instances, the Installation Mission Sustainment Team or appropriate installation personnel are responsible for working with the MAJCOM and the developer to resolve the conflict. The MAJCOM Mission Sustainment Team should determine if the conflict can be resolved and, if not, elevate it to the Air Force Mission Sustainment Working Group.

JOHN W. HENDERSON, P.E.
Assistant Secretary of the Air Force
(Installations, Environment, & Energy)

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 90-20, *Mission Sustainment*, 27 Mar 2019

AFI 33-360, *Publications and Forms Management*, 1 Dec 2015

AFI 90-802, *Risk Management*, 1 Apr 2019

AFPAM 90-803, *Risk Management (RM) Guidelines and Tools*, 11 Feb 2013

10 USC § 183a (Military Aviation and Installation Assurance Siting Clearinghouse for review of mission obstructions)

AFI 90-401, *Air Force Relations with Congress*, 14 Jun 2012

32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*, 1 Jul 2017

AFMAN 33-363, *Management of Records*, 1 Mar 2008

AFI 13-201, *Airspace Management*, 21 Aug 2012

AFMAN 13-212V1, *Range Planning and Operations*, 22 Jun 2018

DoD Directive 3030.01, *Office of Economic Adjustment (OEA)*, 5 Mar 2006

AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, 01 Aug 2014

AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*, 01 Feb 2017

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapons Systems*, 08 Mar 2007

AFI 17-221, *Spectrum Interference Resolution Program*, 11 May 2018

AFI 48-144, *Drinking Water Surveillance Program*, 21 Oct 2014

AFI 32-7001, *Environmental Management*, 16 Apr 2015

AFI 32-7064, *Integrated Natural Resources Management*, 18 Nov 2014

AFI 32-7065, *Cultural Resources Management Program*, 19 Nov 2014

AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, 19 Nov 2014

Adopted Forms

Air Force Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Document

AFSMO—Air Force Spectrum Management Office

AICUZ—Air Installations Compatible Use Zones

DoD—Department of Defense

EMFR—Electromagnetic Field Radiation

FAA—Federal Aviation Administration

HERO—Hazards of Electromagnetic Radiation to Ordnance

ICEMAP—Installation Complex Encroachment Management Action Plan

MAJCOM—Major Command

OPR—Office of Primary Responsibility

REPI—Readiness and Environmental Protection Integration

Terms

Air Force Community Partnership Program—The program, operated within the Office of the Deputy Assistant Secretary of the Air Force for Installations is a framework through which installation and community leaders can develop creative ways to leverage their capabilities and resources to focus on achieving reduced costs by finding shared value. Objectives are met through an organized sequence of meeting and teleconferences involving both Department of Defense and civilian stakeholders.

Air Installations Compatible Use Zones (AICUZ)—A program instituted by the Department of Defense to address the problem of land development surrounding military air installations. It provides for the development and implementation of a plan to determine those land areas for which development should be significantly influenced by the operation of the airfield.

Compatible Use—Uses of land, water, or airspace by the military and others that can co-exist with minimal adverse effects.

Contingency Location—A non-enduring location outside of the United States that supports and sustains operations during named and unnamed contingencies or other operations as an appropriate authority directs and is categorized by mission life-cycle requirements as initial, temporary, or semi-permanent.

Control—A deliberate action taken to reduce or eliminate the risk of a hazard(s) on Air Force activities, facilities, equipment, or personnel. Controls are most commonly initiated and monitored by the Installation Mission Sustainment Team. Effective controls reduce either hazard probability, severity, or both.

Encroachment—Any deliberate action by a governmental or non-governmental entity or individual that does, or is likely to inhibit, curtail, or impede current or future military activities within the installation complex and/or mission footprint; or any deliberate military activity that is, or is likely to be incompatible with a community's use of its resources.

Encroachment Management—Efforts undertaken by the Air Force alone or in conjunction with other federal, local, state, regional, and private entities, to prevent, eliminate, or minimize impacts caused by encroachment.

FAA Part 150 Program and Studies for Airport Noise Compatibility Planning—Federal policy that prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs

Hazard—Any real or potential condition that can cause mission degradation, injury, illness, death to personnel, or damage to or loss of equipment or property.

Installation Complex—The land, facilities, airspace, and ranges which provide direct mission support to and/or are managed by the installation. This includes a combination of land and facilities comprised of a main installation and its noncontiguous properties (e.g., auxiliary air fields, annexes, missile fields) that provide direct support or that the installation supports.

Installation Complex Encroachment Management Action Plan (ICEMAP)—The comprehensive study is a three-volume document (Action Plan, Reference Book, and Community Brochure) that addresses current and future encroachment (i.e., mission sustainment) hazards facing Air Force installations and their surrounding communities.

Joint Land Use Study—Funded by the Department of Defense Office of Economic Adjustment, the study is a community-driven process that promotes and enhances civilian and military communication and collaboration. It serves as a catalyst to sustain the military mission, and promotes public health, safety, quality of life, and economic viability of a region.

Lead Command—Lead command designation establishes advocacy for weapon systems during their life cycle and clarifies responsibilities for all using and supporting organizations. The designated Lead Command provides a primary input into the process of developing and maintaining a force structure with a balance of complementary capabilities. Lead command designation is not exclusive to major commands; Field Operating Agencies and Direct Reporting Units may also be designated. See AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*.

Military Aviation and Installation Assurance Siting Clearinghouse—Part of the Office of the Assistant Secretary of Defense for Sustainment, the Siting Clearinghouse is an inter-Service organization designed to provide a timely, transparent, and repeatable process for evaluating potential impacts and mitigation options that preserve or protect military missions that could be impacted by commercial energy projects.

Mission Footprint—The installation complex plus any land, facilities, airspace, and/or ranges not managed by the installation, but which provide direct, routine support to the mission.

Mission Sustainment—The strategic Air Force objective to proactively manage the risk of hazards and thereby protect current missions, prepare for future missions, and ensure the sustainability of all mission-related operating areas.

Mission Sustainment Working Group—A cross functional team at the headquarters-level responsible for reviewing and monitoring comprehensive status of mission sustainment across the enterprise. The working group is chaired by a representative from SAF/IEI and is co-chaired by designated representatives from Headquarters A3 (Operations) and A4 (Logistics, Engineering, and Force Protection). It meets monthly in Washington, DC and via teleconference.

Obstruction Evaluation / Airport Airspace Analysis—All proposed development on public-use airport property is subject to an airport airspace analysis and is commonly processed as a non-rulemaking airport case regardless of Federal funding participation. This formal process administered by the Federal Aviation Administration, provides a tool for aircraft operators, including those in the Department of Defense, for evaluating possible airspace obstructions

Probability—The likelihood that a hazard(s) will cause negative mission impacts and/or the frequency of occurrence over time. Probability can be determined through estimates or actual data (if available). The five ratings in the risk management model are unlikely, seldom, occasional, likely, and frequent.

Readiness and Environmental Protection Integration (REPI)—The REPI Program protects military missions by helping remove or avoid land-use conflicts near installations and addressing regulatory restrictions that inhibit military activities. The REPI Program is administered by the Office of the Secretary of Defense and utilizes multiple management tools that include strategic land acquisition and landscape scale partnerships with local governments surrounding an installation or military operating area.

Risk—The probability and severity of loss or adverse impact from exposure to various hazards.

Risk Management—The systematic process of identifying hazards, assessing risk, making control decisions, implementing control decisions, and evaluating the activity for effectiveness.

Severity—The overall effect of a hazard(s) in terms of potential impact on personnel, equipment, mission, or activity. The severity ratings used for mission sustainment are in order of least to most severe: negligible, moderate, critical, and catastrophic.

Special Use Airspace—Term used for airspace wherein activities must be confined because of their nature, or wherein limitations are imposed on aircraft operations that are not a part of those activities, or both. Various classifications include, Prohibited Areas, Restricted Areas, Military Operations Areas, Warning Areas, Alert Areas, Controlled Firing Areas, and National Security Areas.

Stakeholder—A person or organization, either internal or external to the Installation Complex/Mission Footprint, with personal, financial, or other manifest interest in an issue or decision. Stakeholders can include: Department of Defense Services; installation tenants; federal, state, regional, and local governments and agencies; tribal governments; individuals or groups outside Department of Defense installations; current and future land owners; local or national advocacy groups; and the media.

Using Command—AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, designates a Lead Command when Regular Air Force MAJCOMs or agencies “share” a weapon system among themselves, with units of the Air Reserve, or with other Services, and when only one Air Force MAJCOM or Field Operating Agencies/Direct Reporting Units possesses the weapon system. All other MAJCOMs, Forward Operating Agencies or Direct Reporting Units possessing that weapon system are designated as “using” commands.

Attachment 2

MISSION SUSTAINMENT HAZARDS AND CONTROLS

A2.1. Background. This attachment supports identification and assessment of hazards and the development and implementation of controls using the risk management framework. Using this framework, mission sustainment team members identify hazards, assess them for risk to mission, and develop controls. It addresses the first three steps of the risk management process and includes a table of example hazards and controls organized by category.

A2.1.1. Organization. Mission sustainment team members can work through the risk management framework by utilizing these sections sequentially. Hazards that fall under the categories described in [para A2.1.2](#) are relevant to mission sustainment. Risks to mission can be evaluated using the framework described in [para A2.3](#), and then controls developed using the principles described in [para A2.4](#). For examples and other reference guidance, see [para A2.5](#).

A2.1.1.1. Identify Hazards. Mission sustainment teams should consider the applicability of each hazard category identified in the following table. The seven categories are provided as a reference for organizing team efforts, but do not limit hazard categorization. Some hazards, for example, may cut across multiple categories. Reference [Table 3.1](#) in this instruction for a complete list of hazard categories and examples.

A2.1.2. Mission Sustainment Hazard Categories. The following paragraphs offer a characterization of each hazard category with examples and a list of complementary programs.

A2.1.2.1. Airspace. Airspace hazards include, any regulatory, internal, or external actions or conditions that compete with or are incompatible with Air Force activities in the same airspace in and around the Installation Complex/Mission Footprint necessary for maintaining operational readiness.

A2.1.2.1.1. Description and Examples. Airspace hazards may include any permanent or temporary restrictions on the physical use of airspace by Air Force platforms and systems. Both current and emerging platforms and systems require consistent access to large airspace volumes for realistic training and testing. Hazards in this category reduce access to military training routes and degrade training and testing airspace. Example hazards include but are not limited to: construction of tall structures that impact low-level flight training and testing, threats to aircraft safety from bird strikes, and increased airspace congestion. Existing plans, programs, and processes that address this hazard include the Bird/Wildlife Aircraft Strike Hazard Program; Air Installations Compatible Use Zones (AICUZ) Program; the Federal Aviation Administration's Obstruction Evaluations / Airport Airspace Analysis process; the Unit Effectiveness Inspection, Air Force Safety Center programs; and the Military Aviation and Installation Assurance Siting Clearinghouse process.

A2.1.2.2. Land/Sea. Land/Sea hazards include any regulatory, internal, or external actions or conditions, including those related to foreign access and control that compete with or are incompatible with Air Force activities on the land and sea assets in the Installation Complex and Mission Footprint.

A2.1.2.2.1. **Description and Examples.** Land/sea hazards include permanent or temporary risks associated with the physical use of land or sea assets by Air Force platforms, systems, or functions, including mission support. These include land development or mineral right development activities that could disturb Air Force infrastructure, communications, and operations. In particular, urban growth in close proximity to the Installation Complex or Mission Footprint could lead to operational risks; residential areas and places of public assembly, such as schools, churches, restaurants, theaters, and shopping centers, are often incompatible with military activities when located in accident potential zones close to the installation complex. Hazards may also include constraints related to public noise complaints associated with military test or training operations.

A2.1.2.2.2. **Safety Considerations.** Encroachment also occurs from actions compromising security and safety resulting in risk to mission (e.g., antiterrorism force protection issues, quantity distance safety arcs, lines-of-sight or vantage points onto installations, trespassing or inadequate fencing), as well as conditions that prevent development on the installation, such as the presence of significant numbers of unexploded ordinance.

A2.1.2.2.3. **Additional Considerations.** Foreign ownership or access to land/sea assets may also have impacts to mission operations. The Department of Defense (DoD) participates in the multi-agency Committee on Foreign Investment in the United States and, consequently, Installation Mission Sustainment Teams should attempt to understand relevant land/asset purchases by foreign governments. Existing Air Force plans, programs, and processes that address this hazard include, but are not limited to: the AICUZ Program, the Readiness and Environmental Protection Integration Program, and the Air Force Community Partnership Program.

A2.1.2.3. **Spectrum.** Spectrum hazards include any regulatory, internal, or external actions or conditions, whether from electromagnetic activity or physical obstruction, that compete with or are incompatible with Air Force activities in the electromagnetic spectrum.

A2.1.2.3.1. **Description and Examples.** Spectrum hazards involve the incompatible use of the electromagnetic spectrum, whether in-band or near band, licensed or unlicensed, shared or exclusive; in-band or near band noise of sufficient intensity and duration; reallocation of spectrum previously exclusive or shared mission critical bandwidth; or the siting of structures that physically or electronically block or impede the line-of-sight necessary to successfully transmit or receive data. With few exceptions, military operations, training, and testing rely heavily on the frequency spectrum; therefore, spectrum encroachment has the potential to inadvertently or unintentionally increase the risk of mission degradation, cancellation, or failure. Outside the United States, spectrum regulations and allocations vary, which complicates Air Force use. Existing Air Force programs, and processes that address this hazard include, but are not limited to, the AICUZ Program and the Air Force Spectrum Interference Resolution Program, reference Air Force Instruction (AFI) 17-221, *Spectrum Interference Resolution Program*, for more information.

A2.1.2.4. **Water.** Water hazards include any actions or conditions that prevent or degrade consistent access to or delivery of water supplies of sufficient quantity, quality, and sustainability that are necessary for mission operations.

A2.1.2.4.1. **Description and Examples.** Water restrictions on the Air Force result from a variety of issues, including quality, supply (i.e., quantity and availability), water rights, floodplains, infrastructure, and regulations. Water is an environmentally sensitive issue for the public on and near military operating areas. Water rights, particularly in Great Plains and Southwestern states, are critical to mission sustainment; thus, it is imperative that the Air Force maintains all documents relating to water rights. Water sources that are not sustainable or consistent may constitute threats to mission sustainment, as well as insufficient delivery systems, single points of failure in water delivery systems, insufficient demand management, or lack of adequate backup supplies. Existing Air Force plans, programs, and processes that address this hazard include, but are not limited to, the Drinking Water Surveillance Program (reference AFI 48-144), aspects identified under the Environmental Management System (reference AFI 32-7001), the Comprehensive Planning Program (for on-site issues), and the Air Force Infrastructure Management program.

A2.1.2.5. **Energy.** Energy sustainment hazards include any actions or conditions that prevent or degrade consistent access to or delivery of energy supplies of sufficient quantity, quality, and sustainability that are necessary for mission operations.

A2.1.2.5.1. **Description and Examples.** Energy availability and the reliability and resiliency of energy supplies are primary concerns for installations where adequate power grid connectivity to energy resources and consistent fuel supply is essential for mission needs. Mission sustainment requires consistent access to sufficient energy supplies through access to renewable or otherwise sustainable energy to perform mission operations. Energy sources that are not sustainable or consistent, have insufficient delivery systems, have single points of failure in delivery or energy supply systems, have insufficient demand management, or lack adequate backup capability may constitute threats to mission sustainment. Energy supplies may include both electricity and fuels used to supply either installation infrastructure or aircraft operations. Existing Air Force plans, programs, and processes that address this hazard include, but are not limited to: Comprehensive Planning Program (for on-site issues) and the Air Force Infrastructure Management Program.

A2.1.2.6. **Climate/Weather.** Climate/Weather hazards include any actions or conditions relating to current or changing climate conditions that impede or constrain mission operations and support. Actions or conditions that degrade the Air Force's ability to monitor weather for operational needs should also be assessed in this category.

A2.1.2.6.1. **Description and Examples.** Climate impacts encompass effects of both current and future climate conditions on Air Force installations. Current impacts may include wildland fires, inland or coastal flooding, and extreme hot or cold temperatures. Future climate impacts can include those from long-term changes to weather patterns, temperature and precipitation, and hydrology and sea level, and secondary effects such as species migration. These factors can compound existing stresses, such as population growth, land use changes, and pollution. Future climate conditions can impact

installation mission capabilities; for example, warmer climates could lead to less snow melt or earlier spring snowmelt and higher stream flows earlier in the season—and correspondingly lower stream flows during summer and fall—resulting overall in a reduced and less reliable water supply. Severe weather and disaster events affect installations and the public; for example, mission operations in proximity to coastal and tidal areas may be affected by rising sea levels, resulting in a loss of natural resources, flooding of low-lying lands, and potential degradation of test and training capabilities caused by damage to, or loss of, operational areas and infrastructure. Additional requirements related to climate hazards may include climate adaptation planning as well as expanded missions related to climate and national security. Existing Air Force plans, programs, and processes that address this hazard include, but are not limited to: Weather Operations, aspects identified under the Environmental Management System (reference AFI 32-7001), the Critical Infrastructure Program, and the Air Force Natural Resources Management Program (reference AFI 32-7064).

A2.1.2.7. Natural and Cultural Resources. Natural and cultural resource hazards include any adverse actions, constraints, or conditions caused by the enforcement of or compliance with laws and regulations concerning natural and cultural resources.

A2.1.2.7.1. Description and Examples. A variety of laws and regulations govern natural and cultural resources with implications for mission sustainment both on- and off-Air Force installations. Compliance requirements mandate a variety of protective actions, some of which carry the potential to constrain operational testing or training activities. Regulatory compliance issues include, but are not limited to, requirements imposed by the Sikes Act, the Endangered Species Act, the Migratory Bird Treaty Act, the National Historic Preservation Act, the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, the Marine Mammal Protection Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Coastal Zone Management Act, and various Executive Orders. Existing Air Force plans, programs, processes that address this hazard include, but are not limited to, the Air Force Natural Resources Management Program (reference AFI 32-7064), aspects identified under the Environmental Management System (reference AFI 32-7001), the Drinking Water Surveillance Program (reference AFI 48-144), the Cultural Resources Management Program (reference AFI 32-7065), and the Tribal Relations Program (reference AFI 90-2002).

A2.2. Assess the Impact of Hazards. The risk to mission sustainment is determined by evaluating both the probability and severity of hazard impacts. Hazards can impact missions in a variety of ways and several examples follow. This is not a comprehensive list and each installation is responsible for assessing the unique impacts of identified hazards.

A2.2.1. Reduced Usage Times or Training Days. Hazards may restrict or prohibit operations and training events. For example, aircraft may not be able to operate in certain areas at specified times because of habitat restrictions, such as migratory bird patterns or the mating seasons of protected species. Operating at night (generally occurring between 2200 and 0700 local time – often referred to as “acoustic night”) is a critical component of Air Force

operations. Nighttime (darkness conditions); however, is also the time when residents near installations are most sensitive to noise. Voluntary or mandatory restrictions that limit flight capacity exclusively to mission essential operations during these hours may reduce impacts on the local community and foster better community relations.

A2.2.2. Avoidance Areas and Reduced Access. Established avoidance areas on installations or ranges and underneath airspace can negatively impact training or operations. These may include endangered species breeding areas or nesting grounds, or areas of sensitive land uses (e.g., homes, ranches, farms, National Parks) that require noise limitations. Avoidance areas often impede ground troop activities and can inhibit or degrade the quality of training operations. Civilian use of higher altitudes, development on the ground, or noise sensitive areas, may result in the Air Force having to restrict flight altitudes, which reduces the amount of airspace available to conduct operations. When training, military aircraft may be forced to fly at artificially low or high altitudes, reducing realism and potentially causing negative behaviors that must be “unlearned” prior to combat. The construction of large buildings or wind turbines may affect flight minimums for approaches. Flight tracks may require modification to avoid large residential areas or other noise sensitive land uses. Long Range Standoff Weapons test and training events may be unrealistically executed (e.g. truncated launch parameters, such as reduced platform altitude and speed) due to lack of sufficient range space. The presence of mission sustainment hazards can also reduce range access. The approaches to target areas, for example, might be limited to specified corridors, rather than permitting access from multiple approaches. Such limitations can degrade the realism and value of the training and could yield safety hazards. Access limitations and added avoidance areas can also increase operational costs.

A2.2.3. Constrained Operational, Training, and Testing Activities. The presence of mission sustainment hazards can constrain certain operations, training, and testing events. For example, prohibiting ground troops from digging into the ground to create realistic fighting positions and prohibiting aircraft from using flares or chaff. In these cases, solutions may involve conducting training at alternate locations or developing other workarounds. Mission sustainment hazards can also limit training or testing with new technologies. Testing limitations can translate into limited application in combat, as forces tend to apply technologies as they have in training, which might lead to sub-optimal application of technology. By restricting maneuver areas, approaches to targets, altitudes, and certain technologies, the creative development of new tactics could be limited. Potential hazards associated with community development, threatened or endangered species, environmental regulations, and other natural factors can reduce opportunities for the use of live-fire ordnance, thereby reducing proficiency. The hazards may require segmentation of sequential training events. For example, aircraft might have to practice ordnance delivery and evasive maneuvers at different times, rather than sequentially or together. Similar to avoidance areas, added restrictions can increase operational costs.

A2.2.4. Limitations to Personnel Readiness and Safety. Hazards may have an impact on personnel, either directly increasing risks related to mission operations or by interfering with mission support. The hazards may result in increased operations tempo when forces must deploy away from their home station to receive effective training. Safety and security restrictions and other regulatory issues may require controls, mitigation, or remediation to keep personnel safe. Mission support functions (e.g., water, energy) support missions directly, but also ensure that personnel are available for mission operations. For example, insufficient water supplies may force mission relocation if communities are unable to sustain the personnel and services needed to support an installation. Natural factors and climate effects may also carry risk to personnel, including direct effects of natural disasters and indirect effects like greater exposure to disease vectors (e.g., mosquitos-borne illnesses).

A2.2.5. Reduced Utility of Infrastructure and Equipment. Hazards may also impact equipment, either directly by disabling infrastructure or operational platforms or indirectly by imposing specific constraints. Natural factors and climate effects, including flooding, storms, drought, excessive heat, and other natural disasters, can damage equipment. This can include impacts to operational platforms as well as infrastructure (e.g., buildings, pipelines). Spectrum interference can degrade the function of radars, communications, and other equipment dependent on the electromagnetic spectrum. Resources such as water and energy must be produced and delivered to installations for mission operations and support; impacts to equipment such as transmission lines, energy production facilities, water and sewage treatment systems may impact mission operations overall. Limitations to development on installations (e.g., unexploded ordnance) can reduce opportunities for new construction or mission expansion. Investing in equipment or preventing or repairing damage may also impose additional costs.

A2.2.6. Community Constraints. External community stakeholders may drive mission impacts. Communities may perceive negative impacts (e.g., health and safety concerns, security issues, or usage conflicts) associated with military operations and areas. Airborne noise may cause concern in the surrounding communities. Air Force mission operations and support may be limited in response to these concerns; overall, risk assessment is advisable for impact on mission, identifying the role and importance of the community in mitigating and controlling risk where appropriate through engagement or other processes.

A2.3. Risk Assessment Matrix. AFI 90-802, *Risk Management*, and Air Force Pamphlet 90-803, *Risk Management Guidelines and Tools*, describe in detail the risk management process underlying the Mission Sustainment Program. Evaluating a hazard's risk to mission can take a variety of forms, but the minimum risk assessment methodology required to comply with this instruction includes evaluating the probability and the severity of mission impacts. The selection of probability and severity determines the overall risk presented by a hazard to mission sustainment.

A2.3.1. The Risk Assessment Matrix in [Chapter 3](#), reproduced below in [Figure A2.1](#) with annotations for an example hazard assessment, is a useful tool to assess risk in a quantitative framework without requiring an extensive level of effort. Upon hazard identification, the Installation Mission Sustainment Team should estimate how the hazard might affect mission operations, equipment and personnel, or readiness.

Figure A2.1. Risk Assessment Matrix.

Risk Assessment Matrix			Probability				
			Frequency of Occurrence Over Time				
			Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable, but possible to occur)
Severity	Effect of Hazard	Catastrophic (Death, Loss of Asset, Mission Capability, or Unit Readiness)	EH	EH	H	H	M
		Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	EH	H	H	M	L
		Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	H	M	M	L	L
		Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	M	L	L	L	L
			Risk Assessment Levels:				
			EH – Extremely High	H – High	M – Medium	L – Low	

A2.3.2. The assessment includes an evaluation of the probability of the hazard occurring. This probability is the best estimate of the frequency of the event, which can include operational considerations over several years and long-term planning of capital investments over decades. The Installation Mission Sustainment Team should estimate the total frequency of the hazard, with the understanding that frequency may change over time. The Installation Mission Sustainment Team should select the approximate level of the probability of the effect from one of the rows.

A2.3.3. The assessment also evaluates the actual or potential severity of the effects of the hazard. The hazard may directly constrain mission operations by creating avoidance areas, reducing operations, creating risk to personnel, and so on, or it may constrain support systems, such as facilities or critical supplies, as described above. The Installation Mission Sustainment Team should select the approximate level of the severity of the effect from one of the rows in the risk assessment tool.

A2.3.4. Installation Mission Sustainment Teams should assess risk based on appropriate timeframes according to the identified hazard. For example, if an Installation Mission Sustainment Team is evaluating the risk of flash flooding on the airfield that disrupts flight operations, they may note that the flooding is currently seldom (it has occurred several times in the past, but is not frequent), but in the future, will be likely (i.e., will occur more frequently) based on trends in severe weather events. The team may also rate the effect as catastrophic for both timeframes, as the sortie rate drops to zero during flooding, loss of infrastructure or equipment is likely, and injuries or deaths may occur from flash flooding. Therefore, using the risk assessment matrix, for the 'current' timeframe risk assessment (Figure A2.2), the team would record a probability level of Seldom and a severity level of Catastrophic, which leads

to an overall risk level of High – orange. For the ‘future’ timeframe rating (Figure A2.3), the team would record a probability of Likely and a severity level of Catastrophic, which leads to an overall risk level of Extremely High – red. The following sample Risk Assessment Matrix in Figures A2.2 and A2.3 addresses three factors (probability, severity, and risk).

Figure A2.2. Current Hazard Risk Assessment.

Risk Assessment Matrix		Probability				
		Frequency of Occurrence Over Time				
		Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable, but possible to occur)
Severity	Catastrophic (Death, Loss of Asset, Mission Capability, or Unit Readiness)	EH	EH	H	H	M
	Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	EH	H	H	M	L
	Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	H	M	M	L	L
	Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	M	L	L	L	L
		Risk Assessment Levels:				
		EH – Extremely High	H – High	M – Medium	L – Low	

Figure A2.3. Future Hazard Risk Assessment.

Risk Assessment Matrix		Probability				
		Frequency of Occurrence Over Time				
		Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable, but possible to occur)
Severity	Catastrophic (Death, Loss of Asset, Mission Capability, or Unit Readiness)	EH	EH	H	H	M
	Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	EH	H	H	M	L
	Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	H	M	M	L	L
	Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	M	L	L	L	L
		Risk Assessment Levels:				
		EH – Extremely High	H – High	M – Medium	L – Low	

A2.4. Developing Controls. With hazard identification and assessment complete, control development can occur. As discussed in [Chapter 3](#), developing controls involves identifying control measures, determining the effects on the targeted hazard, then prioritizing controls and deciding to accept residual risk after implementation. In general, each hazard should have multiple options for eliminating or reducing risk. Types of controls include engineering, physical, administrative, educational, and operational controls. In general, controls reduce the impact of a hazard by changing either the probability of hazard occurrence, the severity of hazard impact, or both. They should eliminate or mitigate a risk via rejection, avoidance, delay, transference, spreading, compensation, or reduction. AFI 90-802 and Air Force Pamphlet 90-803, *Risk Management Guidelines and Tools* contain more information on developing and implementing controls.




A2.4.1. AFI 90-802 indicates that control options should be identified while seeking to reduce the overall risk of the hazard. Once these options have been identified, the Installation Mission Sustainment Team should assess, through a deliberative process, the costs and effects of the control on the two components of risk (probability and severity). This is a critical step that allows mission sustainment stakeholders to understand which controls are likely to reduce risk to an acceptable level and the resources that will be necessary to implement the control.

A2.4.2. Controls may reduce the probability, severity, or both; controls should reduce overall risk to an acceptable level. For example, to control the risk to mission of the flooding hazard above, the Installation Mission Support Team Chair may consider two controls: hardening the flight apron against flooding and restoring upstream wetlands. These controls have different risk reduction ratings – the hardened apron reduces the impact of the flooding on operations, whereas the upstream wetland restoration both reduces the frequency of flooding and severity by increasing the absorption capacity of the landscape. The evaluation of these effects is shown

in **Figure A2.4**. If the investment in the apron is estimated to cost \$1 million and the wetland restoration is estimated to cost \$1.5 million, the team may recommend the wetland restoration over the apron hardening since the wetland restoration reduces risk in the most cost-effective way. Note that if the team considers a risk level of Medium – yellow acceptable, they may recommend the apron hardening over the wetland restoration and suggest acceptance of the residual risk.

Figure A2.4. Control Effect Assessment.

Risk Assessment Matrix			Probability				
			Frequency of Occurrence Over Time				
			Frequent (Continuously experienced)	Likely (Will occur frequently)	Occasional (Will occur several times)	Seldom (Unlikely; can be expected to occur)	Unlikely (Improbable, but possible to occur)
Severity	Effect of Hazard	Catastrophic (Death, Loss of Asset, Mission Capability, or Unit Readiness)	EH	EH	H	H	M
		Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	EH	H	H	M	L
		Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	H	M	M	L	L
		Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	M	L	L	L	L
			Risk Assessment Levels:				
			EH – Extremely High	H – High	M – Medium	L – Low	

-  **Hazard Risk Assessment**
-  **Wetland Control: Reduced Severity and Probability**
-  **Hardened Infrastructure Control: Reduced Severity**

A2.5. Examples. In addition to the hazard identification and assessment guidelines provided in this attachment, the following tables provide example hazards and control options for each identified hazard category. Most examples are related to actual hazards and control options identified in past studies and evaluations. These descriptions can support application of the risk management framework for mission sustainment.

Table A2.1. Examples of Airspace-Related Hazards and Controls.

Vertical Obstructions Are Present or Under Development Under Low-Level Airspace	
Hazard Identification	Towers, transmission lines, and wind turbines high enough to require operational avoidance.
Hazard Assessment	Airspace volumes may be restricted by avoidance areas or may become constricted. Effects on platforms will vary (e.g., helicopters vs. remotely piloted aircraft).
Example Hazards	<ul style="list-style-type: none"> • Transmission lines under low-level training routes would require increase in floor elevation. • Wind turbines in helicopter routes prevent low-level flights.
Control Options	<ul style="list-style-type: none"> • Easements, encroachment partnering, conservation partnering. • Adjusted routes and avoidance areas. • Outreach/engagement with commercial sector/utility commissions.
Airspace Congestion Reduces Overall Airspace Capacity	
Hazard Identification	High airspace traffic reduces the available time for Air Force utilization of airspace, including flying routes.
Hazard Assessment	Aircraft and other platforms may be unable to utilize the full volume of airspace required, may need to restrict time in airspace, may encounter delays transiting, or may need to use airspace further away.
Example Hazards	<ul style="list-style-type: none"> • High civilian air traffic at local airports creates congestion in local airspace and increases risk of collision. • High utilization of routes reduces aircraft throughput and forces utilization of routes further away.
Control Options	<ul style="list-style-type: none"> • Traffic control improvements. • Utilization of other routes or temporal deconfliction. • Regional coordination initiatives.
Bird/Wildlife Aircraft Strike Hazards Restrict Flying Times	
Hazard Identification	Airspace utilization near airfields and in landing patterns is not safe for operations during certain seasons or at certain times of day.
Hazard Assessment	Nearby communities, personnel, and equipment may be at risk from damage. Temporary or permanent restrictions on flight operations may reduce airfield utilization.
Example Hazards	<ul style="list-style-type: none"> • Bird strikes damage aircraft and cause risk to personnel. • Bird hazards prevent flight operations in the morning and at night during migration season.
Control Options	<ul style="list-style-type: none"> • Strike controls in areas surrounding airfields, such as military working dogs, compatible use programs. • Adjusted flying hours.
Unauthorized Access	
Hazard Identification	Unauthorized platforms access airspace, including training routes, and airspace over installations and facilities.
Hazard Assessment	Unauthorized aircraft may create safety or security risks, restrict sensitive operations, or otherwise disrupt operations.
Example Hazards	<ul style="list-style-type: none"> • Hobby drone overflights threaten sensitive activity.

	<ul style="list-style-type: none"> Unauthorized aircraft such as unmanned aircraft systems, drones, and gliders in airspace endanger transiting aircraft.
Control Options	<ul style="list-style-type: none"> Outreach, engagement, and education with pilots and hobbyists. Technology or engineering controls to prevent unauthorized access. Regional traffic coordination initiatives.
Light Interference	
Hazard Identification	Light interference from tower lighting at night or glint/glare during the day restrict flight operations.
Hazard Assessment	Light interference may increase risk to personnel and equipment by increasing accident potential; some platforms may face restrictions.
Example Hazards	<ul style="list-style-type: none"> Tower lighting interferes with night vision systems on aircraft. Glint/glare from solar development restricts flight operations near solar panels.
Control Options	<ul style="list-style-type: none"> Restrict flight operations during affected time periods. Community zoning/military overlays.

Table A2.2. Examples of Land/Sea-Related Hazards and Controls.

Incompatible Development Within AICUZ Footprint	
Hazard Identification	Urban development is present or is possible in Accident Potential Zones, clear zones, within explosive safety arcs or within noise contours that is not compatible with flight operations.
Hazard Assessment	Flight operations may be restricted or require modifications due to incompatible development. Risk to mission may be increased due to increased accident potential or increased damage from accident potential. Equipment and personnel may be in danger.
Example Hazards	<ul style="list-style-type: none"> Residential development within Air Installation Compatible Use Zones increases risk to flight operations. Incompatible development within noise contours requires adjustment of flight patterns and takeoff operations.
Control Options	<ul style="list-style-type: none"> Community zoning/overlay initiatives. Encroachment partnering, environmental protection, other real estate actions.
Airborne Noise Issues Restrict Airspace Utilization	
Hazard Identification	Noise restrictions and complaints restrict the utilization of airspace due to sensitivity over community impacts.
Hazard Assessment	Noise restrictions may create temporary or permanent restrictions on flight operations and may impact specific platforms with higher noise profiles.
Example Hazards	<ul style="list-style-type: none"> Testing and training realism is restricted because of community opposition to explosive blast noise. F-35 operations restricted due to noise constraints.
Control Options	<ul style="list-style-type: none"> Adjust training conditions and parameters to reduce noise. Community outreach and engagement.

Physical Encroachment on Installation Boundaries	
Hazard Identification	Incompatible structures are located too close to installation boundaries or on installation property.
Hazard Assessment	The presence of encroaching structures may threaten security and safety. Sensitive operations may be restricted. Personnel may be in danger.
Example Hazards	<ul style="list-style-type: none"> Structures near the fenceline permit unauthorized access to base over the fence. Insufficient setbacks threaten facilities, such as fuel and water infrastructure.
Control Options	<ul style="list-style-type: none"> Encroachment partnering, environmental protection, other real estate actions. Investment in improved fences, setbacks, facility renovations.
Incompatible Development Near Remote Facilities	
Hazard Identification	Development operations, including extractive industries, threaten remote facilities either directly or by interfering with transport to or communication with the installation.
Hazard Assessment	Utilization of remote facilities or communication with remote facilities may be limited or disrupted.
Example Hazards	<ul style="list-style-type: none"> Underground wastewater injection causes seismic events, damaging facilities. Energy development near communications links disrupts microwave communications.
Control Options	<ul style="list-style-type: none"> Legislative, regulatory outreach, or engagement. Commercial sector outreach or engagement.
Limited Access	
Hazard Identification	Development near the installation or remote facilities lacks adequate infrastructure.
Hazard Assessment	Personnel and equipment may be at risk due to temporary or permanent restrictions on transit near the installation. Mission disruption is possible.
Example Hazards	<ul style="list-style-type: none"> Excessive traffic disrupts critical transport for personnel. Defense access roads in poor repair prevent access to key facilities.
Control Options	<ul style="list-style-type: none"> Community partnering and outreach to improve traffic. Investment or partnership in transportation infrastructure and/or transit.
Hazards Prevent On-Base Development	
Hazard Identification	Environmental contamination, explosive safety arcs, or high numbers of unexploded ordnance prevent utilization of space on installation for mission-critical development.
Hazard Assessment	Equipment, infrastructure, and personnel may be at risk from hazards. Mission operations may be restricted because of lack of resources.

Example Hazards	<ul style="list-style-type: none"> • Unexploded ordnance prevents expansion of facilities and poses safety risks • Remediation sites restrict development of new facilities.
Control Options	<ul style="list-style-type: none"> • Investment in remediation. • Avoidance zones, land acquisition, compact development.
Temporary Security Hazards	
Hazard Identification	Sensitive areas on installation are accessible via boat or other transport.
Hazard Assessment	Personnel may be at risk or mission disruption can occur, especially in sensitive activities.
Example Hazards	<ul style="list-style-type: none"> • Ranges threatened by intruders or transients, restricting operations, and causing risk to personnel. • Casual boating comes too close to installation boundaries during sensitive operations.
Control Options	<ul style="list-style-type: none"> • Partnerships with law enforcement and other community stakeholders. • Investment in additional security equipment, infrastructure, or personnel.
Foreign Access or Control	
Hazard Identification	Foreign entities control areas near the installation.
Hazard Assessment	Sensitive activities may be restricted.
Example Hazards	<ul style="list-style-type: none"> • Foreign corporations own land with lines of sight to sensitive facilities. • Overseas installations have limited ability to restrict foreign activity.
Control Options	<ul style="list-style-type: none"> • Relocate or restrict sensitive activity. • Develop countermeasures to surveillance.

Table A2.3. Examples of Spectrum-Related Hazards and Controls.

Physical Interference with Spectrum Utilization	
Hazard Identification	Physical structures or effects (e.g., air emissions) interfere with spectrum utilization.
Hazard Assessment	Communications and radar equipment may not function correctly. Gaps in radar or radio coverage may restrict mission operations. Personnel may be at risk due to communications failures.
Example Hazards	<ul style="list-style-type: none"> • Wind turbines disrupt ground-based radar. • Power plant emissions disrupt microwave communications links.
Control Options	<ul style="list-style-type: none"> • Software- or hardware-based workarounds. • Outreach and engagement with utilities and utility commissions.
Radio Frequency Interference	
Hazard Identification	Radiation in or near bands utilized by Air Force equipment is significant.
Hazard Assessment	Temporary or permanent degradation of communications or radar equipment may threaten mission operations, personnel, and equipment.
Example Hazards	<ul style="list-style-type: none"> • Radio transmissions from commercial bandwidth utilization degrade radio link performance. • Commercial spectrum utilization conflicts directly with radar performance.
Control Options	<ul style="list-style-type: none"> • Engagement with commercial spectrum users, regulatory, or legislative process. • Adjustments to or investment in equipment.

Table A2.4. Examples of Water-Related Hazards and Controls.

Water Supply	
Hazard Identification	Insufficient primary water supplies are available for Air Force use now or in the future.
Hazard Assessment	Mission operations or mission support may be unable to obtain sufficient water, restricting missions, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Groundwater supply is depleted or being depleted and will not be sufficient for mission support. • Surface water supply is over-allocated, and water supplies to installation will be restricted.
Control Options	<ul style="list-style-type: none"> • Engage with other users to implement gradual water sustainability plan. • Locate additional supplies.
Water Rights	
Hazard Identification	Water rights are insufficiently documented or do not provide sufficient water supplies for Air Force use.
Hazard Assessment	Compliance issues may restrict mission activities or support. Mission operations or mission support may be unable to provide sufficient water.
Example Hazards	<ul style="list-style-type: none"> • Water rights are not sufficiently documented. • Water rights are of insufficient quantity to supply the mission.
Control Options	<ul style="list-style-type: none"> • Implement water conservation plans to reduce water consumption. • Document and acquire water rights. • Obtain water security through other agreements and partnerships.
Water Quality	
Hazard Identification	Water quality issues prevent utilization of Air Force water supplies.
Hazard Assessment	Compliance issues may restrict mission activities or support or require additional investment in equipment. Mission operations or mission support may be unable to provide sufficient water.
Example Hazards	<ul style="list-style-type: none"> • Compliance requirements for water treatment are costly and require new equipment. • Water quality prevents utilization of water supplies during drought.
Control Options	<ul style="list-style-type: none"> • Invest in or utilize engineering controls to improve water quality. • Locate alternative sources.
Infrastructure Quality	
Hazard Identification	Water delivery or treatment infrastructure does not provide enough capacity, is degraded, or has single points of failure.
Hazard Assessment	Equipment may be degraded, and mission activities or personnel may be at risk. Permanent or temporary issues with water delivery systems may disrupt activities.

Example Hazards	<ul style="list-style-type: none"> • Aging water infrastructure has leaks, disrupting supply. • Single water main provides all installation water, creating a security risk.
Control Options	<ul style="list-style-type: none"> • Invest in improved or diversified water delivery system. • Privatize water delivery system, including operations and maintenance.
Water Demand	
Hazard Identification	Water efficiency and conservation measures are insufficient to reduce Air Force water consumption.
Hazard Assessment	Compliance issues may restrict mission activities or support. Mission operations or mission support may be unable to provide sufficient water.
Example Hazards	<ul style="list-style-type: none"> • Installation water demand has increased over time. • Installation water efficiency efforts lack funding and have been ineffective.
Control Options	<ul style="list-style-type: none"> • Invest in water conservation or efficiency measures. • Develop community partnerships to aid in water conservation and efficiency initiatives.
Backup Supplies	
Hazard Identification	Limited or no backup supplies are available for Air Force use.
Hazard Assessment	Disruptions to supplies may adversely affect mission operations, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Poorly maintained backup supplies and may lack appropriate quality. • Backup supplies require costly investment to be viable.
Control Options	<ul style="list-style-type: none"> • Seek alternative backup supplies. • Privatize backup supply system.

Table A2.5. Examples of Energy-Related Hazards and Controls.

Energy Supply	
Hazard Identification	Insufficient primary energy supplies are available for Air Force use now or in the future.
Hazard Assessment	Mission operations or mission support may be unable to provide sufficient energy supplies, restricting missions, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Installation cannot provide enough electrical power to meet new mission requirements. • Installation fuel supply cannot meet demand during high operational tempos.
Control Options	<ul style="list-style-type: none"> • Invest in on-base energy production or storage infrastructure. • Partner with utilities or other firms to add capacity to installation energy supplies.
Energy Source	
Hazard Identification	Energy (electrical or fuels) comes from unsustainable or non-renewable sources.
Hazard Assessment	Compliance issues may restrict mission activities or support. Mission operations or mission support may be unable to provide sufficient energy supplies or exercise sufficient control over energy supplies, restricting missions, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Electrical supply is fossil-fuel based. • No guaranteed electrical supply during emergencies.
Control Options	<ul style="list-style-type: none"> • Invest in renewable energy production facilities. • Partner with energy stakeholders to acquire renewable energy credits.
Energy Reliability	
Hazard Identification	Fuel or electricity delivery unreliable, either consistently or at specific times of year.
Hazard Assessment	Mission operations or mission support may be unable to provide sufficient energy supplies or exercise sufficient control over energy supplies, restricting missions, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Electricity supply is unreliable during high demand periods. • Transportation issues can disrupt fuel supply via train or truck.
Control Options	<ul style="list-style-type: none"> • Invest in demand management or energy storage. • Coordinate with local transportation agencies to improve delivery.
Infrastructure Quality	
Hazard Identification	Energy delivery is limited by infrastructure constraints, including insufficient transmission or pipeline capacity, or has single points of failure.
Hazard Assessment	Equipment may be degraded, and mission activities or personnel may be at risk. Permanent or temporary issues with energy delivery systems may disrupt activities.
Example Hazards	<ul style="list-style-type: none"> • Installation transmission lines lack capacity to support increased loads or net energy metering.

	<ul style="list-style-type: none"> • Electrical substation off-base represents single point of failure.
Control Options	<ul style="list-style-type: none"> • Invest in improved infrastructure and maintenance. • Privatize energy distribution infrastructure, including operations and maintenance.
Energy Demand	
Hazard Identification	Energy efficiency and conservation measures are insufficient to reduce Air Force energy consumption.
Hazard Assessment	Compliance issues may restrict mission activities or support. Mission operations or mission support may be unable to provide sufficient electricity or fuel.
Example Hazards	<ul style="list-style-type: none"> • Installation has increased overall electrical load. • Operational tempo has increased fuel usage over sustainable baseline.
Control Options	<ul style="list-style-type: none"> • Invest in energy conservation or efficiency measures. • Develop community partnerships to aid in energy conservation and efficiency initiatives.
Backup Supplies	
Hazard Identification	Limited or no backup energy sources are available for Air Force use.
Hazard Assessment	Disruptions to supplies may adversely affect mission operations, activities, equipment, or personnel.
Example Hazards	<ul style="list-style-type: none"> • Installation has limited backup supplies for critical infrastructure. • Long-term plans for investment reduce backup supplies available to installation from utility.
Control Options	<ul style="list-style-type: none"> • Seek alternative backup supplies. • Privatize backup supply system.

Table A2.6. Examples of Climate/Weather-Related Hazards and Controls.

Extreme Weather	
Hazard Identification	Severe weather can include extreme heat and cold events, high wind events, thunderstorms with strong winds/hail and/or tornados, lightning, tropical storms and hurricanes, heavy precipitation events, blizzards, freezing drizzle/rain events, and other locally defined weather hazards. The frequency and intensity of events may increase as well.
Hazard Assessment	Severe weather events threaten mission operations, infrastructure, equipment, and personnel, especially with increases in frequency and intensity.
Example Hazards	<ul style="list-style-type: none"> • High heat events cause injuries to personnel and restrict use of some equipment. • Tornados or hurricanes disrupt mission operations and cause risk to personnel and damage to equipment. • Thunderstorms can produce damaging winds and hail that can cause injuries and damage to resources and equipment.
Control Options	<ul style="list-style-type: none"> • Restrict operations during severe weather. • Invest in hardened or green infrastructure. • Community partnerships to increase emergency management and preparedness capabilities.
Drought	
Hazard Identification	Droughts may disrupt water supplies, infrastructure, or community resilience, and may increase in frequency and intensity.
Hazard Assessment	Droughts threaten mission support, disrupting the use of equipment and restricting personnel.
Example Hazards	<ul style="list-style-type: none"> • Drought events lead to temporary restrictions on water use and restrict mission operations. • Droughts restrict water supplies for mission support, threatening overall community resilience.
Control Options	<ul style="list-style-type: none"> • Investment in efficiency and conservation measures. • Drought mitigation planning with community stakeholders.
Wildland Fire	
Hazard Identification	Climate change and weather conditions may exacerbate wildland fires, directly or indirectly threatening operations
Hazard Assessment	Wildland fires disrupt mission operations temporarily and can damage or destroy equipment and threaten safety of personnel.
Example Hazards	<ul style="list-style-type: none"> • Wildland fires damage installation equipment and prevent flight operations. • Wildland fires, exacerbated by climate effects, threaten mission support and community resilience.
Control Options	<ul style="list-style-type: none"> • Partner with emergency management and range management

	<p>stakeholders to reduce risk of fire.</p> <ul style="list-style-type: none"> • Invest in natural resources management program. • Partner with National Oceanic and Atmospheric Administration, National Weather Service that employs Incident Meteorologists that support fire response management teams during wildfire season.
Flooding	
Hazard Identification	Flooding may include coastal and inland flooding and associated erosion, both of which may increase in frequency and intensity. Over extended time periods, sea-level rise may exacerbate flooding risks or lead to persistent inundation or contamination of water supplies.
Hazard Assessment	Temporary flooding can disrupt missions and activities as well as support, damage equipment, and threaten personnel. Permanent inundation can damage equipment and restrict mission operations and support. Compliance with floodplain regulations can restrict operations, activity, and infrastructure.
Example Hazards	<ul style="list-style-type: none"> • Installation flooding from upstream precipitation disrupts mission operations, threatens personnel, and damages equipment. • Infrastructure in low-lying areas is susceptible to long-term flooding and inundation due to sea level rise.
Control Options	<ul style="list-style-type: none"> • Invest in natural infrastructure to prevent severe floods. • Plan infrastructure to avoid or mitigate flood damage.
Ocean Impacts	
Hazard Identification	Ocean impacts may be varied, including loss of arctic sea ice, ocean acidification, and other disruptions.
Hazard Assessment	Ocean impacts may disrupt mission operations or alter operational tempo. Some ocean impacts may disrupt mission support directly or indirectly.
Example Hazards	<ul style="list-style-type: none"> • Mission operations due to increased Arctic Ocean transport increase operational tempo for personnel and equipment. • Water system intakes damaged by invasive species threaten launch facilities.
Control Options	<ul style="list-style-type: none"> • Implement quality of life programs to ease changes in operational tempo. • Invest in engineering controls to avoid damage to equipment.
Ecosystem Disruption	
Hazard Identification	Ecosystems that depend on climate regimes may shift, leading to species migration or other impacts, including disruption of ecosystem services.
Hazard Assessment	Ecosystem disruption can alter compliance requirements, affecting mission operations and support. Some ecosystem changes may affect equipment or disrupt ecosystem services that support personnel.
Example Hazards	<ul style="list-style-type: none"> • Wetlands degradation can impact storm water runoff and consequently pose risks to potable water quality and/or mission operations. • Invasive species expected to damage equipment and require additional

	management.
Control Options	<ul style="list-style-type: none"> • Develop and implement invasive species control plans. • Invest in natural infrastructure through encroachment or community partnering.
Disease Vectors	
Hazard Identification	Disease vectors depend on climate conditions; changes in climate conditions may create new disease vector risks or reduce current risks.
Hazard Assessment	Disease vectors may threaten personnel and may cause changes in mission operations or alter operational tempo.
Example Hazards	<ul style="list-style-type: none"> • Increased temperatures bring disease vectors associated with tropical climates to subtropical installations, threatening personnel. • Increased operational tempo required by units responding to new mission requirements due to expanded disease vectors.
Control Options	<ul style="list-style-type: none"> • Partner with community medical organizations to address disease risks. • Relocation of key facilities or missions.

Table A2.7. Examples of Natural and Cultural Resources-Related Hazards and Controls.

Loss or Destruction of Natural Resources	
Hazard Identification	Natural resources may be at risk of loss or destruction. Ecosystem services provisioned by natural capital may be degraded or underutilized.
Hazard Assessment	Personnel and equipment may depend on natural resources, especially if ecosystem services are utilized by the installation.
Example Hazards	<ul style="list-style-type: none"> • Development threatens recreational areas critical to personnel and community relations. • Water supply degradation by invasive species.
Control Options	<ul style="list-style-type: none"> • Invest in integrated natural resource management planning. • Develop and implement invasive species control planning.
Management of Natural Resources	
Hazard Identification	Natural resource management may restrict Air Force operations or increase risk.
Hazard Assessment	Compliance with natural resource laws and regulations may restrict mission operations, increase costs or risks, or affect personnel.
Example Hazards	<ul style="list-style-type: none"> • Installation has become “habitat of last resort” for endangered species, leading to restrictions on mission operations. • Avoidance areas to protect natural resources, including wetlands, restrict mission operations.
Control Options	<ul style="list-style-type: none"> • Support off-base habitat protection efforts, potentially by pursuing Readiness and Environmental Protection Integration options. • Restrict operations on or near natural resources.
Degradation of Natural Environment	
Hazard Identification	Pollution, hazardous waste disposal, and hazardous substance releases may damage the natural environment or expose Air Force operations to regulatory action. Hazard classification may include air pollution, hazardous waste disposal, and other environmental contamination issues.
Hazard Assessment	Compliance with other regulations may restrict mission operations and activities, limit mission support, or affect equipment and infrastructure. Environmental hazards may directly threaten safety of personnel.
Example Hazards	<ul style="list-style-type: none"> • Hazardous waste contamination causes risk to personnel and environment • Air quality requirements restrict use of aircraft during summer months.
Control Options	<ul style="list-style-type: none"> • Adjust mission operations to achieve compliance with air quality controls. • Invest in cost-effective hazardous waste disposal operations to ensure removal of waste from the installation as soon as possible, preferably within 90-days.
Loss or Destruction of Cultural Resources	
Hazard	Cultural resources may be at risk of loss or destruction.

Identification	
Hazard Assessment	Personnel may depend on cultural resources.
Example Hazards	<ul style="list-style-type: none"> • Key cultural resources are degrading but integrated into critical facilities, including hangars. • Tribal cultural resources are under threat from development, creating compliance issues.
Control Option	<ul style="list-style-type: none"> • Outreach and engagement with local stakeholders to preserve cultural resources.
Management of Cultural Resources	
Hazard Identification	Cultural Resource management may restrict Air Force operations or increase risk.
Hazard Assessment	Compliance with cultural resource laws and regulations may restrict mission operations, increase costs or risks, or affect personnel.
Example Hazards	<ul style="list-style-type: none"> • Cultural resources create avoidance areas on ranges, preventing realistic training. • Archaeological recovery efforts on an installation can delay mission operations.
Control Options	<ul style="list-style-type: none"> • Partner with community organizations to manage and sustain cultural resources. • Restrict operations on or near cultural resources.

Attachment 3

MISSION SUSTAINMENT RISK REPORT

A3.1. Introduction. This attachment includes an example of the mission sustainment data reporting format. Reports should include a combination of concise, aggregated hazard and control information, as well as individual sections with detailed information to answer questions. The reporting format will evolve over time, but installations can use the following as a guide to maintain mission sustainment documentation.

A3.2. Mission Sustainment Risk Report Data Elements. The following elements include the minimum data gathering and analysis requirements.

A3.2.1. Installation Mission Sustainment Team Points of Contact. This section lists members of the Installation Mission Sustainment Team as an evolving roster of participants.

Table A3.1. Points of Contact.

Name	Office	Phone	Email

A3.2.2. Hazard Risk and Control Status Roll-Up. This section lists hazards in descending order by risk assessment priority and provides the status of identified controls.

Table A3.2. Installation Hazards Roll-Up.

#	XXX AFB HAZARDS	FYXX		FYXX	
		Current	Future	Current	Future
1	Hazard Title	Extremely High	High	Medium	Low
2					
3					

Table A3.3. Major Asset Hazards Roll-Up.

#	XXX [Major Asset Name] HAZARDS	FYXX		FYXX	
		Current	Future	Current	Future
1	Hazard Title	Extremely High	High	Medium	Low
2					
3					

Table A3.4. Control Status Roll-Up.

#	CONTROLS	FYXX	FYXX
1	Control Title	Status: Incomplete	Status: Proposed
2	Control Title	Status: Ongoing	Status: Complete

A3.2.3. **Hazards and Related Controls.** This section displays the relationship between the hazard category, individual hazards, and associated controls. A hazard category may have several hazards. More than one control can address an individual hazard.

Table A3.5. Hazards and Related Controls.

Category	Hazard Title	Associated Controls
XXX AFB		
Hazard Category	Hazard Title	Control Title
XXX [Major Asset Name]		
Hazard Category	Hazard Title	Control Title

A3.2.4. **Scope.** The scope provides background on the installation pertinent to mission sustainment. This can include information on the installation's location, the host unit, major tenant units, current operations, future operations, economic impact, Installation Mission Sustainment Team status, and relevant studies and programs.

Table A3.6. Scope.

Scope	
Location	
Host Unit	
Major Tenant Units	
Current Operations	
Future Operations	
Economic Impact	
IMST Status	

Table A3.7. Relevant Studies and Programs.

Relevant Studies and Programs		
Study	Year	Notable Outcomes
AICUZ		
JLUS		
ICEMAP		
AFCP		
REPI		
(etc.)		

A3.2.5. **Installation Complex/Mission Footprint Map.** This section provides a map of the Installation Complex/Mission Footprint scope.

A3.2.6. **Hazards.** This section describes a hazard’s scope, risk assessment, and associated controls. Recommend repeating the following table and subsections for each major hazard.

Table A3.8. Major Hazard.

Hazard Title		
Scope		
Category	Hazard Category	
Affected Areas		
Affected Missions		
Risk Assessment		
Hazard Metric	FYXX Timeframe Ratings	
	Current	Future (+# years)
Overall Risk Rating	Extremely High	High
Severity	Medium	Low
Probability	Risk Rating	Risk Rating
Controls		
Status: Proposed	Control Title	

A3.2.6.1. **Hazard Description.** The hazard description provides justification for the Risk Assessment section in [Table A3.8](#), describing the current and future risk rating severity and probability.

A3.2.6.2. **Additional Considerations.** Additional considerations, such as key stakeholders for any internal or external factors not yet captured, can be listed in this section.

A3.2.7. **Other Hazards.** This section lists other hazards that exist but are not severe, do not merit need for controls, or determined by leadership to carry risk.

Table A3.9. Other Hazards.

Hazard Category	Hazard Title			
Description of Hazard				
FYXX Risk Rating	Current Overall	Extremely High	Future (+# Overall)	High
	Severity	Medium	Severity	Low
	Probability	Risk Rating	Probability	Risk Rating
Controls				
Status: Proposed	Control Title			

A3.2.8. **Controls.** Concisely describe individual controls in this section along with their related hazard and associated internal and external stakeholders.

Table A3.10. Control.

Status: Proposed		Control Title	
Related Hazard & Risk Assessment			
Hazard (Category)	Hazard Title (Hazard Category)		
FYXX Hazard Risk Rating	Current	Risk Rating	
	Future	Risk Rating	
Stakeholders			
Current Owner (OPR)			
Support (OCR)			
External Stakeholders			

A3.2.8.1. **Control Description.** Briefly summarize the expected outcome and the overall process to achieve the expected outcome in this section.

A3.2.8.2. **Engagement Plan.** This section describes the major efforts in the process that involve external stakeholders.

A3.2.8.3. **Changelog.** This section tracks the changes, progress, or updates for this control.

Table A3.11. Changelog.

Changelog		
Fiscal Year	Status	Actions Taken
20XX		
20XX		

A3.2.9. **Completed Controls.** Provide a list of completed controls in this section.

Table A3.12. Completed Controls.

Date Completed	Control Title	Notes

A3.2.10. **Installation Complex/Mission Footprint Asset List.** Compile the Installation Complex/Mission Footprint assets in this section.

Table A3.13. Asset List.

Asset	Asset Owner	User