# DRAFT ENVIRONMENTAL ASSESSMENT

U.S. FISH AND WILDLIFE SERVICE
PROPOSED VISITOR AND ENVIRONMENTAL EDUCATION CENTER,
OUTDOOR EDUCATIONAL/INTERPRETIVE FACILITIES, AND INTERN HOUSING
MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE
CARVER, MINNESOTA

In compliance with the National Environmental Policy Act of 1969

June, 2005

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## 1. Purpose and Need

### 1.1 Purpose

The purpose of this Environmental Assessment (EA) is to consider alternatives for the development of a Visitor and Environmental Education Center (VEEC), associated outdoor educational/interpretive facilities, and for the construction of intern housing on the Minnesota Valley National Wildlife Refuge (Refuge). These facilities will help fulfill the requirements of the Memorandum of Agreement (dated September 21, 1998) and Funding Agreement (dated September 14, 2000) between the U.S. Fish and Wildlife Service (Service) and the Metropolitan Airports Commission (MAC).

Construction and operation of Runway 17/35 at the Minneapolis-St. Paul International Airport will have adverse impacts upon the Minnesota Valley National Wildlife Refuge. The construction and development of a visitor and education center and construction of visitor access, environmental education, and wildlife interpretive facilities were identified as (but not limited to) mitigation activities within the above mentioned funding agreement. These projects, acknowledged as components of "the Refuge Mitigation Plan", when implemented would mitigate the impacts of Runway 17/35 upon the Refuge. The construction of intern housing was identified as an additional mitigation project during the formulation of the final Refuge Mitigation Plan. The development and construction of all these projects on or near the Rapids Lake Unit are also identified as specific Comprehensive Conservation Plan (CCP) strategies which will support public use on the Refuge.

The Service's objective for public use facilities as identified in the final CCP under the Public Use goal is to "*...develop new and maintain existing facilities to promote public advocacy and use of the Refuge and Waterfowl Production Areas.*" The proposed developments would allow the Service to provide high quality wildlife-dependent recreational and environmental education opportunities necessary to replace comparable Refuge amenities being adversely impacted by the new runway and to promote

understanding, appreciation and support for the resources being protected by the Minnesota Valley National Wildlife Refuge.

**1.2 Need:**

The expansion of the Minneapolis-St. Paul International Airport will directly impact the Long Meadow Lake Unit and Black Dog Unit of Minnesota Valley National Wildlife Refuge. Noise sensitive public use activities conducted on these units, such as environmental education, wildlife interpretation, and bird watching will be notably diminished upon the construction and use of a new north-south runway. Likewise, the values of the existing Long Meadow Lake Visitor Center located in Bloomington will be diminished as increased jet noise will influence outdoor activities associated with that facility. As the external pressures on the Refuge such as noise levels are anticipated to increase, the need to develop new public use facilities beyond anticipated impact areas has become apparent. (See Appendix B, Map #1).

The following educational and interpretive needs from a visitor's perspective in addition to administrative needs were considered in the preliminary identification of facility feature and space requirements and location of development. To provide quality educational and interpretive opportunities, the Service has the need to develop a visitor and environmental education center and associated outdoor facilities at a location with the presence of, or access to, multiple ecosystems (forest, wetland, and prairie). The space needed for a visitor and environmental education center would be approximately 8,000 square feet, inclusive of office space for Refuge staff. The tentative size of this building was obtained through use of a software tool titled "Unified Design and Cost Model" developed by Washington Office Service staff for preliminary project planning.

The Service has a strong desire to develop a three-stall garage for vehicle and program storage. Parking space would be needed to accommodate approximately 30 personal and Service vehicles with additional space for two busses and/or large recreational vehicles. Outdoor environmental education and interpretive facilities such as short loop trails, kiosks, an outdoor classroom, and habitat demonstration sites developed in close union with the visitor and education center would be needed to support program implementation. These opportunities are necessary to meet the needs of younger school-aged children and those visitors with limited time.

Extended outdoor environmental education and interpretive facilities such as longer loop trail opportunities, destination trails inclusive of a trail traversing parallel to the Minnesota River along the entire length of the Rapids Lake Unit, kiosks, boardwalks, observation platforms, and habitat

demonstration sites would be needed to further enhance the educational and interpretive programs which would be conducted at the proposed visitor and education center. These expanded features are needed to meet the needs of older school-aged children and those visitors with ample time to explore the Refuge.

The Refuge has a need to provide clean and affordable intern housing in close proximity to the proposed visitor and education center as an operational support facility. Development of an intern bunkhouse capable of hosting 16 individuals would be expected to consist of a single-story structure with a full basement not more than 5,000 square feet in size. Individuals using this facility would support the Refuge's expanded environmental education and wildlife interpretive programs, and help address the development and management of new Refuge lands. Both college interns and volunteers would be housed at this facility. If during the design phase it is determined that sufficient funding is unavailable to construct a 16-person bunkhouse, an eight-person bunkhouse would be designed and constructed instead.

The following needs for general site selection criteria have been developed by the Service and will be considered in selecting a site:

a. Suitable and buildable land. The sites should be adequate in size to accommodate full development (no less than two acres for the intern bunkhouse and no less than five acres for the visitor and environmental education center) and potential future expansion; meet the requirements of Carver County Ordinance No. 47 (i.e. road and bluff top setback requirements) and associated Carver County Land and Water Management plans; and be located on upland acreage.
b. Public uses. Development should not create conflict with existing or planned public uses.
c. Visual resources. Site development should not be visually intrusive to the surrounding area.
d. Presence of contaminants. The sites should be free of contaminants or hazardous materials.
e. Environmental impact. The sites should consist of land previously disturbed. Minimal impact to wildlife, sensitive habitats, and water quality should occur. Site development should not occur on native ecosystems.
f. Protection of cultural resources. Site development should protect cultural resources from damage and loss.
g. Comparable uses. Proposed development sites should be chosen so as to locate similar uses adjacent to existing facilities.

## 1.3 Decisions that Need to be Made

The Service's Regional Director will select one of the alternatives analyzed in detail and will determine, based on the facts and recommendations contained herein, whether this Environmental Assessment is adequate to support a Finding of No Significant Impact (FONSI) decision, or whether an Environmental Impact Statement (EIS) will need to be prepared.

## 1.4 Background

The U.S. Fish and Wildlife Service administers Minnesota Valley National Wildlife Refuge as a unit of the National Wildlife Refuge System. The Refuge was established in 1976 by Congress through the Minnesota Valley National Wildlife Refuge Act ***(Public Law 94-466; October 8, 1976)*** to (1) provide habitat for a large number of migratory waterfowl, fish, and other wildlife species; (2) to provide environmental education, wildlife recreational opportunities, and interpretive programs for Twin Cities residents; (3) to protect important natural resource areas from degradation; and to (4) protect the valley's unique social, educational, and environmental assets.

Minnesota Valley National Wildlife Refuge is one of more than 540 refuges in the National Wildlife Refuge System. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat and represents the most comprehensive wildlife management program in the world.

The authorized boundary of the Refuge encompasses 24,700 acres. Nearly 13,000 acres of the authorized 24,700 acres are owned or managed as part of the Refuge. Some areas are not owned by the Service but are administered through management agreements. The Refuge consists of fourteen units along a 100-mile stretch of the Minnesota River located between historic Fort Snelling and the city of Kasota. Minnesota Valley National Wildlife Refuge is unusual in that it is one of only four urban national wildlife refuges.

In 1989, the Minnesota State Legislature directed the Metropolitan Airports Commission and the Metropolitan Council to examine how best to meet the region's future aviation needs. The product of this effort was a draft Environmental Impact Statement (EIS) titled the Dual Track Airport Planning Process. Although several alternatives were considered in this draft EIS, a determination was made that the only feasible alternative was the construction of a new 8,000 foot runway (Runway 17/35) that would roughly parallel Cedar Avenue (Highway 77).

In response to considerable public concern over both existing and future aircraft noise associated with the Minneapolis-St. Paul International

Airport, MAC developed a Noise Mitigation Plan. Within the Noise Mitigation Plan, the Minnesota River Valley was identified as a corridor for aircraft with the express purpose of reducing noise on residential areas. All incoming and departing flights from the new runway, estimated to be nearly 8,000 daytime flights per month, would be directed over the Refuge. The proposed expansion of the airport would directly impact the Long Meadow Lake Unit and Black Dog Unit.

The Fish and Wildlife Service conducted an assessment to determine the expected impacts to the Refuge from the new runway. This assessment was based on extensive discussions, a thorough review of literature, conversations with experts in the field, and by studying and learning about the Federal Aviation Administration (FAA) and MAC noise impact models. A determination was made that impacts to fish and wildlife resources which utilize the Refuge would be uncertain. However, noise sensitive public use conducted on these units and at the Refuge's existing Visitor Center would be considerably compromised. An assessment of the damages that would occur to Refuge units once the new runway became operational and components of acceptable mitigation were summarized in a letter sent to FAA and MAC from Regional Director William Hartwig in May 1997.

In response to this, the Metropolitan Airports Commission, the Federal Aviation Administration, and the U.S. Fish and Wildlife Service entered into a Memorandum of Agreement dated September 21, 1998. Through this agreement, a mitigation package inclusive of a cash settlement would be used to offset the impacts of commercial over flights on Refuge lands, programs, and activities.

In August 2000, the Minnesota Valley National Wildlife Refuge Trust, Inc. was established as directed by the Funding Agreement, dated September 14, 2000, to serve as the mitigation and fiscal agent for MAC. The primary purpose of the Trust is to work with Refuge staff and other interested parties in completing the mitigation projects as described within the Refuge Mitigation Plan. The individual components of this plan were originally derived from the above mentioned assessment of damages. The conversion of the Gehl-Mittelsted house located on the Rapid Lake Unit, to an environmental education facility was identified as one of several mitigation projects. These mitigation projects were also acknowledged as components of the final Comprehensive Conservation Plan for Minnesota Valley National Wildlife Refuge. Suggestions for additional mitigation projects were received as input to the Refuge's final Comprehensive Conservation Plan and many have been incorporated into the final mitigation plan. Development and construction of a visitor and environmental education center, outdoor environmental education and

interpretive facilities, and an intern bunkhouse on the Rapids Lake Unit would fulfill a portion of the Trust's mitigation obligations.

With the desire to make informed decisions concerning the development of public use facilities, Minnesota Valley National Wildlife Refuge Trust hired C.J. Olson Market Research to conduct a survey of educators during the spring of 2002. Survey participants were from the seven county metro area and the five adjacent counties consisting of Blue Earth, Brown, LeSeuer, Nicollet and Sibley. Educators were asked what factors were considered when selecting an environmental education center to take students to. The quality of the environmental education program and experience was the most important factor taken into consideration by teachers.

### 1.4.1 Prior Scoping Efforts

In March 2004, the Service conducted project scoping in an effort to seek comments from the public on proposed alternatives for developing public use facilities on the Rapids Lake Unit of the Minnesota Valley National Wildlife Refuge. At that time, the Service presented an alternative to relocate and restore the Gehl-Mittelsted house for use as a visitor contact station with administrative offices. This proposal also identified the construction of an annex adjacent to the relocated house to serve as an environmental education center. Initially, this alternative was the Service's proposed action. Upon further research, the cost to move the Gehl-Mittelsted house was determined to be prohibitive to the project so a new preferred alternative has been identified.

The development and construction of a visitor and education center, outdoor educational and interpretive facilities, and intern housing on or near the Rapids Lake Unit were identified as specific CCP strategies which would support public use on the Refuge. A CCP is a planning tool which provides management direction for a national wildlife refuge over a 15 year period. The CCP planning process for the Refuge began in October 1998. Seven open houses were conducted during 1999 with the primary purpose of obtaining public input into the future direction of the Refuge and its District. The Refuge and District CCP and corresponding EA, inclusive of the aforementioned project opportunities, were subsequently written by Refuge staff. A public review period of at least 45 days followed the release of the draft plan. In September 2004, the final CCP for Minnesota Valley National Wildlife Refuge was approved.

## 2. Alternatives Including the Proposed Action

This section addresses the proposed action and alternatives considered in meeting the purpose and need for the project. Alternatives eliminated from further consideration are also identified and summarized.

### 2.1 Alternatives not Considered for Detailed Analysis

#### 2.1.1 Renovation of Gehl-Mittelsted House in Existing Location

The renovation of the Gehl-Mittelsted house in its current location (See Appendix B**,** Map #2) to serve as both a visitor and environmental education center was contemplated yet eliminated from further analysis. The existing location of the house is within the 100 and 500 year flood plains of the Minnesota River. Currently all utilities for this structure are located in the basement which was completely flooded during the 1965 flood. Building restoration efforts would need to make the structure resistant to most flooding events. The house would need to be raised allowing the basement to be backfilled. The house would be re-set on its existing location on a solid concrete foundation at an elevation higher than the 100 year flood mark. All services now located in the basement would have to be relocated to the first floor. Only an estimated 3,000 square feet of space would remain within this structure after the above-mentioned flood resistant measures were implemented. This space would be inadequate to fully develop a visitor and education center with administrative offices.

Furthermore, Executive Order 11988 of May 24, 1977 pertaining to Floodplain Management has been interpreted by the U.S. Fish and Wildlife Service as prohibiting the development of federal facilities within the 100 year flood plain. Facilities may be allowed if they are raised above the 100 year elevation or behind a dike, dam, or levy. The other exception to this interpretation is that if the nature of the facilities requires them to be within the flood plain, then construction is allowed. If facilities are within the flood plain, they must be "flood proofed" so little damage if any would occur during a flood event.

#### 2.1.2 Renovation of Gehl-Mittelsted House on Terrace

The relocation and renovation of the Gehl-Mittelsted house on the mid-level terrace overlooking its current location (See Appendix B**,** Map #3) to serve as a visitor contact station was thoroughly studied and researched yet eliminated from further analysis. This alternative was initially identified as the Service's proposed action but was reluctantly given up as a viable alternative when the estimated costs to implement such a proposal became prohibitive.

The house is built strictly of brick stacked upon brick without any sort of framed structure to support it. In order to move such a building successfully, a massive system of hydraulic jacks and levels would be needed to keep the building from varying more than one-quarter inch off plumb. The estimated cost, at more than $1.45 million, to move the house in such a way exceeded budget allocations.

### 2.1.3 Development on Rapids Lake Unit-North Bluff

The development of a visitor and education center on the Rapids Lake Unit at an upland site consisting of a north facing bluff overlooking Rapids Lake (See Appendix B, Map #4) was eliminated from further consideration because this site consists of a remnant native prairie. Developing a center at this site would damage the existing native prairie.

### 2.1.4 Development on Rapids Lake Unit-Edge of Road

The development of a visitor and education center at the edge of the access road overlooking the Gehl-Mittelsted house (See Appendix B, Map #5) was eliminated from further consideration because it would not be in compliance with Carver County Ordinance No. 47 regarding bluff setback for structures.

### 2.1.5 Development on Rapids Lake Unit-Southern Terrace Area

The development of a visitor and education center on the southern portion of the terrace overlooking the Gehl-Mittelsted house (See Appendix B, Map #6) was eliminated from further consideration because this site is needed for the complete development of an access road at grade.

### 2.1.6 Development on Rapids Lake Unit-Mittelsted Picnic Shelter

The development of a visitor and education center on the Rapids Lake Unit at the upland site formerly known as the Mittelsted Picnic Shelter (See Appendix B, Map #7) was eliminated from further consideration because this site consists of a remnant native prairie. Developing a center at this site would damage the existing native prairie.

### 2.1.7 Development on Louisville Swamp Unit

The development of a visitor and education center at an upland site on the Louisville Swamp Unit (See Appendix B, Map #7) was eliminated from further consideration because this site also consists of a remnant native prairie. Developing a facility at this location would damage existing native prairie.

### 2.1.8 Development on Bloomington Ferry Unit

The development of a visitor and education center at an upland site on the Bloomington Ferry Unit (See Appendix B, Map #8) was eliminated from further consideration because this site consists of non-disturbed bluff land. Developing a center at this site would damage the non-disturbed bluff land present.

Additionally, two environmental education facilities currently operate in close proximity to the Bloomington Ferry Unit. Both the Richardson Nature Center (Bloomington) and the Staring Lake Outdoor Center (Eden Prairie) are located less than three miles from this unit. There are 38 facilities within the Twin Cities metro area which provide environmental education opportunities. Developing a facility at this site would overwhelm an already saturated market.

### 2.1.9 Development on other Refuge Units

The development of a visitor and education center on other Refuge units such as the Chaska and Wilkie Units was eliminated from further consideration because no suitable upland site exists at either of the units. Further consideration of the Upgrala Unit was eliminated because there currently is not enough area in fee title to develop public use facilities.

### 2.1.10 Refurbish Existing Visitor Center in Bloomington

This alternative was not given further consideration since its scope would not meet the intent of the Memorandum of Agreement (dated 9/21/98) and the Funding Agreement (dated 9/14/00) between the Service and MAC. This alternative would therefore put the Service in noncompliance with the aforementioned agreements.

### 2.1.11 Development on Leased Property

The development of a visitor and education center on leased property was eliminated from further consideration because doing so would not be fiscally responsible while developable Refuge land exists.

### 2.1.12 Intern Housing on Parcel Overlooking Gehl-Mittelsted House

Further consideration was not given to this alternative since this site was previously analyzed (Final Environmental Assessment for Proposed Maintenance Operations Complex and Residence, June 2003) for proposed facility development (See Appendix B, Map #9).

#### 2.1.13 Intern Housing on Terrace Overlooking Gehl-Mittelsted House

The services of an architectural firm were obtained to determine the feasibility of constructing a visitor and education center and intern bunkhouse on the terrace overlooking the Gehl-Mittelsted house. Further consideration was not given to this alternative since the terrace is not large enough to adequately accommodate the construction of an intern bunkhouse and a visitor/environmental education center. Taking into consideration desired road grades, the space needed for vehicle flow and parking, and the Service's desire to comply with Carver County bluff set back requirements, the intern bunkhouse would have had to be constructed immediately adjacent to the visitor and education center (See Appendix B, Map #10). Greater spatial separation is needed between facilities with such different purposes in order to provide a quality visitor experience of solitude and wildlife viewing on a national wildlife refuge. Activities associated with residential living on evenings and weekends would impact the visitor's experience. Furthermore, construction of intern housing at this site was also determined to be cost prohibitive. The architectural style of the bunkhouse would have had to complement that of the visitor and education center, thus projecting higher construction costs (estimated at over $970,000) than budget allocations.

#### 2.1.14 Intern Housing Combined with Visitor Center on Terrace

Further consideration was not given to this alternative since this proposal would not provide the desired separation between different uses. The Service desires to provide the best appearance and service in all of its public use facilities. The Service also desires to provide living accommodations for intern and volunteer staff, with a certain level of privacy and that is not overly constrictive. In this type of situation, the public would have a hard time differentiating between staff on- or off-hours. (See Appendix B, Map #11)

#### 2.1.15 Development of Minnesota River Pedestrian Bridge.

The development of a pedestrian bridge over the Minnesota River, linking the Rapids Lake and Louisville Swamp Units was eliminated from further consideration because such a structure would create a substantial "footprint" on the river environment.

### 2.2 Alternatives Carried Forward for Detailed Analysis

#### 2.2.1 Elements Common to All Alternatives

The Long Meadow Lake Visitor Center would remain as is and would continue to be used for visitor services regardless of the decision made as a result of this Environmental Assessment. All

public use facilities currently located on the Black Dog and Long Meadow Lake Units such as trails, parking lots, kiosks and signs, would continue to be maintained for visitor use. Noise sensitive public use activities conducted on these units, as well as the values of the existing Long Meadow Lake Visitor Center, will be diminished upon the construction and use of a new runway.

### 2.2.2 Elements Common to All Action Alternatives

The entire undertaking is located within the Mittelsted Farm which the Minnesota State Historic Preservation Officer (SHPO) has determined needs to be evaluated for eligibility for the National Register of Historic Places in accordance with criteria being developed (see Section 3.1.5.1 below). Until the National Register eligibility of the Farm is determined, construction cannot proceed. If the Farm meets the criteria for the National Register, the Section 106 process will be followed to completion prior to constructing these elements.

Except as otherwise stated, all elements described in this section would be constructed on land previously investigated and determined to not contain archeological resources meeting the criteria for the National Register and would affect no standing structures eligible for the National Register.

#### 2.2.2.1 Outdoor Environmental Education and Interpretive Facilities

Outdoor environmental education and interpretive facilities such as short and long loop trails, destination trails inclusive of a trail traversing the entire length of the Rapids Lake Unit parallel to the Minnesota River, kiosks, an outdoor classroom, boardwalks, observation platforms, and habitat demonstration sites would be developed to support program implementation based out of the proposed visitor and environmental education center. (See Appendix B, Map #12). Please note: Outdoor environmental education and interpretive facility development extending south of the proposed visitor and education center to Carver County Road 45 is dependent upon funding availability and successful land acquisition.

General trail specifications include a 12’ wide tread consisting of mowed grass or gravel surfacing as needed to meet accessibility requirements or to traverse through wet/low lying areas. The short loop trail would be a fully accessible trail approximately one-quarter to one-half mile in length originating at the proposed visitor and education

center. The first 800 feet of this accessible trail as it traverses across and down a steep side slope would be paved to prevent excessive erosion. The long loop and destination trails would originate from the short loop trail. To the greatest extent possible, old farm roads would be identified and utilized as trails. Rehabilitation of existing field roads for trail use would include mowing, clearing of overhanging brush, and graveling where needed. Trail construction in areas where no field roads exist, would consist of small diameter vegetation clearing to ground level only via the use of a skid loader/mower. Large diameter trees posing a safety hazard would be removed where necessary. Sections of new trail would be graveled as needed. Up to three (10 ton carrying capacity) trail bridges would be constructed to cross over streams and existing ditches.

Kiosks located alongside trails would typically be one panel wooden bulletin boards no larger than six feet by eight feet containing interpretive information explaining cultural or natural history facts. An outdoor classroom would consist of an open air concrete patio with benches and/or picnic-style tables. Boardwalks would consist of wooden plank walkways over wetland areas. Observation platforms are wooden plank decks typically six feet by eight feet in size.

Habitat demonstration sites would include features such as water control structures or habitat restoration areas. Water control structures are similar to dams or dikes and are used to manipulate wetland water levels for habitat improvement. These structures are typically constructed within existing ditches that were originally dug out to drain natural wetlands for agricultural purposes. Habitat restoration areas would include wetland, flood plain forest, and oak savanna restoration. Wetland restoration would entail breaking buried agricultural field tile used to drain natural wetlands. The breakage of only a small section (approximately 30 feet) of field tile is typically sufficient to re-establish natural wetland hydrological processes. Former agricultural fields will be restored to flood plain forests through a combination of natural re-vegetation and the planting of tree seedlings (silver maple, green ash, swamp white oak, etc.). Oak savanna restoration would include the removal of non-native tree and shrub species such as Siberian elm and buckthorn that have invaded an

existing oak savanna. Oak seedlings and native prairie grasses would then be planted within the treated area.

Many of these facilities (trails, kiosks, outdoor classrooms, boardwalks, observation platforms, and habitat demonstration areas) would be located where archeological surveys have identified no archeological resources that meet the criteria for the National Register of Historic Places. But trails are expected to cross prehistoric archeological site 21-CR-130 considered eligible for the National Register and to cross land that has not been inspected for archeological sites. Facilities constructed in the view shed of the Gehl-Mittelsted House #1 could affect the setting of the house. In these cases, the Service will consult with the SHPO about facilities leading to a determination of no effect through the National Historic Preservation Act, Section 106 process defined in 36 Code of Federal Regulations Part 800.

#### 2.2.2.2 Accessibility Compliance

All proposed public use buildings, adjoining parking areas, and connecting sidewalks would be designed and developed to be in full compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the latest Uniform Federal Accessibility Standards (UFAS). To the greatest extent feasible, outdoor environmental education and interpretive facilities would be universally designed and comply with ADAAG and UFAS.

#### 2.2.2.3 Main Access Road

Due to the proposed development of public use facilities, traffic along the first one-quarter mile stretch of Carver Highlands Drive starting from Carver County Road 45 and continuing eastward along the access road until reaching the bluff top, would be expected to increase. The anticipated increase in traffic volume would be estimated at up to 20-25 vehicles plus two school busses per day. Carver Highlands Drive is constructed to a standard which accommodates single lanes of opposing traffic. The access road is only 16-18 feet in width, barely allowing opposing traffic to pass safely. Both roads are currently gravel surfaced. The Service intends to work cooperatively with the San Francisco Township Board to seek funding to upgrade both the one-quarter mile section of Carver Highlands Drive and the access road which is approximately one-half mile in length. The upgraded roads

would be 24 feet in width and asphalt surfaced. The alignment of the eastern-most one-quarter mile section of access road would also be modified from a straight east-west line to a serpentine alignment. Additionally, the entrance to the already existing Refuge parking lot would be modified to connect to the proposed new road alignment (See Appendix B, Maps #13 and 14). A possible funding source would include Transportation Enhancement funds (Transportation Equity Act, P.L. 105-178). Until such time when these upgrades are completed, the Service would work cooperatively with the Township and local residents to address such issues as dust abatement.

Most (not all) of this road, located on top of the bluff, is adjacent to land that has been investigated for archaeological resources with negative results (Bailey 1999; Halloran 2004). Prior to road expansion or realignment, the Service will consult with the SHPO and carry the Section 106 process to completion.

#### 2.2.2.4 Bluff Access Road and Abandoned Quarry

The existing access road as it crosses over the top of the bluff and heads down slope into the existing Rapids Lake Maintenance Complex (former Gehl-Mittelsted farmstead) is very steep (10-14% grade) and traverses through archaeological site 21-CR-1 and an abandoned quarry plagued with erosion problems. A portion of archaeological site 21-CR-1 was severely damaged during gravel mining operations and the construction of the access road, both of which occurred prior to Service acquisition of the Rapids Lake Unit. Development of a new section of access road within the existing confines of this heavily disturbed area would be considered to help address public safety and erosion concerns. The new road would be 24 feet in width and asphalt surfaced at five to eight percent (5 -8%) grade, with necessary drainage features and water gardens for surface runoff treatment. Stabilization of site 21-CR-1 and restoration of the abandoned quarry would occur in conjunction with road construction. Stabilization and restoration work would consist of the movement of on-site soil to fill in old road cuts and re-establish the original bluff line configuration as much as possible. (See Appendix B, Maps #14 and 15)

Re-sloping and widening the access road, stabilizing erosion, and restoring the original bluff line configuration

would be located within a section of mound group 21-CR-1 that has been entirely destroyed through gravel mining and three previous road locations, so would have no effect on archeological sites that might qualify for the National Register.

**2.2.2.5 Public and Service Access**

An additional not-to-exceed one-quarter mile of new road (24 feet in width, asphalt surfaced) with parking areas would be constructed to access the new public use buildings. (See Appendix B, Map #15)

**2.2.2.6 Garage for Service Vehicles**

A three-stall, detached garage would be constructed on the southern portion of the mid-level terrace (See Appendix B, Map #15). Two stalls would be used for overnight storage of Service vehicles. The third stall would be used for storage of program materials such as snow shoes and water quality testing equipment.

**2.2.2.7 Water Gardens**

Water gardens would be constructed as needed to treat surface water runoff from the new access road, all new parking areas, and all new buildings.

**2.2.2.8 Existing Asphalt Surfaces**

Where necessary, existing asphalt road surfaces originally part of the Gehl-Mittelsted farm would be removed prior to or throughout the development of new public use facilities. (All buildings associated with the existing Rapids Lake Maintenance Complex and abandoned farm structures will have been relocated or removed upon completion of the new Rapids Lake Maintenance Complex.)

**2.2.2.9 Overhead Electric Lines**

Minnesota Valley Electric Cooperative (MVEC) has a three-phase overhead line which traverses parallel to the first one-quarter mile of Carver Highlands Drive and continues eastward paralleling the access road. At the edge of the bluff, the main overhead electric line extends due east through the former Gehl-Mittelsted farm, then crosses over the Minnesota River, and continues eastward through the Louisville Swamp Unit. A feeder line extends due south from the main line at the point it crosses over the edge of the bluff. The Refuge would make a request to MVEC to bury a portion of the east-west main line and the

north-south feeder line via trenching and directional boring (See Appendix B, Map #14). Trenched burial of the east-west line would begin just west of the junction of the new maintenance shop driveway with the access road and continue eastward. Eastward burial of this line would directly follow the access road alignment to the proposed developments on the terrace. Continuing due east from the new developments, the line would be directionally bored to cross underneath the Minnesota River. The line would resurface and reconnect to the existing overhead line on the east side of the river. The feeder line, if not abandoned by MVEC, would be buried for an approximate length of one-quarter mile extending south from the new alignment of the main line.

Ground disturbance associated with resurfacing of the underground line east of the Minnesota River would be subject to SHPO consultation and the Section 106 process.

**2.2.2.10 Natural Gas Line**

Currently a buried natural gas line is in place along the first one-quarter mile stretch of Carver Highlands Drive. The Refuge would make a request of Center Point Energy to extend the existing line eastward directly alongside the access road to provide natural gas service to the new developments proposed for the terrace overlooking the Gehl-Mittelsted house. This new gas line would be trenched with the MVEC line. At the same time, a natural gas line would be extended southward from the access road to service the intern bunkhouse, as well as the new maintenance complex. (See Appendix B, Map #14)

**2.2.2.11 Utility Services**

Existing electrical and telephone services would be extended as needed to accommodate the proposed new developments. All utility services would be developed according to Carver County Ordinance No. 47.

**2.2.2.12 Septic and Well Development**

The existing Rapids Lake Maintenance Complex site has a working well which currently provides water to the old maintenance shop. A completely new well would be drilled to provide adequate service to the visitor and education center. Three functional septic tanks (1,250 gallons each) are currently in place. Septic lines and a drain field would be installed to fulfill septic system

requirements for the visitor and education center. If insufficient space exists on the terrace to develop a drain field, a drain field would be developed within the restored prairie west of the bluff which overlooks the Gehl-Mittlested farm. A lift station and septic lines would be installed to complete the system.

#### 2.2.2.13 Green Development

If feasible, a geothermal heating and cooling system would be installed on the mid-level terrace.

#### 2.2.2.14 Historic Structure Preservation

Remnants of the large stone and brick barn foundation situated directly west of the Gehl-Mittelsted house would be preserved in its existing location. This structure would be stabilized by capping the foundation walls.

#### 2.2.2.15 Construct Visitor and Environmental Education Center and Bunkhouse

Areas proposed for construction of a visitor and environmental education center and a bunkhouse have been subjected to archeological surveys with negative results. These locations are, however, within the Mittelsted Farm and construction cannot proceed until adverse effects on the National Register farm, if it is eligible, are resolved in consultation with the SHPO and through the Section 106 process.

### 2.2.3 Alternative A (Proposed Action - New)

The U.S. Fish and Wildlife Service's proposed action is to construct a new visitor and environmental education center on the northern portion of the mid-level terrace. Intern housing would be constructed on grassland near the site of the new Rapids Lake Maintenance Complex. (See Appendix B, Maps #15 and 16)

Development of the new visitor and environmental education center would occur on the mid-level terrace. The site is currently located on a small excavated, topographical terrace approximately five acres in size and contains two pole barns, a stick built house and garage, and a metal quonset. Development at this proposed site would include the construction of an 8,000 square foot visitor and education center inclusive of administrative office space.

Construction of an eight-bedroom bunkhouse would occur on two acres of restored native prairie grass planting off of Carver Highlands Drive near the site of the new Rapids Lake Maintenance

Complex. This site currently has no improvements. A well would be drilled to provide water. Depending upon the soil type present, a septic system consisting either of a drain field or an above-ground mound system would be installed. Natural gas service would be developed for the bunkhouse and also extended to the new maintenance shop. A parking area with the capacity for 18 vehicles would be constructed to access the bunkhouse.

### 2.2.4 Alternative B (No Action)

Under the No Action alternative, no new development would be implemented with this proposal (See Appendix B, Map #17). The existing level of public use development and activities offered by the Service would remain the same at all Refuge units. The increase in noise resulting from new runway operations may lead to a decrease in outdoor activities offered on the Black Dog and Long Meadow Lake Units due to the probable reduction in public utilization. Current public use facilities such as trails and parking lots would continue to be maintained at existing levels. A re-use study of the Gehl-Mittelsted house would be completed and adverse impacts would be mitigated in accordance with 36 CFR 800.

### 2.2.5 Alternative C (Public Uses on Terrace/Bunkhouse near Residence)

This alternative also considers the construction of a new visitor and environmental education center on the northern portion of the mid-level terrace. Intern housing would be constructed adjacent to the site of the new Refuge residence, with a slight modification in location from the original proposed action (Service owned property formerly known as the Lutz Farm). (See Appendix B, Map #18)

Development of a visitor and environmental education center would occur exactly as described in Alternative A.

A two-acre parcel located directly off of Carver County Road 45 one-quarter mile north of the intersection with Carver County Road 50 has been identified as the site for intern housing. Within the original proposed action, the intern bunkhouse would have been constructed on the two acres immediately south of the driveway. Based upon concerns expressed by an adjacent landowner during advanced scoping efforts, the proposed location of the bunkhouse has been reversed with that of the Refuge residence. The modified proposed bunkhouse location is north of the old driveway or approximately 200’ north of the previously proposed site. Historically this area had been used in agricultural production but has since been restored to a native prairie grass

planting. Development at this proposed site would include the construction of an eight-bedroom bunkhouse. The existing driveway would be upgraded with the construction of the Refuge residence. A parking area with the capacity for 18 vehicles would be built. Natural gas service would be extended from utility features developed for the Refuge residence. A well would be drilled to provide water. Depending upon the soil type present, a septic system consisting either of a drain field or an above-ground mound system would be installed.

### 2.2.6 Alternative D (Public Uses Construction Only/Postpone Bunkhouse)

As with Alternatives A and C, this alternative proposes the same construction of a new visitor and environmental education center on the northern portion of the mid-level terrace (See Appendix B, Map #19). The decision to construct intern housing would be postponed and such action would be analyzed at a later time.

## 2.3 Summary of Alternative Actions Table

| **Actions** | **Alternative A** (Proposed Action-New) | **Alternative B** (No Action) | **Alternative C** (Public Uses on Terrace/ Bunkhouse near Residence) | **Alternative D** (Public Uses Construction Only/Postpone Bunkhouse) |
|---|---|---|---|---|
| In Compliance with Funding Agreement | Yes | No | Yes | Partially |
| Under Fee Title | Yes | Not Applicable (N/A) | Yes | Yes |
| Building Construction | Yes, VEEC and intern housing | None | Yes, VEEC and intern housing | Yes, VEEC only |
| Utilities Present | Yes, at VEEC and intern housing | N/A | Yes, at VEEC site & at intern housing | Yes, at VEEC |
| # of Acres Developed | 20 | 0 | 20 | 18 |
| Upland Sites | Yes, both sites | N/A | Yes, both sites | Yes |
| Within View shed of MN River | Yes, at VEEC site | N/A | Yes, at VEEC site | Yes, at VEEC |
| Access to Established Roads | Yes | N/A | Yes | Yes |

(VEEC–Visitor and Environmental Education Center)

# 3. Affected Environment

## 3.1 Elements Common to All Development Alternatives

### 3.1.1 Local Socio-economic Conditions

All alternatives are located on the Rapids Lake Unit, Minnesota Valley National Wildlife Refuge about three and one-half miles southwest of Carver (Carver County), Minnesota. Carver County is part of the seven-county Twin Cities Metropolitan Area which serves as a focal point for agriculture, transportation, industry, finance, trade and technology within the State.

The County's history has deep roots in agriculture through both crop and dairy farming. A rural setting was predominant throughout the County until the mid to late 1980's when an increase in residential development began. Over the last decade, residential development has exploded around the communities of Chanhassen, Chaska, Waconia, Carver and Victoria. Even though the County has also seen growth in light industry and retail/service trades around these communities, most residents commute to jobs within the Twin Cities or adjacent suburbs. Carver County currently has a population of 64,000 people.

### 3.1.2 Land Use

The Rapids Lake Unit and surrounding Carver County area falls within the "Agriculture District" classification of the Carver County Zoning Ordinance No. 47. Any proposed development by the Fish and Wildlife Service under this zoning ordinance would be considered an "Essential Service" under the category of "governmental uses".

The Rapids Lake Unit is bounded on the north and west by single family residences, rural residential neighborhood developments, and agricultural land. On the east and south, the Unit is bounded by the Minnesota River, the Louisville Swamp Unit of the Refuge and Minnesota State Department of Natural Resources land (See Appendix B, Map #20). All aforementioned land lying east and south of the Minnesota River falls within Scott County jurisdiction.

### 3.1.3 Listed, Proposed, and Candidate Species

There is one bald eagle (Haliaeetus leucocephalus) nest located within the Rapids Lake Unit while three bald eagle nests are located within the Louisville Swamp Unit of the Refuge. Currently two of the four nests are actively used. No other Listed, Proposed or Candidate species are known to exist within the Rapids Lake Unit.

The known nest locations are not within close proximity of any alternative sites. Portions of the proposed trail location fall within the tertiary zone (one-eighth to one-half mile) of two nest sites, one active and one inactive. Ample floodplain forest and wetland habitats which could potentially be used by feeding or roosting bald eagles exist within both aforementioned Refuge units.

### 3.1.4 Other Wildlife Species

Forested and grassland habitats attract such species as the nighthawk, wood thrush, vireo, pheasant, turkey, red-tailed hawk, American kestrel, Cooper's hawk, and several warbler and woodpecker species.

Common mammals in the area include whitetail deer, raccoon, shorttail shrew, white-footed mouse, thirteen-lined ground squirrel, plains pocket gopher, eastern chipmunk, and eastern gray, eastern fox, and red squirrel. Red fox, coyote and gray fox are also common to the area.

An array of fish inhabits the Minnesota River such as the northern pike, largemouth bass, walleye, bluegill, crappie, catfish and carp. Numerous species of reptiles and amphibians such as the garter snake and the hog-nosed snake also occur in the area.

Species common to flood plain forest and wetland habitats include the Canada goose, mallard, wood duck, green-winged teal, gadwall, American widgeon, great egrets, double-crested cormorants, great blue heron, green heron, black-crowned night heron, greater and lesser yellowlegs, spotted sandpiper, common snipe, American woodcock, mink, muskrat, beaver, and river otter.

### 3.1.5 Cultural/Paleontological Resources

No paleontological resources have been identified in and around the Rapids Lake Unit.

The National Register of Historic Places database lists 32 properties in Carver County and 18 in adjacent Scott County as of May 2005. Most historic properties are buildings, but farmsteads, bridges, and archaeological sites are included. Of the 50 listed historic properties, only archaeological site "Inyan Ceyaka Otonwe" (21-SC-27, Little Rapids Site) is in the vicinity of the Rapids Lake Unit and the former 1484-acre Mittelsted farm.

A review of standing structures in the view shed of the proposed intern bunkhouse on the former Lutz Farmstead buildings site showed none are present (SHPO No. 2004-2338).

On the former Mittelsted farm and within the Rapids Lake Unit are a number of cultural resources, some of which have been evaluated for eligibility to the National Register of Historic Places and some which have not.

All alternatives (including the no action alternative) have the potential to affect cultural resources. This section covers the status of the cultural resources and addresses how those cultural resources that meet the criteria for the National Register of Historic Places (Section 106, National Historic Preservation Act) or that could contain sacred places and traditional cultural practices, prehistoric human remains, and cultural objects of special importance to Indian tribes (Executive Order 13007; Native American Graves Protection and Repatriation Act).

Determination of effect in accordance with the Section 106 process in 36 Code of Federal Regulations Part 800 likely cannot be completed for all historic properties (properties on or eligible for the National Register of Historic Places) prior to the Regional Director making her decision in accordance with section 1.3 above. Where that is the case, this environmental assessment describes procedures the Service will follow to avoid or otherwise mitigate adverse effects prior to implementation of those elements of the undertaking that could have an adverse effect on historic properties. The Service has contracted for cultural resources studies to determine if historic properties are within the area of potential effect. The area of potential effect is shown on Map 7, being the Rapids Lake Unit in Carver County west of the Minnesota River.

Recent cultural resources studies that have helped identify cultural resources within the area of potential effect:

Maravelas, Paul Scheftel. "The Gehl Farm in San Francisco Township, Carver County." March 1997: Carver County Historical Society, Waconia.

Bailey, Thomas W. and Matthew L. Murray and Barbara A. Mitchell. "Northern Natural Gas Company, Willmar Branch Line Loop Project: Cultural Resources Investigations in Carver and Scott Counties, Minnesota." July 1999: IMAC, Minneapolis.

Pearson, Marjorie. "Gehl-Mittelsted House: Historic Structures Report and National Register Evaluation, Carver County, Minnesota." June 2004: Hess, Roise and Company, Minneapolis.

Wilson, James F. "[Letter Report, Phase I Archaeological Survey of the Proposed Dormitory on the Rapids Lake Unit, Minnesota Valley National Wildlife Refuge, Carver County.]" September 17, 2004: Schoell & Madson, Inc., Minneapolis.

Halloran, Teresa, and Ryan Grohnke. "Phase I Archaeological Reconnaissance Survey of Potential Development Areas in the Rapids Lake Unit of the Minnesota Valley National Wildlife Refuge, Carver County, Minnesota." January 2005: Loucks Associates, Maple Grove.

#### 3.1.5.1 Gehl-Mittelsted Farm

The U.S. Fish and Wildlife Service in 1995 desired to purchase the 1484-acre farm from the Mittelsted family. Federal funds being insufficient, the Minnesota Department of Natural Resources purchased part of the farm, but the entire farm is managed by the Service as part of the Refuge under terms of a memorandum of agreement dated March 22, 1999. Acquisition included at least 26 buildings plus two farmstead buildings sites (Lutz and H03). Consultation with the State Historic Preservation Officer led to the determination that only the 19th century two-story brick house (Mittelsted #1) might be eligible for the National Register of Historic Places (SHPO No. 95-1754). Subsequently many of the other buildings were removed; the Service retained for temporary use some pole barns, a ca. 1930's house and garage, and another garage on the mid-level terrace. Recently the SHPO determined the entire Gehl-Mittelsted Farm (which would include the access roads) needs to be evaluated for significance based on a study underway by the Minnesota Department of Transportation (Susan Granger) to develop criteria for evaluating farms.

The Service will apply the criteria for evaluating farms in consultation with the SHPO. Because any action item described in this environmental assessment could affect characteristics that would qualify the 1484-acre farm for the National Register, the Regional Director cannot make her decision until a determination that the farm is not a historic property or that adverse effects will be resolved through a memorandum of agreement, 36CFR800.6(c).

#### 3.1.5.2 Gehl-Mittelsted Farmstead Buildings Archeological Site (21-CR-132)

The Service contracted with Loucks Associates (Halloran 2005) to conduct an archaeological Phase 1 or reconnaissance survey of 102 acres of portions of the anticipated development area on the Rapids Lake Unit. One of the results of this survey was the identification of site 21-CR-132, a historic period archaeological site encompassing the area of the brick house, privy, stone barn, wood frame barns, and ca. 1930's silos and assorted other structures on the flood plain.

This archaeological site is considered not eligible for the National Register (SHPO No. 2003-3083; 12-29-04) and the undertaking can proceed in terms of impacting this site, 36CFR800.4(d).

#### 3.1.5.3 Gehl-Mittelsted House #1 (CR-SFS-002)

This structure was identified as the two-story brick house, and at time of acquisition the SHPO recommended to the Service that it could be eligible for the National Register (SHPO No. 95-1754). The Service originally anticipated the house would be preserved and the interior remodeled to serve as the primary visitor education center. Consequently the Service contracted with Hess, Roise for a historic structures report, National Register evaluation, and National Register nomination (Pearson 2004). It is possible the current kitchen dates to the 1860's or '70's; Henry Gehl acquired the ca. 300-acre property in 1867. More likely, however, the Gehls constructed the present house in two stages in the 1880's (Pearson pp.12, 16). The National Register nomination identifies the house as eligible under criteria C (architecture) for the period 1870-1900.

Due to flooding and flood plain issues, the Service determined the house could not be used as the visitor contact station in its original location, but would be moved up to the mid-level terrace. The cost of the move, the cost of the remodeling for modern purposes, the need to construct an adjacent building to provide sufficient public use and administrative space, and on the mid-level terrace the house would no longer be in its historic location, led the Service to determine the house would be preserved on its original foundation and location adjacent to the Minnesota River. The house would be "moth-balled" (keep the house

water-tight, minimally heated, and stabilize deteriorating features) and retained as an exterior interpretive feature until a better use could be found in the future when the house would be restored.

At an on-site meeting on May 3, 2005, the SHPO staff observed that if the house could not serve a primary Refuge program purpose (e.g., visitor center, employee housing, administrative offices), it likely would not be preserved in the long term. Major funding cuts for the Service announced on the same day indicated that Service natural resources and wildlife conservation and habitat mandates could preclude funds for even short-term moth-balling the house.

The house is no longer an integral part of the undertaking, but any selected alternative (action and no action) is likely to have an indirect adverse impact on the house because no essential Service program use can be identified for it. Thus the Service will enter into a memorandum of agreement, which probably would include a re-use study of the house, leading to mitigation of probable adverse effects resulting from short and long-term deterioration and destruction of the house. In the meantime the house will be moth-balled.

#### 3.1.5.4 Gehl-Mittelsted Privy

The brick privy is located a short distance downstream from the brick house, perched on the edge of the river so that human waste would flow directly into the river. The privy is in a precarious position and frost heaves and the eroding riverbank threaten its preservation at that location. Engineers have reported that stabilizing the privy in its location is not reasonably feasible, at least in terms of its functional setting. The privy is considered a contributing element to the National Register eligibility of the Gehl-Mittelsted House.

The privy has never been an integral part of the undertaking: no essential Service program use has been identified for it. It cannot be preserved in its present location due to natural processes and relocating it would be an adverse effect. To the extent the privy remains in place, it could be included in the memorandum of agreement for the Gehl-Mittelsted House #1. Fortunately the privy has been recorded and documented (Pearson p.21).

### 3.1.5.5 Stone Barn (Granary) Foundation, Gehl-Mittelsted #8

The Service 1995 acquisition inventory listed building #8, barn, estimated construction date 1884, frame w/metal siding. The study of the Gehl-Mittelsted House identified 19th century barns on the Gehl property: an existing barn (in 1884), too small for Gehl's "immense head of stock," and a new "splendid stone barn" (Pearson p.6). (This information seems inconsistent with an earlier report that Henry Gehl constructed the "large frame granary" in 1878(Maravelas 1995: [14]). This new barn is understood to be #8. All that remains of the barn is the bottom of the stone walls and the foundation: the SHPO determined these barn remains are part of the Gehl-Mittelsted House National Register eligible Property (SHPO No. 2003-3083; 10-29-04).

The ruins of the barn have never been an integral part of the undertaking: no essential Service program use has been identified for it. Selection of any alternative would have no direct effect on the ruins but could have an indirect effect through neglect, although the FWS would prefer to stabilize and preserve the ruins as an exhibit in place. These ruins would be included in the memorandum of agreement.

### 3.1.5.6 Mittelsted Farmstead Buildings

Basically these would be the mid to late 20th century buildings constructed on the flood plain and mid-level terrace and identified within the Service's 1995 inventory as follows:

2) 1.5-story frame house dated to 1930 (with a separate frame garage);
3) Mobile home;
4) Shop building, steel frame, 1985;
5) Machinery shed, metal pole barn, 1977;
6) Machinery shed, metal pole barn, 1991;
7) 4-stall garage, frame with metal siding;
9) Barn, frame;
10) Silo, concrete stave, 1981;
11) Silo, glazed brick, 1937;
12) Silo, glazed brick, 1937;
13) Hay storage shed, metal Quonset, 1938;
14) Grain storage shed, metal Quonset, 1938;
15) Grain bins (10), corrugated metal, 1987;
16) Lowry dump pit w/conveyer, concrete, 1990;
17) 2 or 3 sheds.

The SHPO determined these buildings and structures are not eligible for the National Register (SHPO No. 95-1754). These buildings and structures are within Area C of the archaeological survey: the mid-level terrace is too disturbed to contain intact cultural remains; the lower terrace is comprised of site 21-CR-132 which is not eligible for the National Register (Halloran pp.iv, 9). Removal of the remaining buildings will have no effect on historic properties unless they are part of the criteria that would qualify the Mittelsted Farm as a historic property (see above).

#### 3.1.5.7 Farmstead Buildings Site (21-CR-H03)

The Mittelsted tract included an abandoned farmstead buildings site located 1.5 miles downstream (north) from the Gehl-Mittelsted farmstead, identified by Godfrey (2000:7.3), comprised of an abandoned house and two sheds.

Neither the Carver County Historical Society nor the SHPO (96-2483) identified a historic property affected by removal of the buildings and restoring the area to a natural appearance.

#### 3.1.5.8 Barn (21-SC (sic) [CR]-H54)

The Mittelsted tract included a barn located 1.5 miles north northwest of the Gehl-Mittelsted farmstead, on the part of the Mittelsted tract acquired by the Minnesota Department of Natural Resources. This barn was identified by Godfrey (sec.7.3) although he mistakenly placed it in Scott County.

This barn could be important if it is part of the criteria that would qualify the Mittelsted Farm as a historic property.

#### 3.1.5.9 Lutz Farmstead Buildings Site (21-CR-H01)

The Mittelsted tract included a vacated tenant farmstead comprised of a house, barn, silo, and shed. The Lutz farmstead area has been subjected to two archaeological surveys, both with negative results (Wilson; Halloran p.8). Neither the Carver County Historical Society nor the SHPO (96-2483) identified any historic buildings or any historic properties that would be affected by removing these buildings and restoring the area to a natural appearance.

### 3.1.5.10 Hay Barns Site (21-CR-#313)

Halloran (pp.3, 9) identified the location of two large barn sites based on the mound group 21-CR-1 map by T.H. Lewis in 1889 and published by N.H. Winchell in 1911. The sites are immediately east of mounds 20, 22, 23, and 24, and immediately east of mound 27, on the edge of the bluff. The barns site falls within Halloran's survey area B, but were not investigated because Halloran would not survey into the mound group.

None of the alternatives would affect these hay barns site.

### 3.1.5.11 San Francisco Townsite (21-CR-q)

The Gehl-Mittelsted farm is located within the platted San Francisco townsite. Hudak (1979:172) among others described this first Carver County seat. It was laid out in 1854, contained a warehouse, a store, and a few shanties, and was washed away by the 1863 flood. The two archaeological surveys in the area (Bailey and Halloran) failed to find any recognizable remnants of these structures.

Archaeological surveys of areas of ground disturbance associated with this undertaking have found no archaeological remains associated with the townsite, and the townsite has no characteristics that would qualify it for the National Register.

### 3.1.5.12 LaCroix Ferry Site (21-CR-H04)

The LaCroix Ferry may have operated shortly around 1856 approximately 1 mile downstream from the Gehl-Mittelsted farmstead (Roberts 1993A:237 and Godfrey 2000:7.1).

This site will not be affected by the undertaking.

### 3.1.5.13 San Francisco Mound Group (21-CR-1)

This mound group of 33 mounds was first mapped by Lewis in 1889 and has been described several times. It is located on the edge of the bluff just west of the Gehl-Mittelsted farmstead, acquired by the Service in 1995 as part of the Mittelsted tract. The mounds have been virtually obliterated by barn construction, plowing, Mittelsted access road construction (three routes), and gravel mining. The mounds are within Halloran's Area B archaeological survey, but she intentionally avoided surveying within 50 meters of the estimated location of the mound group (Halloran p.9).

The Minnesota State Archaeologist has conducted several studies and mapping of the group and, with the SHPO archaeologist, determined only fragments of a few north end mounds may remain (5-3-05). If forthcoming consultation with the SHPO does not determine the mound group is not eligible for the National Register, it will be treated through a memorandum of agreement.

The mound group could be considered a sacred site by Native American tribes. Furthermore, Native American tribes might have other sacred sites or areas of traditional cultural practice not known to the Service within the area of potential effect. Thus the Service had notified 13 tribes about the undertaking in an effort to determine if concerns exist.

#### 3.1.5.14 Un-named Mound Group (21-CR-5)

This mound group of reported 40 mounds is located on the edge of the bluff northwest of the San Francisco Mounds. The group is not within any proposed development or disturbance area and has not been investigated since acquired by the Service as part of the Mittelsted tract in 1995.

None of the alternatives would affect this mound group.

#### 3.1.5.15 IMAC 4-2 Woodland Period Habitation Site (21-CR-130)

Bailey located the south end of this group during archaeological survey for the Northern Natural Gas Company, Willmar Branch Line Loop Project. Halloran also located the site as part of the Area C archaeological survey and determined it extends north through the Gehl-Mittelsted House #1, covering about 18 acres. The site appears to be located in part in a wetland basin. Halloran determined the north end of the site is coterminous with historic site 21-CR-132 and has been extensively disturbed by construction and operation of the farm and farmstead buildings.

The central and south parts of the site are considered potentially eligible for the National Register (SHPO No. 2003-3083). Elements of the undertaking (breaking tile line to restore the wetland and installation of interpretive trails) could have an adverse effect on site 21-CR-130. The

Service could conduct an evaluation study of the site to determine if or what parts are eligible for the National Register, or through consultation with the SHPO design these elements of the undertaking to avoid impacts.

#### 3.1.5.16 Cultural/Paleontological Resources Summary

In summary, certain construction and ground disturbing elements of the undertaking will have no effect on historic properties and may proceed if the Regional Director selects an action alternative described in the environmental assessment.

Some elements of the undertaking could have direct or indirect effects on historic properties. Where impacts can be mitigated through avoidance, the Section 106 process will be followed through consultation with the SHPO. Where impacts, especially indirect long-term adverse effects, occur as a result of the undertaking, the Service will immediately enter into a memorandum of agreement with the SHPO, other interested parties, and the Advisory Council on Historic Preservation if it so desires, and probably include a re-use study where appropriate, to resolve adverse effects.

## 3.2 Site 1 (Terrace West of Gehl-Mittelsted House; Alternatives A, C, and D)

### 3.2.1 Site Proximity

The terrace is located due west of the Gehl-Mittelsted house. The existing Rapids Lake Maintenance Complex is located on this terrace. This site is located directly within the view shed of the Minnesota River (See Appendix B, Map #21). T.115N., R.23W., Section 31, SW1/4 SE1/4 SE1/4 and T.114N., R.23W., Section 6, NE1/4 NW1/4 NE1/4.

### 3.2.2 Public Use

The existing maintenance complex and surrounding area is closed to public use.

### 3.2.3 Physical Characteristics

This site consists of relatively flat grassland approximately five acres in size. The area is long and relatively narrow in width surrounded by sloped topographical land features. This site is bordered by upland forest to the west, north and northeast. Refuge personnel routinely mow this site during the growing season to

maintain the area as an administrative site and prevent unwanted weed species from seeding.

A topographic survey was completed in June 2003. Soil testing of the site has not yet been conducted. The soil series typical of bluffs/hills and upland forests is Hayden.

### 3.2.4 Habitat/Vegetation

Vegetation at this site is a mixture of planted Kentucky blue grass, non-native grasses and weeds. Forest habitat which exists around this site consists of northern pin and white oaks. The shrub layer typically consists of hazel, dogwood and blackberries.

## 3.3 Site 2 (Grassland near New Rapids Lake Maintenance Complex; Alternative A)

### 3.3.1 Site Proximity

This proposed development site located off of Carver Highlands Drive near the site of the new Rapids Lake Maintenance Complex consists of 2 acres of grassland beyond the view shed of the Minnesota River (See Appendix B, Map #22). This site is part of a previously fragmented 85-acre expanse of prairie habitat managed by the Refuge. T.114N., R.23W., Section 6, NW1/4 NE1/4 NW1/4.

### 3.3.2 Public Use

Currently, this proposed development site is closed to public use. A substantial amount of hunting occurs on the Rapids Lake Unit. Wildlife viewing and photography are two other popular public uses on this unit. Limited environmental education and interpretive activities have occurred here.

### 3.3.3 Physical Characteristics

This proposed site consists of relatively flat to slightly undulating grassland. A topographic survey has been completed. Soil testing of the site has not been conducted yet. The soil series typical of dry prairies is Estherville. Refuge personnel routinely mow this site during the growing season to prevent unwanted weed species from seeding and maintain the area as grassland.

### 3.3.4 Habitat/Vegetation

This site consists of restored native grasslands which were planted with a grass mixture consisting predominantly of big bluestem, little bluestem, switch grass, side oats grama, blue grama, Kulm's brome, June grass and Indian grass along with 14 forb species.

## 3.4 Site 3 (Existing Site of Gehl-Mittelsted House; Alternative B)

### 3.4.1 Site Proximity

The Gehl-Mittelsted house is situated directly on the bank of the Minnesota River, within the river's view shed. This site is also within the 100 year and 500 year flood plains of the Minnesota River. The Gehl-Mittelsted house has been identified in the final CCP and Refuge Mitigation Plan for use as a visitor contact station (See Appendix B, Maps #23 and 24). T.114N., R.23W., Section 6, NW1/4 NW1/4 NE1/4 NE1/4

### 3.4.2 Public Use

This site is part of the area surrounding the existing maintenance complex which is closed to public use.

### 3.4.3 Physical Characteristics

This proposed site consists of relatively flat to slightly undulating flood plain land bordered by the Minnesota River to the east and sloped upland forest to the west. A topographic survey and soil testing of the site have not yet been conducted. Even though this site is within the flood plain of the Minnesota River, Estherville is the soil series noted for this location.

### 3.4.4 Habitat/Vegetation

Vegetation cover consists predominantly of non-native grasses and weeds. Forest habitat exists along the bluff line of this site consisting of northern pin and white oaks. The shrub layer typically consists of hazel, dogwood and blackberries.

## 3.5 Site 4 (Bluff Top Land Formerly Known as the Lutz Farm-Revised; Alternative C)

### 3.5.1 Site Proximity

This proposed development site formerly known as the Lutz Farm is located directly off of Carver County Road 45 and consists of bluff top land two acres in size, beyond the view shed of the Minnesota River. This site is directly north of the Refuge residence development site. (See Appendix B, Map #25) T.115N., R.24W., Section 36, SW1/4 NE1/4 SE1/4.

### 3.5.2 Public Use

Currently, this area is open to wildlife-dependent public use. A substantial amount of hunting occurs on the Rapids Lake Unit. Wildlife viewing and photography are two other popular public uses on this unit. Limited environmental education and interpretive activities have occurred here.

### 3.5.3 Physical Characteristics

This proposed site consists of gently sloping grassland bordered by sloped upland forest to the north and east. A topographic survey of this site has been completed.

Soil tests to determine primary and secondary locations for the septic system were conducted. These test sites located north of the driveway, identified soils ranging from sand-silt mixtures to sand-clay mixtures to inorganic clays within the first three feet of depth. A poorly graded or gravelly sand soil type was consistently found at depths greater than three feet. This particular soil type exhibits excellent drainage characteristics.

Refuge personnel routinely mow this site during the growing season to prevent unwanted weed species from seeding and maintain the area as grassland.

### 3.5.4 Habitat/Vegetation

This site consists of restored native grasslands which were planted with a grass mixture consisting predominantly of big bluestem, little bluestem, switch grass, side oats grama, blue grama, Kulm's brome, June grass and Indian grass along with 14 forb species. A limited amount of forest habitat including degraded oak savanna exists along the bluff line perimeter of this site consisting of northern pin and white oaks and cedar. The shrub layer typically consists of hazel, dogwood and blackberries.

## 3.6 Site 5 (Flood Plain Forest, Wetlands and River Bluff; Extended Outdoor Environmental Education and Interpretive Facilities)

### 3.6.1 Site Proximity

The proposed development area is Refuge land from the top of the river bluff down slope or eastward to the Minnesota River extending along the entire north-south length of the Rapids Lake Unit. The area, inclusive of Sites 1 and 3, consists of roughly 1,000 acres of flood plain and river bluff land within the view shed of the Minnesota River. This land had been used for both cattle and agricultural crop production during the time it was owned by the Gehl-Mittelsted family. (See Appendix B, Maps #12 and 15**)** T.114N., R.23W., Section 5, W1/2; T.114N., R.23W., Section 6, SE1/4; T.114N., R.23W., Section 7, N1/2 and NW1/4SW1/4; T.115N., R.24W., Section 25, SE1/4SE1/4; T.115N., R.23W., Section 30; and T.115N., R.23W., Section 31, N1/2.

### 3.6.2 Public Use

With the exception of administrative closures surrounding the existing maintenance complex, a sensitive wildlife habitat area, and adjacent to select residential areas, the Rapids Lake Unit is open to wildlife-dependent public use including the following hunting activity according to Minnesota State regulations: spring and fall turkey; archery deer; shotgun and muzzleloader deer; small game; and migratory waterfowl. A substantial amount of hunting occurs on the Rapids Lake Unit along with wildlife viewing and photography. Limited environmental education and interpretive activities have occurred here.

### 3.6.3 Physical Characteristics

The area ranges from relatively flat flood plain to moderately steep river bluffs. Prior to Service acquisition in 1995, Rapids Lake proper was restored through the Conservation Reserve Program. The Service has had to stabilize two water control structures on Rapids Lake as a result of damage from flood events on the Minnesota River since this area became part of the Refuge system. Oshawa is the soil series typical of the flood plain along the Minnesota River.

### 3.6.4 Habitat/Vegetation

The flood plain area contains a variety of habitats from flood plain forest to wetlands and lakes. Cottonwood, silver maple, American elm, willow, boxelder, green ash, and bur oak are some of the tree species found within the flood plain forests. The forest under story predominantly consists of wood nettle. Wetlands in this area range from shallow wet meadows to permanently flooded mixed emergent marshes. Drained wetlands in the form of abandoned crop fields are common place throughout this flood plain area. Rapids Lake proper, Long Lake, and Horseshoe Lake are the prominent bodies of water present.

The river bluff area is forested with northern pin and white oak trees with a shrub layer consisting of American hazel, dogwood, and blackberries. Red cedar is prevalent along the bluff line also.

## 4. Environmental Consequences

### 4.1 Environmental Consequences Common to Outdoor Environmental Education and Interpretive Facility Development

#### 4.1.1 Habitat Impacts

Long term vegetation changes would occur where new facilities are constructed. Approximately 13 acres, predominantly

consisting of flood plain forest along with minor amounts of upland forest, would be impacted by the construction of outdoor environmental education and interpretive facilities. Soils on those 13 acres of land would be impacted during construction activities. The impact to water quality would be minor and short term since siltation fencing would be used to minimize the potential for erosion during all project activities. Those areas not occupied by trails or other outdoor facilities would be restored to native grasses after project completion.

### 4.1.2 Biological Impacts

The construction of outdoor environmental education and interpretive facilities would have short-term temporary impacts on wildlife. Disturbance from these activities could cause feeding disruptions at or adjacent to construction sites. The effect on wildlife would be minor since often times another suitable location to feed would be found. Disturbance to nesting or den activity would be minor due to the limitations placed on construction activities for listed, proposed, and candidate species (see Section 4.1.3). Although impacts from the construction of these facilities would be minor, the future public use and maintenance (i.e. trail mowing, clearing, and cutting) of the facilities would influence the distribution of wildlife. A zone of disturbance would be created around these facilities where little or no feeding or nesting/den activity would occur. It is difficult to quantify the actual impact of this disturbance zone. Furthermore, the construction and subsequent use and maintenance of these facilities may periodically affect the use of Rapids Lake by migratory waterfowl due to disturbance factors. No long term impact to migratory waterfowl is anticipated.

Roughly two miles of abandoned farm roads exist within the Minnesota River flood plain on the Rapids Lake Unit. These abandoned roads would be incorporated into the proposed trail system instead of being restored to flood plain forest habitat. Thus, a total of around thirteen acres, both flood plain and upland forest would be removed through the construction of all outdoor environmental education and interpretive facilities.

### 4.1.3 Listed, Proposed, and Candidate Species

A supplemental Section 7 Consultation pertaining to the development of outdoor environmental education and interpretive facilities was initiated with the Ecological Services Field Office located in Bloomington, Minnesota. Concurrence was obtained on May 5, 2004 that construction of outdoor public use facilities is not likely to adversely affect nesting bald eagles or adversely modify

their critical habitat, as indicated on the Amendment to Intra-Service Section 7 Biological Evaluation Form (Appendix A Supplement).

Portions of the proposed trail location are within the tertiary zone of two known nest sites, one active and one inactive. Due to the flat topography of the flood plain, trail layouts near these two nest sites would be chosen so as to maximize utilization of vegetation to screen the view to and from both nests. The construction of trails, boardwalks, observation platforms, and habitat demonstration sites may require the need to clear portions of mature flood plain forest. Fortunately large sections of the proposed trail system are already in existence in the form of abandoned farm roads. Trail layouts in undeveloped areas would be chosen so as to limit, to the greatest extent possible, the number of mature trees removed. Areas for the construction of boardwalks, observation platforms, and habitat demonstration sites would also be chosen so as to limit the number of mature trees removed. Limiting the timing of outdoor facility construction to late summer and/or fall (July 31 – January 10) would minimize the amount of disturbance to nesting, roosting, or feeding eagles.

After construction, the new outdoor environmental education and interpretive facilities may impact future eagle nesting activity in the Rapids Lake Unit through a reduction of suitable undisturbed areas from which eagles could chose a nest site.

### 4.1.4 Public Use

No additional acres would be permanently closed to public use with the development of these facilities.

The same hunting opportunities would continue to be available upon completion of outdoor facility construction.

Trail development would open up relatively secluded areas of the Rapids Lake Unit to additional sanctioned public uses such as hiking, environmental education, interpretation, etc. During certain times of the year, these uses may have a negative effect on the quality of currently authorized uses such as hunting. Other units of the Refuge with developed trails are presently open to all forms of sanctioned public uses including various types of hunting. Through notification at trailhead kiosks of permitted hunting seasons, conflict between all forms of authorized public use has been minimized while also addressing public safety. User conflict at the Rapids Lake Unit during prominent hunting seasons would be further minimized through the scheduling of environmental

education and interpretive programs within the immediate confines of the VEEC site or at other nearby Refuge units.

The construction of outdoor facilities would restore public use opportunities such as environmental education, interpretation, wildlife observation, and wildlife photography being adversely impacted at the Black Dog and Long Meadow Lake Units as a result of the new runway.

### 4.1.5 Refuge Operations

The development of trails throughout the Rapids Lake Unit would provide administrative access for habitat restoration and management and wildfire suppression.

Conversely, the development of trails in this unit could potentially lead to an increase in law enforcement violations through prohibited uses such as ATV use and mountain bike use off of designated trails. Illegal activity within the Refuge often times results in natural resource damage.

The development of other outdoor public use facilities in addition to new trails would increase the Refuge's maintenance and operations workload. This expanded public use program would greatly benefit from the new maintenance complex being constructed at Rapids Lake. The hiring of additional Refuge maintenance and operational staff positions to cover the additional project work, would be initiated upon completion of the newly constructed public use facilities.

### 4.1.6 Visuals

Outdoor environmental education and interpretive facilities would be constructed within the Minnesota River's view shed. Most of these facilities would have a low profile and either blend into or be screened by the natural surroundings. The visual quality of the area as viewed from the river would be slightly compromised by those features (e.g. outdoor classroom) where blending or screening would not be possible.

### 4.1.7 Environmental Justice

No minority or low-income populations would be displaced or negatively affected in any way through the construction of outdoor environmental education and interpretive facilities. Minority or low-income populations may benefit from the opportunity to utilize new or improved and free of charge public use facilities.

### 4.1.8 Cumulative Impacts

Proposed outdoor facility construction and subsequent use/maintenance would result in the net loss of up to 13 acres of flood plain and upland forests along with a corresponding zone of disturbance around all new facilities. This represents a minor contribution to adverse cumulative impacts. Any additional reduction of these habitat types and further creation of disturbance zones within these habitat types by the Refuge or other agencies could potentially have adverse cumulative impacts. However, a biological goal of the Refuge as stated in the final CCP is to provide 4,700 acres of flood plain forest and 1,000 acres of upland forest along the Minnesota River and its major tributaries by 2017. This estimated acreage pertains to lands only within the original authorized boundary of the Refuge and would be primarily accomplished through on-going Refuge habitat restoration efforts. Future land acquisition along the river within the expanded Refuge boundaries would provide even more flood plain and upland forest habitat. Overall, a positive cumulative effect would be noted for these habitat types and the wildlife species dependent upon them.

Cumulatively, the added removal of mature flood plain forest habitat may have an adverse effect on Listed, Proposed, and Candidate species through the reduction of critical habitat. However, as previously mentioned, habitat restoration work and future land acquisition would provide additional flood plain forest habitat throughout the Refuge and result in a positive cumulative effect on bald eagles. The restoration of wetland habitats for environmental education and interpretive purposes or as a result of future land acquisition would have long term beneficial effects to eagles on the Refuge as well.

Illegal activity without curtailment resulting in natural resource damage would have a negative cumulative effect on the quality of wildlife habitat.

Erosion and subsequent sedimentation from the construction of outdoor public use facilities is not expected to have any long term cumulative impacts. The cumulative impacts resulting from similar projects implemented by the Service or other agencies would be minor because of the prescribed mitigation measures.

Cumulative impacts to the visual quality of the Minnesota River's view shed may be noted through the repeated construction of highly visible outdoor public use facilities by the Service and other agencies.

Developments of this nature completed on other wildlife lands by the Service and other agencies, could potentially have negative cumulative impacts to other wildlife-dependent users (e.g. hunters) of those lands. However, future land acquisition by the Service would ultimately increase the amount of Refuge land available for public use by over 10,000 acres. Furthermore, construction of outdoor facilities by the Service and other agencies to maintain or improve their overall public use programs would have a positive cumulative effect.

## 4.2 Alternative A (Proposed Action-New)

### 4.2.1 Habitat Impacts

The construction of a new visitor and environmental education center, inclusive of parking facilities and three-stall garage, would impact three acres of Kentucky blue grass, other non-native grasses, and weeds. Approximately two acres of restored prairie would be impacted by the construction of the intern bunkhouse and an additional two acres of restored prairie would be impacted by the construction of the new access road. Soils on approximately seven acres of land would be impacted during these construction activities. The removal of asphalt from existing road surfaces would disturb soils on approximately two acres while the combination of new road construction through the abandoned quarry and quarry rehabilitation would disturb soil over an additional two acres of land. The impact to water quality would be minor and short term since precautions such as the use of siltation fencing, would be taken to minimize the potential for erosion during all project activities. Those areas not occupied by buildings, roads, trails, and/or parking lots would be restored to native grasses after the completion of all projects. The development of water gardens would also minimize the impact to water quality from all buildings and parking areas.

### 4.2.2 Biological Impacts

This alternative would have short-term temporary impacts on wildlife during the construction of the visitor and environmental education center, intern bunkhouse and new access road in addition to quarry rehabilitation and asphalt removal. Disturbance from these activities could cause feeding disruptions and/or nest abandonment during critical nesting periods for ground nesting birds at or adjacent to project sites. The effect on wildlife would be minor since often times another suitable location to feed and/or re-nest would be found. Development of the new maintenance complex resulted in the initial fragmentation of an 85-acre expanse of restored prairie habitat. Construction of the intern bunkhouse in

close proximity to the new maintenance complex would also have a negative effect on wildlife through further fragmentation (eight to ten acres) of this prairie habitat. After construction, use of the intern bunkhouse would result in a zone of wildlife disturbance around the structure where little or no feeding or nesting/den activity would occur. It is difficult to quantify the actual impact of this disturbance zone.

Construction of the intern bunkhouse and new access road would remove approximately four acres of restored prairie from the Refuge. The construction of the visitor and education center would remove approximately five acres of non-native grassland. Conversely, rehabilitation of the abandoned quarry and the short section of abandoned road bed would restore approximately two acres of native grassland to the Refuge. Even though quarry rehabilitation would address erosion and sedimentation concerns, such project work would also remove up to one acre of existing and future nesting habitat for swallows.

### 4.2.3 Listed, Proposed, and Candidate Species

A Section 7 Consultation with Dan Stinnett of the Ecological Services Field Office located in Bloomington, Minnesota, has indicated there is only one listed species, the bald eagle, present near Sites 1 and 2. There may be some temporary disturbance to roosting or feeding eagles on the Refuge as a result of the proposed action. Implementation of the proposed action would not negatively impact the relative abundance of flood plain forest or wetland habitat. The known nest locations are not within close proximity of the proposed project sites. Concurrence was obtained on July 24, 2003 and May 26, 2005 that implementation of the proposed action is not likely to adversely affect nesting bald eagles and/or their critical habitat, as indicated on the Intra-Service Section 7 form (Appendix A).

### 4.2.4 Public Use

Approximately 15 acres would be re-opened to public use (excluding hunting) at Sites 1 and 3 with the construction of the VEEC at Site 1. Conversely, approximately five acres would be closed to public use with the construction of the intern bunkhouse at Site 2.

The construction of a new visitor and education center would serve to restore visitor services opportunities being adversely impacted at the Long Meadow Lake Visitor Center as a result of over-flights from the new runway. Also, when planning for off-site activities, schools generally transport multiple classrooms to a particular

facility in an attempt to maximize the benefit of their limited transportation funding. The Service would have a new visitor and education center with the optimum square footage to adequately accommodate requests from private, public, and home schools for educational programming in addition to the general public's desire for educational and interpretive experiences.

### 4.2.5 Refuge Operations

The visitor and environmental education center would provide adequate office space for the number of Refuge employees required to support an expanded public use program and management of new Refuge lands.

An intern bunkhouse located at Site 2 would serve to deter acts of theft, vandalism, and/or arson to public use facilities at Site 1 and at the new maintenance complex.

Site 1 is located beyond the 500 year flood plain delineation. The potential exists for this area to flood under the right set of extreme circumstances.

### 4.2.6 Visuals

The construction of a visitor and education center and garage at Site 1 would occur within the view shed of the Minnesota River. The construction of these facilities would have a negative impact on visual quality. Facility design would attempt to minimize building profiles and possible negative effects. Native construction materials would be selected so as to complement the brick house and the site's natural features. The parking area would be located so as to be screened by the visitor and education center. The detached garage would be screened by a man-made earthen berm.

Even though other rural residential housing is located nearby Site 2, the development of an intern bunkhouse there would have a negative effect on the visual quality of the area by the introduction of another building on the open prairie grassland. The architectural design of this building would strive to match the existing rural character of the area. Additionally, the Service would plant approximately 16 – seven to eight feet tall bur oak trees to screen both the bunkhouse and maintenance complex as viewed from nearby homes.

### 4.2.7 Environmental Justice

No minority or low-income populations would be displaced or negatively affected in any way by the proposed action. Minority or

low-income populations may benefit from the opportunity to utilize a new and free of charge visitor facility.

### 4.2.8 Cumulative Impacts

Overall, planned construction activities balanced with planned restoration activities would result in the net loss of approximately seven acres of grassland habitat along with a zone of disturbance around the new bunkhouse. Further incremental decreases in the overall amount of native grassland and further creation of disturbance zones could result in a negative cumulative effect on wildlife species dependent upon this habitat type. Approximately eight to ten acres of habitat fragmentation would occur. If the Refuge or other agencies did similar projects which further increased the amount of habitat fragmentation, cumulatively the impacts could be adverse. However, the Refuge's biological goal as stated in the final CCP emphasizes protection and restoration of wildlife habitats to provide for 8,700 acres of restored grassland by the year 2017. This acreage estimate includes lands within the original authorized boundary of the Refuge and existing and future Waterfowl Production Areas. Future land acquisition along the Minnesota River within the expanded Refuge boundary would provide additional native and/or restored grasslands. A negative cumulative impact to cliff-dwelling species such as swallows would occur if the Service and other agencies implemented similar projects without replacing or restoring comparable habitat.

No long term cumulative effects would occur to Listed, Proposed, and Candidate species due to activities associated with this alternative or similar action by other agencies.

Sedimentation resulting from project-related erosion and newly developed parking areas is not expected to have any long term cumulative impacts. If other agencies did similar construction activities, the cumulative impacts would be minor because of the stipulated management requirements and mitigation measures. All restoration and rehabilitation activities whether implemented by the Service or other agencies, focused on exposed soils and untreated surface runoff would result in positive long term cumulative effects on water quality.

The long term visual quality of the area would be cumulatively impacted if the Service and other agencies repeatedly constructed buildings within the view shed of the Minnesota River and within relatively open prairie grasslands without project mitigation.

A net total of approximately 10 acres would become available for select public use opportunities. Decisions by the Service and other agencies to open previously closed public land would have positive cumulative impacts to wildlife-dependent users of those lands. Planned land acquisition by the Service would also have a positive effect on public use by increasing the amount of public land available for wildlife-dependent use by 10,000 acres. Moreover, a positive cumulative impact would be noted by the construction of new visitor and education centers by the Service or other agencies in an effort to maintain their public use programs.

## 4.3 Alternative B (No Action)

### 4.3.1 Habitat Impacts

No new development would occur. The impact on vegetation would not change. There would not be any additional impacts to soils or water.

### 4.3.2 Biological Impacts

The impact on wildlife would remain the same.

### 4.3.3 Listed, Proposed, and Candidate Species

There would be no effect since no new development would be implemented.

### 4.3.4 Public Use

No additional acres would be permanently closed to public use with this alternative.

Utilization of the Refuge's visitor services program at the Long Meadow Lake Visitor Center would lessen.

### 4.3.5 Refuge Operations

There would be no impact on the workload of Refuge operations with this alternative.

Office and housing space for the Refuge staff needed to manage new Refuge lands would not be provided under this alternative.

The No Action alternative would not meet the intent of the Memorandum of Agreement, dated 9/21/98, and the Funding Agreement, dated 9/14/00, between the Service and MAC. The intent of the final Comprehensive Conservation Plan for Minnesota Valley National Wildlife Refuge would not be met.

### 4.3.6 Visuals

The impact on the visual quality of the area would not change.

### 4.3.7 Environmental Justice

Low-income or minority populations could potentially be impacted by the lack of opportunities to use new or improved and free of charge public use facilities.

### 4.3.8 Cumulative Impacts

No long term cumulative effects would occur to Listed, Proposed, and Candidate species.

Unaddressed sediment and erosion problems connected to existing exposed soils and untreated surface runoff would lead to cumulative water quality degradation of the Minnesota River.

If the Service or other agencies continually failed to comply with authorized agreements, management plans, and other such documents, those actions or inactions would have a negative cumulative impact on public trust.

If the Service or other agencies made decisions to not replace adversely impacted public use buildings, a negative cumulative impact would be recognized.

## 4.4 Alternative C (Public Uses on Terrace/Bunkhouse near Residence)

### 4.4.1 Habitat Impacts

Same as Alternative A except that the two acres of restored prairie impacted by the construction of an intern bunkhouse would be in a different location.

### 4.4.2 Biological Impacts

Same as Alternative A except that the proposed bunkhouse construction would only result in the fragmentation of five acres of prairie habitat. This proposed development combined with the construction of the Refuge residence would result in a total of ten acres of prairie habitat being fragmented.

### 4.4.3 Listed, Proposed, and Candidate Species

A Section 7 Consultation with the Ecological Services Field Office has indicated there is only one listed species, the bald eagle, present near Sites 1 and 4. The known nest locations are not within close proximity of the proposed project sites. Implementation of this alternative is not likely to adversely affect nesting bald eagles and/or their critical habitat.

### 4.4.4 Public Use

Same as Alternative A with the exception no additional acres would be permanently closed to public use with the construction of the intern bunkhouse (Approximately 15 acres, inclusive of Site 4, would be permanently closed to public use upon completion of the Refuge residence.).

### 4.4.5 Refuge Operations

Same as Alternative A except that construction of the bunkhouse at Site 4 would only meet the Service's need to develop similar Service functions adjacent to each other and would not serve to deter illegal activity at other Service facilities.

### 4.4.6 Visuals

Same as Alternative A with the exception there would be no effect on the visual quality of the area resulting from the construction of an intern bunkhouse at Site 4. Buildings were previously present here and other rural residential housing is directly south and west of the site. The Refuge residence is being constructed immediately south of the proposed bunkhouse site. Architectural designs for the bunkhouse would complement those of the Refuge residence and rural characteristics of Carver County. Furthermore, instead of a two-story design to achieve the necessary square footage, a one-story design with a full basement would be used. The Service would also plant bur oak trees to screen both the bunkhouse and residence.

### 4.4.7 Environmental Justice

Same as Alternative A.

### 4.4.8 Cumulative Impacts

Same as Alternative A with the exception that a net total of approximately 15 acres would become available for select public use opportunities.

## 4.5 Alternative D (Public Uses Construction Only/Postpone Bunkhouse)

### 4.5.1 Habitat Impacts

Same as Alternative A with the exception that two acres of restored prairie would not be impacted by the construction of an intern bunkhouse.

### 4.5.2 Biological Impacts

Same as Alternative A although no habitat fragmentation would occur and a zone of wildlife disturbance would not be created.

Construction of the visitor and education center would remove approximately five acres of non-native grassland while construction of the new access road would remove approximately two acres of restored prairie. Approximately two acres of grassland habitat would be restored through the rehabilitation of the abandoned quarry and the short section of abandoned road bed. Up to one acre of existing and future nesting habitat for swallows would be removed as a result of quarry rehabilitation work.

### 4.5.3 Listed, Proposed, and Candidate Species

A Section 7 Consultation with the Ecological Services Field Office has concurred that implementation of this alternative is not likely to adversely affect nesting bald eagles and/or their critical habitat.

### 4.5.4 Public Use

Same as Alternative A with the exception no additional acres would be permanently closed to public use at this time since the decision to construct intern housing would be postponed.

### 4.5.5 Refuge Operations

Same as Alternative A except the decision to construct intern housing would not be considered. No new facility would exist to deter illegal activities either at the new public use buildings or at the new maintenance complex. The Refuge's capability to attract interns to support its environmental education and interpretation and operations and maintenance programs would be negatively impacted.

### 4.5.6 Visuals

Same as Alternative A with the exception of no visual quality impacts as a result of intern bunkhouse construction.

### 4.5.7 Environmental Justice

Same as Alternative A.

### 4.5.8 Cumulative Impacts

Same as Alternative A with the following exceptions: a net loss of approximately five acres of grassland would be noted with the implementation of this alternative; a negative cumulative impact on visual quality within open prairie grasslands would not occur; and a net total of approximately 15 acres would become available for select public use opportunities.

## 4.6 Summary of Environmental Consequences by Alternative

| **Impacts** | **Alternative A** (Proposed Action-New) | **Alternative B** (No Action) | **Alternative C** (Public Uses on Terrace/ Bunkhouse near Residence) | **Alternative D** (Public Uses Construction Only/ Postpone Bunkhouse) | **Outdoor EEI Facilities** (Constant among all alternatives) |
|---|---|---|---|---|---|
| Site Adequate in Size | Yes | N/A | Yes. Potential is limited for bunkhouse. | Yes | Yes |
| Buildings Adequate in Size | Yes | N/A | Yes | Yes | N/A |
| Meets Zoning Ordinance | Yes | N/A | Yes | Yes | Yes |
| Flood Potential | Beyond 500 year flood plain | Within 500 year flood plain | Beyond 500 year flood plain | Beyond 500 year flood plain | Within 500 yr flood plain |
| Impact on Public Use | 10 acre net increase in open public land | Utilization of current visitor services program at existing Visitor Center would lessen | 15 acre net increase in open public land (15 acres previously closed due to residence construction) | 15 acre net increase in open public land | Negative impact on hunting |
| Impact on Visual Quality | No impacts with mitigation | None | No impacts with mitigation | No impacts with mitigation | Slight negative impacts |
| Hazardous Materials Present | No | No | No | No | No |
| Impact on Wildlife | 7 acre direct habitat loss. 8-10 acre habitat fragmentation | No habitat loss | 7 acre direct habitat loss. 10 acre habitat fragmentation. | 5 acre direct habitat loss. | 13 acre direct habitat loss with linear disturbance zone |
| Impact on LPC Species | None | None | None | None | Impact to existing nests mitigated. Future habitat reduction. |
| Water Quality Impact | Minimal | Moderate degradation | Minimal | Minimal | Minimal |
| Illegal activity | Potential for increase with deterrent | No change | Potential for increase | Potential for increase | Increased potential |

## 5. List of Preparers

The following individuals cooperated in the preparation of this document:

Team Leader: Linda Malz, Park Ranger, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota – author, research, data collection, editing, and etc.

Consultant: Jeff Gosse, Regional Environmental Coordinator, U.S. Fish and Wildlife Service, Ecological Services Region 3 Regional Office, Fort Snelling, Minnesota – Gave author guidance in Fish and Wildlife Service procedures for preparation of NEPA documents, editing, revision, coordination and information.

Team Member: Tom Kerr, Acting Refuge Manager, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota – Project Manager, editing, revision and etc.

Team Member: Chris Trosen, Refuge Operations Specialist, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota – provided map preparation.

Team Member: John Dobrovolny, Regional Historic Preservation Officer, U.S. Fish and Wildlife Service, Region 3 Regional Office, Fort Snelling, Minnesota – Cultural resource information and NEPA compliance.

Team Member: Nick Rowse, Wildlife Biologist, U.S. Fish and Wildlife Service, Bloomington Ecological Services Field Office, Bloomington, Minnesota – Provided wildlife and vegetation information, and conducted Section 7 Intra-Service Consultation.

Former Team Member: Richard Schultz, Refuge Manager, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota – Project Manager, editing, revision and etc.

Contributor: Terry Schreiner, Refuge Operations Specialist, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge, Bloomington, Minnesota – Provided technical data and editing.

Contributor: Paul Evenson, Engineer, U.S. Fish and Wildlife Service, Region 3 Regional Office, Fort Snelling, Minnesota – Provided engineering and soils information.

## 6. Consultation and Coordination with the Public and Others

The following consultation and coordination efforts were conducted in the preparation of this document:

Steve Just and Paul Moline, Department of Planning and Zoning, Carver County, Chaska, Minnesota – Provided Carver County Zoning Ordinance No. 47, and interpretation and guidance on zoning compliance.

Refuge Manager, Rick Schultz provided a field tour of proposed public use facility development on May 14, 2003, for Marty Walsh, Carver County Parks Commission.

On September 11, 2003, Refuge staff met with Minnesota Department of Natural Resources State Parks staff to share information about the proposal to develop public use facilities on the Rapids Lake Unit. No concern was stated regarding the proposed development of a visitor and environmental education center. Concern was expressed over the proposal to construct a foot bridge over the Minnesota River, near the proposed visitor and education center, to link the Rapids Lake and Louisville Swamp Units of the Refuge.

The Regional Historic Preservation Officer, U.S. Fish and Wildlife Service, notified ten Native American tribes about the project and the archaeological survey via letter dated March 21 and 26, 2003 to learn of cultural sites important to the tribes.

Metro-wide media outlet distribution of news release issued by the Service on March 2, 2004, seeking comments from the public between the dates of March 3, 2004 and April 12, 2004, on the proposed alternatives for developing public use facilities on the Rapids Lake Unit. The press release was also sent to: 2nd District Representative; Carver County Parks; Carver County Department of Planning and Zoning; Minnesota State Historic Preservation Office; Minnesota State Archaeologist; San Francisco Township; Minnesota Valley National Wildlife Refuge Trust, Inc.; Minnesota River Valley Audubon Chapter; Friends of Minnesota Valley; Minnesota DNR Parks and Recreation; and Dan and Kris Robb. Three written and two verbal public comments were received during this advanced scoping effort from the following individuals: Peggy Hughes (San Francisco Township), Douglas Claycomb, Kevin Lundquist, Dan and Kris Robb, and Steve Weston (Minnesota River Valley Audubon Chapter).

The Refuge made a request of San Francisco Township Board on March 22, 2004 to schedule a formal presentation of proposed public use development alternatives at their monthly board meeting. The Board declined the offer.

On April 12, 2004, Refuge staff presented the proposal for public use development at the Rapids Lake Unit to the City of Carver's Park and Recreation Board. Board members in attendance included: Robert Low, Harlan Thaemert, Deb Kerry, Paul Reimer, Daryl Ziegler, Kerry Peterson, Mike Webb, Paul Schultz, and Diane Perry.

The Refuge was contacted on August 16, 2004 by Paul Moline, Carver County Planning and Zoning. Mr. Moline requested a copy of the site plans for the intern bunkhouse development to verify that Carver County Water Management Rules were being considered during development. Upon completion, a copy of the bunkhouse site plans will be provided to the Department of Planning and Zoning.

In September, 2004, the Refuge received approximately six comments regarding public use facility development in response to a Draft Supplemental EA for a Maintenance Operations Complex and Residence.

An open house was held by the Service on October 13, 2004 at the new Rapids Lake maintenance shop to share information and address questions regarding the proposed alternatives for public use facility development on the Rapids Lake Unit. Approximately 15 people attended this session.

On March 3, 2005, Linda Malz was contacted by Tim Gohla regarding previous developments and proposed developments for the Rapids Lake Unit. Mr. Gohla expressed the viewpoint that he does not want to see excessive trail development of this unit of the Refuge. Mr. Gohla requested that Refuge staff review the decision to construct trails throughout this area.

Kevin Lundquist and Daniel Robb, adjacent landowners, Carver, Minnesota. On April 18, 2005, Tom Kerr, Acting Refuge Manager, called Kevin Lundquist and Daniel Robb. Mr. Robb was unavailable so a message was left for a return telephone call. Tom Kerr explained to Kevin Lundquist the Service's proposal to develop an intern bunkhouse on a two acre parcel immediately adjacent to the new maintenance complex, which is approximately one-third mile southeast of Mr. Lundquist's home. Tom Kerr also shared the Service's plan to mitigate any development at this site. Tom Kerr also explained the Service's extensive effort to determine the feasibility of developing an intern bunkhouse at the site of the existing maintenance complex. Mr. Lundquist expressed no concern about the proposed alternative. On April 22, 2005, Tom Kerr was able to share this same information with Kristine Robb. Mrs. Robb expressed her preference to have had all new Refuge facilities at the Rapids Lake Unit, including the residence, constructed in one location, preferably at the former Gehl-Mittelsted farm site.

On April 18, 2005, the Service (Tom Kerr and Linda Malz) along with Deb Loon, Executive Director for the Minnesota Valley National Wildlife Refuge Trust, met with board members and interested residents of San Francisco Township, Carver County, Minnesota, to give them information on the proposed action and alternatives for this project. During the presentation, both board members and residents asked questions specifically about the project and about miscellaneous Refuge-related issues. Individuals in attendance included: Maidie Felton, Gerald Scott, Larry Schmidt, Peggy Hughes, Denise Anderson, Larry Jeurissen, Mike Kirk, Robert and Cheryl Perkins, Terry Dircks, Brian and Connie Henry, Mike Gottwalt, David Hall, Joe Walto, Mike Sobraske, Roger Falkenstein, Chris

Dockter, Brenda Harri, Larry and Bonnie Wigfield, Ken Turnquist, Ken Wolter, Don Olson, Bob and Cindy Olson, Fred and Becky Gordon, James Cullen, Mike Loomis, Francis Schatz, Dave Hellriegel, and Adolph Illic.

On Tuesday, May 3, 2005, Service staff and three private contractors provided an on-site project orientation for the State Archaeologist and staff from the State Historic Preservation Office (SHPO). Details of the project proposal were presented and discussed. Individuals in attendance included: Mark Dudzik, State Archaeologist; Dennis Gimmestad, SHPO; Susan Roth, SHPO; Kelly Gragg-Johnson, SHPO; Mark Buechel, SHPO; and Scott Anfinson, SHPO.

A subsequent meeting with SHPO staff was held on Wednesday, May 11, 2005, to clarify cultural resources concerns and discuss the Service's responsibilities with respect to Section 106 requirements of the National Historic Preservation Act.

Refuge staff will host another open house (date and location to be announced) sometime during the first two weeks of the 30-day Draft EA public comment period, to share information and address questions regarding the proposed public use facility development on the Rapids Lake Unit.

Public input was also solicited through the CCP planning process through various news releases and public open house meetings.

## 7. Public Comments on Draft EA and Responses

This section will contain comments received on the Draft EA and the Service's response to those comments.

The environmental assessment is being made available for 30-day public review and in a public meeting. Even though the National Environmental Policy Act and its regulations do not require this level of review at this stage of planning, the National Historic Preservation Act implementing regulations and the National Wildlife Refuge System Improvement Act require the agency provide opportunity for public involvement for historic properties and for compatibility determinations.

Thus through this environmental assessment the public is being informed of the final planning for natural resources interpretation and environmental education and public use on the Rapids Lake Unit and the resulting anticipated environmental effects. The public is being asked to identify major alternatives, substantive environmental impacts, and substantive related issues the Service may appear to have overlooked or not adequately addressed.

## 8. References

Final Comprehensive Conservation Plan and Environmental Assessment, U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge and Wetland Management District, September 2004.

Fulfilling the Promise – The National Wildlife Refuge System, U.S. Fish and Wildlife Service, March 1999.

National Wildlife Refuge Improvement Act of 1997 (P.L. 105-57)

## Appendices