

CASE STUDY SUMMARY – CEQ NEPA TASK FORCE

CATEGORY: Effective Use of Adaptive Management

PROJECT: Management of Deer-Aircraft Strike Hazard, Ellsworth Air Force Base (EAFB), South Dakota

PRACTICE: 1) Adaptive management approach to alternative development and decisionmaking;
2) Use of agency expertise on the Interdisciplinary Team to ensure practicality, effectiveness, and long-term commitment to implementation and monitoring of the decision, using the Facilitated Approach;
3) Incorporation of clear quantitative objectives and their evaluation into the decisionmaking process and document, so the EA is a complete decision package for the decisionmaker
4) Use of the FONSI as a commitment and checklist for each organization to ensure implementation of the alternative, mitigation, and monitoring
5) Use of the facilitated NEPA process to leverage the agency expertise, and to reach closure on and commitment to the issues, alternatives, mitigation, monitoring, and implementation in an extremely short period of time.

AGENCY: U. S. Air Force, Ellsworth Air Force Base, South Dakota

INVOLVED PARTIES: (Other than EAFB personnel) Wildlife Biologists from the private sector (two experts), APHIS Wildlife Services (five experts), Facilitator/Planner from the private sector

AGENCY CONTACT: Gregory Johnson, 28CES/CEVC, 2103 Scott Drive, Ellsworth AFB, SD 57707. Phone: 605-385-2692

DATES: NEPA process began June 1996, FONSI signed February 1997

Context/Background and Project Description: Ellsworth AFB began to experience safety problems with a resident herd of deer in the flightline, after the flightline security gates were opened in 1991 (after the fall of the Berlin Wall and security measures were relaxed). For 5 years, the Base attempted to resolve the problem, without long-term success. In four months, NEPA was used to create a team of EAFB NEPA and organizational expertise related to flight and ground safety, and work with deer management experts from state and Federal agencies and the private sector to identify the need, develop quantitative mission objectives, clarify the environmental, safety, mission and health issues, and develop practical and effective alternatives. From a mission standpoint, it was most practical to take an adaptive management phased approach to resolving

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the problem – implement actions to close the perimeter of the flightline to deer (after removing the deer residing in the flightline); monitor effectiveness. If deer are still entering the flightline by jumping the fence, increase the fence height in appropriate places; monitor the effectiveness. If deer are still using the flightline, take the more drastic measure of fencing and/or destroying the wetland deer habitat located within the flightline. The same team used an adapted version of the AF Operational Risk Management Process to evaluate alternative and phase effectiveness in meeting objectives, and calculated cost-effectiveness of countermeasures based on experience with deer management to date. Using the combination of the effectiveness in meeting objectives and environmental impacts documented in the EA, the Commander made a decision that is still effective in supporting mission and is continuing to be implemented by the responsible organizations on EAFB. The Team won a Commander's Award for Quality Teamwork (see attached photo and award).

Internet Site: N/A

Value as a Practice:

▪ *Results, and Challenges Overcome:*

- 1) The facilitated interdisciplinary planning approach, using the extensive expertise within the pertinent organizations on base, eliminated stovepipe planning, which resulted in more practical alternatives and mitigation measures, and commitment by all levels in the organizations to implementation and monitoring.
- 2) The facilitated planning approach focused the planning and analysis, eliminated "repeat planning," and resulted in closure in only four months, after five years of good but inconclusive efforts.
- 3) The adaptive management approach provided the opportunity to solve the problem with the fewest and most cost-effective actions, with the no resulting environmental impacts.
- 4) Preparing, reviewing, and correcting the EA by the team concurrently with the progress of the analysis, focused the analysis, and therefore the document, on the important issues, identified needs for only the specific data and analyses needed, provided a strong foundation and understanding for each analysis phase, provided for "self-correcting" analyses and documentation, and integrated the disciplines into the analysis effectively.
- 5) Incorporation of all the information needed for the Commander to make an informed decision, including quantitative safety and cost objectives, and the adapted Operational Risk Management approach, into the environmental assessment provided the Commander with the ability to make an informed decision based on both effectiveness and environmental impacts in one concise "decision package."
- 6) Incorporating the history of the 5-year planning effort and the rationale for alternatives not considered in detail into the environmental assessment

avoids future duplication and mistakes by new personnel not involved in the original planning process.

- 7) Incorporation of tables documenting all the actions and associated organizational responsibilities into the FONSI provided a concise "checklist" for the Commander's commitment and all responsible organizations for monitoring and implementation.
- **Source of information/references:** Please see the attached briefing sheet for the describing the powerful characteristics of the environmental assessment, the environmental assessment/FONSI, and briefing on the effectiveness of the facilitated planning process
 - **Validation:** Greg Johnson, 28 CES/CEVC, EAFB (see above)
 - **Recommendation as a best practice:** Judith Lee, Facilitator/Planner, Environmental Planning Strategies, Inc. 6340 Dodds Drive, Bettendorf, IA 52722 563-332-6870

**Deer-Aircraft Hazard Management at Ellsworth Air Force Base -
Environmental Assessment Using the Systematic Interdisciplinary
Approach and Adaptive Management**

Page Number (Section Reference)	Effective Components of the Systematic Interdisciplinary Approach and Documentation, Including Adaptive Management Approach
Entire EA	<p>The contractor partnered with the base NEPA Coordinator to facilitate base Air and Ground Safety personnel and professional wildlife managers from around the country with expertise in airfield management (Chapters 6 and 7) through the analysis to identify and evaluate practical and effective means to protect mission by managing wild deer in the airfield (Attachments A and B). This effort resulted in a successful and innovative phased approach (Adaptive Management) to solving the need for action. The entire NEPA process and document was completed in 4 months, after 5 years of inconclusive planning efforts (see Section 2.2.1.2 of the EA). The EA integrates environmental, safety and health issues with associated mitigation measures and a state of the art assessment of safety risk for each alternative considered in detail. Quantitative objectives were developed by the Team, and each alternative evaluated for both effectiveness in meeting the objectives and environmental impacts, so that the Commander could make a truly informed decision, considering safety, cost effectiveness, and environmental protection. Solutions, including mitigation measures, were collaboratively developed by the Team, and responsibility for implementation and monitoring clearly identified. The base EA team was recognized by the Base Commander for outstanding performance (Attachment C). After 5 years, the process is still being effectively implemented by the responsible base organizations, including monitoring, with no further safety incidents.</p>
7 – 12 (Sec. 1.1-1.3)	<p>Integrated planning focused on the mission need to protect safety of military personnel and aircraft from deer-aircraft strike hazards in a cost-effective manner (related to the degree of flightline security gained). In the beginning, the Team identified quantitative safety and cost objectives against which each alternative would be developed and evaluated for effectiveness in meeting mission need (Sec. 1.3).</p>
13 – 18 (Sec. 1.6); 48 – 54 (Sec. 2.3-2.4)	<p>Planning integrated detailed safety, health, environmental, and design issues into the analysis, and the team collaboratively identified effective solutions (mitigation measures) with associated organizational responsibilities for implementation and monitoring. Two issues were identified that drove alternative development; an additional nine environmental, safety, and health issues were identified that were addressed through mitigation; twelve additional concerns were eliminated from analysis, with clear rationale. This approach focused the planning effort, and therefore the document. The EA also identified requirements</p>

	and responsibilities for monitoring effectiveness of mitigation measures and any need for adjustments (Adaptive Management).
23-26 (Sec. 2.1); 32-39 (Sec. 2.2.1.2)	Popular but ineffective alternatives that had been discussed were eliminated at the beginning, rather than at the end, of Chapter 2, to focus the organizational decisionmakers on the effective solutions that follow. A chronology of the history of the problem and efforts at developing solutions is included, to provide a context for the decisionmaker and to avoid duplicating ineffective efforts in the future, as necessary military and civilian personnel are rotated out.
27 – 32 (Sec. 2.2.1); 39-41 (Sec. 2.2.1.3- 2.2.1.5)	The current deer management program, as currently implemented and planned via approved plans, is described as the “no action” alternative, with responsibilities for each organization for implementation and monitoring assigned. This alternative is clearly described, to avoid any misunderstandings of the actual components of the alternative. Tables with actions and associated responsible organizations help clarify the components of the alternative.
20 – 22 (Sec. 1.8)	Legal and Air Force requirements and state laws and associated permits are identified to provide a legal framework within which the program must operate.
41-46 (Sec. 2.2.2)	This alternative provides an Adaptive Management approach to solving the problem, with the most effective and cost-effective component (based on the literature and recommendations of several deer biologists) described as Phase 1 (closing the gaps in the flightline perimeter). Phase 2 provides the opportunity to increase the height of the fence where it is needed, in areas where Phase 1 is not entirely effective. Phase 3 provides for fencing out an ecologically important wetland and/or destroying less ecologically important wetlands within the flightline perimeter to remove deer habitat from within the flightline.
46-47 (Sec. 2.2.3)	This alternative includes the first two phases from Adaptive Management Alternative 2, but provide the opportunity to destroy the ecologically important wetland identified in Alternative 2.
47-48 (Sec. 2.2.4)	This alternative provides the previous baseline for management of deer in the flightline, prior to when more active deer management began in July 1996 (which is described in Alternative 1, the true “no action” alternative).
48-54 (Sec. 2.3- 2.4)	These sections describe in detail the mitigation measures and monitoring requirements developed by the Flight Safety and other functional organizations for the issues described in Sec. 1.6.2. Responsibilities for implementing the mitigation and monitoring measures are clearly identified in tables.
55-56 (Ch. 3)	The Affected Environment chapter (Chapter 3) is required by AF policy. In this EA, the baseline information that typically is documented in an encyclopedic manner in Chapter 3 is incorporated analytically instead into the description of the need for action and issues (Ch. 1) and description of the alternatives, especially Alternatives 1 and 4 (the no action alternative and the baseline prior to the active deer management alternative).

	Unnecessary information is eliminated.
57 – 65 (Sec. 4.2-4.3)	<p>In addition to the environmental impact analyses required for the Environmental Consequences chapter (Chapter 4), this chapter also assesses the effective of each alternative in meeting the safety and cost-effectiveness objectives identified in Chapter 1. Prior to the Air Force requirement to include risk assessments, this EA adapted the Air Force Operational Risk Management process to evaluate the effectiveness of each alternative in reducing the safety risk. Assumptions providing the basis for the assessment are clearly identified by the Team (Sec. 4.2.5-4.2.9). Using the adapted process, assumptions, and definitions of “severity” and “probability,” the organizational members of the team, with expertise in flightline management, safety, and operation, conducted the risk assessment for each alternative ogether using a facilitated approach, reaching concurrence on all points except one minor point (footnote, pg. 62).</p> <p>Using the experience gained from the implementation of the current program (Alternative 1), the costs of the actions and mitigation measures identified in each alternative for each phase, with assumptions clearly identified, are calculated and displayed in a table.</p>
65-69 (Sec. 4.4)	The environmental impacts of each alternative, by phase, are discussed for the two issues evaluated in detail (described in Sec. 1.6.1). The environmental impacts are summarized in a table (Sec. 4.7) for easy comparison. A clear master table (Table 18, pg. 70), incorporating the results of the risk assessment, economic cost-effectiveness (effectiveness of each alternative in meeting the two objectives) and the environmental impacts, by alternative and phase, summarizes all the information necessary for making an informed decision.
77-end (Ch. 8)	All information used in developing the analysis is incorporated into Chapter 8, so all pertinent reference material is in one place, for easy reference for current and future organizational managers and the Commander at Ellsworth AFB.
FONSI (Last 10 pages)	The Finding of No Significant Impact (FONSI) provides a concise and complete briefing, in tabular format, for the Commander’s decision and EAFB organizations responsible for implementation and monitoring, including a summary of the alternatives and mitigation measures, responsibilities, and monitoring (responsibility tables from the EA). The FONSI becomes an easy checklist for all organizations to easily track and implement their responsibilities, and all such actions are clearly committed to by the Commander with his decision.

NEPA (EIAP) is a Powerful Planning Tool at Ellsworth AFB

Compliance with the National Environmental Policy Act (NEPA) is now a “value added” process incorporated into the Ellsworth mission by combining planning, project design, and environmental impact analysis.

Benefits to the Mission

- No repeat planning because it is done right the first time
- Saves money in design and meetings by being focused, efficient, and collaborative
- Personnel discover their own roles and responsibilities and understand the roles of others
- Identifies “disconnects” in the organizational processes and then corrects them
- Involves national experts, ensuring good science, at no cost to the Air Force

Benefits to the Base Commander

- Receives a quality decision package with a full range of analyzed alternatives
- Assures that necessary people and expertise are brought together
- Ensures decisions are carried out with well-defined solutions and monitoring

Benefits to the Action Proponent and Cross-Functional Planning Team

- By combining planning and analysis, the NEPA process:
 - Creates excitement and pride in participants and instills ownership
 - Creates Commander’s pride in the quality of staff work and teamwork
 - Stimulates “out of the box” thinking by providing a risk-free atmosphere
 - Creates communication across organizational lines
 - Trains participants in collaborative teamwork
 - Develops long-term relationships
- By documenting meeting results directly into the Environmental Assessment (EA):
 - Participants are validated by seeing their contributions incorporated in something useful
 - Organizations have a common focal point in which to work together and accomplish their goals
 - The team helps write the EA
- The Environmental Assessment provides a “one stop” reference for:
 - Project design
 - Contractual clauses
 - Responsibilities for implementation and monitoring
 - Orientation of new Commanders and personnel
 - Process continuity

Reasons for Success

The Environmental Assessment and FONSI provide:

- A “rallying point” around which the base focuses energies for problem solving.
- A contract among the Commander, base organizations, and interested publics for implementation and monitoring of the decision.

The partnership between the NEPA facilitator (expertise in collaborative problem solving, planning, and documentation) and the base NEPA Coordinator (expertise in organizational politics, interrelationship, and roles, Air Force requirements, and the subject matter) provides:

- New ideas and approaches
- An effective shared vision and politically prudent planning strategies
- Quality checks on data and analyses
- An EA drafted concurrently with the planning
- Fewer, more focused meetings
- Strong leadership and validation of analyses
- Symbiotic application of expertise and skills

Costs of Environmental Planning for Deer-Aircraft Strike Hazard Management

EIAP/Planning Integrated: The New Way		EIAP/Planning Separated: The Old Way	
Action	Est. Cost	Action	Est. Cost
No Repeat Planning <ul style="list-style-type: none"> • Sep-Dec 96 • 8 meetings in-house cost • EA prepared by team • Accountability by consensus • EAFB organizations coordinating in-house cost • EA/FONSI implementation 	\$ 3 K \$11 K \$ 4 K	Repeat Planning <ul style="list-style-type: none"> • 1991-1996 • 40+ meetings • Individual reports • No accountability • EAFB organizations operating independently • No results 	 \$15 K \$ 8 K \$ 5 K
No Meeting Minutes <ul style="list-style-type: none"> • EA documented meetings 	X	Meeting Minutes Prepared <ul style="list-style-type: none"> • No EA Written 	\$ 7 K
Strong Scientific Basis for Analysis <ul style="list-style-type: none"> • 7 Wildlife Biologists and Scientific Literature 	X	No Systematic Scientific Basis <ul style="list-style-type: none"> • Would have cost, if contracted out 	\$45 K
Training EAFB Personnel	X	Formal Training EAFB Personnel	\$20 K
Quality Planning and Project Design	X	Subsequent Planning and Design	\$ 5 K
Total Cost	\$18 K		\$105 K

X The action provided benefits at no additional cost.