

**Redfield Municipal Airport  
Redfield, South Dakota**

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**Final Environmental Assessment**

**Prepared for**

**City of Redfield, South Dakota**

**Prepared by**

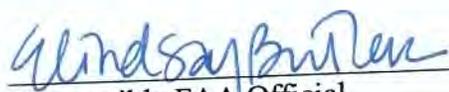
**Helms & Associates**

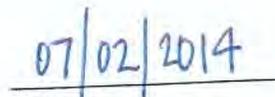
**In association with**

**City of Redfield  
Dakota Research Services  
USDA, Wildlife Services**

**June 2014**

This Environmental Assessment becomes a Federal document when evaluated and signed and dated by the Responsible FAA official.

  
Responsible FAA Official

  
Date

**\*\*This document is intended to be read in its entirety.\*\***

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
for  
REDFIELD MUNICIPAL AIRPORT  
LAND ACQUISITION FOR RUNWAY REALIGNMENT  
and  
WILDLIFE HAZARD ASSESSMENT RECOMMENDATIONS  
by the  
CITY OF REDFIELD, REDFIELD SOUTH DAKOTA**

This Federal Finding of No Significant Impact (FONSI) has been prepared for land acquisition of approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces, and runway realignment at the Redfield Municipal Airport (1D8). The City of Redfield (City) is the owner and operator of 1D8.

The City prepared an Environmental Assessment (EA) to address the potential impacts of implementing the land acquisition and runway realignment at 1D8 consistent with Federal Aviation Administration (FAA) orders and design standards.

Based on the evaluation in the attached EA, no significant impacts associated with the development actions and associated mitigation requirements were identified in accordance with FAA Order 1050.1E, Environmental Impacts: Policies and Procedures. Therefore, no environmental impact statement will be prepared and a FONSI is being issued.

The purpose of the proposed action is to purchase approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces, and runway realignment at the Redfield Municipal Airport. The runway realignment will involve the abandonment/removal of Runway 13/31, construction of a new runway, turnarounds, and exit taxiway. The existing primary runway (Runway 13/31) does not meet the FAA design standard for length or minimum wind coverage requirements. A new primary runway, (Runway 17/35) constructed at a new alignment and based on a Runway Design Code (RDC) of A/B-II, will allow the airport to best meet the wind coverage requirements and lengthen the runway while not having to move highways and allowing for future expansion of the runway, if needed. The Redfield Municipal Airport currently does not own adequate land to construct a new runway at the alignment required to meet the minimum FAA wind coverage criteria. The project also involves removing wildlife hazards from the airport property, which includes filling wetlands on airport property and installing ten-foot high wildlife fencing.

The need for the proposed action is to meet FAA Advisory Circular (AC) 150/5300-13, Airport Design, standards for RPZs. In addition, the need for the proposed action is to meet FAA AC 150/5200-33, Hazardous Wildlife Attractants On or Near Airports,

standards for mitigation of the potential for a damaging aircraft collision with wildlife (deer) on the airport.

Acquisition of land ensures that the City has control of the right of flight, including the right to make noise from such activity and the prohibition against erection of structures, obstructions, or other actions that would interfere with the flight of aircraft over the land, including non-compatible land use. Non-compatible land uses include uses or activities (including certain crops) that create a potential for attracting birds and other wildlife that may pose a hazard to aircraft in accordance with current FAA Advisory Circulars 150/5200-33, Wildlife Hazard Attractants On or Near Airports.

The proposed action (and further described in the attached EA) includes:

- Acquisition (approximately) of 99 acres for runway realignment
- Construct new Runway in accordance with FAA AC 150/5300-13, Airport Design, with turnarounds and an exit taxiway.
- Follow the recommendations in the 2011 Wildlife Hazard Assessment to reduce the potential for wildlife on the Airport, such as:
  - Fill existing wetlands located on existing and future airport property.
  - Remove trees on existing and future airport property.
  - Construct 10-foot wildlife fence around the perimeter of the airport.
  - Manage the property as a grass hay crop with dense warm season grasses.

Acquisition of property shall follow the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601 et. seq.).

A finding of "no effect" to endangered species is determined by FAA. Consultation with the South Dakota (SD) State Historic Preservation Officer (SHPO) was conducted and a finding of "no historic properties affected" is determined.

Consultation with the Sisseton-Wahpeton Oyate Tribe, Tribal Historic Preservation Officer (THPO), was conducted as the Sisseton-Wahpeton Oyate Tribe considers the project area as ancestral land. As a condition of approval of the project the City shall:

- If requested, provide for Sisseton-Wahpeton Oyate approved tribal monitors for construction activities that involve ground disturbance.
- Provide timely notification to the FAA, appropriate SD historic preservation personnel, and the Sisseton-Wahpeton Oyate THPO if an inadvertent discovery is found during the construction activities.
- Ensure that if during the course of any ground disturbance related to this project, any bones, artifacts, foundation, or other indication of past human occupation or cultural resources are uncovered, the project must be temporarily stopped and protected. The City shall provide timely notice to the FAA, the SD SHPO (and/or the SD Archeological Research Center as appropriate), and the Sisseton-Wahpeton Oyate THPO prior to further ground disturbance at the site. The City shall protect the area until cultural resource

concerns have been appropriately addressed according to the SD SHPO, Sisseton-Wahpeton Oyate THPO, and the City shall take action to comply with the National Historic Preservation Act, the Archaeological Resources Protection Act, as appropriate, and SD state law.

When federal or state law does not direct disposition of human remains or funerary objects, or when there is a disagreement among claimants, the process set out in the Native American Graves Protection and Repatriation Act may be instructive for resolutions.

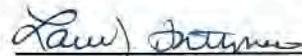
The FAA proposed action includes environmental approval to establish eligibility of the airport to compete for Federal funding of the development listed above. The proposed action also involves unconditional approval of airport layout plan for the specific items covered in the attached EA regarding the land acquisition and wildlife fence.

The City shall implement the mitigation measures as detailed in the attached EA and this FONSI as a condition of environmental approval of the proposed action items listed in this FONSI.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

Having met all relevant requirements for environmental considerations and consultation, the proposed action is authorized to be taken at such time as other requirements have been met. These decisions are taken pursuant to 49 U.S.C. § 40101, et seq. The FAA findings regarding the land acquisition and wildlife fence and any necessary funding constitute an order of the Administrator, which is subject to review by the Courts of Appeals of the United States, in accordance with the provisions of Section 1006 of the Federal Aviation Act of 1958, as amended, 49 U.S.C. § 46110.

Approved: ✓



Laurie J. Suttmeier  
Manager  
FAA Bismarck ADO

Date: July 2, 2014

# **FINAL ENVIRONMENTAL ASSESSMENT**

**SPONSOR:**

**REDFIELD MUNICIPAL AIRPORT**



## **Project Description:**

The City of Redfield, South Dakota is proposing to purchase approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces, and runway realignment at the Redfield Municipal Airport. The runway realignment will involve the abandonment/removal of Runway 13/31, construction of a new runway, turnarounds, and exit taxiway. The existing primary runway (Runway 13/31) does not meet the FAA design standard for length or minimum wind coverage requirements. A new primary runway, (Runway 17/35) constructed at a new alignment and based on a Runway Design Code (RDC) of A/B-II, will allow the airport to best meet the wind coverage requirements and lengthen the runway while not having to move highways and allowing for future expansion of the runway, if needed. The Redfield Municipal Airport currently does not own adequate land to construct a new runway at the alignment required to meet the minimum FAA wind coverage criteria. The project also involves removing wildlife hazards from the airport property, which includes filling wetlands on airport property and installing ten-foot high wildlife fencing.

This environmental assessment becomes a Federal document when evaluated, signed and dated by the Responsible Federal Aviation Administration Official.

**HELMS AND ASSOCIATES**

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June, 2014

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## ACRONYMS

AC	Advisory Circular
ADO	Airports District Office
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ARFF	Airport Rescue Fire Fighting
BMPs	Best Management Practices
CAA	Clean Air Act
CE	Categorically Excluded
CEQ	Council on Environmental Quality
CY	Cubic Yards
dB	Decibels
DENR	Department of Environment and Natural Resources
DNL	Day/Night Average Sound Level
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
°F	Fahrenheit
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency

FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
GA	General Aviation
HIRL	High Intensity Runway Lighting
MALSR	Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MIRL	Medium Intensity Runway Lighting
MITL	Medium Intensity Taxiway Lighting
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Plans
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
PAPI	Precision Approach Path Indicators
RPZ	Runway Protection Zone
SD	South Dakota
SD DENR	South Dakota Department of Environment and Natural Resources
SD DOT	South Dakota Department of Transportation
SD GF&P	South Dakota Department of Game, Fish, and Parks
SHPO	State Historic Preservation Officer

SWO	Sisseton Wahpeton Oyate
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
THPO	Tribal Historic Preservation Officer
US ACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VASI	Visual Approach Slope Indicator
WHA	Wildlife Hazard Assessment
WPA	Waterfowl Production Areas

# Chapter One – Background

## Introduction

Redfield Municipal Airport (1D8) is located on approximately 180 acres on the southwest edge of the City of Redfield (City) in Spink County, South Dakota (SD). It is bordered by U.S. Highway 281 on the east. The airport was constructed in 1965 with a north-south runway paralleling U.S. Highway 281 which was located east of the current Runway 13/31. Some of the original hangar buildings from the original layout of the airport remain in the northeast corner of the property. The airport serves the City and the surrounding area. **Figure 1-1** shows the location of the airport as well as the existing configuration.

## The Purpose of this Environmental Assessment

Federal Aviation Administration (FAA) Order 1050.1E "Policies and Procedures for Considering Environmental Impacts", as revised May 20, 2006 and FAA Order 5050.4B, "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects", as revised April 28, 2006 discuss various proposed actions (airport improvement projects) which require environmental review and approval before implementation. Proposed actions can fall within one of three categories, which are:

- Those actions normally requiring an Environmental Impact Statement (EIS) (such as a new commercial service airport or a new runway to handle air carrier aircraft).
- Those actions requiring an Environmental Assessment (EA) (such as a runway extension project).
- Those actions that are normally Categorical Excluded (CE) (such as installation or upgrading of airfield lighting systems other than an approach lighting system serving an instrument landing system).

This EA is being undertaken by Redfield Municipal Airport to fulfill the requirements necessary for compliance with FAA Orders and the National Environmental Policy Act (NEPA) of 1969 for a proposed land acquisition and new runway alignment.



CITY OF REDFIELD

U.S. HIGHWAY 281

174th STREET

TAXIWAY

RUNWAY 13-31  
60' x 3296.9'

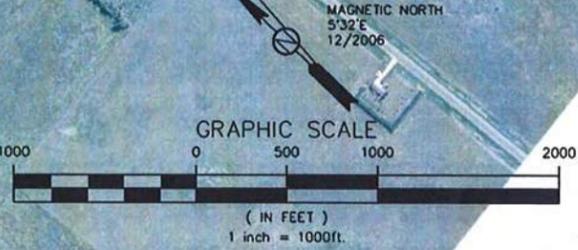
RUNWAY 1-19  
120' x 2564.5'

172nd STREET

**PROJECT LEGEND**



WETLANDS



**FIGURE 1-1  
AIRPORT LAYOUT**

## Airport Activity

The Redfield Municipal Airport serves as General Aviation (GA) facility. There are no scheduled commercial flights at the Airport. **Table 1-1** lists the current based aircraft at the Redfield Municipal Airport.

**Table 1-1 Redfield Municipal Airport Based Aircraft**

Piston		Ultralight	Total
Single Engine	Multi Engine		
10	1	1	12

The Airport Master Record Form 5010 lists the annual operations as 3,200 local GA and 200 itinerant GA operations for a total of 3,400 annual operations at Redfield Municipal Airport as reported in 2013. The most recent Airport Master Record Form 5010 can be found in **Appendix C**.

## Purpose and Need Statement

The identification of the proposed action's purpose and need is the primary foundation for the identification of reasonable alternatives to the action and the evaluation of the environmental effects of the alternatives in an EA.

The purpose of the proposed federal action analyzed in this EA is that the Redfield Municipal Airport currently does not meet FAA recommendations and standards for wind coverage and runway length. The purpose also is that wildlife attractants such as wetlands exist on the airport very near runways, taxiways and other areas of aircraft operations.

The need is to enhance airport safety by taking actions that will:

- a) Meet FAA Standards and protect the people and property on the ground.
- b) Eliminate the possibility of future incompatible land uses in the RPZs and Departure Surfaces to the end of the RPZ limits.
- c) Reduce and/or eliminate wildlife attractants from airport property.

**Comply with FAA Wind Coverage and Runway Length Standards:** FAA AC 150/5300-13 "Airport Design" requires an airport to have a minimum wind coverage of 95 percent. See **Table 1-2** from FAA AC 150/5300-13A for the allowable crosswind components. At the Redfield Municipal Airport, the crosswind runway, Runway 1/19, was closed due to penetrations to the airports airspace, which leaves Runway 13/31 as the only existing runway at Redfield Municipal Airport. Runway 13/31 has a Runway Design Code (RDC) of A/B-I and has an existing wind coverage of 84.81 percent at 10.5 knots, which is below the FAA minimum requirement of 95 percent.

**Table 1-2 Allowable crosswind component per Runway Design Code (RDC)**

<b>RDC</b>	<b>Allowable Crosswind Component</b>
A-I and B-I	10.5 knots
A-II and B-II	13 knots
A-III, B-III, C-I through D-III, D-I through D-III	16 knots
A-IV and B-IV, C-IV through C-VI, D-IV through D-IV	20 knots
E-I through E-VI	20 knots

The FAA AC 150/5325-4 "Runway Length Requirements for Airport Design" requires that an airport intending to serve low-activity location, small and medium population communities, and remote recreational areas be able to accommodate 95 percent of small aircraft. The required runway length to accommodate 95 percent of all small aircraft is 3,500 feet. Runway 13/31 has an existing length of approximately 3,300 feet, which is less than the minimum. Lengthening Runway 13/31 has potential issues since this would require the relocation/realignment of 174<sup>th</sup> Street/County Road 18 and/or U.S. Highway 281. It is also desirable to allow for future extension of the runway to accommodate 100 percent of small aircraft as traffic at the airport increases in the future.

***Comply with FAA Land Ownership Requirements:*** The FAA AC 150/5300-13, "Airport Design" defines the RPZ as "an area at ground level prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground", and

"off-airport development will have a negative impact on current and future airport operations when it creates obstacles to the safe and efficient use of the airspace surrounding the airport", and

"Land acquisition to protect all possible airspace intrusions is generally not feasible, and is usually supplemented by local zoning, easements, or other means to mitigate potential incompatible land uses and potential obstacle conflicts", and

"at a minimum for new runways, land acquisition should include Object Free Areas (OFAs) and Runway Protection Zones (RPZs). To the extent practicable, land acquisition should include adequate areas surrounding the runway(s) to protect the runway approach and departure surfaces identified by paragraph 303, and for existing and planned runways OFAs and RPZs", and

"where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all above-ground objects. Where this is impractical, airport owners, as a minimum, should maintain the RPZ clear of all facilities supporting incompatible activities".

Per the interim guidance for RPZ land, “the following land uses are permissible without further evaluation:

- (1) Farming that meets the minimum buffers as shown in the AC Table 3-10.
- (2) Irrigation channels as long as they do not attract birds.
- (3) Airport service roads, as long as they are not public roads and are directly controlled by the airport operator.
- (4) Underground facilities, as long as they meet other design criteria, such as RSA requirements, as applicable.
- (5) Unstaffed NAVAIDs and facilities, such as equipment for airport facilities that are considered fixed-by-function in regard to the RPZ”.

The FAA Office of Airports must evaluate and approve any proposed land use located within the limits of land controlled by the airport owner of an existing or future RPZ that is not specifically allowed in AC 150/5300-13 paragraph 310.d, such as the public road in the Runway 13 and 31 ends; however, FAA Memorandum, Interim Guidance on Land Uses Within a Runway Protection Zone” dated September 27, 2012 permits the current use of the roads because an airfield project, the critical design aircraft, the addition or revision to an instrument approach procedure that increased the RPZ dimensions, or a local development proposal in the RPZ have yet to occur.

Discussion of need is complicated as is discussed in the interim guidance stating “RPZ land use compatibility also is often complicated by ownership considerations. Airport owner control over the RPZ land is emphasized to achieve the desired protection of people and property on the ground. Although the FAA recognizes that in certain situations the airport sponsor may not fully control land within the RPZ, the FAA expects airport sponsors to take all possible measures to protect against and remove or mitigate incompatible land uses”.

***Reduction of Wildlife Hazards:*** Reducing wildlife hazards enhances safety at the airport by reducing the potential for wildlife-aircraft strikes. A wildlife hazard assessment (WHA) was completed by the U.S. Department of Agriculture (USDA) in 2011 at Redfield Municipal Airport and is included in **Appendix D**. The report identified several wildlife hazards present at the airport as follows:

- Wetlands on and around the airport attract birds.
- Vegetation (alfalfa) grown on the airport attracts wildlife.
- Trees on and around the airport provide attractive perches for large birds.
- No fence exists for preventing large terrestrial wildlife (such as deer) from entering airport property.

The WHA made the following recommendations:

- Fill/Modify wetlands located on and adjacent to the airfield.
- Grow warm season grasses which produce little seed instead of alfalfa and other non-grass vegetation.
- Work with neighboring landowners to reduce or eliminate corn and small grain production on land adjacent to the airport property especially the land to the south of the airport.
- Remove all trees on the airport property.
- Work with adjacent landowners to remove all dead trees on lands south and southwest of the airfield, especially those associated with the large wetland to the south.
- Install ten-foot high wildlife fence to prevent deer and other large terrestrial wildlife from entering airport property.

As recommended in the WHA, the critical attractants, which include the large wetlands located south of the airport and low areas on northeast portion of airport property, should be addressed. Based on these recommendations, critical wetlands should be filled, trees should be removed, and a ten-foot high wildlife fence should be constructed to reduce wildlife attractants on and around airport property.

## **Proposed Action**

The City of Redfield, South Dakota is proposing to purchase approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces, and runway realignment at the Redfield Municipal Airport. The runway realignment will involve the abandonment/removal of Runway 13/31, construction of a new runway, turnarounds, and exit taxiway. The existing primary runway (Runway 13/31) does not meet the FAA design standard for length or minimum wind coverage requirements. A new primary runway, (Runway 17/35) constructed at a new alignment and based on a Runway Design Code (RDC) of A/B-II, will allow the airport to best meet the wind coverage requirements and lengthen the runway while not having to move highways and allowing for future expansion of the runway, if needed. The Redfield Municipal Airport currently does not own adequate land to construct a new runway at the alignment required to meet the minimum FAA wind coverage criteria. The project also involves removing wildlife hazards from the airport property, which includes filling in wetlands on airport property, installing ten-foot high wildlife fencing, removing trees, and managing the airport as a grass hay crop.

The revision of the ALP is necessary to satisfy the Redfield Municipal Airport's obligation to meet FAA standards and requirements for runway length and wind coverage. The proposed action requires mixed approval of updated ALP.

## **Objectives of the Proposed Action**

- Purchase approximately 99 acres of land for a runway realignment.
- Construct new runway in accordance with FAA AC 150/5300-13, Airport Design, with turnarounds and an exit taxiway.
- Follow recommendations made in the 2011 WHA and FAA AC 150/3200-33 to reduce the potential for bird or other wildlife strikes with aircraft by accomplishing the following:
  - Fill in existing wetlands located on existing and future airport property.
  - Remove trees on existing and future airport property.
  - Install a ten-foot high wildlife fence on future airport property.
  - Manage the property as a grass hay crop with dense warm season grasses.

# Chapter Two – Alternatives

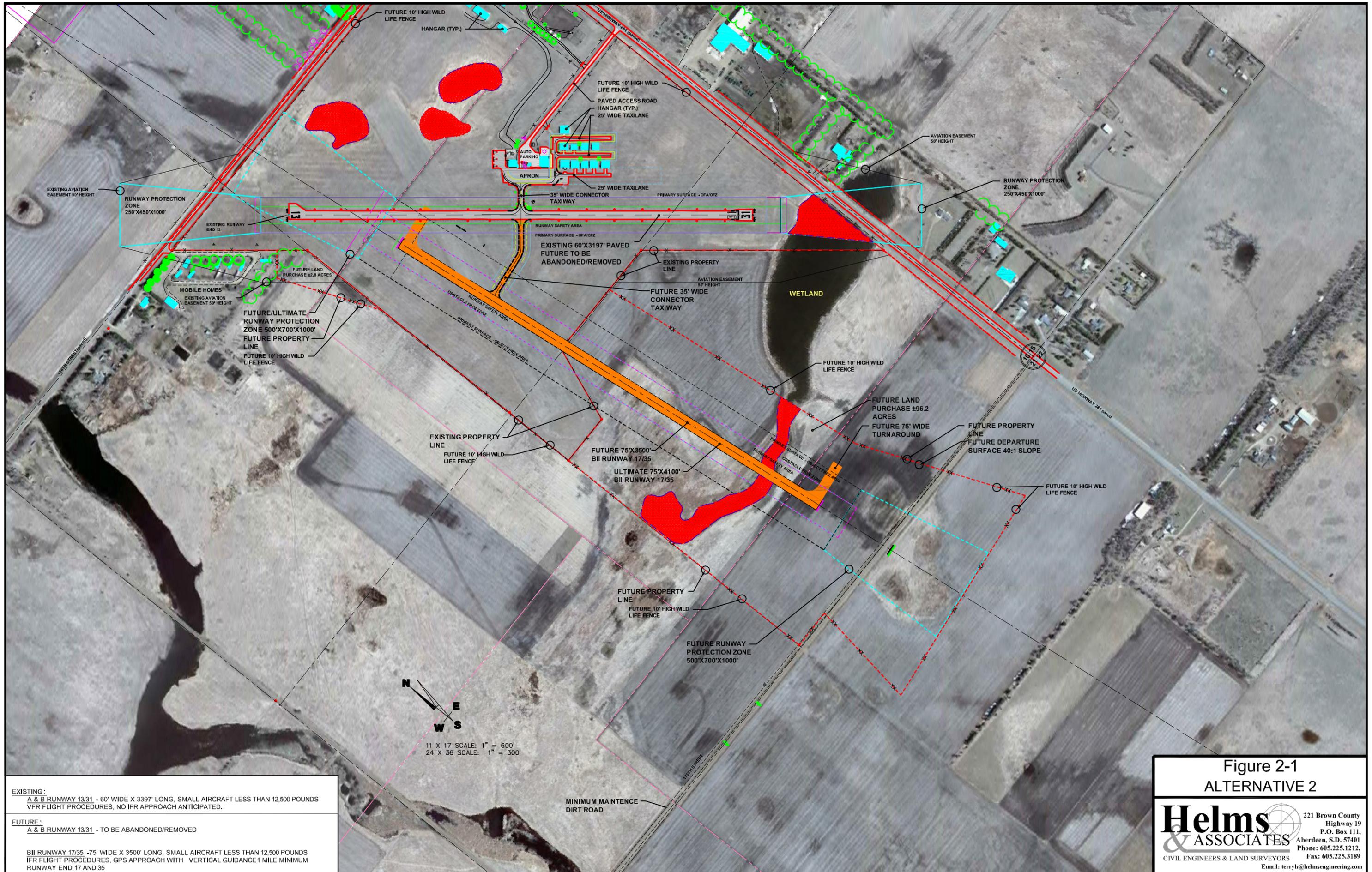
## Major Alternatives

The Council on Environmental Quality (CEQ) Regulations includes specific directions on the consideration of the alternatives. Alternatives evaluated should be feasible and prudent and meet the proposed project objectives presented in Chapter 1, Purpose and Need. The alternatives developed during the environmental review should go through a test of reasonableness and practicability. The *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, FAA Order 5050.4B, requires that the alternatives section contains “a brief discussion of alternatives that contain information sufficient for the official to choose an alternative meeting the proposal’s need and shows reasoned decision making.”

**Alternative 1. “No Action” Alternative.** The Redfield Municipal Airport would continue with its 3,300-foot runway (13/31) and no crosswind runway. The existing wetland habitat on the airport will not be altered. The safety enhancements identified by the sponsor will not be made.

The No Action Alternative represents the “status quo” of the airport and its environment. Airport maintenance, including crack sealing and pavement overlays, would continue as necessary into the future. Therefore, the purpose and need will not be met by this alternative. However, this alternative will be carried forward as the foundation against which to measure other alternatives and the purpose and need.

**Alternative 2. Purchase Approximately 99 Acres of Land, Construct Runway 17/35, Remove/Abandon Runway 13/31, Fill Wetlands, Remove Trees, Construct a Wildlife Fence, and convert non-grass vegetation to a grass hay crop.** The Redfield Municipal Airport will purchase approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces to the end of the RPZ limit, and a runway realignment at the Redfield Municipal Airport. This alternative involves the abandonment/removal of Runway 13/31, construction of a new runway, turnarounds, and exit taxiway. The existing primary runway (Runway 13/31) does not meet the FAA design standard for length or minimum wind coverage requirements. A new primary runway, (Runway 17/35) constructed at a new alignment and based on a Runway Design Code (RDC) of A/B-II, will allow the airport to best meet the wind coverage requirements and lengthen the runway while not having to move highways and allowing for future expansion of the runway, if needed. This alternative also involves removing wildlife hazards from the airport property, which includes filling in critical wetlands, installing ten-foot high wildlife fencing to prevent large wildlife, such as deer, from entering airport property, removing trees, and converting the property to a grass hay crop. See **Figure 2-1** for an illustration.



**Alternative 3. Purchase Approximately 172 Acres of Land, Construct Runway 17/35, Fill Wetlands, Remove Trees and Construct a Wildlife Fence.** This alternative includes the purchase of approximately 172 acres of land for airport protection of RPZ, Departure Surfaces, and runway realignment at the Redfield Municipal Airport. This alternative includes the construction of a new runway (Runway 17/35) at a new alignment and based on a Runway Design Code (RDC) of A/B-I (60' x 3,500'). As Runway 1/19 is already abandoned, it will stay abandoned and Runway 13/31 would be utilized as the crosswind runway. This will allow the airport to meet the wind coverage requirements and runway length requirements for the primary runway and allowing for future expansion of the runway, if needed. Also included is the filling of wetlands and removing trees on existing and future airport property to reduce bird attractants on the airport. A ten-foot high wildlife fence will be constructed around the perimeter of the airport to prevent large wildlife, such as deer, from entering airport property.

**Alternative 4. Rebuild Airport in a Different Location.** The Redfield Municipal Airport would purchase the land to rebuild the Airport to FAA Standards. Three potential sites have been evaluated in the Redfield area. This alternative will allow for the Redfield Municipal Airport to be constructed according to FAA Advisory Circular (AC) 150/5300-13, "Airport Design" and FAA AC 150/5325-4B "Runway Length Requirements for Airport Design".

## Discussion of Alternatives

This section evaluates each alternative's ability to meet the purpose and need as defined in Chapter 1 and the relative cost of each alternative. The consideration of the environmental impacts and their severity will be discussed further in Chapter 4. As stated in the FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, the alternatives must meet the need and purpose, be reasonable, and feasible. While cost can be considered, no alternative will be eliminated based on cost alone.

**Alternative 1. "No Action" Alternative.** This alternative consists of no purchase of land in the existing runway RPZs or for the planned new runway. The measures to reduce and/or eliminate the wildlife hazards at the Redfield Municipal Airport will not be taken. Although, this alternative would have a negligible impact on the environment due to routine airport maintenance, including crack sealing and pavement overlays, it does not give the airport control over development within the RPZs as required by the FAA, it does not allow for the airport to meet the minimum FAA requirements for wind coverage and runway length, nor does it reduce the wildlife hazards. Therefore, this alternative does not meet the project's purpose and need for the federal action. However, this alternative will be carried forward as the foundation against which to measure other alternatives and the purpose and need.

**Alternative 2. Purchase Approximately 99 Acres of Land, Construct Runway 17/35, Remove/Abandon Runway 13/31, Fill Wetlands, Remove Trees, Construct a Wildlife Fence, and convert non-grass vegetation to a grass hay crop.** This alternative includes the purchase of approximately 99 acres of land for airport protection of RPZ, Departure Surfaces to the end of the RPZ limits, and runway realignment at the Redfield Municipal Airport. This alternative includes the purchase of approximately 2.8 acres of land for wildlife fence clearance and another approximate 96.8 acres on the south side of the airport for the new runway.

According to FAA AC 150/5325-4, Federally funded projects require that the critical design airplanes have at least 500 or more annual itinerant operations at the airport for a family grouping of airplanes. Sanford AirMed and Avera Careflight Emergency Air Transportation are critical care air ambulance services that provide fixed-wing transports. The Redfield Municipal Airport has been a destination for these services frequently. However for the aircraft they use, the preferred runway length is 3,500 feet and the current runway length only allows them to land in ideal weather conditions. These services account for up to 130 operations per year. Several agricultural sprayers use the Redfield Municipal Airport for aerial spraying operations. In the past three years, seven different spray operations have used the airport. The largest three agricultural sprayers comprise a total of 1,550 B-II operations annually. Each of these users have aircraft with wingspans greater than 49 feet, therefore the annual B-II operations is over 1,600. This allows for the Redfield Municipal airport to meet the minimum operations required for a B-II (75 feet wide) runway and for a runway alignment designed to meet the allowable crosswind component percentages for 13 knots.

This alternative includes the construction of Runway 17/35 at a width of 75 feet, length of 3,500 feet, turnarounds at both runway ends, and a connecting taxiway from the runway to the apron. As Runway 1/19 is already abandoned, it will stay abandoned and Runway 13/31 would also be removed and abandoned. Runway 17/35 will be a B-II runway and will have a wind coverage of 95.58 percent at 13 knots, which exceeds the FAA minimum requirement of 95 percent wind coverage and no cross wind runway will be required. Runway 17/35 would be constructed with a length of 3,500 feet which can accommodate 95 percent of small aircraft, meeting the FAA requirement for runway length. In addition, this alternative allows the airport flexibility in future development including a future runway extension to accommodate 100 percent of small aircraft, apron and taxiway expansions.

This alternative includes filling of wetlands located on airport property. One large wetland lies south of the airport and three wetlands lie in low areas located on the northeast portion of the airport. These wetlands total approximately 14 acres. This alternative also includes removing all trees from airport property. Finally, this alternative includes constructing a ten-foot high wildlife fence and converting airport property to a grass hay crop.

The following is a list of the major items of work to be completed as part of Alternative 2:

- Complete an ALP Update.
- Purchase approximately 99 acres of land for airport protection of RPZ, Departure Surface to the end of the RPZ limit, and the runway realignment.
- Construct a new runway (Runway 17/35) 3,500 feet long by 75 feet wide which includes:
  - Turnarounds at both ends
  - A connecting taxiway to the apron
- Develop new lighting/approach aids for Runway 17/35.
- Remove and Abandon Runway 13/31.
- Abandon Runway 1/19.
- Drain/Fill approximately 14 acres of wetland on the airport property.
- Mitigate wetland impacts offsite.
- Construct 10-foot high wildlife fence.
- Convert airport property to a grass hay crop.

**Alternative 3. Purchase Approximately 172 Acres of Land, Construct Runway 17/35, Fill Wetlands, Remove Trees, Construct a Wildlife Fence, and converting non-grass vegetation to a grass hay crop.** This alternative includes the purchase of approximately 172 acres of land for airport protection of RPZ, Departure Surfaces to the end of the RPZ limits, and runway realignment at the Redfield Municipal Airport.

The Redfield Municipal Airport would purchase the land to protect the RPZ, Departure Surfaces, and provide adequate land for the existing runway and a new runway realignment. This alternative includes the construction of a new runway (Runway 17/35) at a new alignment and based on a Runway Design Code (RDC) of A/B-I (60' x 3,500').

As Runway 1/19 is already abandoned, it will stay abandoned and Runway 13/31 would be utilized as the crosswind runway. This will allow the airport to meet the wind coverage requirements with a combined wind coverage of 96.22 percent and lengthen the runway. Also included is the filling of wetlands and removing trees on existing and future airport property to reduce bird attractants on the airport. A ten-foot high wildlife fence will be constructed around the perimeter of the airport to prevent large wildlife, such as deer, from entering airport property. **Figure 2-2** illustrates Alternative 3.

This alternative includes the construction of Runway 17/35 to a total length of 3,500 feet. However, the Runway 17 end RPZ will cross County Road 18/174th Street. As per the FAA Interim Guidance on Land Uses within a Runway Protection Zone, transportation facilities introduced into an RPZ because of an airfield project would require an alternative analysis would need to be completed. Runway 13/31 will be left where it is and utilized as the crosswind runway. Also included with this alternative is the filling of wetlands located on airport property. Wetlands impacted total approximately 30 acres. This alternative also includes removing trees surrounding the large wetland south of Runway 31. Finally, this alternative includes constructing a ten-foot high wildlife fence around the airport property and converting airport property to a grass hay crop.

The following is a list of the major items of work to be completed as part of Alternative 3:

- Complete an alternative analysis as per FAA Interim Guidance on Land Uses within a Runway Protection Zone
- Purchase approximately 172 acres of land for airport protection of RPZ, Departure Surfaces, and a runway realignment.
- Construct a new runway (Runway 17/35) 3,500 feet long by 60 feet wide which includes:
  - Turnarounds at both ends
  - A connecting taxiway to the apron
- Develop new lighting/approach aids for Runway 17/35.
- Abandon Runway 1/19.
- Drain/Fill approximately 30 acres of wetlands on the airport property.
- Mitigate wetland impacts offsite.
- Construct 10-foot high wildlife fence.
- Convert airport property to a grass hay crop.

Although this alternative meets the purpose and need, there are still several other issues.

- (1) As per the interim guidance for RPZ land, an alternative analysis would be required.
- (2) The proposed runway configuration would result in the runways converging closely at the 13 and 17 ends. This configuration has the potential to cause pilot confusion.
- (3) Runway 13/31 will only continue to be 3,300 feet, which is still below the FAA Standard to accommodate 95 percent of small aircraft.
- (4) U.S. Highway 281 would continue to penetrate the Runway 31 approach.
- (5) This alternative does not leave flexibility for future change to allow for Runway 13/31 to meet the length to accommodate 95 percent of small aircraft.

For these reasons, this alternative was not carried forward.

**Alternative 4. Rebuild Airport in a Different Location.** The Redfield Municipal Airport would purchase the land to rebuild the Airport to FAA Standards. Three potential sites have been evaluated in the Redfield area. The sites were identified as the West Site, South Site and East Site designating each of their locations from the City of Redfield. The Cursory Review of the Potential Wildlife Hazards of the potential airport sites by United States Department of Agriculture (USDA) Wildlife Service and location maps of the potential sites are included in **Appendix F**. The USDA made the following conclusions when comparing the proposed locations to the current airport location:

- West Site
  - Contains fewer wetlands attractants that may be easier to mitigate
  - Also has agricultural land that should be converted to grass habitat
  - Also has agricultural land adjacent to the property that should be reduced
  - Further from bodies of water, therefore gull activity may be less
- South Site
  - Contains minimal issues on the airport site itself
  - Contains dugout stock pond and low spots that may be easier to mitigate
  - Contains acceptable agricultural land that may be acceptable for a new airport if maintained properly
  - Is still in close proximity of Redfield Lake, but not as close as the existing airport
- Ease Site
  - Contains wetlands that must be mitigated
  - Also has agricultural land that should be converted to grass habitat
  - It is near the James River, a golf course and state park which may have greater influences on potential hazardous birds near the airfield rather than the current airport with influences from Turtle River and the City of Redfield.

Although this alternative meets the purpose and need, there are still several other issues.

- (1) The City of Redfield would need to purchase the approximately 320 acres to construct a new airport.
- (2) Each of the proposed locations will require the removal and mitigation of wetlands prior to constructing the new airport.
- (3) A new ALP would need to be developed.
- (4) A new airport must be designed and constructed.
- (5) The existing buildings will have to be relocated or rebuilt.
- (6) This would be the most costly alternative. For these reasons, this alternative was not carried forward.

## **Alternatives Selected for Further Discussion**

**Alternative 1. “No Action” Alternative.** Although this alternative does not meet the purpose and need, the "No Action" alternative will be carried forward as the foundation against which to measure other alternatives and the purpose and need.

**Alternative 2. Purchase Approximately 99 Acres of Land, Construct Runway 17/35, Remove/Abandon Runway 13/31, Fill Wetlands, Remove Trees, Construct a Wildlife Fence, and converting non-grass vegetation to a grass hay crop.** This alternative includes the purchase of approximately 99 acres of land for airport protection of RPZ, Departure Surfaces to the end of the RPZ limit, and runway realignment at the Redfield Municipal Airport. In addition, this alternative includes the construction of a new 3,500-foot long Runway 17/35, turnarounds at both runway ends, and a connecting taxiway from the runway to the apron. Runway 1/19 is already abandoned and Runway 13/31 will be removed and abandoned. This alternative includes filling of wetlands located on current and future airport property, the removal of trees and the construction of a ten-foot high wildlife fence.

# Chapter Three – Local Information

## Location and Setting

The City is located at the intersection of U.S. Highway 281 and U.S. Highway 212, which is in the central portion of Spink County in northeast SD. The City is the County Seat, is located 68 miles to the west of Watertown, SD, and 40 miles south of Aberdeen, SD.

The Redfield Municipal Airport is publicly owned and operated by the City. It is located approximately one-half mile southwest of the City as indicated in **Figure 3-1**. The airport occupies approximately 180 acres that is situated amongst primarily farm ground.

## Climate

The climate in the Redfield region can be described, much like all of SD, as one of extremes. The average winter temperature is around 20 degrees Fahrenheit (°F) and the average summer temperature is 75°F. However, temperatures in the summer can reach well above 100°F and in the winter, temperatures below -20°F are not uncommon.

Severe weather is not unusual. In the summer, thunderstorms move across the prairie sometimes giving rise to very destructive tornadoes. In the winter, seasonal snowfalls can reach 20 inches and with the gently rolling prairie and lack of trees, strong northerly winds can result in blinding blizzards.

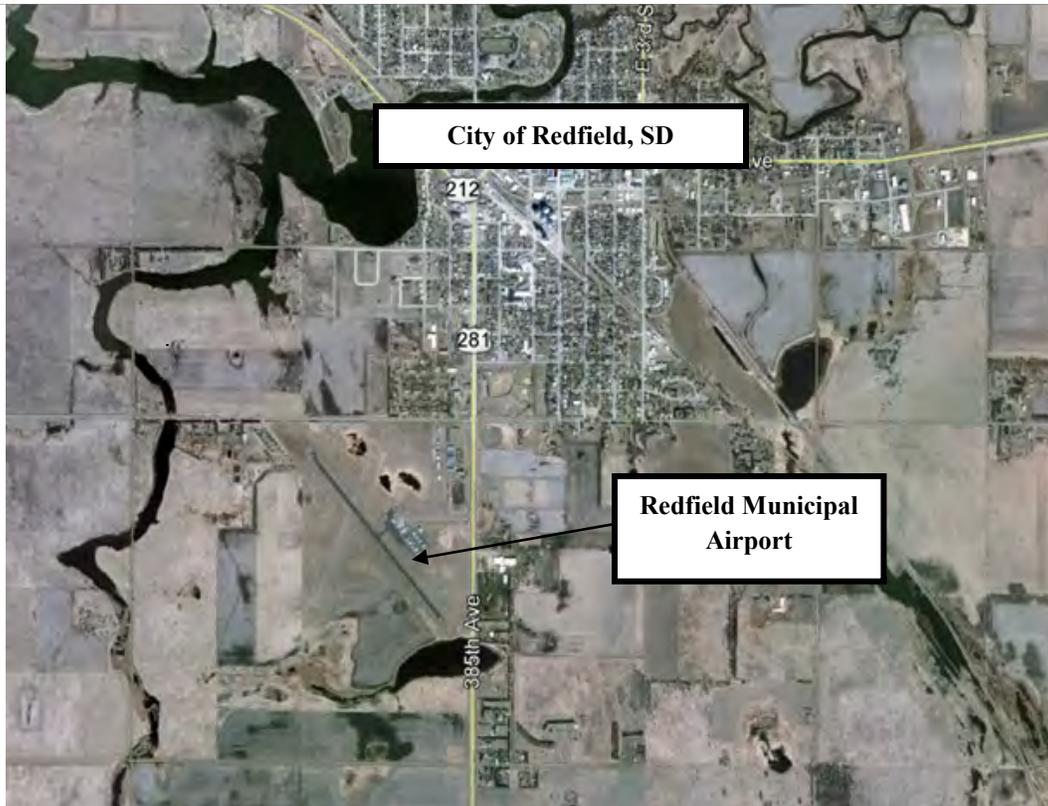
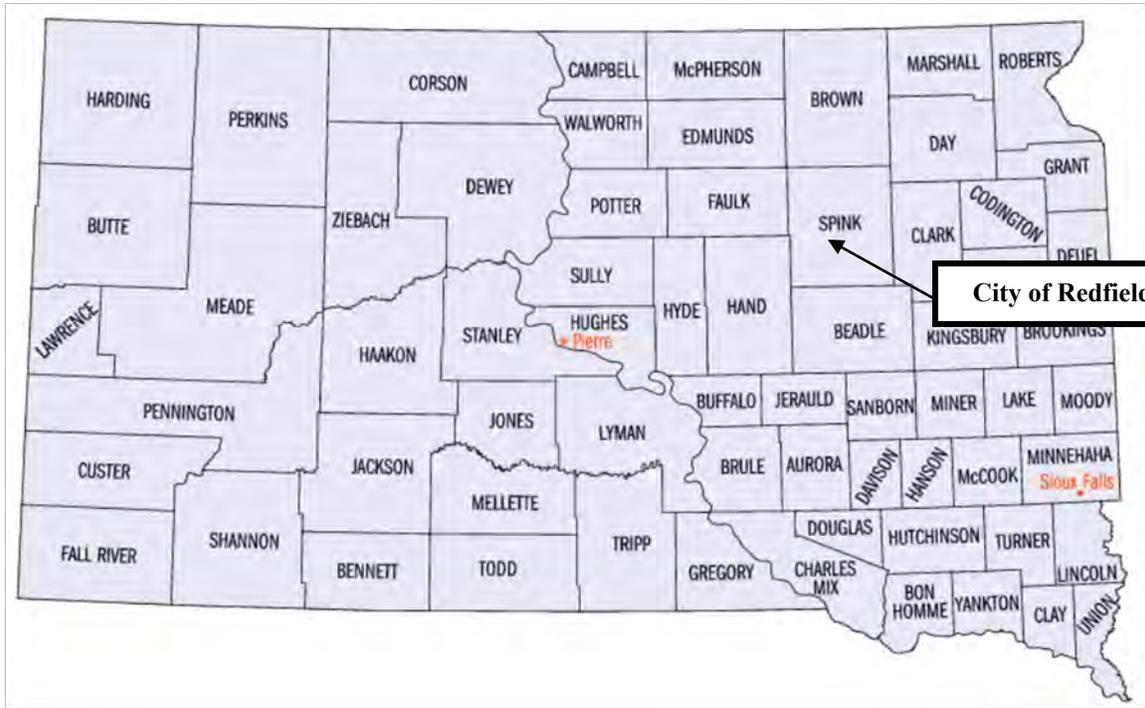
## Population

Redfield's population trends can be seen in the following table from 1960 to 2010. The 2010 census indicated a population of 2,333. **Table 3-1** shows the population fluctuations.

**Table 3-1 Redfield Population Trends 1960 to 2010**

Year	1960	1970	1980	1990	2000	2010
Population	2,952	2,943	3,027	2,770	2,897	2,333

The Redfield School District has an approximate enrollment of 623 students in grades Pre-kindergarten through 12<sup>th</sup> grade. The City has a median household income of \$37,995 based on the U.S. Bureau of the Census, Census 2010.



## Commerce and Industry

The economic base of the Redfield area is primarily agricultural. However, the government, trade, and services are the major employment sectors for the City. Redfield is well known as the “Pheasant Capital of the World” and therefore, has a large recreational industry, i.e. hunting and fishing, which can best be described as a sportsman's paradise. **Table 3-2** provides a list of the major employers in the City with a short description and number of employees.

**Table 3-2 Major Employers in Redfield**

<b>Employer</b>	<b>Description</b>	<b>No. of Employees</b>
SD Developmental Center	Human Services	425
Redfield Public School	Education Services	110
Community Memorial Hospital	Medical Services	110
Beverly Health Care	Health Care Services	100
Spink County	Government	60
Synergy	Telemarketing	60
Eastern Star Nursing Home	Health Care Services	47
City of Redfield	Government	20
Community First National Bank	Financial Services	18

## Land Use

The majority of the land around Redfield Municipal Airport is agricultural with the exception of the City. The airport is owned and operated by the City. The City works with Spink County to prevent any development in the area of the airport that would be incompatible with airport operations.

Land uses are controlled by the airport to gain the most economic benefit while providing for the safe operation of the airport. As such, the grass areas around the runways are mowed. The remainder of the airport is hayed except those areas that are too wet.

## Chapter Four – Affected Environment and Environmental Consequences

This chapter evaluates potential environmental impact categories in accordance with FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *Airport Environmental Handbook*, for the following alternatives:

**Alternative 1. “No Action” Alternative.** This consists of leaving things the way they are and not making any changes.

**Alternative 2.** This alternative consists of purchasing approximately 99 acres of land for airport protection and constructing new Runway 17/35. Reducing wildlife attractants by filling approximately 14 acres of wetlands, removing trees, constructing a wildlife fence, and converting non-grass vegetation to a grass hay crop at the Redfield Municipal Airport.

The following review comments are associated with all alternatives unless specifically noted to pertain to one alternative or the other.

**Appendix A** contains a complete list of all applicable federal statutes, regulations, Executive Orders (EO) and guidance including FAA ACs. The references in the following sections are of a general nature and the reader is referred to **Appendix A** for the complete list of specific references.

## 1) Air Quality

The primary law relating to air quality is the Clean Air Act. This act established National Ambient Air Quality Standards (NAAQS) for six common pollutants, which were named “criteria pollutants”. States and/or the Environmental Protection Agency (EPA) established plans to meet these standards. SD is in attainment for all “criteria pollutants”.

The FAA Order 5050.4B, *Airport Environmental Handbook* and the “Air Quality Procedures For Civilian Airports & Air Force Bases” (Air Quality Handbook) give threshold criteria to use when evaluating the possible impacts to air quality. A flow chart for determination of the level of assessment required is on page AD-34 and 35 of the September 2004 addendum to the Air Quality Handbook. A copy of the flow chart is included in **Appendix C**.

Following the flow chart, since the State of SD does not require indirect source review, no indirect source permit is required. Additionally, since Redfield Municipal Airport is not located in a non-attainment or maintenance area, no NAAQS assessment is required.

The South Dakota State Department of Environment and Natural Resources (SD DENR) was solicited for comments on the air quality impacts of this project. A copy of this correspondence, along with their response, is included in **Appendix B**. The SD DENR indicated in their response that the project would have “little or no impact” on air quality.

**Alternatives 1 and 2.** These alternatives will not impact air quality since Redfield Municipal Airport is not located within a non-attainment or maintenance area.

## 2) Biotic Resources

Biotic Resources refer to plants, fish, birds, reptiles, amphibians, marine mammals, etc. This also applies to rivers, lakes, wetlands, forests, and other habitat types supporting these species.

The airport supports a variety of wildlife that is common to this area of South Dakota. There are larger mammals such as white-tailed deer, jackrabbits, striped skunks, fox, coyote, badger, raccoon, muskrat and house cats common at RMA. Smaller mammals such as field mice, pocket gophers and ground squirrels are also common. Garter snakes and turtles are occasionally seen on the airfield. Many species of birds are commonly seen near the airfield.

The land on the airport consists of grass, alfalfa hay and wetlands. The airport works to control the wet areas during dry time by mowing.

The remainder of this section focuses on "State" protected species.

The United States Fish and Wildlife Service (USFWS) and the South Dakota Department of Game, Fish, and Parks (SD GF&P) were solicited for comments on the biotic resources impacts of this project. A copy of the correspondence and their response is included in **Appendix B**. The SD GF&P response letter included concerns over wetlands which are discussed in **Section 20 – Wetlands**. The USFWS returned a letter describing possible impacts to “Federally” protected species which are discussed in **Section 8 – Fish, Wildlife, and Plants** of this EA.

**Alternative 1.** This alternative would not impact biotic resources.

**Alternative 2.** The SD GF&P indicated that compensatory mitigation for the filling of wetlands is required and is further discussed in **Section 20 – Wetlands**. The USFWS concurred with the determination that this alternative will not adversely affect the listed species. Further discussion is in **Section 8 – Fish, Wildlife, and Plants**. Therefore, this alternative will have no significant impact to biotic resources.

### **3) Coastal Barriers**

The Coastal Barrier Resources Act prohibits federal funding of any development in the Coastal Barrier Resources System. Redfield Municipal Airport is not in or near a Coastal Barrier Resource System since it is inland and over 1,000 miles from the nearest coast.

**Alternatives 1 and 2.** These alternatives would not impact coastal barriers since Redfield Municipal Airport is not located within or near a Coastal Barrier Resource System.

### **4) Coastal Zone Management**

The Coastal Zone Management Act requires the action’s proponent to certify the proposed activity would be consistent with the policies of the State’s Coastal Zone Management Program. Redfield Municipal Airport is not in or near a Coastal Zone Management System since it is located inland and over 1,000 miles from the nearest coast.

**Alternatives 1 and 2.** These alternatives would not impact coastal zones since Redfield Municipal Airport is not located within or near a Coastal Zone Management System.

## 5) Compatible Land Use

When considering compatible land uses, several factors are involved including the noise impacts of air traffic to the types of use of the area around the airport. The noise impacts of this project will be discussed in **Section 17 – Noise**. **Appendix C** includes information on compatible land use and noise.

Land uses under control of the airport are the haying practices on the airport property. The only agriculture activity within the property is the harvesting of alfalfa on the areas outside of the safety areas. The land uses surrounding the airport property are included in **Figure 4-1**. As stated in the WHA, the wetlands and agricultural ground to the south of the airport is an attractant to wildlife. By acquiring the land and draining/filling the wetlands, the attractiveness of the area to wildlife will be greatly reduced and thereby reduce the hazards to aircraft. The replacement of wetlands offsite will be at a ratio to be determined by the appropriate agencies and is further discussed in **Section 20 - Wetlands**.

**Alternative 1.** This alternative would not impact compatible land uses since it does not involve the conversion of land use.

**Alternative 2.** This alternative meets the FAA standards, on airport, for compatible land uses since it allows the City of Redfield to have control over all RPZs, removes incompatible land uses within airport property, improves control and minimizes hazardous wildlife attractants, and meets the FAA recommendations and standards.

Although this alternative includes the acquisition of approximately 99 acres, this land is currently farmed and the majority of it would likely be converted to mowed and maintained grass areas. This alternative also includes filling/draining of approximately 14 acres of wetlands on the airport which would likely be converted to mowed and maintained grass areas. Clearing the RPZ of hazardous incompatible land uses to the airport such as trees will also occur. Therefore, there should be no significant impact to compatible land use.



## 6) Construction Impacts

The impacts of construction would be temporary as they would be limited to the period of construction. Impacts during construction would be related to noise, air quality, visual resources, wetlands and other waters of the U.S., water quality and habitat, fish and wildlife. In addition, there would be temporary impacts on travel patterns and accessibility within the airport property. Because detailed discussion of construction impacts is not feasible until final design has been completed for the preferred alternative, general impacts are discussed in this section. However, all practical precautions would be taken to limit and minimize the temporary impacts of construction activities. Construction-related impacts for the project are not considered to be significant. The general time frame for construction work in Redfield is limited to April to November due to winter weather.

**Noise:** Temporary noise impacts on the Redfield Municipal Airport property would occur during construction of the project because construction activities would create new and additional noise sources. Currently, this primarily consists of farmland with limited development. In addition, the project is bordered by scattered business/residential properties, which may be impacted by construction noise and vibration. Such noise and vibration may be generated from the operation of large construction equipment or from construction activities such as excavating, filling, grading, paving, and other related activities.

Because minor construction noise and vibration is predicted to occur as a result of this project, noise abatement measures are discussed below. Best Management Practices (BMPs), in accordance with South Dakota Department of Transportation (SD DOT) construction manuals, would be used to mitigate construction-related noise impacts. An example of one BMP would be to limit construction to daylight hours, typically 6 a.m. to 6 p.m. This would reduce noise levels in any neighboring residential areas during the evening and at night, which is the most sensitive timeframe for noise impacts.

**Air Quality:** Short-term air quality impacts during construction would occur for the following reasons:

- Construction vehicles and related equipment would increase exhaust emissions.
- Disruption of ground covers by grading and other activities would generate dust.

Emissions caused by construction vehicles, related equipment, and activities generating dust would be minimized to the extent possible and are not expected to change the “attainment” air quality status of the area.

To minimize air quality impacts during construction, the following BMPs would be implemented:

- Equipment would not be concentrated at locations near any sensitive receptor sites. (i.e. hospitals, nursing homes, etc.)
- No single piece of equipment would result in significant pollution concentrations.
- Construction contractors would be required to comply with the statutory regulations for SD for air pollution control and to receive permits, as needed.
- Construction contracts would stipulate adherence to requirements regarding open burning of grub material, fugitive dust, visible emissions, and permits.
- A schedule of water sprinkling would be developed and followed to suppress dust.

Components of the proposed project, including heavy truck and construction equipment, would be required to meet SD air quality standards to reduce or eliminate any point source pollution.

**Water Quality:** During construction, storm water runoff from construction areas and potential erosion from precipitation events could cause temporary declines in surface water quality in drainage ways, creeks, and streams down gradient of construction activities. The contractor would be required to implement BMPs to minimize temporary impacts on water quality during construction.

The SD DENR administers the Federal National Pollutant Discharge Elimination System (NPDES) program and issues general permits for storm water discharges from construction activities. The purpose of the program is to improve water quality by reducing or eliminating contaminants in storm water. The Federal NPDES program requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) for construction sites of more than one acre, which would be applicable for this project. The United States Environmental Protection Agency (EPA) was solicited for their comments which can be found in **Appendix B**. They indicated that a SWPPP will be required for construction.

The specific sediment control, erosion control, and spill prevention measures would be developed during the detailed design phase and would be included in the plans and specifications. The SWPPP would address the requirements set forth by the FAA and the state of SD. It is likely that the SWPPP would include installation of silt fences, buffer strips, or other features to be used in various combinations. As part of standard construction BMPs, water detention basins could also be constructed to minimize pollutant loading of surface waters. Another standard construction BMP is revegetation and stabilization of devegetated areas to provide opportunities for the runoff from the impermeable areas to infiltrate, reduce velocities, and minimize increases in sedimentation.

**Construction Debris:** Construction debris would be required to be disposed of at an approved site and none of it would be allowed to be deposited in a wetland or other sensitive site. Excavation would take place on the airport property and placement of earth would be on site. Proper steps would be taken as discussed above to prevent any lasting impact from this work. During the safety/phasing portion of the design process, the haul routes would be established and incorporated into the SWPPP.

The SD DENR Surface Water Quality Program was solicited for comments. Their response can be found in **Appendix B**. They indicated that BMPs for sediment and erosion control should be implemented. A General Storm Water Permit for Construction Activities and a Section 404 permit may be required prior to construction if any work is done in waters of the United States.

**Alternative 1.** This alternative would not cause construction impacts since it does not involve construction.

**Alternative 2.** This alternative consists of constructing a new Runway 17/35, filling wetlands, removing trees and constructing a 10-foot wildlife fence. This would involve equipment working in the area such as scrapers, dozers, loaders, graders, trucks, excavators, pavers, etc. The installation of the wildlife fence would include smaller equipment, such as a loader or skid steer with a drill for boring holes and concrete trucks for pouring post foundations. The haul routes on and off the airport would be addressed on the safety/phasing plan to minimize disruption of aircraft and surface vehicle traffic in the vicinity of the airport. This alternative would probably be phased over multiple construction seasons and would cause minimal and temporary impacts during the construct seasons. A General Storm Water Permit for Construction Activities and a Section 404 permit may be required prior to construction if any work is done in waters of the United States, which is addressed in **Section 20 - Wetlands**. As part of the construction, BMPs will be implemented.

## **7) Section 4(f) and 6(f) Resources**

Section 4(f) states, in part, that “It is the policy of the United States Government that special effort be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites” (49 USC 303). Section 4(f) requires that United States Departments of Transportation determine whether a proposed highway project would adversely affect a Section 4(f) resource. If a project would affect a Section 4(f) resource, all feasible and prudent ways of avoiding this impact must be evaluated. Section 4(f) resources are as follows:

- Public recreation areas
- Parks
- Wildlife and/or waterfowl refuges
- Significant historic properties, excluding those properties only eligible for listing on the National Register of Historic Places (NRHP) under Criterion D (these same

resources are also considered under Section 106 of the National Historic Preservation Act of 1966

The Spink County Fairgrounds are located northeast of the current runway and apron. However, none of the construction activity for any the alternatives would be located near this site. No other significant historic properties, public recreation areas, parks, or wildlife and/or waterfowl refuges exist in or around the Redfield Municipal Airport property.

**Alternative 1.** This alternative would not impact Section 4(f) or 6(f) properties since it does not involve construction or any modification to the airport and surrounding land.

**Alternative 2.** This alternative would not impact Section 4(f) or 6(f) properties since none exist in the areas where construction would take place.

## **8) Fish, Wildlife, and Plants**

Several federal and state regulations on fish and wildlife coordination for environmental review have implications for this project. At the federal level, direction for coordination on fish and wildlife is provided under the policies of the Fish and Wildlife Coordination Act of 1934, as amended (16 USC 661-667e) and the Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712) for projects involving federal funding. Federal actions under both acts require USFWS review. At the state level, SD GF&P regulates and manages certain fish and wildlife species including game, non-game, and state Threatened and Endangered (T&E) species. Both federally and state-managed wildlife lands are found in SD including federal Waterfowl Production Areas (WPAs), Wildlife Refuges, and state game refuges and hunting areas.

Wildlife species found on the airport property are common for the region. Wildlife habitat in the area includes cropland, pasture, roadside ditches, wetlands, and urban lands. No special wildlife habitats have been identified in the area. Because much of the land within the area has been disturbed by agricultural practices, agricultural land is one of the primary wildlife habitats. Wildlife species found on the agricultural land are those that feed on row crops. Examples are white-tailed deer, rabbits, mice, and avian species such as crows and pheasants. Agricultural land has a low carrying capacity for wildlife.

The other main wildlife habitat types within the proposed project area are upland and wetlands. Wildlife species common to upland areas include squirrels, coyotes, badgers, rabbits, raccoons, several species of small mammals, and several avian species. Wildlife species found in the wetlands identified within the airport property are similar. However, the presence of wildlife species in wetlands varies due to changes in wetland hydrology (water) conditions seasonally and yearly. Typical wildlife species common to wetlands include avian species such as red-winged and yellow-headed blackbirds, shorebirds, and many game waterfowl and non-game bird species. Wildlife in the area would likely seek sanctuary in nearby habitat during grading operations.

A WHA was conducted and can be found in **Appendix D**. This WHA includes an in depth discussion of the types and numbers of wildlife encountered on and around the Airport.

**Federally Listed T&E Species:** In accordance with Section 7(c) of the Endangered Species Act of 1973 (16 United States Code [USC] 1531 et seq.), early coordination with the USFWS SD Field Office and the SD GF&P was initiated for the project with a request for information concerning the presence of T&E species. State T&E species and species of management concern are regulated under SD Statutes 34A-8 and 34A-8A, respectively. SD GF&P maintains a list of species determined to be threatened or endangered within the state.

In general, this section examines the impact of the proposed alternatives on T&E species of fish, wildlife, and plants. It also examines the reduction or elimination of habitat that is used by those species. To examine those impacts, the USFWS and SD GF&P were consulted. Copies of the correspondence are included in **Appendix B**.

USFWS identified two endangered or threatened species that may be in the project vicinity. Those species are the Whooping Crane (*Grus Americana*) and the Topeka Shiner (*Notropis Topeka*). The SD GF&P did not address any threatened or endangered species.

The Whooping Crane is listed as “endangered”. The term “endangered” means that the species is in danger of extinction throughout all or a significant portion of its range. The Whooping Crane is the tallest bird in North America with males standing over 7 feet. One of only two migrating flocks passes through SD on their way from southern wintering grounds in Texas to northern nesting grounds in Canada. They will use cropland and pastures especially with wetlands for feeding and resting. Overnight roosting sites typically include areas of shallow water. The greatest concern is the disturbance of the birds during their spring or fall migration. The airport sponsors with the help of the construction workers will keep vigilant watch for Whooping Cranes and cease all work if they are sighted until the birds have moved on. Any sightings will be reported to the USFWS and the FAA Bismarck ADO.

The Topeka Shiner is listed as an “endangered” species. They are known to occupy numerous small streams within eastern SD and are most concentrated within the Big Sioux, Vermillion, and James River watersheds. None of the alternatives will impact small streams or creeks.

As no impacts are anticipated, the USFWS concurred with the determination of "may affect - not likely to adversely affect" both the Whooping Crane and the Topeka Shiner. This correspondence can be found in **Appendix B**.

**Bald Eagle:** Bald Eagles occur throughout SD and new nests appear each year. The species’ nesting season is January to August. The bald eagle is no longer on the endangered species list but is protected by the Bald and Golden Eagle Protection Act and

the Migratory Bird Act Treaty. No known nests are on or in the vicinity of Redfield Municipal Airport. However, new nests are appearing over time. No construction will be allowed within one-quarter mile of a nest and all nest sightings will be reported to USFWS and the FAA Bismarck ADO. None of the alternatives are anticipated to impact Bald Eagles.

**Alternative 1.** This alternative would not impact fish, wildlife, or plants.

**Alternative 2.** This alternative "may affect - not likely to adversely affect" the Topeka Shiner and the Whooping Crane. If any T& E species or Bald Eagle is sighted near the construction site, construction would be halted and the appropriate agencies would be contacted as listed in the Commitments and Compliance Section at the end of this chapter. Any fish, wildlife, or plant impacts would be mitigated by the creation of new wetlands to replace those lost as part of the construction of the alternative.

## **9) Energy Supplies, Natural Resources, and Sustainable Design**

The two most common impacts to natural resources and energy supply are the resources used to construct the project (i.e. gravel, fill dirt, asphalt, fuel for equipment, etc.) and the increased use of energy for the newly built structures (i.e. building heating and cooling, airfield lighting and maintenance, etc.). The resources used in construction, such as gravel base course, asphalt, fill dirt, etc. are all in adequate supply in the Redfield area and during the design every opportunity to reuse materials from on site would be explored.

**Alternative 1.** This alternative would not impact energy supplies, natural resources, or sustainable design since it does not involve construction or any modification to the airport.

**Alternative 2.** Since Runway 17/35 would be new construction, additional energy is needed to supply the runway lighting system on the new runway and taxiway. The additional power demand of the runway lights is not expected to exceed the capacity of the existing power system.

The resources to construct Runway 17/35 and taxiways, are all available in the Redfield area and during the design every opportunity to reuse materials from on site would be explored. These may include the use of salvaged surfacing such as the use of soil removed to meet the runway grading standards to construct embankments and so forth.

The resources for the construction of the wildlife fence, such as fill dirt etc., are all available in the Redfield area and during the design every opportunity to reuse materials from on site would be explored. Therefore this alternative will cause no significant impact to energy supplies, natural resources, and sustainable design.

## 10) Environmental Justice

To comply with the regulations of Title VI of the 1964 Civil Rights Act (42 USC 2000d et seq.) and Executive Order (EO) 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations (59 Federal Register [FR] 7629), the potential environmental impacts of the preferred alternative were studied with respect to the demographic and socioeconomic composition of the study area. U.S. Census Bureau 2010 census data, the most recent data available, were used for this analysis. To adequately evaluate any “significant” or “disproportionate” impacts of the preferred alternative on minority populations and low income populations was conducted.

Data from the 2010 Census shows that in Spink County, where Redfield is located, there were 6,415 people with a median household income of \$45,000. Of those 17.0 percent or 1,090 people are listed as below the poverty level in Spink County. Total minorities in Spink County make up 2.0 percent of the population as compared to 12.2 percent for the State of South Dakota and 25.2 percent for the nation.

**Alternatives 1 and 2.** These alternatives would not disproportionately impact Environmental Justice populations since they do not include displacement of or impacts to residences or businesses, nor do they impact existing infrastructure.

## 11) Farmlands

The Farmland Protection Policy Act of 1981 (7 CFR 658) requires that federal projects minimize the conversion of farmland to nonagricultural uses. To the extent practicable, state and local farmland policies are to be considered. Specially classified farmlands receive particularly close scrutiny under this act and are addressed in the remainder of this section. The USDA National Resources Conservation Service (NRCS) was consulted on the effects of this project and their correspondence can be found in **Appendix B**. According to NRCS, no significant impact on prime or important farmland occurs if the score of the proposed project is less than a threshold of 160 points. A Farmland Impact Rating Form is completed to determine the score of a proposed project and is below the 160 point threshold.

**Prime Farmland:** The USDA defines prime farmland as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water)” (7 CFR 657). Prime farmland produces the highest yields with the least amount of energy and economic inputs. The USDA NRCS classifies land as prime farmland if it fits specific precipitation, soil temperature, pH, sodium, erosion, and other physical criteria. These lands are considered of the highest quality for agricultural protection.

**Unique Farmland:** Unique farmland is land other than prime farmland that is used for the protection of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce

sustained high-quality and/or large yields of a specific crop when treated and managed according to modern farming methods.

**Alternatives 1.** This alternative would not impact prime or unique farmland since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would not impact prime or unique farmland. A Farmland Rating Form was completed for this alternative with a score of 117, which is below the 160 point impact threshold. The completed Farmland Rating Form is included in **Appendix B**.

## 12) Floodplains

EO 11988, Floodplain Management, directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare and restore and preserve the natural and beneficial values served by floodplains. It specifies that all improvements should if possible be kept outside of the 100-year floodplain.

The United States Army Corps of Engineers (US ACOE), Omaha District, was solicited for their comments on the floodplain impacts of this project. The US ACOE indicated the proposed construction project is located outside the 100-year floodplain according to the Flood Insurance Rate Maps (FIRM). The response letter from US ACOE is included in **Appendix B**.

**Alternative 1.** This alternative would not impact floodplains since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would not impact floodplains since all construction activities would take place outside the 100-year floodplain.

## 13) Hazardous Materials

This section examines the possibility of the production or use of hazardous materials on this project and whether hazardous materials would be disturbed by this project. The main possibility for pollution and disturbance of hazardous materials would occur during construction. A SWPPP would be prepared prior to construction and would address mitigation measures to prevent hazardous materials from entering water systems.

If discovery of hazardous materials or contamination occurs, construction must be stopped and the incident must be reported to the National Response Center at 800-424-8802 and SD DENR at 605-773-3351 or 605-773-3231 (after hours).

**Alternative 1.** This alternative would not produce hazardous materials since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would not produce any hazardous materials during construction or after construction. Hazardous materials may be utilized during construction, such as bituminous asphalt cement, depending on the type of pavement constructed. These materials are regulated in the manner in which they are transported and the contractor would be required to follow all applicable laws relating to the type of materials used.

## **14) Historic and Archaeological Resources**

To assess any possible impacts to the historical, architectural, archaeological and cultural resources the State Historical Preservation Office was consulted. An archaeological records search was completed as part of the Section 106 Project Review. According to the record search conducted by the South Dakota State Historical Society, no known sites are located within the project area for all alternatives. An on-site cultural resources survey was completed and submitted to SHPO as a section 106 review for concurrence on the determination of No Historic Properties Affected. All related correspondence is included in **Appendix B** and the on-site cultural resources survey is included in **Appendix E**.

If any bones, artifacts, foundations or other indications of past human occupation of the area are uncovered during the project, construction shall be temporarily stopped and the City shall take proper care to protect and preserve the item or items found. The City shall take action to comply with the National Historic Preservation Act (NHPA) and the Archaeological Resources Protection Act, as appropriate, and notify the SHPO and the Bismarck ADO immediately. Also, if any tribal cultural items or remains are discovered the affected tribe shall be notified and the proper care shall be taken to protect and preserve the artifacts and the affected tribe shall be notified. This requirement is included in the FAA AC 150/5370-10F, Standards for Specifying Construction of Airports, Item P-152 Excavation and Embankment, which would be part of the project construction contract.

Area Tribal Historic Preservation Officers have been contacted regarding the proposed project. Representatives from the City of Redfield, Helms and Associates, FAA, and Sisseton-Wahpeton Oyate Tribal Historic Preservation Office (SWO-THPO) met on Thursday, June 5 in Redfield, SD to discuss the EA and to complete a site visit at the airport.

According to oral history, Chief Drifting Goose was a leader of a band of Sioux that roamed up and down the James River. The concern is regarding cultural resources, preservation of sacred places, and to prevent the destruction of places and things of cultural value. A concern for the THPO is off-site borrow areas as they have a high probability of uncovering cultural resources. If new project specific borrow sites are identified for the proposed project, they will need to be cleared with SHPO and THPO prior to use. The site visit conducted by the group did not lead to the discovery of any areas of concern within the proposed project site. However, it was discussed that the

SWO-THPO will be kept informed of the project progress and to continually discuss the need for tribal monitors during construction.

**Alternative 1.** This alternative would not impact known historic and archeological resources since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would not impact known historic and archaeological resources since no known sites exist within the areas where construction would take place. The SD SHPO concurred with the determination of No Historic Properties Affected. The SWO-THPO did not find any areas of concern within the proposed project site. However, if new project specific borrow sites will be needed, those sites must be cleared by SHPO and THPO prior to use. Tribal monitors will be required if deemed warranted by the FAA.

## **15) Induced Socioeconomic Impacts**

Examples of induced (secondary) socioeconomic impacts are shifts in population, public service demands, and changes in airport or residential development.

**Alternative 1.** This alternative would not cause induced socioeconomic impacts since it does not require the relocation of people, infrastructure, or future land use development nor would it cause an increase in air traffic at the airport.

**Alternative 2.** This alternative would cause induced socioeconomic impacts since it does require future land use development. Although this alternative would not cause the relocation of people or infrastructure, a new runway will be constructed. As the new runway is required to meet FAA wind coverage and runway length standards, there would be minimal impacts anticipated since the increase in utilization would be limited.

## 16) Light Emissions and Visual Effects

Airport-related lighting facilities and activities could visually affect surrounding residents and other nearby light-sensitive areas such as homes, parks or recreational areas. Some airport projects have visual effects in which airport improvement projects contrast with the existing environment, architecture, history, or others find the proposed action objectionable.

**Alternative 1.** This alternative would not cause light emissions impacts since airport lighting would not be modified under this alternative.

**Alternative 2.** This alternative would cause minimal light emission impacts. This alternative includes installing MIRL along the new Runway 17/35 which are a higher intensity than the existing lighting on Runway 13/31. The MIRL (white lights) have lenses which lower the impact of the lights compared to other lighting from the surrounding area, such as street or security lighting.

## 17) Noise

FAA EO 1050.1E, Environmental Impacts: Policies and Procedures, states, that no noise analysis is needed for proposals involving airplanes with a wingspan less than 79 feet which have landing speeds less than 166 knots operating at airports whose forecast operations in the period covered by the EA do not exceed 90,000 annual propeller operations (247 average daily operations) or 700 jet operations (two average daily operations). Redfield Municipal Airport is currently limited to aircraft with wingspans less than 79 feet. The total annual operations as reported in 2013 were 3,400 annual operations.

**Alternative 1.** This alternative would not cause noise impacts since it would not increase airport operations above the threshold for noise analysis or modify the configuration of the airport.

**Alternative 2.** This alternative would not cause noise impacts. Although the number of air traffic operations would be expected to increase, the number of operations would still be expected to be well below the threshold to require a noise analysis. In addition, the airport configuration is modified with this alternative, however, the new configuration does not bring aircraft any closer to residences or other noise sensitive land uses than already exists at the airport.

## 18) Solid Waste

This section examines the possibility of whether a project would produce more solid waste and if the facilities are available to handle the additional solid waste.

**Alternative 1.** This alternative would not create additional solid waste since garbage and sewage production would continue to remain the same.

**Alternative 2.** These alternatives would not create additional solid waste since garbage and sewage production would continue to remain similar before and after this alternative is implemented.

## 19) Water Quality

The Federal Water Pollution Control Act gives the EPA the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, control location with regard to an aquifer or sensitive ecological area such as a wetlands area and regulate other issues concerning water quality. The US ACOE and the USFWS also have oversight authority if the project would affect wetlands which will be discussed in the next section.

Typically, construction has the highest potential for impacting water quality due to water runoff and erosion. SWPPPs can be incorporated in the project specifications and BMPs can be implemented to minimize the impacts to water quality.

The SD DENR was solicited for comments on the surface water quality impacts of this project. A copy of this correspondence and their response is included in **Appendix B**. The return letter from the DENR indicated that the proposed project will have "little or no impact" on water quality.

**Alternative 1.** This alternative would not impact water quality since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would not impact water quality since the design and maintenance would incorporate BMPs to prevent any construction impacts or longer-term impacts from continuing operation. Once Runway 17/35 and the taxiway are constructed the small increase in runoff from the increase impervious surface would be detained on Airport property to prevent any storm water impacts off the airport.

## 20) Wetlands

Wetlands are identified in the Clean Water Act and the EO 11990, Protection of Wetlands, as important to the nation's environmental health. EO 11900 requires federally funded projects to take action to minimize the destruction, loss or degradation of wetlands and to avoid any impacts on wetlands when possible. Wetlands and other waters of the U.S., including waterways, lakes, natural ponds, and impoundments, are regulated by US ACOE under Section 404 of the Clean Water Act. A permit from US ACOE is required to authorize the discharge of dredged or fill material into waters of the U.S. under US ACOE jurisdiction. The state also has regulatory jurisdiction over all waters within its boundaries.

Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328). Wetlands within the proposed project area were determined in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, January 1987).

The US ACOE, USFWS and SD GF&P were solicited for comments on impacts to wetlands. Responses included steps to avoid, minimize, and mitigate wetlands impacts. Their comments can be found in **Appendix B**. A preliminary wetland delineation was conducted as part of the wildlife hazard review and the impacted wetland areas are included in **Figure 4-2**.

Wetland impacts would be minimized and mitigated per local, state, and federal requirements. Mitigation of wetland impacts typically involves “in-kind” replacement or “restoration” of wetland areas destroyed due to development. Mitigation ratios vary depending on the type, quality, and location. According to the USFWS response letter, drained wetlands are recommended to be mitigated at a 1:1 (restored to impacted) ratio, and wetland losses are recommended to be mitigated up to a 2:1 (restored to impacted) ratio. Mitigation would be implemented off-site and outside the separation from the Airport as described in FAA AC 150/5200-33, Hazardous Wildlife Attractants on or Near Airports.

Reducing wildlife hazards enhances safety at the airport by reducing the potential for wildlife-aircraft strikes. A wildlife hazard assessment (WHA) was completed by the U.S. Department of Agriculture (USDA) in 2011 at Redfield Municipal Airport and is included in **Appendix D**. The report identified several wildlife hazards present at the airport as follows:

- Wetlands on and around the airport attract birds.
- Vegetation (alfalfa) grown on the airport attracts wildlife.
- Trees on and around the airport provide attractive perches for large birds.

- No fence exists for preventing large terrestrial wildlife (such as deer) from entering airport property.

The WHA made the following recommendations:

- Fill/Modify wetlands located on and adjacent to the airfield.
- Grow warm season grasses which produce little seed instead of alfalfa and other non-grass vegetation.
- Work with neighboring landowners to reduce or eliminate corn and small grain production on land adjacent to the airport property especially the land to the south of the airport.
- Remove all trees on the airport property.
- Work with adjacent landowners to remove all dead trees on lands south and southwest of the airfield, especially those associated with the large wetland to the south.
- Install ten-foot high wildlife fence to prevent deer and other large terrestrial wildlife from entering airport property.

As recommended in the WHA, the critical attractants, which include the large wetlands located south of the airport and low areas on northeast portion of airport property, should be addressed. Based on these recommendations, critical wetlands should be filled on and around airport property.

**Alternative 1.** This alternative would not impact wetlands since it does not include construction or modification to the airport and surrounding land.

**Alternative 2.** This alternative would impact approximately 14 acres of wetlands from filling in wetlands to accommodate the runway shifts and reduce the wildlife attractants.

Regardless of whether the wetland is jurisdictional or not, any wetland to be filled must be mitigated. A Section 404 Permit would be required to perform the work of filling in the jurisdictional wetlands, however according to the ACOE none of the wetlands on airport property are Jurisdictional wetlands. Therefore, a Section 404 permit will not be required as a part of the wetland mitigation.



## 21) Wild and Scenic Rivers

The Wild and Scenic Rivers Act, along with the President's 1979 Environmental Message Directive on Wild and Scenic Rivers designates and protects wild and scenic rivers. The proposed project would have no impact on any wild and scenic rivers or national recreational rivers. The only river in SD with either designation is the Missouri River with only limited sections along the border with Nebraska designated as a national recreational river.

**Alternatives 1 and 2.** These alternatives would not impact wild and scenic rivers since Redfield Municipal Airport is not located near a river designated as a wild or scenic river.

## 22) Indirect and Cumulative Impacts

**Indirect Impacts:** Indirect impacts are unintentional project impacts (positive or negative) that would affect the socioeconomic and/or natural environment beyond the project area and would occur later in time or be farther removed in distance from the proposed project (40 CFR 1508.8). Changes in future land use are often characterized as an indirect impact of a new transportation project.

Other short-term indirect impacts could consist of increased traffic on adjacent roads as a result of construction. Users may choose to use alternate routes to avoid the increased truck traffic, thereby temporarily increasing traffic on those alternate routes.

**Cumulative Impacts:** Cumulative impacts are beneficial and/or adverse effects that are combined from different projects, CEQ's Regulations for Implementing the Procedural Provisions of NEPA define cumulative impacts as follows:

*The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).*

Where appropriate the direct, indirect and cumulative impacts to the environment are discussed. **Table 4-1** includes Redfield Municipal Airport's proposed five-year plan. The five-year plan is only a planning document and would likely change over time. No assumptions about the environmental review or funding of these projects have been made and the airport would continuously work with the state and FAA to revise this plan and keep it current.

**Table 4-1 Redfield Municipal Airport Proposed Five-Year Plan**

<b>YEAR</b>	<b>PROJECT DESCRIPTION</b>
<b>2014</b>	ALP UPDATE
	DESIGN FOR RUNWAY REALIGNMENT AND WETLAND MITIGATION/FILLING (PHASE I)
	LAND ACQUISITION
	SRE TRACTOR
<b>2015</b>	PHASE I CONSTRUCTION - WETLAND MITIGATION/FILLING
<b>2016</b>	PHASE II CONSTRUCTION - RUNWAY REALIGNMENT EARTHWORK
<b>2017</b>	PHASE III CONSTRUCTION - RUNWAY CONSTRUCTION W/MIRL
<b>2018-2019</b>	WILDLIFE FENCE
<b>2020-2024</b>	APRON AND TAXIWAY REHABILITATION
<b>NPIAS</b>	PARALLEL TAXIWAY

The cumulative effect could be further airport growth. However, unless the City of Redfield and/or air travel in general grows immensely, the potential for longer runways and larger approaches is not likely.

**Alternative 1.** This alternative would cause indirect impacts since the airport has planned for the land acquisition and design for a new runway in 2014. Other future development plans which complement or accompany the new runway at the airport would also be delayed or eliminated with this alternative.

This alternative would cause indirect impacts since the airport does not currently meet FAA standards for runway length and wind coverage with Runway 13/31 and there would be no action to comply with FAA standards.

**Alternative 2.** An increase in aircraft operations and size of aircraft would be limited and would not be expected to cause any significant impacts to the surrounding area.

This alternative would cause an indirect impact for duration of construction by limiting service at the airport and therefore potentially to patrons of the City and the associated merchants.

This alternative would not cause indirect impacts to the airport's five-year plan for development. Cumulative effects would be linked closely to City and airport growth and are not anticipated to be an issue for quite some time.

## **Selection of the Preferred Alternative**

### Alternative 1 – “No Action”

- This alternative does not meet the purpose and need. The Redfield Municipal Airport would continue to be out of compliance with FAA wind coverage standards, runway length standards and land ownership recommendations.
- This alternative has no permanent significant impacts on air quality, biotic resources, costal barriers, coastal zone management, compatible land use, construction impacts, section 4(f) and 6(f) resources, fish, wildlife, plants, energy supplies, natural resources, sustainable design, environmental justice populations, farmlands, floodplains, hazardous materials, historic and archaeological resources, socioeconomics, light, noise, solid waste, water quality, wetlands, wild and scenic rivers.
- This alternative would alter the airport’s five year plan and hinder growth at the airport. It leaves the airport out of compliance with FAA wind coverage standards, runway length standards, and land ownership recommendations.
- This alternative would prohibit the airport from constructing a new runway as included in their five-year plan.

### Alternative 2 – Purchase Approximately 99 Acres of Land, Construct Runway 17/35, Fill Wetlands, Remove Trees, Construct a Wildlife Fence, and maintain

- This alternative meets the purpose and need. The Redfield Municipal Airport would be in compliance with FAA land ownership regulations, wind coverage and runway length standards.
- This alternative has no permanent significant impacts on air quality, biotic resources, costal barriers, coastal zone management, section 4(f) and 6(f) resources, environmental justice populations, farmlands, floodplains, hazardous materials, historic and archaeological resources, noise, solid waste, water quality, wild and scenic rivers.
- This alternative would cause a minimal impact for compatible land use due to a small portion of the purchased land being converted to Runway 17/35.
- This alternative would only cause temporary impacts during construction that would be mitigated by implementing a SWPPP prior to construction and BMPs during the work. A General Storm Water Permit for Construction will be obtained if required.

- This alternative may affect - and is not likely to adversely affect fish, wildlife, and plants. In the event any of the species identified by the USFWS are sighted, construction will be halted.
- This alternative would cause an increase in energy and materials use for the construction but these would be temporary and would not adversely affect the supplies in the Redfield area. The increase in energy required to light the new runway is not expected to exceed the capacity of the existing power system.
- This alternative would have a minimal socioeconomic impacts due to the conversion of land that will occur with the construction of Runway 17/35.
- This alternative would cause minimal light emission impacts. This alternative includes installing MIRL along the new Runway 17/35 which are a higher intensity than the existing lighting on Runway 13/31. The MIRL (white lights) have lenses which lower the impact of the lights compared to other lighting from the surrounding area, such as street or security lighting.
- This alternative would impact approximately 14 acres of wetlands. Permits and mitigation off site would be coordinated with US ACOE, USFWS, and SD GF&P.
- This alternative would have indirect impacts for the duration of construction by limiting service at the airport and therefore potentially to patrons of the City and the associated merchants. The cumulative impact would include all of the impact categories together. In addition, the cumulative effect could be further airport growth. However, unless air travel in general grows immensely, the potential for longer runways and larger approaches in not likely.
- This alternative is included in the ALP for Redfield Municipal Airport.

Alternative 2 is the preferred prudent and feasible alternative since it satisfies the purpose and need and it is included in the ALP for Redfield Municipal Airport. All impacts to the environment were considered in the determination of the preferred alternative and are summarized in **Table 4-3**.

**Table 4-2 Summary of Alternatives\***

<b>Purpose and Need</b>	<b>Alternative 1 – "No Action"</b>	<b>Alternative 2 – Purchase Approximately 99 Acres, Construct Runway 17/35, Fill Wetlands, Remove Trees and Construct Wildlife Fence</b>
Compliance with FAA Land Control Requirements, Wind Coverage Standards, Runway Length Standards, and Reduce Wildlife Attractants	Airport would not meet FAA Land Control Requirements, Wind Coverage Standards, Runway Length Standards, and Reduce Wildlife Attractants	Airport would be in compliance with FAA Land Control Requirements, Wind Coverage Standards, Runway Length Standards, and Reduce Wildlife Attractants

<b>Impact Categories</b>	<b>Alternative 1 – "No Action"</b>	<b>Alternative 2 – Purchase Approximately 99 Acres, Construct Runway 17/35, Fill Wetlands, Remove Trees and Construct Wildlife Fence</b>	<b>Commitments and Compliance of Preferred Alternative (2)</b>
Air Quality	No Impact - Not located in a non-attainment area no NAAQS Assessment is required	No Impact - Not located in a non-attainment area, no NAAQS Assessment is required	Include BMPs to minimize construction impacts
Biotic Resources	No Impact	No Significant Impact	Compensatory mitigation of wetland impacts is required.
Coastal Resources	No Impact - Not located in the Coastal Barrier Resource System	No Impact - Not located in the Coastal Barrier Resource System	N/A
Coastal Zone Management	No Impact - Not located in Coastal Zone Management System	No Impact - Not located in Coastal Zone Management System	N/A
Compatible Land Use	No Impact	No Significant Impact - Meets FAA standards on airport. Only a small portion of the land currently farmed will be converted to airport use for Runway 17/35.	Monitor zoning and development around airport to ensure compatible land use.
Construction Impacts	No Impact	No Significant Impact - Temporary impacts including large equipment with the associated noise and possible air pollution, soil erosion, dust, and the closing of portion of the airport to comply with the FAA safety plan requirements	Include BMPs to minimize construction impacts. Prepare a SWPPP for construction and submit a Notice of Intent to the DENR. Obtain a Storm Water Permit for Construction Activities from 1-800-SDSTORM (if applicable).
Section 4(f) and 6(f) Resources	No Impact	No Impact	N/A

Impact Categories	Alternative 1 – "No Action"	Alternative 2 – Purchase Approximately 99 Acres, Construct Runway 17/35, Fill Wetlands, Remove Trees and Construct Wildlife Fence	Commitments and Compliance of Preferred Alternative (2)
Fish, Wildlife, and Plants	No Impact	May Affect - Not Likely to Adversely Affect the Whooping Crane and Topeka Shiner	If Whooping Cranes, Topeka Shiners, or Bald Eagles are spotted on or near the project site, construction shall halt and the USFWS and the Bismarck ADO contacted to provide further direction before construction is resumed. Other impacts to fish, wildlife, and plans would be mitigated by the creation of new wetlands to replace those lost as part of the construction of this alternative
Energy Supplies, Natural Resources, Sustainable Design	No Impact	No Significant Impact - An increase in energy will occur but is not expected to exceed the capacity of the existing power system.	The reuse of salvaged materials would be incorporated in the plans.
Environmental Justice	No Impact	No Impact	N/A
Farmlands	No Impact	No Impact	N/A
Floodplains	No Impact	No Impact	N/A
Hazardous Materials	No Impact	No Impact	Report all spills to the SD DENR 605-773-3296 and the National Response Center 800-424-8802 if a spill were to reach waters.
Historical and Archaeological Resources	No Impact	No Significant Impact	If bones, artifacts, foundations or other indications of past human occupation of the area are discovered, the SHPO and the Bismarck ADO will be notified. In addition, if any tribal cultural items or remains are discovered the affected Tribe will be notified and the proper care will be taken to protect and preserve the artifacts. Any project specific borrow sites must be cleared with the SHPO and THPO prior to use. The SWO-THPO will be kept informed of the project progress.
Induced Socioeconomic Impacts	No Impacts	Minimal Impact - No relocation of people or infrastructure are expected however the conversion of future land use will occur with the construction of the Runway 17/35.	N/A

Impact Categories	Alternative 1 – "No Action"	Alternative 2 – Purchase Approximately 99 Acres, Construct Runway 17/35, Fill Wetlands, Remove Trees and Construct Wildlife Fence	Commitments and Compliance of Preferred Alternative (2)
Light Emissions and Visual Impacts	No Impact	Minimal Impact - Minimal light impacts to the surrounding area will occur with the installation of MIRL on Runway 17/35.	N/A
Noise	No Impact	No Impact	N/A
Solid Waste	No Impact	No Impact	N/A
Water Quality	No Impact	No Impact	Prepare a SWPP for construction and submit a Notice of Intent to the DENR. Include BMPs. Stop construction if any spills or discovery of contaminants occurs. Report to the National Response Center 800-424-8802 and SD DENR 605-773-3351 or 605-773-3231 (after hours).
Wetlands	No Impact	Fill approximately 14 acres of wetlands.	Mitigate wetlands off-site and outside the separation from the Airport as described in FAA AC 150/5200-33, Hazardous Wildlife Attractants on or Near Airports.
Wild and Scenic Rivers	No Impact	No Impact	N/A
Indirect and Cumulative Impacts	No Significant Impact - Would impact airport's five-year plan, and hinder growth at the airport. Also leaves the airport out of compliance with FAA wind coverage and runway length standards.	No Significant Impact - Indirect impacts for the duration of construction by limiting service at the airport and therefore potentially to patrons of the City and the associated merchants. The cumulative impact would include all of the impact categories together. In addition, the cumulative effect could be further airport growth. However, unless air travel in general grows immensely, the potential for longer runways and larger approaches is not likely.	N/A

\*This table is only a summary of the impacts. For a full analysis and discussion please see the individual sections in Chapter 4.

## Commitments and Compliance

The following is a list of permits, plans and other approvals needed for the project as proposed in chapter one of this assessment.

Air Quality: Include BMPs to minimize construction impacts such as wind erosion and dust, and keep equipment maintained to reduce exhaust emissions, etc.

Compatible Land Use: The airport and City shall monitor zoning, development and work to coordinate with the county to restrict the use of land adjacent to and surrounding the airport to uses compatible with the operations of the airport and to protect the approach surfaces and protection zones.

Construction Impacts: Prepare a SWPPP for construction and submit a Notice of Intent (NOI) to the SD DENR. Include BMPs for sediment and erosion control. A General Storm Water Permit for General Construction will be obtained if required from 1-800-SDSTORM.

Fish, Wildlife and Plants: No construction will be allowed within 1/4 mile of an active Bald Eagle nest and all Bald Eagle nest sightings will be reported to USFWS and the FAA Bismarck ADO. The airport sponsors with the help of the construction workers will keep vigilant for Whooping Cranes and Topeka Shiners and cease all work if they are sighted. Any Whooping Crane and Topeka Shiner sightings will be reported to the USFWS and the FAA Bismarck ADO.

Hazardous Materials: Prepare SWPPP and submit NOI as noted above. Stop work if any spills or discovery of contaminants occurs. Report to the National Response Center at 800-424-8802 and SD DENR at 605-773-3351 or 605-773-3231 (after hours).

Historical and Archaeological Resources: If any bones, artifacts, foundations or other indications of past human occupation of the area are uncovered during the project, construction will be temporarily stopped until the SHPO and the Bismarck ADO have been notified and had a chance to comment.

If any tribal cultural items or remains are discovered the affected Tribe will be notified and the proper care will be taken to protect and preserve the artifacts.

Any project specific borrow sites must be cleared with the SHPO and THPO prior to use. The SWO-THPO will be kept informed of the project progress and Tribal Monitors will be required if deemed to be warranted by the FAA.

Water Quality: Prepare SWPPP and submit NOI as noted above. Stop work if any spills or discovery of contaminants occurs. Report to the National Response Center at 800-424-8802 and SD DENR at 605-773-3351 or 605-773-3231 (after hours).

Wetlands: Wetland impacts will be minimized and mitigated per local, state, and federal requirements. Mitigation would be implemented off-site and outside the separation from the airport as described in FAA AC 150/5200-33, Hazardous Wildlife Attractants on or Near Airports.

# Chapter Five – Personnel, Agency and Public Involvement

## Permits, Licenses, and Other Approvals

A Surface Water Discharge Permit will be obtained if dewatering is required. A General Storm Water Permit for Construction Activities will be obtained if required (1-800-SDSTORM).

## List of Preparers

The prime preparers of the EA for Land Ownership Requirements, Wind Coverage and Runway Length Requirements, and the Wildlife Hazard Mitigation at the Redfield Municipal Airport are:

Terry D. Helms, Principal  
Helms & Associates

Michael A. Schmit, Engineer  
Helms & Associates

Brooke B. Edgar, Engineer  
Helms & Associates

In addition, expertise, project background, and other information was provided by the following individuals and reports:

Darrel Ronnfeldt, Airport Manager  
Redfield Municipal

Adam Hansen, Finance Officer  
City of Redfield, SD

Draft 2006 Airport Layout Plan  
Prepared by Helms and Associates

## **Listing of Agencies, and Persons Consulted**

Various agencies were consulted in the process of preparing this EA document. The consultations at a minimum consisted of a letter requesting comments on the proposed project and were often followed by responding correspondence with comments or requests for more information. The following agencies were contacted:

- U. S. Department of Agriculture Natural Resource Conservation Service
- U. S. Department of the Interior, Fish, and Wildlife Service
- U. S. Army Corps of Engineers, Omaha District
- U. S. Environmental Protection Agency, Region VIII
- South Dakota Department of Environment and Natural Resources,  
Surface Water Program
- South Dakota Department of Environment and Natural Resources,  
Air Quality Program
- South Dakota Game, Fish, and Parks Division of Wildlife
- South Dakota State Historical Society
- Sisseton-Wahpeton Oyate Tribal Historic Preservation Officer
- Yankton Sioux Tribe Tribal Historic Preservation Officer
- Crow Creek Sioux Tribe Tribal Historic Preservation Officer

## **Public Involvement**

A notice of public hearing and availability of draft environmental assessment for the Redfield Municipal Airport was published in the Redfield Press on April 30 and May 7, 2014. The public meeting was held at 7:00 pm on Monday June 2, 2014. No public comments were received.

## **APPENDIX A**

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**FEDERAL STATUTES, REGULATIONS, EXECUTIVE ORDERS, AND GUIDANCE,  
INCLUDING FAA ADVISORY CIRCULARS**

## Federal Statutes, Regulations, Executive Orders, and Guidance, Including FAA Advisory Circulars<sup>1</sup>

Statute	Implementing Regulations and Other Guidance
<p><b>Air Quality</b></p> <ul style="list-style-type: none"> <li>Clean Air Act (CAA), as amended, 42 U.S.C. §§ 7401-7671 (1990).</li> </ul>	<ul style="list-style-type: none"> <li>40 C.F.R. Parts 9, 50 - 53, 60, 61, 66, 67, 81, 82, and 93 (2004).</li> </ul>
<p><b>Coastal Resources</b></p> <ul style="list-style-type: none"> <li>Coastal Barrier Resources Act of 1982, as amended by the Coastal Barrier Improvement Act of 1990, 16 U.S.C. §§ 3501-3510 (1990).</li> <li>Coastal Zone Management Act, as amended, 16 U.S.C. §§ 1451-1464 (1999).</li> <li>Coral Reef Protection, Exec. Or. 13089 and 63 Fed. Reg. 32701 (June 11, 1998).</li> </ul>	<ul style="list-style-type: none"> <li>U.S. Department of Interior (001) Coastal Barrier Act Advisory Guidelines, 57 Fed. Reg. 52730 (November 5, 1992).</li> <li>15 C.F.R. Parts 930, Subparts C and O (2005).</li> <li>15 C.F.R. Part 923 (2005).</li> </ul>
<p><b>Compatible Land Use</b></p> <ul style="list-style-type: none"> <li>Aviation Safety and Noise Abatement Act of 1979, as amended, 49 U.S.C. §§ 47501-47507 (2000).</li> </ul>	<ul style="list-style-type: none"> <li>14 C.F.R. Part 150 (2005).</li> </ul>
<p><b>Department of Transportation Act</b></p> <ul style="list-style-type: none"> <li>Department of Transportation Act of 1966, Section 4(f), recodified at 49 U.S.C. 303 (c) (1983).</li> </ul>	
<p><b>Farmlands</b></p> <ul style="list-style-type: none"> <li>Farmland Protection Policy Act, 7 U.S.C. §§ 4201- 4209, as amended by section 1255 of the Food Security Act of 1985, 100 Stat. 45.</li> </ul>	<ul style="list-style-type: none"> <li>7 C.F.R. Part 658 (2005).</li> <li>7 C.F.R. Part 657 (2005).</li> <li>The President's Council on Environmental Quality (CEQ) Memorandum on Analysis of Impacts on Prime and Unique Agricultural Lands in Implementing the National Environmental Policy Act, 45 Fed. Reg. 59189 (September 8, 1980).</li> </ul>
<p><b>Fish, Wildlife and Plants</b></p> <ul style="list-style-type: none"> <li>Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1544 (1973).</li> <li>Marine Mammal Protection Act of 1972, 16 U.S.C. §§ 1361-1421(h) (1972).</li> <li>Related Essential Fish Habitat Requirements of the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act, 16 U.S.C. § 1855(b)(2) (1996).</li> <li>Sikes Act Amendments of 1974, 16 U.S.C. §§ 670- 670(f) (1997).</li> <li>Fish and Wildlife Coordination Act of 1958, 16 U.S.C. §§ 661-666c (1958).</li> </ul>	<ul style="list-style-type: none"> <li>50 C.F.R. Part 402 (2004).</li> <li>50 C.F.R. Parts 450 - 453 (2004).</li> <li>50 C.F.R. § 600.920 (2004).</li> <li>Memorandum of Understanding (MOU) among 14 Federal agencies on Implementation of the Endangered Species Act, <a href="http://environment.fhwa.dot.gov/guidebook/vol1/doc4a.pdf">http://environment.fhwa.dot.gov/guidebook/vol1/doc4a.pdf</a>, November 8, 1994.</li> <li>"Memorandum of Understanding to Foster the Ecosystem Approach", <a href="http://environment.fhwa.dot.gov/guidebook/vol1/doc17b.pdf">http://environment.fhwa.dot.gov/guidebook/vol1/doc17b.pdf</a>, December 15, 1995.</li> <li>CEQ Guidance on Incorporating Biodiversity Considerations into Environmental Impact Analysis, <a href="http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf">http://www.eh.doe.gov/nepa/tools/guidance/Guidance-PDFs/iii-9.pdf</a> (January 1993).</li> </ul>

- All Federal Statutes, Regulations, Executive Orders, and Guidance, including Federal Aviation Administration (FAA) Advisory Circulars (AC) are referenced in FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, effective June 8, 2004, and all citations are accurate as of July 19, 2005.

## Federal Statutes, Regulations, Executive Orders, and Guidance, Including FAA Advisory Circulars<sup>1</sup>

Statute	Implementing Regulations and Other Guidance
<ul style="list-style-type: none"> <li>• Fish and Wildlife Conservation Act of 1980, 16 U.S.C. §§ 2901-2912 (1980).</li> <li>• Invasive Species, Exec. Or. 13112, 64 Fed. Reg. 6183 (February 8, 1999).</li> <li>• Migratory Bird Treaty Act of 1981, 16 U.S.C. §§ 703-712.</li> <li>• Responsibilities of Federal Agencies to Protect Migratory Birds, Exec. Or. 13186, 66 Fed. Reg. 3853 (January 10, 2001).</li> <li>• Presidential Memorandum on Environmentally and Economically Beneficial Landscape Practices on Federally Landscaped Grounds, April 26, 1994; Greening the Government Through Leadership in Environmental Management, Exec. Or. 13148 (April 21, 2000).</li> <li>• The Animal Damage Control Act of 1931, as amended, 7 U.S.C. 426--426c (2000), 46 Stat. 1468.</li> </ul>	<ul style="list-style-type: none"> <li>• 50 C.F.R. Part 83 (2004).</li> <li>• Department of Transportation (DOT) Policy on Invasive Alien Species, <a href="http://www.fhwa.dot.gov/environment/rdsduse/rdus3_11.htm">http://www.fhwa.dot.gov/environment/rdsduse/rdus3_11.htm</a>, April 22, 1999.</li> <li>• 50 C.F.R. Part 10 (2004).</li> <li>• Environmental Protection Agency, Office of the Federal Environmental Executive, Guidance for Presidential Memorandum on Environmentally and Economically Beneficial Landscape Practices on Federal Landscaped Grounds, 60 Fed. Reg. 40837 (August 10, 1995).</li> <li>• DOT Order 5610.1 C, Paragraph 3f of attachment 2.</li> </ul>
<p><b>Floodplains</b></p> <ul style="list-style-type: none"> <li>• Floodplain Management, Exec. Or. 11988, 42 Fed. Reg. 26951 (May 24, 1977).</li> <li>• Appropriate State and Local construction statutes.</li> </ul>	<ul style="list-style-type: none"> <li>• DOT Order 5650.2, Floodplain Management and Protection.</li> <li>• Federal Emergency Management Agency "Protecting Floodplain Resources: A Guidebook for Communities", <a href="http://www.fema.gov/hazards/floods/lib268.shtm">http://www.fema.gov/hazards/floods/lib268.shtm</a>, June 1996.</li> </ul>
<p><b>Hazardous Materials, POLLUTION PREVENTION, and Solid Waste</b></p> <ul style="list-style-type: none"> <li>• Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992, 42 U.S.C. §§ 9601-9675.</li> <li>• Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109.</li> <li>• Toxic Substances Control Act of 1976, as amended, 15 U.S.C. §§ 2601-2692 (1976).</li> <li>• Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. § 6972 as amended by the Solid Waste Disposal Act of 1980 (SWDA), 42 U.S.C. § 6901(1976), the Hazardous and Solid Waste Amendments of 1984, and the Federal Facility Compliance Act of 1992, (FFCA), 42 U.S.C. §§ 6901-6992(k) (1992).</li> <li>• Federal Compliance with Pollution Control Standards Exec. Or. 12088, 43 Fed. Reg. 47707 (October 13, 1978) amended by Exec. Or. 12580, 52 Fed. Reg. (January 23, 1987).</li> <li>• Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, Exec. Or. 12856, 58 Fed. Reg. 41981 (August 3, 1993).</li> </ul>	<ul style="list-style-type: none"> <li>• 40 C.F.R. Parts 300, 311, 355, and 370 (2004).</li> <li>• CEQ Memorandum to Heads of Federal Departments and Agencies Regarding Pollution Prevention and the National Environmental Policy Act, 58 Fed. Reg. 6478 (January 12, 1993).</li> <li>• 40 C.F.R. Parts 761 - 763 (2004).</li> <li>• 40 C.F.R. Parts 240 - 280 (2004).</li> </ul>

# Federal Statutes, Regulations, Executive Orders, and Guidance, Including FAA Advisory Circulars<sup>1</sup>

Statute	Implementing Regulations and Other Guidance
<ul style="list-style-type: none"> <li>• Superfund Implementation, Exec. Or. 12580, 52 Fed. Reg. 2923 (January 23, 1987). Amended Exec. Or. 12777, 56 Fed. Reg. 54757 (1991).</li> </ul>	
<b>Historical, Architectural, Archeological, and Cultural Resources</b>	
<b>Laws Governing National Historic Preservation Programs, National Natural Landmarks, and National Historic Landmarks</b>	
<ul style="list-style-type: none"> <li>• National Historic Preservation Act of 1966, as amended Exec. Or. 11593, 36 Fed. Reg. 8921 (May 13, 1971). Protection and Enhancement of the Cultural Environment, 16 U.S.C. § 470 (1992).</li> </ul>	<ul style="list-style-type: none"> <li>• 36 C.F.R. Parts 60, 61, 63, 65, 68, 73, 78, 79, and 800, and §§ 62.1 and 65.1, as revised (2004); 65 Fed. Reg. 77695 (December 12, 2000).</li> </ul>
<b>Laws Governing the Federal Archeology Program</b>	
<ul style="list-style-type: none"> <li>• Antiquities Act of 1906, 16 U.S.C. §§ 431 - 433 (1996).</li> <li>• Archaeological and Historic Preservation Act of 1974, as amended, 16 U.S.C. §§ 469-469c (1974).</li> <li>• Archaeological Resources Protection Act of 1979, as amended, 16 U.S.C. §§ 470aa-470mm (1979).</li> <li>• Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. § 3001 (1990).</li> </ul>	<ul style="list-style-type: none"> <li>• 36 C.F.R. Part 68 (2004).</li> <li>• DOI Guidelines for Archeology and Historic Preservation: Standards and Guidelines, 48 Fed. Reg. 44716 (September 29, 1983).</li> <li>• 36 C.F.R. Part 68 (2004).</li> <li>• 43 C.F.R. Parts 3 and 7 (2004).</li> <li>• 36 C.F.R. Part 79 (2004).</li> <li>• 25 C.F.R. Part 262 (2005).</li> <li>• National Strategy for Federal Archeology, <a href="http://www.cr.nps.gov/aad/TOOLS/Natlstrg.htm">http://www.cr.nps.gov/aad/TOOLS/Natlstrg.htm</a></li> <li>• 43 C.F.R. Part 10 (2004).</li> <li>• 25 C.F.R. § 262.8 (2005).</li> </ul>
<b>Other Major Federal Historic and Cultural Resource Preservation Laws and Executive Orders</b>	
<ul style="list-style-type: none"> <li>• American Indian Religious Freedom Act of 1978, 42 U.S.C. § 1996 (1978).</li> <li>• Department of Transportation Act, 49 U.S.C. § 303 (1983) (recodification of the Department of Transportation Act of 1966, Section 4(f)).</li> <li>• Public Building Cooperative Use Act of 1976, 40 U.S.C. §§ 601 (a), 601(a)(1), 606, 611(c) and 612(a)(4) (2002).</li> <li>• Locating Federal Facilities on Historic Properties in Our Nation's Central Cities, Exec. Or. 13006, 51 Fed. Reg. 26071 (May 21, 1996).</li> <li>• Indian Sacred Sites, Exec. Or. 13007, 61 Fed. Reg. 26771 (May 24, 1996).</li> <li>• Consultation and Coordination with Indian Tribal Governments, Exec. Or. 13175, 65 Fed. Reg. 67249 (November 6, 2000), and the Presidential Memorandum for Government-to-government Relations with Native American Tribal Governments, 59 Fed. Reg. 2295 (April 29, 1994).</li> <li>• Protection and Enhancement of the Cultural Environment, Exec. Or. 11593, 36 Fed. Reg. 8921, (May 13, 1971), 16 U.S.C. § 470 (1980).</li> </ul>	<ul style="list-style-type: none"> <li>• 43 C.F.R. §§ 7.32 and 7.77 (2004).</li> <li>• 25 C.F.R. §§ 262.7 (2005).</li> <li>• 41 C.F.R. §§ 101-117, 101-117.002(1), (m), and (n), 101.17.002(i)(2), and 101-19 (2004).</li> </ul>

# Federal Statutes, Regulations, Executive Orders, and Guidance, Including FAA Advisory Circulars<sup>1</sup>

Statute	Implementing Regulations and Other Guidance
<p><b>Noise</b></p> <ul style="list-style-type: none"> <li>Aviation Safety and Noise Abatement Act of 1979, as amended, 49 U.S.C. §§ 47501-47507 (1994).</li> <li>Federal Aviation Act of 1958, et seq., as amended, 49 U.S.C. § 40101 (2005).</li> <li>Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968, 49 U.S.C. § 44709 (2003).</li> <li>Airport and Airway Improvement Act, 49 U.S.C. §§ 47101 - 47142 (2000).</li> <li>Airport Noise and Capacity Act of 1990, 49 U.S.C. §§ 2101, et seq.</li> <li>Noise Control Act of 1972, 49 U.S.C. § 44715.</li> </ul>	<ul style="list-style-type: none"> <li>14 C.F.R. Part 150 (2005).</li> <li>FAA AC 150/5020-1, Noise Control and Compatibility Planning for Airports.</li> <li>14 C.F.R. Part 161 (2005).</li> </ul>
<p><b>Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks</b></p> <ul style="list-style-type: none"> <li>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations Exec. Or. 12898, 59 Fed. Reg. 7629 (February 11, 1994).</li> <li>Protection of Children from Environmental Health Risks and Safety Risks, Exec. Or. 13045, 62 Fed. Reg. 19885 (April 21, 1997).</li> <li>Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Pub. L. 91-646, January 2, 1971, 84 Stat. 1894. (January 4, 2005)</li> </ul>	<ul style="list-style-type: none"> <li>DOT Order 5610.2, Environmental Justice in Minority and Low-Income Populations, April 15, 1997.</li> <li>CEQ Environmental Justice: Guidance Under the National Environmental Policy Act, <a href="http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_ceq12_97.pdf">http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_ceq12_97.pdf</a>, December 10, 1997.</li> <li>Final Guidance for Consideration of Environmental Justice in Clean Air Act 309 Reviews, <a href="http://www.epa.gov/compliance/resources/policies/nepa/enviro_justice_309revie_w.pdf">http://www.epa.gov/compliance/resources/policies/nepa/enviro_justice_309revie_w.pdf</a>, July 1999.</li> <li>42 U.S.C. 4601 et seq.; 49 CFR 1.48(cc).</li> <li>40 C.F.R. § 1508.27 (2004).</li> <li>49 C.F.R. Part 24 (2004).</li> <li>FAA Order 5100.37A, Land Acquisition and Relocation Assistance for Airport Projects.</li> <li>FAA AC 150/5100-17, Land Acquisitions and Relocation Assistance for Airport Improvement Program Assisted Projects.</li> </ul>
<p><b>Water Quality</b></p> <ul style="list-style-type: none"> <li>Federal Water Pollution Control Act, as amended (also known as the Clean Water Act), 33 U.S.C. §§ 1251- 1387 (1987).</li> <li>Safe Drinking Water Act, as amended, 42 U.S.C. § 300f to 300j-26 (1996).</li> <li>Fish and Wildlife Coordination Act of 1980, 16 U.S.C. §§ 651-666c (1980).</li> </ul>	<ul style="list-style-type: none"> <li>40 C.F.R. Parts 110-112, 116, 117, 122, 125, 129, 130, 131, 136, and 403 (2004).</li> </ul>
<p><b>Wetlands</b></p> <ul style="list-style-type: none"> <li>Clean Water Act, section 404, 33 U.S.C. § 1344 (1987).</li> <li>Rivers and Harbors Appropriation Act of 1899, 43 U.S.C. §401, et seq., Section 10.</li> <li>Protection of Wetlands, Exec. Or. 11990, 42 Fed. Reg. 26961 (May 24, 1977).</li> </ul>	<ul style="list-style-type: none"> <li>33 C.F.R. Parts 320 - 330 (2004).</li> <li>DOT Order 5660.1A, Preservation of the Nation's Wetlands.</li> </ul>

## Federal Statutes, Regulations, Executive Orders, and Guidance, Including FAA Advisory Circulars<sup>1</sup>

Statute	Implementing Regulations and Other Guidance
<p><b><i>Wild and Scenic Rivers</i></b></p>	
<ul style="list-style-type: none"> <li>• Wild and Scenic Rivers Act of 1968, 16 U.S.C. §§ 1271-1287 (1968)</li> </ul>	<ul style="list-style-type: none"> <li>• 36 C.F.R. Part 297 (2004).</li> <li>• DOT and the U.S. Department of Agriculture, Wild and Scenic River Guidelines for Eligibility, Classification and Management of River Areas, 47 Fed. Reg. 39454 (September 7, 1982).</li> <li>• CEQ Memorandum on Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, 45 Fed. Reg. 59190( September 8,1980).</li> </ul>
<p><b><i>Additional FAA Advisory Circulars and Regulations</i></b></p>	
<ul style="list-style-type: none"> <li>• FAA AC 150/5020-1, Noise Control and Compatibility Planning for Airports.</li> <li>• FAA AC 150/5200-33B, Hazardous Wildlife Attractants On or Near Airports.</li> <li>• FAA AC 150/5300-13, Airport Design.</li> <li>• FAA AC 150/5325-4B, Runway Length Requirements for Airport Design.</li> <li>• FAA AC 150/5370-10F, Standards for Specifying Construction of Airports.</li> <li>• 14 C.F.R. Part 77 (2011).</li> </ul>	

## **APPENDIX B**

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### **CORRESPONDENCE**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**CORPS OF ENGINEERS, OMAHA DISTRICT**  
**SOUTH DAKOTA REGULATORY OFFICE**  
**28563 POWERHOUSE ROAD, ROOM 118**  
**PIERRE, SOUTH DAKOTA 57501-6174**

**COPY**

December 27, 2012

South Dakota Regulatory Office  
28563 Powerhouse Road, Room 118  
Pierre, South Dakota 57501

City of Redfield  
Attn: Adam Hansen  
626 Main Street  
Redfield, South Dakota 57469

**RECEIVED**

DEC 28 2012

HELMS & ASSOCIATES

Dear Mr. Hansen:

Reference is made to the information received October 18, 2012, concerning Section 404 of the Clean Water Act permit requirements. We have reviewed your request for a determination of Section 404 CWA jurisdiction. The project site is located in Section 15, Township 116 North, Range 64 West, Spink County, South Dakota.

Based on the information provided and a site visit conducted, we have determined that there are nowaters of the United States (i.e. jurisdictional waters) located within the area you identified for a jurisdictional determination. Therefore, the proposed activity within this project area is not subject to Department of the Army regulatory authorities and no permit pursuant to Section 404 of the Clean Water Act is required from the Corps of Engineers.

An approved jurisdictional determination (JD) has been completed for your project. This JD is valid for 5 years from the date of this letter. The JD is enclosed and also may be viewed at our website. The link to the website is shown below. The JD will be available on the website within 30 days. If you are not in agreement with the JD, you may request an administrative appeal under Corps of Engineers regulations found at 33 C.F.R. 331. Enclosed you will find a Notification of Administrative Appeal Options and Process and Request for Appeal form (RFA). Should you decide to submit an RFA form, it must be received by the Corps of Engineers Northwestern Division Office within 60 days from the date of this correspondence (by February 24, 2013). It is not necessary to submit a RFA if you do not object to the JD.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at <http://per2.nwp.usace.army.mil/survey.html>. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

You can obtain additional information about the Regulatory Program from our website:  
<http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/SouthDakota.aspx>

If you have any questions or need any assistance, please feel free to contact this office at the above Regulatory Office address or telephone Carolyn Kutz at (605) 224-8531 and reference action ID NWO-2012-2472.

Sincerely,



*for* Steven E. Naylor  
Regulatory Program Manager,  
South Dakota

CF: Edgar, Helms and Associates

**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** December 17, 2012

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Omaha District, Redfield Airport, NWO-2012-2472-PIE

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:** Isolated wetlands

State: SD

County/parish/borough: Spink City: Redfield

Center coordinates of site (lat/long in degree decimal format): Lat. 44.85426N; Long. -98.52763W

Universal Transverse Mercator: 14

Name of nearest waterbody: Isolated Wetlands

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: N/A

Name of watershed or Hydrologic Unit Code (HUC): Turtle/10160009

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date:

Field Determination. Date(s): November 26, 2012

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: .

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Pick List**

Elevation of established OHWM (if known): .

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: The four wetland have no surface water connection to a surface tributary to a TNW. The wetlands do not have and are not anticipated to have a nexus to interstate and/or foreign commerce .

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: Site 1 - 3.39 acres  
Site 2 - 21.28 acres  
Site 3 - 2.0 acres  
Site 4/5 - 3.5 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

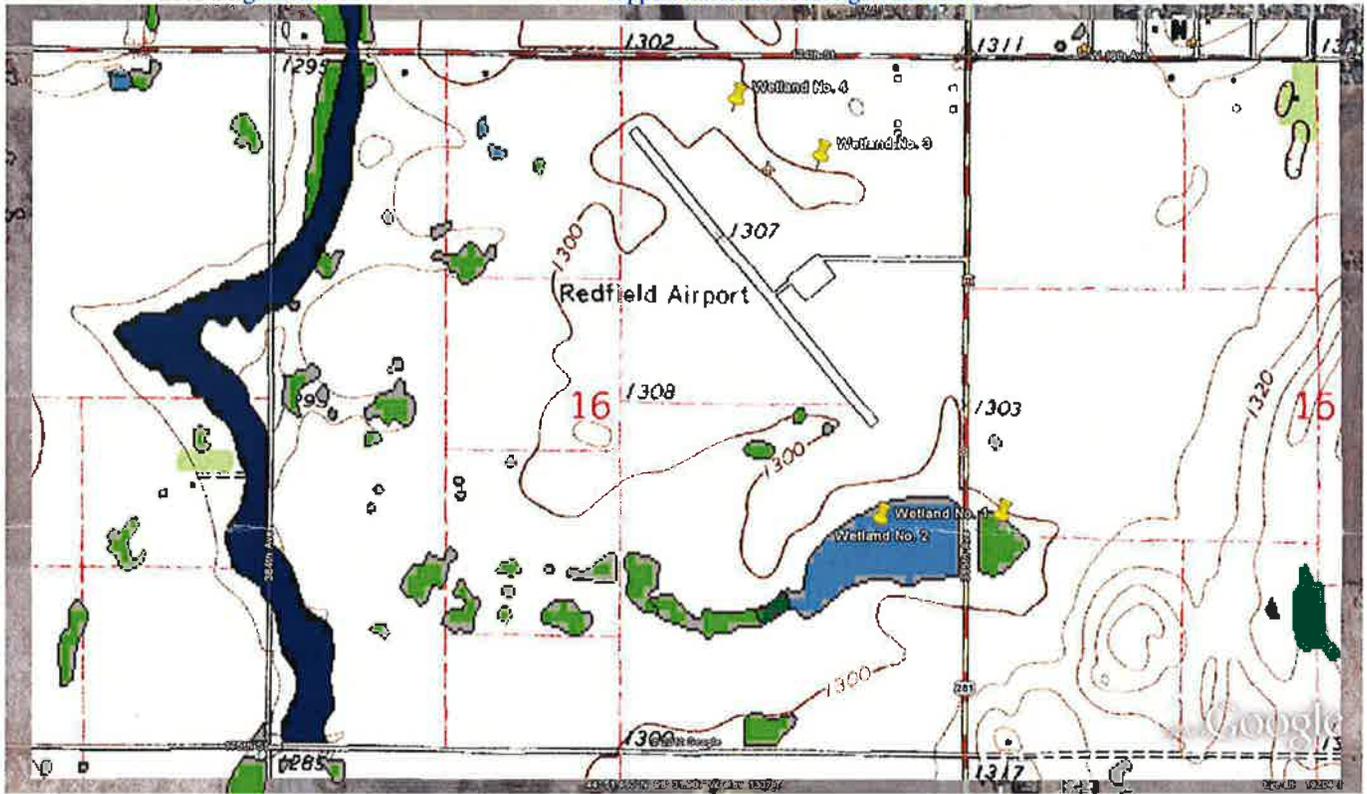
**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Maps have been provided by the Agent, Helms and Associates.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps. Turtle/10160009
- U.S. Geological Survey map(s). Cite scale & quad name: Redfield South 1:24K.
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: Redfield South
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): .  
or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law:
- Applicable/supporting scientific literature: .
- Other information (please specify): .

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** The four wetlands are isolated pothole wetlands. Wetland 1 is on the east side of Highway 281 and is connected to Wetland 2 via a culvert under the highway. A swale on the west end of Wetland No. 2 prohibits water from Wetlands 1 and 2 to flow to the west to Turtle Creek. The surrounding area of the Redfield airport is flat. Wetlands 3 and 4/5 are isolated pothole wetlands that have developed through time from standing water in low areas. There are no outflows from these wetlands. All four

wetlands do not have a significant nexus to a TNW and do not support interstate or foreign commerce.



October 17, 2012

U.S. Army Corps of Engineers  
Pierre Regulatory Office  
Attention: CENWO-OD-R-SD/Naylor  
28563 Powerhouse Road, Room 120  
Pierre, SD 57501

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

To Whom It May Concern,

As part of the Environmental Assessment that the City of Redfield is completing for improvements to the Redfield Municipal Airport for the FAA we are requesting a Jurisdictional Determination be made for the wetlands that would be impacted with each of the alternatives. Attached is Figure 4-3 with the wetlands that would be impacted hatched in red and numbered. This area is in Sections 15 and 16 of T116N, R64W.

Please keep in mind that any wetlands impacted by the selected alternative must be mitigated whether they are Corps Jurisdictional or not.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosure

Cc: City of Redfield

## Brooke Edgar

---

**From:** Macy, Marc [Marc.Macy@state.sd.us]  
**Sent:** Monday, March 10, 2014 5:00 PM  
**To:** Brooke Edgar  
**Subject:** RE: Redfield Municipal Airport Environmental Assessment

Brooke,

After review of the FEMA flood insurance rate map (FIRM) panel, the Redfield Municipal Airport addition and expansion in Spink County does not impact any FEMA designated Special Flood Hazard Areas (SFHAs). The SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V. The addition area is located outside of the A Zone or 1 Percent Annual Chance Flood Hazard area (commonly referred to as the 100-year floodplain) and is situated in a Zone X (area of minimal flood risk); thus, a local floodplain development permit would not be required. Thank you for ensuring the proposed project would be in compliance with the Code of Federal Regulations 44, Part 60 "Floodplain Management" Section. Please contact me with any questions.

---

**Marc A. Macy**  
State NFIP Coordinator  
SD Office of Emergency Management  
118 West Capitol Avenue Pierre, SD 57501-5070  
Phone: 605.773.2199 Fax: 605.773.3580  
Web: [Oem.sd.gov](http://Oem.sd.gov) Follow OEM on [Twitter](#)  or [Facebook](#) 

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*Confidentiality Note:* The information contained in this email is confidential or privileged material and is intended only for use of the individual or entity to which it is addressed. Use or distribution of information contained in this email by any other individual or entity not intended to receive this is strictly prohibited.

---

**From:** Brooke Edgar [mailto:brookee@helmsengineering.com]  
**Sent:** Monday, February 10, 2014 2:34 PM  
**To:** Macy, Marc  
**Subject:** Redfield Municipal Airport Environmental Assessment

Mr. Macy,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

Upon our correspondence with the Department of the Army Corps of Engineers, it was recommended that we coordinate with your office regarding compliance with the National Flood Insurance Program. We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, comments, or need any additional information regarding this matter, please feel free to contact our office at your convenience.

Thank you,

**Brooke B. Edgar**

**Helms**  
**& ASSOCIATES**

CIVIL ENGINEERS & LAND SURVEYORS

**221 Brown County Highway 19**

**PO Box 111**

**Aberdeen, SD 57401**

**Phone: (605)225-1212**

**Fax: (605)225-3189**

**Mobile: (605)380-4863**

**Email: [brookee@helmsengineering.com](mailto:brookee@helmsengineering.com)**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**CORPS OF ENGINEERS, OMAHA DISTRICT**  
1616 CAPITOL AVENUE  
OMAHA NE 68102-4901

January 27, 2014

Planning, Programs, and Project Management Division

Ms. Brooke Edgar, Engineer in Training  
Helms & Associates  
221 Brown County Highway #19  
P.O. Box 111  
Aberdeen, South Dakota 57402

Dear Ms. Edgar:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated January 8, 2014 (received January 10, 2014) regarding the City of Redfield's proposal to purchase approximately 99 acres of land for the construction of new Runway 17/ 35 and a 10' wildlife protection fence, and the abandonment/removal of Runway 13/31 in Spink County, South Dakota. The Corps recommends you complete the following actions:

Your plans should be coordinated with the state water quality office in which the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency. Please coordinate with the South Dakota Department of Environment & Natural Resources concerning state water quality programs.

If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and South Dakota Department of Game, Fish and Parks regarding fish and wildlife resources. In addition, the South Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

Furthermore, your plans should be coordinated with the local floodplain administrators in which the project is located to ensure compliance with National Flood Insurance Program. Please coordinate with the South Dakota Division of Emergency Management located at:

South Dakota Division of Emergency Management  
Attention: Mr. Marc Macy  
118 W. Capitol Avenue  
Pierre, South Dakota 57501  
Telephone: 605-773-3238  
Fax: 605-773-3580  
Email: [marc.macy@state.sd.us](mailto:marc.macy@state.sd.us)

**RECEIVED**

FEB 10 2014

**HELMS & ASSOCIATES**

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (<http://www.nwo.usace.army.mil/Missions/RegulatoryProgram.aspx>) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers  
Pierre Regulatory Office  
Attention: CENWO-OD-R-SD/Naylor  
28563 Powerhouse Road, Room 120  
Pierre, South Dakota 57501

If you have any questions, please contact Ms. Amanda Ciurej of my staff at (402) 995-2897.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric A. Laux". The signature is fluid and cursive, with a large initial "E" and "L".

Eric A. Laux  
Acting Chief, Environmental Resources and Missouri  
River Recovery Program Plan Formulation Section



CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 8, 2014

Brad Thompson  
U.S Army Corps of Engineers  
Planning Division  
Attention: CENWO-PM-AE  
1616 Capital Avenue  
Omaha, NE 68102-4901

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Thompson,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
1616 CAPITOL AVENUE  
OMAHA NE 68102-4901

JANUARY 23, 2009

RECEIVED

FEB 04 2009

HELMS & ASSOCIATES

Planning, Programs, and Project Management Division

Michael Schmit  
Helms & Associates  
221 Brown Co Hwy #19  
P.O. Box 111  
Aberdeen, South Dakota 57402-0111

Dear Mr. Schmit:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated January 8, 2009 regarding the Redfield Municipal Airport EA (A-4441). The Corps offers the following comments:

The City of Redfield, South Dakota participates in the National Flood Insurance Program. According to the Flood Insurance Rate Map (FIRM), the proposed location for the project is located outside of the 100-year flood plain. The FIRM is community-panel number 460081 0005B, dated November 15, 1985. The possibility may exist, however, for a flood hazard that could result from heavy rainfall in the immediate area, which would produce runoff in excess of storm sewer and local drainage way capacities. Flooding which results from this phenomenon is usually quite localized and shallow. Detailed definitions of this hazard would require a site-specific investigation.

Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect groundwater resources. If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks, regarding fish and wildlife resources. In addition, the South Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

If construction activities involve any work in waters of the United States, a Section 404 permit may be required. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers  
Pierre Regulatory Office  
Attention: CENWO-OD-R-SD/Naylor  
28563 Powerhouse Road, Room 120  
Pierre, South Dakota 57501

In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District  
Planning Division  
Attention: CENWO-PM-AE  
1616 Capitol Ave.  
Omaha, Nebraska 68102-4901

If you have any questions, please contact Ms. Cindy Upah of my staff at (402) 995-2672.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Thompson", with a long horizontal flourish extending to the right.

Brad Thompson, Chief  
Environmental, Economics, and  
Cultural Resources Section  
Planning Branch

January 12, 2008

Brad Thompson  
U.S. Army Corps of Engineers, Omaha District  
Planning Division  
215 North 17th Street  
Omaha, NE 68102-4978

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Mr. Thompson,

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of it useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



CIVIL ENGINEERS & LAND SURVEYORS

RECEIVED

JAN 09 2014

AIR QUALITY PROGRAM

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 8, 2014

Brad Schultz  
SD DENR  
Air Quality Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

RECEIVED

JAN 20 2014

HELMS & ASSOCIATES

Dear Mr. Schultz,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield

AIR QUALITY DETERMINATION  
It appears, based on the information, that the project will have little or no impact on the air quality in this area. This project is approved.

Approved By: Brad Schultz  
Date: 1/17/2014

(605) 773-6038 Fax: (605) 773-5286  
South Dakota Department of Environment  
And Natural Resources

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 8, 2014

Brad Schultz  
SD DENR  
Air Quality Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Schultz,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield

FILE COPY

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 12, 2009

John Miller  
Department of Environment and Natural Resources  
Surface Water Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

**RECEIVED**  
JAN 13 2009  
SURFACE WATER PROGRAM

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

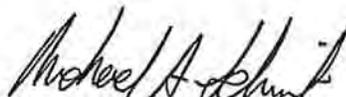
*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of it useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

  
Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield

#### AIR QUALITY DETERMINATION

It appears, based on the information, that the project will have little or no impact on the air quality in this area. This project is approved.

Approved By: 

Date: 2/9/2009

(605) 773-6038 Fax: (605) 773-5286  
South Dakota Department of Environment  
And Natural Resources



**DEPARTMENT OF ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
denr.sd.gov



January 16, 2014

Brooke Edgar  
Helms and Associates  
221 Brown Co. Hwy 19  
P.O. Box 111  
Aberdeen, SD 57402

Dear Brooke:

The South Dakota Department of Environment and Natural Resources (DENR) reviewed the project proposed by City of Redfield concerning the municipal airport. The DENR finds that this construction, using conventional construction techniques, should not cause violation of any statutes or regulations administered by the DENR based on the following recommendations:

1. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the Department of Environment and Natural Resources for additional information or guidance at 1-800-SDSTORM (737-8676) or <http://denr.sd.gov/des/sw/stormwater.aspx>.
2. A Surface Water Discharge (SWD) permit may be required if any construction dewatering should occur as a result of this project. Please contact this office for more information.
3. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment of wetlands and other surface water bodies except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the U.S. Army Corps of Engineers concerning this permit.

If you have any questions concerning these comments, please contact me at (605) 773-3351.

Sincerely,

John Miller  
Environmental Scientist  
Surface Water Quality Program

**RECEIVED**

JAN 20 2014

**HELMS & ASSOCIATES**

January 8, 2014

John Miller  
SD DENR  
Surface Water Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Miller,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield

FILE COPY

A-4441



February 4, 2009

Michael Schmit  
Helms and Associates  
221 Brown Co. Hwy 19  
P.O. Box 111  
Aberdeen, SD 57402

DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

PMB 2020  
JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
www.state.sd.us/denr

RECEIVED

FEB 05 2009

HELM & ASSOCIATES

Dear Mr. Schmit:

The South Dakota Department of Environment and Natural Resources (DENR) reviewed the project proposed by City of Redfield concerning the airport project. The DENR finds that this construction, using conventional construction techniques, should not cause violation of any statutes or regulations administered by the DENR based on the following recommendations:

1. Best Management Practices (BMP) for sediment and erosion control should be incorporated into the planning, design, and construction of this project.
2. A General Storm Water Permit for Construction Activities may be required. If you have any questions, please contact Al Spangler at 1-800-SDSTORM (1-800-737-8676).
3. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment of wetlands and other surface water bodies except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the U.S. Army Corps of Engineers concerning this permit.

If you have any questions concerning these comments, please contact me at (605) 773-3351.

Sincerely,

John Miller  
Environmental Program Scientist  
Surface Water Quality Program

January 12, 2009

John Miller  
Department of Environment and Natural Resources  
Surface Water Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of it useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

February 3, 2014

Brooke Edgar  
Helms & Associates  
P.O. Box 111  
Aberdeen, SD 57402-0111

RE: Redfield Municipal Airport Environmental Assessment

Dear Brooke Edgar:

I have conducted a brief review of the modifications that are being proposed at the Redfield Municipal Airport.

Here are some general guidelines that we recommend for this project:

Wildlife Fence:

- Place gates at corners: an animal that inadvertently finds itself trapped inside is more likely to find escape through an open corner gate than through a side gate.
- Assuming this is a woven-wire fence that will be constructed, ensure that the bottom wire is brought tight to the ground and closely inspect areas where gullies or other topographic features could cause gaps.
- Recommend 12.5 gauge woven wire with maximum 6 inch squares.
- Make the top highly visible by using a top rail, high visibility wire, or flagging.
- Make a complete search inside the enclosure to ensure all wildlife species are chased out before the final exclusion fence is completed.

Wetland Impacts:

- Runway construction near wetlands may pose risks to aircraft from flying waterfowl.
- Game, Fish and Parks will be providing comments within the Section 404 application regarding the filling of wetlands.

The South Dakota Department of Game, Fish and Parks appreciates the opportunity to provide comments. If you have any questions regarding these comments, please feel free to contact me at 605-773-7595.

Sincerely,

Keith Fisk  
Wildlife Damage Program Administrator

RECEIVED

FEB 05 2014

HELMS & ASSOCIATES

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 8, 2014

Tom Kirschenmann  
SD Dept. of Game, Fish and Parks  
Division of Wildlife  
523 E. Capitol Avenue  
Pierre, SD 57501-3181

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Kirschenmann,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield



**DEPARTMENT OF GAME, FISH AND PARKS**

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

RECEIVED  
JAN 21 2009  
HELMS & ASSOCIATES

January 20, 2009

Mr. Michael A. Schmit, E.I.T  
Helms & Associates  
221 Brown County Hwy 19  
PO Box 111  
Aberdeen, SD 57402-0111

**RE: Redfield Municipal Airport Environmental Assessment  
A-4441**

Dear Mr. Schmit:

South Dakota Department of Game, Fish and Parks, Wildlife Division staff have reviewed the proposed Redfield Municipal Airport project for potential adverse effects to fish, wildlife and habitat resources. We provide the following comments to assist your agency and the project sponsor in any further planning and environmental permitting required to build the project.

As indicated in your project proposal, an undetermined acreage of wetlands in the project area would be filled as part of the land purchase for the Runway Protection Zones, Approach and Transitional Surfaces, and future runway realignments. Pursuant to federal Clean Water Act (Section 404) statute and accompanying regulations, filling of such jurisdictional waters should be avoided, minimized and/or mitigated concurrently with project construction. Since it is your intention to fill in the undetermined acres of wetlands, this office will be requiring compensatory mitigation to adequately replace lost acres and their functions and values.

If you have not already done so, we suggest that you contact the US Army Corps of Engineers Regulatory office in Pierre at (605) 224-8531 regarding permitting necessary for the project. During the 404 permit review process we may provide the Corps with additional comments/recommendations regarding how adverse effects to wetland habitat can be minimized or mitigated.

If you have any questions regarding the above, or would like additional recommendations regarding mitigation strategies, please call me at (605) 773-6208.

Sincerely,

Leslie Petersen  
Aquatic Resource Coordinator

January 12, 2008

**FILE COPY**

Tom Kirschenmann  
South Dakota Dept. of Game, Fish and Parks  
Division of Wildlife  
523 E. Capitol Avenue  
Pierre, SD 57501-3181

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Mr. Kirschenmann,

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of its useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmitt, E.I.T.

Enclosure

Cc: City of Redfield

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 8, 2014

EPA Region VIII  
ATTN: Larry Svoboda  
Code # EPR-N  
1595 Wynkoop Street  
Denver, CO 80202-1129

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Svoboda,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield

FILE COPY



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

1595 Wynkoop Street  
DENVER, CO 80202-1129  
Phone 800-227-8917  
<http://www.epa.gov/region08>

RECEIVED

JAN 26 2009

Ref: 8EPR-N

MEMORANDUM

HELMS & ASSOCIATES

DATE: January 21, 2009

SUBJECT: Scoping for Environmental Reviews for airports in South Dakota at Faulkton, Aberdeen, Sisseton and Redfield

FROM: Dana Allen, NEPA Program, 8EPR-N  
(303) 312-6870, (800) 227-8917 X 6870, [Allen.Dana@EPA.gov](mailto:Allen.Dana@EPA.gov)

TO: Michael Schmidt, Helms and Associates

We have reviewed your request to identify issues that should be addressed in the environmental review of the proposed project. The information was requested to comply with the NEPA regulations for FHWA, FAA or Homeland Security.

- Based on the information submitted, our review did not identify any specific issues that should be addressed in your environmental review.
- From the information submitted we are unable to discern whether there are environmental issues. We recommend that the proposed plans the proposed project plans be underlain by areal photography, quad maps, etc. is instead of line diagrams. Also the National Wetlands Inventory map is online at: <http://www.fws.gov/wetlands/Data/mapper.html>. In the Dakotas, the NWI maps are still useful in identifying potential wetlands. Faulkton, Sisseton and Redfield
- Based on the Aberdeen information submitted, our review identified wetlands impacts, increased noise impacts to surrounding homes, are the subdivisions near the airport environmental justice communities? \_\_\_\_\_ as the issue(s) that should be addressed in your environmental review.

Because the information on the proposed project is preliminary and limited in scope, we've listed below some of EPA's typical issues of concern:

- Avoid wetlands and riparian areas. The Army Corps of Engineers has the lead in identifying any wetlands/waters of the US that may be impacted.
- Storm water controls during construction. Construction activities that disturb more than 1 acre require a storm water permit. The main requirement is to prepare a storm water pollution prevention plan. The permits are issued either by the state or by EPA. In EPA Region 8, we issue storm water permits for Indian country and for Federal facilities in Colorado. EPA's permits can be obtained electronically. For more information and to file for coverage under the general storm water permits please see <http://www.epa.gov/region08/water/stormwater/construction.html>.

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 12, 2009

EPA Region VIII  
Attn: Larry Svoboda  
Code# EPR-N  
1595 Wynkoop Street  
Denver, CO 80202-1129

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Mr. Svoboda,

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

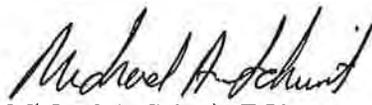
*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of it useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

  
Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



January 12, 2009

EPA Region VIII  
Attn: Larry Svoboda  
Code# EPR-N  
1595 Wynkoop Street  
Denver, CO 80202-1129

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

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Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield

January 16, 2014

Deanna M. Peterson  
U.S. Department of Agriculture  
NRCS  
200 Fourth Street SW, Room 203  
Huron, SD 57350

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Ms. Peterson,

Attached is the completed AD-1006 (Farmland Conversion Impact Rating) form for the above referenced project.

The total points in Part VII is 117. Therefore, per the correspondence dated January 15, 2014, if the total points are less than 160 points, the proposed activity will have no significant impact on the prime or land of statewide importance in Spink County.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosure

Cc. City of Redfield

U.S. Department of Agriculture

# FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>	Date Of Land Evaluation Request <b>2/8/14</b>
---	---

Name Of Project <b>Redfield Municipal Airport</b>	Federal Agency Involved <b>FAA</b>
---	------------------------------------

Proposed Land Use <b>Purchase of 99 acres of land</b>	County And State <b>Spink County, South Dakota</b>
---	--

<b>PART II (To be completed by NRCS)</b>	Date Request Received By NRCS <b>9/25/08</b>
--	--

Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply -- do not complete additional parts of this form).</i>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
--	---	-----------------	-------------------

Major Crop(s) <b>Cropland</b>	Farmable Land In Govt. Jurisdiction Acres: <b>853400</b> % <b>88</b>	Amount Of Farmland As Defined in FPPA Acres: <b>587,891</b> % <b>61</b>
----------------------------------	---	--

Name Of Land Evaluation System Used <b>Cropland Productivity</b>	Name Of Local Site Assessment System <b>None</b>	Date Land Evaluation Returned By NRCS
---	---	---------------------------------------

<b>PART III (To be completed by Federal Agency)</b>	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	99.0			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	99.0	0.0	0.0	0.0

<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>	
A. Total Acres Prime And Unique Farmland	15.7
B. Total Acres Statewide And Local Important Farmland	38.8
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	<b>&lt; 0.01</b>
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	73.0

<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>	Site A	Site B	Site C	Site D
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	58	0	0	0

<b>PART VI (To be completed by Federal Agency)</b>	Maximum Points	Site A	Site B	Site C	Site D
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))					
1. Area In Nonurban Use	15	13			
2. Perimeter In Nonurban Use	10	6			
3. Percent Of Site Being Farmed	20	20			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	15			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	0			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
<b>TOTAL SITE ASSESSMENT POINTS</b>	160	<b>59</b>	0	0	0

<b>PART VII (To be completed by Federal Agency)</b>	Maximum Points	Site A	Site B	Site C	Site D
Relative Value Of Farmland (From Part V)	100	58	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	<b>59</b>	0	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>	260	<b>117</b>	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
----------------	-------------------	--

Reason For Selection:

United States Department of Agriculture



Natural Resources Conservation Service  
200 Fourth Street SW  
Huron, South Dakota 57350

Phone: (605) 352-1200  
Fax: (855) 256-2565

January 15, 2013

Brooke B. Edgar, E.I.T.  
Helms & Associates  
221 Brown Co. Hwy. #19  
P.O. Box 111  
Aberdeen, SD 57402-0111

RE: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Ms. Edgar:

Attached is the completed AD-1006 form for the subject proposal.

The project does impact prime farmland and land of statewide importance. Enclosed is a Farmland Conversion Impact Rating Form (AD-1006) for this project. We have completed Parts I through V. Please complete parts VI, and VII. If the TOTAL POINTS in part VII is less than 160 points, the proposed activity will have no significant impact on the prime or land of statewide importance in Spink County, and no further alternatives need be considered.

Please return a copy of the forms, upon completion, to this office. If you have any questions, please contact Barb Hall, GIS Specialist, at (605) 352-1256.

Sincerely,

A handwritten signature in blue ink, appearing to read "Deanna M. Peterson".

DEANNA M. PETERSON  
State Soil Scientist

RECEIVED  
JAN 16 2014  
HELMS & ASSOCIATES

January 8, 2014

Janet Oertly  
State Conservationist  
U.S. Department of Agriculture  
NRCS  
200 Fourth Street SW, Room 203  
Huron, SD 57350

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Ms. Oertly,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning environmental impacts of the proposed updates. Attached is a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures  
Cc: City of Redfield

February 20, 2009

Janet Oertly  
United States Department of Agriculture  
National Resource Conservation Service  
200 4<sup>th</sup> Street SW  
Huron, SD 57350

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Ms. Oertly,

Enclosed is the Farmland Conversion Impact Rating Form (AD-1006) that you sent our office with a letter dated February 3. We have completed parts VI and VII per your request and the Total Points for Part VII is 101. Therefore, it is our belief that the project will not have a significant impact on the prime and important farmland in Spink County.

If you have any questions, please feel free to contact our office at any time.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

W/enclosure

Cc: City of Redfield

# FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 1/20/09			
Name Of Project Redfield Municipal Airport		Federal Agency Involved FHA			
Proposed Land Use Airport property expansion		County And State Spink South Dakota			
<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS 9/25/08			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s) Corn, Soybeans, Wheat		Farmable Land In Govt. Jurisdiction Acres: 876,186 % 91		2,018 ac	
Name Of Land Evaluation System Used South Dakota Dept. of Revenue		Name Of Local Site Assessment System None		Amount Of Farmland As Defined in FPPA Acres: 733,903 % 76	
		Date Land Evaluation Returned By NRCS 2/3/09			
<b>PART III (To be completed by Federal Agency)</b>		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		171.8			
B. Total Acres To Be Converted Indirectly		0.0			
C. Total Acres In Site		171.8	0.0	0.0	0.0
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland		0.0			
B. Total Acres Statewide And Local Important Farmland		81.4			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		0.0			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		99.0			
<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>					
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		32	0	0	0
<b>PART VI (To be completed by Federal Agency)</b>					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use		15	14		
2. Perimeter In Nonurban Use		10	10		
3. Percent Of Site Being Farmed		20	20		
4. Protection Provided By State And Local Government		20	0		
5. Distance From Urban Buillup Area		15	5		
6. Distance To Urban Support Services		15	5		
7. Size Of Present Farm Unit Compared To Average		10	0		
8. Creation Of Nonfarmable Farmland		10	10		
9. Availability Of Farm Support Services		5	5		
10. On-Farm Investments		20	0		
11. Effects Of Conversion On Farm Support Services		10	0		
12. Compatibility With Existing Agricultural Use		10	0		
<b>TOTAL SITE ASSESSMENT POINTS</b>		160	69	0	0
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)		100	32	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	69	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>		260	101	0	0
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?	
Reason For Selection:				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

## STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 - Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 - NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step 4 - In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 - NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 - The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

## INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

**Part I:** In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

**Part III:** In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

**Part VI:** Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at 160.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

**Part VII:** In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

Total points assigned Site A =  $180 \times 160 = 144$  points for Site "A."

Maximum points possible      200

United States Department of Agriculture



Natural Resources Conservation Service  
200 Fourth Street SW  
Huron, South Dakota 57350

Phone: (605) 352-1200  
Fax: (605) 352-1270

February 3, 2009

Mr. Michael A. Schmit, E.I.T.  
Helms and Associates  
221 Brown County Hwy 19  
P.O. Box 111  
Aberdeen, South Dakota 57402

RE: Redfield Municipal Airport Environmental Assessment

Dear Mr. Schmit:

We have reviewed the site map of the proposed land acquisitions for this airport in Spink County.

The project does impact important farmland. Enclosed is a Farmland Conversion Impact Rating Form (AD-1006) for this project. We have completed Parts I through V. Please complete Parts VI and VII. If the Total Points in part VII is less than 160 points, the proposed activity will have no significant impact on the prime and important farmland in Faulk County, and no further alternatives need be considered.

Please return a copy of the form, upon completion, to this office. Please contact Dan Shurtliff at (605) 352-1254, if you have any questions on completing this form.

Sincerely,

A handwritten signature in cursive script that reads "Deanna M. Peterson".

DEANNA M. PETERSON  
State Soil Scientist

Enclosure

cc: Shane Jordan, DC, NRCS, Redfield FO

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 20, 2008

Janet Oertly  
State Conservationist  
U.S. Department of Agriculture  
NRCS  
200 Fourth Street SW, Room 203  
Huron, SD 57350

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Ms. Oertly,

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of its useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

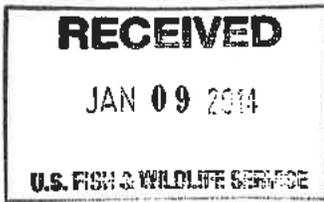
If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



January 8, 2013

Scott Larson  
U.S. Fish and Wildlife Service  
Ecological Services, South Dakota Field Office  
420 S. Garfield Avenue  
Pierre, SD 57501-5408

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

2/4/14  
Date

*Scott Larson*  
SD Field Supervisor  
USFWS

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441



FEB 06 2014

Dear Mr. Larson,

HELMS & ASSOCIATES

Please find the enclosed information required for a Section 7 Consultation of the above referenced project. In addition, please find enclosed a vicinity map showing the location of the airport respective to the City of Redfield and a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration.

**Project Description**

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

**Description of Specific Areas Affected**

Redfield Municipal Airport  
Redfield, South Dakota  
Spink County

Listed below are the legal descriptions of the location of the airport and land proposed to be purchased:

E 1/2	Section 16	T116N	R64W
NE 1/4	Section 21	T116N	R64W

### **Listed Species or Critical Habitat Potentially Affected**

<b>Group</b>	<b>Name</b>	<b>Status</b>	<b>Habitat</b>
Birds	Whooping Crane ( <i>Grus Americana</i> )	Endangered	Croplands and palustrine wetlands during migration
	Red Knot ( <i>Calidris Canutus Rufa</i> )	Proposed Threatened	Southeast U.S., northwest Gulf of Mexico, inland states during migration
Fishes	Topeka Shiner	Endangered	Streams and Creeks within eastern SD
Mammals	Northern Long-Eared Bat ( <i>Myotis Septentrionalis</i> )	Proposed Endangered	Caves and crevices of live and dead trees.

#### **Description of Affect on Listed Species or Critical Habitat**

The Whooping Crane (*Grus Americana*) is North America's tallest bird, with the males being up to 5 feet tall standing. It is snowy white, except for black primaries, black or grayish specialized feathers attached to the upper leading end of the wing, sparse black bristly feather on the side of the head from the bill to the angle of the jaw, and a dark gray-black wedge-shaped patch on the nape. The Whooping Crane is known to migrate through central South Dakota. Their habitats during migration include croplands and large palustrine wetlands.

The Red Knot (*Calidris Canutus Rufa*) is approximately 25-28 cm in length and the adults vary in colors from the spring to the winter. These birds may fly more than 9,300 miles from south to north and repeat the trip in reverse every autumn. For much of the year, red knots eat small clams, mussels, snails and other invertebrates. They may stopover during migration in the northern plains primarily in the spring.

The Topeka Shiner is listed as an "endangered" species. It is a small minnow with dark lateral and back stripes. They are known to occupy numerous small prairie streams and creeks within eastern SD and are most concentrated within the Big Sioux, Vermillion, and James River watersheds.

The Northern Long-Eared Bat (*Myotis Septentrionalis*) is a medium-sized bat about 3-3.7 inches with a wingspan of 9-10 inches with long ears. They spend their winters hibernating in caves and summers roosting underneath bark, in cavities or in crevices of both live and dead trees.

The proposed parcels of land to be purchased are currently used for agricultural purposes and do not contain any streams or high quality, native, tallgrass prairies. There have been no critical habitats identified in the project area. None of the above mentioned species are likely to be found in the project area. Therefore, we do not anticipate any affect on the listed species.

#### **Direct, Indirect and Cumulative Effects**

No direct, indirect or cumulative effects on the listed or proposed species for Spink County, SD are anticipated as the land to be purchased is currently used for agricultural purposes and the areas not developed will likely be converted to similar crops already found on airport property.

The proposed runway construction, wetland filling/mitigation and wildlife fence will not impact any of the species' habitats.

**Measures to Avoid/Reduce Impacts on Listed Species or Critical Habitat**

The Sponsor, with the help of construction workers, would keep a vigilant watch for Whooping Cranes and cease all work if they are sighted until the birds have moved away from the construction area. Any sightings would be reported to the USFWS and the FAA Bismarck Airport District Office.

Topeka Shiners are not known in the area and are generally not found in isolated wetlands or drainages. The wetlands located on current and future airport property have been determined to be isolated by the Department of the Army Corps of Engineers on December 17, 2012.

No other measures will be taken to reduce impacts, with the exception of standard BMPs, as there will be no construction impacting high quality, native, tallgrass prairies.

**Determination**

Based on the information obtained from <http://ecos.fws.gov/ipac> and [http://www.fws.gov/southdakotafieldoffice/endangered\\_species.htm](http://www.fws.gov/southdakotafieldoffice/endangered_species.htm) and the fact that land will not be significantly disturbed, we are submitting a determination that this proposed project will **MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT** any federally listed species or their habitats.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates



Brooke B. Edgar, E.I.T.

Enclosure

Cc: City of Redfield

January 8, 2013

Scott Larson  
U.S. Fish and Wildlife Service  
Ecological Services, South Dakota Field Office  
420 S. Garfield Avenue  
Pierre, SD 57501-5408

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Larson,

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**Description of Specific Areas Affected**

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Redfield, South Dakota  
Spink County

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<b>Group</b>	<b>Name</b>	<b>Status</b>	<b>Habitat</b>
Birds	Whooping Crane (Grus Americana)	Endangered	Croplands and palustrine wetlands during migration
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Fishes	Topeka Shiner	Endangered	Streams and Creeks within eastern SD
Mammals	Northern Long-Eared Bat (Myotis Septentrionalis)	Proposed Endangered	Caves and crevices of live and dead trees.

### **Description of Affect on Listed Species or Critical Habitat**

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The proposed parcels of land to be purchased are currently used for agricultural purposes and do not contain any streams or high quality, native, tallgrass prairies. There have been no critical habitats identified in the project area. None of the above mentioned species are likely to be found in the project area. Therefore, we do not anticipate any affect on the listed species.

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No direct, indirect or cumulative effects on the listed or proposed species for Spink County, SD are anticipated as the land to be purchased is currently used for agricultural purposes and the areas not developed will likely be converted to similar crops already found on airport property.

The proposed runway construction, wetland filling/mitigation and wildlife fence will not impact any of the species' habitats.

**Measures to Avoid/Reduce Impacts on Listed Species or Critical Habitat**

The Sponsor, with the help of construction workers, would keep a vigilant watch for Whooping Cranes and cease all work if they are sighted until the birds have moved away from the construction area. Any sightings would be reported to the USFWS and the FAA Bismarck Airport District Office.

Topeka Shiners are not known in the area and are generally not found in isolated wetlands or drainages. The wetlands located on current and future airport property have been determined to be isolated by the Department of the Army Corps of Engineers on December 17, 2012.

No other measures will be taken to reduce impacts, with the exception of standard BMPs, as there will be no construction impacting high quality, native, tallgrass prairies.

**Determination**

Based on the information obtained from <http://ecos.fws.gov/ipac> and [http://www.fws.gov/southdakotafieldoffice/endangered\\_species.htm](http://www.fws.gov/southdakotafieldoffice/endangered_species.htm) and the fact that land will not be significantly disturbed, we are submitting a determination that this proposed project will **MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT** any federally listed species or their habitats.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosure

Cc: City of Redfield

2009-FA-0171



"Brooke Postma-Edgar"  
<brookee@helmsengineering.com>

09/26/2012 11:47 AM

Please respond to  
<brookee@helmsengineering.com>

To <charlene\_bessken@fws.gov>

cc

bcc

Subject Redfield Airport Environmental Assessment

RECEIVED

OCT 03 2012

HELMS & ASSOCIATES

Ms. Bessken,

We are preparing an Environmental Assessment (EA) for the City of Redfield. The Redfield Municipal Airport is proposing to purchase approximately 172 acres of land and construct new Runway 17/35. Also proposed is the filling/drainage of approximately 24 acres of wetlands located on airport property and construction of a wildlife fence for the Redfield Municipal Airport based on the original site visit by the U.S. Department of Agriculture Wildlife Service, see attached drawing and Site Visit.

From the original response from the US Fish and Wildlife Service to the proposed project in a letter dated February 2, 2009 (attached), the wetland impacts were identified and incorporated into our EA. Bald eagle impacts are identified as protected by the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act and no construction will occur within 1/4 mile of any known active bald eagle nest. As incorporated into the EA, if any new nests are found, construction will cease and the nest will be reported to the appropriate agencies. The comments on the protection of wetlands are also incorporated into to EA.

The Whooping Crane (*Grus americana*) and the Topeka Shiner (*Notropis topeka*) were identified as endangered species that may occur in the project area. Neither Whooping Cranes or Topeka Shiners are known in the area especially in the wetlands on current and future airport property. A yearlong Phase II Environmental Assessment Wildlife Study was concluded in June 2011 by the U.S. Department of Agriculture Wildlife Service and did not identify any endangered species on or near the airport.

We, along with E. Lindsay Guttilla, Regional Environmental Specialist, of the FAA Great Lakes Region Office, are submitting to your office for concurrence, a determination that the proposed project "may affect - not likely to adversely affect" the Whooping Crane and Topeka Shiner.

If you have any questions, comments, or need any additional information regarding this matter, please feel free to contact our office at your convenience.

Thank you for your assistance,

Brooke B. Edgar

**Helms**  
& ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 Brown County Highway 19  
PO Box 111

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

10/11/12

Date

SD Field Supervisor  
USFWS

**Aberdeen, SD 57401**

**Phone: (605)225-1212**

**Fax: (605)225-3189**

**Email: [brookee@helmsengineering.com](mailto:brookee@helmsengineering.com)**



FIGURE 2.2 - Future Land Purchase and New Runway.pdf USFW Response.pdf Redfield Site Visit.pdf



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
420 South Garfield Avenue, Suite 400  
Pierre, South Dakota 57501-5408

February 2, 2009

FEB 03 2009

RECEIVED

Mr. Michael A. Schmit, E.I.T.  
Helms and Associates  
221 Brown County Highway 19  
P.O. Box 111  
Aberdeen, South Dakota 57402-0111

Re: Redfield Municipal Airport, # A-4441,  
Spink County, South Dakota

Dear Mr. Schmit:

This letter is in response to your request dated January 12, 2009, requesting environmental comments regarding the above referenced project involving the purchase of approximately 171.76 acres of land for airport protection at the Redfield Municipal Airport, Spink County, South Dakota.

According to the enclosed National Wetlands Inventory maps, wetlands do exist near the airport. If any future construction is planned near the airport that may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally, if adverse impacts are unavoidable, then measures should be undertaken to replace the impacted areas.

The Fish and Wildlife Coordination Act and Executive Order 11990 (Protection of Wetlands) encourages the protection and conservation of wetlands. In reviewing projects that may impact wetlands, the Service encourages: 1) avoidance of wetlands, if possible, 2) minimization of impacts to wetlands if they cannot be avoided, and 3) replacement of wetland values that may be impacted by a project.

Generally, once all measures to avoid and minimize impacts to the maximum extent possible have been taken, the Service recommends mitigation in the form of restoration of drained wetlands at a ratio of 1:1. If creation of new wetlands is deemed necessary to mitigate for wetland losses, a 2:1 ratio (restored:impacted) is recommended. Created wetlands may have a lower rate of establishment success, may result in a temporal delay in achieving value to wildlife, or may not contain the degree of biological diversity typically found in a natural wetland basin; thus, they are not preferred when considering mitigation options. Preservation of existing wetlands is also not recommended as a means of mitigation as this is not consistent with the "no net loss" of wetlands as outlined in Executive Order 11990.

Our records indicate that the Service may hold easements near the airport. We recommend that you contact the Services' Sand Lake Wetland Management District for exact locations of these easements and any additional restrictions that may apply regarding these sites. You can contact the Sand Lake Wetland Management District at 39650 Sand Lake Drive, Columbia, South Dakota 57433, Telephone No. (605) 885-6320.

In accordance with section 7(c) of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
Whooping crane ( <u>Grus americana</u> )	Endangered	Migration.
Topeka shiner ( <u>Notropis topeka</u> )	Endangered	Known Resident.

Whooping cranes migrate through South Dakota on their way to northern breeding grounds and southern wintering areas. They occupy numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock ponds; and both freshwater and alkaline basins for feeding and loafing. Overnight roosting sites frequently require shallow water in which they stand and rest. Additionally, should construction occur during spring or fall migration, the potential for disturbances to whooping cranes exists. Disturbance (flushing the birds) stresses them at critical times of the year. We recommend that you remain vigilant for these birds. There is little that can be done to reduce disturbance besides ceasing construction at sites where the birds have been observed. The birds normally do not stay in any one area for long during migration. Any whooping crane sightings should be reported to this office.

Topeka shiners are known to occupy numerous small streams within eastern South Dakota, and most are concentrated within the Big Sioux, Vermillion, and James River watersheds. Survey efforts continue to reveal additional inhabited streams. If small streams/creeks will be affected by your construction, please contact this office for best management practices to minimize potential impacts specifically to Topeka shiners.

Bald eagles occur throughout South Dakota, and new nests are appearing each year. The bald eagle is no longer on the endangered species list but is protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. No construction should occur within one-quarter mile of any known active bald eagle nest. The species' nesting season is January to August. Any nests found should be reported to this office.

If the Federal action agency or their designated representative determines that the project "may adversely affect" listed species in South Dakota, it should request formal consultation from this office. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary. However, a copy of the determination should be sent to this office.

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service should be informed so that the above determinations can be reconsidered.

The Service appreciates the opportunity to provide comments on this project and your information regarding the City of Redfield's intentions for development of this area. If you have any questions on these comments, please contact Charlene Bessken of this office at (605) 224-8693, Extension 231.

Sincerely,

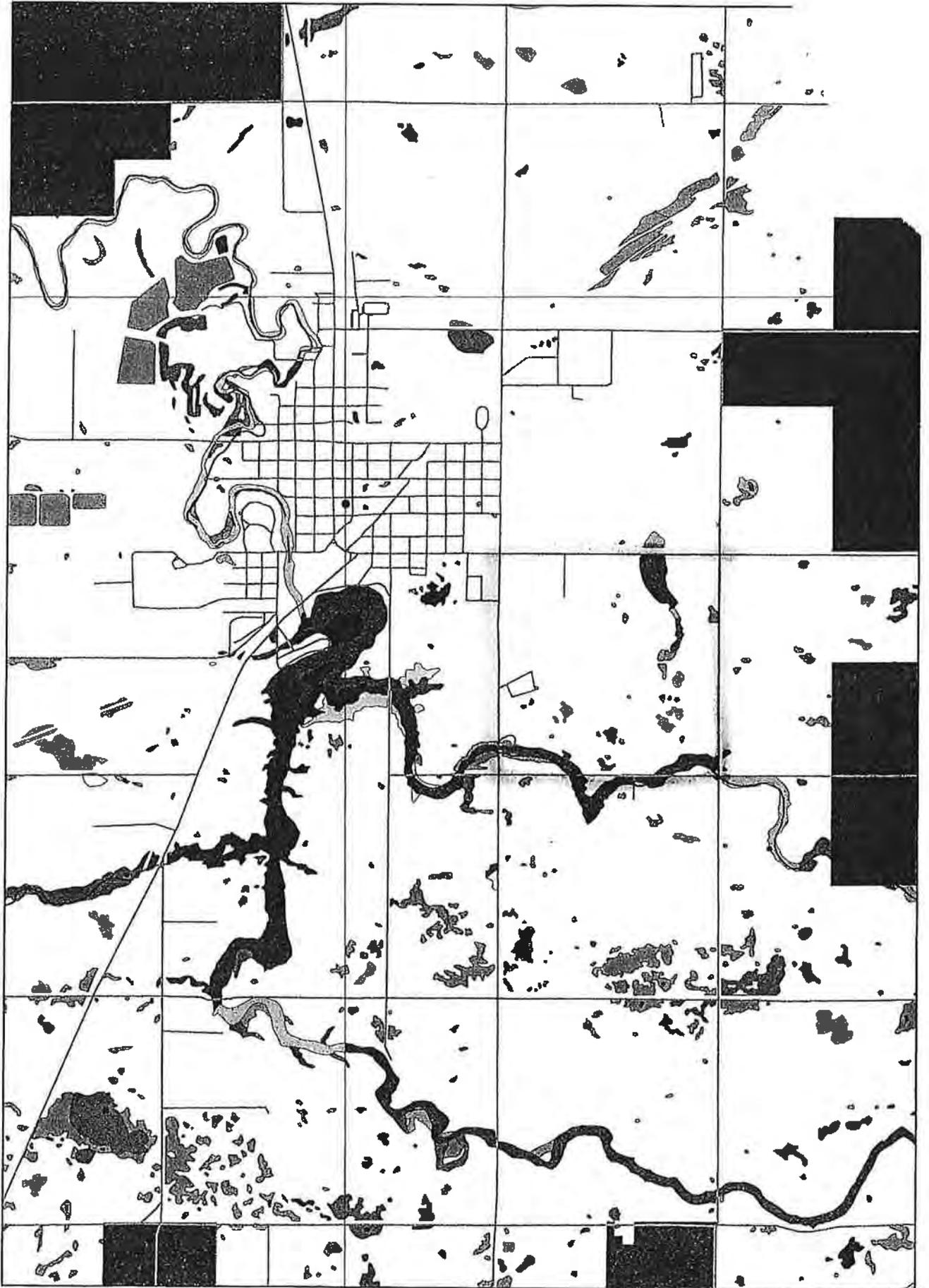
A handwritten signature in black ink, appearing to read "Pete Gober". The signature is fluid and cursive, with a long horizontal stroke at the end.

Pete Gober  
Field Supervisor  
South Dakota Field Office

Enclosures

cc: Corps of Engineers/Regulatory; Pierre, SD  
FWS/Sand Lake WMD; Columbia, SD

**Redfield Area**



Redfield Area



January 12, 2008

Donald Gober, Field Supervisor  
United States Department of Interior  
Fish and Wildlife Service  
420 S. Garfield Avenue  
Pierre, SD 57501-5408

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Mr. Gober

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

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I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

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If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield

**SECTION 106 CONSULTATION**  
Concurrence of the State Historic Preservation  
Office does not relieve the federal agency  
official from consulting with other appropriate  
parties, as described in 36 CFR Part 600.2(c).

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 13, 2014

Amy Rubingh  
Review and Compliance Archaeologist  
Office of State Historic Preservation Officer  
900 Governors Drive  
Pierre, SD 57501

Pursuant to 36 CFR part 600.13, if historic  
properties are discovered or unanticipated  
effects on historic properties found after the  
agency official has completed the Section 106  
process, the agency official shall avoid, mini-  
mize or mitigate the adverse effects to such  
properties and notify the SHPO/THPO, and  
Indian tribes that might attach religious and  
cultural significance to the affected property  
within 48 hours of the discovery.

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

RECEIVED

FEB 04 2014

Dear Ms. Rubingh,

HELMS & ASSOCIATES

Please find enclosed the updated information required for a Section 106 Review of the above referenced project. Following new FAA standards, the proposed project at the Redfield Municipal Airport has been revised. A reduced number of acres is proposed to be purchased which can be seen in the revised APE map attached.

Since we have found that there are no historic properties present in the Area of Potential Effect for the proposed actions at the Redfield Municipal Airport, we are resubmitting the same determination of **NO HISTORIC PROPERTIES AFFECTED**. The previously submitted "A Short Format Report of a Cultural Resources Inventory Survey of the Wetland Redfield Airport Improvements Project in Spink County, South Dakota" by Jeff Buechler is attached as that survey was comprised of a larger area of land than what is now proposed.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

  
Brooke B. Edgar, E.I.T.

W/Enclosures  
Cc: City of Redfield

**SECTION 106 DETERMINATION**  
Based upon the information provided to the South Dakota  
State Historic Preservation Office on 1/17/14,  
we concur with your agency's determination of "No Historic  
Properties Affected" for this undertaking.  
Jay D. Vogt  
State Historic Preservation Officer (SHPO)  
By: Amy Rubingh  
2/3/14 0120921006F  
Date SHPO Project #

January 13, 2014

Amy Rubingh  
Review and Compliance Archaeologist  
Office of State Historic Preservation Officer  
900 Governors Drive  
Pierre, SD 57501

FILE COPY

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Redfield, South Dakota  
A-4441

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Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

W/Enclosures  
Cc: City of Redfield



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

**I. PROJECT INFORMATION**

THIS IS A NEW SUBMITTAL

THIS IS MORE INFORMATION RELATING TO SHPO PROJECT # 120921006F

1. PROJECT NAME: Redfield Municipal Airport Environmental Assessment

**2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT**

A. AGENCY NAME: Federal Aviation Administration

B. AGENCY CONTACT PERSON: Lindsay Guttifa BUTLER

C. MAILING ADDRESS: 2300 East Devon Avenue, Des Plaines, IL 60018

D. EMAIL ADDRESS: ~~Lindsay.Guttifa@faa.gov~~ LINDSAY.BUTLER@FAA.GOV

E. TELEPHONE NUMBER: (847) 294 - 7723

**3. STATE AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT, IF APPLICABLE**

A. AGENCY NAME: South Dakota Department of Transportation Office of Aeronautics

B. AGENCY CONTACT PERSON: Jennifer Boehm

C. MAILING ADDRESS: 700 East Broadway Avenue, Pierre, SD 57501

D. EMAIL ADDRESS: jennifer.boehm@state.sd.us

E. TELEPHONE NUMBER: (605) 773 - 4430

F. IF THIS IS A GRANT PROGRAM, PLEASE INCLUDE THE NAME OF THE PROGRAM (FOR EXAMPLE, CDBG OR SRF):

Airports Improvement Program

**4. CONSULTANT CONTACT PERSON, IF APPLICABLE**

A. COMPANY NAME: Helms & Associates

B. CONTACT PERSON: Brooke B. Edgar, E.I.T.

C. MAILING ADDRESS: P.O. Box 111, Aberdeen, SD 57402

D. EMAIL ADDRESS: brookee@helmsengineering.com

E. TELEPHONE NUMBER: (605) 225 - 1212



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**5. PROJECT LOCATION**

A. ADDRESS: Sections 16, 21 T116N R64W

B. CITY: Redfield, SD

C. COUNTY: Spink County

D. TOWNSHIP: T 116 N

E. RANGE R 64 W

F. SECTION 16, 21

G. Provide a USGS 7.5 minute quadrangle map of the project area. If the project is in an urban area, show the location(s) on a city map. Photocopies are acceptable, but poor quality maps or insufficient information will cause review delays. Do not enlarge or reduce the map.

Is a map showing the exact location of the project attached to this form?

YES  or NO

**6. PROJECT DESCRIPTION**

Describe all anticipated work associated with the project. Be specific. The description should include all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. Use as much space and as many pages as needed to clearly describe the project.

**The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.**

**The current Airport property is located in the NE 1/4 of Section 16 T116N R64W. The area proposed to be purchased for the runway realignment is located in the SE 1/4 of Section 16 and NE 1/4 of Section 21 T116N R64W. Areas proposed to be purchased for wildlife fence clearance is in the NW 1/4 of Section 16 T116N.**

**A Cultural Resources Inventory Survey of the Redfield Municipal Airport was conducted and a report dated September 21, 2012 has previously been submitted to SHPO. The areas of land to be purchased have been narrowed. The Survey covered airport property and all of the proposed land to be purchased with the exception of the 2.8 acres now required for the 10' wildlife fence clearance on the northwest corner of airport property.**



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**7. PROJECT PLANS**

Plans, drawings, engineering specifications etc. should be included to help explain the project, but these cannot replace the above verbal description. If new construction is involved, elevation drawings and plans should be included.

Are plans, drawings, engineering specifications, or similar documents attached to this form?

YES  or NO

**8. PHOTOGRAPHS**

Provide several clear, original photographs of the project location. Also, include photographs of every affected buildings/structures, including an overall front view of each structure and other views necessary to describe fully the structures and the project. Streetscape photographs of surrounding buildings and structures should also be included. Photographs should be color and can be either printed or digital images submitted on a CD. Printed digital photographs should have a high dpi and clear resolution. Photographs should also either be labeled or include a key.

NOTE: Projects submitted with insufficient photographs will cause review delays.

Are photographs that clearly show the project location attached to this form?

YES  or NO  (Aerial photographs)

**9. PROJECT AREA OF POTENTIAL EFFECT (APE)**

The APE consists of the geographic area or areas within which a project may directly or indirectly, cause changes in the character or use of historic properties. In most instances, the APE is not simply the project's physical boundaries or right-of-way. The APE also includes all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. The APE may include visual and audible effects.

Highlight the APE on a localized map.

A. Is a map highlighting the APE attached to this form? YES  or NO

B. Provide a written description of the APE. Describe the steps taken to identify the APE, and justify why the APE boundaries were chosen. If the APE has been previously disturbed, include an explanation of the previous ground disturbance.

**The Area of Potential Effect (APE) for this proposed project has been determined to contain only the boundaries of land to be purchased and current airport property. Since much of the airport has previously been disturbed and the land to be purchased has been previously disturbed by agricultural practices, there is no justifiable reason to extend the APE beyond the boundaries of current and future airport property.**

**As mentioned previously, the current and proposed future airport property except the 2.8 acres required for wildlife fence clearance has already been surveyed by Dakota Research Services.**



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**II. IDENTIFY HISTORIC PROPERTIES**

**10. IDENTIFICATION EFFORTS (See 36 CFR 800.4)**

Identification of historic properties may include, but is not limited, any of the following identification methods. Check which steps were taken to identify historic properties in the APE. Check all that apply and describe the results.

**A.  RECORD SEARCH**

Conducted a record search through the Archaeological Research Center in Rapid City. Record searches are available for a fee by calling 605.394.1936. This will include a search of all previously-surveyed archaeological sites and structures within the APE and within one mile of the APE.

If a record search was conducted, is a copy of the results attached to this form? YES  or NO

**B.  ON-THE-GROUND SURVEY**

Survey by an archaeologist and/or an architectural historian of project area not previously surveyed. Survey type will depend on the scope of the project. A list of professionals is available at <http://history.sd.gov/Preservation/TechAssist/ConsultantsContractors.aspx>. Guidelines for surveys and reports are available at: [http://history.sd.gov/Preservation/PresLaws/r&c\\_guidelines.pdf](http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf) and <http://history.sd.gov/Preservation/OtherServices/HSArchitecturalSurveyManual2006.pdf>.

If a survey was conducted, is a copy of the survey report and/or survey forms attached to this form?  
YES  or NO

**C.  SEARCHED THE NATIONAL REGISTER OF HISTORIC PLACES DATABASE**

This database is available online at: <http://nrhp.focus.nps.gov/>. NOTE: This database only includes properties listed on the National Register of Historic Places. Properties that are eligible for the National Register must also be taken into consideration.

If the National Register database was searched, is a printout of any results attached to this form?  
YES  or NO

**D.  BACKGROUND RESEARCH**

Please describe sources reviewed and findings of research. This could include such things as reviewing county or city history books or conducting research at a local historical society, research facility, or county courthouse.

**E.  ORAL HISTORY INTERVIEWS**

Please list who was interviewed and describe what was learned through the interviews.

**F.  CONSULTATION**

Please describe who was consulted and the results of the consultation. Examples include tribes, historic preservation commissions, the public, and local historical societies.

**G.  OTHER**

Describe any other efforts undertaken to identify historic properties and the results of those efforts.



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**11. HISTORIC PROPERTIES FINDING**

Based on the efforts described above to identify historic properties, please choose one finding for the project. There are (mark one):

- Historic Properties Present in the APE
- No Historic Properties Present in the APE

**III. ASSESS EFFECTS**

**12. DETERMINATION OF EFFECT**

The federal agency must submit a determination of effect for the SHPO to review this project. Based on the information provided above, the responsible agency official should make a determination of effect on historic properties for this project. Please select and mark one of the following determinations, then explain the basis for your decision

- No Historic Properties Affected** [36 CFR 800.4(d)(1)] – For a determination of no historic properties affected, the agency official finds no historic properties present or that the undertaking will have no effect upon historic properties as defined in Sec. 800.16(i). Please explain.

A determination of "No Historic Properties Affected" was recommended for the proposed project by Jeff Buechler, RPA of Dakota Research Services based on his findings from "A Short Format Report of a Cultural Resources Inventory Survey of the Redfield Airport Improvement Projects in Spink County, South Dakota."

- Adverse Effect** [36 CFR Part 800.5(a)(1)] – For a determination of adverse effect, the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Please explain.

- No Adverse Effect** [36 CRF Part 800.5(b)] – For a determination of no adverse effect, the undertaking is modified or conditions are imposed to avoid adverse effects to a historic property. Please explain.

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. **This must be an original signature and not electronic.**

SIGNATURE Lindsay Guttilla Butler DATE 01/09/2014  
 NAME Lindsay Guttilla BUTLER  
 TITLE Regional Environmental Specialist  
 AGENCY Federal Aviation Administration



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

Please print and mail completed form to:

Review and Compliance Coordinator  
South Dakota State Historical Society  
900 Governors Drive  
Pierre, SD 57501

Questions about Section 106 can be directed to:

Paige Olson  
Review and Compliance Coordinator  
[Paige.HoskinsonOlson@state.sd.us](mailto:Paige.HoskinsonOlson@state.sd.us)  
605.773.6004

OR

Amy Rubingh  
Review and Compliance Archaeologist  
[Amy.Rubingh@state.sd.us](mailto:Amy.Rubingh@state.sd.us)  
605.773.8370

Questions about Section 106 projects on existing buildings or structures can be directed to:

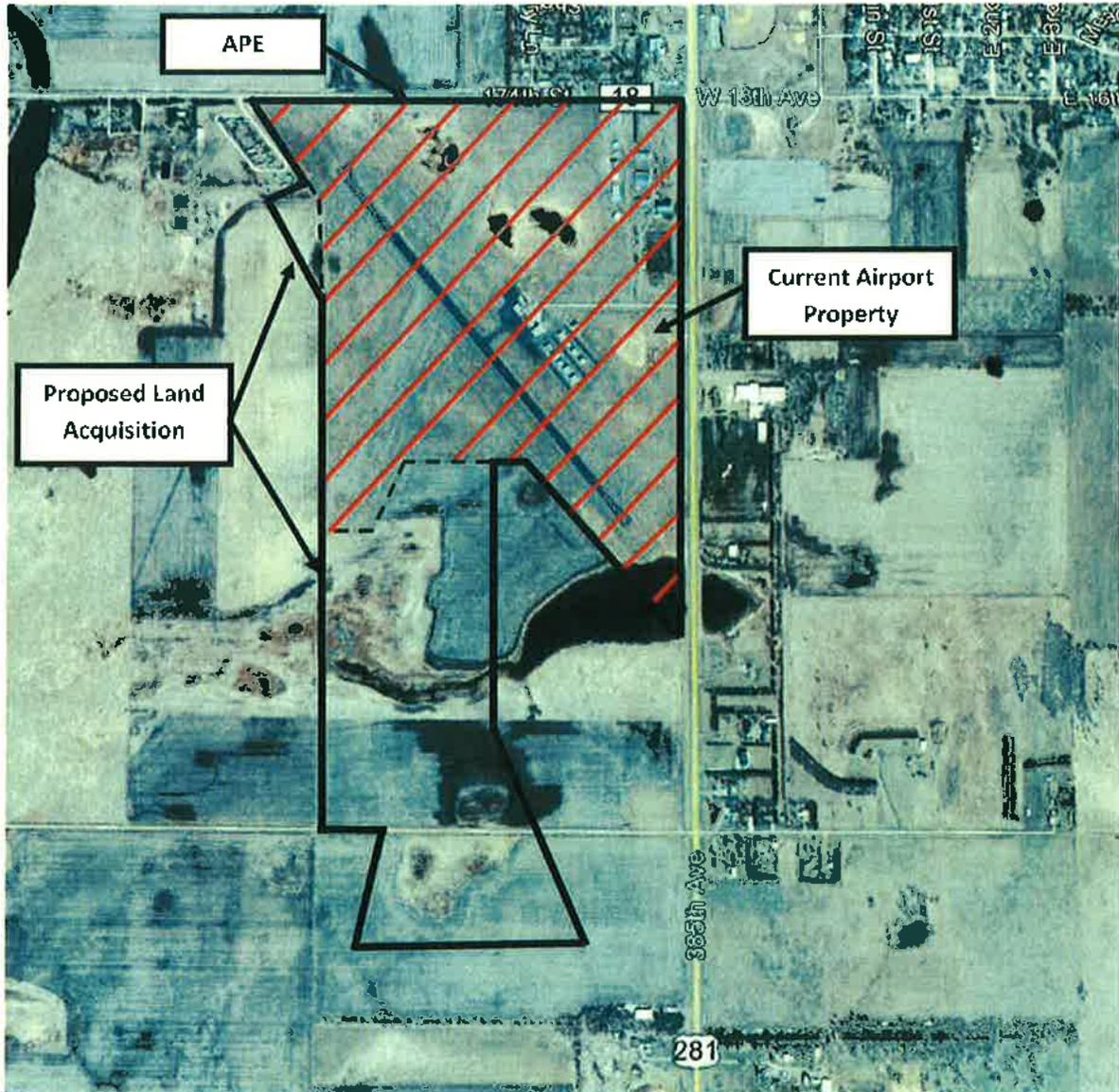
Paul Porter  
Restoration Specialist  
[Paul.Porter@state.sd.us](mailto:Paul.Porter@state.sd.us)  
605.773.6296

Project information submitted cannot be returned. This documentation is kept on file at the South Dakota State Historical Society. We review faxed and electronic submissions in the same manner as any other submission and with the same considerations for clarity and completeness. However, original documents with original signature must follow all faxed and electronic submissions. The submission of incomplete, unclear, or confusing information may result in unnecessary delays in the review process until adequate information is obtained.

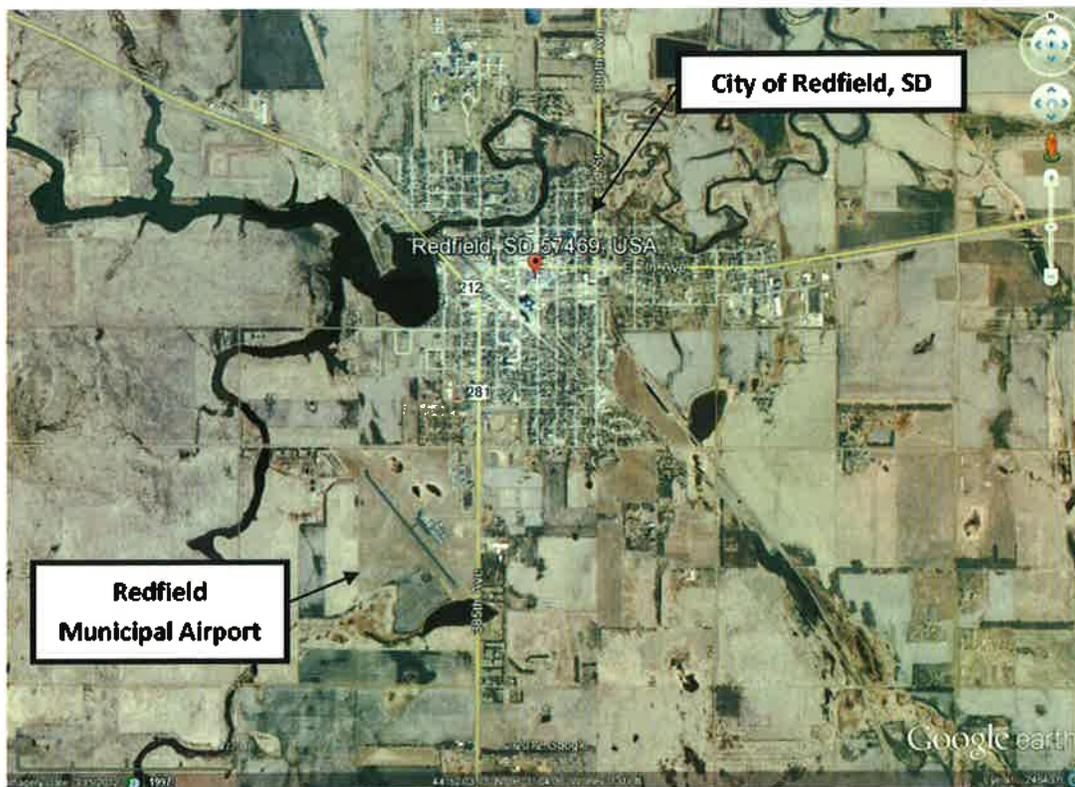
**Additional Resources**

1. South Dakota State Historic Preservation Office <http://history.sd.gov/Preservation/>
  - a. Link to National and State Register Listed Properties:  
<http://history.sd.gov/Preservation/NatReg/NatReg.aspx>
  - b. Historic Contexts:  
[history.sd.gov/Preservation/OtherServices/SHPODocs.aspx](http://history.sd.gov/Preservation/OtherServices/SHPODocs.aspx)
  - c. *Guidelines for Cultural Resource Surveys and Survey Reports 2005*:  
[http://history.sd.gov/Preservation/PresLaws/r&c\\_guidelines.pdf](http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf)
  
2. Advisory Council on Historic Preservation: [www.achp.gov](http://www.achp.gov)
  - a. Link to National Historic Preservation Act of 1966 as amended
  - b. 36 CFR Part 800 – Protection of Historic Properties
  
3. National Park Service: [www.nr.nps.gov/](http://www.nr.nps.gov/)
  - a. National Register of Historic Places
  - b. Publications (National Register Bulletins, Preservation Briefs, etc.):  
[www.nps.gov/history/publications.htm](http://www.nps.gov/history/publications.htm)
  
4. Archaeological Research Center: [history.sd.gov/Archaeology/](http://history.sd.gov/Archaeology/) or 605.394.1936
  - a. Record Search Information
  
5. State Archives: [history.sd.gov/Archives/](http://history.sd.gov/Archives/) or 605.773.3804
  - a. Historic photographs
  - b. Research material

# Revised Redfield Municipal Airport Area of Potential Affect



## Redfield Municipal Airport Location and Vicinity Maps







October 10, 2012

Brooke B. Edgar  
Helms & Associates  
221 Brown Co. HWY #19  
PO Box 111  
Aberdeen SD 57402-0111

RECEIVED  
OCT 11 2012  
HELMS & ASSOCIATES

**PROJECT CONSULTATION – IDENTIFICATION/EVALUATION**

Project: 120921006F – Redfield Regional Airport – Land Purchase

Location: Spink County  
(FAA)

Dear Ms. Edgar:

Thank you for the opportunity to comment on the above referenced project. The South Dakota Office of the State Historic Preservation Officer (SHPO) concurs with your determination regarding the effect of the proposed undertaking on the non-renewable cultural resources of South Dakota.

We have made this decision based on the information provided in your correspondence and the report “A Short Format Report of a Cultural Resources Inventory Survey of the Wetland Redfield Airport Improvements Project in Spink County, South Dakota” by Jeff Buechler, received on September 21, 2012. SHPO concurs with your determination that site 39SP276 should be considered not eligible for the National Register of Historic Properties. Therefore, SHPO concurs with your determination of No Historic Properties Affected for this undertaking. Activities occurring in areas not identified in your request will require the submission of additional documentation pursuant to 36 CFR part 800.4.

If historic properties are discovered or unanticipated effects on historic properties are found after the agency official has completed the Section 106 process, the agency official shall avoid, minimize, or mitigate the adverse effects to such properties and notify the SHPO/ THPO and Indian tribes that might attach religious and cultural significance to the affected property within 48 hours of the discovery, pursuant to 36 CFR part 800.13.

Concurrence of the SHPO does not relieve the federal agency official from consulting with other appropriate parties, as described in 36 CFR part 800.2(c).

Should you require additional information, please contact Amy Rubingh, Review & Compliance Archaeologist, at (605) 773-8370. Your concern for the non-renewable cultural heritage of our state is appreciated.

Sincerely,

Jay D. Vogt  
State Historic Preservation Officer



Amy Rubingh  
Review & Compliance Archaeologist

CC: Patricia L. Dressler, Bismarck Airports District Office, 2301 University Drive,  
Building 23B, Bismarck ND 58504  
Jane Watts, Archaeological Research Center, Rapid City SD



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

**I. PROJECT INFORMATION**

THIS IS A NEW SUBMITTAL

THIS IS MORE INFORMATION RELATING TO SHPO PROJECT # \_\_\_\_\_

1. PROJECT NAME: Redfield Municipal Airport Environmental Assessment

**2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT**

A. AGENCY NAME: Federal Aviation Administration

B. AGENCY CONTACT PERSON: Lindsay Guttilla

C. MAILING ADDRESS: 2300 East Devon Avenue, Des Plaines, IL 60018

D. EMAIL ADDRESS: Lindsay.Guttilla@faa.gov

E. TELEPHONE NUMBER: (847) 294 - 7723

**3. STATE AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT, IF APPLICABLE**

A. AGENCY NAME: South Dakota Department of Transportation Office of Aeronautics

B. AGENCY CONTACT PERSON: Jennifer Clements

C. MAILING ADDRESS: 700 East Broadway Avenue, Pierre, SD 57501

D. EMAIL ADDRESS: jennifer.clements@state.sd.us

E. TELEPHONE NUMBER: (605) 773 - 4430

F. IF THIS IS A GRANT PROGRAM, PLEASE INCLUDE THE NAME OF THE PROGRAM (FOR EXAMPLE, CDBG OR SRF): Airports Improvement Program

**4. CONSULTANT CONTACT PERSON, IF APPLICABLE**

A. COMPANY NAME: Helms & Associates

B. CONTACT PERSON: Brooke B. Edgar, E.I.T.

C. MAILING ADDRESS: P.O. Box 111, Aberdeen, SD 57402

D. EMAIL ADDRESS: brookee@helmsengineering.com

E. TELEPHONE NUMBER: (605) 225 - 1212



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**5. PROJECT LOCATION**

A. ADDRESS: Sections 9, 15, 16, 21 T166N R64W

B. CITY: Redfield, SD

C. COUNTY: Spink County

D. TOWNSHIP: T 166 N E. RANGE R 64 W F. SECTION 9, 15, 16, 21

G. Provide a USGS 7.5 minute quadrangle map of the project area. If the project is in an urban area, show the location(s) on a city map. Photocopies are acceptable, but poor quality maps or insufficient information will cause review delays. Do not enlarge or reduce the map.

Is a map showing the exact location of the project attached to this form?

YES  or NO

**6. PROJECT DESCRIPTION**

Describe all anticipated work associated with the project. Be specific. The description should include all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. Use as much space and as many pages as needed to clearly describe the project.

The City of Redfield, South Dakota is proposing to purchase approximately 172 acres of land for their airport. This purchase will allow the City to protect and control the Runway Protection Zones (RPZs), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and a taxiway at the Redfield Municipal Airport. The current cross wind runway 1/19 has been abandoned due to penetrations to the airport airspace, leaving the Redfield Municipal Airport out of compliance with the FAA Wind Coverage and Runway Length Requirements according to the FAA AC 150/5300-13, "Airport Design." The runway realignment project will consist of constructing a new primary runway 17/35, 3,500 feet long with an ultimate potential to be extended to 4,100 feet. Runway 13/31 would be used as the cross wind runway. Also, the reduction of wildlife hazards as recommended by the wildlife study will be implemented, such as the filling or modification of wetlands located on current and future airport property and installation of a ten-foot high wildlife fence.

The current Airport property is located in the NE 1/4 of Section 16 T166N R64W. The area proposed to be purchased for the runway realignment is located in the SE 1/4 of Section 16 T166N R64W. Areas proposed to be purchased for RPZ and Approach and Transitional Surfaces are located in the S 1/2 of Section 9 T166N R64W, SW 1/4 of Section 15 T166N R64W, and NE 1/4 of Section 21 T166N R64W.

### 7. PROJECT PLANS

Plans, drawings, engineering specifications etc. should be included to help explain the project, but these cannot replace the above verbal description. If new construction is involved, elevation drawings and plans should be included.

Are plans, drawings, engineering specifications, or similar documents attached to this form?

YES  or NO

### 8. PHOTOGRAPHS

Provide several clear, original photographs of the project location. Also, include photographs of every affected buildings/structures, including an overall front view of each structure and other views necessary to describe fully the structures and the project. Streetscape photographs of surrounding buildings and structures should also be included. Photographs should be color and can be either printed or digital images submitted on a CD. Printed digital photographs should have a high dpi and clear resolution. Photographs should also either be labeled or include a key.

NOTE: Projects submitted with insufficient photographs will cause review delays.

Are photographs that clearly show the project location attached to this form?

YES  or NO

### 9. PROJECT AREA OF POTENTIAL EFFECT (APE)

The APE consists of the geographic area or areas within which a project may directly or indirectly, cause changes in the character or use of historic properties. In most instances, the APE is not simply the project's physical boundaries or right-of-way. The APE also includes all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. The APE may include visual and audible effects.

Highlight the APE on a localized map.

A. Is a map highlighting the APE attached to this form? YES  or NO

B. Provide a written description of the APE. Describe the steps taken to identify the APE, and justify why the APE boundaries were chosen. If the APE has been previously disturbed, include an explanation of the previous ground disturbance.

**The Area of Potential Effect (APE) for this proposed project has been determined to contain only the boundaries of land to be purchased and current airport property. Since much of the land to be purchased is for RPZ and Approach and Transitional Surface protection and the rest is for the proposed actions of a runway realignment which is not intended to increase the capacity of the Redfield Municipal Airport, there is no justifiable reason to extend the APE beyond the boundaries of current and future airport property.**

## II. IDENTIFY HISTORIC PROPERTIES

### 10. IDENTIFICATION EFFORTS (See 36 CFR 800.4)

Identification of historic properties may include, but is not limited, any of the following identification methods. Check which steps were taken to identify historic properties in the APE. Check all that apply and describe the results.

A.  RECORD SEARCH

Conducted a record search through the Archaeological Research Center in Rapid City. Record searches are available for a fee by calling 605.394.1936. This will include a search of all previously-surveyed archaeological sites and structures within the APE and within one mile of the APE.

If a record search was conducted, is a copy of the results attached to this form? YES  or NO

B.  ON-THE-GROUND SURVEY

Survey by an archaeologist and/or an architectural historian of project area not previously surveyed. Survey type will depend on the scope of the project. A list of professionals is available at <http://history.sd.gov/Preservation/TechAssist/ConsultantsContractors.aspx>. Guidelines for surveys and reports are available at: [http://history.sd.gov/Preservation/PresLaws/r&c\\_guidelines.pdf](http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf) and <http://history.sd.gov/Preservation/OtherServices/HSArchitecturalSurveyManual2006.pdf>.

If a survey was conducted, is a copy of the survey report and/or survey forms attached to this form?  
YES  or NO

C.  SEARCHED THE NATIONAL REGISTER OF HISTORIC PLACES DATABASE

This database is available online at: <http://nrhp.focus.nps.gov/>. NOTE: This database only includes properties listed on the National Register of Historic Places. Properties that are *eligible* for the National Register must also be taken into consideration.

If the National Register database was searched, is a printout of any results attached to this form?  
YES  or NO

D.  BACKGROUND RESEARCH

Please describe sources reviewed and findings of research. This could include such things as reviewing county or city history books or conducting research at a local historical society, research facility, or county courthouse.

---

E.  ORAL HISTORY INTERVIEWS

Please list who was interviewed and describe what was learned through the interviews.

---

F.  CONSULTATION

Please describe who was consulted and the results of the consultation. Examples include tribes, historic preservation commissions, the public, and local historical societies.

---

G.  OTHER

Describe any other efforts undertaken to identify historic properties and the results of those efforts.

---



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

**11. HISTORIC PROPERTIES FINDING**

Based on the efforts described above to identify historic properties, please choose one finding for the project. There are (mark one):

- Historic Properties Present in the APE
- No Historic Properties Present in the APE

**III. ASSESS EFFECTS**

**12. DETERMINATION OF EFFECT**

The federal agency must submit a determination of effect for the SHPO to review this project. Based on the information provided above, the responsible agency official should make a determination of effect on historic properties for this project. Please select and mark one of the following determinations, then explain the basis for your decision

- No Historic Properties Affected [36 CFR 800.4(d)(1)]** – For a determination of no historic properties affected, the agency official finds no historic properties present or that the undertaking will have no effect upon historic properties as defined in Sec. 800.16(i). Please explain.

A determination of "No Historic Properties Affected" was recommended for the proposed project by Jeff Buechler, RPA of Dakota Research Services based on his findings from "A Short Format Report of a Cultural Resources Inventory Survey of the Redfield Airport Improvement Projects in Spink County, South Dakota."

- Adverse Effect [36 CFR Part 800.5(a)(1)]** – For a determination of adverse effect, the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Please explain.

- No Adverse Effect [36 CRF Part 800.5(b)]** – For a determination of no adverse effect, the undertaking is modified or conditions are imposed to avoid adverse effects to a historic property. Please explain.

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. This must be an original signature and not electronic.

**SIGNATURE** Lindsay Guttilla **DATE** 09/19/2012

**NAME** Lindsay Guttilla

**TITLE** Regional Environmental Specialist

**AGENCY** Federal Aviation Administration



**SOUTH DAKOTA STATE HISTORICAL SOCIETY  
STATE HISTORIC PRESERVATION OFFICE  
SECTION 106 PROJECT REVIEW FORM**

Please print and mail completed form to:

Review and Compliance Coordinator  
South Dakota State Historical Society  
900 Governors Drive  
Pierre, SD 57501

Questions about Section 106 can be directed to:

Paige Olson  
Review and Compliance Coordinator  
[Paige.HoskinsonOlson@state.sd.us](mailto:Paige.HoskinsonOlson@state.sd.us)  
605.773.6004

OR

Amy Rubingh  
Review and Compliance Archaeologist  
[Amy.Rubingh@state.sd.us](mailto:Amy.Rubingh@state.sd.us)  
605.773.8370

Questions about Section 106 projects on existing buildings or structures can be directed to:

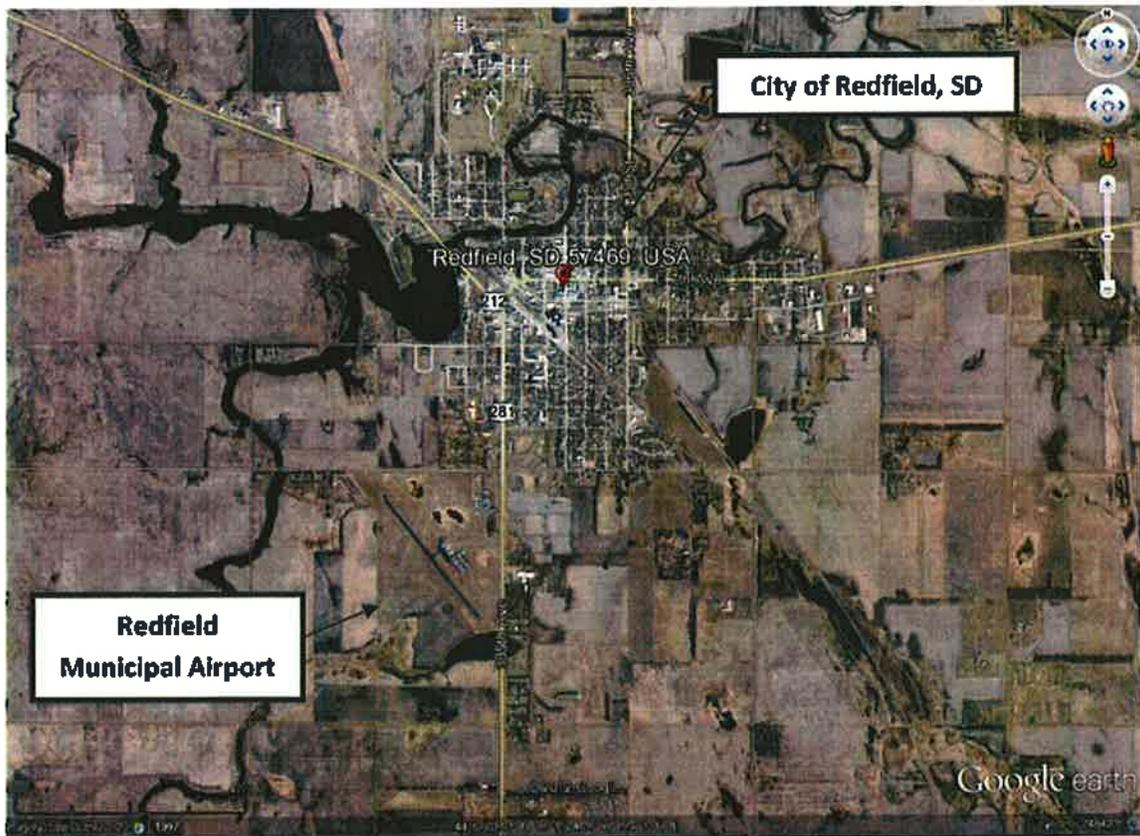
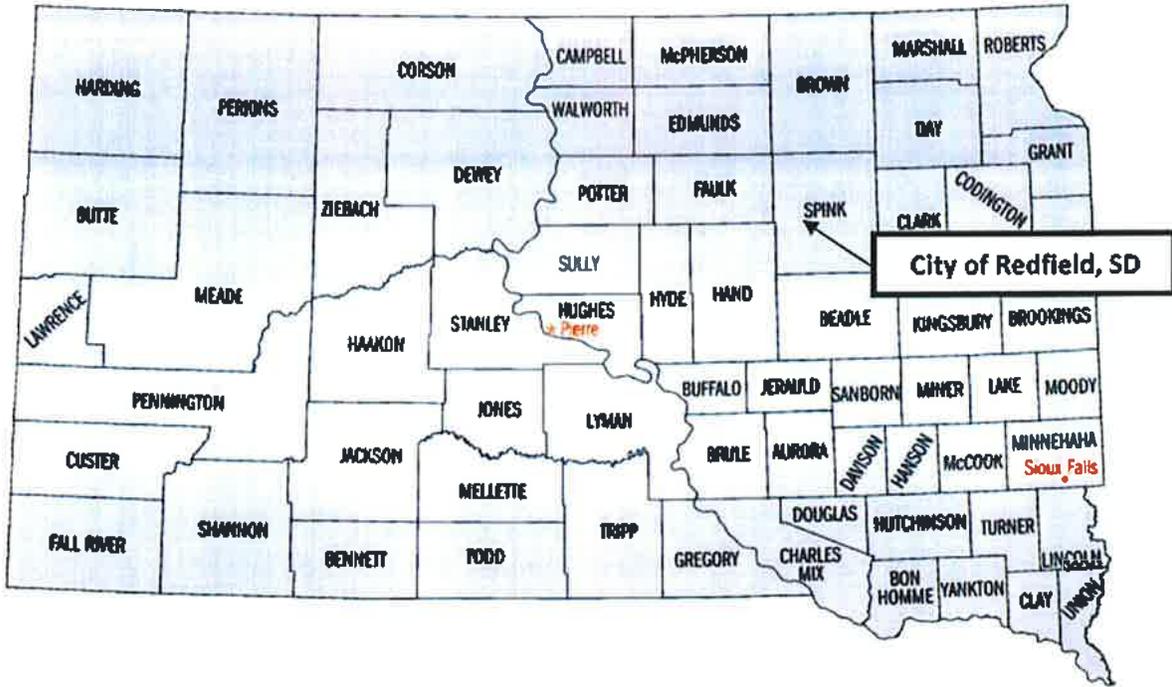
Paul Porter  
Restoration Specialist  
[Paul.Porter@state.sd.us](mailto:Paul.Porter@state.sd.us)  
605.773.6296

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### **Additional Resources**

1. South Dakota State Historic Preservation Office <http://history.sd.gov/Preservation/>
  - a. Link to National and State Register Listed Properties:  
<http://history.sd.gov/Preservation/NatReg/NatReg.aspx>
  - b. Historic Contexts:  
[history.sd.gov/Preservation/OtherServices/SHPODocs.aspx](http://history.sd.gov/Preservation/OtherServices/SHPODocs.aspx)
  - c. *Guidelines for Cultural Resource Surveys and Survey Reports 2005*:  
[http://history.sd.gov/Preservation/PresLaws/r&c\\_guidelines.pdf](http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf)
2. Advisory Council on Historic Preservation: [www.achp.gov](http://www.achp.gov)
  - a. Link to National Historic Preservation Act of 1966 as amended
  - b. 36 CFR Part 800 – Protection of Historic Properties
3. National Park Service: [www.nr.nps.gov/](http://www.nr.nps.gov/)
  - a. National Register of Historic Places
  - b. Publications (National Register Bulletins, Preservation Briefs, etc.):  
[www.nps.gov/history/publications.htm](http://www.nps.gov/history/publications.htm)
4. Archaeological Research Center: [history.sd.gov/Archaeology/](http://history.sd.gov/Archaeology/) or 605.394.1936
  - a. Record Search Information
5. State Archives: [history.sd.gov/Archives/](http://history.sd.gov/Archives/) or 605.773.3804
  - a. Historic photographs
  - b. Research material

# Redfield Municipal Airport Location and Vicinity Maps





CITY OF REDFIELD

U.S. HIGHWAY 281

174th STREET

LEDDAS SURVEY

TAXIWAY

RUNWAY 17-31  
607' x 3206' 0"

RUNWAY 17-30  
607' x 3500"

RUNWAY 17-30  
607' x 3500"

54.28 ACRES

89.77 ACRES

24.18 ACRES

1.53 ACRES

PROJECT LEGEND

WETLAND

FUTURE PURCHASE

GRAPHIC SCALE

0 500 1000  
1" = 1000'

APE

Helm's ASSOCIATES  
CONSULTING ENGINEERS



# SOUTH DAKOTA STATE HISTORICAL SOCIETY

Department of Tourism and State Development

January 16, 2009

Michael A. Schmidt  
Helms & Associates  
221 Brown County, Hwy 19  
PO Box 111  
Aberdeen, SD 57402-0111  
Search S09-213

REC-111  
JAN 20 2009  
RECEIVED

Dear Mr. Schmidt:

I have completed your archaeological and structural record searches for the proposed airport environmental assessments with the following results:

**Aberdeen Regional Airport Environmental Assessment, A4431  
T123N, R63W, Sec. 21, 27 and 28, Aberdeen East Quadrangle**

No Sites, No Surveys, No Structures

- **One Mile Radius**

Site: 39BN2007 (Chicago, Milwaukee, St. Paul & Pacific Railroad)

Surveys: Report Archive #ABN-0031      Fosha 1992  
          Report Archive #ABN-0042      Shierts 1994  
          Report Archive #ABN-0095      Downing 2004  
          Report Archive #ABN-0138      Lueck 2007  
          Report Archive #ESD-0189      Buechler 1998

**Faulkton Municipal Airport Environmental Assessment, A-4432  
T118N, R69W, NE ¼ of Sec. 23 and the NW ¼ of Sec. 24, Faulkton East Quadrangle**

Site: 39Fk2003 (Chicago Northwestern Railroad)

- **One Mile Radius**

Site: 39FK42

Surveys: Report Archive #AFK-0012      Kurtz 1987  
          Report Archive #AFK-0024      Littlefield 2002  
          Report Archive #ESD-0013      Haug et al 1983



Department of  
Tourism & State  
Development

Office of Tourism [TravelSD.com](http://TravelSD.com)  
Governor's Office of Economic Development [SDreadytowork.com](http://SDreadytowork.com)  
Tribal Government Relations [Dtr.bakrelations.com](http://Dtr.bakrelations.com)  
Arts Council [artscouncil.sd.gov](http://artscouncil.sd.gov)  
State Historical Society [SDhistory.org](http://SDhistory.org)  
Housing Development Authority [SDHDA.org](http://SDHDA.org)

2010  
TENTH ANNIVERSARY  
[2010initiative.com](http://2010initiative.com)

Helms  
Pg.2

Surveys: Report Archive #ESD-0018      Buechler 1985  
          Report Archive #ESD-0119      Buechler 1985

**Bridges**

FK00000001, DOT Str. #25-218-141, NR Eligible, NR listed  
FK00000042, DOT Str. #25-220-138, Not Eligible

**Structures**

FK00000002, Byrne House, NR Eligible, NR listed  
FK00000003, Eyler House, NR Eligible, NR listed  
FK00000013, Faulkton Public School, Not Eligible  
FK00000014, Faulk County Courthouse, NE Eligible, NR listed  
FK00000015, Alfred Haberling Barn, unevaluated  
FK00000033, Faulkton Community Hall, NR Eligible, NR listed  
FK00000041, Faulk County Memorial Hospital, Not Eligible

**Redfield Municipal Airport Environmental Assessment, A-4441  
T116N, R64W, Sec. 9, 15, 16 and 21, Redfield South Quadrangle**

Surveys: Report Archive #ASP-0041      Long 2000  
          Report Archive #ASP-0070      Messerli et al 2004  
          Report Archive #ESD-0109      Buechler 1990

• **One Mile Radius**

Sites: 39SP2003 (Chicago Northwestern Railroad), 39SP2007 9Chicago, Milwaukee, St.  
Paul & pacific Railroad)

Surveys: Report Archive #ASP-0033      Downing 1998  
          Report Archive #ASP-0090      Downing 2006  
          Report Archive #ESD-0007      Keller & Keller 1982  
          Report Archive #ESD-0110      Buechler 1990  
          Report Archive #ESD-0130      Buechler 1991

**Bridges**

SP0000140, DOT Str. #58-090-251, Not Eligible  
SP0000006, DOT Str. #58-086-251, NR Eligible  
SP0000298, DOT Str. #58-099-251, Not Eligible

Structures: 2 pages, see enclosed list

Helms  
Pg.3

**Sisseton Municipal Airport Environmental Assessment, A-4438  
T126N, R50W, SW ¼ of Sec. 24 and the SW ¼ of Sec. 25, Peever NW Quadrangle**

Surveys: Report Archive #ARO-0003      Hanenberger 1977  
          Report Archive #ARO-0016      Banks 1987

• **One Mile Radius**

Surveys: Report Archive #ARO-0034      Byrne 1996  
          Report Archive #ARO-0094      Downing 2001  
          Report Archive #ARO-0099      Downing 2003  
          Report Archive #ARO-0101      Murdy 2004  
          Report Archive #ARO-0107      Murdy 2005

**Bridges**

RO00000105, DOT Str. #55-120-183, Not Eligible  
RO00000309, DOT Str. #55-115-180, Not Eligible

This concludes your archaeological record search and I have enclosed copies of the GIS quadrangle maps showing the site, structure and survey locations and copies of structure Crystal Report tables. State Historic Preservation Office guidelines require listing all sites, structures and surveys within a mile of a project area. Researchers/contractors must be aware that lack of sites or surveys at a particular location does not mean the project site may not need a Class III archaeological resources survey by a qualified archaeologist. The SHPO has set an arbitrary date of 1982 as the cut-off for previous surveys to be considered valid and not require a new survey. This arbitrary date does not grandfather in inadequate surveys. The SHPO has also established a policy that a file search is valid for six months prior to the submission of the report.

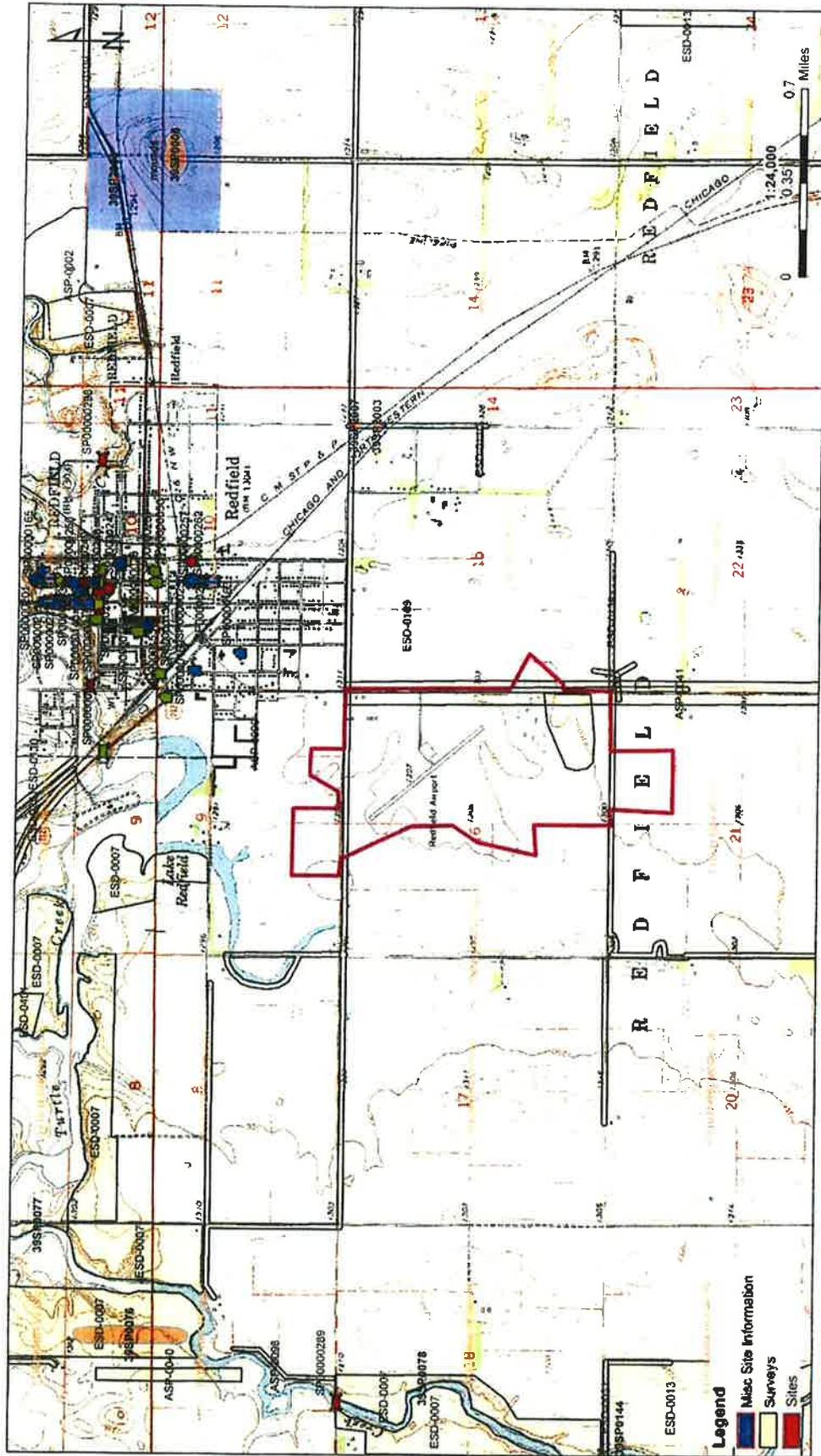
The purpose of the Level I archaeological records search is for informational purposes only and does not constitute compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended). **This information must be submitted for review to Paige Hoskinson-Olson, Review and Compliance Coordinator, Office of the State Historic Preservation Officer (SHPO), 900 Governors Drive, Pierre, SD, 57501.**

Sincerely,



Jane P. Watts  
Records Manager

South Dakota Archaeological Research Center  
GIS Database



**Warning!** This data is preliminary and not intended for public use or display!  
Redfield Municipal Airport Environmental Assessment, A-4441  
T116N, R64W, Sec. 9, 15, 16, and 21, Redfield South Quadrangle  
Sites, Surveys and Structures  
01/16/2009

A - 4441

01/16/2009

SHFO ID	Property Name	DOE	Nomination Status
MR00001537	Duplicate House	NR Eligible	
MR00000020	Bailey Residence	X	
SP00000050	Spink County Courthouse	NR Eligible	NR listed
SP00000056	Redfield Public School	NR Eligible	
SP00000136	Dalton Hatcher and Mill	NR Eligible	NR listed
SP00000137	Redfield Carnegie Library	NR Eligible	NR listed
SP00000139	Redfield Fire Station	NR Eligible	NR listed
SP00000162	Redfield City Hall	NR Eligible	NR listed
SP00000163	Redfield College Building		
SP00000165	Opaz House	NR Eligible	NR listed
SP00000166	Bruell House	NR Eligible	NR listed
SP00000169	Norbeck-Nicholson Carriage House		
SP00000188	St. Bernard's Catholic Church Rectory		
SP00000189	St. Bernard's Catholic Church		
SP00000190		Not Eligible	
SP00000192	Lambert House	NR Eligible	
SP00000193	Geulke House	Not Eligible	
SP00000194	Schnauffer Garage		
SP00000195	Schnauffer House		
SP00000196	Fues House		
SP00000197	Whitley House	Not Eligible	
SP00000199	Bruggler House	Not Eligible	
SP00000200		Not Eligible	
SP00000201	Dykstra House		
SP00000202	Graves House	NR Eligible	
SP00000203	Fallon House	NR Eligible	
SP00000204	Rude House		
SP00000205	Dosch House		
SP00000206		Not Eligible	
SP00000207			
SP00000208		Not Eligible	
SP00000209		Not Eligible	
SP00000210	Hansen House		
SP00000211		Not Eligible	
SP00000212	Kelly House	NR Eligible	
SP00000213	Metzinger House	NR Eligible	
SP00000214	Schnauffer House		
SP00000215		Not Eligible	
SP00000216			
SP00000217		Not Eligible	
SP00000218	Kuoss House	NR Eligible	
SP00000219	Messiah Lutheran Church		
SP00000220	Permann House	Not Eligible	
SP00000221	Rindlaub House	NR Eligible	
SP00000222		Not Eligible	

01/16/2009

SHPO ID	Property Name	DCE	Nomination Status
SP00000223	Sietrecht House		
SP00000224	Lansing House		
SP00000225	Jankord House	NR Eligible	
SP00000226	Zene House		
SP00000227	Gillette House	NR Eligible	
SP00000228	Smith House	NR Eligible	
SP00000229	Bakley House		
SP00000230	Baxter House		
SP00000231	Hamill House		
SP00000232		Not Eligible	
SP00000233	Osborn House		
SP00000234			
SP00000235	Wolfschem House		
SP00000237	Keating House	Not Eligible	
SP00000238		Not Eligible	
SP00000239	Rude House		
SP00000240	Lunney House		
SP00000241		Not Eligible	
SP00000242	Kappench House	Not Eligible	
SP00000243		Not Eligible	
SP00000244	Rude House		
SP00000245	Vivagner House	NR Eligible	
SP00000246	Tubandt House	NR Eligible	
SP00000247	Rude House	NR Eligible	
SP00000248	Rude House	NR Eligible	
SP00000249	Rose House	NR Eligible	
SP00000250		Not Eligible	
SP00000251	Sooker House	NR Eligible	
SP00000252		Not Eligible	
SP00000253	Boh House		
SP00000254	Fuss House		
SP00000255	Decker House		
SP00000259		Not Eligible	
SP00000257	Beg House	NR Eligible	
SP00000258	Gillette House		
SP00000259	Rodman House		
SP00000260	Cabacat House		
SP00000261	Paulson House	NR Eligible	
SP00000262	Hansen House		

January 12, 2009

Paige Hoskinson  
Review and Compliance Coordinator  
Office of State Historic Preservation Officer  
900 Governors Drive  
Pierre, SD 57501

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Ms. Hoskinson,

The City of Redfield is proposing to purchase approximately 171.76 Acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and a future runway realignment that will involve the construction of a new runway, turnarounds, and taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*"Construct a new primary runway 17/35, 3,500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of it useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway."*

I have enclosed a layout sheet showing the proposed parcels of land to be purchased and additional items of construction. We are requesting your comments concerning environmental impacts.

Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



# SOUTH DAKOTA STATE HISTORICAL SOCIETY

Department of Tourism and State Development

January 16, 2009

Michael A. Schmidt  
Helms & Associates  
221 Brown County, Hwy 19  
PO Box 111  
Aberdeen, SD 57402-0111  
Search S09-213

Archaeological Research Center  
2425 E. St. Charles St. | PO Box 1257 | Rapid City, SD 57709-1257  
Phone: 605-394-1936 | Fax: 605-394-1941 | www.sdsmt.edu/wwwsarc

RECEIVED

JAN 20 2009

HELMS & ASSOCIATES

Dear Mr. Schmidt:

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**Aberdeen Regional Airport Environmental Assessment, A4431  
T123N, R63W, Sec. 21, 27 and 28, Aberdeen East Quadrangle**

No Sites, No Surveys, No Structures

- **One Mile Radius**

Site: 39BN2007 (Chicago, Milwaukee, St. Paul & Pacific Railroad)

Surveys: Report Archive #ABN-0031	Fosha 1992
Report Archive #ABN-0042	Shierts 1994
Report Archive #ABN-0095	Downing 2004
Report Archive #ABN-0138	Lueck 2007
Report Archive #ESD-0189	Buechler 1998

**Faulkton Municipal Airport Environmental Assessment, A-4432  
T118N, R69W, NE ¼ of Sec. 23 and the NW ¼ of Sec. 24, Faulkton East Quadrangle**

Site: 39Fk2003 (Chicago Northwestern Railroad)

- **One Mile Radius**

Site: 39FK42

Surveys: Report Archive #AFK-0012	Kurtz 1987
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Report Archive #ESD-0013	Haug et al 1983



Department of  
Tourism & State  
Development

Office of Tourism: [TravelSD.com](http://TravelSD.com)  
 Governor's Office of Economic Development: [SDreadybiz.com](http://SDreadybiz.com)  
 Tribal Government Relations: [SDtribelrelations.com](http://SDtribelrelations.com)  
 Arts Council: [arts.council.sd.gov](http://arts.council.sd.gov)  
 State Historical Society: [SDhistory.org](http://SDhistory.org)  
 Housing Development Authority: [SCHDA.org](http://SCHDA.org)

2010  
LEGISLATIVE

2010initiative.com

Helms

Pg.2

Surveys: Report Archive #ESD-0018      Buechler 1985  
          Report Archive #ESD-0119      Buechler 1985

Bridges

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Structures

FK00000002, Byrne House, NR Eligible, NR listed  
FK00000003, Eyer House, NR Eligible, NR listed  
FK00000013, Faulkton Public School, Not Eligible  
FK00000014, Faulk County Courthouse, NE Eligible, NR listed  
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- **One Mile Radius**

Sites: 39SP2003 (Chicago Northwestern Railroad), 39SP2007 9Chicago, Milwaukee, St. Paul & pacific Railroad)

Surveys: Report Archive #ASP-0033      Downing 1998  
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Bridges

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SP0000006, DOT Str. #58-086-251, NR Eligible  
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Structures: 2 pages, see enclosed list

Helms  
Pg.3

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          Report Archive #ARO-0094      Downing 2001  
          Report Archive #ARO-0099      Downing 2003  
          Report Archive #ARO-0101      Murdy 2004  
          Report Archive #ARO-0107      Murdy 2005

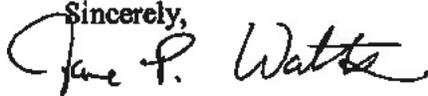
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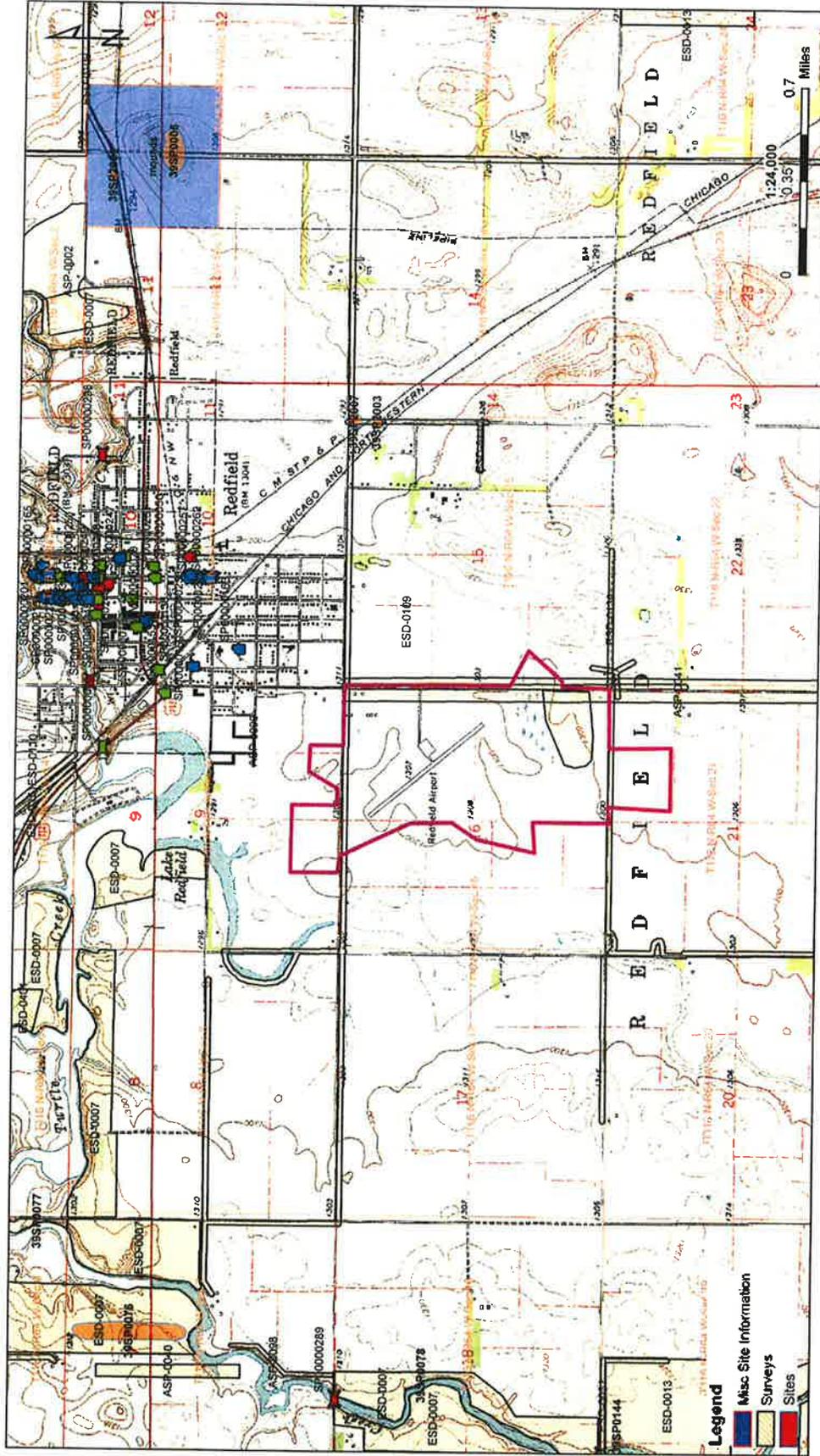
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Sincerely,



Jane P. Watts  
Records Manager

South Dakota Archaeological Research Center  
GIS Database



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 Redfield Municipal Airport Environmental Assessment, A-4441  
 T116N, R64W, Sec. 9, 15, 16, and 21, Redfield South Quadrangle  
 Sites, Surveys and Structures  
 01/15/2009

A - 4447

01/16/2009

SHPO ID	Property Name	DOE	Nomination Status
MK000001537	Doqittie House	NR Eligible	
MK000000020	Belleys Residence	NR Eligible	
SP000000050	Spink County Courthouse	NR Eligible	NR listed
SP000000056	Redfield Public School	Not Eligible	
SP000000136	Dakota Hatchery and Mill	NR Eligible	NR listed
SP000000137	Redfield Carriage Library	NR Eligible	NR listed
SP000000138	Redfield Fire Station	NR Eligible	NR listed
SP000000162	Redfield City Hall	NR Eligible	NR listed
SP000000163	Redfield College Building		
SP000000165	Optiz House	NR Eligible	NR listed
SP000000166	Bruehl House	NR Eligible	NR listed
SP000000169	Norbeck-Nicholson Carriage House		Tabled
SP000000189	St. Bernard's Catholic Church Rectory		
SP000000190	St. Bernard's Catholic Church	Not Eligible	
SP000000192	Lambert House	NR Eligible	
SP000000193	Geuke House	Not Eligible	
SP000000194	Schaeffer Garage		
SP000000195	Schaeffer House		
SP000000196	Fuss House		
SP000000197	Whitley House	Not Eligible	
SP000000199	Brugger House	Not Eligible	
SP000000200		Not Eligible	
SP000000201	Dykstra House		
SP000000202	Graves House	Not Eligible	
SP000000203	Fallon House	NR Eligible	
SP000000204	Rude House		
SP000000205	Dosch House		
SP000000206		Not Eligible	
SP000000207			
SP000000208		Not Eligible	
SP000000209		Not Eligible	
SP000000210	Hansen House		
SP000000211		Not Eligible	
SP000000212	Kelly House	NR Eligible	
SP000000213	Metzinger House	NR Eligible	
SP000000214	Schaefer House		
SP000000215		Not Eligible	
SP000000216			
SP000000217		Not Eligible	
SP000000218	Rude House	NR Eligible	
SP000000219	Messiah Lutheran Church		
SP000000220	Permann House	Not Eligible	
SP000000221	Rindelau House	NR Eligible	
SP000000222		Not Eligible	

01/16/2009

A - 44441

SHPO ID	Property Name	DOE	Nomination Status
SP00000223	Siebrecht House		
SP00000224	Lesseyoung House		
SP00000225	Jankord House	NR Eligible	
SP00000226	Zens House		
SP00000227	Gillette House	NR Eligible	
SP00000228	Smith House	NR Eligible	
SP00000229	Battley House		
SP00000230	Baxter House		
SP00000231	Hammill House		
SP00000232	Osborn House	Not Eligible	
SP00000233			
SP00000234			
SP00000235	Wolfechem House		
SP00000237	Keating House	Not Eligible	
SP00000236		Not Eligible	
SP00000239	Rude House		
SP00000240	Lunney House		
SP00000241		Not Eligible	
SP00000242	Kapperrich House	Not Eligible	
SP00000243		Not Eligible	
SP00000244	Rude House		
SP00000245	Wagner House	NR Eligible	
SP00000246	Tusandt House	NR Eligible	
SP00000247	Rude House	NR Eligible	
SP00000248	Ruda House	NR Eligible	
SP00000249	Rose House	NR Eligible	
SP00000250		Not Eligible	
SP00000251	Socler House	NR Eligible	
SP00000252		Not Eligible	
SP00000253	Boh House		
SP00000254	Fuss House		
SP00000255	Decker House		
SP00000256		Not Eligible	
SP00000257	Berg House	NR Eligible	
SP00000258	Gillette House		
SP00000259	Rodman House		
SP00000260	Gabacar house		
SP00000261	Paulson House	NR Eligible	
SP00000262	Hansen House		

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

January 12, 2009

Jane Watts  
Archeological Records Coordinator  
Archeological Research Center  
P.O. Box 1257  
Rapid City, SD 57709-1257

**FILE COPY**

Re: Redfield Municipal Airport Environmental Assessment  
A-4441

Dear Ms. Watts,

We are requesting an Archeological Records check for the above referenced project. Listed below are the legal descriptions of the land in which the project will take place:

NE ¼ Section 16	T116N	R64W
SE ¼ Section 16	T116N	R64W
NW ¼ Section 16	T116N	R64W
SW ¼ Section 15	T116N	R64W
NE ¼ Section 21	T116N	R64W
SE ¼ Section 9	T116N	R64W
SW ¼ Section 9	T116N	R64W

I have enclosed a layout sheet showing the legal description of the proposed parcels of land to be purchased and additional items of construction. Please bill our office directly for the work.

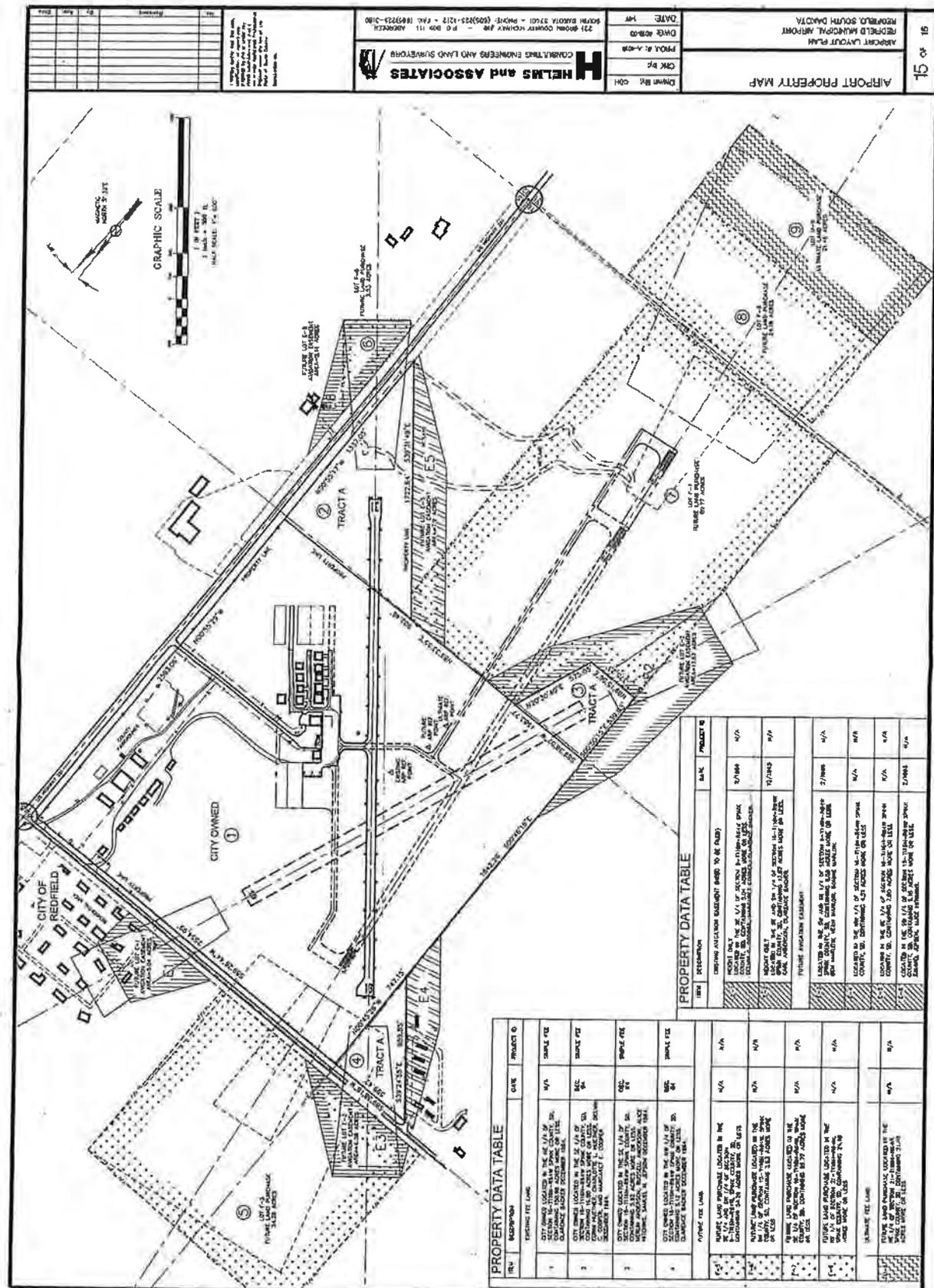
If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Michael A. Schmit, E.I.T.

Enclosure

Cc: City of Redfield



**HELMES and ASSOCIATES**  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 231 800th COURT, CHRYSLER #18 - P.O. BOX 111, ARDENHILL  
 507th STREET, SOUTH DAKOTA 57001 - PHONE (605) 233-1212 - FAX (605) 233-1180

DATE: 1/14/03  
 DWG. NO.: 03  
 PROJ. NO.: A-100  
 CHK. BY: [Signature]  
 DRAWN BY: CDH

PROJECT NO. 15 OF 16

**PROPERTY DATA TABLE**

TRACT	DESCRIPTION	DATE	PROJECT #
1	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
2	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
3	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
4	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500

**PROPERTY DATA TABLE**

TRACT	DESCRIPTION	DATE	PROJECT #
5	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
6	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
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**PROPERTY DATA TABLE**

TRACT	DESCRIPTION	DATE	PROJECT #
11	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
12	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
13	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
14	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500
15	CITY OWNED LOCATED IN THE SW 1/4 OF SECTION 10, T14N, R10W, SD. CONTAINS 160 ACRES. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED. 100% OF THIS TRACT IS CITY OWNED.	1/14/03	1500

## Brooke Edgar

---

**From:** Brooke Edgar  
**Sent:** Friday, April 11, 2014 9:34 AM  
**To:** 'Dianne Desrosiers'  
**Subject:** Redfield Municipal Airport Environmental Assessment  
**Attachments:** Figure 2-1.pdf; Redfield Municipal Airport Revised APE.pdf

Dianne,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning cultural impacts of the proposed updates. Attached is a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration and a an Area of Potential Affect Map. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, comments, or need any additional information regarding this matter, please feel free to contact our office at your convenience.

Thank you,

**Brooke B. Edgar**

**Helms**  
**& ASSOCIATES**

CIVIL ENGINEERS & LAND SURVEYORS

221 Brown County Highway 19

PO Box 111

Aberdeen, SD 57401

Phone: (605)225-1212

Fax: (605)225-3189

Mobile: (605)380-4863

Email: [brookee@helmsengineering.com](mailto:brookee@helmsengineering.com)

## **Brooke Edgar**

---

**From:** Brooke Edgar  
**Sent:** Friday, April 11, 2014 9:36 AM  
**To:** 'yst.thpo@gmail.com'  
**Subject:** Redfield Municipal Airport Environmental Assessment  
**Attachments:** Figure 2-1.pdf; Redfield Municipal Airport Revised APE.pdf

Mr. Miller,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning cultural impacts of the proposed updates. Attached is a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration and a an Area of Potential Affect Map. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, comments, or need any additional information regarding this matter, please feel free to contact our office at your convenience.

Thank you,

**Brooke B. Edgar**

**Helms**  
**& ASSOCIATES**

CIVIL ENGINEERS & LAND SURVEYORS

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**Email: [brookee@helmsengineering.com](mailto:brookee@helmsengineering.com)**

## Brooke Edgar

---

**From:** Brooke Edgar  
**Sent:** Friday, April 11, 2014 9:37 AM  
**To:** 'wandawells@midstatesd.net'  
**Subject:** Redfield Municipal Airport Environmental Assessment  
**Attachments:** Figure 2-1.pdf; Redfield Municipal Airport Revised APE.pdf

Ms. Wells,

The City of Redfield, Spink County, South Dakota has proposed numerous updates to the Redfield Municipal Airport in the past. The City is now proposing to purchase approximately 99 acres of land. Approximately 2.8 acres is for clearance in the wildlife fence construction and approximately 96.2 acres is for a new runway alignment at the Redfield Municipal Airport. Along with the land purchases, the airport is proposing the removal/abandonment of Runway 13/31, construction of a new Runway 17/35, construction of a 10' wildlife fence around the perimeter of the airport and the filling/mitigation of on airport wetlands.

We are requesting your comments concerning cultural impacts of the proposed updates. Attached is a layout sheet showing the proposed parcels of land to be purchased (labeled Future Land Purchase) and the new Runway 17/35 configuration and a an Area of Potential Affect Map. Your comments will be evaluated and included in an Environmental Assessment that we are preparing for the FAA for these proposed actions.

If you have any questions, comments, or need any additional information regarding this matter, please feel free to contact our office at your convenience.

Thank you,

**Brooke B. Edgar**

**Helms**  
**& ASSOCIATES**

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Email: [brookee@helmsengineering.com](mailto:brookee@helmsengineering.com)

## **APPENDIX C**

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### **ADDITIONAL INFORMATION**

**Table 1 – Compatibility with Yearly Day-Night  
Average Sound Zoning District Definitions**

**Air Quality Procedures for Civilian Airports  
& Air Force Bases**

**Airport Master Record 5010 Form**

Below is a table from FAA Order 1050.1E, Appendix A that lists common land uses and allowable noise levels. Note that all uses are compatible with sound levels below 65 dB.

**TABLE 1 - LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND**

Land Use	Yearly Day-Night Average Sound Level (L <sub>dn</sub> ) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
<b>Residential</b>						
Residential, other than mobile homes and transient lodgings	YES	NO (1)	NO (1)	NO	NO	NO
Mobile home parks	YES	NO	NO	NO	NO	NO
Transient lodgings	YES	NO (1)	NO (1)	NO (1)	NO	NO
<b>Public Use</b>						
Schools	YES	NO (1)	NO (1)	NO	NO	NO
Hospitals and nursing homes	YES	25	30	NO	NO	NO
Churches, auditoriums, and concert halls	YES	25	30	NO	NO	NO
Government services	YES	YES	25	30	NO	NO
Transportation	YES	YES	YES (2)	YES (3)	YES (4)	YES (4)
Parking	YES	YES	YES (2)	YES (3)	YES (4)	NO
<b>Commercial Use</b>						
Offices, business and professional	YES	YES	25	30	NO	NO
Wholesale and retail- building materials, hardware and farm equipments	YES	YES	YES (2)	YES (3)	YES (4)	NO
Retail trade-general	YES	YES	25	30	NO	NO
Utilities	YES	YES	YES (2)	YES (3)	YES (4)	NO
Communication	YES	YES	25	30	NO	NO
<b>Manufacturing and Production</b>						
Manufacturing, general	YES	YES	YES (2)	YES (3)	YES (4)	NO
Photographic and optical	YES	YES	25	30	NO	NO
Agriculture (except livestock) and forestry	YES	YES (6)	YES (7)	YES (8)	YES (8)	YES (8)
Livestock farming and breeding	YES	YES (6)	YES (7)	NO	NO	NO
Mining and fishing, resource production and extraction	YES	YES	YES	YES	YES	YES
<b>Recreational</b>						
Outdoor sports arenas and spectator sports	YES	YES (5)	YES (5)	NO	NO	NO
Nature exhibits and zoos	YES	NO	NO	NO	NO	NO
Amusements, parks, resorts, and camps	YES	YES	YES	NO	NO	NO
Golf courses, riding stables and water recreation	YES	YES	25	30	NO	NO

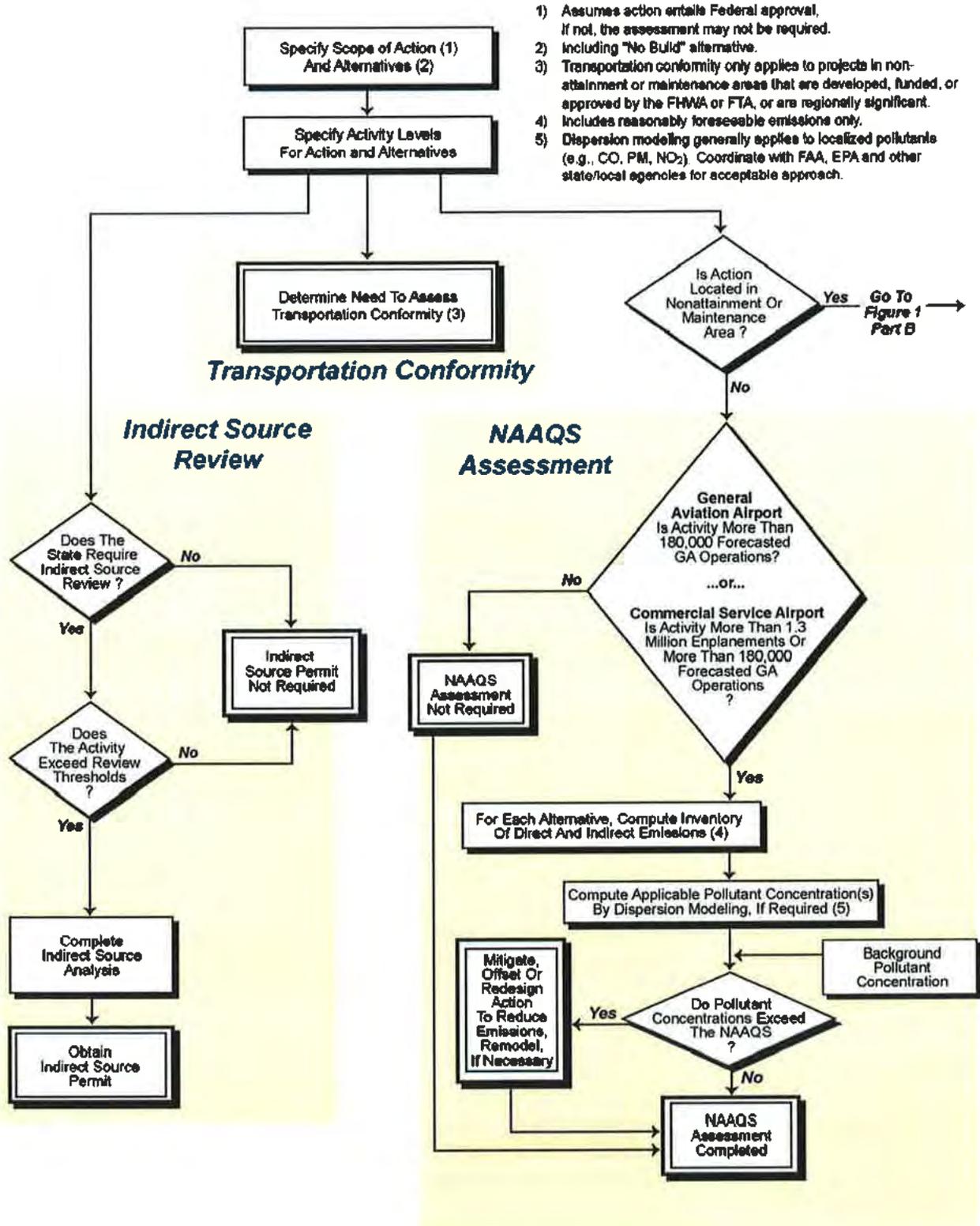
Numbers in parenthesis refer to notes; see continuation of table 1 for notes and key.

NOTE: The designations in this table do not constitute a Federal determination that any use of land is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with local land use authorities. FAA determinations under Part 150 are guidelines and are not intended to substitute for land uses determined to be suitable by local authorities in response in response to locally determined needs and values in achieving noise compatible land uses.

**TABLE 1 - LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS**

<b>Key to Table 1</b>	
YES	Land Use and related structures compatible without restrictions.
NO	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporated of noise attenuation into the design and construction of the structure.
25, 30, or 35	Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.
<b>Notes for Table 1</b>	
(1)	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reductions (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2)	Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3)	Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4)	Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(5)	Land use compatible provided special sound reinforcement systems are installed.
(6)	Residential buildings require an NLR of 25.
(7)	Residential buildings require an NLR of 30.
(8)	Residential buildings not permitted.
<b>(End of Table 1)</b>	

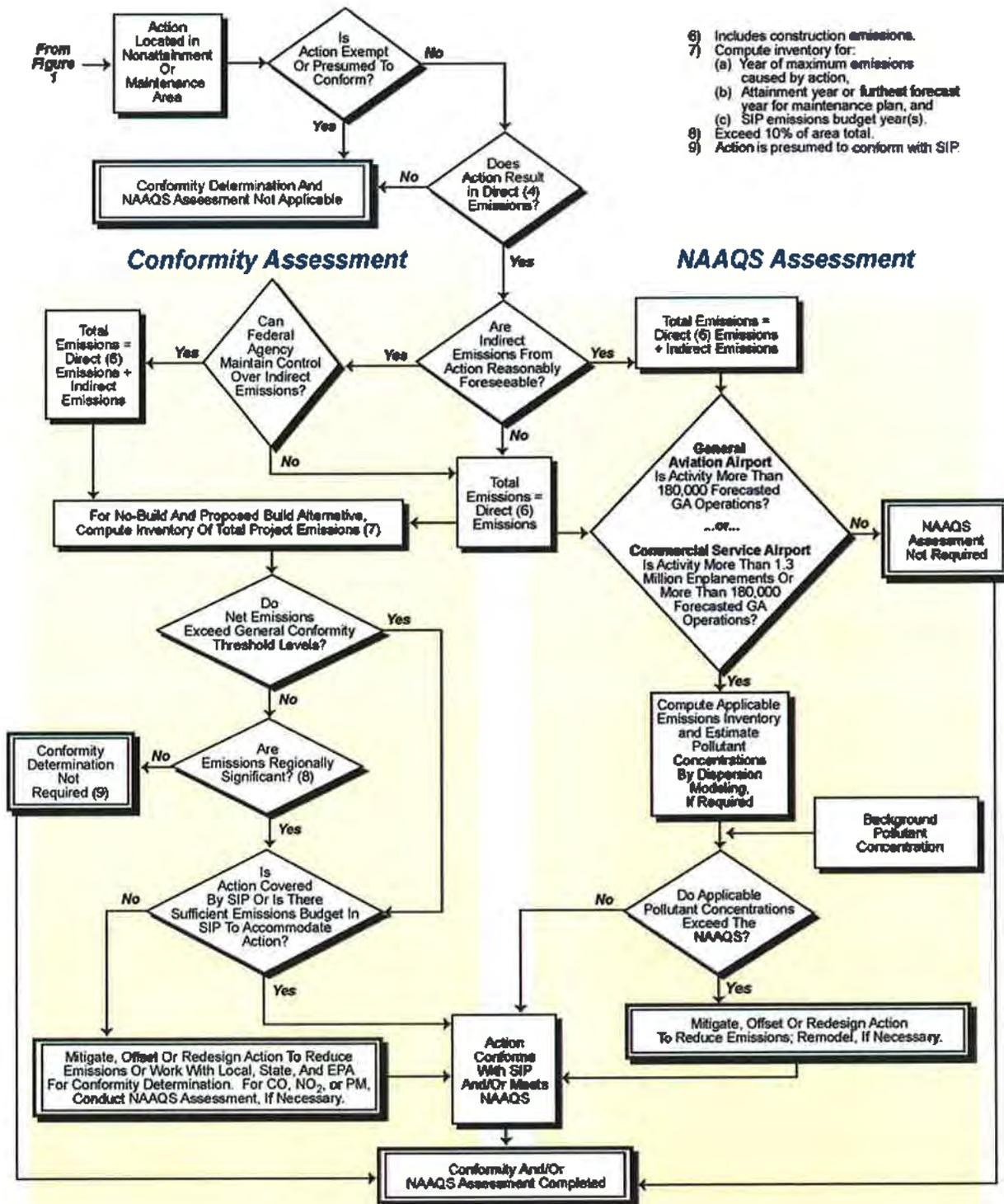
**AIR QUALITY PROCEDURES FOR CIVILIAN AIRPORTS & AIR FORCE BASES  
(THE "AIR QUALITY HANDBOOK")  
ADDENDUM (Continued)**



**Figure 1. Air Quality Assessment Process for Airports and Air Bases - Part A**

(Amended 9/04)

**AIR QUALITY PROCEDURES FOR CIVILIAN AIRPORTS & AIR FORCE BASES  
(THE "AIR QUALITY HANDBOOK")  
ADDENDUM (Continued)**



**Figure 1. Air Quality Assessment Process for Airports and Air Bases - Part B**



# AIRPORT MASTER RECORD

> 1 ASSOC CITY: REDFIELD 4 STATE: SD LOC ID: 1D8 FAA SITE NR: 22778.\*A  
 > 2 AIRPORT NAME: REDFIELD MUNI 5 COUNTY: SPINK SD  
 > 3 CBD TO AIRPORT (NM): 01 SW 6 REGION/ADO: AGL/BIS 7 SECT AERO CHT: TWIN CITIES

<u>GENERAL</u>		<u>SERVICES</u>		<u>BASED AIRCRAFT</u>	
> 10 OWNERSHIP:	PU	> 70 FUEL:	100LL	90 SINGLE ENG:	10
> 11 OWNER:	CITY OF REDFIELD	> 71 AIRFRAME RPRS:	MINOR	91 MULTI ENG:	1
> 12 ADDRESS:	626 N. MAIN STREET REDFIELD, SD 57469	> 72 PWR PLANT RPRS:	MINOR	92 JET:	0
> 13 PHONE NR:	605-472-4550	> 73 BOTTLE OXYGEN:	NONE	TOTAL:	11
> 14 MANAGER:	DARRELL RONNFELDT	> 74 BULK OXYGEN:	NONE	93 HELICOPTERS:	0
> 15 ADDRESS:	626 N. MAIN STREET, 626 N. MAIN REDFIELD, SD 57469	75 TSNT STORAGE:	TIE	94 GLIDERS:	0
> 16 PHONE NR:	605-472-0810	76 OTHER SERVICES:	AGRI	95 MILITARY:	0
> 17 ATTENDANCE SCHEDULE:	UNATNDD			96 ULTRA-LIGHT:	1

		<u>FACILITIES</u>		<u>OPERATIONS</u>	
> 18 AIRPORT USE:	PUBLIC	> 80 ARPT BCN:	CG	100 AIR CARRIER:	0
> 19 ARPT LAT:	44-51-44.9140N ESTIMATED	> 81 ARPT LGT SKED:		102 AIR TAXI:	0
> 20 ARPT LONG:	098-31-46.3430W	> 82 UNICOM:	122.800	103 G A LOCAL:	3,500
> 21 ARPT ELEV:	1307.0 SURVEYED	> 83 WIND INDICATOR:	YES-L	104 G A ITNRNT:	650
> 22 ACREAGE:	180	84 SEGMENTED CIRCLE:	YES	105 MILITARY:	0
> 23 RIGHT TRAFFIC:		85 CONTROL TWR:	NONE	TOTAL:	4,150
> 24 NON-COMM LANDING:	NO	86 FSS:	HURON	OPERATIONS FOR 12	
> 25 NPIAS/FED AGREEMENTS:NGY		87 FSS ON ARPT:	NO	MONTHS ENDING	04/19/2012
> 26 FAR 139 INDEX:		88 FSS PHONE NR:			
		89 TOLL FREE NR:	1-800-WX-BRIEF		

RUNWAY DATA  
 > 30 RUNWAY IDENT:  
 > 31 LENGTH:  
 > 32 WIDTH:  
 > 33 SURF TYPE-COND:  
 > 34 SURF TREATMENT:  
 35 GROSS WT: SW  
 36 (IN THSDS) DW  
 37 DTW  
 38 DDTW  
 > 39 PCN:

	01/19	13/31		
	2,500	3,300		
	250	60		
	TURF-F	ASPH-G		
		13.0		

LIGHTING/APCH AIDS  
 > 40 EDGE INTENSITY:  
 > 42 RWY MARK TYPE-COND:  
 > 43 VGSi:  
 44 THR CROSSING HGT:  
 45 VISUAL GLIDE ANGLE:  
 > 46 CNTRLN-TDZ:  
 > 47 RVR-RWV:  
 > 48 REIL:  
 > 49 APCH LIGHTS:

		LOW		
	- / -	BSC - G / BSC - G	- / -	- / -
	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /
	N - N / N - N	N - N / N - N	- / -	- / -
	- N / - N	- N / - N	- / -	- / -
	N / N	N / N	/ /	/ /
	/ /	/ /	/ /	/ /

OBSTRUCTION DATA  
 50 FAR 77 CATEGORY:  
 > 51 DISPLACED THR:  
 > 52 CTLG OBSTN:  
 > 53 OBSTN MARKED/LGTD:  
 > 54 HGT ABOVE RWY END:  
 > 55 DIST FROM RWY END:  
 > 56 CNTRLN OFFSET:  
 57 OBSTN CLNC SLOPE:  
 58 CLOSE-IN OBSTN:

	A(V) / A(V)	A(V) / A(V)	/ /	/ /
	/ /	/ /	/ /	/ /
	/ TREE	TREE / TREES	/ /	/ /
	/ /	/ /	/ /	/ /
	/ 36	18 / 40	/ /	/ /
	/ 731	600 / 1,860	/ /	/ /
	/ 35R	0B / 0B	/ /	/ /
	50:1 / 20:1	22:1 / 41:1	/ /	/ /
	N / N	N / N	/ /	/ /

DECLARED DISTANCES  
 > 60 TAKE OFF RUN AVBL (TORA):  
 > 61 TAKE OFF DIST AVBL (TODA):  
 > 62 ACLT STOP DIST AVBL (ASDA):  
 > 63 LNDG DIST AVBL (LDA):

	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:  
 A 030 RWY 01/19 RY 01/19 CLSD WINTER MONTHS.  
 A 042 RWY 01 01/19 MKD WITH YELLOW & BLACK METAL A-FRAME MARKERS.  
 A 070 FUEL AVBL 24 HRS WITH CREDIT CARD.  
 A 082 UNICOM UNMONITORED.  
 A 110-1 ULTRALIGHT ACTIVITY ON AND INVOF ARPT.  
 A 110-2 MIGRATORY BIRDS ON AND INVOF ARPT

# **APPENDIX D**

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## **WILDLIFE HAZARD REVIEWS**

**2011 Phase II Environmental Assessment Wildlife Study**

**2009 Wildlife Hazard Review of the Proposed Redfield Airport Construction Project**

**REDFIELD  
MUNICIPAL  
AIRPORT**

**PHASE II ENVIRONMENTAL ASSESSMENT  
WILDLIFE STUDY**

June, 2011

*Developed by:*



**U.S. Department of Agriculture  
Animal and Plant Health Inspection Service  
Wildlife Services  
420 South Garfield Avenue, Suite 300  
Pierre, SD 57501**

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- Map 5. Redfield Municipal Airport – New 17/37 Runway - Proposed Airport Layout.
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### **Appendix B. Bird Point Count Data**

### **Appendix C. RMA Wildlife Activity Log**

## **I. INTRODUCTION**

Wildlife create a variety of problems affecting aircraft operations. Most significant are the thousands of collisions that occur annually between wildlife and aircraft. The direct and indirect damages from such wildlife strikes cost millions of dollars (MacKinnon 1998, Dolbeer et al. 2008), and although very few strikes have resulted in the loss of human lives, the potential for such catastrophic losses is real. To determine the extent of all wildlife hazards at an airport, a year long (12 month) wildlife hazard review is conducted.

A 12 month wildlife hazard review identifies wildlife hazards at an airport by monitoring wildlife activity, and associations between wildlife activities and local habitats, throughout a 12-month period. A year long study is necessary because wildlife populations and activities, especially for migratory birds, fluctuate seasonally. Upon completing the review, the data are analyzed and recommendations for minimizing wildlife hazards are made.

In 1989, a Memorandum of Understanding (MOU) between the U.S. Department of Agriculture/Animal and Plant Health Inspection Service/Wildlife Services (WS) (formerly Animal Damage Control) and FAA, established a cooperative agreement between the two agencies to reduce wildlife hazards at aviation facilities. The Animal Damage Control Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C. 426-462b) and the Rural Development, Agriculture and Related Agencies Appropriations Act in 1988 (P.L. 100-202) authorizes and directs the Secretary of Agriculture to cooperate with States, individuals, public and private agencies, organizations and institutions in controlling nuisance mammals and birds deemed injurious to the public. The MOU and legislation allows WS to conduct initial on-site investigations, biological assessments (short-term studies), wildlife hazard assessments and wildlife management operations, and to complete airport wildlife hazard management plans.

The City of Redfield is planning to construct a new, realigned runway at the Redfield Municipal Airport (RMA), and is in the process of writing an environmental assessment. Due to numerous wetlands and wildlife attractants in the airport vicinity, FAA has required the city to conduct a year long wildlife hazard review of the airport, to be included in the environmental assessment. On February 18, 2010, the City of Redfield entered into a cooperative agreement with WS to conduct a wildlife review at RMA.

## **II. OBJECTIVES**

The goal for this review was to assist RMA with determining the extent of their wildlife hazards. There were six primary objectives:

1. Review available records to determine problem species, severity of problems and their daily and seasonal patterns.
2. Establish current wildlife population parameters such as species composition, abundance and activities.

3. Determine current wildlife hazards to airport operations.
4. Identify features and activities on or near RMA that contribute, or potentially contribute, to wildlife hazards.
5. Provide management recommendations aimed at minimizing wildlife hazards.
6. Evaluate wildlife influences on the proposed new runway and provide recommendations aimed at minimizing wildlife hazards.

### **III. BACKGROUND**

RMA provides service for general aviation, crop spraying and ultralights. In 2010, the FAA recommended that the City of Redfield contract with WS to conduct a year long wildlife hazard review. A cooperative service agreement between the City of Redfield and WS to conduct the wildlife hazard review was signed by Redfield on February 18, 2010 and finalized by WS on March 5, 2010. Data collection by WS began April 1, 2010 and concluded on March 31, 2011.

#### **A. AIRCRAFT OPERATIONS**

RMA is a public facility owned and operated by the City of Redfield. RMA reports a daily average of 15 operations (an aircraft take-off or landing) per day and a yearly average of about 5200 operations.

#### **B. WILDLIFE STRIKE DATA**

Wildlife strike data provides valuable information on wildlife hazards at airports, including types of wildlife struck, seasonality and time of day. The following statistics are summarized from 1990-2007 national strike data (Dolbeer et al. 2008). Gulls (20%), pigeons/doves (14%), hawks (13%), and waterfowl (9%) were responsible for the majority of strikes. Of all national strikes, 60% occurred at altitudes  $\leq 100$  ft., 73% under 500 ft. and 92% under 3000 ft. Most strikes (51%) occurred July-October. Also, most strikes were during the day (62%), and/or while on approach or landing roll (60%). Jet aircraft reported the majority of strikes and also the greatest damaging results from strikes. This is likely because turbine powered jets are faster and quieter than propelled aircraft (Solman, 1981).

Airports with strike rates greater than 1 in 10,000 operations, especially involving high-risk birds such as gulls or geese, are considered to have significant problems. Therefore, combining aircraft operations data with accurate strike data (by species) at a particular airport is important for determining their problem severity. Yet, as important as this information is for ultimately minimizing wildlife strikes, few (< 20%) known strikes ever get reported (Dolbeer et al. 1995).

In an attempt to meet study Objective 1, a search of the national wildlife strike database was conducted and the airport manager was interviewed. WS was unable to locate any reported strike data for RMA. Strike rates are typically under reported, especially at general aviation airports

with minimal operations such RMA.

### **C. CURRENT WILDLIFE HAZARD MANAGEMENT**

- RMA mows the grass/alfalfa on the airport annually which is removed from the airfield in a timely manner.
- RMA conducts ongoing jackrabbit control through shooting.
- RMA has a permanent FAA Notice to Airmen (NOTAM) stating “migratory birds on and in the vicinity of the airport.”

## **IV. STUDY AREA**

### **A. DESCRIPTION AND BOUNDARIES**

The RMA property is located on the southwest side of the City of Redfield in Spink County and covers about 200 acres.

Three land areas comprise the wildlife hazard review study area: the RMA airfield, the critical zone and the general zone. This is best visualized as a three-ringed target, with the RMA airfield being the bull’s-eye, critical zone being the second ring and general zone the outer ring. For study purposes, the RMA airfield is defined as all properties and facilities within the perimeter fence. The critical zone extends two miles out from the runways. Turbine powered aircraft in the critical zone are usually under 500 feet above ground level (AGL); 75% of nationwide strikes occur within this altitude. The general zone accounts for reviews done within a five mile radius from the center of the airfield. Five miles was established by FAA because nearly all (90%) strikes occur within 2000 feet AGL - an altitude turbine powered aircraft normally obtain within five miles.

### **B. WILDLIFE**

RMA and the surrounding area has an abundant diversity of wildlife. Many are common or fairly common to RMA, and responsible for creating wildlife hazards. Gulls, geese, ducks, hawks, blackbirds and large mammals are considered the greatest threats to aviation (Dolbeer et al. 2000), and depending on time of year, representatives from all these groups can be in the RMA area.

### **C. HABITATS**

Availability of at least one of their basic needs (water, food and cover) attracts wildlife to different habitats, including airports. Water sources can be permanent such as lakes, rivers, or streams; or they can be classified as temporary such as ditches or pools in fields, lawns, roads or even roof tops, formed naturally from precipitation (snow, rain or snow/ice melt) or by human activity (irrigation or sprinklers). Food sources are numerous and, depending on the particular

type of wildlife, include insects, earthworms, wild seeds, cultivated grains, wild plants, garden vegetables, other wildlife (fish, reptiles, amphibians, birds, mammals), or even garbage. Wildlife use natural features (trees, shrubs, weedy fields, grasslands, stream side vegetation, burrows, etc.) Or human-made structures (buildings, signs, towers, lighting fixtures, etc) for cover. Cover is classified as either escape cover (places where wildlife hide), loafing/roosting cover (temporary or overnight use), and reproductive cover. Based on these sources of attractants, habitats can be categorized as either natural or structural.

**1. Structural Habitats.** Structural habitats on the RMA airfield that potentially cater to wildlife needs include the two existing runways (13-31 and 1-19), the taxiway, tarmac, hangars and other buildings. There are many other miscellaneous structures such as the parking area, culverts, light fixtures and signs within the airfield. Beyond the airfield, but in the critical and general zones, are a grain elevator, wastewater lagoons, and rural and residential homes. The City of Redfield lies immediately adjacent to RMA on its north and east sides. Structural elements associated with the city include residential homes, parks, bridges, powerlines, sheds, dumpsters, vacant lots, fences, billboards, etc. Because structural habitats are man-made, they are often overlooked as wildlife habitat, but such habitats are present on and off the RMA airfield and do attract wildlife.

**2. Natural Habitats.** Natural habitats of the RMA airfield, critical zone and general zone include four broad types: agricultural areas, grasslands, permanent/temporary wetlands and woodlands.

*a. Agriculture.* Agricultural habitat is the most prevalent natural habitat in the RMA area. Corn, sunflower, soy beans, small grains and hay are the most common agricultural commodities in the general zone. No crops are grown inside the current airport perimeter fence however, agricultural lands lie immediately adjacent to the airport, including the area where the proposed new runway is to be built.

*b. Grass.* Grass habitats occurred within the RMA airfield, critical zone and General zone. These habitats include grazing land, hayfields, lawns and areas enrolled in the Conservation Reserve Program (CRP). Short and long grass (greater than 12 inches) were the most prevalent habitat within RMA.

*c. Wetlands.* Wetland habitats in the RMA area include rivers/streams, permanent and seasonal lakes/ponds, marshes, stock ponds and wastewater treatment lagoons. In addition to the airport drainage system, the airfield has several large poorly drained areas, some of which maintain marsh vegetation throughout the year. Immediately adjacent to the airfield is a large pond. Additionally, there are several areas that hold water seasonally or remain wet throughout the year.

Turtle Creek meanders through the Redfield area coming within about 2 miles of RMA on its west side and ½ mile on its north side. A dam on Turtle Creek within the city of Redfield backs up water creating Redfield Lake. Additionally, a large cattail choked creek flows along the west side of the airfield and into Redfield Lake.

*d. Wooded.* Wooded habitats exist within the RMA, general and critical zones. Most are shelterbelts or ornamental plantings. Shelter belts occur mainly around farmsteads and borders of croplands. Ornamental plantings are found in the residential and business areas of Redfield. Trees are located immediately adjacent to the airport in the mobile home park on the northwest edge, and along the east side of the airfield (across Hwy 281) amongst several residential homes and businesses. A few willow trees are located on the airfield and several large dead trees are found in the marsh areas adjacent to the airport.

## V. STUDY METHODS

The study was conducted over a two day period, twice each month, beginning April 1, 2010 and ending March 31, 2011. Data collection was conducted by Tim Pugh (Wildlife Biologist, USDA/Wildlife Services).

Wildlife activities and habitats in the RMA airfield, critical and general zone, were assessed to determine their hazard potential. However, the closer wildlife are to runways, the greater the hazard. Therefore, most study effort involved identifying hazards in the airfield first, followed by the critical zone, and finally the general. Also, due to their greater mobility and higher strike potential, birds were the primary focus of the study. Large and medium sized mammals were also assessed because of their high hazard potential (Dolbeer et al. 2000). Small mammals were evaluated because they are sought after by carnivores and hawks - both hazardous wildlife strike candidates. To minimize time expenditures while accomplishing study Objectives 2, 3 and 4, various methods were used to acquire pertinent data on birds, mammals and habitats.

### A. BIRDS

**1. Point Counts.** Point counts, based on the USFWS Breeding Bird Survey (BBS) (Robbins et al. 1986), were used to establish bird species composition, abundance and activities, and also identify level of habitat use by birds. This standardized survey design provides baseline data that can be compared with future RMA data, or data from other airports collected similarly.

Point counts were conducted by an observer remaining at an established observation station on the airfield for three minutes. All birds heard or seen within a 1/4 mile radius (125 acres) were recorded by individual species if possible, or otherwise by guild. When possible, the number of individuals, their primary activity and habitat used, as well as any runways they entered or flew over, were also recorded. Bird detection and identification was aided with 10x40 binoculars.

Habitats were recorded as agriculture, air, asphalt, short grass, tall grass, gravel, marsh, runway, taxiway, structure, trees and unpaved road. Activities were identified as standing, feeding, flying locally (i.e. flying between local habitats), flying past (i.e. migrating or passing through the area) or vocalizing.

Due to the subjectivity occasionally involved with deciphering primary activities or habitats, efforts were made to maintain consistency among judgement calls. If the primary habitat or activity was questionable, the first observed was recorded. Air was recorded as habitat for birds

flying past. For birds seen flying locally, the habitat they flew to was recorded. Swallows or hawks actively hunting were usually seen in the air, however, the habitat they were actually hunting above was recorded. However, if hawks were hunting from a perch, the type of perch (i.e. structure or tree) was recorded for habitat.

Five observation stations throughout the airfield were established along a survey route (Appendix A. Map 2). With the exception of station #3 during periods of heavy snow cover, stations were readily accessible by vehicle at all times of the year and traveling the route interfered little with airport operations. Each station provided a view of the airfield and included areas of known bird activity. The cumulative area covered by all five stations totaled 100% of runway 13-31, and 100% of runway 1-19. There was minimal overlap among stations and, except for point #5, each included portions of runways. Overall, the five stations included at least a portion of all habitats found on the airfield. Maps were used to estimate habitat coverage percentages at each station and habitat richness was determined (Table 1).

**Table 1.** Habitat coverage estimates and habitat richness values for point count observation stations at Redfield Municipal Airport, April 2010 - March 2011.

Habitat Class	Percentage of habitat at each observation station					Stations Combined
	1	2	3	4	5	
Agriculture	10	52	60	20	66	41.6
Asphalt	2	-	-	5	-	1.4
Grass	36	20	10	30	-	19.2
Gravel	5	3	-	-	3	2.2
Marsh/Pond	25	10	10	30	25	20.0
Runway	10	5	15	5	-	7.0
Structure	5	5	3	5	3	4.2
Trees	2	5	2	5	3	3.4
Taxiway	5	-	-	-	-	1.0
<i>Richness</i> <sup>2</sup>	9	7	6	7	5	6.8

<sup>1</sup> "Air" habitat was not included in coverage estimates.

<sup>2</sup> Richness refers to the number of different habitats within the respective observation station (¼ mile radius).

The survey route was run 8 times per month. This included a series of two consecutive runs on two mornings and two evenings each month, usually during two 24 hour periods during each month. Morning counts were started within 30 minutes of sunrise. Evening counts were started about two hours prior to sunset. These times were established to include daily peaks in bird activity.

Overall, 8 counts per month were conducted at each station, totaling 40 point counts for the airfield/month and 480 counts overall. Weather conditions and the active runway were recorded at the start of each morning and evening series. All information was initially recorded on standardized data sheets and later entered into a computer database.

For analysis, bird species were grouped into guilds according to similar size and/or life histories.

Additionally, since weather patterns and other factors are variable from year to year, timing of monthly bird activities, such as migration and nesting are also variable from year to year. To allow for more accurate year to year predictions in seasonal activities, months were grouped by seasons and analyzed accordingly. Seasons (with respective months pooled): spring (March, April and May), summer (June, July and August), fall (September, October and November) and winter (December, January and February).

Statistix® 7.0 (Analytical Software, 2000, Tallahassee, FL) was used to generate the following seasonal and overall statistics from the point count data for all birds combined, select guilds and select species: total abundance, mean abundance per point count, mean flock size, frequency of occurrence, habitat selection and activity breakdown.

**2. Critical Zone Bird Survey.** The unnamed creek that lies to the west of the airfield and empties into Redfield Lake is typically choked with cattails and appears to be highly attractive to waterfowl. This large amount of marsh along with the open water of Redfield Lake has the potential to attract waterfowl from the area wetlands and cropland, thus creating a hazard as they pass through RMA airspace. Therefore, a survey route (Appendix A. Map 7.) with 9 major observation points were established to monitor activity by large water related birds i.e. ducks, geese, pelicans, herons etc. The survey was run four times monthly in an attempt to determine the influence that this water has on attracting birds into the RMA area.

**3. General Observations.** Observations of bird species (not recorded during point counts or general zone survey), large flocks of birds, presence of high risk species such as geese and hawks, or notable patterns in bird activities, were documented. This included sightings while the observer was on the airfield or within the general zone. General observations were not conducive to data analysis and were used only for descriptive generalizations.

## **B. LARGE AND MEDIUM SIZED MAMMALS**

**1. Spotlight Surveys.** Spotlight surveys were used to establish species composition and abundances of large and medium sized mammals (e.g. deer, coyotes, jackrabbits, etc.). One driver/spotter traveled a basic route (Appendix A. Map 3.) covering all RMA runways, weather permitting. Driving speed was 10 miles per hour and mammals were located by scanning a 300,000 candle power spotlight. Species and numbers were documented for each survey. A survey was done on two nights per month following evening point counts, beginning at least 90 minutes after sunset and ending at least 90 minutes prior to sunrise. For each species, the monthly maximum number of individuals recorded in one survey was calculated.

**2. General Observations.** All mammals and sign (e.g. tracks and droppings) were documented when seen at RMA or in the immediate vicinity. These observations provided a generalized indication of species composition and relative density near the airfield.

## **C. SMALL MAMMALS**

**1. Snap-traps.** Snap-trap transect surveys were used to establish small mammal species composition and densities relative to the dominate natural habitat (grass/hay) on the RMA airfield. Sampling transects were established at two different areas (Appendix A. Map 3.). Each sampling site consisted to two 800 foot transects. The transects ran parallel to each other and were spaced 100 feet apart. Each transect contained 25 mouse snap-traps set 30 feet apart, for a total of 50 traps set at each of the two sampling sites. Traps baited with peanut butter and rolled oats were set over 2 consecutive nights.

Sampling was conducted April 14 - 16, 2010 and replicated September 1 - 3, 2010. Data from all sampling dates for each habitat were pooled and species composition was established. Then with species pooled, small mammal relative densities/habitat by catch-per-unit-effort were calculated with values expressed as a number of animals per 100 adjusted trap nights (King 1989).

## D. GENERAL WILDLIFE ACTIVITIES AND HABITATS

**1. General Observations.** Relationships among all wildlife (including birds, mammals and invertebrates), habitats and human activities were monitored through general observations. This provided clues to problem areas, key habitats, activity periods, etc., on and off the airfield, that were not obtained from other study methods. Again, these observations were not conducive to data analysis and were used only for descriptive generalizations.

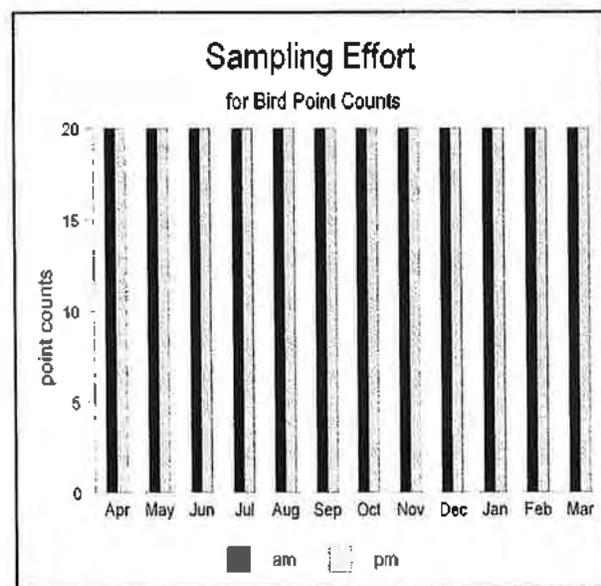
**2. Interviews.** In addition to WS general observations, pilots and city personnel were questioned regarding their observations of wildlife incidences on the airport.

## VI. RESULTS

This section presents results from the study methods described above. This includes data analysis and descriptive generalizations for birds, medium to large sized mammals, small mammals, general wildlife activities and habitats, and threatened and endangered species. A discussion of these results follows this section.

### A. BIRDS

**1. Sample Effort.** A total of 480 point counts were conducted from April 2010 - March 2011. Forty point counts were conducted each month over 12 survey periods (Figure 1). The dataset is provided in Appendix B.



**Figure 1.** Breakdown of total sampling effort for bird point counts (n=480) at Redfield Municipal Airport, April 2010 - March 2011.

**2. Total Abundance.** Throughout the point counts, 18,850 birds were recorded, representing 52 identified species and 13 guilds (Table 2). The eight most abundant species were common grackles (3958), red-winged blackbirds (2382), mixed blackbirds(1259), Canada goose (1220), rock dove (1212), lesser scaup (1196), mallard (1047) and cliff swallow (1039). Blackbirds (8785) were the most abundant guild, followed by ducks (3671), swallows (1300), geese (1220) and rock doves (1212).

**Table 2.** Breakdown of bird guilds with inclusive species and numbers of birds observed during point counts (n = 480) at Redfield Municipal Airport, April 2010 - March 2011.

Bird Guild	Inclusive Species		Number
	Common Name	Scientific Name	
Blackbirds (blackbirds, meadowlarks, starlings and cowbirds)	Common grackle	<i>Quiscalus quiscula</i>	3958
	Red-winged blackbird	<i>Agelaius phoeniceus</i>	2382
	Mixed blackbirds	na	1259
	European starling	<i>Sturnus vulgaris</i>	849
	Western meadowlark	<i>Sturnella neglecta</i>	243
	Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	65
	Brown-headed cowbird	<i>Molothrus ater</i>	17
	Bobolink	<i>Dolichonyx oryzivorus</i>	12
	<b>Total</b>		<b>8785</b>
Ducks	Lesser Scaup		1196
	Mallard	<i>Anas platyrhynchos</i>	1047
	Blue-winged teal	<i>Anas discors</i>	658
	Redhead	<i>Aythya americana</i>	278
	Northern shoveler	<i>Anas clypeata</i>	145
	Pied-billed grebe	<i>Podilymbus podiceps</i>	94
	Northern pintail	<i>Anas acuta</i>	87
	Wood duck	<i>Aix sponsa</i>	66
	Canvasback	<i>Aythya valisineria</i>	40
	Unidentified duck	na	40
	American wigeon	<i>Anas americana</i>	8
	Bufflehead	<i>Bucephala islandica</i>	8
	American coot	<i>Fulica americana</i>	2
	Eared grebe	<i>Podilymbus nigricollis</i>	2
<b>Total</b>		<b>3671</b>	
Game Birds	Ring-necked pheasant	<i>Phasianus colchicus</i>	693
	<b>Total</b>		<b>693</b>
Geese	Canada goose	<i>Branta canadensis</i>	1220
	White-fronted goose	<i>Anser albifrons</i>	2
	<b>Total</b>		<b>1222</b>
Gulls	Ring-billed gull	<i>Larus delawarensis</i>	693
	Franklin's gull	<i>Larus pipixcan</i>	33
	Black tern	<i>Chlidonias niger</i>	4
	Herring gull	<i>Larus argentatus</i>	1
	<b>Total</b>		<b>731</b>
Hawks (broadwings and accipiters)	Swainson's hawk	<i>Buteo swainsoni</i>	36
	Northern harrier	<i>Circus cyaneus</i>	29
	Red-tailed hawk	<i>Buteo jamaicensis</i>	8
	Unidentified hawk	na	7
	American kestrel	<i>Falco sparverius</i>	6

			<b>Total</b>	<b>86</b>
<b>Herons</b> (herons and other waterbirds)	Great egret	<i>Ardea alba</i>		2
	Double-crested cormorant	<i>Phalacrocorax auritus</i>		1
			<b>Total</b>	<b>3</b>
<b>Miscellaneous Birds</b> (medium sized)	Western kingbird	<i>Tyrannus verticalis</i>		72
	American robin	<i>Turdus migratorius</i>		55
	Northern flicker	<i>Cplaptes auratus</i>		21
	Eastern kingbird	<i>Tyrannus tyrannus</i>		14
			<b>Total</b>	<b>86</b>
<b>Mourning Doves</b>	Mourning doves	<i>Zenaida macroura</i>		361
			<b>Total</b>	<b>361</b>
<b>Rock Doves (pigeons)</b>	Rock doves	<i>Columba livia</i>		1212
			<b>Total</b>	<b>1212</b>
<b>Shorebirds</b>	Killdeer	<i>Charadrius vociferus</i>		131
	Unidentified shorebird	<i>na</i>		36
	Wilson's phalarope	<i>Phalaropus tricolor</i>		9
	Marbled godwit	<i>Limosa fedoa</i>		3
	Upland sandpiper	<i>Bartramia longicauda</i>		2
			<b>Total</b>	<b>181</b>
<b>Sparrows</b> (sparrows, longspurs, larks, and warblers)	Horned lark	<i>Eremophila alpestris</i>		626
	Unidentified sparrow	<i>na</i>		274
	House sparrow	<i>Passer domesticus</i>		51
	Savannah sparrow	<i>Passerculus sandwichensis</i>		8
	Chipping sparrow	<i>Spizella passerina</i>		1
			<b>Total</b>	<b>980</b>
<b>Swallows</b>	Cliff swallow	<i>Petrochelidon pyrrmaota</i>		1039
	Barn swallow	<i>Hirundo rustica</i>		211
	Tree swallow	<i>Tachycineta bicolor</i>		50
			<b>Total</b>	<b>1300</b>

**3. Mean Abundance.** While total abundance is useful when comparing data within a specific dataset, it is not always useful when making comparisons across datasets. Even though general methods may be standardized, sampling efforts between data sets are unlikely to be equal. Therefore, total abundance was divided by sampling effort to generate a *mean abundance*, expressed as birds per point count. The overall mean bird abundance at RMA, based on 480 point counts was 4.26 birds/ point count (Figure 2). Seasonally, summer had the greatest mean abundance (8.07), followed by spring (5.93), fall (2.62) and winter (0.43).

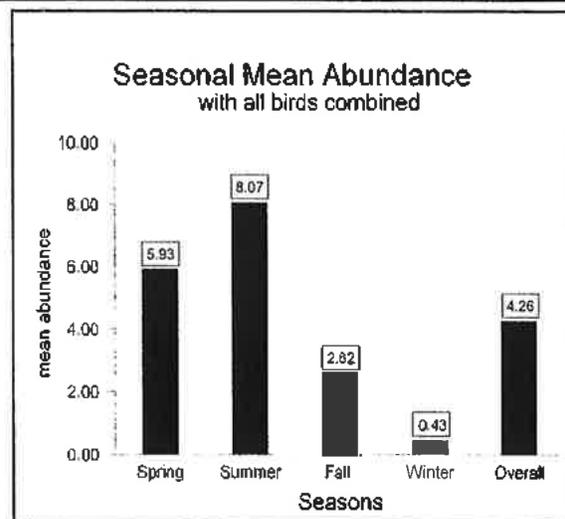


Figure 2. Seasonal mean bird abundance generated from point counts (n=480) at Redfield Municipal Airport April 2010 - March 2011.

**4. Mean Flock Size.** Although bird abundance at an airport is important for determining airstrike potential, bird flocking tendencies must also be considered. For instance, 500 blackbirds dispersed about an airfield as individuals, do not represent the same level of hazard as 500 blackbirds dispersed in one or two large flocks. Aircraft strikes could occur under either situation, however, if only a single bird is involved the likelihood of harm to the aircraft or its occupants is less than if the strike involved large flocks of birds. The mean flock size for all birds combined at RMA was 9.2 (Figure 3). Fall had the greatest mean flock size (14.0), followed by winter (9.0), spring (8.9) and summer (7.9) (Figure 3).

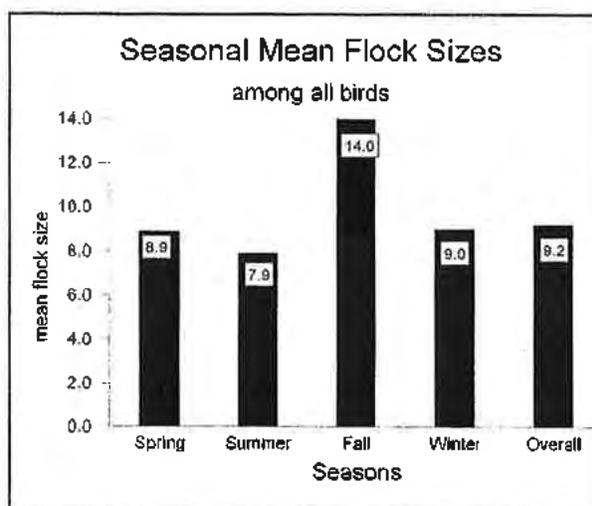


Figure 3. Seasonal mean flock sizes generated from point counts (n=480) at Redfield Municipal Airport, April 2010 - March 2011.

**5. Frequency of Occurrence.** Bird abundance and flock size are two important variables to consider in determining bird hazards at airports. A third, and just as important variable, is frequency of occurrence. Frequency of occurrence basically answers the question - how often would you expect to see a certain bird species or guild at the airport? Nine out of ten visits, or just two out of ten? Considering all bird species averaged over the entire year, birds were observed at RMA during 72% of all point counts (Figure 4). Seasonally, birds were recorded at 100% of the point counts during summer, 78% in spring, 77% in fall, and just 32% in winter (Figure 4).

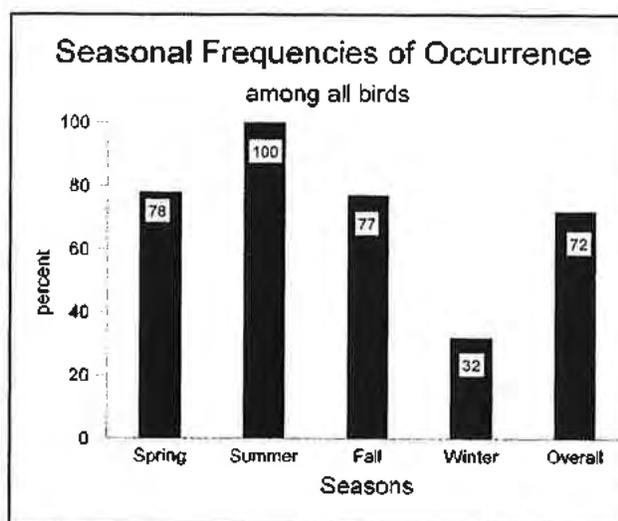


Figure 4. Seasonal frequencies of occurrence generated from point counts (n=480) at Redfield Municipal Airport, April 2010 - March 2011.

**6. Composite Hazard Rankings.** When evaluating the hazard potential of birds, three variables specific to the airport in question must be considered. This includes bird abundance, flock size and frequency of occurrence. However, the kind of birds evaluated must also be considered. Dolbeer et al. (2000) used nationwide data to rank various wildlife according to their relative hazard level to aircraft. They based their rankings on three criteria: damage to aircraft overall, major damage, and effect on flight. There is a direct relationship between the weight of a bird and the level of damage and effect on flight, and also, some birds are more apt to avoid strikes (e.g. a hawk has greater flight maneuverability than a duck). These considerations were therefore inherently factored in their final rankings (Dolbeer et. al. 2000).

To determine which birds at RMA represented the highest potential for bird strikes likely to result in aircraft damage, bird guilds were first ranked by their mean abundance, mean flock size and frequency of occurrence. Next, they were ranked by their hazard level according to Dolbeer et al. (2000). Finally, ranks for the four variables were added for each bird guild, and a composite guild hazard ranking was established specific to RMA, termed a *RMA Composite Rank*. This rank was generated for each guild seasonally to determine which birds posed the greatest threat in each season.

Spring. Based on the RMA composite rankings during spring, there were four bird guilds that stood out as the most hazardous. These included ducks, geese, blackbirds and gulls (Table 3). Ducks and geese, which have high hazard rankings nationwide (Dolbeer et. al. 2000) ranked 1 and 2 for the RMA composite ranking. Although blackbirds were most abundant (rank = 1) and most frequently observed (rank = 1), they are far less of a concern for damage or effect on flight nationwide (national rank = 9) than ducks (national rank = 2) or geese (national rank = 1) (Dolbeer et. al. 2000), thus the RMA composite rank for blackbirds is 3 (Table 3). Gulls are another guild that represent a relatively high level of danger to aircraft (national rank = 5) (Dolbeer et. al. 2000), however, they were abundant and frequent enough at RMA to rank them fairly high (RMA composite rank = 4).

Summer. During the summer, five guilds were of concern in the RMA composite ranks, including ducks, blackbirds, rock doves, mourning doves and swallows (Table 4). Ducks had the highest RMA composite rank (rank = 1) by ranking 2 or 3 in abundance (rank = 3), flock size (rank = 2), frequency (rank = 3) and hazard rank (national rank = 2). Blackbirds ranked second overall (RMA composite rank = 2), ranking highest in abundance (rank = 1) and frequency (rank = 1). The three other species of concern ranked first or second in either abundance (swallows), flock size (rock doves) and frequency (mourning doves).

Fall. There were five notable guilds during the fall; ducks, rock doves, blackbirds, sparrows and gulls (Table 5). Ducks had the highest RMA composite rank and are considered to be the most hazardous species at RMA during the fall. Ducks ranked first in both abundance and flock size at RMA, and rank second in the national hazard ranking.

Winter. Following the fall migration, few birds resided through the winter at RMA. Only 5 guilds were noted at RMA during the winter (Table 6). Except for sparrows, each of these guilds were comprised of only one species; rock doves, sparrows (horned larks and house sparrows), hawks (unidentified), blackbirds (starlings) and game birds (pheasants). None of these birds were at hazardous levels at RMA during winter.

Summary. Based on these seasonal trends, eight of the thirteen bird guilds observed at RMA (blackbirds, ducks, geese, gulls, mourning doves, rock doves, sparrows and swallows) are notably high risk birds during one season or another.

**Table 3.** Spring ranking of bird guilds (1=highest rank and most hazardous) by mean abundance per point count (n=96), mean flock size, frequency of occurrence, and hazardous level to aircraft. Includes a final composite ranking, specific to Redfield Municipal Airport, based on an average of the other four rank variables for each guild. April - May 2010, March 2011).

Guilds	Abundance		Flock Size		Frequency		Hazard	Redfield
	$\bar{x}$	Rank	$\bar{x}$	Rank	%	Rank	Rank <sup>1</sup>	Composite <sup>2</sup>
Ducks	8.68	3	12.3	2	62.5	2	2	1
Geese	9.20	2	6.6	7	24.2	4	1	2
Blackbirds	26.8	1	6.6	7	69.2	1	9	3
Gull	4.36	4	11.0	4	10.8	8	5	4
Shorebird	0.28	8	19.2	1	13.3	5	8	5
Hawk	0.12	10	11.69	3	10.0	9	3	6
Rock Doves	1.75	5	3.9	12	13.3	5	4	7
Game	1.07	6	7.8	6	42.5	3	13	8
Mourning Dove	0.30	7	6.0	10	13.3	5	7	9
Sparrow	0.24	9	7.9	5	19.2	10	10	10
Heron	0.01	12	5.0	11	1.7	12	6	11
Miscellaneous	0.11	11	6.1	9	8.3	11	12	12
Swallow	0.01	12	1.5	13	1.7	12	11	13

<sup>1</sup> Derived from relative hazard rankings established in Dolbeer, R.A., S.E. Wright, and E.C. Cleary. 2000. Ranking the hazard level of wildlife species to aviation. *Wildlife Society Bulletin* 28:372-378.

<sup>2</sup> Composite ranking, specific to Redfield Municipal Airport, generated after averaging the four ranking variables (abundance, flock size, frequency and hazard) for each guild.

**Table 4.** Summer ranking of bird guilds (1= highest rank and most hazardous) by mean abundance per point count (n=96), mean flock size, frequency of occurrence, and hazardous level to aircraft. Includes a final composite ranking, specific to Redfield Municipal Airport, based on an average of the other four rank variables for each guild. June - August 2010).

Guilds	Abundance		Flock Size		Frequency		Hazard	Redfield
	$\bar{x}$	Rank	$\bar{x}$	Rank	%	Rank	Rank <sup>1</sup>	Composite <sup>2</sup>
Ducks	7.03	3	11.2	2	45.8	3	2	1
Blackbirds	31.8	1	7.1	6	73.3	1	9	2
Rock Doves	4.35	4	12.8	1	22.5	9	4	3
Mourning Dove	2.22	5	6.1	9	47.5	2	7	4
Swallow	10.55	2	7.9	4	30.8	6	11	4
Shorebird	1.20	8	10.2	3	26.6	8	8	6
Miscellaneous	1.21	7	7.3	5	43.3	4	12	7
Geese	0.95	11	6.3	7	5.8	11	1	8
Game	1.74	6	6.3	7	40.8	5	13	9
Hawk	0.34	12	3.3	12	22.5	9	3	10
Sparrow	1.11	9	6.0	10	28.3	7	10	10
Gull	0.96	10	5.1	11	9.2	12	5	12
Heron	0.01	13	1.0	13	0.8	13	6	13
Shorebird	1.20	8	10.2	3	26.6	8	8	6

<sup>1</sup> Derived from relative hazard rankings established in Dolbeer, R.A., S.E. Wright, and E.C. Cleary. 2000. Ranking the hazard level of wildlife species to aviation. *Wildlife Society Bulletin* 28:372-378.

<sup>2</sup> Composite ranking, specific to Redfield Municipal Airport, generated after averaging the four ranking variables (abundance, flock size, frequency and hazard) for each guild.

**Table 5.** Fall ranking of bird guilds (1= highest rank and most hazardous) by mean abundance per point count (n=96), mean flock size, frequency of occurrence, and hazardous level to aircraft. Includes a final composite ranking, specific to Redfield Municipal Airport, based on an average of the other four rank variables for each guild. September - November 2010.

Guilds	Abundance		Flock Size		Frequency		Hazard	Redfield
	$\bar{x}$	Rank	$\bar{x}$	Rank	%	Rank	Rank <sup>1</sup>	Composite <sup>2</sup>
Ducks	14.89	1	18.3	1	17.5	5	2	1
Rock Doves	3.12	3	17.3	2	13.3	7	4	2
Blackbirds	14.42	2	8.4	8	37.5	1	9	3
Sparrow	1.14	5	12.4	4	24.1	2	10	4
Gull	0.75	6	7.5	9	18.3	4	5	5
Hawk	0.22	9	10.3	6	15.0	6	3	5
Mourning Dove	0.47	7	16.6	3	13.3	7	7	5
Game	1.23	4	10.4	5	24.1	3	13	8
Shorebird	0.02	10	9.0	7	0.8	10	8	9
Swallow	0.26	8	2.0	11	1.6	9	11	10
Miscellaneous	0.02	11	3.0	10	0.8	10	12	11
Geese	-	-	-	-	-	-	1	-
Heron	-	-	-	-	-	-	6	-

<sup>1</sup> Derived from relative hazard rankings established in Dolbeer, R.A., S.E. Wright, and E.C. Cleary. 2000. Ranking the hazard level of wildlife species to aviation. Wildlife Society Bulletin 28:372-378.

<sup>2</sup> Composite ranking, specific to Redfield Municipal Airport, generated after averaging the four ranking variables (abundance, flock size, frequency and hazard) for each guild.

**Table 6.** Winter ranking of bird guilds (1= highest rank and most hazardous) by mean abundance per point count (n=96), mean flock size, frequency of occurrence, and hazardous level to aircraft. Includes a final composite ranking, specific to Redfield Municipal Airport, based on an average of the other four rank variables for each guild. December 2010 - February 2011.

Guilds	Abundance		Flock Size		Frequency		Hazard	Redfield
	$\bar{x}$	Rank	$\bar{x}$	Rank	%	Rank	Rank <sup>1</sup>	Composite <sup>2</sup>
Rock Doves	0.86	3	8.3	1	6.66	5	4	1
Sparrow	1.19	2	5.9	3	13.3	1	10	2
Hawk	0.01	5	1.0	5	8.33	3	3	2
Blackbirds	0.05	4	6.0	2	8.33	1	9	4
Game	1.72	1	2.7	4	12.5	2	13	5
Geese	-	-	-	-	-	-	1	-
Ducks	-	-	-	-	-	-	2	-
Gull	-	-	-	-	-	-	5	-
Heron	-	-	-	-	-	-	6	-
Mourning Dove	-	-	-	-	-	-	7	-
Shorebird	-	-	-	-	-	-	8	-
Swallow	-	-	-	-	-	-	11	-
Miscellaneous	-	-	-	-	-	-	12	-

<sup>1</sup> Derived from relative hazard rankings established in Dolbeer, R.A., S.E. Wright, and E.C. Cleary. 2000. Ranking the hazard level of wildlife species to aviation. Wildlife Society Bulletin 28:372-378.

<sup>2</sup> Composite ranking, specific to Redfield Municipal Airport, generated after averaging the four ranking variables (abundance, flock size, frequency and hazard) for each guild.

**7. Breakdown of Guilds.** The number of different species included within the 13 bird guilds ranged from one (game birds, mourning doves and rock doves) to thirteen (ducks) (Table 2). Tables 3-6 show which guilds were the more hazardous during each season based on abundance, flock size, frequency and hazard level. To provide further insight into specific species potentially causing problems, species composition was determined seasonally for each guild, as well as overall (Table 7).

**Table 7. Seasonal species composition for bird guilds as recorded during point counts at Redfield Municipal Airport, April 2010 - March 2011.**

Guild	Species	(Seasonal Composition (% of season abundance) %				Overall
		Spring	Summer	Fall	Winter	
<b>Blackbirds</b>	Common grackle	64	44	12	-	45
	Red-winged blackbird	27	13	57	-	27
	Mixed blackbirds	1	27	12	-	14
	European starling	3	12	18	100	10
	Western meadowlark	3	3	1	-	3
	Yellow-headed blackbird	2	<1	-	-	1
	Brown-headed cowbird	<1	<1	-	-	<1
	Bobolink	-	<1	-	-	<1
<b>Ducks</b>	Lesser Scaup	24	-	53	-	32
	Mallard	44	48	10	-	32
	Blue-winged teal	5	30	14	-	18
	Redhead	8	-	11	-	8
	Northern shoveler	6	6	2	-	4
	Pied-billed grebe	<1	3	4	-	2
	Wood duck	-	5	1	-	2
	Northern pintail	2	1	-	-	1
	Canvasback	4	-	-	-	1
	Unidentified duck	-	5	-	-	1
	American wigeon	<1	<1	-	-	<1
	Bufflehead	1	-	-	-	<1
	American coot	<1	<1	-	-	<1
	Eared grebe	-	-	-	-	<1
<b>Game birds</b>	Ring-necked pheasant	100	100	100	100	100
<b>Geese</b>	Canada goose	100	100	-	-	100
	White-fronted goose	<1	-	-	-	<1
<b>Gulls</b>	Ring-billed gull	93	99	100	-	95
	Franklin's gull	6	-	-	-	4
	Black tern	1	-	-	-	<1
	Herring gull	-	1	-	-	<1
<b>Hawks</b>	Swainson's hawk	46	46	37	-	42
	Northern harrier	27	36	37	-	34
	Red-tailed hawk	27	5	8	-	9
	Unidentified hawk	-	3	12	100	8
	American kestrel	-	10	8	-	7

<b>Hérons</b>	Great blue heron	100	-	-	-	67
	D -crested cormorant	-	100	-	-	33
<b>Miscellaneous</b>	Western kingbird	-	50	-	-	44
	American robin	100	28	33	-	34
	Northern flicker	-	14	-	-	13
	Eastern kingbird	-	8	67	-	9
<b>Mourning</b>	Mourning doves	100	100	100	-	100
<b>Rock doves</b>	Rock doves (pigeon)	100	100	100	100	100
<b>Shorebirds</b>	Killdeer	97	66	100	-	72
	Unidentified shorebird	-	25	-	-	20
	Wilson's Phalarope	-	6	-	-	5
	Marbled godwit	3	1	-	-	2
	Upland sandpiper	-	1	-	-	1
<b>Sparrows</b>	Horned lark	10	13	39	98	48
	Unidentified sparrow	35	60	34	-	31
	House sparrow	55	16	18	2	15
	Savannah sparrow	-	11	5	-	5
	Chipping sparrow	-	-	4	-	1
<b>Swallows</b>	Cliff swallow	-	79	100	-	80
	Barn swallow	100	17	-	-	16
	Tree swallow	-	4	-	-	4

**8. Habitat Selection.** Habitat use was evaluated for the 13 guilds in each season they were present and posed a potential threat to aircraft (Table 8). Variability in seasonal habitat use is likely related to seasonal changes in the birds life history patterns.

**Table 8.** Seasonal habitat use by guilds at Redfield Municipal Airport, April 2010 - March 2011. Only habitats with ≥5% use were included. Wetland attractants (i.e. marsh, pond, temporary standing water) were pooled together.

Guild	Season	#	Habitats used (percentage of seasonal guild #)
<b>Blackbirds</b>	Spring	3225	Agriculture (41) Tree (25) Short Grass (16)Marsh/Pond/TSW (12)
	Summer	3823	Agriculture (30) Short Grass (27), Tall Grass (22), Marsh/Pond/TSW (15)
	Fall	1731	Agriculture (61), Structure (17), Marsh/Pond (16)
	Winter	6	Structure (100)
<b>Ducks</b>	Spring	1042	Marsh/Pond/TSW (83) Air (14)
	Summer	844	Marsh/Pond/TSW(94)
	Fall	1787	Marsh/Pond/ (99)
<b>Game</b>	Spring	129	Short Grass (46), Agriculture (32), Marsh/Pond (12)
	Summer	209	Agriculture (86), Short Grass (14),
	Fall	148	Tall Grass (42), Marsh/Pond/TSW (42) Short Grass (8), Agriculture (7)
	Winter	207	Tall Grass (77), Agriculture (17), Runway(6)
<b>Geese</b>	Spring	1108	Air (76), Runway (16), Marsh/Pond/TSW (5)

	Summer	114	Air (68), Tall Grass (28)
<b>Gulls</b>	Spring	524	Marsh/Pond/TSW (91), Air (7)
	Summer	116	Runway (83), Air (8)
	Fall	91	Runway (57) Marsh/Pond/TSW (15) Short Grass (10), Structure (13)
<b>Hawks</b>	Spring	15	Tree (47), Agriculture (20), Structure (13), Pond (7) Short Grass (7), Runway (7)
	Summer	41	Short Grass (44), Tree (22), Agriculture (15), Tall Grass (10), Rway (5) Structure (5)
	Fall	27	Structure (37), Agriculture (26), Tree (15), Short Grass (7), Runway (7), Tall (7)
	Winter	1	Tree (100)
<b>Hérons</b>	Spring	2	Air (100)
	Summer	1	Air (100)
<b>Misc</b>	Spring	13	Short Grass (45), Marsh/Pond/TSW (16) Runway (8), Tree (8), Runway (8)
	Summer	146	Short Grass (32), Tall Grass (24), Agriculture (13), Runway (13), Tree (8)
	Fall	3	Tall Grass (100)
<b>M. Doves</b>	Spring	37	Air (30), Structure (25), Gravel (19), Tree (5), Agriculture (5) Tall Grass (5), Asphalt (5)
	Summer	267	Agriculture (33), Structure (18), Gravel (14), Short (14), Air (8), Asphalt (6), Tall (5)
	Fall	57	Short Grass (33), Structure (25), Gravel (14), Air (12), Tall Grass (7)
<b>R. Doves</b>	Spring	210	Structure (95)
	Summer	523	Structure (54), Short Grass (13), Air (12), Gravel (11), TSW (8)
	Fall	375	Structure (99)
	Winter	104	Structure (99)
<b>Shorebirds</b>	Spring	34	Marsh/Pond/TSW (48), Agriculture (24), Short Grass (15), Asphalt (9)
	Summer	144	Marsh/Pond/TSW (56), Runway (22), Gravel (8), Short Grass (6)
	Fall	3	Gravel (100)
<b>Sparrows</b>	Spring	29	Structure (31), Short Grass (24), Agriculture (17), Runway (8), Asphalt (7)
	Summer	134	Short Grass (51), Tall Grass (25), Structure (18), Agriculture (6)
	Fall	137	Runway (29), Short Grass (22), Structure (19), Agriculture (10), Gravel (6)
	Winter	143	Gravel (35), Short Grass (30), Taxiway (178), Structure (10), Runway (8)
<b>Swallows</b>	Spring	2	Asphalt (50), Short Grass (50)
	Summer	1266	Short Grass (52), Marsh/Pond/TSW (26) Structure (8), Agriculture (6), Tall Grass (5)
	Fall	32	Tall Grass (100)

**9. Bird Activities.** Since habitat use is often dependant on activity, for each of the thirteen bird guilds, activities were evaluated in each season they were present (Table 9). Activities varied for most of the guilds for each of the seasons. Birds within the guilds which were in flight (flying past or flying local) obviously pose the greatest threat to aircraft. This is true for 9 of the 13 guilds at RMA, which spent a significant amount of their activities in flight ( $\geq 30\%$ ) during at least one season (Table 9).

**Table 9.** Seasonal activities by bird guilds at Redfield Municipal Airport, April 2010 - March 2011. Only activities by  $\geq 5\%$  were included. Stationary activity (i.e. standing, vocalizing, nesting, feeding) were pooled together.

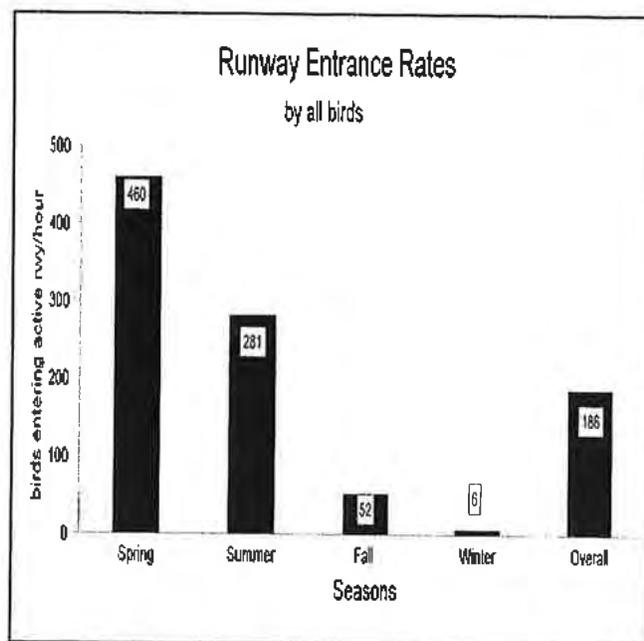
<b>Guild</b>	<b>Season</b>	<b>Abundance</b>	<b>Activities (percentage of seasonal guild abundance)</b>
<b>Blackbird</b>	Spring	3225	Stationary (73), Flying Local (26)
	Summer	3823	Stationary (67), Flying Local (31)
	Fall	1731	Stationary (78), Flying Local (21)
	Winter	6	Flying Local (100)
<b>Ducks</b>	Spring	1042	Stationary (76), Flying Past (19)
	Summer	844	Stationary (93), Flying Local (5)
	Fall	1787	Stationary (100)
<b>Game</b>	Spring	129	Stationary (98)
	Summer	209	Stationary (83), Flying Local (17)
	Fall	148	Stationary (91), Flying Local (6)
	Winter	207	Stationary (100)
<b>Geese</b>	Spring	1108	Stationary (94), Flying Past (5)
	Summer	114	Stationary (65), Flying Local (35)
<b>Gulls</b>	Spring	524	Stationary (83), Flying Local (10), Flying Past (7)
	Summer	116	Stationary (89), Flying Local (8)
	Fall	91	Stationary (79), Flying Local (19)
<b>Hawks</b>	Spring	15	Stationary (59), Flying Local (35), Flying Past (6)
	Summer	41	Stationary (65), Flying Local (35)
	Fall	27	Stationary (63), Flying Local (37)
	Winter	1	Stationary (100)
<b>Hérons</b>	Spring	2	Flying Past (100)
	Summer	1	Flying Past (100)
<b>Misc</b>	Spring	13	Stationary (100)
	Summer	146	Stationary (82), Flying Local (19)
	Fall	3	Flying Local (100)
<b>M. Doves</b>	Spring	37	Stationary (62), Flying Past (32), Flying Local (6)
	Summer	267	Stationary (72), Flying Past (17), Flying Local (11)
	Fall	57	Stationary (86), Flying Past (12)
<b>R. Doves</b>	Spring	210	Stationary (99)
	Summer	523	Stationary (79), Flying Past (13), Flying Local (8)
	Fall	375	Stationary (99)
	Winter	104	Stationary (97)
<b>Shorebirds</b>	Spring	34	Stationary (76), Flying Local (24)
	Summer	144	Stationary (67), Flying Local (31)
	Fall	3	Stationary (100)

Sparrows	Spring	29	Stationary (62), Flying Local (34)
	Summer	134	Stationary (54), Flying Local (46)
	Fall	137	Flying Local (62), Stationary (58)
	Winter	143	Stationary (78), Flying Local (82)
Swallows	Spring	2	Stationary (50), Flying Local (50)
	Summer	1266	Flying Local (80), Stationary (20)
	Fall	32	Flying Local (100)

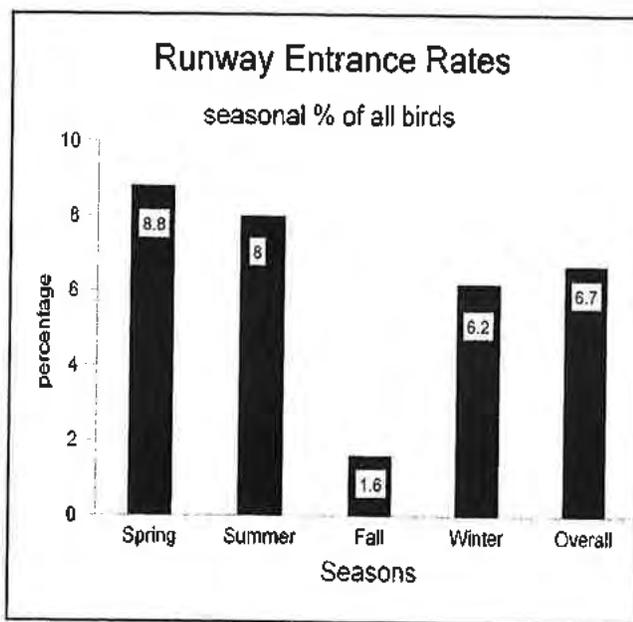
**10. Runway Entrance Rates.** Birds at RMA were often observed entering runways to feed, loaf or even roost. Birds also entered the airspace above runways as they flew from one area to another. Obviously these birds have a higher potential for strikes with aircraft than birds away from the runways. Overall, 81 birds entered or crossed the active runway per hour (Figure 5). Seasonally, summer had the highest bird entrance rate with 126 birds per hour, followed by spring (112), fall (105) and winter (3) (Figure 5). Based on all bird point counts including runway habitat (n=480), 6% of all birds recorded, entered the active runway or its airspace (Figure 6). Seasonally, 8% of all birds in fall entered the active runway, while 4%, 6% and 2% entered during spring, summer and winter respectively (Figure 6).

Hourly entrance rates also varied seasonally among the notable bird guilds (Figure 7). Blackbirds had the greatest seasonal entrance rate among any of the guilds, peaking in the spring at 52.9/hour (Figure 7).

**11. Critical Zone Bird Survey Results.** The critical zone bird survey tallied large water related birds present at 9 observation points on Redfield Lake and the unnamed creek running along the west side of RMA. Actual bird numbers present during the surveys were minimal. The number of birds counted at each observation point during a survey route were added together. Figure 8 shows the highest number of birds counted during any one survey during each month.



**Figure 5.** Seasonal estimates of hourly bird numbers entering the active runway or its airspace. Redfield Municipal Airport, April 2010 - March 2011.



**Figure 6.** Seasonal percentages of all birds observed during point counts that entered the active runway or its airspace. Redfield Municipal Airport, April 2010 - March 2011.

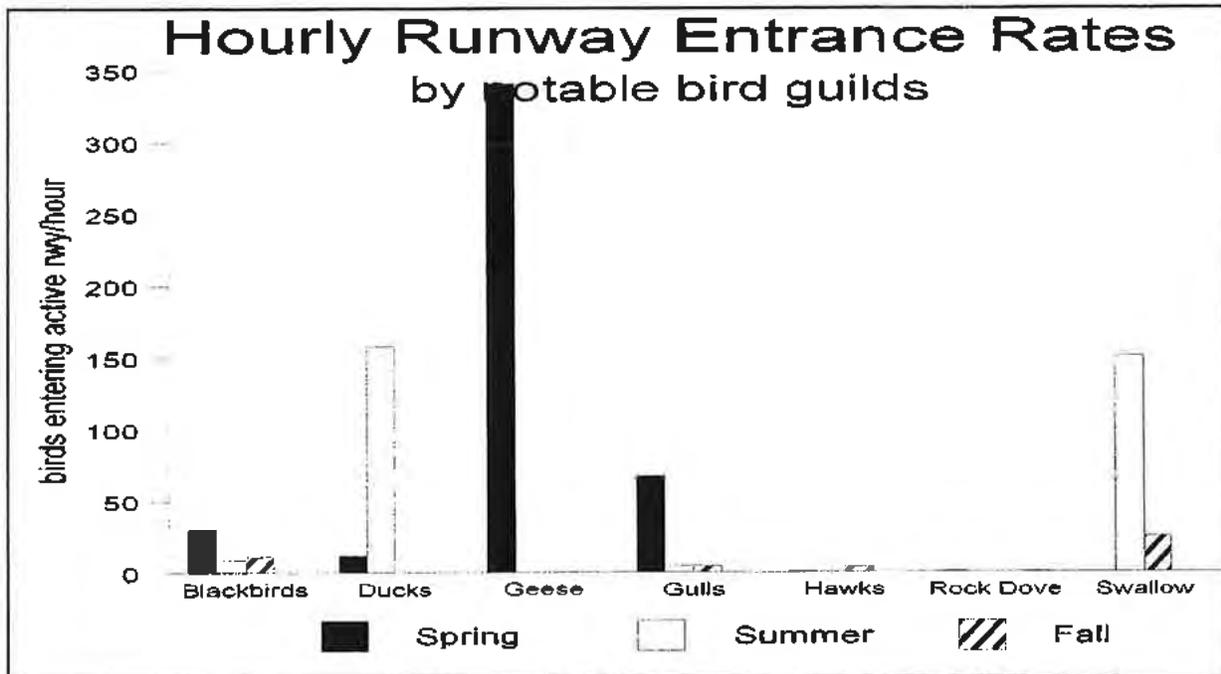


Figure 7. Seasonal estimates of hourly bird numbers (broken down by notable guilds) entering the active runway or its airspace at Redfield Municipal Airport, April 2010 - March 2011.

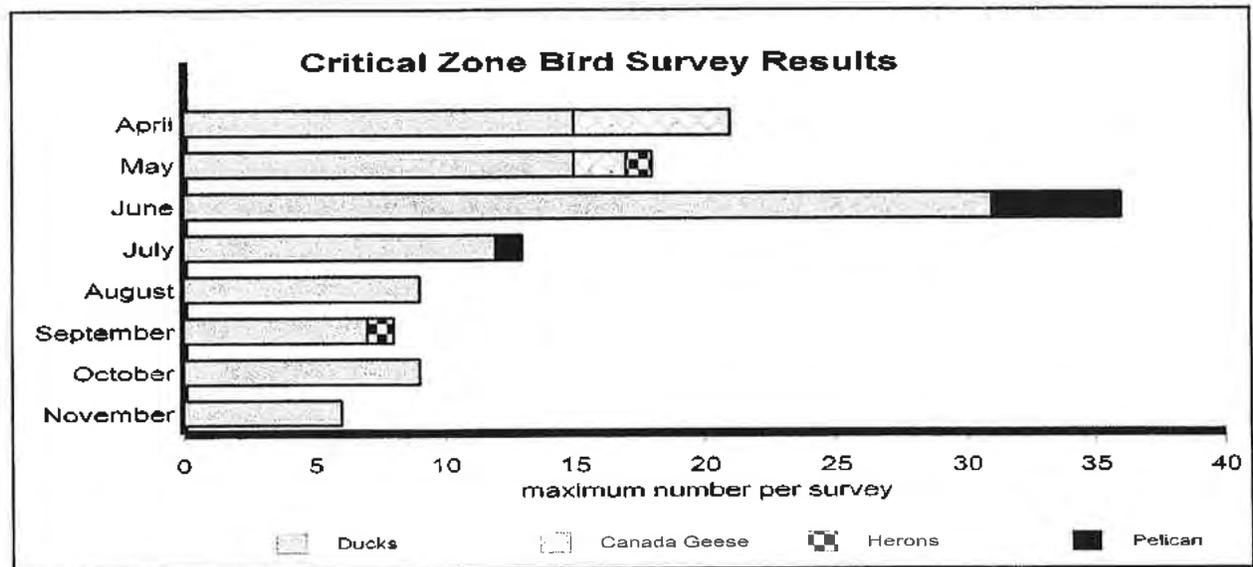


Figure 8. Maximum number of large birds observed at all observation points on the Critical Zone Bird route each month, April 2010 - March 2011.

**B. LARGE AND MEDIUM SIZED MAMMALS**

**1. Spotlight Surveys.** Two surveys were conducted each month from April 2010 - March 2011. A total of 24 surveys were conducted. The most common mammal seen during the spotlight counts was white-tailed jackrabbits (Figure 9). Deer were commonly seen on the airfield. In the two months that deer were not recorded during spotlight surveys, they were seen during daylight hours. Several other species (red fox, coyote, badger, raccoon and skunk) were seen on a rare or occasional basis.

**2. General Observations.** Throughout the RMA general zone and on the RMA airfield, sign (tracks, hair or feces) and sightings were recorded for white-tailed deer, white-tailed jackrabbit, cottontail rabbits, coyote, red fox, raccoon, striped skunks and badger. Deer were common on the airfield throughout most of the year. This was likely due to the height of the perimeter fence which was below 10 foot in many areas.

### C. SMALL MAMMALS

**1. Snap-trap Surveys.** Only one small rodent species was captured during the snap-trap surveys (Figure 10.). In 379 total adjusted trap nights (ATN's), 10 white-tailed deer mice were captured, equaling 2.64 catches/100 ATN's. This included 0 catches in 190.5 ATN's during spring (0.0/100 ATN's) and 10 catches in 165.5 ATN's in fall (5.28/100 ATN's). All were captured in grass habitat.

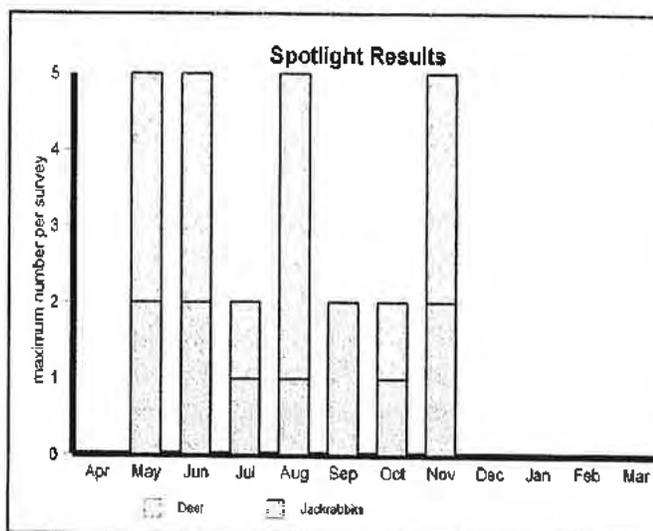
**2. General Observations.** Aside from those sampled in the snap-traps, the other small mammals on RMA included thirteen-lined ground squirrels and pocket gophers. Pocket gophers were quite abundant in several areas on the airfield.

## VII. DISCUSSION

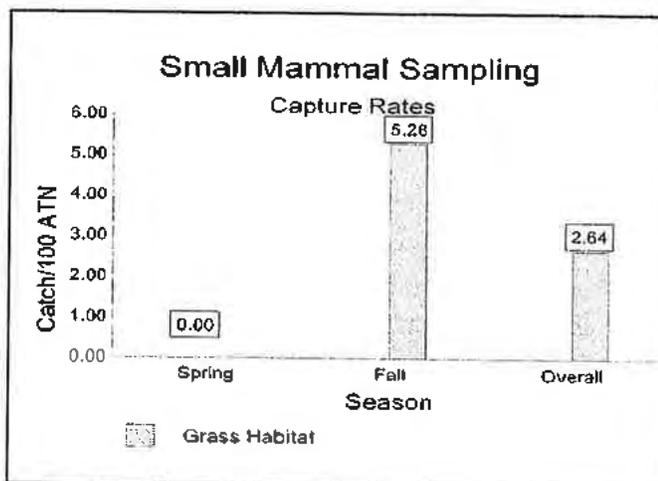
This section summarizes the above results and discusses implications related to potential and existing wildlife hazards at RMA, including those pertaining to birds, large and medium sized mammals, small mammals and the various habitats. Inferences and theories hereafter are based on data acquired during this study, widely accepted wildlife and ecological principals, interviews with RMA personnel, and/or general observations by WS.

### A. BIRDS

As the results indicate, point counts proved effective for identifying hazardous birds near the airfield. Those birds deemed most hazardous at RMA, during at least one season, included blackbirds, ducks, geese, gulls, hawks mourning doves, rock doves, sparrows and swallows.



**Figure 9.** Maximum number of mammals observed per survey during monthly spotlight surveys. Redfield Municipal Airport, April 2010 - March 2011.



**Figure 10.** Spring and fall small mammal catch per unit effort (100 Adjusted Trap Nights) results at Redfield Municipal Airport, April /September 2010.

**1. Blackbirds.** Seven species of blackbirds were seen during the bird point counts (Table 7). The blackbird guild had the second highest composite hazard ranking in summer and the third highest in the spring and fall. Additionally, blackbirds were the most abundant species in spring and summer, and the second most abundant in fall.

Most blackbirds flocks consisted of grackles, red-winged blackbirds and cowbirds (recorded as mixed blackbirds). Together, these three species were the most abundant species (86%) within the guild and dominated during all four seasons at RMA. From spring to fall, they often staged in the trees east of the airfield while feeding in the corn stubble or weedy agricultural land on the south side of the airport. Red-winged and yellow-headed blackbirds set up territories and nested in all cattail habitat on and around the airfield. This was especially noticeable in the cattail marsh section of the large wetland south of the airfield.

Only a few European starlings were present at RMA. They utilized the hangars at the airport and the other structures at the fairgrounds to the northeast side for nesting or loafing.

Although meadowlarks were not present in large numbers or flocks, as were grackles and red-wings, they are a very common prairie species in South Dakota throughout all but the coldest winter months. Meadowlarks did not form large flocks. They were typically seen in pairs or as individuals vocalizing or searching for insects in the short grass areas. Meadowlark numbers at RMA were typical for an airport in prairie habitat.

Seasonal runway entrance rates reached 30.0 blackbirds per hour during the spring (Figure 7), higher than any other species recorded during the study except gulls and geese. Due to their small size, this figure is less of a concern than if it were for larger birds. However, flocks of blackbirds can cause substantial damage to aircraft.

Blackbird activity at RMA will be best managed through vegetation management. Eliminating crops and alfalfa, maintaining grass height, preventing seed production, and keeping the airfield free of cattails will discourage most blackbird species.

**2. Ducks.** Ducks were common in the Redfield area from spring through fall, and were attracted to the wetland areas on and around RMA. Fourteen different species of ducks were observed at RMA during the study. Ducks had the highest composite hazard ranking of all species at RMA in all seasons except winter. Ducks utilized the marsh and pond area to the south of the airfield as well as numerous low areas around the airfield that held water through most of the year.

In the fall, ducks ranked first in both abundance and frequency. Ducks ranked second and third in flock size and abundance respectively, in both spring and summer. Since ducks were difficult to observe in the tall cattail marsh areas, it is likely that duck activity at RMA was considerably higher than recorded. Lesser scaup, mallards and blue-winged teal accounted for at least 82% of the ducks identified at RMA. Most ducks were observed on the open water pond south of Runway 13/31. However, ducks used the potholes and other areas of temporary standing water, including road ditches, on a regular basis.

Due to their large size and abundance through most of the year, ducks appeared to be the most hazardous species at RMA. The best way to keep duck activity to a minimum at RMA will be to

minimize all permanent and temporary wetland habitat.

**3. Geese.** Because of their large size and flocking tendencies, geese are considered the most hazardous birds to aircraft. In spring, tens of thousands of geese push north toward their breeding grounds. Flock sizes can range from two to 20,000, and fly close to the ground or up to 10,000 feet AGL. Spring migration spans from one to four weeks, depending on weather. Birds will often rest in wetlands and pastures, and feed in agricultural fields.

RMA did not appear to attract large numbers of geese. However, migrating geese did fly over the airfield on occasions in the spring often enough to be considered the second most hazardous bird at RMA in spring. Little can be done to control migrating geese.

Two pair of geese nested at RMA and were commonly seen with their goslings during the spring and early summer. Once the goslings were able to fly, geese left the area. Proper habitat management (i.e. minimizing wetlands and maintaining grass height at between 6 and 12 inches) will help to keep goose activity at RMA to a minimum. If ever paired geese are seen regularly on the airfield in spring, they are attempting to nest and should be lethally removed. Their presence greatly increases the probability of a strike, and any offspring produced will likely return to nest in the future.

**4. Gulls.** Nationwide, gulls are involved in more wildlife/aircraft strikes than any other species (Dolbeer et al. 2000). Ring-billed and Franklin's are the most abundant gulls in the Redfield area. A herring gull and a black tern were noted on one occasion each. Gulls were present at RMA in the spring and, on occasion in the summer and fall. Gulls often utilized the open water areas of the pond and standing water on the airfield. They commonly loafed on either end of Runway 13/31, creating a very hazardous situation at those times. Spring posed the greatest threat as to aircraft as abundance and flock size were ranked relatively high (Abundance = 4 & Flock size = 4). However, seasonal RMA entrance rates for gulls were second highest to geese in spring, with 67 gulls per hour flying through the RMA airspace (Figure 7).

Proper habitat management (i.e. eliminating any open water and maintaining grass height at between 6 and 10 inches) and an effective hazing program will be essential for keeping gull activity on RMA to a minimum. Any and all gulls seen on RMA should be immediately hazed away. In the event that gulls disregard scare tactics, at least one or two gulls should be lethally taken and left in a highly visible area.

**5. Hawks.** Nationwide, hawks are fairly common risks at airports. During the study, four species of hawks, or other birds of prey were identified (Table 7). Seasonally, the highest composite rank for hawks was 2 during the winter followed by 5 during the fall. Since very few birds of any species were present in winter, the high winter hazard rank of 2 is very misleading. During the point counts in winter, only one hawk was recorded on only one occasion. Although hawk activity was not highly notable during other seasons, their activity was considerably higher during the other months. Summer had the most hawk activity with 41 recordings during the point counts, followed by fall (27) and spring (17). Swainson's hawks were the most prevalent hawk at RMA. Northern harriers were the second most prevalent hawk species at RMA according to the point counts. Unlike Swainson's hawks that hunt primarily from a perch, harriers hunt by low level flying over prairie lands.

Due to their large size and their potential for damaging aircraft, the presence of hawks at an airport should always be noted as a high risk situation. Hawks are typically attracted to airports to prey on small rodent populations and rabbits. At RMA hawks used the fence posts and large dead trees for hunting perches. The best way to discourage hawks from the airport is to maintain short grass habitats, eliminate perching locations and remove prey species. Perch sites can be minimized through tree removal and using anti-perch devices. Rabbits can be effectively controlled with spotlighting and shooting at night. Small rodents can be controlled with rodenticides. See Section C. Small Mammals for further information on controlling pocket gophers and other rodents at RMA.

**6. Mourning Doves.** In summer, mourning doves ranked second in frequency. In both summer and fall they were commonly seen flying past, feeding in short grass or cropland, or perched on a fence, tree or structure. Doves migrate relatively early in fall, and consequently, few were seen after mid-fall and none were seen in winter. In summer, doves likely roosted and nested in trees and shelterbelts near RMA. Proper vegetation management and keeping seed production to a minimum should keep their activity at RMA to a minimum.

**7. Rock Doves.** Rock doves are commonly referred to as pigeons. They were abundant in the Redfield area with a flock of up to 100 regularly seen in the hangar & fairground area on the northeast side of RMA. They typically loafed on the hangars and roosted under the fairground shelter. Rock doves likely feed in area cropland or at the elevator to the east of the fairgrounds. Although rock doves were rarely seen flying over the airfield, their high numbers at the airport and flocking characteristics make them a hazard concern.

Rock doves are considered the fourth most hazardous bird guild to aircraft. If rock doves use the hangars, doors can be kept closed, entrance holes plugged, nesting areas excluded and nests removed. Regular shooting with an air rifle on night roosts is an excellent way to control rock dove numbers. Decoy traps are also effective in reducing the local population.

**8. Sparrows.** The sparrow guild was comprised of 4 species however, since these small birds are often difficult to identify, especially at distances up to 1/4 mile, some sparrows were recorded as "unidentified sparrows" (Table 7). Because of their small size, sparrows are considered a relatively low risk to aircraft. Sparrows were notable in the fall when they had a relatively high composite rank of 4. This was mainly due to their high frequency (rank=2) and relatively high abundance (rank=5) and flock size (rank=4). They also had a high composite rank in winter (rank=2) however, this was at a time when few birds were present at RMA and they were not considered a hazard.

Sparrows are seed and insect eaters that prefer to forage in open areas. Fortunately, they were typically seen only as individuals or small flocks. They were often seen feeding on insects and/or wind blown seeds on the runways, taxiways and short grass areas. They often used the hangars, runway lights and signs as perches. Proper vegetation management that minimizes insects and seed production will likely keep sparrow activity low at RMA.

**9. Swallows.** Three species of swallows were the only species of the swallow guild recorded at RMA during the study. Ninety-seven percent of all swallows recorded at RMA were during the summer months. Their high abundance (rank=2) gave them the fourth highest composite rank during the summer. They typically flew over the grass or wetland areas foraging on insects. The

small size of swallows make it highly unlikely that any direct aircraft damage would result from a strike, however, large flocks could result in multiple strikes or evasive maneuvers by a pilot. Swallow nesting was minimal at RMA.

**10. Other birds.** During the point counts, 50 species of birds from 13 guilds were identified (crows were the only guild never observed at RMA). While nine guilds were considered notable in at least one season, the remaining guilds should not be overlooked as potentially hazardous birds. This includes game birds, herons, miscellaneous species and shorebirds.

**Game Birds.** Ring-necked pheasants were the only game bird species seen at RMA. Pheasants were commonly observed on the airfield during all seasons of the year. In spring and summer, pheasants were typically seen as individuals or small groups of 3 or less. However, in late fall and winter, as cropland was harvested, pheasants were often grouped up in flocks of several dozen. The tall cattails, un-mowed areas and cropland on and adjacent to RMA is likely the reason pheasants were so common at RMA. Pheasants do not migrate and are therefore a year-round hazard. Although they have the lowest hazard rank (13) of all bird guilds, pheasants never had a high composite ranking, even in winter when they were the most abundant species. Still, pheasants are large bodied birds and their presence on the airfield could be a hazard to the small planes that utilize the RMA airfield.

Pheasants often feed on waste grain in agricultural fields or on seeds and insects in grass habitats. They will generally roost in thick vegetation such as cattails or tall grass. The removal of thick cover (alfalfa, cattails and trees) and proper grass management will keep pheasant hazards to a minimum. Lethal control may be necessary at times.

**Herons.** Two herons and a cormorant that flew over the airfield were the only species of the heron guild observed at RMA during the point counts. Herons, cranes and pelicans are large, slow moving, birds associated with shallow wetlands. Shallow wetlands are numerous in the RMA area. However, most larger wetlands that would attract these large birds are currently choked with cattails most of the year. Removal of wetlands will help to keep heron activity to a minimum.

**Miscellaneous Birds.** Four miscellaneous small to medium sized bird species were recorded at RMA (Table 2). Although these species were not seen in large numbers, 93% of these were American robins and kingbirds. Robins eat earthworms, insects and fruit while kingbirds are insect eaters. Both are somewhat sparrow like. Managing to discourage sparrows will also minimize robin and kingbird activity.

**Shorebirds.** Killdeer were the only notable species of shorebirds present at RMA. Some small unidentified sandpipers were occasionally present in summer. These species are migratory and not present in winter. Killdeer use open short grass and nest in areas with sparse vegetation and a gravelly substrate, such as areas alongside runways, taxiways, roads and parking lots. They are relatively tame birds and are common on airport runways.

Shorebirds had a composite rank of 5 in the spring and 6 in the summer. Although killdeer are relatively small birds, their flock size rank of 1 and 2 in the spring and

summer respectfully are likely why they ranked as high as they did. These birds will be difficult to discourage and will likely always be present at RMA at some level. Maintaining dense turf and minimizing gravel and small rock along the paved surfaces will be the best way to discourage their activity.

## **B. LARGE AND MEDIUM SIZED MAMMALS**

**1. White-tailed Deer.** Deer are an extreme hazard to aircraft and are responsible for ninety-seven percent of all damaging strikes with mammals (Dolbeer 2000). Deer, or their sign, was consistently observed at RMA during all seasons of the year. Deer were observed during spotlight surveys in all months from May through November and were occasionally observed crossing the runway or bedded down near the runway. The perimeter fence that surrounds the airport consists of 3 or 4 strands of barbed wire and is ineffective in excluding deer. To effectively exclude deer from the airfield, a fence will need to be a minimum of 10 feet in height throughout its length and should be tight to the ground. Gates should be strategically placed so that the occasional deer that does find its way onto the airfield can be easily herded off.

**2. Jackrabbits.** Given their size (about 4 to 6 pounds) and their attractiveness to some predators, jackrabbits pose direct and indirect threats to aircraft, and typically need to be controlled at airports. The occurrence of white-tailed jackrabbits at RMA was minimal. Jackrabbit numbers recorded on the spotlight surveys varied from zero to two. However, their abundance can fluctuate greatly due to their prolific breeding and dispersal. Jackrabbits prefer relatively flat open grassland with some taller thicker vegetation for food and cover. Habitat management, along with continued direct lethal control will keep their numbers under control.

**3. Other mammals.** Jack rabbits and deer were the only mammals observed during the spotlight surveys. However, other mammals or sign that was observed at RMA included striped skunks, fox, coyote, badger, raccoon, muskrat and house cats. Although most of the hazards associated with these species is minimal, some hazard does exist.

Although skunks are relatively small, they can pose a direct threat to small aircraft. Their digging in turf areas or activity around buildings is usually not welcomed either. Skunks use a variety of habitats including agriculture, grasslands, wetland edges and woodlands. Skunks on airports are usually associated with brush and debris piles. Skunks at RMA will be best controlled with cage or conibear traps, or with firearms while spotlighting.

Red fox and coyote are a direct potential hazard to aircraft. Like skunks, they use just about every type of habitat and feed primarily on small rodents, birds, grasshoppers and beetles. These species can be best controlled through proper habitat and rodent management. A chain link perimeter fence and the addition of an apron to the bottom can help to keep them off the airfield. Problem individuals can be effectively removed with snares or foot hold traps.

Evidence of badger presence, including burrows and tracks, was found in several airfield grass areas at RMA. The presence of badger is typically associated with colonial rodents, such as ground squirrels or pocket gophers. The abundance of pocket gophers at RMA is likely the main attractant for badger. Although they are unlikely to be struck by aircraft, badgers are fairly large (up to 25 pounds) and could cause severe damage if struck. Their tendency to excavate extensive

burrows, damaging turf and buried electrical wiring, make badgers a nuisance on airfields. Badgers can be controlled directly with trapping and indirectly through intensive rodent control.

Raccoons were never seen on the airfield however, their tracks were common in the mud around the pond and marsh areas. As with skunks and badgers, raccoons are only slight threats to aircraft at RMA, but since they can carry rabies, they can be a health threat when they reside near humans. Proper vegetation management and the removal of marsh areas will likely reduce the attractiveness of the area to raccoons.

With the influx of water on the airfield that remained throughout the year, muskrats began to colonize on the airport. At least two active muskrat huts were constructed. While muskrats do not pose a direct hazard to aircraft, geese are attracted to these structures and utilize them as nesting platforms. Muskrats should be trapped or shot when they appear. Elimination of wetlands will eliminate any possible attraction to muskrats.

During the year, house cats were occasionally seen on the airfield. Given the proximity to rural and residential homes, the potential for visits by dogs and cats exists. The occurrence of these animals on the airfield can be minimized with some modifications to a game proof fence. If dog or cat sightings become more than isolated infrequent incidents, a live trap or catch-pole can be used to capture the animal, depending on its temperament.

### **C. SMALL MAMMALS**

Small mammals such as field mice, pocket gophers and ground squirrels are not high risk airstrike candidates, simply because of their small size. However, they do represent indirect risks because they attract larger predatory birds and mammals. Snap-trap surveys indicate a low population of small field rodents at RMA. The most prevalent predators to small mammals at RMA was hawks and badgers. Pocket gophers, which are rarely caught in snap traps have colonized in several areas of the airfield. These burrowing rodents do damage to turf areas and can interfere with mowing or haying operations. They should be controlled with traps or grain baits. If small rodent populations increase, an efficient control effort including trapping, rodenticides and or fumigants may be needed to alleviate hazards.

### **D. REPTILES AND AMPHIBIANS**

Garter snakes and turtles were occasionally seen on the airfield. Snakes and turtles create a minor hazard and will be best controlled through proper vegetation management and eliminating wetlands from the airfield.

### **E. HABITATS**

**1. Structural Habitats.** Two main structural habitats of the RMA area were identified. These are the RMA airfield and the City of Redfield. In addition to the city wastewater treatment ponds, the RMA critical and general zones contained numerous structural habitats attractive to wildlife. Fortunately, most of these features did not appear to create significant hazards for aircraft.

a. *RMA Airfield.* The RMA airfield contained few man-made features that attracted wildlife. The airport hangars attracted a few sparrows and starlings which appeared to be able to access the buildings for shelter or nesting. Kingbirds, sparrows and other small bird species occasionally used the hangars and other instruments near the airport entrance for perching. However, the use of these structures were minimal and the small birds using these structures posed little hazard to aircraft.

Light fixtures and signs were used by male meadowlarks, horned larks and other small birds. Sun warmed concrete runways and taxiways attracted insects, and thus also attracted insect eating birds such as horned larks, killdeer, meadowlarks and kingbirds. Horned larks were attracted to seeds that accumulated along the runways and taxiways. These species were typically seen in small numbers and rarely appeared to be highly hazardous. Proper vegetation management as discussed below (Section VII. E. 2. b. *Grass*) will be the best way to keep these species to a minimum.

Gulls were also attracted to the concrete runways which they used for loafing or to warm themselves on cool days.

The perimeter fence was used by perching birds, especially mourning doves and hawk species. A variety of perching deterrents can be employed where birds persist in perching on structures.

b. *City of Redfield.* RMA is adjacent to the city of Redfield. Fortunately, most of the features associated with the city did not appear to create significant hazards for aircraft. The city did contain several structures used by rock doves. The grain elevator likely provides a dependable food source while the fairgrounds and possibly some residential homes, businesses and billboards provide some loafing and nesting areas. Pigeons were most noticeable at the fairgrounds. A city pigeon control program would minimize the hazards posed by pigeons to aircraft at RMA.

Residential homes, especially the mobile home park located just west of the north end of Runway 13/31, contains trees that are used by flocking blackbirds on occasion as well as a variety of other small birds. The trees associated with the businesses and homes just east of the airport provide a roost for large numbers of blackbird species that stage in the trees and feed in the cropland south of the airfield. Although the use of the trees in the mobile home park was minimal, the trees on the southeast side contributed considerably to the blackbird activity on RMA.

The city of Redfield should actively participate in land-use projects on and off the airport to discourage projects or designs that could potentially increase wildlife hazards at RMA. This might include projects to restore wildlife habitat that benefit hazardous species, or encouraging developers to use buildings, signs, and other structures with designs that discourage wildlife use.

c. *Wastewater Treatment Ponds.* The Redfield wastewater treatment ponds are located approximately 2 miles north of the RMA airfield. The ponds lie just outside of the 10,000 foot FAA recommended citing distance for turbine powered aircraft and well out side the 5,000 foot distance for piston powered aircraft. Monthly observations did not indicate that these ponds were used by significant numbers of waterfowl and there was no indication that birds from the treatment ponds utilized habitats on or near the RMA airfield.

## **2. Natural Habitats.** Natural habitats of the RMA airfield, critical zone and general zone

include four broad types: agricultural, grass, wetland and wooded.

*a. Agriculture.*

Agricultural cropland, along with wetlands, were the habitats that most attracted hazardous birds and other wildlife to the RMA area. Wetlands are discussed in detail below in section 2. *c. Wetlands*. Except for grass and alfalfa hay, no agricultural crops were produced on the airfield. However, agricultural cropland did lie immediately adjacent to RMA.

In the spring of 2010, at the beginning of the study, the crop field adjacent to the airfield lying directly west of the crosswind runway was corn stubble. At that time, it was very attractive to deer, pheasants and blackbirds. It was planted to soybeans in late spring. During the summer growing period, the soy bean crop provided cover for pheasants and deer, and attracted some smaller insect eating birds.

Land to the north of the airport, north of 174 Street was planted with several different crops. This cropland attracted a few small insect eating birds during the growing season. Few birds were observed in this land during the point counts.

Agricultural land to the southwest of the airport appeared to be enrolled in CRP. Except for the wetland issues associated with this land, it mainly appeared to provide cover for pheasants, deer, rabbits and other medium/small mammals.

The agricultural land south of the airfield had been planted to soy beans in 2009 and had very little vegetation during the early spring of 2010. It was never planted in 2010, most likely because of the moisture so late in the planting season. These fields produced a weedy overgrown area that attracted a large number of seed eating birds, especially blackbirds and mourning doves.

Farther to the south, the agricultural land south of 175<sup>th</sup> Street was similar. It started out as soy bean stubble. Part of it was planted to corn, but the vast majority of it was left unplanted and became weedy and overgrown. Seed eating birds were attracted to the weedy fields. Corn attracted a variety of insect eating species during the growing season. Blackbirds were attracted to the corn as it went into the milk stage. After harvesting, the corn was again attractive to seed eating birds and wildlife such as blackbirds, pheasants, doves and deer.

Although cropland was not present on the airfield, it did help to attract and hold large numbers of pheasants on the airfield. It attracted deer for feeding and cover, and it attracted large flocks of blackbirds to areas directly under the south approach to Runway 13/31. Blackbirds were highly concentrated in this specific area due to the juxtaposition of area wetlands, the trees southeast of the airfield, and the agricultural cropland south of the airfield. This concentration did pose a small hazard to aircraft when the mixed blackbird species used this area. The removal of any one of these three attractants might eliminate their activity at this location.

Other adjacent agricultural and natural habitat in the RMA critical and general zone should be monitored. If they become a significant wildlife attractant, RMA should work with the landowners or purchase the property. It should be managed as grass habitat as discussed in the following section.

*b. Grass.*

Grass habitat is very prominent in the RMA area. Wildlife use is dependant on grass height, density and species composition. Grass habitat on the airfield and the unpaved crosswind runway consisted of several grass species interspersed with alfalfa and a variety of annual and perennial plants. The spring and summer of 2010 brought abnormally high moisture to the Redfield area. Vegetation remained green and grew well through the summer and into October. In July, alfalfa was at 24" in height and some areas of the RMA airfield had vegetation exceeding 36 inches. Haying operations at RMA began in July, however, airfield vegetation was quick to recover and by September, the alfalfa was at 18 inches in height.

There are no firm guidelines for grass management at airports. The main principles to follow are to use a grass cover and mowing regime that does not result in the buildup of rodent numbers or the production of seeds, forage or insects desired by birds. Short grass (2-4 inches) is preferred by many bird species because it allows clear sight distances, provides forage for grazing birds and does not impede access to insects or other invertebrates. Gulls, blackbirds, doves, horned larks, crows and small insectivorous birds (swallows) prefer short grass because of these factors.

Longer grass heights (6-12 inches) are attractive to birds such as some species of ducks, meadowlarks, and some species of hawks and owls because of the food and cover provided. When a short grass regime (5 inches or less) is chosen, management ordinarily involves mowing when grass reaches the upper height limit. The advantages of short grass management are that it does not attract ground nesting birds or large numbers of small mammals and insects, and it reduces availability of seed for seed-eating birds. The disadvantages of short grass are that it exposes earthworms and insects for bird availability and provides an open view for loafing.

Grasses grown at heights between 6-10 inches reduce bird access to earthworms, insects and other small prey animals and denies good visibility to loafing birds. If the grass is allowed to grow higher than 10 inches, it may attract ground nesting birds and provide habitat for mice, voles and shrews which in turn may attract fox, coyotes, hawks and other predators. Additionally tall grass that is permitted to develop seed heads is used as food by rodents, geese and other birds.

Warm season grasses that produce fine seed or no seed are preferred. Cool season grasses (i.e. bluegrasses & bromes) typically have two growing seasons each year. These seasons are unpredictable and vary in time and length each spring and fall. However, warm season grasses (i.e. buffalo, gramma, & blue stems) have only one growing season which is fairly short, predictable from year to year and therefore, much easier to manage. Western wheat grass produces a lot of seed when initially planted however, once established it creates a dense cover and little if any seed. Mixed with intermediate wheat grass, it can create a good, dense hay crop while minimizing seed production.

From a wildlife hazard standpoint, alfalfa has many negative aspects and no benefits. In the spring, alfalfa begins to increase in height and density, and provides a habitat attractive to several nesting species such as pheasants and ducks. Areas containing alfalfa are also high in insects, seeds and rodents and are therefore attractive feeding areas for additional wildlife species. Unlike warm season grasses, alfalfa will typically grow well after cutting, and continue well into

the fall. Unless it is kept short with frequent mowing, it provides excellent habitat for pheasants, rabbits, rodents, fox and deer throughout the year.

Preferred grass management at RMA, on all areas within 600 feet of runways include: maintaining warm season grasses; a mowing regime that produces a dense cover while minimizing seed production; produces a good hay crop; eliminates non grass species; maintains a grass height between 6 and 10 inches (except for the short period in early summer just prior to hay cutting); and discourages ground nesting birds. Grass areas greater than 600 feet from the runways should be managed in the same manner however, grass height should be maintained at between 6 and 20 inches.

Vegetation that does not get cut during the annual haying operations should be cut by other means to maintain proper grass height. Areas with terrain too rough or irregular to mow should be leveled and re-vegetated so that mowing can be accomplished.

Hay bales at RMA were removed from the airfield in October. Prior to their removal they were used consistently as perches by hawks. In a short amount of time they will also become an attractant to rabbits and rodents. If left into the winter, they will become an attractant to deer as well. Hay bales should be removed from the airfield immediately after baling and never stored on the airfield.

### *c. Wetlands.*

The importance of wetlands as wildlife attractants should not be underestimated. The Redfield area contains a complexity of temporary, seasonal, semi-permanent and permanent wetland basins, such as ponds, streams, rivers, marshes, lakes and drainage areas, that provide water, food and/or cover for many wildlife species.

The spring and summer of 2010 had an abundance of moisture and several areas on or adjacent to the RMA airfield remained wet during most or all of the year. Even as the summer progressed, water was slow to disappear. Heavy rains in July and August increased standing water to above the levels in spring. Map 4. (Appendix A) shows the high and low levels of the more significant areas of standing water on the RMA airfield and surrounding area. Standing water was abundant. Even in July, following considerable rains, many areas of the airfield had standing water.

The presence of active muskrat huts on two airfield wetlands suggest that those wetlands may permanently contain standing water. These wetlands consistently held ducks and contained considerable vegetation, especially in the late summer and fall. From a distance, they often appeared not contain water, but upon closer examination, it was evident that they not only contained considerable water, but also contained numerous nesting ducks as well as a host of amphibians.

A series of potholes, or areas of temporary standing water are located just outside the perimeter fence, south of the airfield, and between the two runways (See Map 4. Appendix A) These wetlands held water through much of the spring and summer, but finally dried up in September. While holding water, they almost always held ducks and occasionally other water associated birds such as phalaropes and small shorebirds.

The large open water pond directly south of Runway 13/31 held water throughout the year. It typically contained an abundance of ducks creating a potential threat to aircraft using this runway. Grebes, gulls and geese were also associated with this wetland on a seasonal basis. The dead tree and cattails associated with this pond often attracted blackbirds or other perching birds. Part of this pond was located to the east, across Hwy 281. This portion of the pond was bordered by thick cattails, which provided cover for the broods of wood ducks and blue-winged teal that utilized the pond.

The upper end of this pond meanders to the west and is choked with cattails. Standing water existed in the cattail choked part of this wetland until freeze up in December. Aerial photos of this area from previous years indicate that standing water in this cattail choked area may be intermittent depending upon year. These cattails attracted nesting blackbirds and provided cover utilized by pheasants and deer. Numerous small and medium sized mammals utilized this area as represented by the numerous tracks in the bordering mud.

Further south of the pond and large cattail choked area lies medium sized wetlands on either side of 175th Street. The wetland on the north side of 175<sup>th</sup> (Appendix A, Map 4.) was choked with cattails and contained water until November. Ducks utilized this wetland through most of the spring and summer as did pheasants, killdeer and a few nesting blackbirds. The wetland on the south side of 175<sup>th</sup>, appeared to be flat flooded cropland without any standing vegetation. It did however, grow considerable shorter aquatic plants and attracted ducks and shorebirds. This general area consisted of a mix of several habitats coming together. Cattails, open water, corn, fallow/weed fields, flooded cropland, water-filled road ditches, fence posts, telephone/electrical wires etc. created attractive habitat for a variety of species.

Redfield lake and the unnamed drainage that wrap through the area approximately ½ mile to the west and north of RMA have the potential to attract considerable hazardous birds to the area. Fortunately, surveys of these wetlands indicated that they attract relatively few hazardous birds. Except for a rare pelican and a few ducks, large birds were not observed on Redfield Lake. The unnamed drainage, while containing water through most of the year, gets choked with cattails early in the summer and is utilized by only a few ducks.

*d. Wooded.*

Trees and shrubs provide sites for perching, roosting and nesting by a variety of bird species. They are also used for food and cover by many mammal species as well.

A few large dead trees were associated with the pond and wetland area to the south and southwest of the airfield. These trees provided hunting perches for hawks and for staging blackbirds.

In the wetland just west of the north end of the crosswind runway, a group of several small willow trees stand in the middle. While these trees were small and could not support much weight, they have the potential to grow larger and be attractive to more hazardous birds. During the study, the trees did not pose a large hazard and attracted only small birds (mostly black birds) on occasion.

Several large trees lie east, and parallel to Hwy 281, just east of the RMA airfield. Mixed

blackbird species used these trees for staging while feeding in the cropland to the south of the airfield. Groups of blackbirds using these trees numbered from a few dozen to several hundred.

The trailer park on the northwest side of the airport contained numerous trees. Small birds (blackbirds, sparrows, starlings etc.) used these trees on occasion. Although these numbers were small and birds using these trees did not appear to be a hazard to aircraft, they have the potential to become a hazard in the future.

Future tree planting and growth outside of the airfield should be monitored to ensure new hazards do not develop.

## **VIII. LEGAL STATUS OF WILDLIFE SPECIES**

Wildlife and their habitat are protected by federal, state and/or local laws. The legal status of any species at RMA must be determined before wildlife hazard management is attempted. Many agencies involved in regulating wildlife are supportive of managing wildlife hazards, depending on species and control methods involved. RMA is responsible for adhering to current regulations involved in wildlife control and for obtaining appropriate permits necessary to take and/or harass wildlife.

### **A. FEDERAL REGULATIONS**

The U.S. Government has passed several Acts protecting wildlife, including the Migratory Bird Treaty Act, Lacey Act, Endangered Species Act, Eagle Protection Act, National Environmental Policy Act, and Federal Insecticide, Fungicide and Rodenticide Act. These are the basis for most wildlife regulations issued in the Codes of Federal Regulations (CFR). Several agencies are responsible for implementing these regulations, many affecting wildlife control at airports. Federal wildlife laws are mostly administered by the U.S. Fish and Wildlife Service (USFWS) and involve primarily migratory birds and threatened & endangered (T&E) species. RMA must annually obtain necessary permits issued for taking either non-T&E migratory birds, or T&E species, should the need arise, from the USFWS.

### **B. STATE AND LOCAL REGULATIONS**

Several South Dakota State Agencies have regulations affecting wildlife control at airports. Pertinent regulations are in the South Dakota Codified Laws. State wildlife laws are primarily administered by the South Dakota Department of Game, Fish and Parks (SDGFP) and involve resident and migratory birds, mammals, reptiles, amphibians and protected species.

## **IX. RECOMMENDATIONS**

There are four general approaches to reducing wildlife hazards at airports. These include habitat modification, exclusion, behavior modification and population reduction. An integrated application of these approaches is the best plan for reducing damage by wildlife, while minimizing effects of control measures on humans, non-target species and the environment.

1. Habitat modification is manipulating landscape features (i.e. food, water and cover)

that support and attract wildlife. It is the most effective long-term measure for reducing wildlife hazards on or near airports. Since food is a component of habitat, controlling rodents and other prey to reduce predatory birds and mammals is a form of habitat modification. Care should be taken so habitat modifications to reduce an airport's attractiveness to some species does not inadvertently increase the airport's attractiveness to other species that are equally or more hazardous. Also, the modification of wetlands requires permits from the US Fish and Wildlife Service (USFWS), Army Corp of Engineers and possibly other departments.

2. Exclusion involves the use of physical barriers designed to exclude problem wildlife from structural and natural habitats. Examples of barriers include perimeter fencing to exclude deer and other animals from the airfield or sealing openings in buildings to exclude birds.

3. Behavior modification uses various techniques to dissuade wildlife from committing objectionable activities. This might involve the use of auditory harassment methods such as pyrotechnics, propane exploders or distress calls. It might also involve visual harassments such as predator effigies, lights, or even a vehicle. Commercial repellents may also have applications for altering animal behavior.

4. Population reduction is the direct removal of individuals from local populations of animals which pose a hazard to aviation. Population reduction can be achieved using either lethal or non-lethal methods. These include the use of toxicants, trapping, shooting, or capture and relocation.

House sparrows, European starlings and rock doves are the only state and federally unprotected bird species at RMA, and no permits are required to lethally control these species. However, state and federal regulations apply to all other bird species, as well as most mammals and other wildlife.

Provisions within federal and state regulations allow the lethal control of blackbirds which are causing damage, about to damage, pose a threat to human health or causing a nuisance. Prior to any wildlife control, RMA must become familiar with all state and federal regulations involving applicable species.

It is possible for RMA to integrate the four general approaches and reduce their wildlife hazards. This section will discuss WS recommendations for coordinating, implementing and monitoring wildlife control efforts at RMA.

## **A. COORDINATING CONTROL EFFORTS**

**Recommendation A1.** Form a Wildlife Hazard Management committee, including representatives from all city/airport departments likely involved with monitoring or controlling wildlife activities (e.g. management, operations, maintenance, security, etc.). The committee should meet annually and members should be able to provide input from their department, as it relates to wildlife management plans and issues.

**Recommendation A2.** Appoint a Wildlife Hazard Management coordinator. The coordinator

will be responsible for overseeing all wildlife and control activities and insuring the following recommendations are completed:

a. Maintain an accurate and detailed FAA strike database for RMA of all wildlife strikes including those involving reports by pilots or traffic control operators, and wildlife FOD found within 200 feet of a runway and likely involved with a strike. FAA bird strike/incident reports (Form 5200-7) should be made available to pilots and airport personnel to report strikes. All strikes and suspected strikes (FOD) should be reported with these forms (or via the FAA website at <http://wildlife-mitigation.tc.faa.gov/wildlife/> with as much information as possible.

Unidentifiable birds should be examined by qualified personnel, or feathers should be sent to the Smithsonian Institute for positive identification. For more information on collecting and submitting feather remains, go the FAA website: <http://wildlife-mitigation.tc.faa.gov/wildlife/speciesid.aspx> .

b. Maintain a daily checklist such as the Wildlife Activity Log (Appendix C) to document any notable wildlife related incidents other than an airstrike. This should include, but not be limited to, occurrences of hazardous wildlife (large birds or large flocks of birds) near the airfield, emergency control incidents, near misses between wildlife and aircraft, unusual sightings, animal behavior patterns (e.g “flocks of mallards flying over the airfield each morning, always from south and seen landing in fields to north”) or any other general wildlife observation. Documentation becomes critical for identifying and monitoring wildlife hazards.

c. Develop a timetable for completing all wildlife related projects, and discuss this timetable with the appropriate personnel and the wildlife hazard management committee. Projects should be prioritized and implemented as time and funds allow.

d. Actively participate in land-use projects on and off the airport to discourage projects or designs that could potentially increase wildlife hazards at RMA. This might include projects to restore wildlife habitat that benefit hazardous species, or encouraging developers to use buildings, signs, and other structures with designs that discourage wildlife use.

**Recommendation A3.** Designate a wildlife patrol person that can immediately respond to wildlife hazards on the airfield (e.g. large birds loafing on or near a runway), document all dead wildlife potentially involved with airstrikes, and document wildlife activities in the area.

a. The designated wildlife patrol person should have up-to-date training to ensure they are familiar with wildlife identification and control techniques, especially the use of pyrotechnics, shooting and firearm safety.

b. The wildlife patrol person will collect wildlife strike information based on wildlife FOD found during daily runway sweeps. Information should include species involved, number of individuals, date, location (as specific as possible), current time and approximate time of previous runway sweep, and any other comments. All animals found

within 200 feet of a runway are considered strikes unless another cause of death is known. This information should be forwarded to the wildlife coordinator and added to the FAA strike database for RMA.

## **B. IMPLEMENTING CONTROL EFFORTS - STRUCTURAL HABITATS**

**Recommendation B1.** Install and maintain a deer proof fence with a height of at least 10 feet around the entire perimeter of the airfield. The fence should be kept tight to the ground. An apron should be attached to the bottom of the fence in low areas or where deer are able to crawl under.

**Recommendation B2.** Buildings should be inspected for the presence of pigeons or other birds. Holes or openings in the buildings should be filled or covered to prevent access by pigeons or other birds.

## **C. IMPLEMENTING CONTROL EFFORTS - NATURAL HABITATS**

**Recommendation C1.** All natural habitats at RMA should be managed as a grass hay crop that minimizes activity by hazardous wildlife.

- a. Maintain a dense turf of warm season grasses and a mowing regime that produces little or no seed. To prevent seed production, hay (or mow) all grass areas prior to seed maturation (usually mid June to early July).
- b. Eliminate alfalfa, and other non-grass vegetation from the airfield and airport property.
- c. Following the first annual cutting of hay, all grass on or within 600 feet of the runways should be maintained at a height of 6-10 inches until the next growing season. Areas beyond 600 feet of the runways should be maintained at a height of 6-20 inches.

**Recommendation C2.** All hay bales should be removed from RMA as soon as possible, and never stored on or adjacent to the airfield.

**Recommendation C3.** Several wetlands on and adjacent to the RMA airfield should be modified so that do not attract waterfowl or gulls. Elimination of these wetlands through draining or filling may be the only way their attraction can be eliminated: These wetlands, which are identified on Map 4 (Appendix A.) include:

- a. The pond located directly under the approach to Runway 31.
- b. The two airfield wetlands that lie on either side of the north end of the crosswind runway.
- c. The low area directly east of the hangars, south of the entrance road that intermittently holds water.
- d. The series of potholes in the agricultural land just south of the airfield

**Recommendation C4.** Redfield should attempt to take possession of the land south of the current airfield (within T116N R64W Section 16). It should be converted to a grass hay crop and managed as described in Recommendation C1 and in Section VII, E. 2. b. *Grass*.

**Recommendation C5.** All trees should be removed from the airfield.

**Recommendation C6.** All dead trees on lands south and southwest of the airfield, especially those associated with the large wetland to the south of the airfield should be removed.

#### **D. IMPLEMENTING CONTROL EFFORTS - WILDLIFE**

For most wildlife hazards addressed in the "Discussion" subsections for birds and mammals, control methods are provided in the 2 volume, *Prevention and Control of Wildlife Damage*. This can also be found online at <http://icwdm.org/handbook/index.aspx>. For further specifics on wildlife control, review the *Wildlife Hazard Management at Airports* manual which was produced by the FAA and Wildlife Services in 1999 and revised in 2005. RMA may have received a copy of this manual, if not, it can be downloaded from the following site: <http://wildlife-mitigation.tc.faa.gov/wildlife/Resources.aspx>.

**Recommendation D1.** Since most wildlife are protected under federal and state laws, RMA must secure appropriate permits prior to lethal control. Each year RMA should apply for a USFWS migratory bird permit to allow the lethal removal of migratory birds (except threatened and endangered species and eagles) as needed to maintain safe operations at RMA.

**Recommendation D2.** Maintain a "no tolerance" policy for hawks, ducks, gulls and geese at RMA. Immediately haze these birds when seen on or approaching the airfield.

**Recommendation D3.** Whenever non-lethal hazing techniques become ineffective, particularly for ducks, gulls and geese, use lethal techniques to reinforce hazing. Hawks should be lethally removed, or trapped and relocated, depending upon USFWS approval. House sparrows, European starlings and rock doves can be killed without permits. All other species require annual depredation permits.

**Recommendation D4.** Whenever hazardous birds are present in large numbers, issue NOTAM's advising air traffic of hazardous birds in the area.

**Recommendation D5.** Monitor deer activity on the airfield. Whenever deer are identified on the airfield, they should immediately be hazed off until the deer proof wildlife fence can be erected.

**Recommendation D6.** Monitor jackrabbit populations and implement spotlight/shooting methods as needed. Whenever Jackrabbits are found on the airfield, they should be removed.

#### **E. MONITORING CONTROL EFFORTS**

There is no guarantee that the recommendations and methods outlined in this report will consistently work in controlling wildlife hazards at RMA. A monitoring program will be essential for determining the effectiveness of control efforts. Additionally, as time passes, habitats, wildlife populations and human influences will change, and so will hazards. It is important that RMA routinely monitor all aspects of their wildlife control efforts to insure new hazards are identified and addressed as soon as possible.

RMA must be cautious when comparing future wildlife data with current and previous data. For the first few years following implementation of a wildlife management program, it may appear as though wildlife incidents are actually increasing. However, this is likely because as wildlife hazard awareness among personnel increases, so will observations and documentation of those hazards.

**Recommendation E1.** Review strike data and wildlife activity logs annually, and compare with previous years to identify trends in all factors involved, such as wildlife species, time of day, season, location on airfield, etc., and to possibly identify new problems.

**Recommendation E2.** Conduct a systematic spotlight count for jackrabbits, fox, deer, skunks, etc. monthly. Record numbers and respond appropriately when populations of jackrabbits are increasing or predators are observed on the airfield.

**Recommendation E3.** Consider having study methods in this study duplicated every 10 years to track progress of control methods and identify chronic and new hazards.

## **X. CONSIDERATIONS FOR THE PROPOSED 17/35 RUNWAY**

The City of Redfield is proposing to purchase approximately 171.76 acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces and a future runway realignment that will involve the construction of a new runway, turnarounds, and a taxiway at the Redfield Municipal Airport. Below is an excerpt of the Draft Master Plan regarding the scope of the runway realignment project:

*“construct a new primary runway 17/35, 3500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 12/31 as the cross wind runway and when the current pavement reaches the end of its useful life make a determination as to what surface is most economical. Till in the portion of the wetland that is necessary to construct the 35 end of the runway.”*

This wildlife hazard review of the RMA airport also attempted to identify the wildlife issues associated with the new proposed runway and expanded airfield. The proposed runway is located on the current airport property and all of the recommendations made above in section IX will remain the same with the addition of the new runway. The new issues or considerations for the expanded airport are primarily associated with the wetlands and agricultural land on or adjacent to this new airfield.

Maps 5 & 6 (Appendix A) show the approximate layout of the proposed new airport. The new runway will lie on the west side of the current airfield and extend to the south onto new land that

is not within the current airport boundaries. The RPZ's for this runway are also identified and extend further to the north and south. The issues and considerations for the new runway are discussed below.

#### **A. Influence of the large pond and associated cattail wetland.**

The south end of the proposed 17/35 runway will pass through the large cattail choked wetland that stretches from east to west across the land south of the current airfield. The cattails and other vegetation associated with this wetland attract nesting and roosting blackbirds, as well as provide habitat and cover for various species, including medium and large mammals. The wetland areas (open water as well as emergent vegetation) adjacent to the new runway would need to be eliminated to keep hazardous wildlife away from the runway. There should not be any wetland or wetland habitat within a minimum of 600 feet of this runway. This should be filled along with the fill needed for the construction of the runway.

The open water pond associated with this wetland lies about 600 feet from the proposed runway. This pond has proved to be an attractant to several ducks of various species throughout the year, except when it is frozen over. Although numerous ducks use this pond, the diving ducks typically stayed on the pond to feed and loaf while puddle ducks typically left and returned in pairs or singles. It did not appear that ducks were heavily flying back and forth to the pond. If they did, the level of hazard that they pose to aircraft would be much greater. They did however, with the pond located directly underneath the approach to the 13/31 runway, create a very significant hazard to aircraft. The existence of this pond 600 feet east of the new runway does present a potential hazard to aircraft if ducks continue to use this pond, which they will. However, the level of hazard that it poses to Runway 17/35 will be substantially less than its hazard to 13/31. Another consideration for this pond is that it contributes to the attraction of gulls to the RMA airfield. Gulls on the airfield will seek out paved areas (runways) where they can loaf and have good visibility to watch for predators. It is also possible, with the vast amount of wetlands in the Redfield area, that gulls will be attracted to the runways regardless of any wetlands on the RMA airfield.

Ideally, it would be best to eliminate this pond by filling or other means. If this cannot be done, modifications can be made to make it less attractive to ducks and gulls. These modifications might include the removal of cattails on the edges, lining the edge with rock, overhead wire grids, etc. Considering the size of this pond, filling the pond with bird balls may be an effective and cost efficient method of eliminating it as an attractant.

Additionally, just southwest of the pond, on the north side of 175<sup>th</sup> Street, and just east of the approach to the proposed runway lies another small cattail wetland. This wetland was located near observation Point 5. It held standing water and cattails through most of the study and attracted several ducks, blackbirds and killdeer. Due to its close proximity to the proposed runway, it should be filled or otherwise eliminated.

#### **B. Influence of the Agricultural Land**

Agricultural land is attractive to a variety of species. The species it attracts will depend upon if it is being cropped and if so, which crop is planted. Currently there is agricultural cropland adjacent to the west side of the airfield. The proposed runway will somewhat parallel this land

and will lie about 400 to 800 feet of it. During the hazard review, this land was commonly used by deer, hawks, pheasants and flocking blackbirds. Had the land been planted to a different crop during that time, additional or different species may have also been attracted to it. Generally, agricultural crops are not compatible with airports. Due to its close proximity to the new runway, it would be best if the agricultural land on the west side of the current airfield be removed from crop production and converted to a warm season grass hay crop and managed as described previously in Recommendation C1 and in Section VII. E. 2. *b. Grass*.

Most of the land south of the current airfield will become part of the new airfield. This land is a mix of wetlands and agricultural cropland. During the wildlife review, much of the cropland was left unplanted. This was either due to the land being left fallow intentionally or that it was too wet to plant. Some areas will likely always be too wet to plant while the condition of others will vary from year to year. Depending upon the stage of the study, land was either disced stubble, fallow & full of volunteer weeds, or plowed/disced and later planted. Regardless, this cropland was like a magnet to a variety of birds, especially flocks of mixed blackbird. All of this new airfield land should be converted to a grass hay crop and managed as recommended in Recommendation C1 and in Section VII. E. 2. *b. Grass*.

### **C. RPZ Management.**

The proposed RPZ on the south end of Runway 17/35 will extend south of 175<sup>th</sup> Street. Much of this field had standing water on it during the wildlife hazard review and contained several ducks and shorebirds through much of the year. That part of the field that was dry enough to plant was planted to corn. The mix of corn, wetlands and unplanted field attracted flocks of mixed blackbirds and mourning doves, in addition to the ducks. Since this land lies directly under the southern approach to Runway 17/35, it should be altered so that the standing water that attracts waterfowl is eliminated. Converting the land to a grass hay crop as described previously will help to keep large, hazardous birds to a minimum.

The RPZ on the north end of runway 17/35 appeared to be drained enough to not have standing water issues. It was maintained as cropland and although it did appear to attract some blackbirds and other small birds, they were never in large flocks. Although this area did not pose a large threat to aircraft, if the City of Redfield does take control of this property, it would be best to convert it also to grass hay.

These habitat recommendations for the new 17/35 runway discussed above are simple and basic - eliminate wetland habitat and cropland wherever possible on and around the airport.

## **XI. CONCLUSION**

It is important to remember that a one year study has its limitations. While the data is representative of what occurred at RMA during the study period, there is no assurance it represents a typical year. Weather patterns, wildlife activities and human influences on wildlife will likely vary from year to year, and sometimes dramatically. Therefore, potential strike hazards may also vary from year to year.

Information collected during this study indicates a variety of wildlife using the RMA airfield.

Fortunately to this point, RMA has had relatively few, in any known strikes which have resulted in minimal damage to aircraft and personnel. However, the very low number of aircraft operations that occur at this small general aviation airport, along with under reporting, may be the main reason for this.

Many of the recommendations outlined in this study are in fact currently addressed by RMA. However, controlling those populations currently most hazardous at RMA may require additional planning and training.

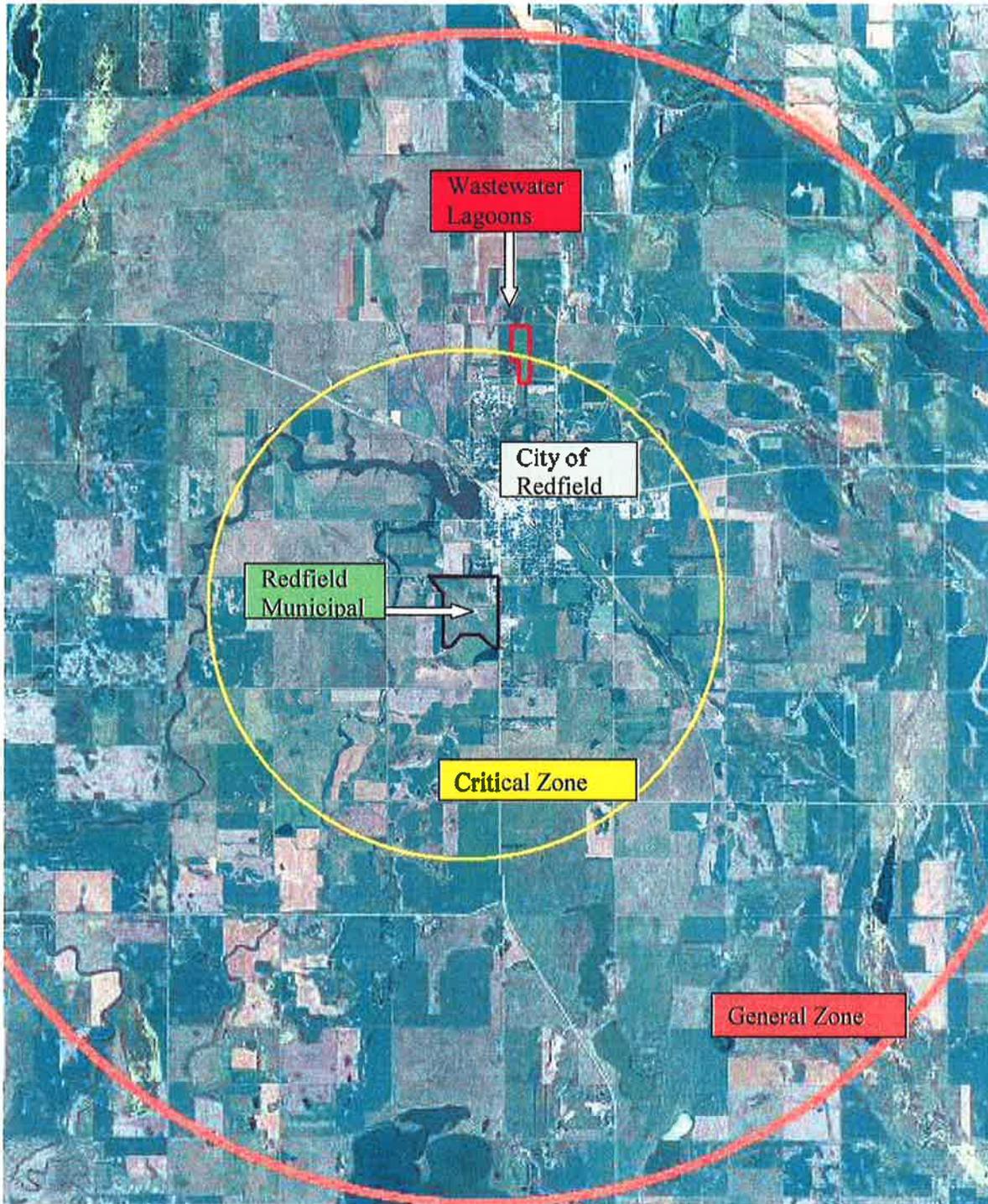
Overall, RMA appeared to have few major hazard issues. The pond that lies beneath Runway 13/31 and the lack of a deer proof perimeter fence are likely the two major issues of concern. As wildlife adjust, as operations increase, and if RMA expands to allow turbine driven aircraft, the current hazard level could change. Therefore, Redfield should consider having the study methods in this study duplicated every 5-10 years to track progress of control methods and identify new areas of concern.

## **XI. LITERATURE CITED**

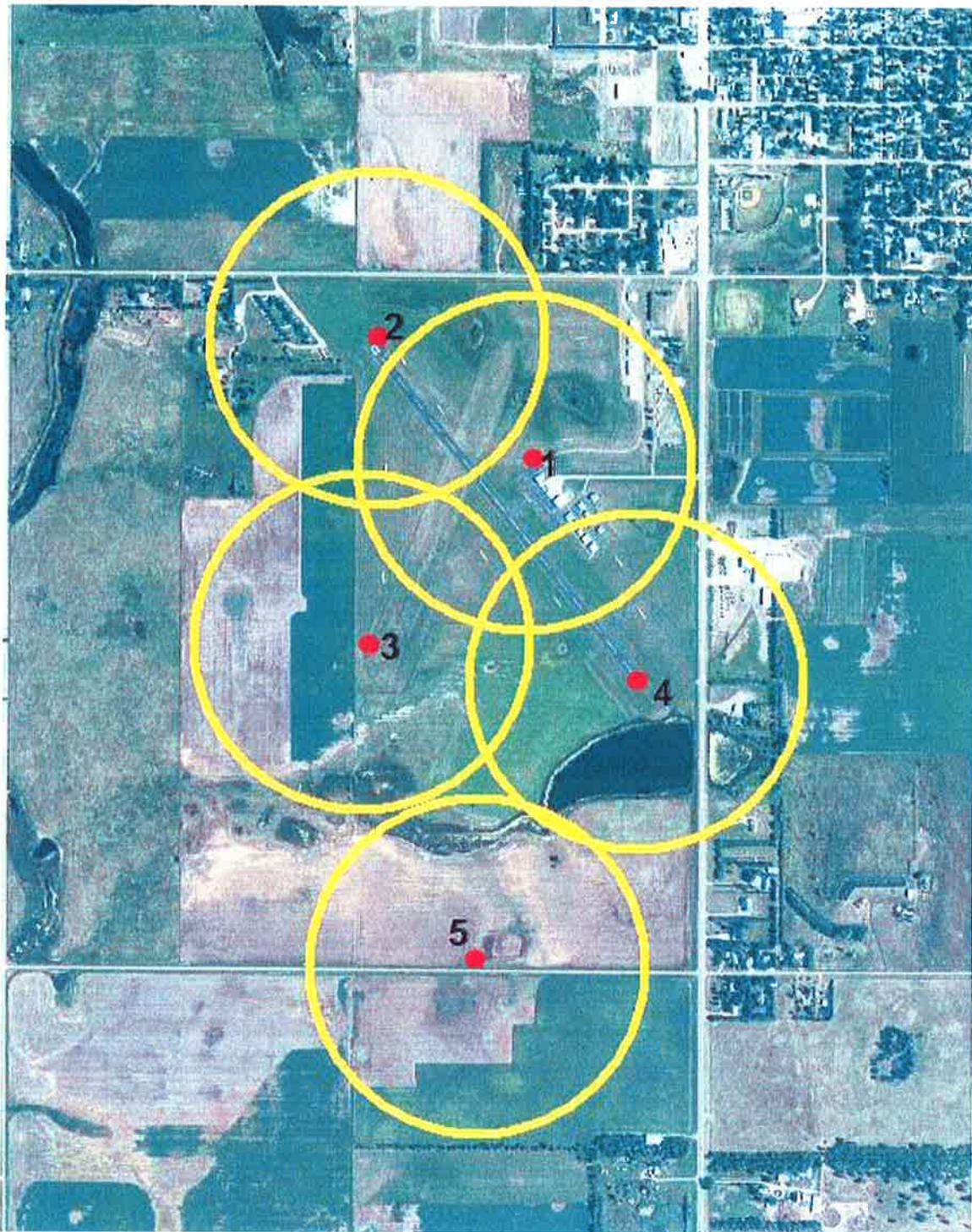
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# **Appendix A**

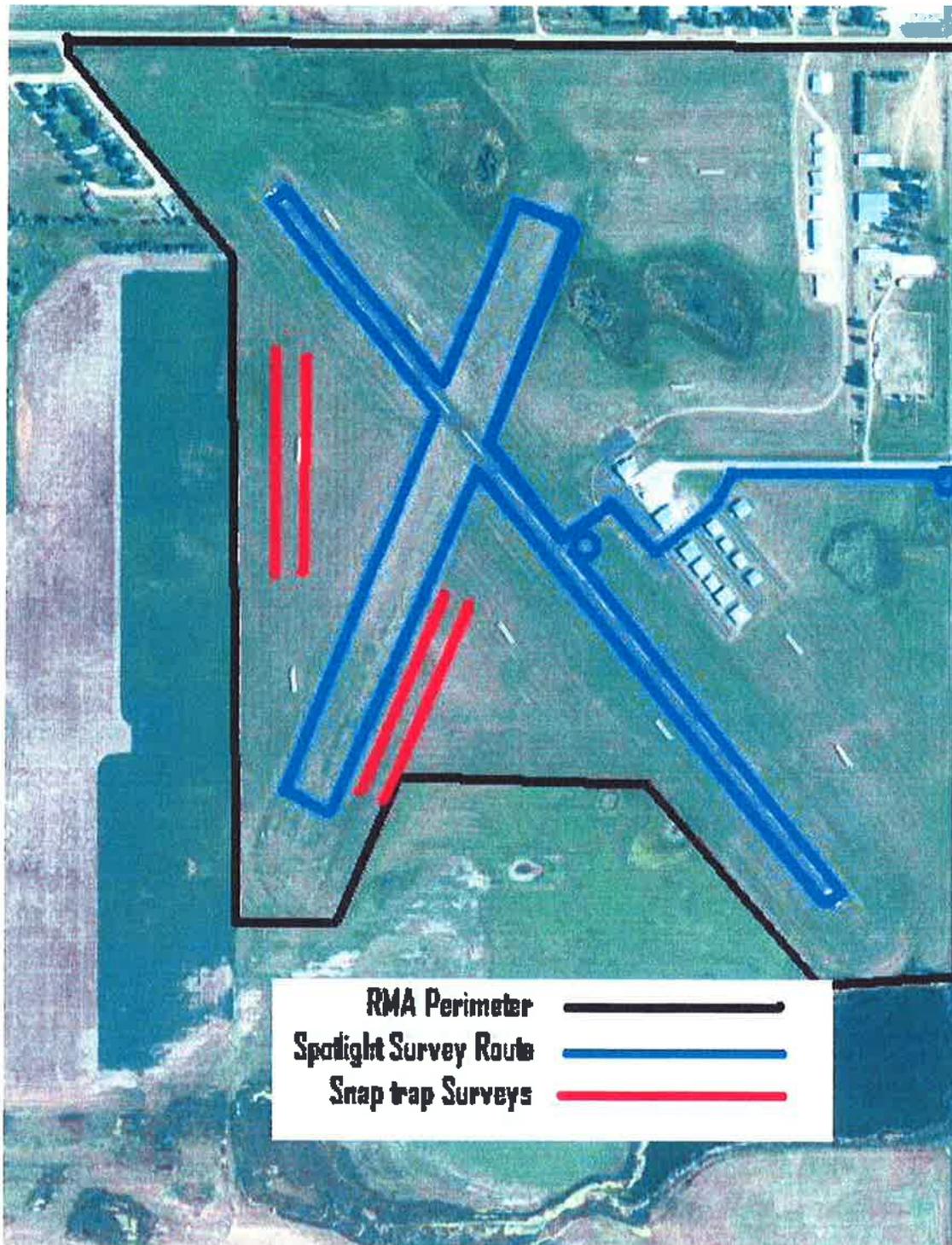
## **MAPS**



Map 1. Redfield Municipal Airport General Zone Boundaries.



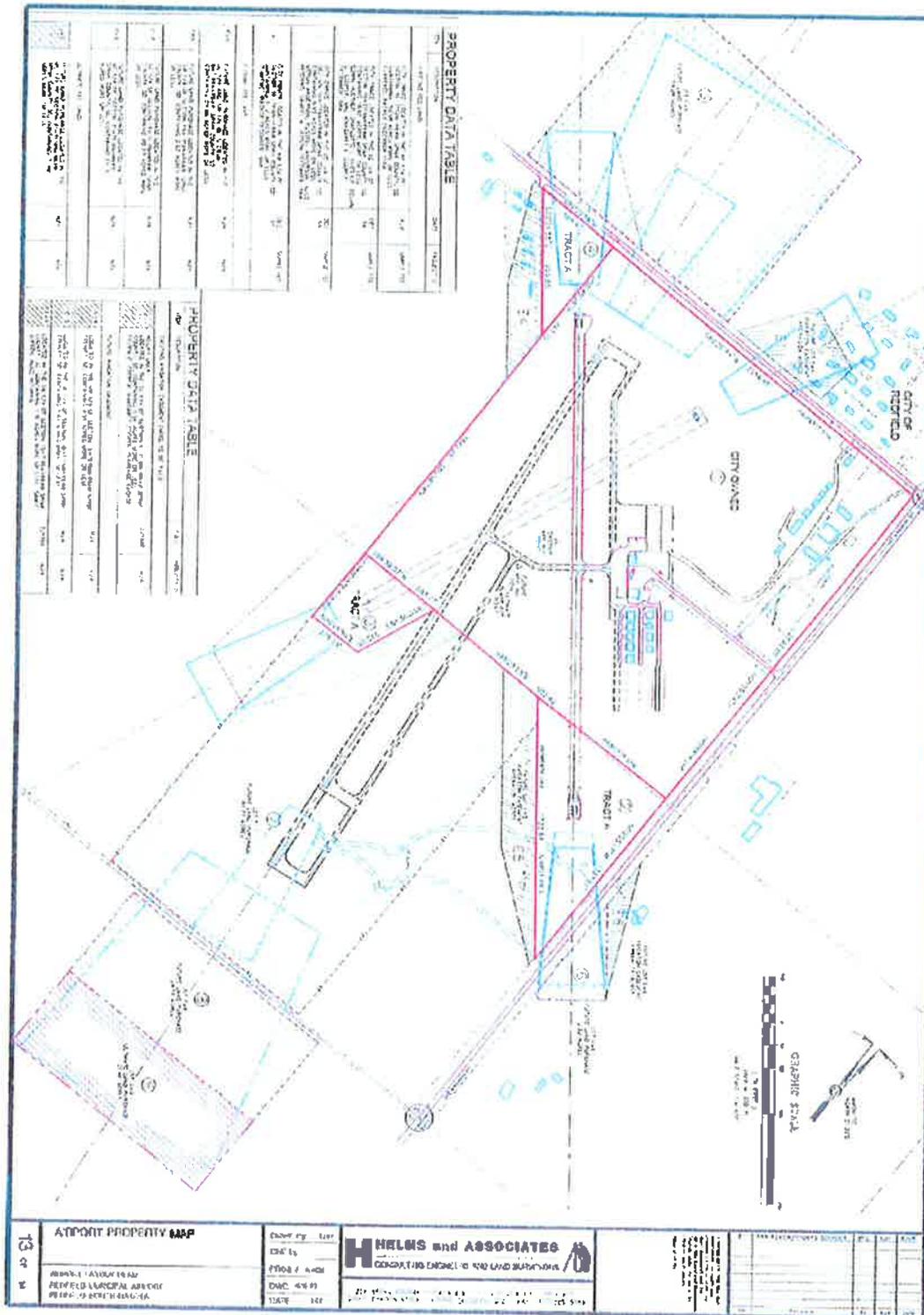
Map 2. Redfield Municipal Airport Bird Point Count Observation Stations.



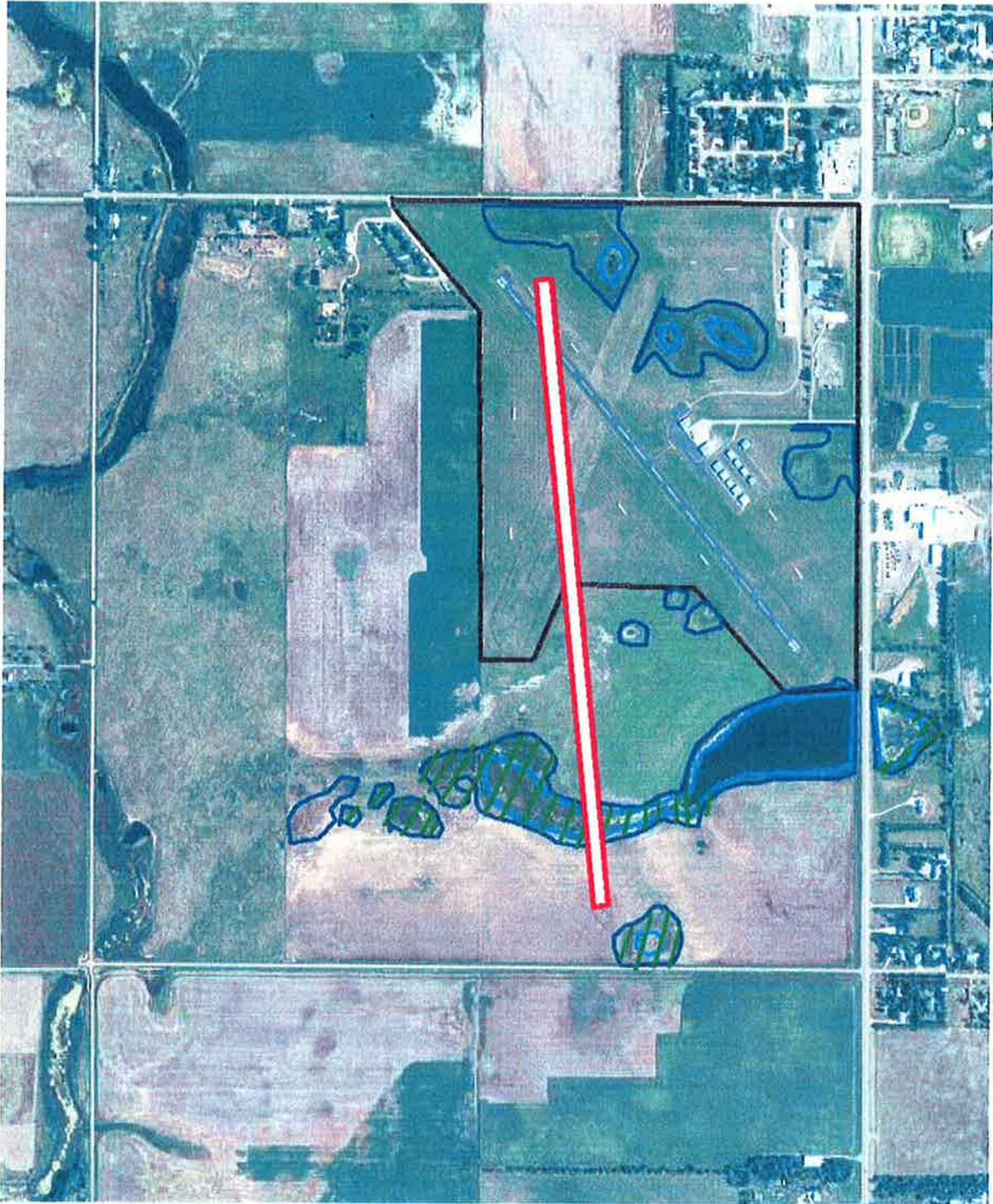
Map 3. Redfield Municipal Airport Spotlight Survey Route and Snap Trap Transect locations.



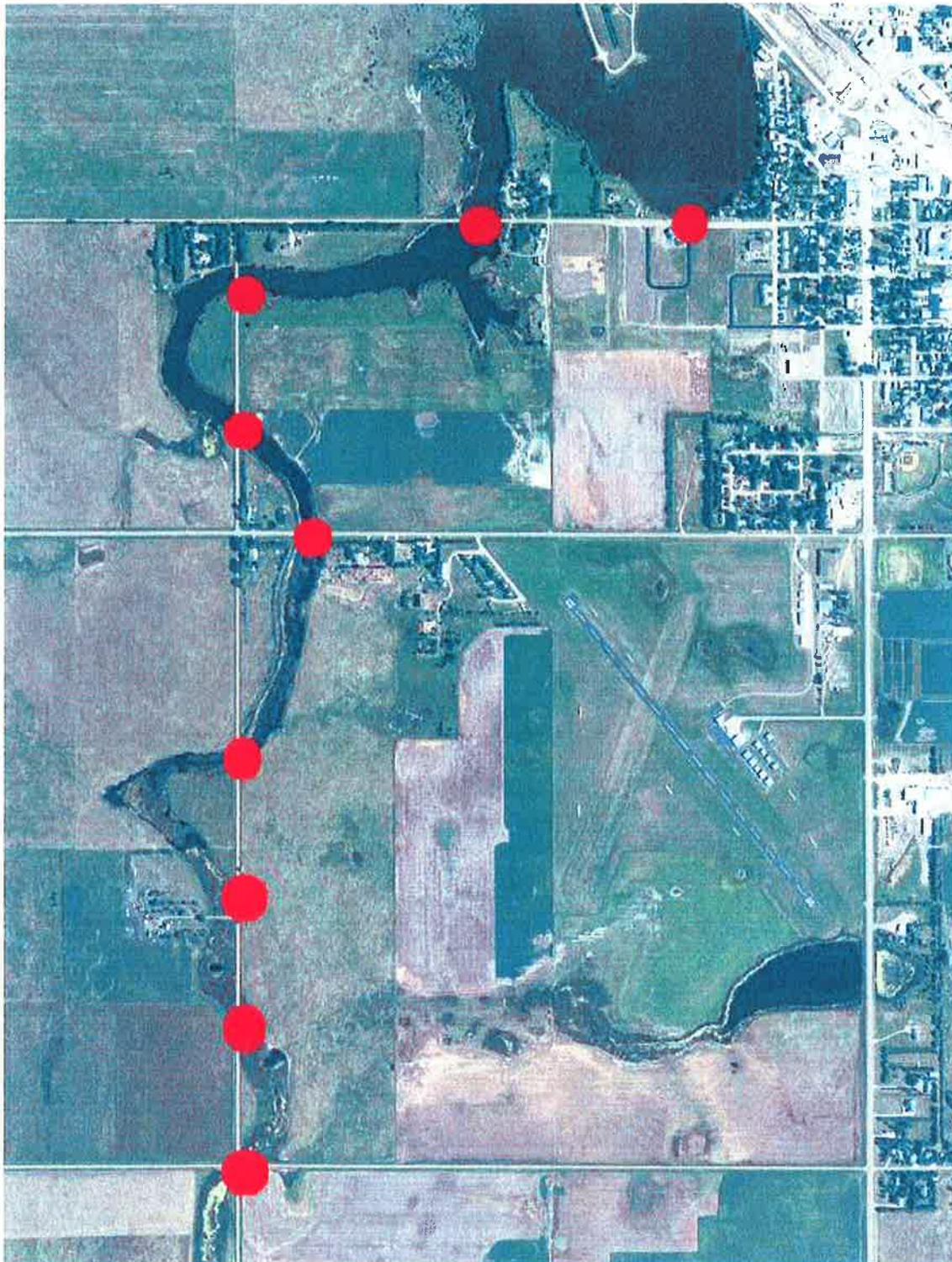
Map 4. Redfield Municipal Airport Wetlands.



Map 5. Redfield Municipal Airport – New 17/37 Runway - Proposed Airport Layout.



Map 6. Redfield Municipal Airport – New 17/37 Runway Location.



Map 7. Critical Zone Bird Survey Observation Points.

**Appendix B**

**BIRD  
POINT COUNT  
DATA**

**Appendix B**

**APPENDIX B. BIRD POINT COUNT DATA COLLECTED AT REDFIELD MUNICIPAL AIRPORT, April 2010 – March 2011.**

Alpha Codes used for guilds and inclusive species during bird point counts at RMA.

BLAC - Blackbirds, meadowlarks and starlings	Brown-headed cowbird	BHCO
	Bobolink	BOBO
	Common grackle	COGR
	European starling	EUST
	Mixed blackbirds	MXBL
	Red-winged blackbird	RWBL
	Western meadowlark	WEME
	Yellow-headed blackbird	YHBL
DUCK - Dabbling and diving ducks	American coot	AMCO
	American wigeon	AMWI
	Blue-winged teal	BWTE
	Bufflehead	BUFF
	Canvasback	CANV
	Eared grebe	EAGR
	Lesser scaup	LESC
	Mallard	MALL
	Northern pintail	NOPI
	Northern Shoveler	NOSH
	Pied-billed grebe	PBGR
	Redhead	REDH
	Unidentified duck	UNDU
Wood Duck	WOOD	
GAME - Game Birds	Ring-necked pheasant	RNPH
GEES - Geese	Canada goose	CAGO
	White-fronted goose	WFGO
GULL - Gulls	Black tern	BLTE
	Franklin's gull	FRGU
	Herring gull	HERG
	Ring-billed gull	RBGU
HAWK - Eagles, hawks and falcons	American kestrel	MAKE
	Northern harrier	NOHA
	Red-tailed hawk	RTHA
	Swainson's hawk	SWHA
	Unidentified hawk	UNHA
HERO - Herons and waterbirds	Double-crested cormorant	DCCO
	Great-blue heron	GBHE
MISC - Miscellaneous medium-sized birds	American Robin	AMRO
	Eastern kingbird	EAKI
	Northern flicker	NOFL
	Western kingbird	WEKI
MODO - Mourning Doves	Mourning dove	MODO
RODO - Pigeons	Rock dove	RODO
SHOR - Shorebirds	Killdeer	KILL
	Marbled godwit	MAGO
	Unidentified shorebird	UNSH
	Upland sandpiper	UPSA
	Wilson's phalarope	PHAL

**Appendix B**

SPAR - Sparrow, larks, warblers and other small birds	Chipping sparrow	CHSP
	Horned lark	HOLA
	House sparrow	HOSP
	Unidentified sparrow	UNSP
	Savannah sparrow	SAVS
SWAL - Swallows and nighthawks	Barn swallow	BARS
	Cliff swallow	CLSW
	Tree swallow	TRSW

**Alpha Codes used for Activities and Habitats during bird point counts at RMA.**

<u>Activity</u>	<u>Alpha Code</u>	<u>Habitat</u>	<u>Alpha Code</u>
Feeding	FD	Agriculture	AGR
Flying Locally	FL	Air	AIR
Flying Past	FP	Marsh	MAR
Loafing	LF	Runway	RWY
Nesting	NS	Short grass	GSH
Roosting	RS	Structure	STR
Standing	ST	Tall grass	GLG
Vocalizing	VO	Taxiway	TWY
		Trees	TRE
		Unknown	UNK
		Unpaved road	UNP

**Variables used in RMA bird point count dataset.**

- SEASON-** season: spring (spr), summer (sum), fall (fal) or winter (win)
- MON-** first 3 letters of each calendar month
- DATE-** mm/dd/yyyy
- TIME-** am or pm
- REP-** replicates of survey routes conducted for time and day: 1-4 possible
- STAT-** point count station numbers: 1-7
- SPEC-** bird species alpha code (see above)
- GUILD-** bird guild alpha code (see above)
- NUMBER-** number of birds seen together
- ACT-** activity code (see above) birds were engaged in at first sighting
- HAB-** habitat code (see above) being used by birds when first sighted
- XRWY-** whether or not bird(s) crossed active runway: yes or no

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1	04/01/10	APR	AM	1	1	GAME	RNPH	1	ST	RWY	N
2	04/01/10	APR	AM	1	1	BLAC	RWBL	1	NS	TSW	N
3	04/01/10	APR	AM	1	1	BLAC	COGR	8	ST	TRE	N
4	04/01/10	APR	AM	1	1	DUCK	MALL	2	FP	AIR	N
5	04/01/10	APR	AM	1	1	DUCK	MALL	1	ST	TSW	N
6	04/01/10	APR	AM	1	1	GAME	RNPH	1	ST	GSH	N
7	04/01/10	APR	AM	1	1	BLAC	EUST	4	ST	STR	N
8	04/01/10	APR	AM	1	1	DUCK	NOSH	2	ST	TSW	N
9	04/01/10	APR	AM	1	1	GULL	RBGU	25	FP	AIR	Y
10	04/01/10	APR	AM	1	2	BLAC	COGR	12	ST	TRE	N
11	04/01/10	APR	AM	1	2	GULL	RBGU	1	FP	AIR	N
12	04/01/10	APR	AM	1	2	DUCK	MALL	2	FP	AIR	Y
13	04/01/10	APR	AM	1	2	GULL	RBGU	250	FD	TSW	N
14	04/01/10	APR	AM	1	2	GULL	FRGU	10	FD	TSW	N
15	04/01/10	APR	AM	1	3	HAWK	UNHA	2	ST	TRE	N
16	04/01/10	APR	AM	1	3	DUCK	MALL	2	FL	MAR	N
17	04/01/10	APR	AM	1	3	RODO	RODO	1	FD	AGR	N
18	04/01/10	APR	AM	1	3	DUCK	MALL	2	FL	MAR	N
19	04/01/10	APR	AM	1	4	DUCK	CANV	2	ST	PND	N
20	04/01/10	APR	AM	1	4	DUCK	MALL	4	ST	PND	N
21	04/01/10	APR	AM	1	4	GEES	CAGO	4	ST	PND	N
22	04/01/10	APR	AM	1	4	BLAC	COGR	10	FL	TRE	N
23	04/01/10	APR	AM	1	4	DUCK	REDH	2	ST	PND	N
24	04/01/10	APR	AM	1	4	HAWK	SWHA	1	FL	AGR	N
25	04/01/10	APR	AM	1	4	GEES	CAGO	2	FL	PND	N
26	04/01/10	APR	AM	1	4	GULL	RBGU	1	FP	AIR	Y
27	04/01/10	APR	AM	1	4	DUCK	LESC	17	ST	PND	N
28	04/01/10	APR	AM	1	5	MISC	AMRO	1	ST	AGR	N
29	04/01/10	APR	AM	1	5	BLAC	RWBL	3	FD	AGR	N
30	04/01/10	APR	AM	1	5	HAWK	RTHA	1	FD	AGR	N
31	04/01/10	APR	AM	2	1	BLAC	RWBL	2	VO	PND	N
32	04/01/10	APR	AM	2	1	DUCK	NOPI	2	FL	PND	N
33	04/01/10	APR	AM	2	1	DUCK	MALL	3	ST	PND	N
34	04/01/10	APR	AM	2	1	DUCK	NOPI	2	ST	PND	N
35	04/01/10	APR	AM	2	1	SHOR	KILL	2	VO	PND	N
36	04/01/10	APR	AM	2	1	GAME	RNPH	1	VO	GSH	N
37	04/01/10	APR	AM	2	1	SHOR	KILL	1	VO	GSH	N
38	04/01/10	APR	AM	2	1	GEES	CAGO	3	ST	PND	N
39	04/01/10	APR	AM	2	1	DUCK	MALL	2	FP	AIR	Y
40	04/01/10	APR	AM	2	1	GEES	CAGO	2	FP	AIR	N
41	04/01/10	APR	AM	2	1	BLAC	EUST	4	ST	STR	N
42	04/01/10	APR	AM	2	2	GAME	RNPH	1	ST	GSH	N
43	04/01/10	APR	AM	2	2	BLAC	COGR	5	FP	AIR	Y
44	04/01/10	APR	AM	2	2	BLAC	COGR	22	FL	TRE	N
45	04/01/10	APR	AM	2	2	GULL	FRGU	5	ST	TSW	N
46	04/01/10	APR	AM	2	2	GULL	RBGU	4	FP	AIR	Y
47	04/01/10	APR	AM	2	2	GULL	RBGU	90	ST	TSW	N
48	04/01/10	APR	AM	2	3	SHOR	KILL	2	VO	GSH	Y
49	04/01/10	APR	AM	2	3	MODO	MODO	1	FP	AIR	Y
50	04/01/10	APR	AM	2	3	BLAC	WEME	1	VO	GSH	N
51	04/01/10	APR	AM	2	3	BLAC	WEME	1	VO	GSH	Y
52	04/01/10	APR	AM	2	3	HAWK	SWHA	2	ST	TRE	N
53	04/01/10	APR	AM	2	3	DUCK	MALL	2	ST	PND	N
54	04/01/10	APR	AM	2	4	GEES	CAGO	10	ST	PND	N
55	04/01/10	APR	AM	2	4	GULL	RBGU	1	FP	AIR	Y
56	04/01/10	APR	AM	2	4	BLAC	COGR	18	ST	TRE	N
57	04/01/10	APR	AM	2	4	DUCK	MALL	6	ST	PND	N
58	04/01/10	APR	AM	2	4	BLAC	EUST	2	FD	GSH	N
59	04/01/10	APR	AM	2	4	BLAC	RWBL	10	ST	TRE	N
60	04/01/10	APR	AM	2	4	DUCK	LESC	20	ST	PND	N
61	04/01/10	APR	AM	2	4	SHOR	KILL	2	FL	AGR	N
62	04/01/10	APR	AM	2	5	GEES	CAGO	2	FP	AIR	N
63	04/01/10	APR	AM	2	5	DUCK	MALL	2	FP	AIR	N
64	04/01/10	APR	AM	2	5	BLAC	RWBL	2	ST	AGR	N
65	04/01/10	APR	AM	2	5	SHOR	KILL	1	VO	AGR	N
66	04/01/10	APR	PM	1	1	DUCK	NOPI	2	FD	PND	N
67	04/01/10	APR	PM	1	1	DUCK	MALL	3	FL	PND	N
68	04/01/10	APR	PM	1	1	GAME	RNPH	1	ST	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
69	04/01/10	APR	PM	1	1	GULL	RBGU	34	FL	PND	Y
70	04/01/10	APR	PM	1	2	GULL	FRGU	1	ST	PND	N
71	04/01/10	APR	PM	1	2	BLAC	COGR	16	ST	TRE	N
72	04/01/10	APR	PM	1	2	GULL	RBGU	3	FP	AIR	Y
73	04/01/10	APR	PM	1	2	GULL	RBGU	1	ST	PND	N
74	04/01/10	APR	PM	1	3	DUCK	MALL	1	ST	TSW	N
75	04/01/10	APR	PM	1	3	BLAC	WEME	1	FL	AGR	N
76	04/01/10	APR	PM	1	3	GEES	CAGO	2	ST	PND	N
77	04/01/10	APR	PM	1	3	GAME	RNPH	5	ST	AGR	N
78	04/01/10	APR	PM	1	3	GULL	FRGU	5	ST	TSW	N
79	04/01/10	APR	PM	1	3	HAWK	SWHA	2	ST	TRE	N
80	04/01/10	APR	PM	1	3	GAME	RNPH	1	VO	GSH	N
81	04/01/10	APR	PM	1	3	GULL	RBGU	60	ST	TSW	N
82	04/01/10	APR	PM	1	3	GEES	CAGO	3	FL	PND	N
83	04/01/10	APR	PM	1	4	DUCK	LESC	16	ST	PND	N
84	04/01/10	APR	PM	1	4	DUCK	BUFF	1	ST	PND	N
85	04/01/10	APR	PM	1	4	GAME	RNPH	1	VO	AGR	N
86	04/01/10	APR	PM	1	4	BLAC	RWBL	30	FD	GSH	N
87	04/01/10	APR	PM	1	4	GEES	CAGO	2	ST	PND	N
88	04/01/10	APR	PM	1	4	DUCK	MALL	1	FL	PND	N
89	04/01/10	APR	PM	1	4	GEES	CAGO	3	FL	PND	N
90	04/01/10	APR	PM	1	5	GEES	CAGO	2	VO	TSW	N
91	04/01/10	APR	PM	1	5	RODO	RODO	4	FD	AGR	N
92	04/01/10	APR	PM	1	5	SHOR	KILL	2	FL	AGR	N
93	04/01/10	APR	PM	1	5	GULL	RBGU	1	FP	AIR	N
94	04/01/10	APR	PM	1	5	BLAC	COGR	12	FD	AGR	N
95	04/01/10	APR	PM	1	5	BLAC	WEME	5	VO	GSH	N
96	04/01/10	APR	PM	1	5	HAWK	SWHA	1	ST	TRE	N
97	04/01/10	APR	PM	2	1	RODO	RODO	1	FD	GSH	N
98	04/01/10	APR	PM	2	1	GAME	RNPH	1	VO	GSH	N
99	04/01/10	APR	PM	2	1	BLAC	RWBL	12	ST	TRE	N
100	04/01/10	APR	PM	2	1	BLAC	RWBL	1	ST	TSW	N
101	04/01/10	APR	PM	2	1	MISC	AMRO	1	ST	STR	N
102	04/01/10	APR	PM	2	1	DUCK	MALL	2	FP	AIR	N
103	04/01/10	APR	PM	2	1	SHOR	KILL	3	ST	ASP	N
104	04/01/10	APR	PM	2	1	DUCK	MALL	2	ST	TSW	N
105	04/01/10	APR	PM	2	1	BLAC	EUST	4	ST	STR	N
106	04/01/10	APR	PM	2	1	BLAC	COGR	1	FP	AIR	N
107	04/01/10	APR	PM	2	2	BLAC	WEME	3	VO	GSH	N
108	04/01/10	APR	PM	2	2	DUCK	MALL	2	FP	AIR	N
109	04/01/10	APR	PM	2	2	BLAC	COGR	20	ST	TRE	N
110	04/01/10	APR	PM	2	2	BLAC	COGR	3	FP	AIR	N
111	04/01/10	APR	PM	2	2	GEES	CAGO	1	ST	TSW	N
112	04/01/10	APR	PM	2	3	BLAC	RWBL	2	VO	MAR	N
113	04/01/10	APR	PM	2	3	DUCK	MALL	2	FP	AIR	N
114	04/01/10	APR	PM	2	3	GAME	RNPH	1	VO	AGR	N
115	04/01/10	APR	PM	2	3	BLAC	WEME	2	VO	GSH	N
116	04/01/10	APR	PM	2	4	DUCK	BUFF	2	ST	PND	N
117	04/01/10	APR	PM	2	4	BLAC	RWBL	150	ST	TRE	N
118	04/01/10	APR	PM	2	4	DUCK	LESC	38	ST	PND	N
119	04/01/10	APR	PM	2	4	DUCK	MALL	4	ST	PND	N
120	04/01/10	APR	PM	2	4	BLAC	WEME	2	VO	GSH	N
121	04/01/10	APR	PM	2	5	BLAC	WEME	2	VO	AGR	N
122	04/01/10	APR	PM	2	5	BLAC	RWBL	1	ST	STR	N
123	04/14/10	APR	PM	1	1	DUCK	MALL	2	ST	PND	N
124	04/14/10	APR	PM	1	1	BLAC	WEME	1	VO	GSH	N
125	04/14/10	APR	PM	1	1	SPAR	HOLA	1	ST	RWY	Y
126	04/14/10	APR	PM	1	1	GAME	RNPH	1	ST	GSH	N
127	04/14/10	APR	PM	1	1	SPAR	HOLA	1	ST	TXY	N
128	04/14/10	APR	PM	1	1	BLAC	EUST	1	ST	STR	N
129	04/14/10	APR	PM	1	2	BLAC	COGR	1	ST	TRE	N
130	04/14/10	APR	PM	1	2	BLAC	WEME	1	ST	RWY	N
131	04/14/10	APR	PM	1	2	MODO	MODO	3	FP	AIR	Y
132	04/14/10	APR	PM	1	2	DUCK	MALL	1	ST	PND	N
133	04/14/10	APR	PM	1	2	GAME	RNPH	3	ST	PND	N
134	04/14/10	APR	PM	1	2	BLAC	WEME	1	VO	GSH	N
135	04/14/10	APR	PM	1	2	BLAC	COGR	5	FD	GSH	N
136	04/14/10	APR	PM	1	3	GAME	RNPH	1	VO	AGR	N
137	04/14/10	APR	PM	1	3	GEES	CAGO	2	VO	MAR	N
138	04/14/10	APR	PM	1	3	GEES	CAGO	1	ST	PND	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
39	04/14/10	APR	PM	1	3	BLAC	RWBL	16	ST	MAR	N
140	04/14/10	APR	PM	1	3	BLAC	COGR	30	FD	AGR	N
141	04/14/10	APR	PM	1	3	GAME	RNPH	2	FL	AGR	N
142	04/14/10	APR	PM	1	3	DUCK	MALL	1	FL	MAR	N
143	04/14/10	APR	PM	1	3	DUCK	MALL	2	ST	PND	N
144	04/14/10	APR	PM	1	3	GAME	RNPH	2	ST	MAR	N
145	04/14/10	APR	PM	1	4	GAME	RNPH	3	ST	GSH	N
146	04/14/10	APR	PM	1	4	BLAC	RWBL	20	ST	MAR	N
147	04/14/10	APR	PM	1	4	DUCK	NOSH	8	ST	PND	N
148	04/14/10	APR	PM	1	4	DUCK	LESC	12	ST	PND	N
149	04/14/10	APR	PM	1	4	BLAC	COGR	50	FD	AGR	N
150	04/14/10	APR	PM	1	4	GEES	CAGO	1	ST	PND	N
151	04/14/10	APR	PM	1	4	DUCK	PBGR	1	ST	PND	N
152	04/14/10	APR	PM	1	4	BLAC	RWBL	50	FD	AGR	N
153	04/14/10	APR	PM	1	4	BLAC	COGR	150	ST	TRE	N
154	04/14/10	APR	PM	1	4	HAWK	NOHA	1	FL	PND	N
155	04/14/10	APR	PM	1	4	DUCK	AMCO	1	ST	PND	N
156	04/14/10	APR	PM	1	4	DUCK	MALL	1	ST	PND	N
157	04/14/10	APR	PM	1	4	BLAC	YHBL	2	FL	MAR	N
158	04/14/10	APR	PM	1	5	GEES	CAGO	2	ST	AGR	N
159	04/14/10	APR	PM	1	5	BLAC	COGR	20	FD	AGR	N
160	04/14/10	APR	PM	1	5	BLAC	WEME	1	VO	AGR	N
161	04/14/10	APR	PM	1	5	GEES	CAGO	1	ST	AGR	N
162	04/14/10	APR	PM	1	5	DUCK	MALL	1	FL	AGR	N
163	04/14/10	APR	PM	1	5	GAME	RNPH	1	ST	ATR	N
164	04/14/10	APR	PM	1	5	GULL	BLTE	4	FL	MAR	N
165	04/14/10	APR	PM	2	1	GAME	RNPH	1	ST	GSH	N
166	04/14/10	APR	PM	2	1	BLAC	WEME	1	VO	GSH	N
167	04/14/10	APR	PM	2	1	SPAR	HOSP	1	FL	TWY	Y
168	04/14/10	APR	PM	2	1	BLAC	COGR	15	FL	TRE	N
169	04/14/10	APR	PM	2	1	DUCK	MALL	1	ST	PND	N
170	04/14/10	APR	PM	2	2	BLAC	WEME	1	VO	GSH	N
171	04/14/10	APR	PM	2	2	BLAC	COGR	20	FD	GSH	N
172	04/14/10	APR	PM	2	2	GAME	RNPH	8	ST	GSH	N
173	04/14/10	APR	PM	2	2	BLAC	COGR	5	ST	TRE	N
174	04/14/10	APR	PM	2	2	MISC	AMRO	1	ST	RWY	N
175	04/14/10	APR	PM	2	2	GAME	RNPH	1	VO	AGR	N
176	04/14/10	APR	PM	2	2	BLAC	WEME	1	ST	GSH	N
177	04/14/10	APR	PM	2	2	BLAC	COGR	8	ST	ASP	N
178	04/14/10	APR	PM	2	2	BLAC	COGR	2	FP	AIR	Y
179	04/14/10	APR	PM	2	3	BLAC	WEME	2	VO	GSH	N
180	04/14/10	APR	PM	2	3	DUCK	MALL	2	ST	PND	N
181	04/14/10	APR	PM	2	3	BLAC	RWBL	8	ST	MAR	N
182	04/14/10	APR	PM	2	3	BLAC	RWBL	5	FP	AIR	N
183	04/14/10	APR	PM	2	3	GEES	CAGO	2	FP	AIR	N
184	04/14/10	APR	PM	2	3	DUCK	MALL	6	FP	AIR	N
185	04/14/10	APR	PM	2	3	GAME	RNPH	2	VO	AGR	N
186	04/14/10	APR	PM	2	3	SHOR	MAGO	1	ST	PND	N
187	04/14/10	APR	PM	2	3	GAME	RNPH	4	ST	MAR	N
188	04/14/10	APR	PM	2	3	GEES	CAGO	2	FP	AIR	N
189	04/14/10	APR	PM	2	4	GAME	RNPH	1	VO	GSH	N
190	04/14/10	APR	PM	2	4	BLAC	RWBL	30	ST	MAR	N
191	04/14/10	APR	PM	2	4	DUCK	BUFF	3	ST	PND	N
192	04/14/10	APR	PM	2	4	BLAC	RWBL	250	ST	AGR	N
193	04/14/10	APR	PM	2	4	BLAC	COGR	20	ST	TRE	N
194	04/14/10	APR	PM	2	4	BLAC	COGR	250	ST	AGR	N
195	04/14/10	APR	PM	2	4	DUCK	LESC	21	ST	PND	N
196	04/14/10	APR	PM	2	4	BLAC	WEME	1	VO	GSH	N
197	04/14/10	APR	PM	2	5	GAME	RNPH	2	ST	AGR	N
198	04/14/10	APR	PM	2	5	BLAC	RWBL	20	FL	AGR	N
199	04/14/10	APR	PM	2	5	BLAC	RWBL	5	VO	MAR	N
200	04/14/10	APR	PM	2	5	DUCK	MALL	1	ST	MAR	N
201	04/14/10	APR	PM	2	5	BLAC	COGR	20	FL	AGR	N
202	04/14/10	APR	PM	2	5	DUCK	MALL	2	FP	AIR	N
203	04/15/10	APR	AM	1	1	BLAC	EUST	10	FD	GSH	N
204	04/15/10	APR	AM	1	1	BLAC	EUST	3	ST	STR	N
205	04/15/10	APR	AM	1	1	BLAC	RWBL	2	ST	MAR	N
206	04/15/10	APR	AM	1	1	BLAC	COGR	10	FL	TRE	N
207	04/15/10	APR	AM	1	1	GAME	RNPH	2	VO	GSH	N
208	04/15/10	APR	AM	1	1	DUCK	MALL	2	ST	PND	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
209	04/15/10	APR	AM	1	1	BLAC	WEME	2	VO	GSH	N
210	04/15/10	APR	AM	1	1	GULL	FRGU	12	FL	RWY	Y
211	04/15/10	APR	AM	1	2	GAME	RNPH	2	ST	GSH	N
212	04/15/10	APR	AM	1	2	SPAR	UNSP	1	FL	RWY	Y
213	04/15/10	APR	AM	1	2	GAME	RNPH	1	VO	AGR	N
214	04/15/10	APR	AM	1	2	MODO	MODO	3	FP	AIR	N
215	04/15/10	APR	AM	1	2	BLAC	COGR	2	FP	AIR	Y
216	04/15/10	APR	AM	1	2	BLAC	RWBL	3	ST	MAR	N
217	04/15/10	APR	AM	1	2	BLAC	COGR	20	FL	TRE	N
218	04/15/10	APR	AM	1	3	GAME	RNPH	1	ST	RWY	N
219	04/15/10	APR	AM	1	3	BLAC	WEME	2	VO	GSH	N
220	04/15/10	APR	AM	1	3	GAME	RNPH	6	ST	AGR	N
221	04/15/10	APR	AM	1	3	DUCK	MALL	2	ST	TSW	N
222	04/15/10	APR	AM	1	3	DUCK	MALL	1	FP	AIR	Y
223	04/15/10	APR	AM	1	3	DUCK	MALL	2	FP	AIR	Y
224	04/15/10	APR	AM	1	3	GAME	RNPH	1	ST	GLG	N
225	04/15/10	APR	AM	1	3	BLAC	WEME	1	VO	AGR	N
226	04/15/10	APR	AM	1	3	BLAC	RWBL	6	ST	MAR	N
227	04/15/10	APR	AM	1	4	BLAC	RWBL	30	FL	TRE	N
228	04/15/10	APR	AM	1	4	BLAC	WEME	2	VO	AGR	N
229	04/15/10	APR	AM	1	4	DUCK	LESC	12	ST	PND	N
230	04/15/10	APR	AM	1	4	DUCK	MALL	3	FP	AIR	N
231	04/15/10	APR	AM	1	4	DUCK	NOSH	4	ST	PND	N
232	04/15/10	APR	AM	1	4	GAME	RNPH	2	ST	AGR	N
233	04/15/10	APR	AM	1	4	BLAC	RWBL	20	ST	MAR	N
234	04/15/10	APR	AM	1	4	BLAC	WEME	2	VO	GSH	N
235	04/15/10	APR	AM	1	4	DUCK	MALL	2	ST	PND	N
236	04/15/10	APR	AM	1	4	BLAC	COGR	30	FL	TRE	N
237	04/15/10	APR	AM	1	5	SHOR	KILL	1	ST	MAR	N
238	04/15/10	APR	AM	1	5	BLAC	RWBL	2	ST	MAR	N
239	04/15/10	APR	AM	1	5	DUCK	MALL	2	ST	MAR	N
240	04/15/10	APR	AM	1	5	RODO	RODO	1	ST	MAR	N
241	04/15/10	APR	AM	1	5	GAME	RNPH	2	ST	MAR	N
242	04/15/10	APR	AM	2	1	BLAC	COGR	8	FL	TRE	N
243	04/15/10	APR	AM	2	1	GAME	RNPH	2	VO	GSH	N
244	04/15/10	APR	AM	2	1	BLAC	EUST	4	ST	STR	N
245	04/15/10	APR	AM	2	1	SPAR	UNSP	1	ST	STR	N
246	04/15/10	APR	AM	2	1	DUCK	MALL	2	ST	PND	N
247	04/15/10	APR	AM	2	1	BLAC	RWBL	2	ST	PND	N
248	04/15/10	APR	AM	2	1	BLAC	WEME	2	VO	GSH	N
249	04/15/10	APR	AM	2	1	RODO	RODO	1	ST	STR	N
250	04/15/10	APR	AM	2	1	MODO	MODO	1	FP	AIR	Y
251	04/15/10	APR	AM	2	2	MODO	MODO	1	ST	GSH	N
252	04/15/10	APR	AM	2	2	BLAC	RWBL	20	FD	AGR	N
253	04/15/10	APR	AM	2	2	BLAC	WEME	2	VO	GSH	N
254	04/15/10	APR	AM	2	2	BLAC	COGR	8	FP	AIR	Y
255	04/15/10	APR	AM	2	2	DUCK	MALL	2	FP	AIR	Y
256	04/15/10	APR	AM	2	3	SHOR	KILL	2	FL	GSH	N
257	04/15/10	APR	AM	2	3	DUCK	MALL	1	ST	GSH	N
258	04/15/10	APR	AM	2	3	DUCK	MALL	6	FL	MAR	N
259	04/15/10	APR	AM	2	3	BLAC	COGR	2	FP	AIR	Y
260	04/15/10	APR	AM	2	3	GEES	CAGO	2	FP	AIR	N
261	04/15/10	APR	AM	2	3	SHOR	KILL	1	FL	AGR	N
262	04/15/10	APR	AM	2	3	DUCK	MALL	3	FL	AGR	N
263	04/15/10	APR	AM	2	4	GAME	RNPH	1	ST	GSH	N
264	04/15/10	APR	AM	2	4	GEES	CAGO	1	ST	MAR	N
265	04/15/10	APR	AM	2	4	BLAC	WEME	1	FL	RWY	Y
266	04/15/10	APR	AM	2	4	SHOR	KILL	1	VO	AGR	N
267	04/15/10	APR	AM	2	4	DUCK	MALL	4	ST	TSW	N
268	04/15/10	APR	AM	2	4	GAME	RNPH	1	VO	AGR	N
269	04/15/10	APR	AM	2	4	SHOR	KILL	1	FL	RWY	Y
270	04/15/10	APR	AM	2	4	BLAC	RWBL	14	ST	MAR	N
271	04/15/10	APR	AM	2	4	BLAC	WEME	2	VO	GSH	N
272	04/15/10	APR	AM	2	4	GEES	CAGO	2	ST	PND	N
273	04/15/10	APR	AM	2	4	BLAC	COGR	150	FL	TRE	N
274	04/15/10	APR	AM	2	4	DUCK	LESC	10	ST	PND	N
275	04/15/10	APR	AM	2	5	BLAC	RWBL	10	FL	AGR	N
276	04/15/10	APR	AM	2	5	DUCK	MALL	2	FP	AIR	N
277	04/15/10	APR	AM	2	5	BLAC	COGR	10	FL	AGR	N
278	04/15/10	APR	AM	2	5	MISC	AMRO	1	ST	MAR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
179	04/15/10	APR	AM	2	5	DUCK	MALL	1	ST	MAR	N
180	04/15/10	APR	AM	2	5	DUCK	MALL	4	ST	PND	N
281	05/03/10	MAY	PM	1	1	BLAC	COGR	6	FD	GSH	N
282	05/03/10	MAY	PM	1	1	RODO	RODO	15	ST	STR	N
283	05/03/10	MAY	PM	1	1	MODO	MODO	1	ST	ASP	N
284	05/03/10	MAY	PM	1	1	GAME	RNPH	3	ST	GSH	N
285	05/03/10	MAY	PM	1	1	BLAC	RWBL	2	ST	MAR	N
286	05/03/10	MAY	PM	1	1	BLAC	WEME	4	FL	GSH	N
287	05/03/10	MAY	PM	1	1	BLAC	WEME	2	VO	GSH	N
288	05/03/10	MAY	PM	1	1	BLAC	WEME	2	FL	GSH	N
289	05/03/10	MAY	PM	1	1	GAME	RNPH	1	VO	GSH	N
290	05/03/10	MAY	PM	1	1	MODO	MODO	2	ST	GVL	N
291	05/03/10	MAY	PM	1	1	DUCK	BWTE	2	ST	MAR	N
292	05/03/10	MAY	PM	1	1	BLAC	EUST	2	ST	STR	N
293	05/03/10	MAY	PM	1	1	BLAC	COGR	20	ST	GSH	N
294	05/03/10	MAY	PM	1	2	GAME	RNPH	2	ST	GSH	N
295	05/03/10	MAY	PM	1	2	BLAC	COGR	14	ST	GSH	N
296	05/03/10	MAY	PM	1	2	BLAC	COGR	8	ST	TRE	N
297	05/03/10	MAY	PM	1	2	GAME	RNPH	2	ST	GSH	N
298	05/03/10	MAY	PM	1	2	BLAC	WEME	2	VO	GSH	N
299	05/03/10	MAY	PM	1	3	GAME	RNPH	2	ST	AGR	N
300	05/03/10	MAY	PM	1	3	BLAC	RWBL	4	ST	MAR	N
301	05/03/10	MAY	PM	1	3	BLAC	COGR	8	ST	AGR	N
302	05/03/10	MAY	PM	1	3	MODO	MODO	1	FP	AIR	Y
303	05/03/10	MAY	PM	1	3	DUCK	MALL	3	ST	MAR	N
304	05/03/10	MAY	PM	1	3	GAME	RNPH	1	ST	GSH	N
305	05/03/10	MAY	PM	1	3	HERO	GBHE	1	FP	AIR	N
306	05/03/10	MAY	PM	1	3	DUCK	NOPI	2	ST	TSW	N
307	05/03/10	MAY	PM	1	3	BLAC	YHBL	8	ST	MAR	N
308	05/03/10	MAY	PM	1	3	BLAC	WEME	1	ST	GSH	N
309	05/03/10	MAY	PM	1	4	BLAC	COGR	1	FP	AIR	N
310	05/03/10	MAY	PM	1	4	DUCK	AMWI	1	ST	PND	N
311	05/03/10	MAY	PM	1	4	BLAC	COGR	2	ST	AGR	N
312	05/03/10	MAY	PM	1	4	DUCK	BWTE	6	ST	TSW	N
313	05/03/10	MAY	PM	1	4	BLAC	RWBL	5	ST	MAR	N
314	05/03/10	MAY	PM	1	4	DUCK	NOPI	2	ST	TSW	N
315	05/03/10	MAY	PM	1	5	BLAC	COGR	19	FD	AGR	N
316	05/03/10	MAY	PM	1	5	BLAC	RWBL	10	VO	TSW	N
317	05/03/10	MAY	PM	1	5	DUCK	BWTE	2	ST	TSW	N
318	05/03/10	MAY	PM	1	5	DUCK	MALL	1	ST	AGR	N
319	05/03/10	MAY	PM	1	5	DUCK	MALL	2	ST	TSW	N
320	05/03/10	MAY	PM	1	5	DUCK	BWTE	2	ST	AGR	N
321	05/03/10	MAY	PM	1	5	MODO	MODO	1	ST	STR	N
322	05/03/10	MAY	PM	1	5	DUCK	MALL	2	ST	AGR	N
323	05/03/10	MAY	PM	1	5	SHOR	KILL	2	ST	MAR	N
324	05/03/10	MAY	PM	2	1	BLAC	COGR	10	ST	GSH	N
325	05/03/10	MAY	PM	2	1	MODO	MODO	1	ST	GVL	N
326	05/03/10	MAY	PM	2	1	GAME	RNPH	2	ST	GSH	N
327	05/03/10	MAY	PM	2	1	BLAC	COGR	6	ST	GSH	N
328	05/03/10	MAY	PM	2	1	RODO	RODO	6	ST	STR	N
329	05/03/10	MAY	PM	2	1	BLAC	EUST	2	ST	STR	N
330	05/03/10	MAY	PM	2	2	BLAC	WEME	2	ST	GSH	N
331	05/03/10	MAY	PM	2	3	BLAC	WEME	1	ST	GSH	N
332	05/03/10	MAY	PM	2	3	GAME	RNPH	2	VO	AGR	N
333	05/03/10	MAY	PM	2	3	BLAC	RWBL	10	ST	MAR	N
334	05/03/10	MAY	PM	2	3	DUCK	BWTE	2	ST	PND	N
335	05/03/10	MAY	PM	2	3	DUCK	MALL	6	FP	AIR	N
336	05/03/10	MAY	PM	2	3	BLAC	YHBL	10	ST	MAR	N
337	05/03/10	MAY	PM	2	4	DUCK	MALL	2	ST	PND	N
338	05/03/10	MAY	PM	2	4	GAME	RNPH	2	VO	GSH	N
339	05/03/10	MAY	PM	2	4	BLAC	WEME	2	VO	GSH	N
340	05/03/10	MAY	PM	2	4	DUCK	MALL	1	ST	PND	N
341	05/03/10	MAY	PM	2	4	DUCK	MALL	5	FP	AIR	N
342	05/03/10	MAY	PM	2	4	GEES	CAGO	2	VO	MAR	N
343	05/03/10	MAY	PM	2	4	DUCK	NOPI	2	ST	PND	N
344	05/03/10	MAY	PM	2	5	BLAC	WEME	2	VO	AGR	N
345	05/03/10	MAY	PM	2	5	BLAC	RWBL	6	NS	MAR	N
346	05/03/10	MAY	PM	2	5	DUCK	MALL	1	ST	MAR	N
347	05/03/10	MAY	PM	2	5	GAME	RNPH	2	VO	AGR	N
348	05/03/10	MAY	PM	2	5	HERO	GBHE	1	FP	AIR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
349	05/03/10	MAY	PM	2	5	BLAC	RWBL	2	FL	MAR	N
350	05/03/10	MAY	PM	2	5	DUCK	MALL	2	ST	AGR	N
351	05/03/10	MAY	PM	2	5	BLAC	COGR	10	ST	AGR	N
352	05/03/10	MAY	PM	2	5	BLAC	COGR	120	FD	AGR	N
353	05/04/10	MAY	AM	1	1	BLAC	WEME	3	VO	GSH	N
354	05/04/10	MAY	AM	1	1	RODO	RODO	17	ST	STR	N
355	05/04/10	MAY	AM	1	1	BLAC	COGR	8	FD	GSH	N
356	05/04/10	MAY	AM	1	1	GAME	RNPH	2	ST	GSH	N
357	05/04/10	MAY	AM	1	1	DUCK	BWTE	3	ST	MAR	N
358	05/04/10	MAY	AM	1	1	BLAC	EUST	5	ST	STR	N
359	05/04/10	MAY	AM	1	1	BLAC	RWBL	4	ST	MAR	N
360	05/04/10	MAY	AM	1	1	BLAC	COGR	22	ST	GSH	N
361	05/04/10	MAY	AM	1	1	BLAC	WEME	5	FL	GSH	N
362	05/04/10	MAY	AM	1	1	MODO	MODO	3	ST	GVL	N
363	05/04/10	MAY	AM	1	2	BLAC	COGR	5	ST	GSH	N
364	05/04/10	MAY	AM	1	2	BLAC	COGR	30	ST	TRE	N
365	05/04/10	MAY	AM	1	2	BLAC	WEME	3	VO	GSH	N
366	05/04/10	MAY	AM	1	2	GAME	RNPH	2	ST	GSH	N
367	05/04/10	MAY	AM	1	3	BLAC	RWBL	8	ST	MAR	N
368	05/04/10	MAY	AM	1	3	DUCK	MALL	4	ST	MAR	N
369	05/04/10	MAY	AM	1	3	GAME	RNPH	1	ST	GSH	N
370	05/04/10	MAY	AM	1	3	BLAC	YHBL	12	ST	MAR	N
371	05/04/10	MAY	AM	1	3	GAME	RNPH	2	ST	AGR	N
372	05/04/10	MAY	AM	1	3	BLAC	WEME	1	ST	GSH	N
373	05/04/10	MAY	AM	1	3	DUCK	NOPI	1	ST	TSW	N
374	05/04/10	MAY	AM	1	4	BLAC	COGR	3	FP	AIR	N
375	05/04/10	MAY	AM	1	4	BLAC	COGR	4	ST	AGR	N
376	05/04/10	MAY	AM	1	4	DUCK	AMWI	3	ST	PND	N
377	05/04/10	MAY	AM	1	4	BLAC	RWBL	6	ST	MAR	N
378	05/04/10	MAY	AM	1	4	DUCK	NOPI	3	ST	TSW	N
379	05/04/10	MAY	AM	1	4	DUCK	BWTE	4	ST	TSW	N
380	05/04/10	MAY	AM	1	5	DUCK	MALL	2	ST	AGR	N
381	05/04/10	MAY	AM	1	5	DUCK	MALL	4	ST	TSW	N
382	05/04/10	MAY	AM	1	5	DUCK	BWTE	2	ST	AGR	N
383	05/04/10	MAY	AM	1	5	DUCK	MALL	1	ST	AGR	N
384	05/04/10	MAY	AM	1	5	BLAC	COGR	6	FD	AGR	N
385	05/04/10	MAY	AM	1	5	MODO	MODO	7	ST	STR	N
386	05/04/10	MAY	AM	2	1	RODO	RODO	5	ST	STR	N
387	05/04/10	MAY	AM	2	1	BLAC	EUST	5	ST	STR	N
388	05/04/10	MAY	AM	2	1	BLAC	COGR	4	ST	GSH	N
389	05/04/10	MAY	AM	2	1	MODO	MODO	1	ST	GVL	N
390	05/04/10	MAY	AM	2	1	GAME	RNPH	2	ST	GSH	N
391	05/04/10	MAY	AM	2	2	BLAC	WEME	2	ST	GSH	N
392	05/04/10	MAY	AM	2	3	BLAC	WEME	3	ST	GSH	N
393	05/04/10	MAY	AM	2	3	BLAC	RWBL	8	ST	MAR	N
394	05/04/10	MAY	AM	2	3	DUCK	MALL	7	FP	AIR	N
395	05/04/10	MAY	AM	2	3	BLAC	YHBL	12	ST	MAR	N
396	05/04/10	MAY	AM	2	3	DUCK	BWTE	2	ST	PND	N
397	05/04/10	MAY	AM	2	4	DUCK	MALL	2	ST	PND	N
398	05/04/10	MAY	AM	2	4	DUCK	NOPI	2	ST	PND	N
399	05/04/10	MAY	AM	2	4	GAME	RNPH	2	VO	GSH	N
400	05/04/10	MAY	AM	2	4	DUCK	MALL	5	ST	PND	N
401	05/04/10	MAY	AM	2	4	BLAC	WEME	3	VO	GSH	N
402	05/04/10	MAY	AM	2	4	GEES	CAGO	2	VO	MAR	N
403	05/04/10	MAY	AM	2	5	GAME	RNPH	1	VO	AGR	N
404	05/04/10	MAY	AM	2	5	BLAC	RWBL	4	NS	MAR	N
405	05/04/10	MAY	AM	2	5	DUCK	MALL	2	ST	AGR	N
406	05/04/10	MAY	AM	2	5	BLAC	RWBL	2	FL	MAR	N
407	05/04/10	MAY	AM	2	5	BLAC	COGR	88	FD	AGR	N
408	05/04/10	MAY	AM	2	5	BLAC	COGR	22	ST	AGR	N
409	05/04/10	MAY	AM	2	5	DUCK	MALL	1	ST	MAR	N
410	05/17/10	MAY	PM	1	1	BLAC	COGR	15	FD	GSH	N
411	05/17/10	MAY	PM	1	1	SPAR	HOSP	1	FP	AIR	N
412	05/17/10	MAY	PM	1	1	DUCK	NOPI	1	FP	AIR	N
413	05/17/10	MAY	PM	1	1	RODO	RODO	35	ST	STR	N
414	05/17/10	MAY	PM	1	1	BLAC	RWBL	2	FP	AIR	Y
415	05/17/10	MAY	PM	1	1	BLAC	RWBL	1	ST	MAR	N
416	05/17/10	MAY	PM	1	1	BLAC	RWBL	1	FP	AIR	N
417	05/17/10	MAY	PM	1	1	BLAC	COGR	1	ST	GSH	N
418	05/17/10	MAY	PM	1	1	BLAC	WEME	1	ST	STR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
19	05/17/10	MAY	PM	1	1	MISC	AMRO	1	ST	GSH	N
420	05/17/10	MAY	PM	1	1	BLAC	WEME	1	VO	GSH	N
421	05/17/10	MAY	PM	1	1	GEES	CAGO	1	FL	GSH	N
422	05/17/10	MAY	PM	1	1	BLAC	RWBL	1	VO	GSH	N
423	05/17/10	MAY	PM	1	1	BLAC	COGR	1	FL	GSH	N
424	05/17/10	MAY	PM	1	1	BLAC	COGR	1	ST	GSH	N
425	05/17/10	MAY	PM	1	1	BLAC	RWBL	1	VO	GSH	N
426	05/17/10	MAY	PM	1	1	GAME	RNPH	2	FD	GSH	N
427	05/17/10	MAY	PM	1	1	BLAC	WEME	1	FL	GSH	N
428	05/17/10	MAY	PM	1	1	MISC	AMRO	1	ST	GSH	N
429	05/17/10	MAY	PM	1	1	SWAL	BARS	1	FL	ASP	N
430	05/17/10	MAY	PM	1	1	BLAC	WEME	1	VO	GSH	N
431	05/17/10	MAY	PM	1	2	MODO	MODO	M	FP	GSH	Y
432	05/17/10	MAY	PM	1	2	GAME	RNPH	M	VO	AGR	N
433	05/17/10	MAY	PM	1	2	BLAC	COGR	3	FL	GSH	N
434	05/17/10	MAY	PM	1	2	DUCK	BWTE	1	FL	MAR	Y
435	05/17/10	MAY	PM	1	2	DUCK	BWTE	2	FL	MAR	N
436	05/17/10	MAY	PM	1	2	BLAC	COGR	M	FL	GSH	N
437	05/17/10	MAY	PM	1	2	BLAC	WEME	M	ST	RWY	N
438	05/17/10	MAY	PM	1	3	DUCK	NOSH	1	ST	TSW	N
439	05/17/10	MAY	PM	1	3	BLAC	RWBL	6	ST	MAR	N
440	05/17/10	MAY	PM	1	3	DUCK	MALL	1	ST	TSW	N
441	05/17/10	MAY	PM	1	3	HAWK	RTHA	1	ST	STR	N
442	05/17/10	MAY	PM	1	3	GAME	RNPH	1	VO	GSH	N
443	05/17/10	MAY	PM	1	3	BLAC	YHBL	8	ST	MAR	N
444	05/17/10	MAY	PM	1	3	BLAC	COGR	12	FD	AGR	N
445	05/17/10	MAY	PM	1	3	BLAC	RWBL	2	FL	GSH	N
446	05/17/10	MAY	PM	1	3	GAME	RNPH	1	VO	GSH	N
447	05/17/10	MAY	PM	1	3	DUCK	BWTE	1	ST	TSW	N
448	05/17/10	MAY	PM	1	4	DUCK	BWTE	1	ST	TSW	N
449	05/17/10	MAY	PM	1	4	DUCK	LESC	2	ST	PND	N
450	05/17/10	MAY	PM	1	4	DUCK	MALL	5	ST	PND	N
451	05/17/10	MAY	PM	1	4	SPAR	UNSP	5	ST	AGR	N
452	05/17/10	MAY	PM	1	4	DUCK	PBGR	2	ST	PND	N
453	05/17/10	MAY	PM	1	4	DUCK	REDH	2	ST	PND	N
454	05/17/10	MAY	PM	1	4	BLAC	COGR	1	ST	RWY	N
455	05/17/10	MAY	PM	1	4	DUCK	BWTE	2	ST	PND	N
456	05/17/10	MAY	PM	1	4	BLAC	RWBL	8	FD	AGR	N
457	05/17/10	MAY	PM	1	4	BLAC	COGR	8	FL	GSH	N
458	05/17/10	MAY	PM	1	4	BLAC	COGR	4	ST	AGR	N
459	05/17/10	MAY	PM	1	4	DUCK	NOSH	2	ST	PND	N
460	05/17/10	MAY	PM	1	4	BLAC	COGR	8	FD	AGR	N
461	05/17/10	MAY	PM	1	4	DUCK	NOPI	2	ST	TSW	N
462	05/17/10	MAY	PM	1	4	DUCK	BWTE	2	ST	TSW	N
463	05/17/10	MAY	PM	1	5	RODO	RODO	2	FD	AGR	N
464	05/17/10	MAY	PM	1	5	DUCK	MALL	4	FL	TSW	N
465	05/17/10	MAY	PM	1	5	DUCK	BWTE	2	ST	AGR	N
466	05/17/10	MAY	PM	1	5	BLAC	RWBL	4	FD	TSW	N
467	05/17/10	MAY	PM	1	5	HAWK	RTHA	1	FL	AGR	N
468	05/17/10	MAY	PM	1	5	DUCK	NOPI	2	FL	TSW	N
469	05/17/10	MAY	PM	1	5	BLAC	COGR	30	FD	AGR	N
470	05/17/10	MAY	PM	1	5	DUCK	NOPI	1	ST	TSW	N
471	05/17/10	MAY	PM	1	5	BLAC	COGR	30	FD	AGR	N
472	05/17/10	MAY	PM	1	5	SHOR	KILL	2	VO	TSW	N
473	05/17/10	MAY	PM	1	5	SHOR	KILL	1	ST	AGR	N
474	05/17/10	MAY	PM	1	5	DUCK	MALL	2	ST	TSW	N
475	05/17/10	MAY	PM	1	5	BLAC	COGR	30	FD	AGR	N
476	05/17/10	MAY	PM	1	5	BLAC	WEME	2	VO	AGR	N
477	05/17/10	MAY	PM	2	1	BLAC	RWBL	1	ST	MAR	N
478	05/17/10	MAY	PM	2	1	BLAC	WEME	1	FL	GSH	N
479	05/17/10	MAY	PM	2	1	RODO	RODO	1	FP	AIR	N
480	05/17/10	MAY	PM	2	1	SPAR	HOSP	1	ST	STR	N
481	05/17/10	MAY	PM	2	1	BLAC	COGR	4	FL	GSH	N
482	05/17/10	MAY	PM	2	1	BLAC	COGR	1	FP	AIR	N
483	05/17/10	MAY	PM	2	1	SPAR	HOSP	1	ST	STR	N
484	05/17/10	MAY	PM	2	1	MODO	MODO	1	ST	ASP	N
485	05/17/10	MAY	PM	2	1	MISC	AMRO	1	ST	GSH	N
486	05/17/10	MAY	PM	2	1	BLAC	WEME	1	VO	GSH	N
487	05/17/10	MAY	PM	2	1	MODO	MODO	1	ST	RWY	N
488	05/17/10	MAY	PM	2	1	BLAC	COGR	12	FL	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
489	05/17/10	MAY	PM	2	1	SPAR	HOSP	2	ST	GSH	N
490	05/17/10	MAY	PM	2	1	BLAC	COGR	1	FP	AIR	Y
491	05/17/10	MAY	PM	2	1	BLAC	EUST	2	ST	ASP	N
492	05/17/10	MAY	PM	2	2	BLAC	WEME	1	FL	GSH	N
493	05/17/10	MAY	PM	2	2	GAME	RNPH	1	VO	GSH	N
494	05/17/10	MAY	PM	2	2	BLAC	RWBL	1	ST	AGR	N
495	05/17/10	MAY	PM	2	2	BLAC	COGR	30	FL	GSH	N
496	05/17/10	MAY	PM	2	2	BLAC	RWBL	1	VO	GSH	N
497	05/17/10	MAY	PM	2	2	MISC	AMRO	1	ST	TRE	N
498	05/17/10	MAY	PM	2	3	DUCK	BWTE	2	ST	TSW	N
499	05/17/10	MAY	PM	2	3	DUCK	MALL	1	VO	TSW	N
500	05/17/10	MAY	PM	2	3	BLAC	MXBL	15	ST	MAR	N
501	05/17/10	MAY	PM	2	3	GAME	RNPH	1	VO	AGR	N
502	05/17/10	MAY	PM	2	3	BLAC	COGR	30	ST	GSH	N
503	05/17/10	MAY	PM	2	3	GAME	RNPH	1	VO	AGR	N
504	05/17/10	MAY	PM	2	4	DUCK	MALL	2	ST	PND	N
505	05/17/10	MAY	PM	2	4	GAME	RNPH	1	VO	MAR	N
506	05/17/10	MAY	PM	2	4	BLAC	COGR	60	FL	TRE	N
507	05/17/10	MAY	PM	2	4	DUCK	BWTE	8	ST	PND	N
508	05/17/10	MAY	PM	2	4	DUCK	BWTE	3	ST	PND	N
509	05/17/10	MAY	PM	2	4	MODO	MODO	1	FP	GLG	N
510	05/17/10	MAY	PM	2	4	GAME	RNPH	2	AG	AGR	N
511	05/17/10	MAY	PM	2	4	DUCK	REDH	2	ST	PND	N
512	05/17/10	MAY	PM	2	4	GAME	RNPH	1	VO	GSH	N
513	05/17/10	MAY	PM	2	4	MODO	MODO	2	FP	AIR	N
514	05/17/10	MAY	PM	2	4	MODO	MODO	1	ST	GLG	N
515	05/17/10	MAY	PM	2	4	BLAC	COGR	8	FL	GLG	N
516	05/17/10	MAY	PM	2	4	DUCK	NOPI	2	ST	PND	N
517	05/17/10	MAY	PM	2	5	DUCK	MALL	2	ST	TSW	N
518	05/17/10	MAY	PM	2	5	BLAC	WEME	2	VO	AGR	N
519	05/17/10	MAY	PM	2	5	DUCK	MALL	2	ST	TSW	N
520	05/17/10	MAY	PM	2	5	MISC	AMRO	1	ST	TSW	N
521	05/17/10	MAY	PM	2	5	BLAC	COGR	40	FL	AGR	N
522	05/17/10	MAY	PM	2	5	GAME	RNPH	1	ST	GVL	N
523	05/17/10	MAY	PM	2	5	MODO	MODO	1	ST	STR	N
524	05/17/10	MAY	PM	2	5	GAME	RNPH	1	VO	AGR	N
525	05/17/10	MAY	PM	2	5	DUCK	NOSH	2	ST	TSW	N
526	05/17/10	MAY	PM	2	5	SHOR	KILL	1	ST	GVL	N
527	05/17/10	MAY	PM	2	5	BLAC	RWBL	4	VO	MAR	N
528	05/17/10	MAY	PM	2	5	SHOR	KILL	2	VO	TSW	N
529	05/17/10	MAY	PM	2	5	MODO	MODO	2	FL	AGR	N
530	05/17/10	MAY	PM	2	5	MISC	AMRO	1	ST	AGR	N
531	05/18/10	MAY	AM	1	1	BLAC	EUST	2	ST	STR	N
532	05/18/10	MAY	AM	1	1	BLAC	COGR	12	FL	GSH	N
533	05/18/10	MAY	AM	1	1	BLAC	WEME	1	ST	RWY	N
534	05/18/10	MAY	AM	1	1	SWAL	BARS	1	ST	GSH	N
535	05/18/10	MAY	AM	1	1	MISC	AMRO	1	ST	GSH	N
536	05/18/10	MAY	AM	1	1	SPAR	HOSP	1	ST	ASP	N
537	05/18/10	MAY	AM	1	1	BLAC	BHCO	5	ST	GSH	N
538	05/18/10	MAY	AM	1	1	SPAR	HOSP	2	ST	GSH	N
539	05/18/10	MAY	AM	1	1	BLAC	EUST	1	ST	STR	N
540	05/18/10	MAY	AM	1	1	BLAC	BHCO	3	ST	RWY	N
541	05/18/10	MAY	AM	1	1	MISC	AMRO	1	ST	GSH	N
542	05/18/10	MAY	AM	1	1	BLAC	COGR	1	ST	GSH	N
543	05/18/10	MAY	AM	1	1	BLAC	EUST	1	ST	GSH	N
544	05/18/10	MAY	AM	1	2	BLAC	RWBL	1	ST	MAR	N
545	05/18/10	MAY	AM	1	2	BLAC	COGR	1	FL	GSH	Y
546	05/18/10	MAY	AM	1	2	DUCK	AMWI	2	FP	AIR	Y
547	05/18/10	MAY	AM	1	2	GAME	RNPH	1	VO	GSH	N
548	05/18/10	MAY	AM	1	2	DUCK	BWTE	1	FP	AIR	N
549	05/18/10	MAY	AM	1	2	BLAC	COGR	2	ST	MAR	N
550	05/18/10	MAY	AM	1	2	BLAC	COGR	12	FL	GSH	N
551	05/18/10	MAY	AM	1	2	BLAC	WEME	2	ST	RWY	N
552	05/18/10	MAY	AM	1	2	BLAC	BHCO	3	ST	GSH	N
553	05/18/10	MAY	AM	1	3	GEES	CAGO	2	ST	AGR	N
554	05/18/10	MAY	AM	1	3	BLAC	BHCO	2	ST	RWY	N
555	05/18/10	MAY	AM	1	3	BLAC	RWBL	6	ST	MAR	N
556	05/18/10	MAY	AM	1	3	BLAC	RWBL	10	ST	AGR	N
557	05/18/10	MAY	AM	1	3	BLAC	COGR	2	ST	GSH	Y
558	05/18/10	MAY	AM	1	3	GAME	RNPH	1	VO	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
59	05/18/10	MAY	AM	1	3	DUCK	NOPI	2	ST	TSW	N
560	05/18/10	MAY	AM	1	3	BLAC	WEME	2	ST	RWY	N
561	05/18/10	MAY	AM	1	3	BLAC	WEME	1	VO	GSH	N
562	05/18/10	MAY	AM	1	3	BLAC	MXBL	20	FL	AGR	N
563	05/18/10	MAY	AM	1	3	BLAC	YHBL	6	ST	MAR	N
564	05/18/10	MAY	AM	1	4	BLAC	COGR	30	FL	MAR	N
565	05/18/10	MAY	AM	1	4	DUCK	REDH	2	ST	PND	N
566	05/18/10	MAY	AM	1	4	DUCK	NOPI	2	ST	TSW	N
567	05/18/10	MAY	AM	1	4	SHOR	KILL	2	ST	TSW	N
568	05/18/10	MAY	AM	1	4	BLAC	COGR	1	FP	AIR	Y
569	05/18/10	MAY	AM	1	4	DUCK	NOSH	1	ST	TSW	N
570	05/18/10	MAY	AM	1	4	BLAC	COGR	2	FP	AIR	Y
571	05/18/10	MAY	AM	1	5	DUCK	MALL	2	ST	TSW	N
572	05/18/10	MAY	AM	1	5	DUCK	MALL	1	ST	DTC	N
573	05/18/10	MAY	AM	1	5	DUCK	MALL	2	ST	DTC	N
574	05/18/10	MAY	AM	1	5	GEES	CAGO	4	ST	MAR	N
575	05/18/10	MAY	AM	1	5	DUCK	MALL	2	ST	TSW	N
576	05/18/10	MAY	AM	1	5	BLAC	COGR	2	FL	AGR	N
577	05/18/10	MAY	AM	1	5	DUCK	MALL	3	FL	MAR	N
578	05/18/10	MAY	AM	1	5	DUCK	MALL	4	FL	MAR	N
579	05/18/10	MAY	AM	1	5	DUCK	BWTE	3	ST	TSW	N
580	05/18/10	MAY	AM	1	5	SHOR	KILL	2	ST	MAR	N
581	05/18/10	MAY	AM	1	5	BLAC	WEME	1	VO	AGR	N
582	05/18/10	MAY	AM	2	1	BLAC	EUST	2	ST	STR	N
583	05/18/10	MAY	AM	2	1	BLAC	COGR	20	ST	GSH	N
584	05/18/10	MAY	AM	2	1	RODO	RODO	1	FD	GSH	N
585	05/18/10	MAY	AM	2	1	SPAR	HOSP	1	ST	STR	N
586	05/18/10	MAY	AM	2	1	BLAC	COGR	1	ST	GSH	N
587	05/18/10	MAY	AM	2	1	BLAC	COGR	4	ST	GSH	N
588	05/18/10	MAY	AM	2	1	BLAC	EUST	1	FD	GSH	N
589	05/18/10	MAY	AM	2	1	SPAR	HOSP	1	ST	ASP	N
590	05/18/10	MAY	AM	2	1	BLAC	COGR	8	ST	GSH	N
591	05/18/10	MAY	AM	2	1	MISC	AMRO	1	ST	GSH	N
592	05/18/10	MAY	AM	2	2	BLAC	COGR	1	FP	AIR	Y
593	05/18/10	MAY	AM	2	2	BLAC	RWBL	1	ST	MAR	N
594	05/18/10	MAY	AM	2	2	BLAC	COGR	10	FL	GSH	Y
595	05/18/10	MAY	AM	2	2	GAME	RNPH	1	VO	GSH	N
596	05/18/10	MAY	AM	2	2	MODO	MODO	2	ST	TRE	N
597	05/18/10	MAY	AM	2	2	GAME	RNPH	1	VO	GSH	N
598	05/18/10	MAY	AM	2	2	BLAC	COGR	2	ST	RWY	N
599	05/18/10	MAY	AM	2	2	BLAC	COGR	50	FL	GSH	N
600	05/18/10	MAY	AM	2	3	BLAC	COGR	40	FL	AGR	N
601	05/18/10	MAY	AM	2	3	DUCK	MALL	2	ST	TSW	N
602	05/18/10	MAY	AM	2	3	BLAC	COGR	50	FL	GSH	N
603	05/18/10	MAY	AM	2	3	GAME	RNPH	2	ST	AGR	N
604	05/18/10	MAY	AM	2	3	DUCK	NOPI	2	ST	MAR	N
605	05/18/10	MAY	AM	2	4	BLAC	RWBL	6	ST	MAR	N
606	05/18/10	MAY	AM	2	4	BLAC	COGR	40	FL	PND	N
607	05/18/10	MAY	AM	2	4	BLAC	WEME	1	VO	GSH	N
608	05/18/10	MAY	AM	2	4	GEES	CAGO	2	ST	PND	N
609	05/18/10	MAY	AM	2	4	DUCK	MALL	2	ST	TSW	N
610	05/18/10	MAY	AM	2	4	DUCK	BWTE	3	ST	TSW	N
611	05/18/10	MAY	AM	2	4	BLAC	YHBL	4	ST	PND	N
612	05/18/10	MAY	AM	2	4	DUCK	REDH	2	ST	PND	N
613	05/18/10	MAY	AM	2	4	DUCK	NOSH	1	ST	TSW	N
614	05/18/10	MAY	AM	2	4	DUCK	NOPI	2	ST	TSW	N
615	05/18/10	MAY	AM	2	5	GEES	CAGO	2	ST	AGR	N
616	05/18/10	MAY	AM	2	5	BLAC	RWBL	9	ST	MAR	N
617	05/18/10	MAY	AM	2	5	SHOR	KILL	2	ST	TSW	N
618	05/18/10	MAY	AM	2	5	BLAC	COGR	40	ST	AGR	N
619	05/18/10	MAY	AM	2	5	DUCK	BWTE	2	ST	MAR	N
620	05/18/10	MAY	AM	2	5	DUCK	NOSH	3	ST	MAR	N
621	06/03/10	JUN	PM	1	1	SPAR	HOSP	4	FL	STR	N
622	06/03/10	JUN	PM	1	1	BLAC	EUST	2	ST	GLG	N
623	06/03/10	JUN	PM	1	1	BLAC	COGR	20	FL	GLG	N
624	06/03/10	JUN	PM	1	1	BLAC	RWBL	2	FL	GLG	N
625	06/03/10	JUN	PM	1	1	BLAC	RWBL	10	FL	GLG	N
626	06/03/10	JUN	PM	1	1	BLAC	COGR	2	ST	GLG	N
627	06/03/10	JUN	PM	1	1	BLAC	EUST	1	ST	STR	N
628	06/03/10	JUN	PM	1	1	BLAC	COGR	2	ST	GLG	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
629	06/03/10	JUN	PM	1	1	BLAC	COGR	1	FP	AIR	Y
630	06/03/10	JUN	PM	1	1	BLAC	WEME	1	ST	STR	N
631	06/03/10	JUN	PM	1	1	BLAC	EUST	1	FL	STR	N
632	06/03/10	JUN	PM	1	1	BLAC	COGR	6	FL	GLG	N
633	06/03/10	JUN	PM	1	1	BLAC	RWBL	1	ST	GSH	N
634	06/03/10	JUN	PM	1	2	DUCK	MALL	2	FP	AIR	N
635	06/03/10	JUN	PM	1	2	BLAC	COGR	15	FL	GLG	N
636	06/03/10	JUN	PM	1	2	BLAC	RWBL	1	ST	MAR	N
637	06/03/10	JUN	PM	1	2	GAME	RNPH	1	VO	GSH	N
638	06/03/10	JUN	PM	1	3	DUCK	MALL	1	ST	PND	N
639	06/03/10	JUN	PM	1	3	GAME	RNPH	1	VO	GSH	N
640	06/03/10	JUN	PM	1	3	DUCK	BWTE	1	ST	PND	N
641	06/03/10	JUN	PM	1	3	BLAC	MXBL	30	ST	AGR	N
642	06/03/10	JUN	PM	1	3	BLAC	WEME	2	VO	GLG	N
643	06/03/10	JUN	PM	1	3	GAME	RNPH	1	ST	GLG	N
644	06/03/10	JUN	PM	1	3	BLAC	WEME	1	ST	GLG	N
645	06/03/10	JUN	PM	1	3	GEES	CAGO	4	ST	PND	N
646	06/03/10	JUN	PM	1	3	BLAC	COGR	30	ST	AGR	N
647	06/03/10	JUN	PM	1	3	GAME	RNPH	1	VO	GLG	N
648	06/03/10	JUN	PM	1	3	GAME	RNPH	1	VO	GLG	N
649	06/03/10	JUN	PM	1	3	BLAC	MXBL	50	FL	GLG	N
650	06/03/10	JUN	PM	1	3	DUCK	NOSH	1	ST	PND	N
651	06/03/10	JUN	PM	1	3	MISC	WEKI	1	VO	GLG	N
652	06/03/10	JUN	PM	1	3	BLAC	WEME	2	VO	GLG	N
653	06/03/10	JUN	PM	1	3	MODO	MODO	2	ST	AGR	N
654	06/03/10	JUN	PM	1	3	MISC	AMRO	1	ST	AGR	N
655	06/03/10	JUN	PM	1	4	MODO	MODO	2	FL	GSH	N
656	06/03/10	JUN	PM	1	4	BLAC	COGR	4	FP	PND	Y
657	06/03/10	JUN	PM	1	4	BLAC	COGR	50	FL	MAR	N
658	06/03/10	JUN	PM	1	4	GAME	RNPH	1	ST	PND	N
659	06/03/10	JUN	PM	1	4	GAME	RNPH	3	VO	GSH	N
660	06/03/10	JUN	PM	1	4	BLAC	WEME	4	VO	GSH	N
661	06/03/10	JUN	PM	1	5	DUCK	NOPI	1	ST	MAR	N
662	06/03/10	JUN	PM	1	5	DUCK	MALL	1	FL	MAR	N
663	06/03/10	JUN	PM	1	5	BLAC	RWBL	200	FL	AGR	N
664	06/03/10	JUN	PM	1	5	HAWK	AMKE	2	ST	TRE	N
665	06/03/10	JUN	PM	1	5	SHOR	KILL	2	VO	AGR	N
666	06/03/10	JUN	PM	1	5	GAME	RNPH	1	VO	AGR	N
667	06/03/10	JUN	PM	1	5	SHOR	KILL	2	VO	MAR	N
668	06/03/10	JUN	PM	1	5	DUCK	AMCO	1	ST	MAR	N
669	06/03/10	JUN	PM	1	5	DUCK	BWTE	2	ST	MAR	N
670	06/03/10	JUN	PM	1	5	DUCK	NOSH	2	ST	MAR	N
671	06/03/10	JUN	PM	2	1	BLAC	WEME	2	VO	GLG	N
672	06/03/10	JUN	PM	2	1	MODO	MODO	9	ST	GSH	N
673	06/03/10	JUN	PM	2	1	RODO	RODO	18	ST	STR	N
674	06/03/10	JUN	PM	2	1	BLAC	COGR	3	ST	STR	N
675	06/03/10	JUN	PM	2	1	BLAC	COGR	1	ST	GLG	N
676	06/03/10	JUN	PM	2	1	MISC	AMRO	1	ST	ASP	N
677	06/03/10	JUN	PM	2	1	DUCK	MALL	3	FP	AIR	Y
678	06/03/10	JUN	PM	2	1	RODO	RODO	35	ST	STR	N
679	06/03/10	JUN	PM	2	1	MODO	MODO	1	ST	GSH	N
680	06/03/10	JUN	PM	2	1	BLAC	COGR	3	ST	GSH	N
681	06/03/10	JUN	PM	2	1	MODO	MODO	1	FP	ASP	N
682	06/03/10	JUN	PM	2	1	BLAC	WEME	2	ST	GLG	N
683	06/03/10	JUN	PM	2	1	BLAC	EUST	6	ST	STR	N
684	06/03/10	JUN	PM	2	1	BLAC	COGR	450	FL	GSH	N
685	06/03/10	JUN	PM	2	1	BLAC	COGR	20	ST	GSH	N
686	06/03/10	JUN	PM	2	1	BLAC	EUST	10	ST	GSH	N
687	06/03/10	JUN	PM	2	1	GAME	RNPH	2	VO	GLG	N
688	06/03/10	JUN	PM	2	1	BLAC	COGR	20	ST	GLG	N
689	06/03/10	JUN	PM	2	2	BLAC	RWBL	2	ST	MAR	N
690	06/03/10	JUN	PM	2	2	BLAC	COGR	30	ST	GLG	N
691	06/03/10	JUN	PM	2	2	BLAC	WEME	2	VO	GLG	N
692	06/03/10	JUN	PM	2	3	GAME	RNPH	1	ST	GLG	N
693	06/03/10	JUN	PM	2	3	BLAC	RWBL	7	ST	MAR	N
694	06/03/10	JUN	PM	2	3	DUCK	BWTE	2	ST	TSW	N
695	06/03/10	JUN	PM	2	3	GAME	RNPH	1	ST	AGR	N
696	06/03/10	JUN	PM	2	3	GEES	CAGO	8	ST	AGR	N
697	06/03/10	JUN	PM	2	3	GAME	RNPH	1	ST	AGR	N
698	06/03/10	JUN	PM	2	3	MODO	MODO	2	ST	AGR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
99	06/03/10	JUN	PM	2	3	BLAC	EUST	10	ST	AGR	N
700	06/03/10	JUN	PM	2	3	BLAC	COGR	50	ST	AGR	N
701	06/03/10	JUN	PM	2	3	SWAL	BARS	2	FL	GLG	N
702	06/03/10	JUN	PM	2	4	BLAC	COGR	2	FL	GLG	Y
703	06/03/10	JUN	PM	2	4	DUCK	MALL	1	FL	GLG	Y
704	06/03/10	JUN	PM	2	4	DUCK	MALL	3	ST	PND	N
705	06/03/10	JUN	PM	2	4	BLAC	COGR	6	ST	PND	N
706	06/03/10	JUN	PM	2	4	GAME	RNPH	1	ST	PND	N
707	06/03/10	JUN	PM	2	4	BLAC	COGR	20	ST	PND	N
708	06/03/10	JUN	PM	2	4	DUCK	MALL	2	ST	PND	N
709	06/03/10	JUN	PM	2	5	MODO	MODO	2	ST	STR	N
710	06/03/10	JUN	PM	2	5	DUCK	BWTE	2	FL	MAR	N
711	06/03/10	JUN	PM	2	5	SHOR	KILL	2	VO	MAR	N
712	06/03/10	JUN	PM	2	5	DUCK	NOSH	4	ST	MAR	N
713	06/04/10	JUN	AM	1	1	BLAC	WEME	1	ST	ASP	N
714	06/04/10	JUN	AM	1	1	DUCK	BWTE	2	FL	GLG	Y
715	06/04/10	JUN	AM	1	1	DUCK	MALL	2	ST	GLG	N
716	06/04/10	JUN	AM	1	1	RODO	RODO	7	ST	STR	N
717	06/04/10	JUN	AM	1	1	GAME	RNPH	1	ST	GSH	N
718	06/04/10	JUN	AM	1	1	GAME	RNPH	1	ST	GSH	N
719	06/04/10	JUN	AM	1	1	DUCK	MALL	1	FL	GLG	Y
720	06/04/10	JUN	AM	1	1	MISC	AMRO	2	ST	GSH	N
721	06/04/10	JUN	AM	1	1	DUCK	MALL	2	FL	GLG	Y
722	06/04/10	JUN	AM	1	1	BLAC	EUST	1	ST	STR	N
723	06/04/10	JUN	AM	1	1	BLAC	COGR	20	ST	GLG	N
724	06/04/10	JUN	AM	1	1	BLAC	EUST	1	ST	STR	N
725	06/04/10	JUN	AM	1	1	MODO	MODO	1	ST	GVL	N
726	06/04/10	JUN	AM	1	1	BLAC	EUST	3	ST	STR	N
727	06/04/10	JUN	AM	1	1	MODO	MODO	1	ST	GLG	N
728	06/04/10	JUN	AM	1	2	BLAC	RWBL	2	VO	MAR	N
729	06/04/10	JUN	AM	1	2	BLAC	RWBL	2	ST	MAR	N
730	06/04/10	JUN	AM	1	2	BLAC	WEME	3	VO	GLG	N
731	06/04/10	JUN	AM	1	2	BLAC	COGR	50	ST	GLG	Y
732	06/04/10	JUN	AM	1	3	BLAC	MXBL	100	ST	GLG	N
733	06/04/10	JUN	AM	1	3	DUCK	MALL	1	FL	MAR	N
734	06/04/10	JUN	AM	1	3	DUCK	MALL	2	ST	AGR	N
735	06/04/10	JUN	AM	1	3	DUCK	MALL	2	ST	PND	N
736	06/04/10	JUN	AM	1	3	BLAC	WEME	2	VO	GLG	N
737	06/04/10	JUN	AM	1	3	MISC	EAKI	1	AG	AGR	N
738	06/04/10	JUN	AM	1	3	BLAC	WEME	5	VO	GLG	N
739	06/04/10	JUN	AM	1	3	MISC	AMRO	6	ST	AGR	N
740	06/04/10	JUN	AM	1	3	SPAR	HOLA	2	FL	AGR	N
741	06/04/10	JUN	AM	1	4	DUCK	MALL	2	ST	PND	N
742	06/04/10	JUN	AM	1	4	DUCK	AMWI	1	ST	PND	N
743	06/04/10	JUN	AM	1	4	DUCK	NOSH	1	ST	PND	N
744	06/04/10	JUN	AM	1	4	BLAC	COGR	2	ST	RWY	N
745	06/04/10	JUN	AM	1	5	DUCK	NOPI	1	ST	MAR	N
746	06/04/10	JUN	AM	1	5	DUCK	MALL	2	ST	MAR	N
747	06/04/10	JUN	AM	1	5	BLAC	RWBL	5	VO	MAR	N
748	06/04/10	JUN	AM	1	5	SHOR	KILL	2	ST	GVL	N
749	06/04/10	JUN	AM	1	5	BLAC	COGR	30	FD	AGR	N
750	06/04/10	JUN	AM	1	5	BLAC	WEME	2	VO	AGR	N
751	06/04/10	JUN	AM	1	5	DUCK	BWTE	1	ST	MAR	N
752	06/04/10	JUN	AM	1	5	MODO	MODO	1	ST	GVL	N
753	06/04/10	JUN	AM	1	5	MODO	MODO	1	ST	STR	N
754	06/04/10	JUN	AM	1	5	DUCK	MALL	1	ST	DTC	N
755	06/04/10	JUN	AM	2	1	RODO	RODO	7	ST	STR	N
756	06/04/10	JUN	AM	2	1	DUCK	MALL	1	FL	GLG	Y
757	06/04/10	JUN	AM	2	1	MISC	AMRO	2	ST	GSH	N
758	06/04/10	JUN	AM	2	1	MODO	MODO	1	ST	GLG	N
759	06/04/10	JUN	AM	2	1	DUCK	MALL	2	FL	GLG	Y
760	06/04/10	JUN	AM	2	1	BLAC	EUST	1	ST	STR	N
761	06/04/10	JUN	AM	2	1	DUCK	MALL	2	ST	GLG	N
762	06/04/10	JUN	AM	2	1	GAME	RNPH	1	ST	GSH	N
763	06/04/10	JUN	AM	2	1	GAME	RNPH	1	ST	GSH	N
764	06/04/10	JUN	AM	2	1	BLAC	WEME	1	ST	ASP	N
765	06/04/10	JUN	AM	2	1	DUCK	BWTE	2	FL	GLG	Y
766	06/04/10	JUN	AM	2	1	BLAC	COGR	20	ST	GLG	N
767	06/04/10	JUN	AM	2	1	BLAC	EUST	3	ST	STR	N
768	06/04/10	JUN	AM	2	1	BLAC	EUST	1	ST	STR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
769	06/04/10	JUN	AM	2	1	MODO	MODO	1	ST	GVL	N
770	06/04/10	JUN	AM	2	2	BLAC	WEME	3	VO	GLG	N
771	06/04/10	JUN	AM	2	2	BLAC	RWBL	2	ST	MAR	N
772	06/04/10	JUN	AM	2	2	BLAC	RWBL	2	VO	MAR	N
773	06/04/10	JUN	AM	2	2	BLAC	COGR	50	ST	GLG	Y
774	06/04/10	JUN	AM	2	3	BLAC	WEME	2	VO	GLG	N
775	06/04/10	JUN	AM	2	3	MISC	EAKI	1	AG	AGR	N
776	06/04/10	JUN	AM	2	3	DUCK	MALL	1	FL	MAR	N
777	06/04/10	JUN	AM	2	3	BLAC	MXBL	100	ST	GLG	N
778	06/04/10	JUN	AM	2	3	DUCK	MALL	2	ST	AGR	N
779	06/04/10	JUN	AM	2	3	DUCK	MALL	2	ST	PND	N
780	06/04/10	JUN	AM	2	3	BLAC	WEME	5	VO	GLG	N
781	06/04/10	JUN	AM	2	3	MISC	AMRO	6	ST	AGR	N
782	06/04/10	JUN	AM	2	3	SPAR	HOLA	2	FL	AGR	N
783	06/04/10	JUN	AM	2	4	DUCK	MALL	2	ST	PND	N
784	06/04/10	JUN	AM	2	4	BLAC	COGR	2	ST	RWY	N
785	06/04/10	JUN	AM	2	4	DUCK	AMWI	1	ST	PND	N
786	06/04/10	JUN	AM	2	4	DUCK	NOSH	1	ST	PND	N
787	06/04/10	JUN	AM	2	5	BLAC	RWBL	5	VO	MAR	N
788	06/04/10	JUN	AM	2	5	DUCK	BWTE	1	ST	MAR	N
789	06/04/10	JUN	AM	2	5	DUCK	MALL	2	ST	MAR	N
790	06/04/10	JUN	AM	2	5	SHOR	KILL	2	ST	GVL	N
791	06/04/10	JUN	AM	2	5	DUCK	NOPI	1	ST	MAR	N
792	06/04/10	JUN	AM	2	5	DUCK	MALL	1	ST	DTC	N
793	06/04/10	JUN	AM	2	5	MODO	MODO	1	ST	GVL	N
794	06/04/10	JUN	AM	2	5	BLAC	COGR	30	FD	AGR	N
795	06/04/10	JUN	AM	2	5	BLAC	WEME	2	VO	AGR	N
796	06/04/10	JUN	AM	2	5	MODO	MODO	1	ST	STR	N
797	06/16/10	JUN	PM	1	1	BLAC	COGR	5	ST	GSH	Y
798	06/16/10	JUN	PM	1	1	BLAC	WEME	2	ST	GSH	Y
799	06/16/10	JUN	PM	1	1	BLAC	COGR	2	ST	GSH	N
800	06/16/10	JUN	PM	1	1	MISC	AMRO	1	ST	GSH	N
801	06/16/10	JUN	PM	1	1	BLAC	WEME	2	ST	GSH	N
802	06/16/10	JUN	PM	1	1	BLAC	COGR	50	ST	GLG	N
803	06/16/10	JUN	PM	1	1	MISC	WEKI	1	ST	GLG	N
804	06/16/10	JUN	PM	1	1	BLAC	WEME	1	ST	GSH	N
805	06/16/10	JUN	PM	1	1	SHOR	KILL	2	FL	GVL	N
806	06/16/10	JUN	PM	1	1	BLAC	COGR	1	ST	GSH	N
807	06/16/10	JUN	PM	1	1	SPAR	HOSP	2	ST	GSH	N
808	06/16/10	JUN	PM	1	1	BLAC	EUST	1	ST	GSH	N
809	06/16/10	JUN	PM	1	2	BLAC	WEME	2	ST	GSH	Y
810	06/16/10	JUN	PM	1	2	GAME	RNPH	1	VO	GLG	N
811	06/16/10	JUN	PM	1	2	BLAC	WEME	1	VO	GLG	N
812	06/16/10	JUN	PM	1	2	SPAR	HOLA	1	VO	GLG	N
813	06/16/10	JUN	PM	1	2	MODO	MODO	1	FL	GLG	N
814	06/16/10	JUN	PM	1	3	DUCK	BWTE	2	ST	TSW	N
815	06/16/10	JUN	PM	1	3	HAWK	RTHA	1	ST	AGR	N
816	06/16/10	JUN	PM	1	3	DUCK	MALL	2	ST	TSW	N
817	06/16/10	JUN	PM	1	3	BLAC	COGR	20	ST	GSH	N
818	06/16/10	JUN	PM	1	3	GAME	RNPH	2	ST	AGR	N
819	06/16/10	JUN	PM	1	3	DUCK	NOPI	1	ST	MAR	N
820	06/16/10	JUN	PM	1	3	BLAC	EUST	40	ST	GSH	N
821	06/16/10	JUN	PM	1	3	BLAC	MXBL	20	ST	AGR	N
822	06/16/10	JUN	PM	1	4	DUCK	MALL	2	ST	TSW	N
823	06/16/10	JUN	PM	1	4	GEES	CAGO	40	FL	AGR	N
824	06/16/10	JUN	PM	1	4	BLAC	RWBL	20	FL	AGR	N
825	06/16/10	JUN	PM	1	4	GEES	CAGO	20	ST	GLG	N
826	06/16/10	JUN	PM	1	4	DUCK	BWTE	2	ST	TSW	N
827	06/16/10	JUN	PM	1	4	DUCK	NOPI	2	ST	TSW	N
828	06/16/10	JUN	PM	1	4	BLAC	COGR	12	ST	TSW	N
829	06/16/10	JUN	PM	1	5	SWAL	BARS	2	FL	MAR	N
830	06/16/10	JUN	PM	1	5	BLAC	RWBL	30	ST	MAR	N
831	06/16/10	JUN	PM	1	5	BLAC	RWBL	30	ST	AGR	N
832	06/16/10	JUN	PM	1	5	DUCK	BWTE	2	ST	MAR	N
833	06/16/10	JUN	PM	1	5	BLAC	COGR	30	ST	MAR	N
834	06/16/10	JUN	PM	1	5	SHOR	KILL	2	ST	MAR	N
835	06/16/10	JUN	PM	1	5	DUCK	BWTE	2	ST	MAR	N
836	06/16/10	JUN	PM	1	5	BLAC	COGR	30	ST	STR	N
837	06/16/10	JUN	PM	2	1	BLAC	WEME	1	ST	GSH	N
838	06/16/10	JUN	PM	2	1	BLAC	WEME	2	ST	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
39	06/16/10	JUN	PM	2	1	MISC	WEKI	1	ST	GLG	N
40	06/16/10	JUN	PM	2	1	BLAC	COGR	5	ST	GSH	Y
41	06/16/10	JUN	PM	2	1	BLAC	EUST	1	ST	GSH	N
42	06/16/10	JUN	PM	2	1	BLAC	WEME	2	ST	GSH	Y
43	06/16/10	JUN	PM	2	1	MISC	AMRO	1	ST	GSH	N
44	06/16/10	JUN	PM	2	1	SHOR	KILL	2	FL	GVL	N
45	06/16/10	JUN	PM	2	1	SPAR	HOSP	2	ST	STR	N
46	06/16/10	JUN	PM	2	1	BLAC	COGR	1	ST	GSH	N
47	06/16/10	JUN	PM	2	1	BLAC	COGR	2	ST	GSH	N
48	06/16/10	JUN	PM	2	1	BLAC	COGR	50	ST	GLG	N
49	06/16/10	JUN	PM	2	2	BLAC	WEME	2	ST	GSH	Y
50	06/16/10	JUN	PM	2	2	GAME	RNPH	1	VO	GLG	N
51	06/16/10	JUN	PM	2	2	MODO	MODO	1	FL	GLG	N
52	06/16/10	JUN	PM	2	2	BLAC	WEME	1	VO	GLG	N
53	06/16/10	JUN	PM	2	2	SPAR	HOLA	1	VO	GLG	N
54	06/16/10	JUN	PM	2	3	BLAC	WEME	M	VO	GLG	N
55	06/16/10	JUN	PM	2	3	HAWK	RTHA	1	ST	AGR	N
56	06/16/10	JUN	PM	2	3	DUCK	MALL	2	ST	TSW	N
57	06/16/10	JUN	PM	2	3	GAME	RNPH	2	ST	AGR	N
58	06/16/10	JUN	PM	2	3	BLAC	EUST	40	ST	GSH	N
59	06/16/10	JUN	PM	2	3	BLAC	COGR	20	ST	GSH	N
60	06/16/10	JUN	PM	2	3	DUCK	NOPI	1	ST	MAR	N
61	06/16/10	JUN	PM	2	3	BLAC	MXBL	20	ST	AGR	N
62	06/16/10	JUN	PM	2	3	DUCK	BWTE	2	ST	TSW	N
63	06/16/10	JUN	PM	2	4	BLAC	COGR	M	ST	RWY	N
64	06/16/10	JUN	PM	2	4	DUCK	BWTE	M	ST	PND	N
65	06/16/10	JUN	PM	2	4	DUCK	BWTE	M	FL	PND	N
66	06/16/10	JUN	PM	2	4	BLAC	COGR	M	ST	GSH	N
67	06/16/10	JUN	PM	2	4	BLAC	EUST	M	ST	RWY	N
68	06/16/10	JUN	PM	2	5	DUCK	BWTE	10	ST	MAR	N
69	06/16/10	JUN	PM	2	5	BLAC	MXBL	150	VO	AGR	N
70	06/17/10	JUN	AM	1	1	MODO	MODO	1	ST	GVL	N
71	06/17/10	JUN	AM	1	1	BLAC	WEME	2	ST	GLG	N
72	06/17/10	JUN	AM	1	1	MODO	MODO	2	ST	ASP	N
73	06/17/10	JUN	AM	1	1	BLAC	COGR	2	FL	ASP	N
74	06/17/10	JUN	AM	1	1	RODO	RODO	2	ST	STR	N
75	06/17/10	JUN	AM	1	1	BLAC	COGR	10	ST	GSH	Y
76	06/17/10	JUN	AM	1	1	BLAC	COGR	8	FD	STR	N
77	06/17/10	JUN	AM	1	1	BLAC	COGR	50	ST	GLG	N
78	06/17/10	JUN	AM	1	1	SPAR	HOSP	2	ST	STR	N
79	06/17/10	JUN	AM	1	1	MISC	AMRO	1	ST	STR	N
80	06/17/10	JUN	AM	1	1	BLAC	EUST	1	ST	STR	N
81	06/17/10	JUN	AM	1	1	MISC	AMRO	2	FD	GSH	N
82	06/17/10	JUN	AM	1	1	BLAC	EUST	60	ST	GSH	Y
83	06/17/10	JUN	AM	1	1	BLAC	EUST	2	FD	GSH	N
84	06/17/10	JUN	AM	1	2	BLAC	COGR	20	ST	GSH	N
85	06/17/10	JUN	AM	1	2	BLAC	WEME	1	VO	GLG	N
86	06/17/10	JUN	AM	1	2	GAME	RNPH	1	VO	GLG	N
87	06/17/10	JUN	AM	1	2	BLAC	EUST	50	ST	GSH	N
88	06/17/10	JUN	AM	1	2	MISC	AMRO	1	ST	RWY	N
89	06/17/10	JUN	AM	1	3	MODO	MODO	3	ST	AGR	N
90	06/17/10	JUN	AM	1	3	BLAC	EUST	2	FL	AGR	N
91	06/17/10	JUN	AM	1	3	DUCK	MALL	4	ST	TSW	N
92	06/17/10	JUN	AM	1	3	DUCK	MALL	2	FL	MAR	N
93	06/17/10	JUN	AM	1	3	BLAC	EUST	10	FD	GSH	Y
94	06/17/10	JUN	AM	1	3	MISC	AMRO	2	FD	AGR	N
95	06/17/10	JUN	AM	1	3	HAWK	NOHA	1	ST	RWY	N
96	06/17/10	JUN	AM	1	3	MODO	MODO	12	FD	AGR	N
97	06/17/10	JUN	AM	1	3	MODO	MODO	5	ST	AGR	N
98	06/17/10	JUN	AM	1	4	BLAC	WEME	1	ST	RWY	N
99	06/17/10	JUN	AM	1	4	DUCK	MALL	3	ST	PND	N
100	06/17/10	JUN	AM	1	4	DUCK	MALL	7	ST	TSW	N
101	06/17/10	JUN	AM	1	4	GEES	CAGO	15	ST	AGR	N
102	06/17/10	JUN	AM	1	4	DUCK	MALL	2	ST	RWY	Y
103	06/17/10	JUN	AM	1	4	DUCK	MALL	2	FL	TSW	N
104	06/17/10	JUN	AM	1	4	BLAC	EUST	10	ST	RWY	N
105	06/17/10	JUN	AM	1	4	DUCK	NOPI	1	ST	TSW	N
106	06/17/10	JUN	AM	1	4	BLAC	MXBL	60	ST	AGR	N
107	06/17/10	JUN	AM	1	5	SHOR	KILL	1	ST	TSW	N
108	06/17/10	JUN	AM	1	5	DUCK	NOPI	2	ST	TSW	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR ACT	HAB	XRWY
909	06/17/10	JUN	AM	1	5	DUCK	NOPI	2 ST	TSW	N
910	06/17/10	JUN	AM	1	5	BLAC	MXBL	60 ST	AGR	N
911	06/17/10	JUN	AM	1	5	DUCK	BWTE	2 ST	TSW	N
912	06/17/10	JUN	AM	2	1	BLAC	EUST	2 FD	GSH	N
913	06/17/10	JUN	AM	2	1	BLAC	COGR	10 ST	GSH	Y
914	06/17/10	JUN	AM	2	1	MISC	AMRO	2 FD	GSH	N
915	06/17/10	JUN	AM	2	1	RODO	RODO	2 ST	STR	N
916	06/17/10	JUN	AM	2	1	MODO	MODO	1 ST	GVL	N
917	06/17/10	JUN	AM	2	1	MISC	AMRO	1 ST	STR	N
918	06/17/10	JUN	AM	2	1	BLAC	WEME	2 ST	GLG	N
919	06/17/10	JUN	AM	2	1	SPAR	HOSP	2 ST	STR	N
920	06/17/10	JUN	AM	2	1	BLAC	COGR	8 FD	STR	N
921	06/17/10	JUN	AM	2	1	BLAC	COGR	50 ST	GLG	N
922	06/17/10	JUN	AM	2	1	BLAC	EUST	1 ST	STR	N
923	06/17/10	JUN	AM	2	1	BLAC	COGR	2 FL	ASP	N
924	06/17/10	JUN	AM	2	1	MODO	MODO	2 ST	ASP	N
925	06/17/10	JUN	AM	2	1	BLAC	EUST	60 ST	GSH	Y
926	06/17/10	JUN	AM	2	2	MISC	AMRO	1 ST	RWY	N
927	06/17/10	JUN	AM	2	2	GAME	RNPH	1 VO	GLG	N
928	06/17/10	JUN	AM	2	2	BLAC	COGR	20 ST	GSH	N
929	06/17/10	JUN	AM	2	2	BLAC	EUST	50 ST	GSH	N
930	06/17/10	JUN	AM	2	2	BLAC	WEME	1 VO	GLG	N
931	06/17/10	JUN	AM	2	3	DUCK	MALL	4 ST	TSW	N
932	06/17/10	JUN	AM	2	3	BLAC	EUST	2 FL	AGR	N
933	06/17/10	JUN	AM	2	3	DUCK	MALL	2 FL	MAR	N
934	06/17/10	JUN	AM	2	3	HAWK	NOHA	1 ST	RWY	N
935	06/17/10	JUN	AM	2	3	MISC	AMRO	2 FD	AGR	N
936	06/17/10	JUN	AM	2	3	MODO	MODO	3 ST	AGR	N
937	06/17/10	JUN	AM	2	3	MODO	MODO	12 FD	AGR	N
938	06/17/10	JUN	AM	2	3	MODO	MODO	5 ST	AGR	N
939	06/17/10	JUN	AM	2	3	BLAC	EUST	10 FD	GSH	Y
940	06/17/10	JUN	AM	2	4	BLAC	WEME	1 ST	RWY	N
941	06/17/10	JUN	AM	2	4	DUCK	MALL	2 ST	RWY	Y
942	06/17/10	JUN	AM	2	4	DUCK	MALL	2 FL	TSW	N
943	06/17/10	JUN	AM	2	4	DUCK	MALL	7 ST	TSW	N
944	06/17/10	JUN	AM	2	4	DUCK	MALL	3 ST	PND	N
945	06/17/10	JUN	AM	2	4	GEES	CAGO	15 ST	AGR	N
946	06/17/10	JUN	AM	2	4	DUCK	NOPI	1 ST	TSW	N
947	06/17/10	JUN	AM	2	4	BLAC	EUST	10 ST	RWY	N
948	06/17/10	JUN	AM	2	4	BLAC	MXBL	60 ST	AGR	N
949	06/17/10	JUN	AM	2	5	DUCK	BWTE	2 ST	TSW	N
950	06/17/10	JUN	AM	2	5	SHOR	KILL	1 ST	TSW	N
951	06/17/10	JUN	AM	2	5	DUCK	NOPI	2 ST	TSW	N
952	06/17/10	JUN	AM	2	5	DUCK	NOPI	2 ST	TSW	N
953	06/17/10	JUN	AM	2	5	BLAC	MXBL	60 ST	AGR	N
954	07/07/10	JUL	PM	1	1	MODO	MODO	3 FL	STR	N
955	07/07/10	JUL	PM	1	1	MISC	WEKI	1 ST	STR	N
956	07/07/10	JUL	PM	1	1	SWAL	BARS	1 FL	MAR	N
957	07/07/10	JUL	PM	1	1	BLAC	RWBL	6 ST	GSH	N
958	07/07/10	JUL	PM	1	1	BLAC	COGR	10 FL	GSH	N
959	07/07/10	JUL	PM	1	1	RODO	RODO	30 FL	STR	N
960	07/07/10	JUL	PM	1	1	GAME	RNPH	1 ST	GSH	N
961	07/07/10	JUL	PM	1	1	BLAC	RWBL	4 FL	MAR	N
962	07/07/10	JUL	PM	1	1	BLAC	WEME	1 ST	GSH	N
963	07/07/10	JUL	PM	1	1	BLAC	COGR	2 ST	MAR	N
964	07/07/10	JUL	PM	1	1	BLAC	EUST	4 FL	STR	N
965	07/07/10	JUL	PM	1	1	MISC	NOFL	1 ST	GSH	N
966	07/07/10	JUL	PM	1	1	MODO	MODO	2 ST	ASP	N
967	07/07/10	JUL	PM	1	1	SWAL	CLSW	4 FL	GSH	N
968	07/07/10	JUL	PM	1	2	MISC	EAKI	1 FL	RWY	N
969	07/07/10	JUL	PM	1	2	SWAL	BARS	2 FL	GSH	Y
970	07/07/10	JUL	PM	1	2	DUCK	MALL	3 ST	MAR	N
971	07/07/10	JUL	PM	1	2	BLAC	WEME	2 VO	GSH	N
972	07/07/10	JUL	PM	1	2	MISC	WEKI	1 ST	STR	N
973	07/07/10	JUL	PM	1	2	MISC	WEKI	4 FL	RWY	Y
974	07/07/10	JUL	PM	1	2	BLAC	RWBL	2 ST	TSW	N
975	07/07/10	JUL	PM	1	2	MISC	WEKI	2 ST	RWY	N
976	07/07/10	JUL	PM	1	2	BLAC	BOBO	8 FL	GLG	N
977	07/07/10	JUL	PM	1	2	GAME	RNPH	1 ST	RWY	N
978	07/07/10	JUL	PM	1	2	DUCK	NOPI	1 FL	GLG	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
79	07/07/10	JUL	PM	1	2	BLAC	BHCO	1	FP	AIR	N
980	07/07/10	JUL	PM	1	2	BLAC	MXBL	20	FL	GLG	N
981	07/07/10	JUL	PM	1	2	BLAC	EUST	1	FL	GSH	N
982	07/07/10	JUL	PM	1	2	MISC	WEKI	2	FL	GLG	N
983	07/07/10	JUL	PM	1	3	BLAC	WEME	1	VO	GLG	N
984	07/07/10	JUL	PM	1	3	DUCK	MALL	2	FL	MAR	N
985	07/07/10	JUL	PM	1	3	BLAC	RWBL	6	ST	MAR	N
986	07/07/10	JUL	PM	1	3	GEES	CAGO	12	ST	GLG	N
987	07/07/10	JUL	PM	1	3	GAME	RNPH	1	VO	GSH	N
988	07/07/10	JUL	PM	1	3	MISC	WEKI	1	ST	GLG	N
989	07/07/10	JUL	PM	1	3	BLAC	COGR	10	FL	MAR	N
990	07/07/10	JUL	PM	1	4	BLAC	MXBL	20	ST	TRE	N
991	07/07/10	JUL	PM	1	4	MISC	WEKI	2	FL	RWY	N
992	07/07/10	JUL	PM	1	4	DUCK	MALL	1	FL	GLG	N
993	07/07/10	JUL	PM	1	4	GAME	RNPH	1	ST	GSH	N
994	07/07/10	JUL	PM	1	4	BLAC	MXBL	20	FL	GLG	N
995	07/07/10	JUL	PM	1	4	BLAC	MXBL	2	FL	RWY	N
996	07/07/10	JUL	PM	1	4	DUCK	EAGR	1	ST	PND	N
997	07/07/10	JUL	PM	1	5	BLAC	RWBL	8	ST	MAR	N
998	07/07/10	JUL	PM	1	5	BLAC	RWBL	30	FL	AGR	N
999	07/07/10	JUL	PM	1	5	BLAC	RWBL	12	FL	STR	N
1000	07/07/10	JUL	PM	1	5	BLAC	COGR	4	ST	STR	N
1001	07/07/10	JUL	PM	1	5	MODO	MODO	2	ST	STR	N
1002	07/07/10	JUL	PM	1	5	SHOR	PHAL	1	ST	MAR	N
1003	07/07/10	JUL	PM	2	1	SWAL	CLSW	15	FL	GLG	N
1004	07/07/10	JUL	PM	2	1	BLAC	WEME	1	FL	GLG	N
1005	07/07/10	JUL	PM	2	1	MISC	WEKI	2	FL	GLG	N
1006	07/07/10	JUL	PM	2	1	MISC	WEKI	1	ST	ASP	N
1007	07/07/10	JUL	PM	2	1	MISC	WEKI	3	FL	TXY	N
1008	07/07/10	JUL	PM	2	1	SWAL	BARS	2	FL	MAR	N
1009	07/07/10	JUL	PM	2	1	BLAC	RWBL	1	VO	GLG	N
1010	07/07/10	JUL	PM	2	1	SWAL	BARS	15	FL	GLG	N
1011	07/07/10	JUL	PM	2	1	BLAC	RWBL	1	FL	GLG	N
1012	07/07/10	JUL	PM	2	1	SWAL	BARS	1	ST	GLG	N
1013	07/07/10	JUL	PM	2	1	RODO	RODO	25	ST	STR	N
1014	07/07/10	JUL	PM	2	1	GAME	RNPH	1	ST	GSH	N
1015	07/07/10	JUL	PM	2	1	BLAC	WEME	1	FL	GLG	N
1016	07/07/10	JUL	PM	2	1	BLAC	WEME	4	ST	RWY	N
1017	07/07/10	JUL	PM	2	1	BLAC	BHCO	1	FL	GLG	N
1018	07/07/10	JUL	PM	2	1	MISC	AMRO	1	ST	GSH	N
1019	07/07/10	JUL	PM	2	1	BLAC	EUST	2	ST	GSH	N
1020	07/07/10	JUL	PM	2	1	MISC	WEKI	1	ST	GSH	N
1021	07/07/10	JUL	PM	2	1	BLAC	WEME	1	VO	GLG	N
1022	07/07/10	JUL	PM	2	1	SPAR	UNSP	50	FL	GSH	N
1023	07/07/10	JUL	PM	2	1	HAWK	NOHA	1	FL	GLG	N
1024	07/07/10	JUL	PM	2	1	HAWK	NOHA	1	FL	GLG	N
1025	07/07/10	JUL	PM	2	1	BLAC	MXBL	50	FL	TSW	N
1026	07/07/10	JUL	PM	2	1	MODO	MODO	1	FL	GLG	N
1027	07/07/10	JUL	PM	2	2	MISC	WEKI	2	ST	RWY	N
1028	07/07/10	JUL	PM	2	2	BLAC	RWBL	1	ST	MAR	N
1029	07/07/10	JUL	PM	2	2	GAME	RNPH	1	VO	GLG	N
1030	07/07/10	JUL	PM	2	2	BLAC	WEME	1	VO	GSH	N
1031	07/07/10	JUL	PM	2	3	MISC	WEKI	2	FL	RWY	N
1032	07/07/10	JUL	PM	2	3	BLAC	RWBL	1	FL	AGR	N
1033	07/07/10	JUL	PM	2	3	BLAC	RWBL	10	ST	MAR	N
1034	07/07/10	JUL	PM	2	3	BLAC	RWBL	1	FP	AIR	N
1035	07/07/10	JUL	PM	2	3	SPAR	UNSP	1	ST	GLG	N
1036	07/07/10	JUL	PM	2	3	SHOR	KILL	8	ST	TSW	N
1037	07/07/10	JUL	PM	2	3	SHOR	KILL	2	VO	MAR	N
1038	07/07/10	JUL	PM	2	3	BLAC	COGR	1	FL	GLG	N
1039	07/07/10	JUL	PM	2	3	HAWK	NOHA	1	FL	AGR	N
1040	07/07/10	JUL	PM	2	4	BLAC	WEME	1	ST	RWY	N
1041	07/07/10	JUL	PM	2	4	DUCK	MALL	1	ST	PND	N
1042	07/07/10	JUL	PM	2	4	SHOR	UNSH	30	FL	TSW	N
1043	07/07/10	JUL	PM	2	4	DUCK	MALL	1	ST	TSW	N
1044	07/07/10	JUL	PM	2	4	SHOR	KILL	1	FP	AIR	Y
1045	07/07/10	JUL	PM	2	4	MISC	WEKI	4	ST	RWY	N
1046	07/07/10	JUL	PM	2	4	DUCK	BWTE	10	ST	PND	N
1047	07/07/10	JUL	PM	2	4	DUCK	NOSH	2	ST	PND	N
1048	07/07/10	JUL	PM	2	4	DUCK	BWTE	2	ST	PND	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1049	07/07/10	JUL	PM	2	4	BLAC	MXBL	30	FL	AGR	N
1050	07/07/10	JUL	PM	2	4	DUCK	EAGR	1	ST	PND	N
1051	07/07/10	JUL	PM	2	5	HAWK	UNHA	1	FL	GLG	N
1052	07/07/10	JUL	PM	2	5	SHOR	KILL	1	FL	GLG	N
1053	07/07/10	JUL	PM	2	5	BLAC	MXBL	22	ST	STR	N
1054	07/07/10	JUL	PM	2	5	BLAC	MXBL	30	FL	GLG	N
1055	07/07/10	JUL	PM	2	5	MODO	MODO	1	FL	GLG	N
1056	07/08/10	JUL	AM	1	1	MODO	MODO	3	ST	STR	N
1057	07/08/10	JUL	AM	1	1	BLAC	WEME	1	VO	GLG	N
1058	07/08/10	JUL	AM	1	1	BLAC	WEME	1	ST	RWY	N
1059	07/08/10	JUL	AM	1	1	BLAC	WEME	1	FL	RWY	N
1060	07/08/10	JUL	AM	1	1	MISC	WEKI	1	FL	GLG	N
1061	07/08/10	JUL	AM	1	1	DUCK	MALL	12	ST	MAR	N
1062	07/08/10	JUL	AM	1	1	MISC	WEKI	1	ST	GLG	N
1063	07/08/10	JUL	AM	1	1	BLAC	RWBL	1	ST	MAR	N
1064	07/08/10	JUL	AM	1	1	BLAC	RWBL	2	ST	STR	N
1065	07/08/10	JUL	AM	1	1	RODO	RODO	8	ST	GLG	N
1066	07/08/10	JUL	AM	1	1	MISC	AMRO	1	ST	GLG	N
1067	07/08/10	JUL	AM	1	1	BLAC	RWBL	1	FL	GLG	N
1068	07/08/10	JUL	AM	1	1	MISC	WEKI	1	ST	GVL	N
1069	07/08/10	JUL	AM	1	1	BLAC	EUST	1	ST	STR	N
1070	07/08/10	JUL	AM	1	1	BLAC	COGR	3	FL	GLG	Y
1071	07/08/10	JUL	AM	1	1	DUCK	MALL	1	ST	MAR	N
1072	07/08/10	JUL	AM	1	1	SPAR	HOSP	1	ST	STR	N
1073	07/08/10	JUL	AM	1	1	BLAC	COGR	5	FL	GLG	N
1074	07/08/10	JUL	AM	1	1	MISC	NOFL	3	ST	TRE	N
1075	07/08/10	JUL	AM	1	1	MODO	MODO	1	ST	GVL	N
1076	07/08/10	JUL	AM	1	1	DUCK	BWTE	1	ST	MAR	N
1077	07/08/10	JUL	AM	1	1	BLAC	EUST	1	FP	AIR	N
1078	07/08/10	JUL	AM	1	2	BLAC	WEME	1	ST	TRE	N
1079	07/08/10	JUL	AM	1	2	BLAC	WEME	1	ST	GSH	N
1080	07/08/10	JUL	AM	1	2	BLAC	WEME	1	ST	GSH	N
1081	07/08/10	JUL	AM	1	2	SPAR	UNSP	1	ST	GSH	N
1082	07/08/10	JUL	AM	1	2	BLAC	RWBL	2	ST	GSH	N
1083	07/08/10	JUL	AM	1	2	MISC	WEKI	1	ST	TRE	N
1084	07/08/10	JUL	AM	1	2	GAME	RNPH	1	ST	GSH	N
1085	07/08/10	JUL	AM	1	2	DUCK	UNDU	20	ST	MAR	N
1086	07/08/10	JUL	AM	1	2	MISC	NOFL	1	ST	GSH	N
1087	07/08/10	JUL	AM	1	2	MISC	NOFL	3	ST	TRE	N
1088	07/08/10	JUL	AM	1	3	DUCK	BWTE	2	ST	TSW	N
1089	07/08/10	JUL	AM	1	3	MISC	WEKI	1	FL	GLG	N
1090	07/08/10	JUL	AM	1	3	SPAR	UNSP	15	ST	GLG	N
1091	07/08/10	JUL	AM	1	3	HAWK	SWHA	2	FL	AGR	N
1092	07/08/10	JUL	AM	1	3	BLAC	COGR	3	FL	AGR	N
1093	07/08/10	JUL	AM	1	3	DUCK	MALL	2	ST	TSW	N
1094	07/08/10	JUL	AM	1	3	SHOR	PHAL	8	ST	TSW	N
1095	07/08/10	JUL	AM	1	3	MISC	WEKI	1	ST	GLG	N
1096	07/08/10	JUL	AM	1	3	BLAC	EUST	1	FL	GLG	N
1097	07/08/10	JUL	AM	1	3	BLAC	MXBL	20	FL	MAR	N
1098	07/08/10	JUL	AM	1	3	BLAC	YHBL	1	FL	MAR	N
1099	07/08/10	JUL	AM	1	4	SHOR	KILL	2	FL	PND	N
1100	07/08/10	JUL	AM	1	4	BLAC	COGR	10	FL	TRE	N
1101	07/08/10	JUL	AM	1	4	BLAC	COGR	2	FP	AIR	N
1102	07/08/10	JUL	AM	1	5	BLAC	RWBL	12	ST	MAR	N
1103	07/08/10	JUL	AM	1	5	SHOR	KILL	2	ST	MAR	N
1104	07/08/10	JUL	AM	1	5	BLAC	COGR	20	ST	MAR	N
1105	07/08/10	JUL	AM	1	5	SHOR	KILL	2	ST	GVL	N
1106	07/08/10	JUL	AM	1	5	SPAR	HOLA	1	ST	STR	N
1107	07/08/10	JUL	AM	1	5	BLAC	MXBL	50	ST	AGR	N
1108	07/08/10	JUL	AM	1	5	MODO	MODO	1	ST	GVL	N
1109	07/08/10	JUL	AM	2	1	BLAC	EUST	2	ST	STR	N
1110	07/08/10	JUL	AM	2	1	BLAC	WEME	1	VO	GLG	N
1111	07/08/10	JUL	AM	2	1	BLAC	RWBL	2	ST	GSH	N
1112	07/08/10	JUL	AM	2	1	BLAC	RWBL	1	VO	MAR	N
1113	07/08/10	JUL	AM	2	1	BLAC	COGR	2	ST	GSH	N
1114	07/08/10	JUL	AM	2	1	BLAC	BOBO	1	ST	GLG	N
1115	07/08/10	JUL	AM	2	1	SPAR	HOSP	1	ST	STR	N
1116	07/08/10	JUL	AM	2	1	BLAC	COGR	1	ST	STR	N
1117	07/08/10	JUL	AM	2	1	BLAC	BHCO	1	ST	STR	N
1118	07/08/10	JUL	AM	2	1	MISC	NOFL	1	ST	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
119	07/08/10	JUL	AM	2	2	BLAC	WEME	1	ST	GSH	N
120	07/08/10	JUL	AM	2	2	SPAR	UNSP	1	ST	GSH	N
121	07/08/10	JUL	AM	2	2	BLAC	WEME	1	ST	TRE	N
122	07/08/10	JUL	AM	2	2	BLAC	WEME	1	ST	GSH	N
123	07/08/10	JUL	AM	2	2	MISC	WEKI	1	ST	TRE	N
124	07/08/10	JUL	AM	2	2	DUCK	UNDU	20	ST	MAR	N
125	07/08/10	JUL	AM	2	2	BLAC	RWBL	2	ST	GSH	N
126	07/08/10	JUL	AM	2	2	GAME	RNPH	1	ST	GSH	N
127	07/08/10	JUL	AM	2	2	MISC	NOFL	1	ST	GSH	N
128	07/08/10	JUL	AM	2	2	MISC	NOFL	3	ST	TRE	N
129	07/08/10	JUL	AM	2	3	BLAC	WEME	1	ST	GSH	N
130	07/08/10	JUL	AM	2	3	SPAR	UNSP	1	ST	GSH	Y
131	07/08/10	JUL	AM	2	3	BLAC	RWBL	5	ST	TRE	N
132	07/08/10	JUL	AM	2	3	DUCK	MALL	3	ST	TSW	N
133	07/08/10	JUL	AM	2	3	BLAC	YHBL	2	FL	MAR	N
134	07/08/10	JUL	AM	2	3	BLAC	WEME	1	VO	AGR	N
135	07/08/10	JUL	AM	2	3	DUCK	BWTE	2	ST	TSW	N
136	07/08/10	JUL	AM	2	4	SHOR	KILL	2	FL	PND	N
137	07/08/10	JUL	AM	2	4	BLAC	COGR	2	FP	AIR	N
138	07/08/10	JUL	AM	2	4	BLAC	COGR	10	FL	TRE	N
139	07/08/10	JUL	AM	2	5	BLAC	RWBL	12	ST	MAR	N
140	07/08/10	JUL	AM	2	5	SHOR	KILL	2	ST	GVL	N
141	07/08/10	JUL	AM	2	5	BLAC	COGR	20	ST	MAR	N
142	07/08/10	JUL	AM	2	5	SHOR	KILL	2	ST	MAR	N
143	07/08/10	JUL	AM	2	5	SPAR	HOLA	1	ST	STR	N
144	07/08/10	JUL	AM	2	5	BLAC	MXBL	50	ST	AGR	N
145	07/08/10	JUL	AM	2	5	MODO	MODO	1	ST	GVL	N
146	07/29/10	JUL	PM	1	1	SWAL	CLSW	30	ST	STR	N
147	07/29/10	JUL	PM	1	1	DUCK	MALL	4	FL	TSW	N
148	07/29/10	JUL	PM	1	1	RODO	RODO	3	FL	AIR	N
149	07/29/10	JUL	PM	1	1	DUCK	MALL	1	FL	TSW	N
150	07/29/10	JUL	PM	1	1	RODO	RODO	12	ST	STR	N
151	07/29/10	JUL	PM	1	1	BLAC	WEME	1	ST	GSH	N
152	07/29/10	JUL	PM	1	1	SWAL	CLSW	30	ST	STR	N
153	07/29/10	JUL	PM	1	1	SWAL	CLSW	1	ST	ASP	N
154	07/29/10	JUL	PM	1	1	SWAL	CLSW	5	FL	ASP	Y
155	07/29/10	JUL	PM	1	2	SHOR	UPSA	2	ST	GSH	N
156	07/29/10	JUL	PM	1	2	BLAC	WEME	1	ST	GSH	N
157	07/29/10	JUL	PM	1	2	SWAL	CLSW	1	ST	TRE	N
158	07/29/10	JUL	PM	1	2	SPAR	HOLA	1	ST	GSH	N
159	07/29/10	JUL	PM	1	2	SPAR	HOLA	1	VO	GSH	N
160	07/29/10	JUL	PM	1	2	BLAC	EUST	4	FP	AIR	N
161	07/29/10	JUL	PM	1	2	SWAL	CLSW	1	FP	AIR	N
162	07/29/10	JUL	PM	1	3	MISC	EAKI	1	ST	GLG	N
163	07/29/10	JUL	PM	1	3	SWAL	CLSW	1	FL	GSH	N
164	07/29/10	JUL	PM	1	3	HAWK	SWHA	1	ST	TRE	N
165	07/29/10	JUL	PM	1	3	GULL	RBGU	1	FP	AIR	Y
166	07/29/10	JUL	PM	1	3	HAWK	NOHA	2	ST	GSH	N
167	07/29/10	JUL	PM	1	3	HAWK	NOHA	1	ST	GSH	Y
168	07/29/10	JUL	PM	1	3	MODO	MODO	1	FP	GSH	N
169	07/29/10	JUL	PM	1	4	SWAL	CLSW	15	ST	RWY	N
170	07/29/10	JUL	PM	1	4	DUCK	MALL	6	ST	PND	N
171	07/29/10	JUL	PM	1	4	SWAL	CLSW	30	FL	PND	N
172	07/29/10	JUL	PM	1	4	SWAL	CLSW	30	FL	GSH	N
173	07/29/10	JUL	PM	1	4	HAWK	SWHA	1	FP	TRE	N
174	07/29/10	JUL	PM	1	4	HERO	DCCO	1	FP	AIR	N
175	07/29/10	JUL	PM	1	4	DUCK	MALL	3	ST	PND	N
176	07/29/10	JUL	PM	1	4	RODO	RODO	2	FP	AIR	N
177	07/29/10	JUL	PM	1	4	GAME	RNPH	2	ST	GSH	N
178	07/29/10	JUL	PM	1	4	SHOR	KILL	2	ST	PND	N
179	07/29/10	JUL	PM	1	4	GAME	RNPH	3	ST	GSH	N
180	07/29/10	JUL	PM	1	4	BLAC	COGR	40	FL	AGR	N
181	07/29/10	JUL	PM	1	4	GULL	RBGU	15	ST	RWY	Y
182	07/29/10	JUL	PM	1	4	GULL	RBGU	2	FL	GLG	N
183	07/29/10	JUL	PM	1	4	GULL	RBGU	2	FL	GLG	N
184	07/29/10	JUL	PM	1	4	DUCK	NOSH	2	ST	PND	N
185	07/29/10	JUL	PM	1	4	DUCK	NOSH	1	ST	PND	N
186	07/29/10	JUL	PM	1	4	DUCK	BWTE	8	ST	PND	N
187	07/29/10	JUL	PM	1	4	GULL	HERG	1	FP	ATR	N
188	07/29/10	JUL	PM	1	4	HAWK	NOHA	1	FL	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1189	07/29/10	JUL	PM	1	4	DUCK	BWTE	6	ST	PND	N
1190	07/29/10	JUL	PM	1	4	MODO	MODO	3	FL	GLG	N
1191	07/29/10	JUL	PM	1	5	MODO	MODO	2	FP	AIR	N
1192	07/29/10	JUL	PM	1	5	SWAL	CLSW	30	FL	AGR	N
1193	07/29/10	JUL	PM	1	5	BLAC	RWBL	6	FP	AIR	N
1194	07/29/10	JUL	PM	1	5	SHOR	KILL	2	VO	MAR	N
1195	07/29/10	JUL	PM	1	5	SPAR	UNSP	2	ST	STR	N
1196	07/29/10	JUL	PM	2	1	SWAL	BARS	4	FL	GSH	N
1197	07/29/10	JUL	PM	2	1	MODO	MODO	1	ST	GSH	N
1198	07/29/10	JUL	PM	2	1	MISC	WEKI	1	FL	GLG	N
1199	07/29/10	JUL	PM	2	1	MISC	WEKI	1	ST	GSH	N
1200	07/29/10	JUL	PM	2	1	HAWK	SWHA	1	ST	GSH	N
1201	07/29/10	JUL	PM	2	1	RODO	RODO	1	ST	GSH	N
1202	07/29/10	JUL	PM	2	1	DUCK	MALL	1	ST	TSW	N
1203	07/29/10	JUL	PM	2	1	MISC	WEKI	2	FL	GSH	N
1204	07/29/10	JUL	PM	2	1	SPAR	HOLA	1	FL	GSH	N
1205	07/29/10	JUL	PM	2	1	SPAR	HOLA	1	FL	GLG	N
1206	07/29/10	JUL	PM	2	1	HAWK	NOHA	1	ST	GSH	N
1207	07/29/10	JUL	PM	2	1	SWAL	CLSW	3	FL	MAR	N
1208	07/29/10	JUL	PM	2	2	BLAC	WEME	1	FL	GSH	N
1209	07/29/10	JUL	PM	2	2	MISC	WEKI	1	FL	GSH	N
1210	07/29/10	JUL	PM	2	2	GAME	RNPH	1	ST	GSH	N
1211	07/29/10	JUL	PM	2	3	MISC	WEKI	1	FL	GSH	N
1212	07/29/10	JUL	PM	2	3	SWAL	CLSW	2	FL	AGR	N
1213	07/29/10	JUL	PM	2	4	BLAC	WEME	1	ST	RWY	N
1214	07/29/10	JUL	PM	2	4	DUCK	MALL	26	ST	PND	N
1215	07/29/10	JUL	PM	2	4	DUCK	MALL	1	ST	PND	N
1216	07/29/10	JUL	PM	2	4	DUCK	MALL	18	ST	PND	N
1217	07/29/10	JUL	PM	2	4	DUCK	BWTE	8	FP	AIR	N
1218	07/29/10	JUL	PM	2	4	GAME	RNPH	3	ST	GSH	N
1219	07/29/10	JUL	PM	2	4	GAME	RNPH	2	ST	GSH	N
1220	07/29/10	JUL	PM	2	4	DUCK	MALL	1	ST	PND	N
1221	07/29/10	JUL	PM	2	4	DUCK	NOSH	1	ST	PND	N
1222	07/29/10	JUL	PM	2	4	DUCK	NOSH	8	ST	PND	N
1223	07/29/10	JUL	PM	2	4	HAWK	NOHA	1	FL	GSH	N
1224	07/29/10	JUL	PM	2	4	SWAL	CLSW	30	FL	PND	N
1225	07/29/10	JUL	PM	2	5	MODO	MODO	3	ST	STR	N
1226	07/29/10	JUL	PM	2	5	MODO	MODO	1	ST	STR	N
1227	07/29/10	JUL	PM	2	5	SHOR	UNSH	6	FL	MAR	N
1228	07/29/10	JUL	PM	2	5	SWAL	TRES	20	FL	MAR	N
1229	07/29/10	JUL	PM	2	5	BLAC	RWBL	1	ST	MAR	N
1230	07/29/10	JUL	PM	2	5	BLAC	RWBL	1	ST	GVL	N
1231	07/29/10	JUL	PM	2	5	SWAL	BARS	100	FL	MAR	N
1232	07/29/10	JUL	PM	2	5	SWAL	CLSW	100	FL	MAR	N
1233	07/30/10	JUL	AM	1	1	BLAC	WEME	1	VO	GSH	N
1234	07/30/10	JUL	AM	1	1	MODO	MODO	1	FP	AIR	N
1235	07/30/10	JUL	AM	1	1	SWAL	CLSW	2	FL	ASP	N
1236	07/30/10	JUL	AM	1	1	SWAL	CLSW	10	ST	STR	N
1237	07/30/10	JUL	AM	1	1	RODO	RODO	30	ST	STR	N
1238	07/30/10	JUL	AM	1	1	MISC	AMRO	1	ST	GSH	N
1239	07/30/10	JUL	AM	1	1	GULL	RBGU	1	FL	GSH	N
1240	07/30/10	JUL	AM	1	1	MISC	NOFL	1	ST	GSH	N
1241	07/30/10	JUL	AM	1	1	SWAL	CLSW	1	FL	GSH	N
1242	07/30/10	JUL	AM	1	1	SWAL	CLSW	3	FL	ASP	N
1243	07/30/10	JUL	AM	1	1	BLAC	EUST	5	ST	STR	N
1244	07/30/10	JUL	AM	1	2	BLAC	WEME	1	ST	RWY	Y
1245	07/30/10	JUL	AM	1	2	MODO	MODO	2	FP	AIR	Y
1246	07/30/10	JUL	AM	1	2	HAWK	SWHA	1	ST	GSH	N
1247	07/30/10	JUL	AM	1	2	GULL	RBGU	2	FL	RWY	Y
1248	07/30/10	JUL	AM	1	2	DUCK	NOSH	1	FP	AIR	Y
1249	07/30/10	JUL	AM	1	2	SWAL	CLSW	5	FL	GSH	Y
1250	07/30/10	JUL	AM	1	3	MODO	MODO	1	ST	GLG	N
1251	07/30/10	JUL	AM	1	3	BLAC	WEME	3	FL	GSH	N
1252	07/30/10	JUL	AM	1	3	MISC	WEKI	2	ST	GSH	N
1253	07/30/10	JUL	AM	1	3	SWAL	CLSW	3	FL	GLG	N
1254	07/30/10	JUL	AM	1	3	SPAR	UNSP	1	ST	GSH	N
1255	07/30/10	JUL	AM	1	3	HAWK	NOHA	2	ST	GSH	N
1256	07/30/10	JUL	AM	1	4	DUCK	MALL	2	ST	TSW	N
1257	07/30/10	JUL	AM	1	4	DUCK	MALL	60	ST	PND	N
1258	07/30/10	JUL	AM	1	4	HAWK	SWHA	1	ST	TRE	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
159	07/30/10	JUL	AM	1	4	DUCK	MALL	7	ST	PND	N
160	07/30/10	JUL	AM	1	4	GAME	RNPH	5	FD	GSH	N
161	07/30/10	JUL	AM	1	4	GAME	RNPH	3	ST	GSH	N
162	07/30/10	JUL	AM	1	4	DUCK	BWTE	40	ST	PND	N
163	07/30/10	JUL	AM	1	4	GULL	RBGU	12	ST	RWY	N
164	07/30/10	JUL	AM	1	4	GULL	RBGU	1	ST	PND	N
165	07/30/10	JUL	AM	1	4	DUCK	PBGR	2	ST	PND	N
166	07/30/10	JUL	AM	1	4	DUCK	NOSH	4	ST	PND	N
167	07/30/10	JUL	AM	1	4	DUCK	NOSH	18	ST	PND	N
168	07/30/10	JUL	AM	1	4	DUCK	BWTE	2	ST	TSW	N
169	07/30/10	JUL	AM	1	5	MODO	MODO	1	ST	AGR	N
170	07/30/10	JUL	AM	1	5	MODO	MODO	2	ST	GVL	N
171	07/30/10	JUL	AM	1	5	BLAC	RWBL	20	FD	AGR	N
172	07/30/10	JUL	AM	1	5	MODO	MODO	2	FL	AGR	N
173	07/30/10	JUL	AM	2	1	SWAL	CLSW	4	FL	GSH	N
174	07/30/10	JUL	AM	2	1	RODO	RODO	6	ST	GSH	N
175	07/30/10	JUL	AM	2	1	RODO	RODO	37	FD	GSH	N
176	07/30/10	JUL	AM	2	1	MISC	NOFL	1	ST	GSH	N
177	07/30/10	JUL	AM	2	2	MODO	MODO	1	FP	AIR	N
178	07/30/10	JUL	AM	2	2	BLAC	WEME	1	VO	GSH	N
179	07/30/10	JUL	AM	2	2	SWAL	CLSW	20	FL	GSH	Y
180	07/30/10	JUL	AM	2	2	BLAC	EUST	5	ST	STR	N
181	07/30/10	JUL	AM	2	2	MISC	WEKI	3	ST	GSH	N
182	07/30/10	JUL	AM	2	2	MISC	WEKI	2	ST	GSH	N
183	07/30/10	JUL	AM	2	2	DUCK	MALL	2	FP	AIR	N
184	07/30/10	JUL	AM	2	2	DUCK	MALL	3	FL	MAR	N
185	07/30/10	JUL	AM	2	2	HAWK	SWHA	1	ST	GSH	N
186	07/30/10	JUL	AM	2	2	SWAL	BARS	3	FL	ASP	N
187	07/30/10	JUL	AM	2	2	MISC	WEKI	1	ST	GSH	N
188	07/30/10	JUL	AM	2	2	SHOR	KILL	1	VO	GSH	N
189	07/30/10	JUL	AM	2	2	GAME	RNPH	2	ST	GSH	N
190	07/30/10	JUL	AM	2	2	GAME	RNPH	2	ST	GSH	N
191	07/30/10	JUL	AM	2	2	MODO	MODO	1	ST	RWY	N
192	07/30/10	JUL	AM	2	2	HAWK	NOHA	2	ST	GSH	N
193	07/30/10	JUL	AM	2	2	MISC	NOFL	1	ST	GSH	N
194	07/30/10	JUL	AM	2	2	SWAL	BARS	4	FL	GSH	N
195	07/30/10	JUL	AM	2	2	SWAL	CLSW	1	FL	RWY	N
196	07/30/10	JUL	AM	2	3	SWAL	CLSW	50	FL	AGR	N
197	07/30/10	JUL	AM	2	3	MISC	WEKI	1	FD	GSH	N
198	07/30/10	JUL	AM	2	3	HAWK	SWHA	1	ST	TRE	N
199	07/30/10	JUL	AM	2	3	GAME	RNPH	7	ST	GSH	N
200	07/30/10	JUL	AM	2	3	BLAC	BHCO	1	FD	GSH	N
201	07/30/10	JUL	AM	2	4	HAWK	SWHA	1	ST	GSH	N
202	07/30/10	JUL	AM	2	4	DUCK	MALL	60	ST	PND	N
203	07/30/10	JUL	AM	2	4	DUCK	MALL	8	ST	PND	N
204	07/30/10	JUL	AM	2	4	DUCK	WOOD	8	ST	PND	N
205	07/30/10	JUL	AM	2	4	GULL	RBGU	8	ST	RWY	N
206	07/30/10	JUL	AM	2	4	GULL	RBGU	8	ST	PND	N
207	07/30/10	JUL	AM	2	4	DUCK	PBGR	4	ST	PND	N
208	07/30/10	JUL	AM	2	4	DUCK	PBGR	2	ST	PND	N
209	07/30/10	JUL	AM	2	4	DUCK	BWTE	24	ST	PND	N
210	07/30/10	JUL	AM	2	5	MODO	MODO	2	ST	AGR	N
211	07/30/10	JUL	AM	2	5	MODO	MODO	1	ST	GVL	N
212	07/30/10	JUL	AM	2	5	BLAC	RWBL	3	ST	AGR	N
213	08/03/10	AUG	PM	1	1	MODO	MODO	1	FP	AIR	Y
214	08/03/10	AUG	PM	1	1	MODO	MODO	1	FP	GSH	N
215	08/03/10	AUG	PM	1	1	SWAL	BARS	2	FL	GSH	N
216	08/03/10	AUG	PM	1	1	SWAL	CLSW	2	FL	GSH	N
217	08/03/10	AUG	PM	1	1	MODO	MODO	1	ST	GVL	N
218	08/03/10	AUG	PM	1	1	SWAL	CLSW	50	FL	GSH	N
219	08/03/10	AUG	PM	1	1	SWAL	TRES	10	FL	MAR	N
220	08/03/10	AUG	PM	1	1	RODO	RODO	4	FD	GSH	N
221	08/03/10	AUG	PM	1	1	RODO	RODO	5	FP	AIR	Y
222	08/03/10	AUG	PM	1	1	GAME	RNPH	3	ST	GSH	N
223	08/03/10	AUG	PM	1	1	GAME	RNPH	12	ST	GSH	N
224	08/03/10	AUG	PM	1	1	GAME	RNPH	1	VO	MAR	N
225	08/03/10	AUG	PM	1	1	SPAR	HOSP	1	ST	STR	N
226	08/03/10	AUG	PM	1	1	RODO	RODO	4	FP	AIR	N
227	08/03/10	AUG	PM	1	1	SWAL	CLSW	50	ST	GSH	N
228	08/03/10	AUG	PM	1	2	SWAL	CLSW	50	FL	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1329	08/03/10	AUG	PM	1	2	SHOR	MAGO	1	FP	AIR	N
1330	08/03/10	AUG	PM	1	3	BLAC	WEME	4	FL	GSH	N
1331	08/03/10	AUG	PM	1	3	GAME	RNPH	5	ST	GSH	N
1332	08/03/10	AUG	PM	1	3	GAME	RNPH	2	ST	GSH	N
1333	08/03/10	AUG	PM	1	3	GAME	RNPH	1	VO	GLG	N
1334	08/03/10	AUG	PM	1	3	MISC	EAKI	1	ST	GSH	N
1335	08/03/10	AUG	PM	1	3	SWAL	CLSW	40	FL	GSH	Y
1336	08/03/10	AUG	PM	1	4	MODO	MODO	2	FP	AIR	Y
1337	08/03/10	AUG	PM	1	4	BLAC	WEME	4	FL	GSH	N
1338	08/03/10	AUG	PM	1	4	DUCK	MALL	1	ST	PND	N
1339	08/03/10	AUG	PM	1	4	DUCK	MALL	5	ST	PND	N
1340	08/03/10	AUG	PM	1	4	RODO	RODO	14	ST	TSW	N
1341	08/03/10	AUG	PM	1	4	RODO	RODO	4	FP	AIR	Y
1342	08/03/10	AUG	PM	1	4	DUCK	WOOD	5	ST	PND	N
1343	08/03/10	AUG	PM	1	4	SHOR	KILL	1	VO	GLG	N
1344	08/03/10	AUG	PM	1	4	SHOR	KILL	10	ST	RWY	Y
1345	08/03/10	AUG	PM	1	4	BLAC	BOBO	1	FL	GSH	N
1346	08/03/10	AUG	PM	1	4	DUCK	PBGR	2	ST	PND	N
1347	08/03/10	AUG	PM	1	4	DUCK	BWTE	10	ST	PND	N
1348	08/03/10	AUG	PM	1	4	MISC	NOFL	1	ST	GVL	N
1349	08/03/10	AUG	PM	1	5	MODO	MODO	7	ST	AGR	N
1350	08/03/10	AUG	PM	1	5	MODO	MODO	2	ST	STR	N
1351	08/03/10	AUG	PM	1	5	MODO	MODO	2	FL	AGR	N
1352	08/03/10	AUG	PM	1	5	GAME	RNPH	12	FL	AGR	N
1353	08/03/10	AUG	PM	2	1	DUCK	MALL	2	FL	TSW	N
1354	08/03/10	AUG	PM	2	1	RODO	RODO	12	FL	GSH	N
1355	08/03/10	AUG	PM	2	1	RODO	RODO	15	ST	STR	N
1356	08/03/10	AUG	PM	2	1	SPAR	HOSP	4	ST	STR	N
1357	08/03/10	AUG	PM	2	2	MODO	MODO	1	FP	AIR	Y
1358	08/03/10	AUG	PM	2	2	MODO	MODO	1	FP	AIR	N
1359	08/03/10	AUG	PM	2	2	MISC	EAKI	1	ST	STR	N
1360	08/03/10	AUG	PM	2	2	GAME	RNPH	1	VO	GLG	N
1361	08/03/10	AUG	PM	2	2	MISC	AMRO	2	FL	GSH	N
1362	08/03/10	AUG	PM	2	3	HAWK	SWHA	1	ST	TRE	N
1363	08/03/10	AUG	PM	2	3	SWAL	BARS	10	FL	GSH	N
1364	08/03/10	AUG	PM	2	3	MODO	MODO	2	FP	AIR	N
1365	08/03/10	AUG	PM	2	3	HAWK	SWHA	1	ST	GSH	N
1366	08/03/10	AUG	PM	2	3	GAME	RNPH	3	ST	STR	N
1367	08/03/10	AUG	PM	2	3	MISC	EAKI	1	ST	STR	N
1368	08/03/10	AUG	PM	2	3	SWAL	CLSW	5	FL	GSH	N
1369	08/03/10	AUG	PM	2	4	MODO	MODO	10	FL	AGR	N
1370	08/03/10	AUG	PM	2	4	BLAC	WEME	1	ST	GSH	N
1371	08/03/10	AUG	PM	2	4	HAWK	SWHA	1	FL	AGR	N
1372	08/03/10	AUG	PM	2	4	DUCK	MALL	2	ST	PND	N
1373	08/03/10	AUG	PM	2	4	DUCK	WOOD	7	ST	PND	N
1374	08/03/10	AUG	PM	2	4	BLAC	RWBL	1	VO	PND	N
1375	08/03/10	AUG	PM	2	4	DUCK	WOOD	2	ST	PND	N
1376	08/03/10	AUG	PM	2	4	DUCK	BWTE	8	ST	PND	N
1377	08/03/10	AUG	PM	2	4	GULL	RBGU	6	ST	RWY	N
1378	08/03/10	AUG	PM	2	4	GULL	RBGU	15	ST	RWY	N
1379	08/03/10	AUG	PM	2	4	GULL	RBGU	1	FL	AGR	N
1380	08/03/10	AUG	PM	2	4	DUCK	PBGR	2	ST	PND	N
1381	08/03/10	AUG	PM	2	4	DUCK	PBGR	7	ST	PND	N
1382	08/03/10	AUG	PM	2	4	DUCK	NOSH	1	ST	PND	N
1383	08/03/10	AUG	PM	2	4	MISC	AMRO	3	ST	GLG	N
1384	08/03/10	AUG	PM	2	4	DUCK	BWTE	9	ST	PND	N
1385	08/03/10	AUG	PM	2	5	MODO	MODO	15	ST	STR	N
1386	08/03/10	AUG	PM	2	5	MODO	MODO	10	ST	GVL	N
1387	08/04/10	AUG	AM	1	1	BLAC	EUST	1	ST	STR	N
1388	08/04/10	AUG	AM	1	1	MODO	MODO	2	ST	ASP	Y
1389	08/04/10	AUG	AM	1	1	SWAL	BARS	10	FL	GSH	N
1390	08/04/10	AUG	AM	1	1	SWAL	CLSW	1	ST	STR	N
1391	08/04/10	AUG	AM	1	1	HAWK	AMKE	1	ST	STR	N
1392	08/04/10	AUG	AM	1	1	RODO	RODO	25	ST	STR	N
1393	08/04/10	AUG	AM	1	1	MODO	MODO	2	ST	TRE	N
1394	08/04/10	AUG	AM	1	1	HAWK	SWHA	1	ST	GSH	N
1395	08/04/10	AUG	AM	1	1	GAME	RNPH	1	ST	GSH	N
1396	08/04/10	AUG	AM	1	1	SHOR	KILL	2	ST	GSH	N
1397	08/04/10	AUG	AM	1	1	SPAR	HOLA	2	ST	AGR	N
1398	08/04/10	AUG	AM	1	1	BLAC	EUST	3	ST	STR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
99	08/04/10	AUG	AM	1	1	MISC	NOFL	1	ST	GSH	N
1400	08/04/10	AUG	AM	1	1	BLAC	EUST	3	FD	GSH	N
1401	08/04/10	AUG	AM	1	1	MODO	MODO	8	FL	GSH	N
1402	08/04/10	AUG	AM	1	1	SWAL	BARS	1	ST	GSH	N
1403	08/04/10	AUG	AM	1	2	SPAR	UNSP	4	ST	GSH	N
1404	08/04/10	AUG	AM	1	2	HAWK	SWHA	1	ST	TRE	N
1405	08/04/10	AUG	AM	1	2	SPAR	SAVS	4	ST	GLG	N
1406	08/04/10	AUG	AM	1	2	GAME	RNPH	1	ST	GLG	N
1407	08/04/10	AUG	AM	1	2	SWAL	BARS	1	ST	GSH	N
1408	08/04/10	AUG	AM	1	3	MODO	MODO	1	FP	GSH	Y
1409	08/04/10	AUG	AM	1	3	DUCK	MALL	1	FP	AGR	N
1410	08/04/10	AUG	AM	1	3	DUCK	MALL	19	ST	PND	N
1411	08/04/10	AUG	AM	1	3	GAME	RNPH	2	ST	GSH	N
1412	08/04/10	AUG	AM	1	3	GULL	RBGU	1	FP	GSH	Y
1413	08/04/10	AUG	AM	1	3	GULL	RBGU	7	ST	RWY	N
1414	08/04/10	AUG	AM	1	3	DUCK	BWTE	2	ST	TSW	N
1415	08/04/10	AUG	AM	1	4	DUCK	WOOD	2	ST	PND	N
1416	08/04/10	AUG	AM	1	4	DUCK	BWTE	19	ST	PND	N
1417	08/04/10	AUG	AM	1	4	DUCK	BWTE	3	ST	PND	N
1418	08/04/10	AUG	AM	1	5	MODO	MODO	2	ST	GLG	N
1419	08/04/10	AUG	AM	1	5	MODO	MODO	6	ST	GVL	N
1420	08/04/10	AUG	AM	1	5	DUCK	MALL	2	FP	GSH	Y
1421	08/04/10	AUG	AM	1	5	BLAC	COGR	2	FP	GSH	N
1422	08/04/10	AUG	AM	1	5	RODO	RODO	3	FP	GSH	N
1423	08/04/10	AUG	AM	2	1	SWAL	CLSW	5	ST	GSH	N
1424	08/04/10	AUG	AM	2	1	BLAC	WEME	1	ST	STR	N
1425	08/04/10	AUG	AM	2	1	MISC	WEKI	1	ST	GSH	N
1426	08/04/10	AUG	AM	2	1	HAWK	SWHA	1	ST	GSH	N
1427	08/04/10	AUG	AM	2	1	RODO	RODO	22	ST	STR	N
1428	08/04/10	AUG	AM	2	1	MODO	MODO	1	ST	ASP	N
1429	08/04/10	AUG	AM	2	1	MODO	MODO	3	ST	GSH	N
1430	08/04/10	AUG	AM	2	1	RODO	RODO	60	ST	GVL	N
1431	08/04/10	AUG	AM	2	1	RODO	RODO	9	FP	AIR	Y
1432	08/04/10	AUG	AM	2	1	GAME	RNPH	3	ST	GSH	N
1433	08/04/10	AUG	AM	2	1	SHOR	KILL	2	ST	ASP	N
1434	08/04/10	AUG	AM	2	1	SHOR	KILL	2	VO	GSH	N
1435	08/04/10	AUG	AM	2	1	SWAL	CLSW	10	FL	MAR	N
1436	08/04/10	AUG	AM	2	1	BLAC	EUST	1	ST	ASP	N
1437	08/04/10	AUG	AM	2	1	SWAL	BARS	3	FL	GSH	N
1438	08/04/10	AUG	AM	2	1	BLAC	EUST	5	ST	STR	N
1439	08/04/10	AUG	AM	2	1	SWAL	BARS	30	FL	STR	N
1440	08/04/10	AUG	AM	2	1	MODO	MODO	3	ST	ASP	N
1441	08/04/10	AUG	AM	2	1	MODO	MODO	1	ST	ASP	N
1442	08/04/10	AUG	AM	2	2	HAWK	SWHA	1	ST	GLG	N
1443	08/04/10	AUG	AM	2	2	SPAR	HOLA	1	ST	GSH	N
1444	08/04/10	AUG	AM	2	3	MISC	WEKI	5	ST	GSH	N
1445	08/04/10	AUG	AM	2	3	MISC	WEKI	3	ST	GLG	N
1446	08/04/10	AUG	AM	2	3	MISC	WEKI	2	ST	GLG	N
1447	08/04/10	AUG	AM	2	3	MISC	EAKI	1	ST	GLG	N
1448	08/04/10	AUG	AM	2	3	SPAR	SAVS	6	ST	GLG	N
1449	08/04/10	AUG	AM	2	3	GAME	RNPH	11	ST	GSH	N
1450	08/04/10	AUG	AM	2	3	GAME	RNPH	6	ST	GLG	N
1451	08/04/10	AUG	AM	2	3	SPAR	HOLA	1	FL	GSH	N
1452	08/04/10	AUG	AM	2	4	DUCK	WOOD	7	ST	PND	N
1453	08/04/10	AUG	AM	2	4	MISC	WEKI	8	ST	GLG	N
1454	08/04/10	AUG	AM	2	4	BLAC	RWBL	40	FP	AGR	N
1455	08/04/10	AUG	AM	2	4	DUCK	MALL	4	ST	PND	N
1456	08/04/10	AUG	AM	2	4	DUCK	MALL	6	ST	PND	N
1457	08/04/10	AUG	AM	2	4	RODO	RODO	10	FP	AIR	Y
1458	08/04/10	AUG	AM	2	4	DUCK	MALL	15	ST	PND	N
1459	08/04/10	AUG	AM	2	4	SHOR	KILL	5	ST	TSW	N
1460	08/04/10	AUG	AM	2	4	SHOR	KILL	2	ST	RWY	N
1461	08/04/10	AUG	AM	2	4	GULL	RBGU	9	ST	RWY	N
1462	08/04/10	AUG	AM	2	4	DUCK	BWTE	2	ST	PND	N
1463	08/04/10	AUG	AM	2	4	DUCK	BWTE	18	ST	PND	N
1464	08/04/10	AUG	AM	2	4	DUCK	PBGR	2	ST	PND	N
1465	08/04/10	AUG	AM	2	5	MODO	MODO	1	ST	AGR	N
1466	08/16/10	AUG	PM	1	1	SWAL	CLSW	50	FL	GSH	N
1467	08/16/10	AUG	PM	1	1	SWAL	TRES	10	FL	MAR	N
1468	08/16/10	AUG	PM	1	1	RODO	RODO	4	FP	AIR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1469	08/16/10	AUG	PM	1	1	RODO	RODO	4	FD	GSH	N
1470	08/16/10	AUG	PM	1	1	RODO	RODO	5	FP	AIR	Y
1471	08/16/10	AUG	PM	1	1	GAME	RNPH	3	ST	GSH	N
1472	08/16/10	AUG	PM	1	1	GAME	RNPH	1	VO	MAR	N
1473	08/16/10	AUG	PM	1	1	GAME	RNPH	12	ST	GSH	N
1474	08/16/10	AUG	PM	1	1	SPAR	HOSP	1	ST	STR	N
1475	08/16/10	AUG	PM	1	1	SWAL	CLSW	50	ST	GSH	N
1476	08/16/10	AUG	PM	1	1	SWAL	BARS	2	FL	GSH	N
1477	08/16/10	AUG	PM	1	1	SWAL	CLSW	2	FL	GSH	N
1478	08/16/10	AUG	PM	1	1	MODO	MODO	1	FP	AIR	Y
1479	08/16/10	AUG	PM	1	1	MODO	MODO	1	ST	GVL	N
1480	08/16/10	AUG	PM	1	1	MODO	MODO	1	FP	GSH	N
1481	08/16/10	AUG	PM	1	2	SWAL	CLSW	50	FL	GSH	N
1482	08/16/10	AUG	PM	1	2	SHOR	MAGO	1	FP	AIR	N
1483	08/16/10	AUG	PM	1	3	BLAC	WEME	4	FL	GSH	N
1484	08/16/10	AUG	PM	1	3	MISC	EAKI	1	ST	GSH	N
1485	08/16/10	AUG	PM	1	3	SWAL	CLSW	40	FL	GSH	Y
1486	08/16/10	AUG	PM	1	3	GAME	RNPH	5	ST	GSH	N
1487	08/16/10	AUG	PM	1	3	GAME	RNPH	2	ST	GSH	N
1488	08/16/10	AUG	PM	1	3	GAME	RNPH	1	VO	GLG	N
1489	08/16/10	AUG	PM	1	4	DUCK	WOOD	5	ST	PND	N
1490	08/16/10	AUG	PM	1	4	BLAC	WEME	4	FL	GSH	N
1491	08/16/10	AUG	PM	1	4	DUCK	MALL	1	ST	PND	N
1492	08/16/10	AUG	PM	1	4	DUCK	MALL	5	ST	PND	N
1493	08/16/10	AUG	PM	1	4	RODO	RODO	14	ST	TSW	N
1494	08/16/10	AUG	PM	1	4	RODO	RODO	4	FP	AIR	Y
1495	08/16/10	AUG	PM	1	4	SHOR	KILL	10	ST	RWY	Y
1496	08/16/10	AUG	PM	1	4	SHOR	KILL	1	VO	GLG	N
1497	08/16/10	AUG	PM	1	4	BLAC	BOBO	1	FL	GSH	N
1498	08/16/10	AUG	PM	1	4	DUCK	BWTE	10	ST	PND	N
1499	08/16/10	AUG	PM	1	4	DUCK	PBGR	2	ST	PND	N
1500	08/16/10	AUG	PM	1	4	MISC	NOFL	1	ST	GVL	N
1501	08/16/10	AUG	PM	1	4	MODO	MODO	2	FP	AIR	Y
1502	08/16/10	AUG	PM	1	5	GAME	RNPH	12	FL	AGR	N
1503	08/16/10	AUG	PM	1	5	MODO	MODO	2	FL	AGR	N
1504	08/16/10	AUG	PM	1	5	MODO	MODO	2	ST	STR	N
1505	08/16/10	AUG	PM	1	5	MODO	MODO	7	ST	AGR	N
1506	08/16/10	AUG	PM	2	1	SWAL	CLSW	2	FL	GSH	N
1507	08/16/10	AUG	PM	2	1	SWAL	BARS	2	FL	GSH	N
1508	08/16/10	AUG	PM	2	1	SWAL	TRES	10	FL	MAR	N
1509	08/16/10	AUG	PM	2	1	RODO	RODO	4	FP	AIR	N
1510	08/16/10	AUG	PM	2	1	RODO	RODO	5	FP	AIR	Y
1511	08/16/10	AUG	PM	2	1	GAME	RNPH	3	ST	GSH	N
1512	08/16/10	AUG	PM	2	1	GAME	RNPH	1	VO	MAR	N
1513	08/16/10	AUG	PM	2	1	GAME	RNPH	7	ST	GSH	N
1514	08/16/10	AUG	PM	2	1	SPAR	HOSP	1	ST	STR	N
1515	08/16/10	AUG	PM	2	1	SWAL	CLSW	50	ST	GSH	N
1516	08/16/10	AUG	PM	2	1	MODO	MODO	1	FP	GSH	N
1517	08/16/10	AUG	PM	2	1	MODO	MODO	1	FP	AIR	Y
1518	08/16/10	AUG	PM	2	1	MODO	MODO	1	ST	GVL	N
1519	08/16/10	AUG	PM	2	2	SWAL	CLSW	50	FL	GSH	N
1520	08/16/10	AUG	PM	2	3	SWAL	CLSW	40	FL	GSH	Y
1521	08/16/10	AUG	PM	2	3	BLAC	WEME	4	FL	GSH	N
1522	08/16/10	AUG	PM	2	3	MISC	EAKI	1	ST	GSH	N
1523	08/16/10	AUG	PM	2	3	GAME	RNPH	1	VO	GLG	N
1524	08/16/10	AUG	PM	2	3	GAME	RNPH	2	ST	GSH	N
1525	08/16/10	AUG	PM	2	3	GAME	RNPH	5	ST	GSH	N
1526	08/16/10	AUG	PM	2	4	DUCK	WOOD	5	ST	PND	N
1527	08/16/10	AUG	PM	2	4	BLAC	WEME	4	FL	GSH	N
1528	08/16/10	AUG	PM	2	4	DUCK	MALL	1	ST	PND	N
1529	08/16/10	AUG	PM	2	4	DUCK	MALL	5	ST	PND	N
1530	08/16/10	AUG	PM	2	4	RODO	RODO	14	ST	TSW	N
1531	08/16/10	AUG	PM	2	4	RODO	RODO	4	FP	AIR	Y
1532	08/16/10	AUG	PM	2	4	SHOR	KILL	1	VO	GLG	N
1533	08/16/10	AUG	PM	2	4	SHOR	KILL	10	ST	RWY	Y
1534	08/16/10	AUG	PM	2	4	BLAC	BOBO	1	FL	GSH	N
1535	08/16/10	AUG	PM	2	4	DUCK	PBGR	2	ST	PND	N
1536	08/16/10	AUG	PM	2	4	MISC	NOFL	1	ST	GVL	N
1537	08/16/10	AUG	PM	2	4	DUCK	BWTE	10	ST	PND	N
1538	08/16/10	AUG	PM	2	4	MODO	MODO	2	FP	ATR	Y

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1539	08/16/10	AUG	PM	2	5	GAME	RNPH	12	FL	AGR	N
1540	08/16/10	AUG	PM	2	5	MODO	MODO	7	ST	AGR	N
1541	08/16/10	AUG	PM	2	5	MODO	MODO	2	FL	AGR	N
1542	08/16/10	AUG	PM	2	5	MODO	MODO	2	ST	STR	N
1543	08/17/10	AUG	AM	1	1	BLAC	EUST	1	ST	STR	N
1544	08/17/10	AUG	AM	1	1	HAWK	SWHA	1	ST	GSH	N
1545	08/17/10	AUG	AM	1	1	RODO	RODO	25	ST	STR	N
1546	08/17/10	AUG	AM	1	1	HAWK	AMKE	1	ST	STR	N
1547	08/17/10	AUG	AM	1	1	GAME	RNPH	1	ST	GSH	N
1548	08/17/10	AUG	AM	1	1	SHOR	KILL	2	ST	GSH	N
1549	08/17/10	AUG	AM	1	1	SPAR	HOLA	2	ST	AGR	N
1550	08/17/10	AUG	AM	1	1	SWAL	BARS	1	ST	GSH	N
1551	08/17/10	AUG	AM	1	1	SWAL	BARS	10	FL	GSH	N
1552	08/17/10	AUG	AM	1	1	MISC	NOFL	1	ST	GSH	N
1553	08/17/10	AUG	AM	1	1	BLAC	EUST	3	ST	STR	N
1554	08/17/10	AUG	AM	1	1	MODO	MODO	8	FL	GSH	N
1555	08/17/10	AUG	AM	1	1	BLAC	EUST	3	FD	GSH	N
1556	08/17/10	AUG	AM	1	1	SWAL	CLSW	1	ST	STR	N
1557	08/17/10	AUG	AM	1	1	MODO	MODO	2	ST	ASP	Y
1558	08/17/10	AUG	AM	1	1	MODO	MODO	2	ST	TRE	N
1559	08/17/10	AUG	AM	1	2	SWAL	BARS	1	ST	GSH	N
1560	08/17/10	AUG	AM	1	2	SPAR	UNSP	4	ST	GSH	N
1561	08/17/10	AUG	AM	1	2	HAWK	SWHA	1	ST	TRE	N
1562	08/17/10	AUG	AM	1	2	GAME	RNPH	1	ST	GLG	N
1563	08/17/10	AUG	AM	1	2	SPAR	SAVS	4	ST	GLG	N
1564	08/17/10	AUG	AM	1	3	DUCK	MALL	19	ST	PND	N
1565	08/17/10	AUG	AM	1	3	DUCK	BWTE	2	ST	TSW	N
1566	08/17/10	AUG	AM	1	3	DUCK	MALL	1	FP	AGR	N
1567	08/17/10	AUG	AM	1	3	GAME	RNPH	2	ST	GSH	N
1568	08/17/10	AUG	AM	1	3	GULL	RBGU	7	ST	RWY	N
1569	08/17/10	AUG	AM	1	3	GULL	RBGU	1	FP	GSH	Y
1570	08/17/10	AUG	AM	1	3	MODO	MODO	1	FP	GSH	Y
1571	08/17/10	AUG	AM	1	4	DUCK	BWTE	19	ST	PND	N
1572	08/17/10	AUG	AM	1	4	DUCK	WOOD	2	ST	PND	N
1573	08/17/10	AUG	AM	1	4	DUCK	BWTE	3	ST	PND	N
1574	08/17/10	AUG	AM	1	5	DUCK	MALL	2	FP	GSH	Y
1575	08/17/10	AUG	AM	1	5	RODO	RODO	3	FP	GSH	N
1576	08/17/10	AUG	AM	1	5	BLAC	COGR	2	FP	GSH	N
1577	08/17/10	AUG	AM	1	5	MODO	MODO	2	ST	GLG	N
1578	08/17/10	AUG	AM	1	5	MODO	MODO	6	ST	GVL	N
1579	08/17/10	AUG	AM	2	1	RODO	RODO	25	ST	STR	N
1580	08/17/10	AUG	AM	2	1	BLAC	EUST	2	FP	AIR	N
1581	08/17/10	AUG	AM	2	1	MODO	MODO	1	FP	AIR	N
1582	08/17/10	AUG	AM	2	1	MODO	MODO	1	ST	ASP	N
1583	08/17/10	AUG	AM	2	2	SWAL	CLSW	30	FL	GLG	Y
1584	08/17/10	AUG	AM	2	2	MODO	MODO	1	FP	AIR	N
1585	08/17/10	AUG	AM	2	3	SWAL	CLSW	2	FL	GLG	N
1586	08/17/10	AUG	AM	2	3	SPAR	SAVS	1	ST	STR	N
1587	08/17/10	AUG	AM	2	3	MISC	AMRO	1	FL	GLG	N
1588	08/17/10	AUG	AM	2	3	MISC	EAKI	2	FL	GLG	N
1589	08/17/10	AUG	AM	2	4	GULL	RBGU	1	FL	GSH	N
1590	08/17/10	AUG	AM	2	4	GULL	RBGU	15	ST	RWY	N
1591	08/17/10	AUG	AM	2	5	GAME	RNPH	8	ST	DTC	N
1592	08/17/10	AUG	AM	2	5	BLAC	COGR	1	ST	STR	N
1593	08/17/10	AUG	AM	2	5	BLAC	COGR	200	ST	MAR	N
1594	08/17/10	AUG	AM	2	5	MODO	MODO	1	ST	GVL	N
1595	08/17/10	AUG	AM	2	5	MODO	MODO	10	ST	STR	N
1596	09/02/10	SEP	AM	1	1	BLAC	WEME	1	ST	STR	N
1597	09/02/10	SEP	AM	1	1	BLAC	EUST	7	ST	STR	N
1598	09/02/10	SEP	AM	1	1	RODO	RODO	25	ST	STR	N
1599	09/02/10	SEP	AM	1	1	SHOR	KILL	3	ST	GVL	N
1600	09/02/10	SEP	AM	1	1	SPAR	HOSP	20	FL	STR	N
1601	09/02/10	SEP	AM	1	1	HAWK	NOHA	1	FL	RWY	Y
1602	09/02/10	SEP	AM	1	1	MODO	MODO	1	FP	AIR	N
1603	09/02/10	SEP	AM	1	1	MODO	MODO	7	ST	GSH	N
1604	09/02/10	SEP	AM	1	1	MODO	MODO	2	ST	TSW	N
1605	09/02/10	SEP	AM	1	2	MODO	MODO	1	ST	TRE	N
1606	09/02/10	SEP	AM	1	3	BLAC	WEME	1	ST	STR	N
1607	09/02/10	SEP	AM	1	3	HAWK	RTHA	1	FL	AGR	Y
1608	09/02/10	SEP	AM	1	3	BLAC	MXBL	200	FL	AGR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1609	09/02/10	SEP	AM	1	4	DUCK	WOOD	7	ST	PND	N
1610	09/02/10	SEP	AM	1	4	DUCK	BWTE	6	ST	PND	N
1611	09/02/10	SEP	AM	1	4	DUCK	MALL	2	ST	PND	N
1612	09/02/10	SEP	AM	1	4	DUCK	LESC	1	ST	PND	N
1613	09/02/10	SEP	AM	1	4	GULL	RBGU	13	ST	PND	N
1614	09/02/10	SEP	AM	1	4	GULL	RBGU	12	ST	RWY	N
1615	09/02/10	SEP	AM	1	4	GULL	RBGU	1	FL	RWY	Y
1616	09/02/10	SEP	AM	1	4	DUCK	BWTE	9	ST	PND	N
1617	09/02/10	SEP	AM	1	5	MODO	MODO	7	ST	GVL	N
1618	09/02/10	SEP	AM	1	5	BLAC	RWBL	2	ST	STR	N
1619	09/02/10	SEP	AM	1	5	MODO	MODO	1	FL	AGR	N
1620	09/02/10	SEP	AM	2	1	BLAC	EUST	2	FP	AIR	N
1621	09/02/10	SEP	AM	2	1	MODO	MODO	1	ST	ASP	N
1622	09/02/10	SEP	AM	2	1	RODO	RODO	25	ST	STR	N
1623	09/02/10	SEP	AM	2	1	MODO	MODO	1	FP	AIR	N
1624	09/02/10	SEP	AM	2	2	SWAL	CLSW	30	FL	GLG	Y
1625	09/02/10	SEP	AM	2	2	MODO	MODO	1	FP	AIR	N
1626	09/02/10	SEP	AM	2	3	SWAL	CLSW	2	FL	GLG	N
1627	09/02/10	SEP	AM	2	3	MISC	EAKI	2	FL	GLG	N
1628	09/02/10	SEP	AM	2	3	MISC	AMRO	1	FL	GLG	N
1629	09/02/10	SEP	AM	2	3	SPAR	SAVS	1	ST	STR	N
1630	09/02/10	SEP	AM	2	4	GULL	RBGU	15	ST	RWY	N
1631	09/02/10	SEP	AM	2	4	GULL	RBGU	1	FL	GLG	N
1632	09/02/10	SEP	AM	2	5	BLAC	COGR	200	ST	MAR	N
1633	09/02/10	SEP	AM	2	5	BLAC	COGR	1	ST	STR	N
1634	09/02/10	SEP	AM	2	5	GAME	RNPH	8	ST	DTC	N
1635	09/02/10	SEP	AM	2	5	MODO	MODO	1	ST	GVL	N
1636	09/02/10	SEP	AM	2	5	MODO	MODO	10	ST	STR	N
1637	09/02/10	SEP	PM	1	1	MODO	MODO	3	ST	GSH	N
1638	09/02/10	SEP	PM	1	1	SPAR	UNSP	3	FL	GLG	N
1639	09/02/10	SEP	PM	1	1	HAWK	SWHA	1	ST	STR	N
1640	09/02/10	SEP	PM	1	1	RODO	RODO	25	ST	STR	N
1641	09/02/10	SEP	PM	1	1	SPAR	UNSP	1	FL	STR	N
1642	09/02/10	SEP	PM	1	1	SPAR	HOLA	2	ST	GVL	N
1643	09/02/10	SEP	PM	1	1	BLAC	EUST	3	FL	STR	N
1644	09/02/10	SEP	PM	1	2	SPAR	UNSP	1	ST	GSH	N
1645	09/02/10	SEP	PM	1	4	DUCK	WOOD	4	ST	PND	N
1646	09/02/10	SEP	PM	1	4	DUCK	MALL	9	ST	PND	N
1647	09/02/10	SEP	PM	1	4	DUCK	PBGR	13	ST	PND	N
1648	09/02/10	SEP	PM	1	5	GAME	RNPH	8	ST	MAR	N
1649	09/02/10	SEP	PM	2	1	HAWK	SWHA	1	ST	STR	N
1650	09/02/10	SEP	PM	2	1	RODO	RODO	27	ST	STR	N
1651	09/02/10	SEP	PM	2	1	SPAR	HOLA	2	ST	GVL	N
1652	09/02/10	SEP	PM	2	1	BLAC	EUST	3	FL	STR	N
1653	09/02/10	SEP	PM	2	1	MODO	MODO	3	ST	GSH	N
1654	09/02/10	SEP	PM	2	2	SPAR	UNSP	1	ST	GSH	N
1655	09/02/10	SEP	PM	2	4	DUCK	WOOD	4	ST	PND	N
1656	09/02/10	SEP	PM	2	4	DUCK	MALL	9	ST	PND	N
1657	09/02/10	SEP	PM	2	4	DUCK	PBGR	13	ST	PND	N
1658	09/02/10	SEP	PM	2	5	GAME	RNPH	10	ST	MAR	N
1659	09/29/10	SEP	PM	1	1	SPAR	UNSP	1	FL	STR	N
1660	09/29/10	SEP	PM	1	1	HAWK	SWHA	1	ST	STR	N
1661	09/29/10	SEP	PM	1	1	RODO	RODO	25	ST	STR	N
1662	09/29/10	SEP	PM	1	1	SPAR	HOLA	2	ST	GVL	N
1663	09/29/10	SEP	PM	1	1	BLAC	EUST	3	FL	STR	N
1664	09/29/10	SEP	PM	1	1	MODO	MODO	3	ST	GSH	N
1665	09/29/10	SEP	PM	1	1	SPAR	UNSP	3	FL	GIG	N
1666	09/29/10	SEP	PM	1	2	SPAR	UNSP	1	ST	GSH	N
1667	09/29/10	SEP	PM	1	4	DUCK	WOOD	4	ST	PND	N
1668	09/29/10	SEP	PM	1	4	DUCK	MALL	9	ST	PND	N
1669	09/29/10	SEP	PM	1	4	DUCK	PBGR	13	ST	PND	N
1670	09/29/10	SEP	PM	1	5	GAME	RNPH	10	ST	MAR	N
1671	09/29/10	SEP	PM	2	1	BLAC	EUST	3	FL	STR	N
1672	09/29/10	SEP	PM	2	1	SPAR	UNSP	3	FL	GLG	N
1673	09/29/10	SEP	PM	2	1	SPAR	UNSP	1	FL	STR	N
1674	09/29/10	SEP	PM	2	1	HAWK	SWHA	1	ST	STR	N
1675	09/29/10	SEP	PM	2	1	RODO	RODO	25	ST	STR	N
1676	09/29/10	SEP	PM	2	1	SPAR	HOLA	2	ST	GVL	N
1677	09/29/10	SEP	PM	2	1	MODO	MODO	3	ST	GSH	N
1678	09/29/10	SEP	PM	2	2	SPAR	UNSP	1	ST	GSH	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1679	09/29/10	SEP	PM	2	4	DUCK	WOOD	4	ST	PND	N
1680	09/29/10	SEP	PM	2	4	DUCK	MALL	9	ST	PND	N
1681	09/29/10	SEP	PM	2	4	DUCK	PBGR	13	ST	PND	N
1682	09/29/10	SEP	PM	2	5	GAME	RNPH	10	ST	MAR	N
1683	09/30/10	SEP	AM	1	1	RODO	RODO	30	ST	STR	N
1684	09/30/10	SEP	AM	1	1	GAME	RNPH	1	ST	GLG	N
1685	09/30/10	SEP	AM	1	1	BLAC	EUST	10	FL	STR	N
1686	09/30/10	SEP	AM	1	1	MODO	MODO	2	ST	GLG	N
1687	09/30/10	SEP	AM	1	3	HAWK	SWHA	2	ST	STR	N
1688	09/30/10	SEP	AM	1	3	HAWK	SWHA	1	ST	GLG	N
1689	09/30/10	SEP	AM	1	4	SPAR	UNSP	2	FL	GSH	N
1690	09/30/10	SEP	AM	1	4	SPAR	UNSP	1	ST	GLG	N
1691	09/30/10	SEP	AM	1	4	SPAR	UNSP	1	ST	RWY	N
1692	09/30/10	SEP	AM	1	4	SPAR	HOLA	2	ST	RWY	N
1693	09/30/10	SEP	AM	1	4	DUCK	PBGR	5	ST	ASP	N
1694	09/30/10	SEP	AM	1	4	SPAR	HOLA	1	ST	RWY	N
1695	09/30/10	SEP	AM	1	5	SPAR	UNSP	1	FL	AGR	N
1696	09/30/10	SEP	AM	1	5	SPAR	SAVS	3	ST	AGR	N
1697	09/30/10	SEP	AM	1	5	SPAR	CHSP	3	FL	AGR	N
1698	09/30/10	SEP	AM	1	5	BLAC	RWBL	400	ST	AGR	N
1699	09/30/10	SEP	AM	2	1	RODO	RODO	30	ST	STR	N
1700	09/30/10	SEP	AM	2	1	GAME	RNPH	1	ST	GLG	N
1701	09/30/10	SEP	AM	2	1	BLAC	EUST	10	FL	STR	N
1702	09/30/10	SEP	AM	2	1	MODO	MODO	2	ST	GLG	N
1703	09/30/10	SEP	AM	2	3	HAWK	SWHA	1	ST	GLG	N
1704	09/30/10	SEP	AM	2	3	HAWK	SWHA	2	ST	STR	N
1705	09/30/10	SEP	AM	2	4	SPAR	UNSP	2	FL	GSH	N
1706	09/30/10	SEP	AM	2	4	SPAR	UNSP	1	ST	RWY	N
1707	09/30/10	SEP	AM	2	4	SPAR	UNSP	1	ST	GLG	N
1708	09/30/10	SEP	AM	2	4	SPAR	HOLA	2	ST	RWY	N
1709	09/30/10	SEP	AM	2	4	DUCK	PBGR	5	ST	ASP	N
1710	09/30/10	SEP	AM	2	4	SPAR	HOLA	1	ST	RWY	N
1711	09/30/10	SEP	AM	2	5	SPAR	UNSP	1	FL	AGR	N
1712	09/30/10	SEP	AM	2	5	SPAR	SAVS	3	ST	AGR	N
1713	09/30/10	SEP	AM	2	5	SPAR	CHSP	3	FL	AGR	N
1714	09/30/10	SEP	AM	2	5	BLAC	RWBL	400	ST	AGR	N
1715	10/13/10	OCT	PM	1	1	BLAC	EUST	2	FL	RWY	Y
1716	10/13/10	OCT	PM	1	1	RODO	RODO	27	ST	STR	N
1717	10/13/10	OCT	PM	1	1	GULL	RBGU	7	ST	RWY	N
1718	10/13/10	OCT	PM	1	1	BLAC	EUST	1	FL	STR	N
1719	10/13/10	OCT	PM	1	1	BLAC	EUST	30	FL	GLG	N
1720	10/13/10	OCT	PM	1	1	BLAC	EUST	22	ST	STR	N
1721	10/13/10	OCT	PM	1	2	GULL	RBGU	3	FL	GSH	N
1722	10/13/10	OCT	PM	1	2	BLAC	EUST	6	FP	AIR	N
1723	10/13/10	OCT	PM	1	3	BLAC	RWBL	12	ST	MAR	N
1724	10/13/10	OCT	PM	1	3	HAWK	RTHA	1	ST	TRE	N
1725	10/13/10	OCT	PM	1	3	GULL	RBGU	1	ST	RWY	N
1726	10/13/10	OCT	PM	1	3	BLAC	EUST	1	FP	AIR	N
1727	10/13/10	OCT	PM	1	4	GAME	RNPH	2	VO	PND	N
1728	10/13/10	OCT	PM	1	4	GULL	RBGU	1	FL	GLG	N
1729	10/13/10	OCT	PM	1	4	DUCK	PBGR	2	ST	PND	N
1730	10/13/10	OCT	PM	1	5	BLAC	RWBL	7	FL	AGR	N
1731	10/13/10	OCT	PM	1	5	BLAC	RWBL	25	ST	STR	N
1732	10/13/10	OCT	PM	1	5	GAME	RNPH	4	FL	AGR	N
1733	10/13/10	OCT	PM	1	5	GAME	RNPH	3	ST	MAR	N
1734	10/13/10	OCT	PM	2	1	BLAC	EUST	8	ST	STR	N
1735	10/13/10	OCT	PM	2	1	SPAR	UNSP	1	FD	GLG	N
1736	10/13/10	OCT	PM	2	1	SPAR	UNSP	1	ST	STR	N
1737	10/13/10	OCT	PM	2	1	SPAR	UNSP	1	FD	GLG	N
1738	10/13/10	OCT	PM	2	1	GULL	RBGU	1	ST	RWY	N
1739	10/13/10	OCT	PM	2	1	BLAC	EUST	3	FD	GLG	N
1740	10/13/10	OCT	PM	2	1	BLAC	EUST	2	FD	GLG	N
1741	10/13/10	OCT	PM	2	2	MODO	MODO	2	ST	STR	Y
1742	10/13/10	OCT	PM	2	2	BLAC	EUST	5	FL	TRE	N
1743	10/13/10	OCT	PM	2	2	SPAR	UNSP	5	ST	RWY	N
1744	10/13/10	OCT	PM	2	2	BLAC	RWBL	1	FL	GLG	N
1745	10/13/10	OCT	PM	2	2	GULL	RBGU	1	FL	RWY	N
1746	10/13/10	OCT	PM	2	3	BLAC	EUST	15	ST	TRE	N
1747	10/13/10	OCT	PM	2	3	BLAC	WEME	6	ST	GSH	N
1748	10/13/10	OCT	PM	2	3	HAWK	UNHA	1	ST	TRE	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1749	10/13/10	OCT	PM	2	3	HAWK	NOHA	1	ST	STR	N
1750	10/13/10	OCT	PM	2	3	HAWK	NOHA	1	FL	GSH	Y
1751	10/13/10	OCT	PM	2	4	BLAC	RWBL	1	FL	MAR	N
1752	10/13/10	OCT	PM	2	4	BLAC	RWBL	20	ST	MAR	N
1753	10/13/10	OCT	PM	2	4	GAME	RNPH	3	ST	GLG	N
1754	10/13/10	OCT	PM	2	4	GULL	RBGU	2	ST	RWY	N
1755	10/13/10	OCT	PM	2	5	BLAC	RWBL	6	ST	AGR	N
1756	10/13/10	OCT	PM	2	5	BLAC	RWBL	15	FL	AGR	N
1757	10/13/10	OCT	PM	2	5	BLAC	RWBL	10	ST	STR	N
1758	10/14/10	OCT	AM	1	1	BLAC	EUST	5	FL	RWY	Y
1759	10/14/10	OCT	AM	1	1	BLAC	EUST	1	FL	STR	N
1760	10/14/10	OCT	AM	1	1	BLAC	EUST	3	ST	STR	N
1761	10/14/10	OCT	AM	1	1	SPAR	UNSP	8	ST	GSH	N
1762	10/14/10	OCT	AM	1	1	RODO	RODO	30	ST	STR	N
1763	10/14/10	OCT	AM	1	1	GULL	RBGU	5	ST	RWY	N
1764	10/14/10	OCT	AM	1	1	BLAC	EUST	30	FL	STR	N
1765	10/14/10	OCT	AM	1	1	BLAC	EUST	20	ST	STR	N
1766	10/14/10	OCT	AM	1	2	GULL	RBGU	4	FL	GSH	N
1767	10/14/10	OCT	AM	1	2	BLAC	EUST	6	FP	AIR	Y
1768	10/14/10	OCT	AM	1	3	BLAC	EUST	1	FP	AIR	N
1769	10/14/10	OCT	AM	1	3	HAWK	UNHA	1	ST	TRE	N
1770	10/14/10	OCT	AM	1	3	BLAC	RWBL	12	ST	PND	N
1771	10/14/10	OCT	AM	1	3	GULL	RBGU	1	ST	RWY	N
1772	10/14/10	OCT	AM	1	4	GAME	RNPH	1	VO	PND	N
1773	10/14/10	OCT	AM	1	4	GULL	RBGU	1	FL	PND	N
1774	10/14/10	OCT	AM	1	4	DUCK	PBGR	2	ST	PND	N
1775	10/14/10	OCT	AM	1	5	BLAC	RWBL	7	FL	AGR	N
1776	10/14/10	OCT	AM	1	5	BLAC	RWBL	25	ST	STR	N
1777	10/14/10	OCT	AM	1	5	GAME	RNPH	3	ST	MAR	N
1778	10/14/10	OCT	AM	1	5	GAME	RNPH	3	FL	AGR	N
1779	10/14/10	OCT	AM	2	1	BLAC	EUST	1	FD	GLG	N
1780	10/14/10	OCT	AM	2	1	BLAC	EUST	8	ST	STR	N
1781	10/14/10	OCT	AM	2	1	SPAR	UNSP	1	ST	STR	N
1782	10/14/10	OCT	AM	2	1	SPAR	UNSP	1	FD	GLG	N
1783	10/14/10	OCT	AM	2	1	SPAR	UNSP	1	FD	GLG	N
1784	10/14/10	OCT	AM	2	1	GULL	RBGU	1	ST	RWY	N
1785	10/14/10	OCT	AM	2	1	BLAC	EUST	2	FD	GLG	N
1786	10/14/10	OCT	AM	2	2	BLAC	EUST	5	FL	TRE	N
1787	10/14/10	OCT	AM	2	2	SPAR	UNSP	2	ST	RWY	N
1788	10/14/10	OCT	AM	2	2	BLAC	RWBL	1	FL	GLG	N
1789	10/14/10	OCT	AM	2	2	GULL	RBGU	1	FL	RWY	N
1790	10/14/10	OCT	AM	2	2	MODO	MODO	2	ST	STR	Y
1791	10/14/10	OCT	AM	2	3	BLAC	WEME	6	ST	GSH	N
1792	10/14/10	OCT	AM	2	3	HAWK	UNHA	1	ST	TRE	N
1793	10/14/10	OCT	AM	2	3	HAWK	NOHA	1	ST	STR	N
1794	10/14/10	OCT	AM	2	3	HAWK	NOHA	1	FL	GSH	Y
1795	10/14/10	OCT	AM	2	3	BLAC	EUST	15	ST	TRE	N
1796	10/14/10	OCT	AM	2	4	BLAC	RWBL	1	FL	MAR	N
1797	10/14/10	OCT	AM	2	4	BLAC	RWBL	20	ST	MAR	N
1798	10/14/10	OCT	AM	2	4	GAME	RNPH	3	ST	GLG	N
1799	10/14/10	OCT	AM	2	4	GULL	RBGU	2	ST	RWY	N
1800	10/14/10	OCT	AM	2	5	BLAC	RWBL	10	ST	STR	N
1801	10/14/10	OCT	AM	2	5	BLAC	RWBL	15	FL	AGR	N
1802	10/14/10	OCT	AM	2	5	BLAC	RWBL	6	ST	AGR	N
1803	10/27/10	OCT	PM	1	1	GAME	RNPH	1	ST	GSH	N
1804	10/27/10	OCT	PM	1	1	SPAR	HOLA	5	ST	RWY	N
1805	10/27/10	OCT	PM	1	1	BLAC	EUST	10	ST	STR	N
1806	10/27/10	OCT	PM	1	2	BLAC	RWBL	1	ST	PND	N
1807	10/27/10	OCT	PM	1	3	GAME	RNPH	1	ST	AGR	N
1808	10/27/10	OCT	PM	1	3	HAWK	NOHA	1	FL	AGR	N
1809	10/27/10	OCT	PM	1	4	DUCK	MALL	22	ST	PND	N
1810	10/27/10	OCT	PM	1	4	DUCK	LESC	65	ST	PND	N
1811	10/27/10	OCT	PM	1	4	DUCK	REDH	18	ST	PND	N
1812	10/27/10	OCT	PM	2	1	GAME	RNPH	1	ST	GSH	N
1813	10/27/10	OCT	PM	2	1	SPAR	HOLA	5	ST	RWY	N
1814	10/27/10	OCT	PM	2	1	BLAC	EUST	5	ST	STR	N
1815	10/27/10	OCT	PM	2	2	BLAC	RWBL	3	ST	PND	N
1816	10/27/10	OCT	PM	2	3	GAME	RNPH	1	ST	AGR	N
1817	10/27/10	OCT	PM	2	3	HAWK	NOHA	1	FL	AGR	N
1818	10/27/10	OCT	PM	2	4	DUCK	MALL	24	ST	PND	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
119	10/27/10	OCT	PM	2	4	DUCK	LESC	55	ST	PND	N
1820	10/27/10	OCT	PM	2	4	DUCK	REDH	26	ST	PND	N
1321	10/28/10	OCT	AM	1	1	GAME	RNPH	1	ST	GSH	N
1322	10/28/10	OCT	AM	1	1	SPAR	HOLA	5	ST	RWY	N
1823	10/28/10	OCT	AM	1	1	BLAC	EUST	10	ST	STR	N
1324	10/28/10	OCT	AM	1	2	BLAC	RWBL	1	ST	PND	N
1925	10/28/10	OCT	AM	1	3	GAME	RNPH	1	ST	AGR	N
1826	10/28/10	OCT	AM	1	3	HAWK	NOHA	1	FL	AGR	N
1327	10/28/10	OCT	AM	1	4	DUCK	MALL	20	ST	PND	N
1928	10/28/10	OCT	AM	1	4	DUCK	LESC	60	ST	PND	N
1329	10/28/10	OCT	AM	1	4	DUCK	REDH	20	ST	PND	N
1330	10/28/10	OCT	AM	2	1	BLAC	EUST	10	ST	STR	N
1831	10/28/10	OCT	AM	2	1	GAME	RNPH	1	ST	GSH	N
1332	10/28/10	OCT	AM	2	1	SPAR	HOLA	5	ST	RWY	N
1933	10/28/10	OCT	AM	2	2	BLAC	RWBL	1	ST	PND	N
1834	10/28/10	OCT	AM	2	3	GAME	RNPH	1	ST	AGR	N
1335	10/28/10	OCT	AM	2	3	HAWK	NOHA	1	FL	AGR	N
1836	10/28/10	OCT	AM	2	4	DUCK	MALL	20	ST	PND	N
1337	10/28/10	OCT	AM	2	4	DUCK	LESC	60	ST	PND	N
1338	10/28/10	OCT	AM	2	4	DUCK	REDH	20	ST	PND	N
1839	11/03/10	NOV	PM	1	1	BLAC	EUST	1	ST	STR	N
1340	11/03/10	NOV	PM	1	1	SPAR	HOSP	2	ST	ASP	N
1941	11/03/10	NOV	PM	1	2	GAME	RNPH	5	ST	GLG	N
1842	11/03/10	NOV	PM	1	3	GAME	RNPH	2	ST	GLG	N
1343	11/03/10	NOV	PM	1	4	DUCK	BWTE	160	ST	PND	N
1844	11/03/10	NOV	PM	1	4	DUCK	REDH	12	ST	PND	N
1345	11/03/10	NOV	PM	1	4	DUCK	NOSH	5	ST	PND	N
1346	11/03/10	NOV	PM	2	1	SPAR	HOSP	2	ST	ASP	N
1847	11/03/10	NOV	PM	2	1	BLAC	EUST	1	ST	STR	N
1348	11/03/10	NOV	PM	2	2	GAME	RNPH	5	ST	GLG	N
1949	11/03/10	NOV	PM	2	3	GAME	RNPH	2	ST	GLG	N
1850	11/03/10	NOV	PM	2	4	DUCK	BWTE	160	ST	PND	N
1351	11/03/10	NOV	PM	2	4	DUCK	REDH	12	ST	PND	N
1852	11/03/10	NOV	PM	2	4	DUCK	NOSH	5	ST	PND	N
1353	11/04/10	NOV	AM	1	1	BLAC	EUST	6	FL	STR	N
1354	11/04/10	NOV	AM	1	1	MODO	MODO	2	FP	AIR	N
1855	11/04/10	NOV	AM	1	1	RODO	RODO	2	FP	AIR	N
1356	11/04/10	NOV	AM	1	1	GAME	RNPH	1	VO	GLG	N
1957	11/04/10	NOV	AM	1	1	GAME	RNPH	2	FP	MAR	N
1858	11/04/10	NOV	AM	1	1	GAME	RNPH	8	ST	GLG	Y
1359	11/04/10	NOV	AM	1	1	GAME	RNPH	1	FL	GLG	N
1960	11/04/10	NOV	AM	1	1	GAME	RNPH	4	ST	GSH	N
1361	11/04/10	NOV	AM	1	1	GULL	RBGU	1	FP	AIR	N
1362	11/04/10	NOV	AM	1	1	BLAC	EUST	12	ST	STR	N
1863	11/04/10	NOV	AM	1	4	DUCK	MALL	20	ST	PND	N
1364	11/04/10	NOV	AM	1	4	DUCK	LESC	45	ST	PND	N
1365	11/04/10	NOV	AM	1	4	DUCK	REDH	45	ST	PND	N
1866	11/04/10	NOV	AM	1	4	GULL	RBGU	6	ST	STR	N
1367	11/04/10	NOV	AM	1	4	GULL	RBGU	1	FL	GSH	Y
1868	11/04/10	NOV	AM	2	1	RODO	RODO	2	FP	AIR	N
1369	11/04/10	NOV	AM	2	1	GAME	RNPH	1	FL	GLG	N
1370	11/04/10	NOV	AM	2	1	GAME	RNPH	2	FP	MAR	N
1871	11/04/10	NOV	AM	2	1	GAME	RNPH	1	VO	GLG	N
1372	11/04/10	NOV	AM	2	1	GAME	RNPH	8	ST	GLG	Y
1373	11/04/10	NOV	AM	2	1	GAME	RNPH	4	ST	GSH	N
1874	11/04/10	NOV	AM	2	1	GULL	RBGU	1	FP	AIR	N
1375	11/04/10	NOV	AM	2	1	MODO	MODO	2	FP	AIR	N
1976	11/04/10	NOV	AM	2	1	BLAC	EUST	12	ST	STR	N
1377	11/04/10	NOV	AM	2	1	BLAC	EUST	6	FL	STR	N
1378	11/04/10	NOV	AM	2	4	DUCK	MALL	20	ST	PND	N
1879	11/04/10	NOV	AM	2	4	DUCK	LESC	45	ST	PND	N
1380	11/04/10	NOV	AM	2	4	DUCK	REDH	45	ST	PND	N
1381	11/04/10	NOV	AM	2	4	GULL	RBGU	6	ST	STR	N
1882	11/04/10	NOV	AM	2	4	GULL	RBGU	1	FL	GSH	Y
1383	11/18/10	NOV	PM	1	1	RODO	RODO	40	ST	STR	N
1984	11/18/10	NOV	PM	1	2	GAME	RNPH	20	ST	GLG	N
1385	11/18/10	NOV	PM	1	2	SPAR	HOLA	5	ST	RWY	N
1386	11/18/10	NOV	PM	1	4	DUCK	LESC	116	ST	PND	N
1887	11/18/10	NOV	PM	1	4	GULL	RBGU	1	FL	RWY	Y
1388	11/18/10	NOV	PM	1	4	DUCK	BWTE	4	ST	PND	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
1889	11/18/10	NOV	PM	1	5	HAWK	AMKE	1	ST	AGR	N
1890	11/18/10	NOV	PM	2	1	RODO	RODO	50	ST	STR	N
1891	11/18/10	NOV	PM	2	1	GAME	RNPH	4	ST	PND	N
1892	11/18/10	NOV	PM	2	1	SPAR	HOLA	8	FL	GSH	N
1893	11/18/10	NOV	PM	2	3	HAWK	NOHA	1	FL	RWY	N
1894	11/18/10	NOV	PM	2	3	HAWK	AMKE	1	FL	AGR	N
1895	11/18/10	NOV	PM	2	4	DUCK	LESC	116	ST	PND	N
1896	11/18/10	NOV	PM	2	4	GULL	RBGU	1	FL	RWY	Y
1897	11/18/10	NOV	PM	2	4	DUCK	BWTE	4	ST	PND	N
1898	11/19/10	NOV	AM	1	1	BLAC	EUST	4	ST	STR	N
1899	11/19/10	NOV	AM	1	1	RODO	RODO	6	ST	STR	N
1900	11/19/10	NOV	AM	1	1	SPAR	HOLA	3	FL	GSH	N
1901	11/19/10	NOV	AM	1	4	DUCK	MALL	10	ST	PND	N
1902	11/19/10	NOV	AM	1	4	DUCK	LESC	190	ST	PND	N
1903	11/19/10	NOV	AM	1	4	DUCK	NOSH	10	ST	PND	N
1904	11/19/10	NOV	AM	2	1	RODO	RODO	6	ST	STR	N
1905	11/19/10	NOV	AM	2	1	SPAR	HOLA	3	FL	GSH	N
1906	11/19/10	NOV	AM	2	1	BLAC	EUST	4	ST	STR	N
1907	11/19/10	NOV	AM	2	4	DUCK	MALL	10	ST	PND	N
1908	11/19/10	NOV	AM	2	4	DUCK	LESC	190	ST	PND	N
1909	11/19/10	NOV	AM	2	4	DUCK	NOSH	10	ST	PND	N
1910	12/08/10	DEC	PM	1	1	RODO	RODO	10	ST	STR	N
1911	12/08/10	DEC	PM	1	1	SPAR	HOLA	2	ST	STR	N
1912	12/08/10	DEC	PM	1	1	SPAR	HOLA	15	ST	GSH	N
1913	12/08/10	DEC	PM	1	4	GAME	RNPH	1	ST	GLG	N
1914	12/08/10	DEC	PM	2	1	RODO	RODO	12	ST	STR	N
1915	12/08/10	DEC	PM	2	1	SPAR	HOLA	6	ST	GSH	N
1916	12/09/10	DEC	AM	1	2	GAME	RNPH	30	ST	AGR	N
1917	12/09/10	DEC	AM	2	2	GAME	RNPH	30	ST	AGR	N
1918	12/20/10	DEC	PM	1	1	RODO	RODO	12	ST	STR	N
1919	12/20/10	DEC	PM	1	1	SPAR	HOLA	4	ST	STR	N
1920	12/20/10	DEC	PM	1	2	GAME	RNPH	2	ST	GSH	N
1921	12/20/10	DEC	PM	1	4	GAME	RNPH	8	ST	AGR	N
1922	12/20/10	DEC	PM	2	1	RODO	RODO	16	ST	STR	N
1923	12/20/10	DEC	PM	2	1	SPAR	HOLA	4	FL	STR	N
1924	12/20/10	DEC	PM	2	2	GAME	RNPH	22	ST	AGR	N
1925	12/21/10	DEC	AM	1	1	BLAC	EUST	6	FL	STR	N
1926	12/21/10	DEC	AM	1	1	RODO	RODO	25	ST	STR	N
1927	12/21/10	DEC	AM	1	2	GAME	RNPH	1	ST	GSH	N
1928	12/21/10	DEC	AM	1	3	HAWK	UNHA	1	ST	TRE	N
1929	12/21/10	DEC	AM	1	4	GAME	RNPH	1	VO	GSH	N
1930	12/21/10	DEC	AM	2	1	RODO	RODO	26	ST	STR	N
1931	12/21/10	DEC	AM	2	1	SPAR	HOSP	2	FL	STR	N
1932	12/21/10	DEC	AM	2	2	GAME	RNPH	4	ST	GSH	N
1933	12/21/10	DEC	AM	2	5	GAME	RNPH	16	ST	AGR	N
1934	01/05/11	JAN	PM	1	1	GAME	RNPH	15	ST	GSH	N
1935	01/05/11	JAN	PM	1	5	SPAR	HOLA	15	ST	GVL	N
1936	01/05/11	JAN	PM	2	1	SPAR	HOSP	1	ST	STR	N
1937	01/05/11	JAN	PM	2	3	GAME	RNPH	6	ST	GSH	N
1938	01/05/11	JAN	PM	2	5	GAME	RNPH	45	ST	AGR	N
1939	01/06/11	JAN	AM	1	1	SPAR	HOLA	1	ST	GVL	N
1940	01/06/11	JAN	AM	1	3	GAME	RNPH	6	ST	AGR	N
1941	01/06/11	JAN	AM	2	3	GAME	RNPH	20	ST	AGR	N
1942	01/13/11	JAN	PM	1	1	RODO	RODO	2	FL	STR	N
1943	02/23/11	FEB	PM	1	1	SPAR	HOLA	12	FL	TXY	N
1944	02/23/11	FEB	PM	1	1	SPAR	HOLA	6	FL	RWY	Y
1945	02/23/11	FEB	PM	1	1	SPAR	HOLA	1	ST	RWY	N
1946	02/23/11	FEB	PM	1	1	SPAR	HOLA	1	FL	TXY	N
1947	02/23/11	FEB	PM	1	2	SPAR	HOLA	1	ST	RWY	N
1948	02/23/11	FEB	PM	2	1	SPAR	HOLA	15	ST	GVL	N
1949	02/23/11	FEB	PM	2	4	SPAR	HOLA	4	FL	RWY	N
1950	02/24/11	FEB	AM	1	1	SPAR	HOLA	1	ST	STR	N
1951	02/24/11	FEB	AM	1	1	SPAR	HOLA	6	ST	GVL	N
1952	02/24/11	FEB	AM	1	1	SPAR	HOLA	8	ST	TXY	N
1953	02/24/11	FEB	AM	1	1	SPAR	HOLA	12	ST	GSH	Y
1954	02/24/11	FEB	AM	1	4	SPAR	HOLA	1	FL	GVL	N
1955	02/24/11	FEB	AM	2	1	SPAR	HOLA	8	ST	GVL	N
1956	02/24/11	FEB	AM	2	1	SPAR	HOLA	3	ST	GVL	N
1957	02/24/11	FEB	AM	2	1	SPAR	HOLA	3	ST	TXY	N
1958	02/24/11	FEB	AM	2	1	SPAR	HOLA	10	ST	GSH	Y

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
59	02/24/11	FEB	AM	2	4	RODO	RODO	1	FP	RWY	Y
1960	02/24/11	FEB	AM	2	4	SPAR	HOLA	1	FL	GVL	N
1961	03/30/11	MAR	PM	1	1	DUCK	MALL	4	FL	MAR	N
62	03/30/11	MAR	PM	1	1	GEES	CAGO	200	FP	RWY	Y
1963	03/30/11	MAR	PM	1	1	DUCK	MALL	5	FP	AIR	N
1964	03/30/11	MAR	PM	1	1	DUCK	MALL	2	FL	RWY	Y
1965	03/30/11	MAR	PM	1	1	GEES	CAGO	200	FP	AIR	Y
1966	03/30/11	MAR	PM	1	1	GEES	CAGO	6	FP	AIR	Y
1967	03/30/11	MAR	PM	1	1	GULL	RBGU	1	FP	RWY	Y
1968	03/30/11	MAR	PM	1	1	HAWK	NOHA	1	FL	STR	N
1969	03/30/11	MAR	PM	1	1	HAWK	NOHA	1	FL	RWY	Y
1970	03/30/11	MAR	PM	1	2	DUCK	MALL	2	FL	TSW	N
1971	03/30/11	MAR	PM	1	2	DUCK	MALL	20	ST	TSW	N
1972	03/30/11	MAR	PM	1	2	DUCK	MALL	8	FP	AIR	N
1973	03/30/11	MAR	PM	1	2	GEES	CAGO	9	FP	AIR	N
1974	03/30/11	MAR	PM	1	2	DUCK	REDH	20	ST	TSW	N
1975	03/30/11	MAR	PM	1	2	GEES	CAGO	4	FP	AIR	Y
1976	03/30/11	MAR	PM	1	2	GULL	RBGU	15	ST	TSW	N
1977	03/30/11	MAR	PM	1	4	GEES	WFGO	2	ST	TSW	N
1978	03/30/11	MAR	PM	1	4	HAWK	SWHA	1	FP	TRE	N
1979	03/30/11	MAR	PM	1	4	DUCK	MALL	50	FP	TSW	N
1980	03/30/11	MAR	PM	1	4	DUCK	MALL	10	ST	TSW	N
1981	03/30/11	MAR	PM	1	4	DUCK	LESC	25	ST	TSW	N
1982	03/30/11	MAR	PM	1	4	GEES	CAGO	2	VO	AIR	N
1983	03/30/11	MAR	PM	1	4	DUCK	REDH	10	ST	TSW	N
1984	03/30/11	MAR	PM	1	4	DUCK	NOPI	25	ST	TSW	N
1985	03/30/11	MAR	PM	2	1	BLAC	EUST	20	FL	STR	N
1986	03/30/11	MAR	PM	2	1	SPAR	UNSP	3	FL	GSH	N
1987	03/30/11	MAR	PM	2	1	GEES	CAGO	8	FP	AIR	N
1988	03/30/11	MAR	PM	2	1	HAWK	RTHA	1	ST	TRE	N
1989	03/30/11	MAR	PM	2	1	RODO	RODO	20	ST	STR	N
1990	03/30/11	MAR	PM	2	1	RODO	RODO	20	ST	STR	N
1991	03/30/11	MAR	PM	2	1	SPAR	HOSP	5	FL	STR	N
1992	03/30/11	MAR	PM	2	2	DUCK	MALL	10	ST	TSW	N
1993	03/30/11	MAR	PM	2	2	GAME	RNPH	4	ST	TSW	N
1994	03/30/11	MAR	PM	2	2	DUCK	REDH	10	ST	TSW	N
1995	03/30/11	MAR	PM	2	2	DUCK	NOPI	10	ST	TSW	N
1996	03/30/11	MAR	PM	2	2	DUCK	NOSH	10	ST	TSW	N
1997	03/30/11	MAR	PM	2	2	HAWK	NOHA	1	FL	GSH	N
1998	03/30/11	MAR	PM	2	4	GEES	CAGO	2	ST	PND	N
1999	03/30/11	MAR	PM	2	4	DUCK	MALL	15	ST	TSW	N
2000	03/30/11	MAR	PM	2	4	SPAR	HOLA	1	ST	RWY	N
2001	03/31/11	MAR	AM	1	1	BLAC	WEME	1	VO	STR	N
2002	03/31/11	MAR	AM	1	1	DUCK	MALL	4	ST	TSW	N
2003	03/31/11	MAR	AM	1	1	DUCK	MALL	2	ST	TSW	N
2004	03/31/11	MAR	AM	1	1	DUCK	CANV	4	ST	TSW	N
2005	03/31/11	MAR	AM	1	1	DUCK	MALL	2	FP	AIR	N
2006	03/31/11	MAR	AM	1	1	RODO	RODO	20	ST	STR	N
2007	03/31/11	MAR	AM	1	1	RODO	RODO	20	ST	STR	N
2008	03/31/11	MAR	AM	1	1	GEES	CAGO	2	ST	TSW	N
2009	03/31/11	MAR	AM	1	1	DUCK	LESC	15	VO	TSW	N
2010	03/31/11	MAR	AM	1	1	DUCK	BUFF	1	ST	TSW	N
2011	03/31/11	MAR	AM	1	1	DUCK	NOSH	2	ST	TSW	N
2012	03/31/11	MAR	AM	1	1	BLAC	EUST	4	ST	STR	N
2013	03/31/11	MAR	AM	1	1	BLAC	EUST	3	ST	STR	N
2014	03/31/11	MAR	AM	1	2	DUCK	CANV	15	ST	TSW	N
2015	03/31/11	MAR	AM	1	2	DUCK	MALL	15	ST	TSW	N
2016	03/31/11	MAR	AM	1	2	GEES	CAGO	300	FP	AIR	N
2017	03/31/11	MAR	AM	1	2	DUCK	LESC	15	ST	TSW	N
2018	03/31/11	MAR	AM	1	2	GEES	CAGO	2	FL	AIR	N
2019	03/31/11	MAR	AM	1	2	GAME	RNPH	5	ST	RWY	N
2020	03/31/11	MAR	AM	1	2	DUCK	REDH	15	ST	TSW	N
2021	03/31/11	MAR	AM	1	2	DUCK	NOSH	15	ST	TSW	N
2022	03/31/11	MAR	AM	1	4	DUCK	MALL	2	FP	AIR	N
2023	03/31/11	MAR	AM	1	4	DUCK	MALL	30	FP	AIR	N
2024	03/31/11	MAR	AM	1	4	DUCK	MALL	2	ST	TSW	N
2025	03/31/11	MAR	AM	1	4	DUCK	LESC	10	ST	TSW	N
2026	03/31/11	MAR	AM	1	5	DUCK	MALL	2	ST	TSW	N
2027	03/31/11	MAR	AM	1	5	BLAC	COGR	10	ST	STR	N
2028	03/31/11	MAR	AM	1	5	DUCK	MALL	8	FP	AIR	N

CASE	DATE	MON	TIME	REP	STAT	GUILD	SPEC	NBR	ACT	HAB	XRWY
2029	03/31/11	MAR	AM	2	1	BLAC	WEME	1	VO	STR	N
2030	03/31/11	MAR	AM	2	1	DUCK	MALL	2	ST	TSW	N
2031	03/31/11	MAR	AM	2	1	DUCK	MALL	2	FP	AIR	N
2032	03/31/11	MAR	AM	2	1	DUCK	CANV	4	ST	TSW	N
2033	03/31/11	MAR	AM	2	1	RODO	RODO	20	ST	STR	N
2034	03/31/11	MAR	AM	2	1	RODO	RODO	20	ST	STR	N
2035	03/31/11	MAR	AM	2	1	GEES	CAGO	2	ST	TSW	N
2036	03/31/11	MAR	AM	2	1	DUCK	MALL	4	ST	TSW	N
2037	03/31/11	MAR	AM	2	1	DUCK	LESC	15	VO	TSW	N
2038	03/31/11	MAR	AM	2	1	DUCK	BUFF	1	ST	TSW	N
2039	03/31/11	MAR	AM	2	1	DUCK	NOSH	2	ST	TSW	N
2040	03/31/11	MAR	AM	2	1	BLAC	EUST	4	ST	STR	N
2041	03/31/11	MAR	AM	2	1	BLAC	EUST	3	ST	STR	N
2042	03/31/11	MAR	AM	2	2	DUCK	CANV	15	ST	TSW	N
2043	03/31/11	MAR	AM	2	2	GEES	CAGO	300	FP	AIR	N
2044	03/31/11	MAR	AM	2	2	GEES	CAGO	2	FL	AIR	N
2045	03/31/11	MAR	AM	2	2	DUCK	MALL	15	ST	TSW	N
2046	03/31/11	MAR	AM	2	2	DUCK	LESC	15	ST	TSW	N
2047	03/31/11	MAR	AM	2	2	GAME	RNPH	3	ST	RWY	N
2048	03/31/11	MAR	AM	2	2	DUCK	REDH	15	ST	TSW	N
2049	03/31/11	MAR	AM	2	2	DUCK	NOSH	15	ST	TSW	N
2050	03/31/11	MAR	AM	2	4	DUCK	MALI	2	FP	AIR	N
2051	03/31/11	MAR	AM	2	4	DUCK	MALL	2	ST	TSW	N
2052	03/31/11	MAR	AM	2	4	DUCK	MALL	30	FP	AIR	N
2053	03/31/11	MAR	AM	2	4	DUCK	LESC	10	ST	TSW	N
2054	03/31/11	MAR	AM	2	5	DUCK	MALL	8	FP	AIR	N
2055	03/31/11	MAR	AM	2	5	DUCK	MALL	2	ST	TSW	N
2056	03/31/11	MAR	AM	2	5	BLAC	COGR	10	ST	STR	N

**Appendix C**

**RMA**

**Wildlife Activity Log**







United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

Wildlife Services  
South Dakota

420 S. Garfield  
Suite 300  
Pierre SD  
57501  
(605) 224-8692

September 28, 2009

Mr. Michael A. Schmidt, E.I.T.  
Helms & Associates  
P.O. Box 111  
Aberdeen, SD 57401

**RE: Wildlife Hazard Review of the Proposed Redfield Airport Construction Project**

Dear Mr. Schmidt:

Per your request, Wildlife Services (WS) contracted with the City of Redfield to review the proposed airport construction project at the Redfield Airport. The project consists of:

*“Construct a new primary runway 17/35, 3500 feet long with ultimate potential to be extended to 4,100 feet. Abandon cross wind runway 1/19. Use runway 13/31 as the cross wind runway and when the current pavement reaches the end of its useful life make a determination as to what surface is most economical. Fill in the portion of the wetland that is necessary to construct the 35 end of the runway.”*

The City of Redfield is proposing to purchase approximately 171.76 acres of land for airport protection of the Runway Protection Zones (RPZ), Approach and Transitional Surfaces, and the construction of the new runway and supporting turnarounds and taxiways. WS has been asked to review this project due to the potential wildlife hazards associated with a significant wetland on the south side of the airport.

Wildlife Services (WS) reviewed the maps and plans for the project and made a site visit to the Redfield Municipal Airport and surrounding area. An attempt was made to identify any wildlife hazards and attractants associated with the current airfield, as well as the potential attractants that may influence wildlife hazards with the proposed project. These wildlife attractants are discussed below.

Wetland Issues

Wetlands on and around airports have the potential to attract birds to the vicinity of the airport. Depending upon the species and the type of wetland, birds will utilize wetlands for feeding, resting and protection. Birds often enter or cross the path of aircraft as they fly from wetlands to feeding areas or to other wetlands, increasing the likelihood of an airstrike. Therefore, FAA recommends a distance of 5 miles between the airport and an attractant that could cause hazardous wildlife movement into or across approach/departure airspace (FAA Advisor Circular 150/5200-33B Hazardous Wildlife Attractants on or Near Airports). Also a 5 mile radius is recommended because turbine



powered aircraft normally have reached 2000 feet AGL within this zone. This level is significant because over 90% of bird airstrikes occur below 2000 feet.

As noted in the project plans, one large wetland is located on the south side of the airport. This wetland stretches at least 4400 feet east to west. Aerial maps indicate that the amount of standing water in the wetland can vary considerably from year to year. It appears the eastern third of the wetland is deepest and typically holds water every year. The remaining part of the wetland can be a mix of standing water, dense cattails, marsh or just damp areas that dry during part of the year. This mixture of wetland habitats is attractive to a variety of birds. This fall, a small group of about 30 - 50 gulls associated with this wetland have been noted using Runway 31 as a loafing and warming area. A variety of other species likely use this wetland throughout the year, including ducks, geese, cormorants, herons and shorebirds. All of these are large bodied birds that are extremely hazardous to aircraft. Additionally, large flocks of blackbirds will use these types of cattail stands for roosting in spring and fall. Striking a flock of small birds can be equally or more hazardous than striking a single large bodied bird. Considering that this wetland currently spans the south side of the airport and is directly under the approach/departure paths of both runways, it creates a hazardous situation for aircraft.

The proposed new runway project will intersect the large runway, placing wetland on either side of the new runway. If this is done, birds will be even more apt to utilize the runway for various purposes such as loafing or moving from one wetland to the other.

Due to the size of this wetland and the fact that birds will use it at all times of the day and night, it is impossible to effectively exclude birds from this wetland or conduct a harassment program that would effectively keep them from being attracted to it. Removal of the wetland is likely the only effective option for eliminating this attractant. Regardless of whether or not this project goes forward, in the interest of air safety, this complete wetland should be eliminated.

Additionally on the northeast side of the current airfield are some low areas. They appear to hold water intermittently in the spring and may remain wet into early summer. These should be drained or filled to eliminate their attractiveness to waterfowl in the spring.

An unnamed creek flows north along the west side of the Redfield Airport, maintaining a distance of about a half mile between it and the airport. It joins Turtle Creek just north of the airport. However, Turtle Creek has been dammed to create Redfield Lake. This reservoir backs water up into the unnamed creek creating a wide channel with slow moving water.

The creek contains open water lined with cattails, and in some places it is as much as 200 feet across. This long cattail lined wetland, along with Redfield Lake, borders the airport by a half mile on both the north and west sides. It is a major attractant to all of the same hazardous species as identified above (i.e. ducks, geese, gulls, herons,

blackbirds etc.). There does not appear to be any way to eliminate or reduce this attractant short of eliminating Redfield Lake and letting the channel revert back to its natural flow.

### Trees

One of the main concerns with trees on airfields is that they provide attractive perches for hawks and owls to sit and watch for prey. Removing trees from an airfield will help to keep these large bodied avian predators from utilizing the airfield.

There are several large dead trees associated with the large wetland on the south side. These provide ideal hunting perches for hawks. They could even be used for nesting by herons or cormorants, or perches for a variety of birds. These trees should be removed.

There are several mobile homes located less than 500 feet northwest of the end of Runway 13 and only 300 feet from the approach path. Although it is uncertain what, if any attractants are made by the homes themselves (feeding, refuse, water etc.) the trees associated with the homes as well as the nearby shelterbelt provide perches, nesting habitat and roost sites for a variety of hazardous birds. Birds flying into and out of these trees are likely to fly over the airport or through the path of planes using the runway. Having residences this close to the runway should be reconsidered. All trees in this area should be removed if possible.

### Vegetation

The dominate vegetation on the Redfield Airport appeared to grass, alfalfa and various other annual & perennial plants. Alfalfa appeared to comprise 50 to 70% of the vegetation on most of the airfield. Although alfalfa and other plants can create a good hay crop, they also flower and produces seeds. Flowers attract insects. Insects and seeds attract birds and rodents. Rodents attract predatory birds (hawks & owls) and mammals (fox, coyote & badgers). Alfalfa is especially attractive to deer and geese. Therefore, it is recommended that airfield plants be replaced with a grass hay crop as discussed below.

Warm season type grasses that produce little or no seed, typically work very well on airfields. They can produce a good hay crop in summer while requiring little maintenance during the spring and fall. Warm season grasses, maintained at the proper height can be very effective in minimizing hazardous birds and wildlife on an airfield. Redfield should consider strictly a grass hay crop for any new lands acquired for this project, and should work toward eliminating non grass species from the existing airfield. For more information on which grass species would be best suited to the soils of the Redfield Airport, contact WS and the local NRCS office.

The City of Redfield may have little influence on which crops are produced on private lands adjacent to the airfield. However, working with neighboring landowners to

reduce or eliminate the production of corn and small grains adjacent to the airport, will help to keep wildlife activity around the airfield to a minimum.

### Deer Fence

When struck, deer are the most hazardous wildlife species to aircraft. Deer are common in the Redfield area and may be present on the airfield at all times of the day and night. The airport should be enclosed with a deer proof perimeter fence. The fence should be a minimum of 10 feet in height and an apron should be attached to the bottom outside of the fence anywhere the fence is not tight to the ground. A deer proof perimeter fence, if erected properly, should eliminate any threat from these large mammals.

As discussed above, Redfield currently has wildlife attractants on and off the airfield that influence hazardous wildlife movements in the airport vicinity. The large wetland on the south side is the most serious. Its removal should be done regardless of whether or not this current project goes forward. Building a new runway through this wetland should not be done unless the entire wetland is removed. The unnamed creek on the west site that becomes part of Redfield Lake is also a major attractant of hazardous birds. As a natural drainage, there is likely not much that can be done with it. However, pilots should be warned of this hazard.

The other items identified in this review, including the removal of the other airfield wetland, the removal of trees, the erection of a deer proof fence, and the airfield vegetation recommendations should be implemented. They will all help to reduce the likelihood of a damaging strike or a fatal accident. All reasonable steps to prevent this from happening should be taken.

Wildlife Services appreciates having the opportunity to comment on this project. Our office in Pierre is available if you need further guidance on how to implement any of these recommendations. If you have any questions or need additional assistance, please contact me.

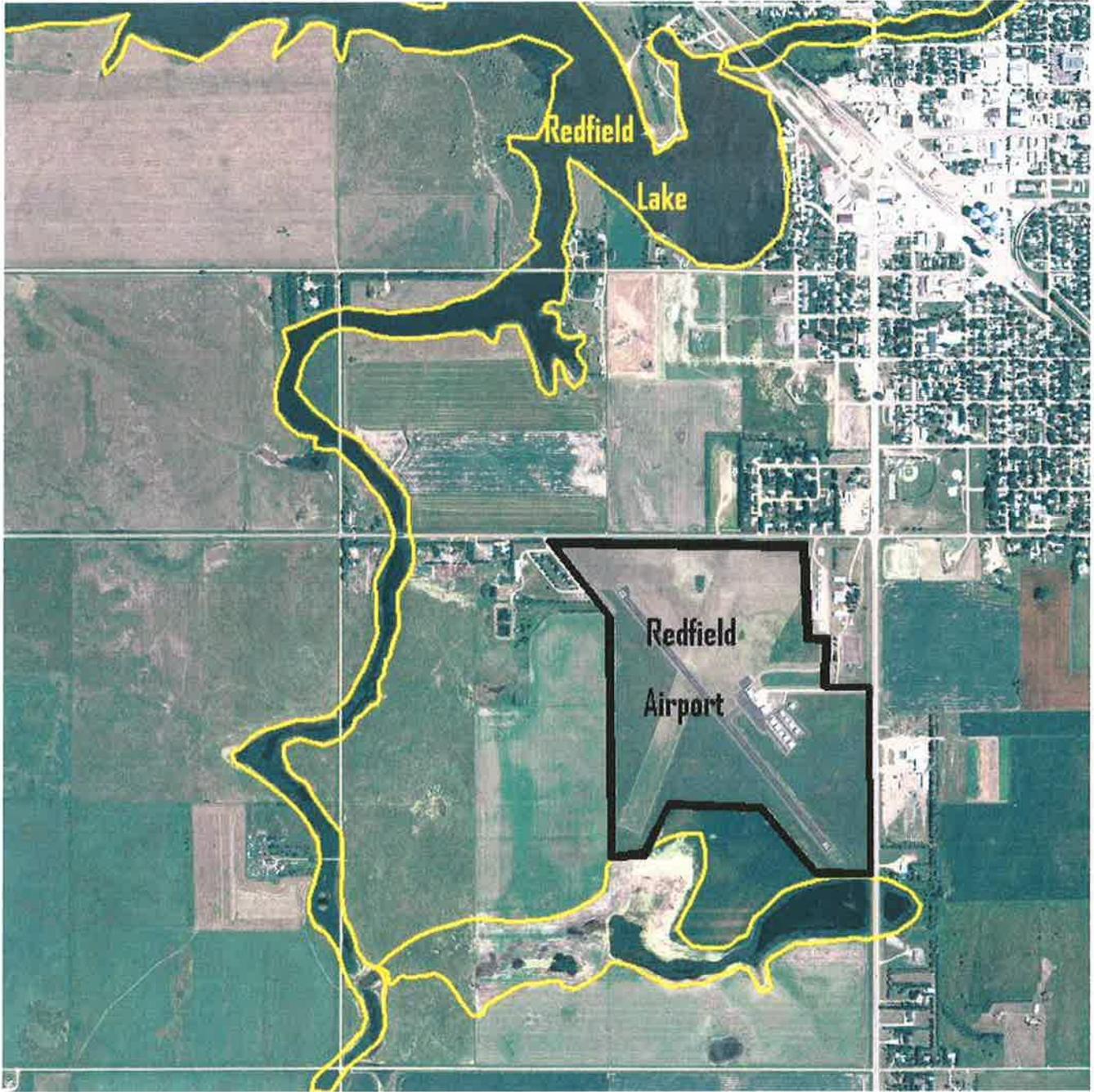
Sincerely



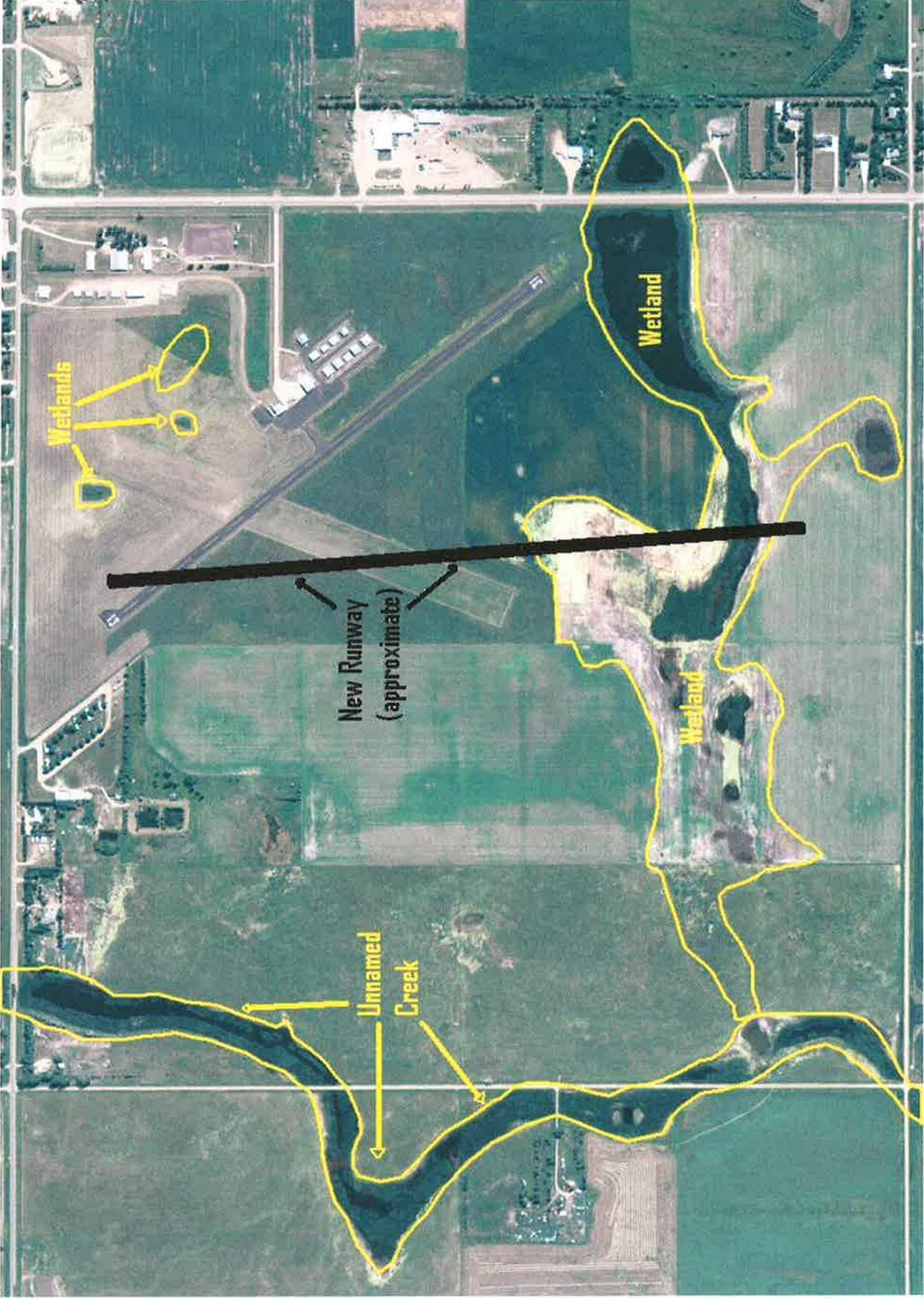
Timothy L Pugh  
Wildlife Biologist

### Attachments

cc: Dave Anderson, FAA, Bismarck, ND  
City of Redfield, Redfield, SD



**Redfield Lake**



**Redfield Airport Features**

## **APPENDIX E**

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**CULTURAL RESOURCES SURVEY OF REDFIELD MUNICIPAL AIRPORT**

**A Short Format Report of a Cultural  
Resources Inventory Survey of the  
Redfield Airport Improvement Projects  
in Spink County, South Dakota**

**Prepared for the City of Redfield**

**August 31, 2012**

**Jeff Buechler, RPA  
Dakota Research Services**

**A Short Format Report of a  
Cultural Resources Inventory Survey of the  
Redfield Airport Improvement Projects in  
Spink County, South Dakota**

*Prepared for*

**City of Redfield  
626 Main Street  
Redfield, South Dakota**

*in cooperation with*

**Helms & Associates  
Aberdeen, South Dakota**

*Prepared by*

**Jeff Buechler, RPA**

**Dakota Research Services  
13110 Michelle Drive  
Rapid City, South Dakota  
Project Number 12-27**

**August 2012**

A Short Format Report of a  
**Cultural Resources Inventory Survey of the  
Redfield Airport Improvement Projects in  
Spink County, South Dakota**

**Abstract**

This report summarizes the activities, results, and recommendations derived from an intensive (Level III) cultural resources inventory survey of construction projects proposed for the Redfield Municipal Airport (RMA) in Spink County, South Dakota. The RMA construction activities are expected to include the construction of a new runway, turnarounds, and taxiway; the acquisition of flight line easements; and the construction of a 10-foot tall wildlife fence. Fill material will be placed in wetland zones for safety and wildlife suppression. The project area encompassed approximately 436.19 acres; however, approximately 104.95 acres of this total involves developed areas (55.35 acres) or wetland sloughs (49.60 acres) that were not included within the 2012 surveyed area. One archaeological property (**39SP276**) was identified within the RMA surveyed area. This property is considered **Not Eligible** in terms of National Register of Historic Places eligibility criteria; therefore, a determination of **No Historic Properties Affected** is recommended for this undertaking to proceed as planned.

**Introduction and Project Background**

The Redfield Municipal Airport (RMA) is proposing to undertake the construction of a new runway, turnarounds, and taxiway; the acquisition of flight line easements; and the construction of a 10-foot tall wildlife fence. Fill material will be placed in wetland zones for safety and wildlife suppression in Spink County, South Dakota (Figure 1). The proposed construction activities are expected to involve municipal property administered by the RMA.

In mid-August 2012, an intensive (Level III) cultural resources inventory survey was conducted to assess the impact the RMA construction activities may have on significant cultural resources (historic properties). This research was conducted in accordance with an agreement between the City of Redfield and Dakota Research Services of Rapid City, South Dakota.

Cultural properties are defined as any building, structure, object, site, district, data, or other material property significant in history, architecture, archaeology, or culture. Cultural properties are considered unique, non-renewable expressions of human behavior. Interpretation of these behaviors concentrates on material or physical remains. "Significance" is evaluated in terms of National Register of Historic Places eligibility criteria defined by Federal regulation (36 CFR 60).

The inventory survey and supplemental records search was conducted by the author. The cooperation of Mr. Adam Hansen of the City of Redfield and Ms. Brooke Edgar of Helms & Associates of Aberdeen, South Dakota is gratefully acknowledged. Helms & Associates is providing the engineering design for the RMA construction activities. The Federal Aviation Administration is considered the lead federal agency administering this undertaking.

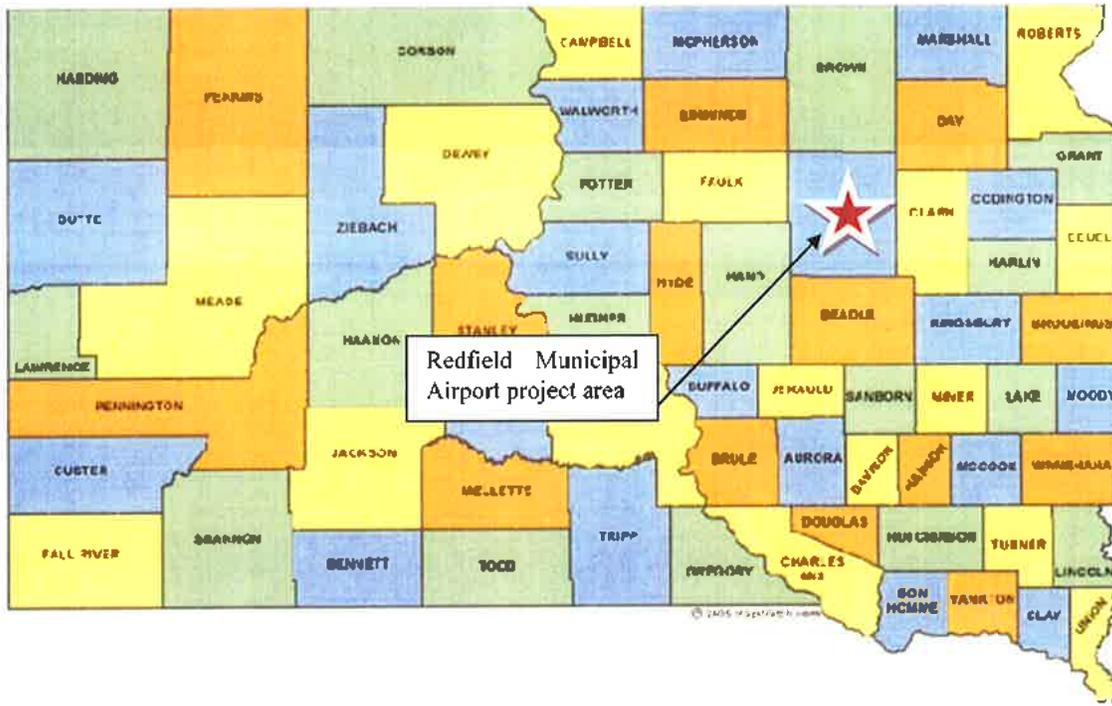


Figure 1. Map of South Dakota showing the general location of the Redfield Municipal Airport project area.

**Environmental Parameters of the Redfield Municipal Airport Project Area**

The RMA project area is situated along the interface of the James Basin and Lake Dakota physiographic zones in northeastern South Dakota (Figure 2). Salient characteristics of these physiographic zones are discussed below:

The James Basin physiographic zone is characterized as smoothly rolling with very broad, low sub-parallel ridges trending eastward and lying convex to the south. Local relief rarely exceeds twenty to thirty feet. Small streams drain toward the James River and occupy broad shallow depressions between ridges (Flint 1955). In detail, the ridges and inter-ridge areas are barely perceptible. These ridges

are end moraines created during the shrinkage of a Wisconsin state (Mankato substage) glacial lobe that conformed to the general contours of the lowland.

The Lake Dakota physiographic zone is a part of the James Basin that is topographically distinct from the predominant glacial moraine portion of the lowland (Flint 1955). The Lake Dakota plain was formed as the floor of a glacial lake. This lake bed extends north from south of Redfield to a point approximately fifteen to twenty miles into North Dakota - a total distance of about 110 miles. Throughout most of this length it is approximately twenty-five to thirty miles wide.

The flat nature of this plain presents the most enduring characteristic of this area. Local relief is generally less than ten feet throughout the entire area. This flat nature is the result of deposition of

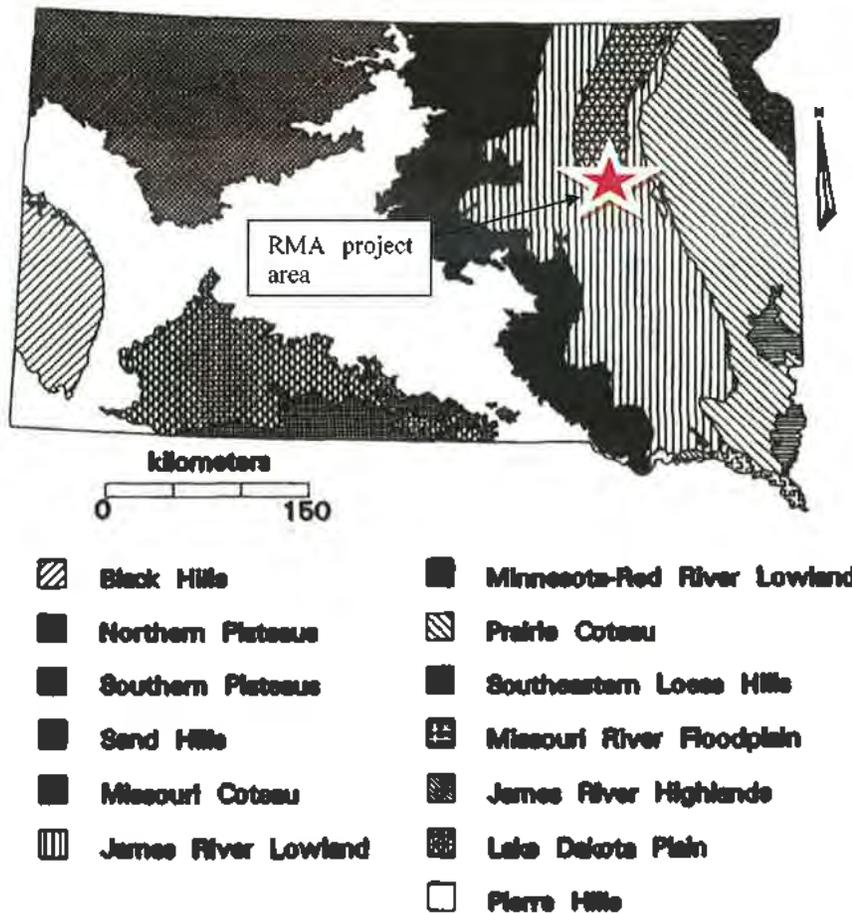


Figure 2. Physiographic regions of South Dakota delineated by soils. Source: Johnson et al. (1995).

sediment in the former glacial lake. Fine-grained lake-floor sediments filled the irregularities in the glacial terrain. The entire area is underlain by lake-floor silt, sand, and clay.

This level plain is dissected by the James River and its tributaries. The tributary streams offer steeper gradients than the James and occupy conspicuous trenches only near their confluence with the James. Elsewhere they are incised only slightly below the general surface. Turtle Creek is the only

major tributary located in the RMA project area vicinity.

Native vegetation in the project area vicinity has been classified as a Mixed Grass Prairie (Johnson and Nichols 1970). The dominant species of grass included in this association include Western wheatgrass (*Agropyron smithii*), Blue grama (*Bouteloua gracilis*), Needleandthread (*Stipa comata*), and Green needlegrass (*Stipa viridula*).

The Recent climate of the region is a typical continental-type characterized by extremes in

temperature and precipitation. In general, the dominant character of the local climate is variability or instability. Climatic data from the Aberdeen, South Dakota recording station can be considered typical of the RMA project area. Data from this station, collected from 1896 through 1964, indicates a mean annual temperature of 43.2° F., with the average growing season extending from 13 May to 20 September. Average annual precipitation is 19.18 inches with roughly seventy-five percent occurring between April to September, inclusive (Spuhler et al. 1971).

In summary, the above-mentioned characteristics of the region are considered factors contributing to both prehistoric and historic population adaptations in the region.

### **Natural Landscape (Setting)**

The general character of the RMA project area can be described as a rural landscape. Urban development associated with the City of Redfield is located north and northeast of the RMA. A strip of commercial and residential development also fronts the east side of US Highway 281 east of the RMA project area. Typical features of the rural landscape of the area include cropland, grazing pastures, fences and corrals, windbreaks or shelter belts, grain bins, windmills, feed lots, barns, and farm houses. Commerce and industry are inconspicuous. The land consists of a flat plain. Native vegetation is present where the land is steep, or conditions are otherwise unfavorable for cultivation.

Where views extend for some distance, the rural landscape of the area is generally low in profile and horizontal. The primary vertical elements are occasional farm buildings, utility line poles, and

shelter belt trees. Patterns in the landscape tend to be simple, well defined, and geometric (i.e., the grid patterns of fields and the right angle intersection of roads and fences).

Smallness of scale is integral to the rural landscape: towns are small, roads are two-lane, and development is dispersed. The primary aesthetic qualities of rural landscapes tend to be natural rather than manmade. In spite of the pervasive influence of man in rural landscapes, structures are comparatively few.

### **Records Search Results**

Helms and Associated had requested a records search for the RMA locality in January 2009. Prior to the initiation of the 2012 field inventory survey supplemental records search research was conducted by the author at the State Archaeological Research Center in Rapid City, South Dakota. The records search research involved a review of National Register of Historic Places listings; an examination of digitized GIS maps; and on-line database site records for the RMA project area. The records search research examined an area approximately one mile surrounding the RMA project area. The digitized GIS files indicate the locations of recorded sites and research projects in the vicinity of the project areas and the Archaeological Resources Management System (ARMS) online database maintained by the South Dakota State Archaeological Research Center provides site information. The Cultural Resource Geographic Research Information Display (CR-GRID) database maintained by the State Historic Preservation Office was consulted for information related to architectural elements or features (e.g., buildings, cemeteries, and structures). The results of

this research are integrated within the general outline of historic contexts and subcontexts developed around six organizing principles (State Historical Preservation Center 2006). Each of these organizing principles provides a temporal parameter for defining historic contexts and subcontexts. The RMA project area is situated within the Upper James archaeological management region (Winham and Hannus (1991).

The results of the supplemental records search indicated past cultural resources research had been reported in the general vicinity ( $\pm$  one mile) of the RMA project area by Buechler (1990a, 1990b, 1991); Downing (1998, 2006); Keller and Keller (1982); Laundry (2012); Long (2000); and Messerli et al. (2004). Portions of the RMA project area had been previously examined by Buechler (1990a); Long (2000); and Messerli et al. (2004). These projects were associated with rural water system and highway construction activities (Figure 3). No archaeological or architectural properties had been previously identified in the immediate vicinity ( $\pm$  500 feet) of the RMA project area.

### **Description of the RMA Project Area**

The engineering design for the RMA undertakings encompasses approximately 351 acres (Figure 4). The precise boundaries of this area were not flagged or otherwise delineated at the time of the inventory survey fieldwork. Thus, an area encompassing approximately 436.19 acres was examined to insure complete coverage of the RMA project area involving portions of Sections 9, 15-16, and 21, T116N, R64W (Figure 5). As previously mentioned, approximately 104.95 acres of this total involves developed areas associated with the existing

airport or fairgrounds (55.35 acres) or wetland sloughs (49.60 acres) that were not included within the 2012 surveyed area (see Figure 5). The developed areas have been extensively disturbed and the portions of wetland slough are inundated.

The RMA surveyed area can be characterized as a relatively flat plain with interior drainage provided by lowland sloughs. Vegetation within the surveyed area consists of alfalfa/grass fields surrounding the existing airport with cultivated cropland along the margins of the airport facilities. Ground surface visibility ranged from poor to fair, depending on crop cover.

Photographs showing the general setting of the RMA project area are presented in Appendix A.

### **Research Orientation and Methods**

General research orientation for the RMA project area was formulated within the context of the records search results; the research questions and goals outlined for the Upper James archaeological management region (Winham and Hannus 1991); and the historic contexts developed by the State Historical Preservation Center (2006).

Field inventory methods involved the implementation of a non-exclusive pedestrian survey (White and King 2007) with sinuous transects ranging from five to eight meters in width. Universal Transverse Mercator (UTM) coordinates were obtained using a Garmin Legend HCx satellite navigator. The coordinates were plotted on a digitized quadrangle map (DeLorme 2007) to obtain the precise location of the surveyed areas using the NAD27 map datum. Each transect closely inspected rodent burrows and other active erosional or disturbed surfaces.



Figure 3. Aerial image showing the locations of previous research projects in the RMA locality.



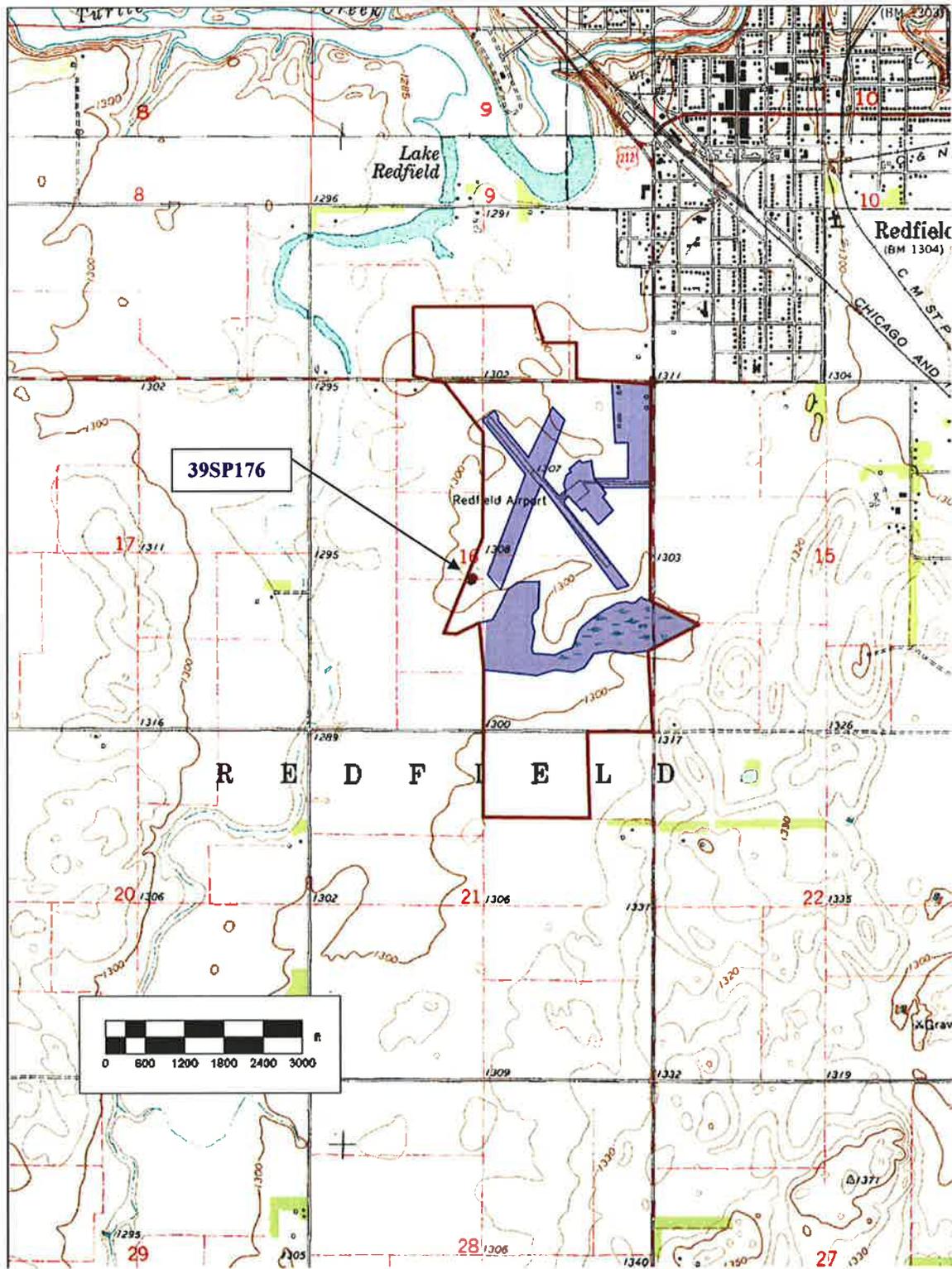


Figure 5. Map (Redfield South quad) showing the location of the RMA surveyed area (outlined with red line). Sections 9, 15-16 & 21, T116N, R64W. Blue shaded indicates not surveyed (developed or slough).

Recent cultural features such as fences or roadside litter were not recorded as historic sites. The locations of modern cultural manifestations observed within the RMA surveyed area were plotted (Figure 6) and are listed in Table 1. Representative photographs of these items are presented in Appendix A.

A review of the Spink County Soil Map (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>) was customized using an area of interest encompassing 710 acres surrounding the RMA project area (Figure 7). This area of interest identifies fifteen soil groups (Table 2) with the majority of the RMA project area within the Woonsocket-Whitelake (Ws) complex soil association; the Henkin-Blendon (HsA) association; or the Forestburg-Elsmere (Ff) soil association. These soil associations are characterized as fine sandy loams to loamy sands with 0 to 2 percent slope.

Nine soil auger test units were excavated assess the potential for extant buried cultural materials or paleosol horizons in the major soil associations encompassing the RMA project area (Figure 8). The test units were excavated with a 3/4-inch diameter auger with the soil matrix from each excavation dry-screened through 1/4-inch mesh hardware cloth (except for Units 7 through 9 to avoid crop damage). Photographs showing the general setting of representative test unit locations are presented in Appendix B. It should be noted that photographs of Soil Auger Unit's 7 through 9 were located in soybean fields and do not offer any perspective of the test unit locality and are not published. A description of the test unit characteristics is provided below:

Soil Auger Unit # 1 was placed within the Henkin-Blendon (HsA) soil association located at the

northwestern edge of the RMA surveyed area. The unit is located at 14z/536874e/4967572n (see Figure 8). This locality can be characterized as the crest of a low swale ridge (Figures B-1 and B-2). Vegetation consists of mix of alfalfa and grass.

Soil matrix characteristics consisted of a light grayish brown sandy loam extending to a depth of 47 centimeters (cm) below ground surface (bgs). A grayish yellow sandy loam was noted from 47 to 73 cm bgs. Yellow sand was encountered below 73 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 2 was placed within the Hand-Ethan-Bonilla (HhB) soil association located at the western edge of the RMA surveyed area. The unit is located at 14z/536878e/4967267n (see Figure 8). This locality can be characterized as the crest of a low swale ridge (Figures B-3 and B-4). Vegetation consists of mix of alfalfa and grass.

Soil matrix characteristics consisted of a brownish gray sandy loam extending to a depth of 32 cm bgs. A grayish yellow sandy loam was noted from 32 to 48 cm bgs. Yellow sand was encountered below 48 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 3 was placed within the Henkin-Blendon (HsA) soil association located west of the grass runway. The unit is located at 14z/537939e/4967162n (see Figure 8). This locality can be characterized as a relatively flat plain (Figure B-5). Vegetation consists of mix of alfalfa and grass.

Soil matrix characteristics consisted of a grayish brown sandy loam extending to a depth of 23 cm bgs. A yellowish brown sandy loam was noted from 23 to 38 cm bgs. Yellow sand was encountered below 38 cm bgs (Figure B-6). No indication of

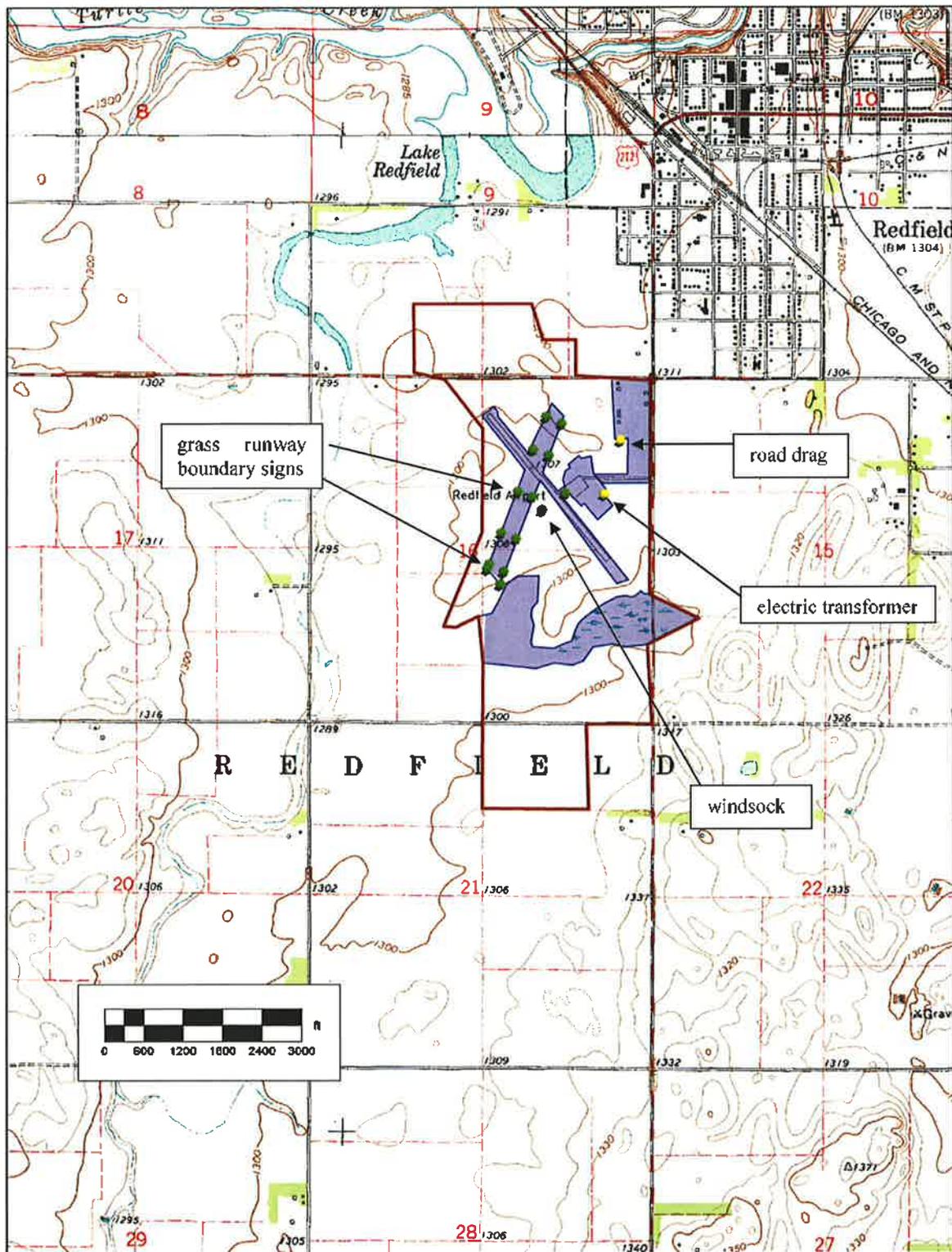


Figure 6. Map (Redfield South quad) showing the locations of modern cultural manifestations.

Redfield Municipal Airport– Table 1 Ubiquitous or Modern Cultural Manifestations		
Manifestation	UTM (NAD27)	Comments
homemade road drag (re-purposed from farm machinery)	14z/537512e/4967537n	foto
grass runway boundary sign	14z/537163e/4967646n	foto
grass runway boundary sign	14z/537104e/4967492n	
grass runway boundary sign	14z/537032e/4967298n	
grass runway boundary sign	14z/536955e/4967104n	
grass runway boundary sign	14z/536900e/4966959n	
grass runway boundary sign	14z/536968e/4966926n	
grass runway boundary sign	14z/537025e/4967077n	
grass runway boundary sign	14z/537100e/4967273n	
taxiway sign (“31-13”)	14z/537256e/4967289n	
electric transformer	14z/537437e/4967387n	
grass runway boundary sign	14z/537176e/4967466n	
grass runway boundary sign	14z/537237e/4967613n	
windsock tower	14z/537145e/4967210n	foto

buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 4 was placed within the Woonsocket-Whitelake (Ws) soil association located west of the grass and asphalt runways. The unit is located at 14z/537028e/4967400n (see Figure 8). This locality can be characterized as a relatively flat plain (Figure B-6). Vegetation consists of mix of alfalfa and grass.

Soil matrix characteristics consisted of a grayish brown sandy loam extending to a depth of 23 cm bgs. A yellowish brown sandy loam was noted from 23 to 33 cm bgs. Yellow sand was encountered below 33 cm bgs (Figure B-7). No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 5 was placed within the Henkin-Blendon (HsB) soil association located southwest of the northeast hangers. The unit is

located at 14z/537494e/4967453n (see Figure 8). This locality can be characterized as the crest of a low swale (Figure B-8). Vegetation consists of mix of alfalfa and grass.

Soil matrix characteristics consisted of a grayish brown, fine-grained sandy loam extending to a depth of 26 cm bgs. A dark brown, fine-grained sandy loam was noted from 26 to 45 cm bgs. Brown, fine-grained sandy loam was noted from 45 to 78 cm bgs. Yellow sand was encountered below 78 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 6 was placed within the Woonsocket-Whitelake (Ws) soil association located east of the asphalt runway. The unit is located at 14z/537481e/4967130n (see Figure 8). This locality can be characterized as a relatively flat plain (Figure B-9). Vegetation consists of mix of alfalfa and grass.

Custom Soil Resource Report  
Soil Map (Redfield Airport)



Figure 7. Soil map encompassing the RMA project area.

## Map Unit Legend (Redfield Airport)

Spink County, South Dakota (SD115)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeA	Beadle-Stickney complex, 0 to 2 percent slopes	54.4	7.7%
Ct	Crossplain-Tetonka complex, 0 to 1 percent slopes	0.0	0.0%
Ek	Elsmere loamy sand, 0 to 2 percent slopes	10.0	1.4%
Ff	Forestburg-Elsmere loamy sands, 0 to 2 percent slopes	110.5	15.6%
HcA	Hand-Bonilla loams, 0 to 3 percent slopes	21.6	3.0%
HdA	Hand-Carthage fine sandy loams, 0 to 3 percent slopes	36.9	5.2%
HfC	Hand-Eiham loams, 6 to 9 percent slopes	7.3	1.0%
HgB	Hand-Eiham-Bonilla loams, 1 to 6 percent slopes	14.4	2.0%
HhB	Hand-Eiham-Carthage complex, 1 to 6 percent slopes	26.1	3.7%
HsA	Henkin-Blendon fine sandy loams, 0 to 2 percent slopes	148.9	21.0%
HsB	Henkin-Blendon fine sandy loams, 2 to 6 percent slopes	18.6	2.6%
Jh	Jerauld-Hoven silt loams, 0 to 2 percent slopes	38.9	5.5%
St	Stickney-Dudley silt loams, 0 to 2 percent slopes	12.0	1.7%
Ws	Woonsocket-Whitelake fine sandy loams, 0 to 2 percent slopes	194.7	27.4%
Ww	Worthing silty clay loam, ponded	16.1	2.3%
<b>Totals for Area of Interest</b>		<b>710.3</b>	<b>100.0%</b>

Table 2. Soil associations encompassing the RMA project area.

Soil matrix characteristics consisted of a dark brown sandy loam extending to a depth of 52 cm bgs. A yellowish gray sandy loam was noted from 52 to 86 cm bgs. Yellow sand was encountered below 86 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 7 was placed within the Forestburg-Elsmere (Ff) soil association located along the edge of the soybean field on the north side of 175<sup>th</sup> Street. This location was selected to minimize crop damage. The unit is located at

14z/537395e/4966237n (see Figure 8). This locality can be characterized as a relatively flat plain.

Soil matrix characteristics consisted of a dark brown loam extending to a depth of 20 cm bgs. A yellowish gray sandy loam was noted from 20 to 39 cm bgs. Yellow clayey sand was observed from 39 to 48 cm bgs. Yellow sand was encountered below 48 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 8 was placed within the Beadle-Stickney (BeA) soil association located along the edge of the soybean field on the north side of

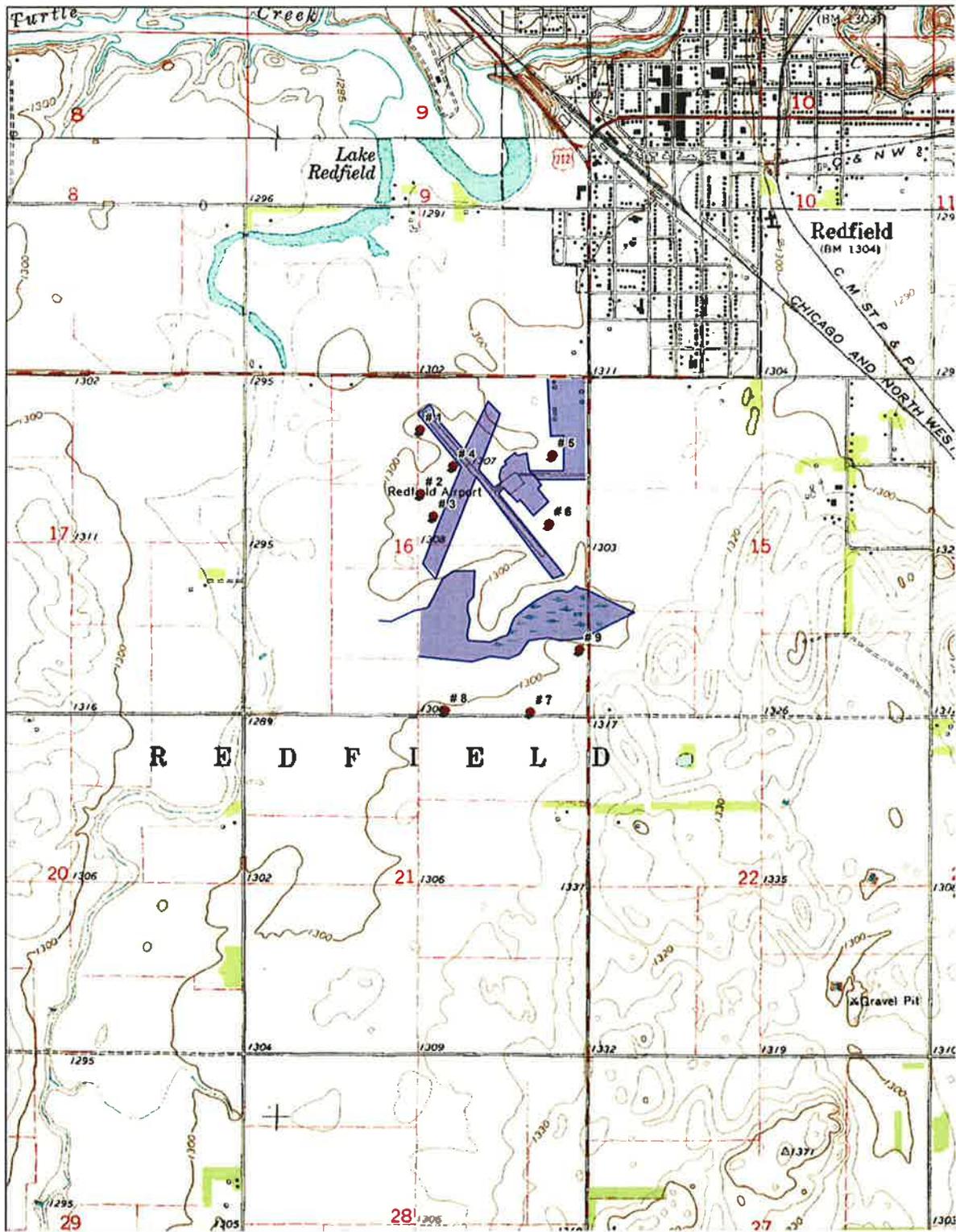


Figure 8. Map (Redfield South quad) showing the location of RMA soil auger test units.

175<sup>th</sup> Street. This location was selected to minimize crop damage. The unit is located at 14z/536997e/4966243n (see Figure 8). This locality can be characterized as a relatively flat plain.

Soil matrix characteristics consisted of a grayish brown loam extending to a depth of 18 cm bgs. A yellowish gray sandy loam was noted from 18 to 40 cm bgs. Reddish gray sandy loam with caliche was observed from 40 to 78 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

Soil Auger Unit # 9 was placed within the Hand-Carriage (HdA) soil association located on the west side of US Highway 281. This locality had been previously cultivated but now consists of high grass/weeds on the south side of a lowland slough. The unit is located at 14z/537626e/4966534n (see Figure 8). This locality can be characterized as the margin of a lowland slough.

Soil matrix characteristics consisted of a dark gray sandy loam extending to a depth of 21 cm bgs. Heavy yellow clay with iron oxide concretions was noted from 21 to 78 cm bgs. Light gray clay (very wet – water table?) was noted below 78 cm bgs. No indication of buried cultural materials or paleosol horizons was observed.

### **Inventory Survey Results**

One archaeological site was identified within the RMA surveyed area during the course of the August 2012 inventory survey. Site form documentation with supporting photographs is presented in Appendix C.

Site **39SP276** consists of foundation ruins located in the NE¼ NE¼ NE¼ NE¼ of Section 16, T116N, R64W (see Figure 5). The approximate

center of the foundation ruins serve as the site datum located at 14z/536821e/4966922n. The context of the site area can be described as the southern aspect of a low hill overlooking a lowland slough. Vegetation in the site area locality consists of a cultivation field currently planted to soybeans. Ground surface visibility ranged from good to very good.

Physical remains consist of a shallow depression feature with concrete footing remnants and fieldstones. The feature has been extensively disturbed and appears to have been dozed with a secondary deposit (dump) of farm/household trash. The feature measures approximately 4.0 meters north/south by 3.5 meters east/west. Additional architectural elements consist of common red bricks and “slabs” of stucco. No structural elements were associated with this feature

The secondary deposit of cultural materials appears to have been dumped into the foundation feature and partially buried. A partial inventory of these materials include clear glass jars and bottles; brown glass bottle fragments; aqua-colored glass canning jar fragments; farm machinery parts; metal barrels; carpeting; fence posts; asphalt shingles; concrete blocks; galvanized metal flashing; plastic bucket lids; blue tarp fragments; steel cable; threaded steel bolts; ceramic tile; and a garden hose.

The foundation feature is believed to be related to the historic theme of Permanent Rural and Urban Settlement (State Historic Preservation Center 2006). Historic era land title research conducted at the Spink County Register of Deeds lists only two entries for this parcel. On April 6, 1920, the State School Land office transferred the property to Fred J. Balsinger (School Land Sale Contract Record – Book 99, Page 171). On January 18, 1935, a default on the

School Land sale contract was filed (Book 102, Page 123).

In summary, the remains are not known to be associated with individuals or events of historical significance. The absence of associated features; the paucity of diagnostic artifact assemblages; and the poor physical condition of the remains suggest limited interpretative value for addressing research questions relating to rural pioneer settlement. Therefore, this property is considered **Not Eligible** for inclusion the National Register of Historic Places. No further research efforts or mitigation remedies are recommended for this property.

### **Management Recommendations**

An intensive (Level III) cultural resources inventory survey examined approximately 331.24 acres associated with the proposed Redfield Municipal Airport project area. One archaeological property (**39SP176**) was identified within a proposed aviation easement at the southwestern margin of the RMA surveyed area. The archaeological or historical significance of this property has been considered in terms of National Register of Historic Places criteria of eligibility (36 CFR 60). These criteria are as follows:

"The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

(a) That are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important in prehistory or history."

Within the context of these criteria, a recommendation of **Not Eligible** for inclusion on the National Register of Historic Places is recommended for this property for reasons stated at the end of the site description.

Therefore, it is recommended that the proposed Redfield Municipal Airport undertakings be granted cultural resources (Section 106) clearance to proceed as proposed. A determination of **No Historic Properties Affected** is recommended for the Redfield Municipal Airport improvements and construction activities. These undertakings are not expected to impact or disturb historic properties.

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## **Appendix A**

Photographs showing the general setting of the Redfield Municipal Airport surveyed area  
and representative examples of modern cultural manifestations



Figure A-1. Photo showing hangar complex & fairgrounds at northeast corner of RMA project area, facing southeast.



Figure A-2. Photo showing RMA project area, facing southwest (from northeast corner).



Figure A-3. Photo showing RMA project area, facing northeast (from southwest corner of Section 16).



Figure A-4. Photo showing RMA project area, facing northwest (from southeast corner of Section 16).



Figure A-5. Photo showing RMA project area, facing southeast (from northwest corner of Section 16).



Figure A-6. Photo showing RMA project area in Section 9, facing east.



Figure A-7. Photo showing RMA asphalt runway, facing southeast.



Figure A-8. Photo showing RMA asphalt runway & main airport facilities (upper right), facing northwest.



Figure A-9. Photo showing the existing RMA grass runway, facing north-northeast.



Figure A-10. Photo showing lowland slough on west side of US Hwy. 281 (Section 16), facing southwest.



Figure A-11. Photo showing lowland slough on east side of US Hwy. 281 (Section 15), facing southeast.



Figure A-12. Photo showing single-engine plane landing on grass runway, facing east.



Figure A-13. Photo showing homemade road drag at south end of north hangars, facing north.



Figure A-14. Photo showing example of grass runway boundary signs, facing southeast.



Figure A-15. Photo showing RMA windsock tower, facing southeast.

## **Appendix B**

Photographs showing selected soil auger test unit excavations



Figure B-1. Photo showing Soil Auger Test Unit # 1, facing east-southeast.



Figure B-2. Photo of Soil Auger Test Unit # 1 at -85 cm bgs level.



Figure B-3. Photo showing Soil Auger Test Unit #21, facing east.



Figure B-4. Photo of Soil Auger Test Unit # 2 at -48 cm bgs level.



Figure B-5. Photo of Soil Auger Test Unit # 3 at -38 cm bgs level, facing east-northeast.



Figure B-6. Photo of Soil Auger Test Unit # 4 at -65 cm bgs level, facing east.



Figure B-7. Detail photo of sandy matrix in Soil Auger Test Unit # 4.



Figure B-8. Photo of Soil Auger Test Unit # 5 locality, facing southwest.



Figure B-9. Photo of Soil Auger Test Unit # 6 at -86 cm bgs level, facing northwest.

## **Appendix C**

Archaeological site form (39SP276)  
with supporting documentation

Site Number: 39SP276

County: Spink Site Name: Other #:

NR Status Recommendation: Not Eligible SHPO Determination

Map Reference: Redfield South Owner: Private

Arch. Region: Upper James Topographic Position: Hill slope

Vegetation: Cropland Substrate: Drift Land Use: Cultivated

UTM centroid: coordinate system: NAD27 14z/536821e/4966921n

Surface visibility (%): 80 Site Elevation: 399 Condition: Disturbed

Site size (m): N-S 4.0 E-W 3.5 Area (ha): 0.01 Depth (cm): 1

Nearest Water Type: intermittent lake Name: unnamed

Distance (m): 607 Elevation (m): 397 Direction: SE Bank: :

LOCATION

Aliquot: NE¼ NE¼ NE¼ SW¼ Section: 16 Township: 116N Range: 64W

Aliquot: Section: Township: Range:

COMPONENTS

Site Type: Foundation Time Period: A.D. 1861 - Cultural Affiliation: EuroAmerican

Site Type: Time Period: Cultural Affiliation:

COMMENTS

UTM @ ± center of feature. Physical remains consist of a concrete & fieldstone foundation ruins located on the southern aspect of a low hill (in cultivated field). Remains appear to have been dozed with a secondary deposit (dump) of farm/household trash.

Evaluation/collection methods: Surface reconnaissance

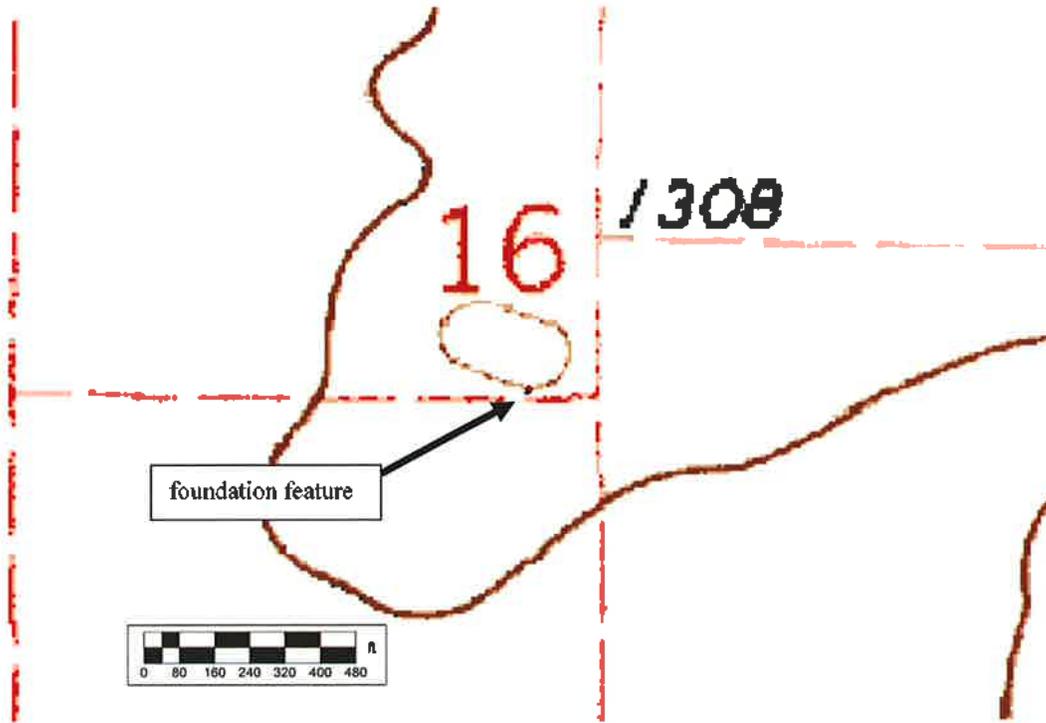
Easement name/address: Redfield Airport, City of Redfield, South Dakota

Name: Jeff Buechler – Dakota Research Services Date: 8/22/12

Project: Redfield Airport improvements inventory survey

Site Number: **39SP276**

**SITE MAP**



**SITE LOCATION**

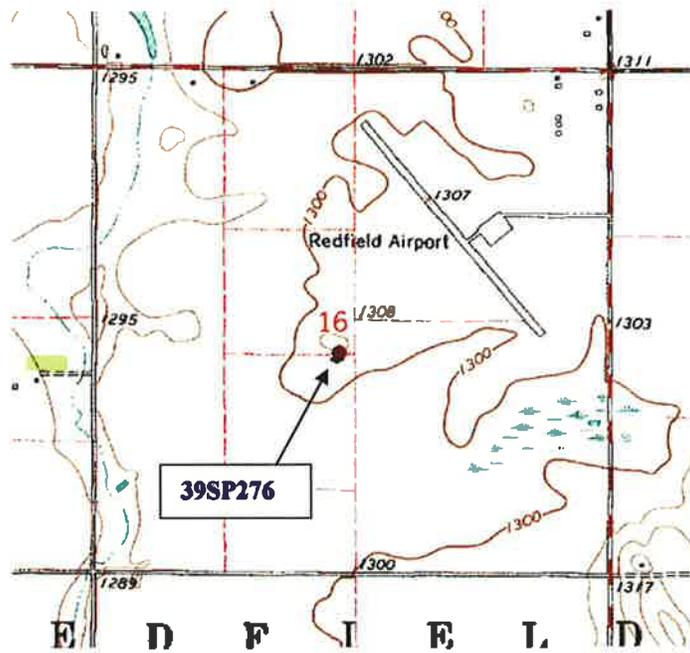




Figure C-1. Photo of site area (39SP276), facing south.



Figure C-2. Photo of site area (39SP276), facing east.



Figure C-3. Photo of site area (39SP276), facing northeast (toward airport).



Figure C-4. Photo of site area (39SP276), facing north.



Figure C-5. Photo of site area (39SP276), facing west.



Figure C-6. Photo of historical materials within foundation feature (39SP276), facing southwest.



Figure C-7. Detail photo of historical materials within foundation feature (39SP276).



Figure C-8. Detail photo of historical materials within foundation feature (39SP276).



Figure C-9. Detail photo of historical materials within foundation feature (39SP276).



Figure C-10. Detail photo of barbed wire roll (39SP276).

# **APPENDIX F**

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## **ALTERNATIVE 4 DOCUMENTATION**

### **Maps of Additional Assessment Sites**

**Cursory Review of Potential Wildlife Hazards at Three Potential Airport Sites near  
Redfield, SD**



United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

Wildlife Services

South Dakota

420 S. Garfield  
Suite 300  
Pierre SD  
57501  
(605) 224-8692

July 1, 2011

Mr. Michael A. Schmit, E.I.T.  
Helms & Associates  
P.O. Box 111  
Aberdeen, SD 57401

**RE: Cursory Review of Potential Wildlife Hazards at Three  
Potential Airport Sites near Redfield, SD**

Dear Mr. Schmit:

Per your request, USDA APHIS Wildlife Services made site visits to three potential airport sites in the Redfield area. Each site was evaluated for potential wildlife hazard influences as compared to the current Redfield Municipal Airport.

As with the current airport, the wildlife issues at the three alternative sites are primarily associated with wetlands and agricultural cropland. Their potential for wildlife hazards are discussed in detail below.

**West Site - E ½ of Section 34, T117N, R65W**

This site five miles west of Redfield appears to be mostly pasture land with some portions being hayed and possibly being cropped at times. Wetland habitat observed on this site consisted of two dugout stock ponds and a low area on the south side, between the highway and what appears to be an abandoned railroad bed. All of these areas had standing water. The stock ponds will likely be a minor attractant to ducks. It shouldn't be difficult to fill these ponds. It appeared that the standing water along the south side was temporary. If so, this should not be a significant hazard issue. Otherwise, it would be best if this area was drained or filled.

The considerable cropland on and adjacent to this site has the potential to attract a variety of bird species. It is likely that the attraction will be minimal but flocks of geese, ducks and blackbirds could be common. Also, crop land typically has an increase in rodents, which in turn attract hawks and other large birds of prey. At a minimum, if this land is used for an airport, all crop production on the airport site should cease.

The ½ section of land to the west of this site contains pasture land, including a drainage that meanders through it. At the time of the site visit, all of this land appeared dry and full of pasture grasses. Two or three dugout stock ponds are also located in the area. The aerial maps that WS received from Helms & Associates, indicate that part of this land is classified as "Freshwater Emergent Wetland". Although, this area did not appear to be wetland, it may contain some sedges and rushes. Overall, it did not appear to be a significant wetland hazard. Furthermore, the small creek that meanders through the area may attract a few ducks, but should pose a very minor hazard as well.



Compared to the current Redfield Municipal Airport, this western site has fewer wetland attractants, which appear to be substantially easier to mitigate. Both sites will have agricultural land on the airfield that should be converted to grass habitat. Both sites have agricultural land adjacent to the airport that could be reduced. It would be expected that gull activity would be less at this western site, as it is not as close to the large bodies of water such as Redfield Lake and the wastewater treatment ponds.

#### **South Site - W ½ of Section 26, T116N, R64W**

This south site is located less than 2 miles southeast of the current airport. Almost the entire site consists of pasture land with the exception of some hay land on the south end. The current pasture land may be acceptable for a new airport if the vegetation height can be maintained at a level that does not attract large birds (gulls and waterfowl). Otherwise, it is best if the entire site is converted to grass hay and properly managed. The property does contain three dugout stock ponds and a few low spots that may contain water at times. These ponds should be relatively easy to fill.

This half section site appears to have relatively few issues, however, there are concerns with the features adjacent to this location. Although there are a few small marsh areas, dugout stock ponds and other wetlands in close proximity, the large lake immediately to the west, southwest of this site is of major concern. This lake is almost a mile long and is relatively close to several other lakes. A lake of this size has the potential to attract extremely large groups of migratory birds to the vicinity of the airport. However, this large lake currently lacks cattails and other emergent vegetation around its edge that would make it attractive to nesting waterfowl. Therefore, it may only attract significant waterfowl numbers during the brief migratory seasons in spring and fall. With the vast amount of other lakes in the area, use of this particular lake by hazardous birds could also be very minimal.

Compared with the current airport site, this south site has minimal issues on the airport site itself. Although not quite as close to the airport, Redfield Municipal has a large lake in close proximity (Redfield Lake). The recent wildlife study did not find that Redfield Lake attracted the large groups of waterfowl. This lake may not be a significant attractant as well. However, wetlands can change and wildlife patterns change too. If this is not currently being used by waterfowl and gulls, it may in the future.

#### **East Site - E ½ of Section 11, T116N, R63W**

This site is about 7 miles east of Redfield. This particular piece of land, as well as most of the land adjacent to it, is very level crop land. Wetlands with emergent vegetation lined most of the east side of this section with a large wetland area in the southeast corner. The wetland on the eastern side extended further to the east into the next section. Another large wetland is located about ¼ mile west of the SW corner of this site. All of these wetlands appear to be fairly shallow. However, they appear to be supporting a variety of emergent vegetation and marsh plants. They are very attractive to waterfowl and, if this site is to be used as an airport, these wetlands should be eliminated.

As discussed above, agricultural cropland will typically attract some hazardous birds or their prey species. The cropland on this site should be converted to grass hay, which should be relatively easy to do.

To the northeast, the James River passes within a half mile of this site. Fisher Grove State Park and a golf course are also located in the same proximity to this site. This abundance and variety of trees, mowed lawns and open water habitats has the potential to attract a variety of birds hazardous to aircraft. If this mix of habitats prove to be a hazard for aircraft, they would be difficult, if not impossible to remove.

Compared to the current Redfield airport, this eastern site would also involve the removal of wetlands and the conversion of cropland to grass hay. However, this site has the influence of the James River, a golf course and a state park, which may have a greater influence on potential hazardous birds near the airfield than the current site has with the Turtle River and the City of Redfield.

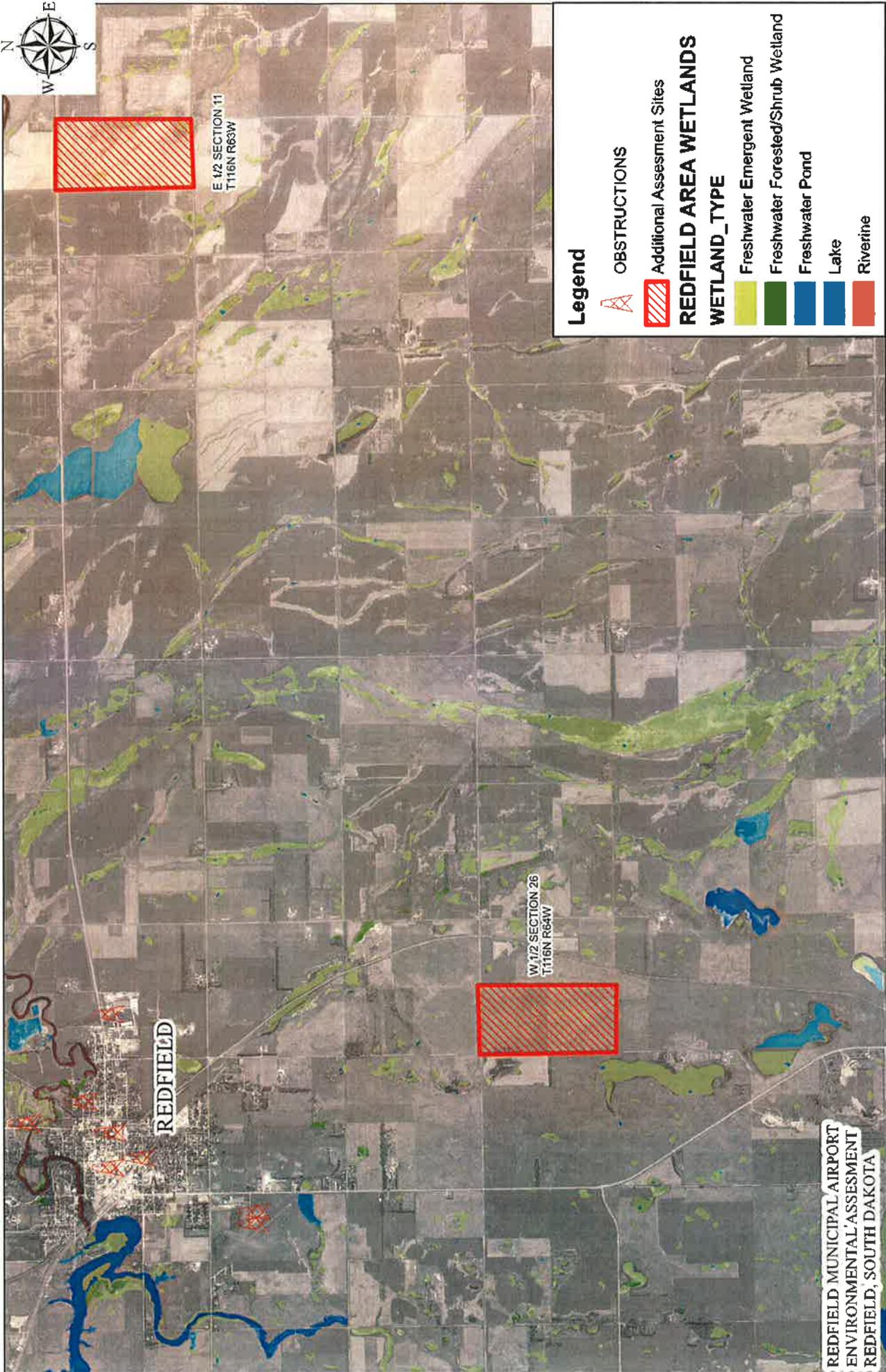
As with any airport site, all three of these sites have issues. This report is based on a one time site visit to each site, as well as a review of several maps and aerial photos of the sites. If you require more detailed information or need further study of these sites, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Timothy L. Pugh". The signature is written in a cursive, flowing style.

Timothy L. Pugh  
Wildlife Biologist

cc: Patricia Dressler, FAA, Bismarck, ND



REDFIELD

E 1/2 SECTION 11  
T116N R63W

W 1/2 SECTION 26  
T116N R64W

REDFIELD MUNICIPAL AIRPORT  
ENVIRONMENTAL ASSESSMENT  
REDFIELD, SOUTH DAKOTA

**Legend**

 OBSTRUCTIONS

 Additional Assessment Sites

**REDFIELD AREA WETLANDS**

**WETLAND\_TYPE**

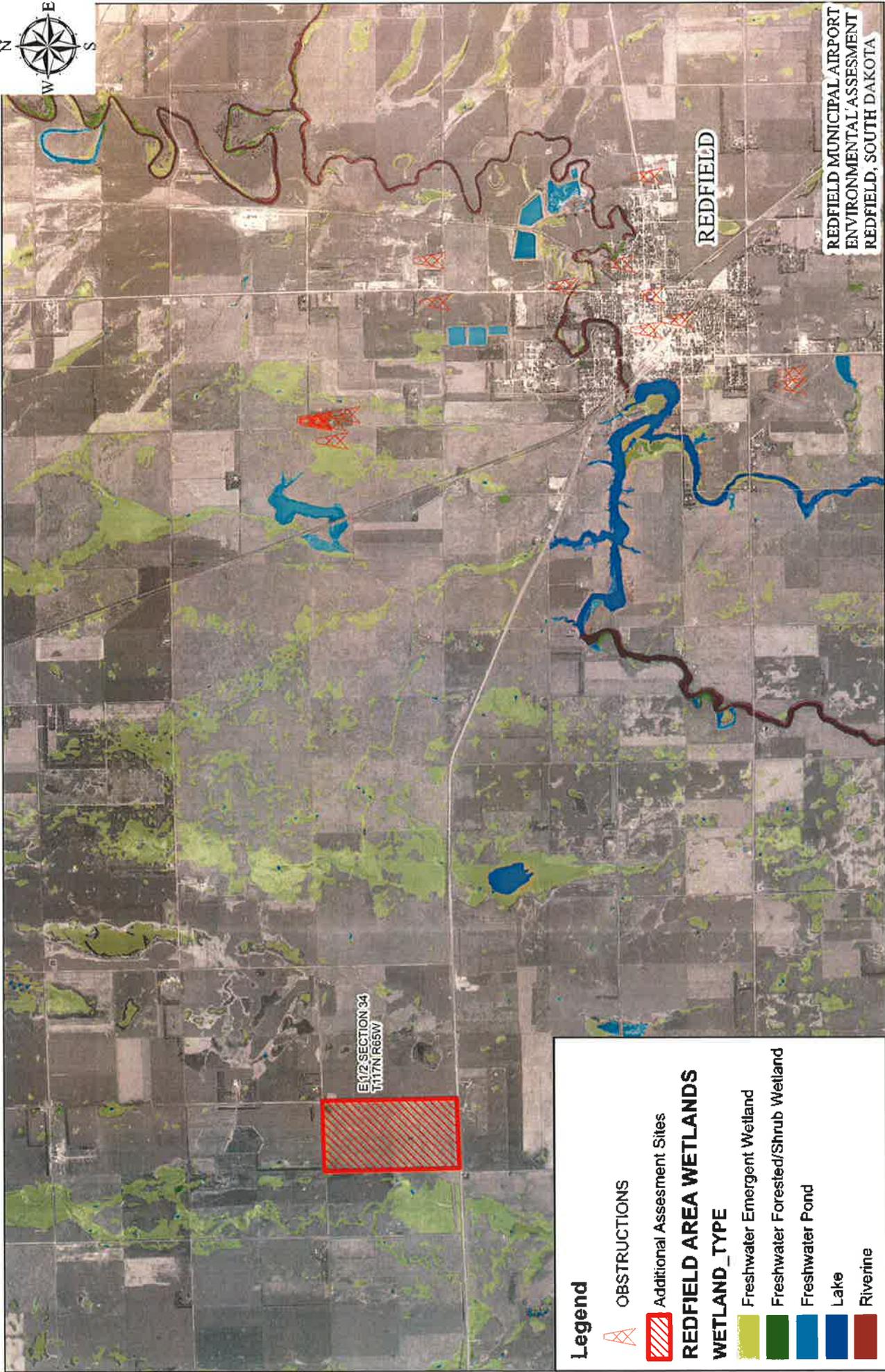
 Freshwater Emergent Wetland

 Freshwater Forested/Shrub Wetland

 Freshwater Pond

 Lake

 Riverine



REDFIELD MUNICIPAL AIRPORT  
ENVIRONMENTAL ASSESMENT  
REDFIELD, SOUTH DAKOTA

E12 SECTION 34  
T117N R65W

**Legend**

- OBSTRUCTIONS
- Additional Assessment Sites
- REDFIELD AREA WETLANDS**
- WETLAND\_TYPE**
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

## **APPENDIX G**

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### **DRAFT EA PUBLIC INVOLVEMENT**

**Notice of Public Hearing and Availability of Draft Environmental Assessment**

**Public Hearing Presentation**

**Public Hearing Sign in Sheet**

**Draft EA Correspondence**

**Comments Received on Draft EA**

## Affidavit of Publication

STATE OF SOUTH DAKOTA,  
County of Spink: ss.

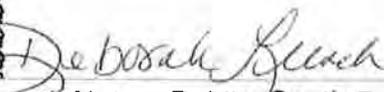
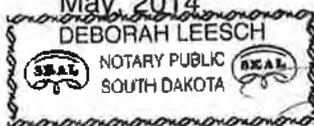
I, Mark E. Davis, of said County & State, being first duly sworn on oath, say that THE REDFIELD PRESS is a legal weekly newspaper as defined in Sec. 65.0508 South Dakota Code 1939, as amended by Chapter 298 of the Session of Laws of 1939, printed and published in the English language in the City of Redfield, in said County and State, by THE REDFIELD PRESS, and has been such newspaper during the time hereinafter mentioned, and that I Mark E. Davis, the undersigned, am Publisher of said newspaper in charge of the advertising department thereof, and have personal knowledge of all the facts stated in this affidavit, and that the legal or official notice entitled:

### #849 NOTICE OF PUBLIC HEARING

A printed copy of which is hereto attached, was printed and published in said newspaper in 2 successive issues, to wit: The first publication being made on April 30<sup>th</sup>, 2014, and the last publication being made on May 7<sup>th</sup>, 2014, that Seventy-one and 82/100 Dollars, insures to the benefit of the publisher of THE REDFIELD PRESS, that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whomsoever.



Subscribed and sworn to before me this 7<sup>th</sup> day of  
May, 2014



Notary Public, South Dakota

My commission expires 10/09/2019

## Public Hearing

#849

### NOTICE OF PUBLIC HEARING AND AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR THE REDFIELD MUNICIPAL AIRPORT REDFIELD, SOUTH DAKOTA

The City of Redfield, and the South Dakota Aeronautics Commission, announces that a Public Hearing will be held at 7:00 pm (local time) starting with a formal presentation followed immediately by an opportunity for comments on June 2, 2014 at the Redfield City Hall, 626 Main Street, Redfield, South Dakota. This hearing is being held to present and discuss the proposed alternatives and the draft environmental assessment. Representatives from Helms and Associates will be available to answer your questions and receive your comments.

Notice is hereby given of the availability of the Draft Environmental Assessment (dated April, 2014) for the proposed alternatives for the Redfield Municipal Airport. The Draft Environmental Assessment was prepared pursuant to the National Environmental Policy Act of 1969 to assess the environmental impacts associated with the proposed alternatives.

The proposed alternative consists of the following:

The City of Redfield, South Dakota is proposing to purchase approximately 99 acres of land for airport protection of the Runway Protection Zone (RPZ), Departure Surfaces, and runway realignment at the Redfield Municipal Airport. The runway realignment will involve the abandonment/removal of Runway 13/31, construction of a new runway, turnarounds, and exit taxiway. The existing primary runway (Runway 13/31) does not meet the FAA design standard for length or minimum wind coverage requirements. A new primary runway, (Runway 17/35) constructed at a new alignment and based on a Runway Design Code (RDC) of A/B-II, will allow the airport to best meet the wind coverage requirements and lengthen the runway while not having to move highways and allowing for future expansion of the runway, if needed. The Redfield Municipal Airport currently does not own adequate land to con-

struct a new runway at the alignment required to meet the minimum FAA wind coverage criteria. The project also involves removing wildlife hazards from the airport property, which includes filling wetlands on airport property and installing ten-foot high wildlife fencing.

The proposed alternative has the potential to impact the following environmental categories: Compatible Land Use; Construction Impacts; Fish, Wildlife and Plants; Energy Supplies; Natural Resources, and Sustainable Design; Induced Socioeconomic Impacts; Light Emissions and Visual Impacts; and Wetlands.

Copies of the Draft Environmental Assessment, which explains the proposed alternatives and their environmental impacts, are available for public inspection upon prior appointment during normal business hours at the following locations:

Federal Aviation Administration, Airports District Office, 2301 University Drive, Building 22, Bismarck, North Dakota

Helms and Associates, 221 Brown County Highway #18, Aberdeen, South Dakota

Redfield City Hall, 626 Main Street, Redfield, South Dakota

Individuals or organizations wishing to submit comments on the Draft Environmental Assessment must do so by 5:00 pm, June 9, 2014. Comments should be addressed to: Brooke B. Edgar, E.I.T.

Helms and Associates  
PO Box 111

Aberdeen, SD 57402

The responsible FAA official for information purposes is:

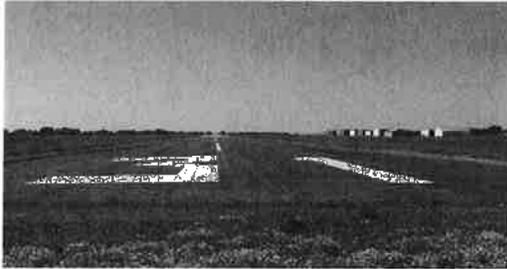
Lindsay Butler  
Regional Environmental Protection Specialist  
Federal Aviation Administration  
Planning and Programming Branch,  
AGL-610  
2300 East Devon Avenue  
Des Plaines, Illinois 60018

Jayme Akin, Mayor  
This institution is an equal opportunity provider and employer.

Published two times at the approximate approximate cost of \$71.82.  
(Apr 30, May 7)

**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**FOR  
REDFIELD MUNICIPAL AIRPORT  
REDFIELD, S.D.**



**Purpose of EA**

- Airport does not meet FAA standards and recommendations
  - Wind Coverage
  - Runway Length
- Wildlife attractants exist on the airport near areas of aircraft operations

**Need for EA**

- a. Meet FAA standards and protect people and property on the ground
- b. Eliminate potential incompatible land uses in the RPZs and Departure Surfaces to the end of the RPZ limits
- c. Reduce and/or eliminate wildlife attractants from airport property



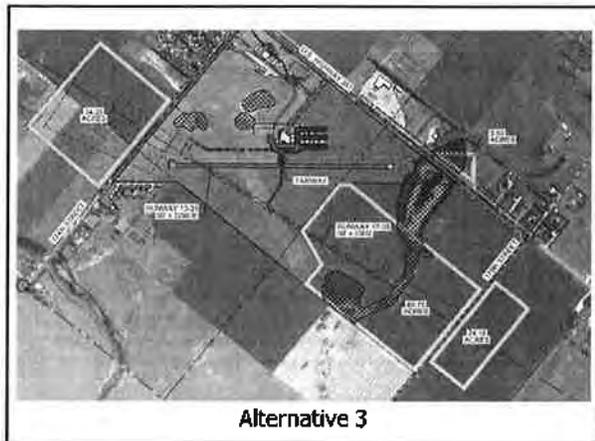
**Current Airport Layout**

## Alternatives

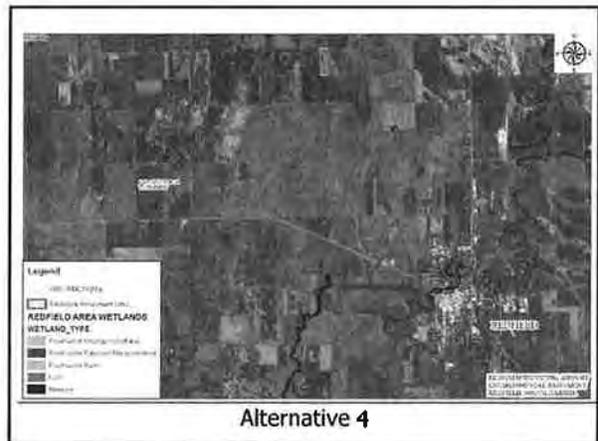
1. "No Action"
2. Purchase Approximately 99 acres, Construct Runway 17/35 (75' x 3,500'), Remove/Abandon Runway 13/31, Fill Wetlands, Remove Trees, Construct Wildlife Fence, Convert Vegetation
3. Purchase Approximately 172 acres, Construct Runway 17/35 (60' x 3,500'), Remove/Abandon Runway 13/31, Fill Wetlands, Remove Trees, Construct Wildlife Fence, Convert Vegetation
4. Rebuild Airport in a Different Location



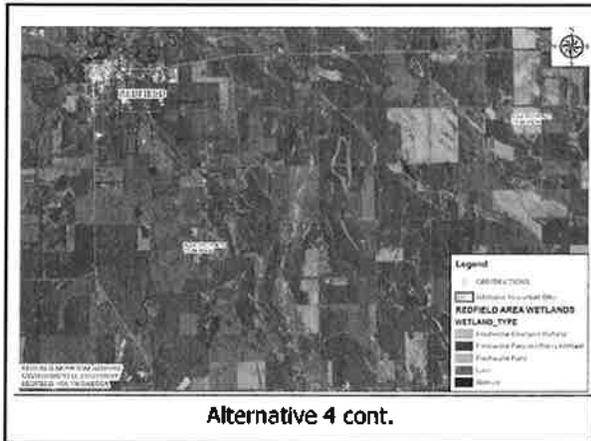
**Alternative 2**



**Alternative 3**



**Alternative 4**



Alternative 4 cont.

## Proposed Action – Alternative #2

1. Acquire ± 99 Acres of Land
2. Abandon/Remove Runway 13/31
3. Construct Runway 17/35 (75' x 3,500')
4. Fill/Mitigate Wetlands
5. Remove Trees
6. Construct 10' Wildlife Fence
7. Convert Vegetation to Grass Hay Crop

## ALTERNATIVE #2 AREAS OF POTENTIAL IMPACT

1. Construction Impacts
  - BMPs and SWPPP must be implemented
2. Fish, Wildlife and Plants
  - May Affect, Not Likely to Adversely Affect the Whooping Crane and Topeka Shiner
3. Light Emissions and Visual Impacts
  - MRL on Runway 17/35

## ALTERNATIVE #2 AREAS OF POTENTIAL IMPACT

4. Wetlands
  - Fill and mitigate approximately 14 acres
5. Indirect and Cumulative Impacts
  - Service at the airport will be limited during construction

## QUESTIONS AND COMMENTS

- WRITTEN COMMENTS WILL BE RECEIVED UNTIL 5:00 PM, JUNE 9, ADDRESS TO:

- **Brooke B. Edgar, E.I.T.**  
Helms and Associates  
PO Box 111  
Aberdeen, SD 57402

- **Lindsay Butler**  
Regional Environmental Specialist  
Federal Aviation Administration  
Planning and Programming Branch, AGL-610  
2300 East Devon Avenue  
Des Plaines, Illinois 60018

PUBLIC HEARING - SIGN-IN SHEET  
REDFIELD MUNICIPAL AIRPORT ENVIRONMENTAL ASSESSMENT  
REDFIELD, SOUTH DAKOTA  
HELMS # A-4441  
JUNE 2, 2014 @ 7:00 P.M.

NAME	REPRESENTING	MAILING ADDRESS (City, State, Zip)	PHONE NUMBER(S)
1 Brooke Edger	Helms and Associates	PO Box 111 - Aberdeen, SD 57402	605-225-1212
2 Corey Helms	Helms and Associates	PO Box 111 - Aberdeen, SD 57402	605-225-1212
3 Terna Helms			
4 Tony Ferguson			
5 Bob Husby			
6 Ronny Mackay			
7 Doreen Brantfield			
8 Larry Stoen			
9 Joe M... ..			
10 David & Susan			

PUBLIC HEARING - SIGN-IN SHEET  
REDFIELD MUNICIPAL AIRPORT ENVIRONMENTAL ASSESSMENT  
REDFIELD, SOUTH DAKOTA  
HELMS # A-4441  
JUNE 2, 2014 @ 7:00 P.M.

NAME	REPRESENTING	MAILING ADDRESS (City, State, Zip)	PHONE NUMBER(S)
11 Orno Orsella	City of Redfield		1-605-460-2324
12 Sharon Keeney			
13 <del>Mark Williams</del>			
14 Bill Book			
15 Brett Boe			
16 Nancy L. E. Management			450-0124
17 Matti Tules			
18 Sharon Starnish			
19 Shirley Demmitt			
20 F. Dale S. O.			

RECEIVED

APR 30 2014

SURFACE WATER PROGRAM

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

John Miller  
SD DENR  
Surface Water Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Miller,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates



Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

RECEIVED

MAY 23 2014

HELMS & ASSOCIATES

**AIR QUALITY DETERMINATION**

It appears, based on the information, that the project will have little or no impact on the air quality in this area. This project is approved.

Approved By: Brad Schuler

Date: 5/22/2014

(605) 773-6038 Fax: (605) 773-5286  
South Dakota Department of Environment  
And Natural Resources

**SURFACE WATER QUALITY DETERMINATION**

It appears, based on the information provided, that this project will have little or no impact on the surface water quality in this area. This project is approved.

Approved By: John Miller

Date: 5-6-2014

(605) 773-3351 FAX - (605) 773-5286  
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Brad Schultz  
SD DENR  
Air Quality Program  
Joe Foss Building  
523 East Capitol Avenue  
Pierre, SD 57501

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Schultz,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

# Helms & ASSOCIATES

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April 29, 2014

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Pierre, SD 57501

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Redfield, South Dakota  
A-4441

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Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

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TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

EPA Region VIII  
ATTN: Larry Svoboda  
Code # EPR-N  
1595 Wynkoop Street  
Denver, CO 80202-1129

FILE COPY

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Svoboda,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Tom Kirschenmann  
SD Dept. of Game, Fish and Parks  
Division of Wildlife  
523 E. Capitol Avenue  
Pierre, SD 57501-3181

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Kirschenmann,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

FILE COPY

# Helms & ASSOCIATES

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221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Janet Oertly  
State Conservationist  
U.S. Department of Agriculture  
NRCS  
200 Fourth Street SW, Room 203  
Huron, SD 57350

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Ms. Oertly,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

FILE COPY

# Helms & ASSOCIATES

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PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Brad Thompson  
U.S Army Corps of Engineers  
Planning Division  
Attention: CENWO-PM-AE  
1616 Capital Avenue  
Omaha, NE 68102-4901

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Thompson,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

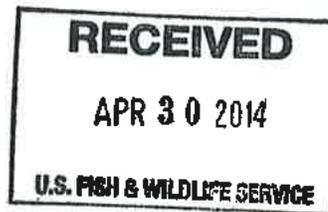
Enclosures

Cc: City of Redfield

FILE COPY

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CIVIL ENGINEERS & LAND SURVEYORS



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PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Scott Larson  
U.S. Fish and Wildlife Service  
Ecological Services, South Dakota Field Office  
420 S. Garfield Avenue  
Pierre, SD 57501-5408

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Mr. Larson,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

A handwritten signature in black ink that reads "Brooke Edgar". The signature is fluid and cursive.

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

A blue ink stamp with the word "RECEIVED" in large, bold, uppercase letters. Below it, the date "MAY 21 2014" is printed in a smaller, red, uppercase font. At the bottom, "HELMS &amp; ASSOCIATES" is printed in a small, blue, uppercase font.

MAY 21 2014

HELMS & ASSOCIATES

This constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). We have reviewed and have NO OBJECTION to this proposed project.

5/20/14  
Date

A handwritten signature in black ink that reads "Scott Larson". The signature is cursive and written over a horizontal line.  
Field Supervisor

# Helms & ASSOCIATES

CIVIL ENGINEERS & LAND SURVEYORS

221 BROWN CO. HWY. #19  
PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Scott Larson  
U.S. Fish and Wildlife Service  
Ecological Services, South Dakota Field Office  
420 S. Garfield Avenue  
Pierre, SD 57501-5408

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Redfield, South Dakota  
A-4441

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Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

FILE COPY

# Helms & ASSOCIATES

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PO BOX 111  
ABERDEEN, SD 57402-0111

PHONE (605) 225-1212  
TOLL FREE 1-888-378-4394  
FAX (605) 225-3189

April 29, 2014

Amy Rubingh  
Review and Compliance Archaeologist  
Office of State Historic Preservation Officer  
900 Governors Drive  
Pierre, SD 57501

Re: Redfield Municipal Airport Environmental Assessment  
Redfield, South Dakota  
A-4441

Dear Ms. Rubingh,

Enclosed for your review is a copy of the Draft Environmental Assessment for the Redfield Municipal Airport.

If you have any questions, please contact our office. Your prompt response would be greatly appreciated.

Sincerely,  
Helms and Associates

Brooke B. Edgar, E.I.T.

Enclosures

Cc: City of Redfield

FILE COPY