Eleventh Air Force

Integrity - Service - Excellence

Instituting Land Use Controls (LUCs) for Environmental Compliance and Planning

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Agenda

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- Installation Restoration Program
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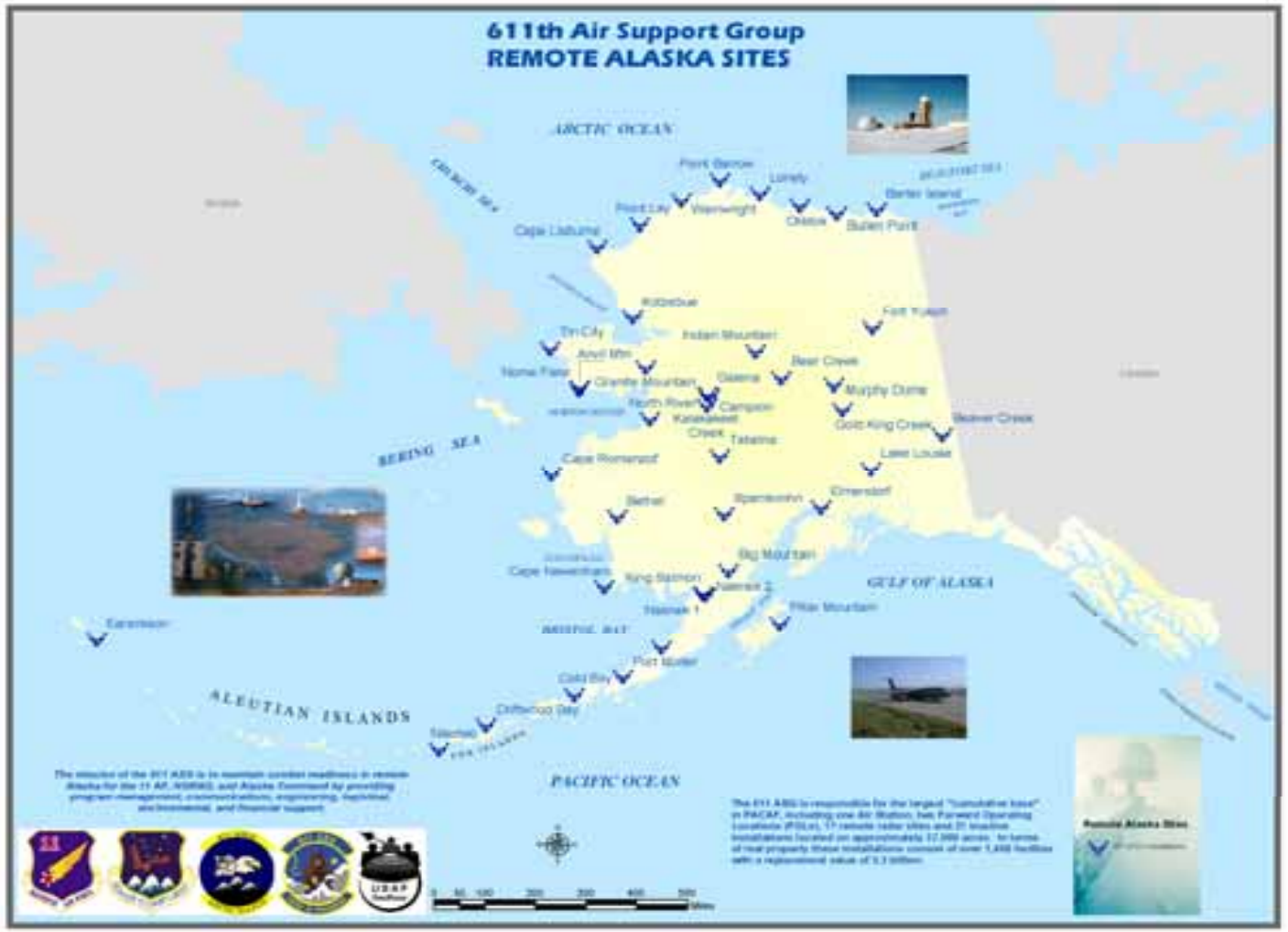
Introduction

- Sprinkled throughout rural Alaska, there are numerous abandoned or minimally manned radar installations
- Once serving as part of the Distant Early Warning Line or DEW Line, and an early warning defense system known as White Alice Communications, the installations were highly regarded during the Cold War
- Now obsolete these installations need to have environmental restoration plans developed and cleanup efforts completed prior to the turning over the real property to federal, state or native government agencies
- ArcGIS and the Spatial Data Standard for Facilities, Infrastructure and the Environment (SDSFIE) are being used to support this effort

Background

- The 611 Air Support Group (ASG) is responsible for providing program management, communications, engineering, logistical and environmental support for one Air Station, two Forward Operating Locations, 17 active Long and Short Range Radar Sites, and 19 inactive sites throughout the state of Alaska
- Largest "cumulative base" in the Pacific Air Forces (PACAF) - approximately 37,500 acres
- These installations support the USAF, North American Aerospace Defense Command (NORAD), and Federal Aviation Administration (FAA) with radar surveillance, communications and infrastructure for homeland defense from the Last Frontier

Area of Responsibility



Alaska vs. CONUS

Background (cont.)

- The 611 ASG environmental cleanup of military sites in Alaska is one of the largest environmental cleanup programs in the Department of Defense (DoD)
- An extremely challenging job given the remoteness, the short summer construction season, and difficult site access
- The 611 ASG Environmental Restoration Program (ERP) has identified 458 contaminated sites, of those 212 sites have been cleaned up
  - The completion of the ERP is a significant step in the environmental restoration process for the transfer of excess property to other agencies
  - Many of these sites will continue long-term monitoring

Land Use Controls (LUCs)

- LUCs include any type of physical, legal or administrative mechanism that restricts the use of, or limits access to, real property to prevent or reduce risks to human health and the environment
- Primary mechanism imposed to ensure the continued effectiveness of land use restrictions
- Legal mechanisms include restrictive covenants, negative easements, and deed notices
- DoD has published policy and guidance on land management responsibilities for implementing, documenting and managing LUCs for real property being transferred out of Federal control and active installations

Land Use Controls (LUCs)

- Geographic Information Systems (GIS) provides a unique tool to document and capture the location of Installation Restoration Program (IRP) sites and Areas of Concern
- LUCs describe the IRP site number, name, and location
- Identify the potential environmental risk such as, unknown waste in landfill under a natural vegetated cap
- The LUC restrictions may include signs posting no digging, excavation, or trespassing
- LUC Required Maintenance: Long Term Management (LTM); Landfill Cap Inspection

Environmental Data Development

- **IRP sites are digitized from field investigations, reports and drawings**
- **Monitoring well locations are used to display ongoing environmental monitoring activities**
- **IRP sites are being overlaid with installation utilities information to assess the potential of development or reutilization of property**

Integrating Disparate Data Sources

- Monitoring well coordinate locations may come in spreadsheet or ASCII text file formats
- Hard copy base maps and engineering drawings are scanned and georeferenced using ArcGIS Desktop Georeferencing and Spatial Adjustment toolsets
- CAD files have been exported and reprojected from local grid coordinate systems to target UTM WGS84 coordinate system
- Attribute information comes from a variety of sources including annotation on drawings, or site descriptions in environmental assessments and surveys

Integrating Disparate Data Sources

- Historic installation base maps show the location of demolished buildings, fuel storage systems, and landfills
- Property boundary sources include US Surveys issued by the Bureau of Land Management through Public Land Orders

Integrating Disparate Data Sources

- Current and historic aerial photography and satellite imagery provide an overview of the installations over time
- Identifying the locations of demolished facilities assist in the long-term monitoring of site
- Pre and post Clean Sweep Operations completed in 2000 at Fort Yukon Long Range Radar Site

Environmental Data Model

- The Spatial Data Standard for Facilities, Infrastructure and Environment (SDSFIE) is being used to organize and store the different types of environmental datasets
- Environmental data layers are stored within the SDSFIE geodatabase environmental hazards entity sets, further organized into entity classes such as environmental hazard sites, and captured in entity types like environmental_restoration_site
- The PACAF Geo Integration Office is working other Air Force Major Commands to develop a Restoration Mission Data Set (MDS)
  - The Restoration MDS will define the data layers to be incorporated into the installations geodatabase
  - Define the minimum attributes to be populated

Discussion

- GIS products that support LUCs include maps and databases documenting the location of IRP sites, site name, type of contamination, and associated LUCs
- GIS map products and other supporting documentation will provide on-site contractors information detailing the IRP sites, and LUCs to ensure that personnel are aware of environmental compliance issues and requirements
- To support work order requests and dig permitting, installation base maps and utilities layers can be overlaid with IRP sites and LUCs to ensure that projects will not disturb IRP sites or endanger personnel or the environment

Contracting

- **To ensure that environmental field data is compatible with existing installation geodatabases, a document has been prepared to provide sample technical contract language**
  - **Identify target architecture**
  - **Define coordinate systems and datums**
  - **Define spatial data standards and conventions**
  - **Provided to Project Managers and Contracting Officers**
  - **Reduce costly data conversion processing or incompatibility**

Technical Contract Provision And Sample Technical Contract Clauses for Surveying, Mapping, Drawing and Geographic Information System Deliverables

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Conclusion

- The 611 ASG GeoBase program will continue to compile and integrate environmental data sets into installation geodatabases
- SDSFIE geodatabase provides a robust data model to store environmental hazards, land use and land restriction information to support environmental compliance and planning efforts
- Future development of an PACAF Restoration MDS will provide guidance on what data layers should be collected and minimum attribution
- Environmental hazard sites and their associated LUCs will be used in conjunction with base map and utilities data layers to ensure projects reduce risk to human health and the environment

Questions

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