United States Department of Agriculture | **Forest Service** | **Midewin National Tallgrass Prairie** | **30239 South State Route 53**
Wilmington, IL 60481
(815) 423-6370

File Code: 1950-1
Date: February 25, 2003

Dear Friends of Midewin:

The Environmental Assessment (EA) for construction of a Hotshot fire crew facility at the Midewin National Tallgrass Prairie is now available for public comment over the next 30 days. We propose to construct a permanent facility for the Midewin Interagency Hotshot crew, an elite firefighting resource assigned to initial and extended attack on wildland fires throughout the nation. The project area is located immediately north of, and adjacent to, the new Supervisor's Office (SO) along Illinois State Highway 53. The temporary modular buildings currently used for Hotshot operations would be dismantled and that site, located 1-1/2 miles north of the SO, would be made available for future restoration. Approximately 12 acres of woody vegetation would be removed to reduce fragmentation within a 325-acre tract located 2 miles northeast of the SO. This area of improved grassland habitat would mitigate for any short-term, localized loss of grassland bird habitat within or near the Hotshot construction site.

On December 3, 2002 Midewin initiated a public comment period to scope for issues regarding the proposed project. The scoping period ended January 6, 2003. Public comments received were used to identify significant issues and mitigation measures, and to develop the alternatives.

To request a copy of the Environmental Assessment for the Midewin Hotshot facility, please contact Enid Erickson at (815) 423-6370 or email at eerickson@fs.fed.us.

The 30-day public comment period for this EA closes on Friday, March 28, 2003. All public comments on the EA will be addressed in my final decision. A Decision Notice will be published after considering all public comments. As the Prairie Supervisor, I am the Forest Service deciding official for this project.

Comments may be sent via email to Enid Erickson or mailed to her at the address above. Please be sure to include your name, address, organization represented, and title; title of the document you are commenting on; and specific facts and supporting reasons regarding your comments.

Copies of the Decision Notice will be mailed to those who submit comments or request copies. For further information concerning this project, please contact Enid Erickson at (815) 423-6370.

Sincerely,

/s/ Renee Thakali (for)
Prairie Supervisor,
Midewin National Tallgrass Prairie

Environmental Assessment
For
Midewin Hotshot Fire Crew Facility

MIDEWIN NATIONAL TALLGRASS PRAIRIE
Will County, Illinois

February 2003

Responsible Official
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MAPS
Figure 1. Hotshot Facility Project Location Map

1.0 EXECUTIVE SUMMARY

The Forest Service at the Midewin National Tallgrass Prairie (Midewin) proposes to construct a permanent fire crew facility to support the Midewin Interagency Hotshots, an elite firefighting crew based at Midewin, and the only such crew in the Midwest. This Environmental Assessment (EA) analyzes the effects of the proposed construction.

Through external public scoping and internal scoping of Midewin resource specialists, issues were raised that helped define the alternatives for this project. Three alternatives have been developed: Alternative 1 would allow construction of a Hotshot facility on no more than 2 acres of a 5.9-acre parcel that is to be transferred from the U.S. Army to Midewin. This parcel is located north of, and adjacent to, the new Supervisor's Office (SO) along Illinois State Highway 53. Alternative 2 is identical to Alternative 1, but also analyzes removal of woody vegetation consisting of approximately 12 acres of treelines and fencerows that fragment 325 acres of grassland bird habitat located 2 miles northeast of the proposed Hotshot facility construction area. Alternative 2 would mitigate for any short-term, localized loss of this habitat type in or near the Hotshot construction site. Alternative 3 is a No Action Alternative. Under the No Action Alternative, construction would not take place on this parcel, and the temporary modular buildings currently used as the Hotshot base would continue to be utilized, pending a permanent location.

Alternative 2 is the Forest Service *Preferred Alternative.* Under the preferred alternative, in Fiscal Year (FY) 2003 the office, garage, and parking lot would be constructed. The Hotshot office construction limit would impact 1/3-acre of the 5.9-acre parcel, and would straddle it and the parcel immediately south, which was previously analyzed for construction of the SO. The garage would be constructed entirely within the existing SO parcel. Future construction of crew quarters, an exercise area, and parking lot on approximately two acres of the transferred parcel would be phased over several years as funding becomes available. Removal of 12-acres of fragmenting treelines and fencerows for mitigation of grassland bird habitat loss would begin immediately.

This EA was completed in compliance with the National Environmental Policy Act and other relevant Federal and state laws and regulations. This EA is consistent with, and tiered to, the Midewin Prairie Plan (2002), which contains direction for the long-term management of Midewin. It discloses the direct, indirect, and cumulative environmental impacts that would result from any of the three Alternatives analyzed in this EA. This EA is also tiered to the EA for the Administrative Site (SO, 2000).

Midewin's natural and heritage resources have been addressed, and the environmental consequences of the alternatives on these resources have been analyzed. Based on this EA, the Prairie Supervisor will decide whether or not to authorize construction of a Hotshot fire crew facility.

2.0 PURPOSE AND NEED

An interdisciplinary team (ID Team) of resource specialists used a systematic approach for analyzing the proposed project and alternatives to it, estimating the environmental effects, and preparing this EA. The planning process complies with NEPA and the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508).

2.1 PROJECT AREA

The Midewin National Tallgrass Prairie is located in Will County, Illinois, about 45 miles southwest of Chicago, 15 miles south of Joliet, and 3 miles north of Wilmington, Illinois. The enactment of the Illinois Land Conservation Act of 1995, established Midewin. Midewin presently includes 15,189 acres of land that were part of the former Joliet Army Ammunition Plant (Joliet Arsenal). Approximately 3,000 additional acres are legislated to be transferred to the Forest Service pending cleanup, but currently remain under the administration of the U.S. Army.

Midewin provides habitat for a rich assemblage of plants and animals, including three species on the Federal list for Threatened and Endangered species, over twenty species listed by the State of Illinois as Threatened or Endangered, and twenty-six species recognized as Regional Forester Sensitive Species (RFSS) in the U.S. Forest Service Eastern Region (R-9).

The area proposed for construction of the Hotshot facility is located just east of Illinois State Route 53 and immediately north of the Supervisor's Office. The site is found in the western portion of Section 18, T.33 N., R.10 E., Will County, Illinois (Figure 1 shows the proposed site location). The area proposed for grassland habitat mitigation is located across (east-west) the center of Section 5, T.33 N., R.10 E., approximately two miles north-northeast of the SO on the east side of Midewin (see Figure 1 for locations of proposed actions).

2.2 PURPOSE AND NEED FOR ACTION

The primary purpose of constructing a Hotshot facility at Midewin would be to function as a fire training and mobilization center for the Midewin Interagency Hotshots. Adequate space is needed for fire training, and sufficient space is not available at the temporary modular office facility where the Hotshots are currently based or in the newly constructed Supervisor's Office.

Firefighting capabilities are integral to the Forest Service mission of "caring for the land and serving people." The Hotshots are a firefighting resource assigned to initial and extended attack on wildland fires across the nation. An appropriate facility would allow for training and quick mobilization of this elite firefighting crew. Midewin facilitates this need because of its proximity to two major airports and the interstate highway system.

While the creation of a national interagency hotshot crew was not envisioned in the establishing legislation for the Midewin National Tallgrass Prairie, the opportunity that opened in 2001 through the National Fire Plan supports Midewin's mission by providing experienced firefighters and fire managers in support of the prescribed fire program that is essential to prairie restoration and maintenance.

Although the Midewin Hotshot crew is a national firefighting resource, the crew is functionally a component of the Midewin organization. The Crew Superintendent is supervised by the Fire Management Officer, a member of the Restoration Team based at the Midewin Supervisor's Office (SO). The Hotshots are comprised of a full-time crew of seven and a seasonal crew of thirteen additional firefighters.

The crew is mobilized elsewhere during the height of the nation's fire season, but the experienced fire fighters that provide crew leadership remain on duty at Midewin during the optimal fire burning periods in northeastern Illinois. The fire crew is also utilized for other duties at Midewin related to non-fire restoration activities, for instance, operating chain saws and farming equipment.

In addition to supporting prairie restoration at Midewin, the Hotshots could continue to provide a live illustration for several educational and interpretive programs relevant to prairie restoration, fire prevention, and safety in the out-of-doors. Individuals on the fire crew could be available to join Midewin's interpretive staff for presentations to classes and other groups.

Promoting this elite firefighting cadre from Midewin has proved to be a very successful way to attract news media and incorporate coverage of additional resource management messages related to restoration of the tallgrass prairie. Such messages have included the visibility of Midewin and its mission along with the Prairie's ecological restoration and biodiversity. Media interviews with crewmembers on assignment in other areas of the country have expanded the message about Midewin to a national audience.

The temporary modular Hotshot fire crew office is located over a mile north of the Midewin Supervisor's Office on Illinois State Route 53. This temporary location is not suitable as an office and training facility over the long term due to inadequate water, sewer, electricity, and infrastructure. These requirements could be met at a greatly reduced cost if the Hotshot facility has access to utilities already provided at the new Supervisor's Office. A centralized Forest Service Supervisor's Office and fire crew headquarters complex would be more cost effective and efficient than either construction

at a separate location or adapting for access and reuse the old and unsafe structures constructed by the U.S. Army for military use starting in the 1940s.

The decision to be made is whether or not to construct a new facility adjacent to the SO for the Hotshots at this time. Approximately $750,000 is available in fiscal year (FY) 2003 for construction of a Hotshot facility. There is a national strategy to provide a relatively consistent Hotshot environment nationally per the National Fire Plan. Full site development is not possible for $750,000, but key components could be constructed that would substantially improve the work and training environment for the Hotshots. The remaining facility components could be completed in the future as additional funds become available. At the same time, if we do not spend the funds this year, it is unlikely that new funds would be available until after FY 2008.

2.3 PROPOSED ACTION

The Forest Service at Midewin proposes to construct a permanent Hotshot fire crew office, garage, and parking lot in Fiscal Year (FY) 2003. Over the next several years, construction of crew quarters, an exercise area, and parking lot would be phased in as funding becomes available. A pond may be excavated to provide for stormwater detention, depending on the final construction design. When completed, the total expansion of the SO site will include the 2-acre Hotshot facility. The two acres are within the 5.9-acre parcel located immediately north of, and adjacent to, the Midewin Supervisor's Office, which will be conveyed to the Forest Service by the U.S. Army. The conveyance is 5.9 acres in order to allow the lands west of the actual construction site to provide a contiguous block of land that the Forest Service will manage. Pending transfer to Midewin, the parcel is currently under agricultural lease for cattle grazing. Because the entire 5.9-acre tract is to be transferred, that area is analyzed in this EA. The 3.9 acres not directly affected by the construction of the Hotshot facility would remain as grassland and continue under grazing management.

The limit of construction in FY 2003 would be 1/3-acre within the 5.9-acre site. A garage would be built as part of this facility on the adjacent Supervisor's Office (SO) parcel immediately south of the project area. Additionally, sections of the Joliet Arsenal fence line along the southern and western site boundaries would be removed, as well as any arsenic (arsenic based herbicides were used by the Army for weed control, especially along fences) found during sampling along the fence line. Landscaping at the new facility would be compatible with the surrounding grassland and Supervisor's Office. To protect as much grassland bird habitat as possible, a fence would surround the 1/3-acre FY 2003 construction area, and cattle grazing could continue unhampered in the unfenced area adjoining Army lands that are grazed. This condition would remain until additional funds are received.

The new office would be approximately 4000 square feet in size and would include office space for crew leadership, a training room, a workout room, and showering facilities. This building would straddle the 5.9-acre parcel under analysis for this EA and the parcel to the south, which was previously analyzed for construction of the Supervisor's Office (SO) in 2000. The garage, located on the previously analyzed SO parcel, would be approximately 1800 square feet in size. The crew quarters planned for future construction would be approximately 3551 square feet in size, in accordance with the Forest Service national standard design. The exercise area would be 700 square feet in size; large training structures (such as repelling towers) would not be part of this facility. A future parking lot would cover 1000 square feet.

The temporary modular offices currently used for Hotshot fire crew operations would be dismantled and the 1-1/2 acre site made available for future restoration.

2.4 RELEVANT PLANNING DOCUMENTS

Planning documents that influenced the scope of this Environmental Analysis (EA) include the Midewin Prairie Plan and Plan Final Environmental Impact Statement (FEIS). We have tiered this project EA to the Prairie Plan, which provides direction and guides management of the Midewin National Tallgrass Prairie. The proposed project is consistent with the Plan and FEIS, meeting Prairie Plan standards and guidelines for the development of administrative facilities, including firefighting facilities, in Management Area 2 – Administrative and Developed Recreation Sites.

This EA is also tiered to the *Environmental Assessment for the Administrative Site* (2000), for which environmental effects within the area planned for construction of the Supervisor's Office were analyzed. That analysis will not be repeated in this document.

Other planning documents relevant to this EA include the National Fire Plan (USDA Forest Service and DOI, 2001) and Thematic Design Guidelines for Midewin (OZ Architecture and USDA Forest Service, 2000).

2.5 PUBLIC INVOLVEMENT SUMMARY

The Forest Service invited the public to participate in this analysis, contacting approximately 200 groups and individuals on December 3, 2002, and requesting comments by January 6, 2003. Additionally, the scoping notice was placed on the Midewin website for widespread dissemination to the public.

2.6 KEY ISSUES

The ID Team considered comments received from the public, other agencies, and Forest Service resource specialists. The ID Team determined that the following issues are relevant to the decisions that must be made for this project. These issues directly influenced the development of alternatives for this project. Resolution of the issues is measured by indicators. Each alternative has been analyzed according to the indicators. The following issue raised by the public during the scoping period helped guide the formulation of the alternatives:

Issue 1: Certain native wildlife and plants would be affected by the loss of grassland habitat, including at least four grassland bird species listed as Regional Forester Sensitive Species (RFSS): upland sandpiper, bobolink, northern harrier, and Henslow's sparrow. Expansion of the Supervisor's Office tract for construction of the Hotshot facility may reduce the surrounding grassland habitat below the critical acreage needed to sustain some populations of area-sensitive bird species and increase fragmentation effects on the surrounding grassland caused by the existing SO. Adverse effects on grassland birds and reduced suitability of this habitat could result from increased human activity in the area. Aside from grassland birds, the action may affect an intermittent waterhole that is a known breeding site for native amphibians (salamanders, frogs, and toads). Finally, the 5.9-acre tract contains suitable habitat for two RFSS plant species (Sullivant's coneflower, Crawe's sedge) known to occur nearby in similar habitat.

Indicator 1: Acres of grassland bird habitat fragmented.
Indicator 2: Number of amphibian breeding sites affected.
Indicator 3: Number of RFSS plant populations affected.

Issues eliminated from further study

Hazardous Substances
Potential for the presence of hazardous substances was eliminated as an issue necessitating further study. Activities during past Joliet Arsenal operations included "application of an arsenic-based herbicide in the 1960s," a practice that was discontinued but which left remains of arsenic in the soil (Admin. Site EA, pp. 8-9). Elevated concentrations of arsenic have been found in an irregular pattern along fences, in upper inches of soils, and most often within two feet of fences. Confirmatory sampling conducted over the 12-acre Supervisor's Office site immediately south of the proposed project area found arsenic "in excess of apparent background" levels associated with former fence lines. However, sampling has shown that arsenic does not migrate in soils (TN & Associates, Inc. 2000), and the amount of arsenic in soils once used to eradicate weeds along the fence lines is not substantial compared to that which occurs as a natural element in the soils across Midewin. Mitigation measures for the Supervisor's Office

parcel involved excavation and appropriate disposal of the affected soil areas. The same mitigations would be applied, where appropriate, for this project.

The fuel source for vehicles would be off-site, posing no hazard to Midewin operations or personnel. Solid waste disposal would continue to be contracted, and the recycling program would continue as an integral part of Midewin's management policy.

2.7 DECISIONS THAT MUST BE MADE

The Prairie Supervisor of Midewin National Tallgrass Prairie must decide whether to allow construction of a new Hotshot fire crew facility now or whether to defer this activity until a later time at another location.

The Prairie Supervisor must also determine if the selected alternative would or would not be a major Federal action significantly affecting the quality of the human environment. If the Prairie Supervisor determines that it would not significantly affect the quality of the human environment, then she can prepare and sign a *Finding of No Significant Impact* (FONSI) and the project can proceed. If the Prairie Supervisor determines that the selected alternative would significantly affect the quality of the human environment, then an Environmental Impact Statement (EIS) and a Record of Decision (ROD) must be prepared and signed before this project can proceed.

3.0 ALTERNATIVES CONSIDERED

3.1 ALTERNATIVES TO BE ANALYZED IN THE EA

This section describes the alternatives considered, including the *No Action Alternative*. Information is provided on how the alternatives were developed, a detailed description of alternatives, alternatives considered but eliminated from detailed study, and a summary of environmental consequences of each alternative.

The intent of this EA is to determine the effects of constructing a Hotshot fire crew facility on the human and natural environment at Midewin. Based upon written comments received in response to the December 3, 2002 scoping notice, the Interdisciplinary (ID) Team developed three project alternatives.

Alternative 1 – Proposed Action

Alternative 1 is the *Proposed Action* to construct a Hotshot facility, as described in the December 3, 2002 scoping letter. Phased construction of an office, garage, crew quarters, exercise area, and parking lot on approximately two acres would be implemented over several years. In FY 2003, the office, garage, and some parking would be constructed. The office would straddle the 5.9-acre parcel to be transferred from the Army and the SO parcel to the south. The garage would be constructed completely within the parcel previously analyzed for the SO. The limit of construction activities in 2003 would be approximately 1/3-acre in size. To protect as much grassland bird habitat as possible, a fence would surround the 1/3-acre initial construction area, and cattle grazing could continue unhampered in the unfenced area adjoining grazed Army lands. Future construction would occupy up to 2 acres of the tract, leaving 3.9 acres as of the 5.9-acre parcel as grassland. The temporary modular offices currently used for Hotshot fire crew operations would be dismantled and that 1-1/2 acre site made available for future restoration.

Alternative 2 – Proposed Action with Mitigation for Affects on Grassland Bird Habitat

Alternative 2 is identical to the proposed action, but with additional analysis for removal of approximately 12 acres (10,000 linear feet) of woody vegetation to enhance 325 acres of existing grassland bird habitat located two miles northeast of the Supervisor's Office. These improvements would mitigate for adverse effects on grassland birds resulting from the proposed action. Treelines and fencerows currently divide the 325-acre tract into units that are too small to serve as quality habitat for certain area-sensitive grassland birds, especially the upland sandpiper. The woody vegetation would be cut down and

removed from the tract with chainsaws and heavy equipment. Mitigation measures would be used to avoid or minimize disturbance to nesting birds. Implementation of Alternative 2 would result in more suitable habitat for grassland birds, allowing greater densities of breeding pairs and use by species especially sensitive to habitat fragmentation.

Alternative 3 – No Action

Alternative 3 is the *No Action Alternative*. Under this alternative, construction of a new Hotshot facility on land immediately north of the Supervisor's Office would not occur. The Forest Service would continue using the temporary modular office until a suitable site could be found for constructing adequate fire crew facilities.

3.2 ALTERNATIVES DROPPED FROM FURTHER ANALYSIS

Locate Hotshot facility just north of River Road within the western-most portion of Midewin. This alternative was dropped from further consideration because this site is needed for seedbed garden expansion, restoration, educational, and recreational purposes rather than as an administrative center for Hotshot training. This alternative would not allow all employees to be located at the same office complex to facilitate the day-to-day administration of Midewin.

When a site for the Hotshot Office was first contemplated in October 2001, two sites were evaluated: one adjacent to the Supervisor's Office and one in the vicinity of the seedbed production gardens north of River Road. The Prairie Plan identifies these sites as areas that may be developed. The cost factors of bringing utilities and constructing a road to the River Road made that selection unfeasible. Adequate funds are not available to construct a new facility at this site and add additional electricity, water, and sewer utilities.

Locate Hotshot facility near the Supervisor's Office in a building already constructed and used by the former Joliet Arsenal or at the old farmhouse currently used as an office. One respondent felt that the Forest Service should not build onto the open land north of the Supervisor's Office but, rather, reuse one of the Joliet Arsenal buildings. Another respondent questioned why the old farmhouse currently used as the Supervisor's Office headquarters could not be used for Hotshot facility purposes.

The primary reasons this alternative was dropped from further consideration were because of substantial cost constraints and permanent habitat fragmentation. Not only would a road, electricity, water, and sewer utilities be required; any building constructed in past decades by the U.S. Army for the manufacture of TNT would require removal of all contaminants, for instance, any transite, asbestos, or lead paint used in construction. The structure would likely need to be gutted, re-roofed, and brought up to Federal

standards for employees of the Federal government. Maintaining utility rights-of-way and a road to the Hotshot site would likely cause fragmentation in existing or restored habitat. The opportunity to consolidate infrastructure at one location and minimize fragmentation effects would be lost. Selection of this alternative would also reduce administrative efficiency at Midewin.

Using the old farmhouse (currently used as a temporary office) for the permanent Hotshot crew facility would not be feasible or allowed under Federal requirements. The farmhouse is not large enough to safely accommodate a crew of 20 firefighters, and the lack of safety features and structural integrity required for Federal use precludes continued use by the Hotshots or other Midewin staff. The structure would need to be brought up to current safety codes governing use for Federal purposes, and all facilities would need rebuilding to modern accessibility standards and building codes.

Cost Estimate of Converting Existing Army Building for Forest Service Use

The average existing (former Army) buildings that remain on site would require extensive renovation and reconfiguration to meet current accessibility codes and standards, such as a ramp to accommodate exterior stairs, accessible interior corridors, sufficient clear space for access by wheelchairs in restrooms, and an elevator if the building is more than one story. The average roof would require replacement, along with the HVAC, electrical, phone and data communication systems. Lead-based solder was commonly used on plumbing joints, and replacement of the potable water plumbing would likely be necessary. The average existing building contains lead-based paint and asbestos-based insulation and roofing materials. The salvageable aspects of an average existing Army building are the foundation, exterior walls, and possibly the roof trusses or rafter system.

The $50,000 estimated cost to design the reconfiguration of an existing building is approximately the same as the cost to design the new office building ($50,000), depending upon the amount of hazardous material abatement, selective demolition and subsequent re-building required. The estimated cost of building a new 4,000 sq ft office building (at $125/sq ft) is roughly $500,000.

The former arsenal had its own utility systems, such as electrical distribution, water treatment and distribution, sewage collection and treatment, and telephone systems. All of these systems were abandoned and mostly dismantled once the arsenal closed. Currently, the primary utility systems of electricity, telephone, and natural gas are routed along Highway 53. Water and sewer service are currently being installed to the new Supervisor's Office site from the south. The cost of installing water and sewer lines is a minimum of $25 per foot each. A well would probably require a water treatment system in order to insure potability. The estimated cost of a well and water treatment system is $40,000. An on-site sewage treatment system is estimated to cost a minimum of $75,000. As Forest Service standards prohibit the installation of overhead electrical or telephone lines, underground electrical, telephone and natural gas lines would need to be installed, at a minimum cost of $15 per foot each. Assuming an existing building is 2500 feet (1/2

mile) east of Highway 53, the cost of providing utilities to that building is minimally estimated at $250,000, and $250,000 per mile beyond that.

An existing building will have immediate access to a road. However, that road may not remain as part of the transportation network identified in the Prairie Plan or the Midewin Roads Analysis (2003). If slated to remain, the road may require asphalt resurfacing, at an estimated cost of $35,000 per mile. If the road were gravel, it would require blading and additional gravel on an annual basis at $1,000 per mile. These costs are based on current construction projects or projects being designed for the Supervisor's Office site.

3.3 MITIGATION MEASURES

The following mitigation measures apply to the action alternatives, but measure #6 is specifically directed to actions proposed in Alterative 2.

1. Fence and then mow the initial 1/3-acre construction tract at a height of 3-6 inches weekly (or as needed) from April 1 until August 15 to discourage any birds from nesting in the tract and so avoid disturbance to, or destruction of, nests, chicks, or sitting adults of any RFSS bird. Fence and then mow the 2-acre tract when construction activities are expanded from the 1/3-acre tract into this larger area.

    - Maintaining this grass height will allow biologists to survey the grassland for rosettes of Sullivant's coneflower and reproduction stems of Crawe's sedge. Mowing should not remove the critical parts needed for positive identification of these two plant species.

2. The 5.9-acre site should be periodically surveyed for Sullivant's coneflower and Crawe's sedge.

    - Thorough botanical surveys should be conducted every two weeks during the growing season. Any plants of these species discovered should be flagged.

    - The specialists conducting the survey should also search for other prairie species that need to be salvaged.

3. If Crawe's sedge or Sullivant's coneflower are found to be present in areas that will be impacted by construction of the Hotshot facility, then one of the two following mitigation actions should be implemented, based on specific conditions:

    - If the plants will not be directly impacted by construction of the Hotshot facility, or if the plants and their habitat can be incorporated into the site design, then protect the plant population from construction equipment trespass with construction or silt fences.

    - If the plants will be impacted by construction, then transplants or seeds should be taken from the affected population and used to establish the

species in the seed production beds or in nearby restored habitat. In either case, the population should make a genetic contribution toward the species' long-term survival at Midewin.

4. The waterhole should be periodically surveyed for breeding amphibians.

    - Site visits during the breeding season will be needed to locate tiger salamanders. Frog and toad species can be determined by call.

5. If the waterhole is determined to be an important breeding site for native amphibians, then one of the two following mitigation actions should be implemented, based on specific conditions:

    - If the waterhole will not be impacted by construction of the Hotshot facility, or if the waterhole can be incorporated into the site design, then protect it from construction equipment with construction or silt fences.

    - If the waterhole will be impacted by construction of the Hotshot facility, then amphibian eggs and larvae should be moved to suitable habitat in the immediate vicinity prior to construction.

6. Habitat improvement for grassland birds should be implemented immediately. If possible, treeline and fencerow removal should be conducted outside the bird-nesting season (April 15th-August 15th). If tree removal must be done during the nesting season, then surveys will be done to locate bird nests before tree removal begins. Adjustments can then be made in work schedules and equipment access to avoid disturbing nest sites until after chicks have fledged.

7. Stormwater detention measures will be designed in full accordance with the requirements of the Northeastern Illinois Planning Commission Model Ordinance (1999) and Prairie Plan guidelines (p. 4-8).

8. Sediment and erosion control measures will be developed in full accordance with the requirements of the Northeastern Illinois Planning Commission Model Ordinance (1999) and Prairie Plan guidelines (p. 4-8).

9. Ensure that appropriate scenery management objectives are met:

    - Utilize guidelines from the Midewin's Thematic Design Guidelines (1999) to ensure that buildings blend with the surrounding environment and existing structures.

    - Utilize earth forms and native vegetation to minimize the impact of development, especially the parking lot.

- Utilize vegetative screening to minimize the impact of parking and the temporary modular buildings within the Illinois State Highway 53, interim trails, and proposed trail viewsheds if Alternative 1 is selected.

3.4 SUMMARY MATRIX OF ENVIRONMENTAL IMPACTS

This matrix compares the alternatives by objectives and issues.

Consequences	**Alternative 1 (Proposed)**	**Alternative 2 (Preferred)**	**Alternative 3 (No Action)**
Objective: Provide a permanent training and mobilization facility for the Midewin Interagency Hotshot fire crew.	Yes	Yes	No
Objective: Reduce construction and long-term maintenance costs by utilizing existing utilities, including electricity, water, sewer, and roads.	Yes	Yes	No
Issue 1: Habitat with native wildlife and plant species would be adversely affected, including the following RFSS: upland sandpiper, northern harrier, bobolink, Henslow's sparrow, Crawe's sedge, and Sullivant's coneflower. Also affected would be a potential breeding site for native amphibians. *Indicators*: 1. Acres of habitat fragmented	107 acres.	107 acres. Restored habitat on 325 acres by removing fragmentation-causing vegetation.	None.
2. Number of amphibian breeding sites disturbed.	1 site depending on final design.	1 site depending on final design.	None.
3. Number of RFSS plant populations affected.	None with mitigation.	None with mitigation.	None.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the present condition of the environment and changes that may be expected by implementing an action alternative or by taking no action. The key issues generated through the scoping process and the requirements of NEPA define the general scope of environmental concern for this project. This chapter forms the scientific and analytic basis for the comparison of alternatives. This EA is tiered to the Environmental Assessment completed in 2000 for the Supervisor's Office complex immediately south of the proposed project area, since the proposed use, affected environment, and environmental effects are similar for these adjacent parcels. Sections that have been added or substantially expanded as the result of changed conditions and new information include: *Vegetation and Wildlife* (Section 3.2), *Threatened, Endangered, and Sensitive Species* (Section 3.3), and *Management Indicator Species* (Section 3.3). This EA has utilized existing analyses to the extent possible.

Cumulative effects are discussed for each of the resources identified below. Cumulative effects result from incremental impacts of proposed activities when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions.

4.1 SOIL AND WATER QUALITY

Affected Environment

Soil types within the project area are in the Benton and Drummer series (Admin. Site EA, p. 5), both of which are Mollisols (prairie soils). No wetlands exist presently within the proposed project area, and the site has low erosion potential due to the low slopes. The entire area within which the Hotshot facility is proposed is currently under lease for cattle grazing.

The project site is drained on the surface by a ditch that runs approximately ½-mile south along Illinois State Highway 53 to a major drainage extending approximately one mile to a minor tributary of the Kankakee River. Soils at the site range from two to three feet in thickness, and are underlain by approximately ten feet of permeable mixed rock, gravel, sand, and other fine materials. The site is not within the regulatory 100-year floodway. Subsurface drainage is westward toward prairie restoration areas of Midewin. Two major ditches on the former arsenal to the east divert water that formerly recharged the project area from surface and subsurface flow. The drainage ditches to the east and along Illinois State Highway 53 presently restrict or preclude the potential for restoration of the native wetland communities within the proposed project area.

The area northeast of the Supervisor's Office proposed for removal of woody vegetation and grassland bird habitat mitigation is generally flat to gently sloping former agricultural fields. The southern terminus of the north-south woody vegetation rows along an old fence line is just north of Prairie Creek. Parallel mile-long rows of mostly Osage orange hedgerows run east to west along an old road and a former rail bed. A short row of trees planned for removal runs north along an old fence line (see Figure 1 map for hedgerow locations). There are no wetlands or major drainages within the proposed mitigation area. The predominant soil type in this tract is a somewhat poorly drained silt loam within the Elliot series.

Environmental Consequences

Alternative 1: Under this alternative, there would be no effects on wetlands because the project area is not considered to be a functional wetland per Executive Order (E.O.) 11990. Wetland protection is required under this E.O. as well as by Section 404 of the Clean Water Act. Depending on the final construction design, a retention pond may be excavated to provide for surface runoff and inhibit any potential erosion concerns (Admin. Site EA, p. 9). However, the potential for erosion is low owing to poor internal drainage of the soils and the high zonal water table.

Alternative 2: The environmental consequences of this alternative are identical to those of Alternative 1. Under this alternative, there would be no effects on soil, wetlands, or water resources within the grassland bird mitigation area, as functional wetlands do not occur and the potential for erosion is low.

Alternative 3: There would be no effects to soil, wetlands, or water resources if the No Action Alternative were to be implemented. The No Action Alternative could allow the eventual restoration of approximately two acres of additional wetlands within the 5.9-acre parcel if construction does not take place, depending on whether local drainage patterns could be restored in future years.

Cumulative effects

None of the alternatives would have major cumulative effects on soil, wetlands, or water resources. Under Alternative 1, the eventual loss of approximately 2 acres for completion of the Hotshot facility would not substantially reduce the potential wetland acres on Midewin. The loss of approximately 2 acres of prime farmland would be unavoidable in order for construction to take place; however, the loss would be minor when considering regional trends. None of the alternatives would involve the physical alteration or loss of any existing wetlands. With mitigation, neither Alternative 1 nor Alternative 2 would result in substantial effects to the timing, quantity, or quality of water downstream from the proposed project site. Wetlands, and water resources within the proposed grassland bird habitat mitigation area would be cumulatively unaffected. There

might be a temporary, slight increase in erosion potential from removal of woody vegetation pending completion of restoration in the area, although the effect is expected to be negligible. There would be no expected cumulative effects on the current Hotshot site if use of this temporary facility was either halted or continued.

4.2 VEGETATION AND WILDLIFE

Affected Environment

The 5.9-acre site within which construction is proposed is pastured grassland, dominated by non-native forage grasses and weedy forbs. A few disturbance-tolerant native plants do persist in this grassland, including switchgrass, sedges, and prairie forbs. Some low shrubs have invaded this pasture, mostly multiflora rose and autumn-olive. There is an excavated depression in this area used to water livestock; the depression holds water in the spring and early summer, and the livestock also use the mud as a wallow. Several disturbance-tolerant annual plant species are present in the depression.

The proposed Hotshot site and the Midewin Supervisor's Office (SO) are surrounded by grassland habitat administered by the U.S. Army. Adjacent pasture consists of approximately 107 acres, partially bisected by the Midewin SO into two tracts (52 and 55 acres). This grassland is grazed on a fairly regular basis; during some years few or no cattle are present. Within ½-mile to the north and east are additional grasslands that are variable in size (10-80 acres) and condition. Some tracts are grazed with livestock and others are mowed. Several tracts receive no management, although some of the grazed tracts are covered with encroaching shrubs and trees. The 107-acre area is bounded to the south and east by private property, and to the west by Illinois State Highway 53. The northern boundary is adjacent to U.S. Army lands that will be managed by Midewin.

The temporary Hotshot facility is located at a former pasture and corral site. It is surrounded by fencerows of Osage-orange, white mulberry, and other invasive trees. These fencerows are surrounded by grasslands that have been pastured or mowed for hay in the past, now maintained by mowing in late summer and fall. These grasslands are fragmented by roads, fencerows, shrub thickets, and a railroad right-of-way. The predominant plant species in these grasslands are non-native pasture grasses.

The 325-acre tract that would be enhanced by woody vegetation removal under Alternative 2 is now a pasture planted with non-native grasses. Most of this tract was planted with row crops until 1997, when grassland conversion began. This grassland remains fragmented by several treelines and fencerows.

Common wildlife species that are not listed as Threatened, Endangered, or Sensitive include the thirteen-lined ground squirrel, meadow vole, deer mouse, short-tailed shrew, fox snake, little brown snake, plains garter snake, tiger salamander, and northern leopard

frog (Sensitive wildlife species are discussed in Section 4.3). Commonly found birds include the eastern meadowlark, grasshopper sparrow, dicksissel, red-winged blackbird, and American kestrel. These wildlife species occur in the grasslands that lie to the north and east of the Midewin SO, around the temporary Hotshot site, and within grasslands surrounding the 12-acre area proposed for vegetation removal under Alternative 2.

The waterhole in the tract around the Midewin SO is used as a breeding site by small numbers of western chorus frog and American toad (Redmer, U.S. Fish and Wildlife Service, pers. comm.); there is potential for breeding use by northern leopard frog and tiger salamander (USDI-FWS 2003). However, additional surveys are needed to determine if this depression is an important breeding site for any amphibian species.

Environmental Consequences

Alternative 1: Under this alternative, the Midewin SO site would be extended northward into existing agricultural grasslands by 1/3-acre starting in 2003, and by up to 2 acres over the next several years. The other 3.9 acres to be transferred to the Forest Service from the U.S. Army would remain as agricultural grassland. At present, there are over 2,800 acres of agricultural grassland on Midewin, and approximately 1,650 acres are managed with livestock.

The native plant species present within the 5.9-acre tract are common throughout Midewin, and the eventual loss of two acres would not have adverse effects on populations of these plants.

Most of the common wildlife species that reside on the site would not be adversely affected by the proposed action, although two acres of habitat used by a few individuals of each species might eventually be lost. However, populations of these common species are expected to persist in surrounding grasslands.

Grassland birds that may be affected by fragmentation are the grasshopper sparrow and dicksissel; use of grasslands by these species declines as unfragmented habitat decreases in size, especially below 45-12 hectares (134-30 acres) (Herkert 1997b; Johnson et al. 1998). This alternative may also result in the localized decline of some grassland bird species that use the surrounding pasture as breeding habitat.

The proposed action may or may not have adverse effects on breeding amphibians, depending upon the construction footprint of the Hotshot facility. Cattle exclusion from the waterhole may improve conditions for amphibian larvae, provided that the depression is not obliterated or receives sediment or other runoff during construction activities. The amphibians likely to be affected belong to species known for the ability to colonize newly constructed ponds and wetlands (Redmer, U.S. Fish and Wildlife Service, pers. comm.).

The only exception is the tiger salamander, which would probably require active transfer of eggs or larvae to ensure colonization at another breeding site. At least two other waterholes in this pasture have similar characteristics; they would continue to function as breeding sites for local amphibians. Implementation of the measures would mitigate for adverse effects on these amphibians and their breeding habitat.

Alternative 2: The effects of this alternative on vegetation and wildlife on the 5.9-acre parcel and surrounding grassland would be similar to those described for Alternative 1. In addition, approximately 12 acres of woody vegetation removal would occur to enhance 325 acres of grassland bird habitat. This mitigation site is located two miles north-northeast of the proposed Hotshot facility. Grassland birds would benefit from these actions, resulting in expanded use of the larger tract. Removing the fencerows and treelines would reduce the woody vegetation that is a seed source for invasive plants that pose management problems in Midewin's grasslands and prairie remnants.

Alternative 3: Under the No Action Alternative, agricultural use (livestock grazing) would continue in grasslands surrounding the Midewin SO, and there would be no change in effects to vegetation and wildlife now using the site. The waterhole would continue to be accessible to livestock, and some amphibians would probably continue using this depression as a breeding site. The temporary Hotshot base would remain in place until another permanent location was selected; until then, the current Hotshot base, and surrounding land would remain unavailable for restoration to grassland bird habitat or upland prairie.

Cumulative effects

Before 1830, the land on and around the Midewin SO and proposed Hotshot facility was a mix of upland and wet prairie (based on soil types, surviving native vegetation, and data from General Land Office surveys). The land proposed for grassland bird habitat mitigation under Alternative 2 was largely upland prairie; the current Hotshot base may have been prairie with scattered open-grown oak trees. This prairie habitat supported a diverse assemblage of native plants, animals, insects, microbes, and other organisms.

Most of this land was converted to agricultural use in the mid-1800s, and has probably been used for livestock, hay, and crop production. Much of the original native flora and fauna have disappeared from these sites, but some species were able to adapt and persist in the agricultural landscape. Within the last 50 years, agriculture in Illinois has become more industrial in nature, focusing on high-yield production of row crops; permanent pastures and hayfields have been phased out. Roadsides have been regraded and their maintenance is dependent on frequent mowing and herbicide use, often eliminating remnant populations of native plants. Non-native plants now dominate most open land in the Midwest. Grassland birds dependent upon permanent pastures have declined over 90% in the past four decades (Glass 1994; Herkert 1997a). Prairie and grassland flora and fauna have become increasingly restricted to a limited number of managed reserves.

A few of these protected areas, such as Goose Lake Prairie State Park, have been managed and restored to allow for local population increases of some of these wildlife and plant species.

Unlike the remainder of Illinois, the Joliet Arsenal retained permanent pastures and hayfields, supporting the largest concentration of breeding grassland birds in Illinois (Glass 1994). Other wildlife species typical of prairie habitats also survived at the Joliet Arsenal. Prairie plants survive in many roadsides, and there are several small prairie remnants (White 1995).

Under the USDA Forest Service, prairie and grassland habitats at Midewin are expected to increase as ecological restoration proceeds, with approximately 3750 acres of upland typic prairie habitat, 3080 acres of wet typic prairie habitat, and 6690 acres managed specifically for grassland birds (USDA Forest Service 2002c). Grassland and prairie wildlife are expected to increase as habitat is restored. Remnants of prairie and other native habitats will be managed, and invasive plant species will be controlled. These actions will allow for expansion of native plant populations. Along with Goose Lake Prairie State Park and other managed natural areas, Midewin is expected to make a significant contribution towards the local survival of native wildlife and plants (USDA Forest Service 2002b and 2002c).

Alternative 1: Under this alternative, the proposed Hotshot facility would have extremely localized, short-term adverse effects on the populations of native wildlife and plants at Midewin. The species that may be affected are widespread at Midewin, and their numbers are expected to increase over time despite this localized impact. Mitigation measures would minimize direct impacts on most wildlife species, largely by translocation of amphibian larvae (if necessary) and mowing to prevent birds from nesting on the site immediately prior to construction. The grassland tract around the Midewin SO may become too small, fragmented, or receive too much disturbance to remain suitable for some non-RFSS grassland birds; habitat for these species would eventually be restored elsewhere on Midewin. Overall cumulative effects would be positive. Cumulative effects of removing the temporary Hotshot facility would be positive because the area would be made available for restoration.

Alternative 2: Impacts of this alternative are similar to those described under Alternative 1, but with the inclusion of effects from 12 acres of woody vegetation removal for grassland habitat improvement. Removal of fragmenting treelines and fencerows within 325 acres of existing grassland should offset any localized habitat degradation (reduced size, increased fragmentation, increased disturbance) resulting from construction of the Hotshot facility and result in more immediate positive effects.

Alternative 3: There would be no cumulative effects on native plants and wildlife. However, land at the present Hotshot base would not be available for restoration to grassland or prairie habitat in the near future. The existing Hotshot base would contribute to habitat fragmentation and disturbance in surrounding habitat, resulting in delayed positive cumulative effects.

4.3 THREATENED, ENDANGERED, AND SENSITIVE SPECIES

Affected Environment

No Federal Threatened or Endangered species occur within the proposed project area, nor does any habitat for any Federally listed species occur within or adjacent to this area. The project area contains suitable habitat for nine Regional Forester Sensitive Species (RFSS) (Table 1). Seven of these have been documented on or immediately adjacent to the Supervisor's Office tract and surrounding agricultural grasslands; two others have not been documented. Appendix A describes the status and ecology of these species at Midewin relevant to the proposed action. The nine species are: Crawe's sedge, Sullivant's coneflower, Henslow's sparrow, short-eared owl, upland sandpiper, northern harrier, bobolink, migrant loggerhead shrike, and plains leopard frog.

Table 1. Proposed Midewin Hotshot Fire Crew Facility: Regional Forester Sensitive Species

Common Name *(Scientific Name)*	**Status** **Fed***	**IL***	**Present at or near site?**	**Habitat present?**
Crawe's Sedge *(Carex crawei)*	RFSS	-	Yes	Yes
Sullivant's Coneflower (*Rudbeckia fulgida sullivantii)*	RFSS	-	Yes	Yes
Henslow's Sparrow *(Ammodromus henslowii)*	RFSS	E	Yes	Yes
Short-eared Owl *(Asio flammeus)*	RFSS	E	No	Yes
Upland Sandpiper *(Batramia longicauda*	RFSS	E	Yes	Yes
Northern Harrier *(Circus cyaneus)*	RFSS	E	Yes	Yes
Bobolink *(Dolichonyx oryzivora)*	RFSS	-	Yes	Yes
Migrant Loggerhead Shrike *(Lanius ludovicianus)*	RFSS	T	Yes	Yes
Plains Leopard Frog *(Rana blairi)*	RFSS	-	No	Yes

*RFSS = Regional Forester Sensitive Species; T = Threatened; E = Endangered

Five species are listed by the State of Illinois as Endangered or Threatened (Illinois Endangered Species Protection Board, 1998) and may occur within the 5.9 acres proposed for the Hotshot facility. These species are: Henslow's sparrow (Endangered), short-eared owl (Endangered), upland sandpiper (Endangered), northern harrier (Endangered), and loggerhead shrike (Threatened). All are discussed in Appendix A. No additional species listed by the Protection Board occur on or adjacent to the proposed project area.

Environmental Consequences

Alternative 1: The proposed action would have no effects on Federal Threatened, Endangered, or Proposed species, because no Federally listed species occur in or adjacent to the project area.

The effects of this alternative on Crawe's sedge and Sullivant's coneflower would be limited and short-term. Mitigation measures require a pre-construction survey to determine if either species is present. If not, there would be no effect. If present, then a variety of mitigation measures are available to prevent reduction or loss of populations of either species, including avoidance, propagation, and transplantation.

As they are not known to occupy the grasslands around the SO or project area, the short-eared owl and plains leopard frog are unlikely to be affected by the proposed action, although some potential habitat would be lost. Local northern harriers and migrant loggerhead shrikes would lose a small amount of foraging habitat: 1/3-acre starting in 2003 and up to two acres over several years. Increased ongoing disturbance from human activities might impact future use of surrounding grasslands.

Henslow's sparrow, upland sandpiper, and bobolink could be adversely affected under Alternative 1. Mitigation measures that would discourage these birds from nesting on the project site prior to construction would prevent direct impacts (destruction of active nests). However, this action may have more subtle impacts on area-sensitive or disturbance-intolerant species. Addition of the Hotshot facility may magnify the fragmenting effect of the SO on adjacent grasslands, effectively subdividing the surrounding 107 acres of grasslands into two tracts of 52 acres and 55 acres each. Since 1997, there has been a decline in upland sandpiper activity within and around the Midewin SO, coinciding with increased staff size and activity (Glass, Midewin NTP, pers. comm.). Alternative 1 may contribute to the eventual abandonment of the 107 acres of surrounding grasslands by certain RFSS birds, especially the upland sandpiper.

Removal of the temporary Hotshot base would have minimal benefits on upland sandpipers and other grassland birds.

Alternative 2: This alternative has no known adverse effects on any Federal Threatened, Endangered, or Proposed species.

For Crawe's sedge and Sullivant's coneflower, the effects of Alternative 2 would be similar to the effects of Alternative 1. The mitigation measures would be implemented if plants of Crawe's sedge or Sullivant's coneflower are discovered within the project area. The effects on the plains leopard frog would also remain the same as for Alternative 1.

As in Alternative 1, a small amount of foraging habitat for short-eared owl, northern harrier, and migrant loggerhead shrike would be lost. However, removal of treelines and fencerows in the tract northeast of the project area should benefit all three birds by reducing fragmentation of known foraging habitat, thereby mitigating for the immediate loss of habitat within the project area. The trees present in these fencerows are large, without dense lower branches, and do not provide suitable nest sites for loggerhead shrikes.

Like Alternative 1, this action would not promote suitable habitat in the vicinity of the SO for Henslow's sparrows, upland sandpipers or bobolinks. However, removal of 12 acres of woody vegetation would reduce fragmentation and improve habitat conditions for these species within a 325-acre grassland tract northeast of the project area. Continued management through grazing of grasslands around the SO and project area would favor the upland sandpiper and bobolink, those RFSS birds which most regularly use these grasslands.

Alternative 3: The temporary Hotshot base does not pose known adverse effects on any Federal Threatened, Endangered, or Proposed species.

Under the No Action Alternative, there would be no adverse effects on RFSS present in grasslands surrounding the SO and proposed project area. However, maintaining the Hotshot facility at its current site would prevent future restoration on that site. Treelines and fencerows proposed for removal under Alternative 2 would be deferred, and the beneficial effects on grassland birds from improving this site might not occur for several years.

The No Action Alternative would eventually necessitate building the Hotshot facility elsewhere on Midewin. Adverse effects could be greater than any expected under Alternatives 1 or 2. There are few places on Midewin where such a facility and associated infrastructure would not have effects on RFSS, especially grassland birds.

Cumulative Effects

Cumulative effects on RFSS animals and plants are similar to those described under Section 4.2 for Native Vegetation and Wildlife. Generally, there has been a loss of habitat and populations, although some RFSS birds have adapted to a mixed agricultural landscape. After WW II, changes in agricultural practices lead to declines in many RFSS grassland birds, many greater than 90% (Glass 1994, Herkert 1997a). Some RFSS wildlife and plants are now fairly secure in prairie preserves and restorations. Other species, however, require large tracts of habitat maintained by fairly specific management practices, such as 3-5 year rotational burning, grazing, and brush control. Only large sites such as Goose Lake Prairie State Park or the Midewin National Tallgrass Prairie may provide sufficient amounts of suitable habitat to maintain local populations of RFSS species (see Table 1) (USDA Forest Service 2002c). Future residential, commercial and industrial development may preclude most future preservation of other large, contiguous tracts of open land in Will County and much of northeastern Illinois.

As U.S. Army lands containing Regional Forester Sensitive Species are transferred and converted to other uses, grasslands on Midewin will become increasingly important for maintaining RFSS grassland bird populations, especially upland sandpiper, bobolink, and migrant loggerhead shrike.

The Prairie Plan directs that lands around the Midewin SO currently administered by the Army (as a pasture lease slated for eventual transfer to the Forest Service) be managed as grassland bird habitat (USDA Forest Service 2002c). Additional grassland lies on land farther east. However, this will become an industrial park. Grasslands remaining on Army land contribute to the attractiveness of the area around the Midewin SO to grassland birds. As the industrial park is developed, the grassland around the Midewin SO will become less suitable for RFSS birds sensitive to noise and human activity.

The area around the temporary Hotshot facility will eventually be restored as upland typic prairie and open oak savanna; fencerows and other fragmenting features will be removed. However, nearby roads, railroads and future shared-use trails may prevent this area from becoming prime grassland bird habitat; it also lies outside of the unfragmented habitat areas designated in the Prairie Plan (USDA Forest Service 2002c).

The 12-acre area proposed for woody vegetation removal under Alternative 2 will be restored to native prairie vegetation, whether as part of the decision for this project or in future years.

<u>Alternative 1</u>: Selection of this alternative would eventually result in positive cumulative impacts on Federal Threatened, Endangered, or Proposed species.

Sullivant's coneflower and Crawe's sedge are both expected to increase as existing habitat is managed and new prairie habitat is restored. Neither species is especially common in northeastern Illinois, and Midewin will eventually provide large tracts of suitable habitat for both plants.

The plains leopard frog is not common at Midewin, and its population size may be related to factors such as climatic conditions or competition from the closely related northern leopard frog. The proposed action is not expected to have cumulative effects on this amphibian.

Short-eared owls may eventually nest on Midewin as suitable habitat and rodent prey become available. Because short-eared owls are not known to use the grassland around the Midewin SO, this alternative is not expected to have cumulative effects on this raptor.

Both northern harriers and migrant loggerhead shrikes are expected to increase as restoration at Midewin proceeds. At present, Midewin supports the largest concentration of nesting loggerhead shrikes in northern Illinois. Northern harriers may become a regular breeding bird when sufficient habitat is restored. Alternative 1 may slightly reduce the suitability of some foraging habitat for both species, but the loss of nearby grassland habitat to the industrial park will probably be a larger factor affecting either species' future use of the grasslands around the SO and proposed project area.

Bobolinks and Henslow's sparrows have increased on Midewin as grassland habitat has been restored and cattle have been removed from their habitats. As restoration proceeds, Midewin will contribute greatly to the survival of local populations of both bird species. As the grasslands around the Midewin SO are managed for these species, they will probably use this habitat. In the long-term, disturbance from surrounding roads (IL State Highway 53 and the landfill access road) may have a greater impact on these species than disturbance from the Midewin SO.

Midewin supports the largest concentration of breeding upland sandpipers in Illinois, and may be very important for this species' long-term presence as a breeding bird in northeastern Illinois. Future restoration of grassland habitat should be sufficient to support a relatively stable population of upland sandpipers at Midewin. The grasslands around the Midewin SO will become less suitable for upland sandpipers as the adjacent industrial park is developed. Increased activity and traffic in the industrial park, at the Midewin SO, and on IL State Highway 53, will contribute to impacts from the loss of adjacent grassland habitat.

The sandpiper population at Midewin began declining prior to Forest Service administration, and may also be related to a reduction in livestock on the former Joliet Arsenal (including lands not administered by the FS) over the past 5-7 years. Although

Midewin has recently increased the acreage of grasslands managed as short-stature habitat, sandpiper numbers have not yet responded, perhaps because some of this grassland remains fragmented by treelines and fencerows.

Alternative 2: The cumulative effects of Alternative 2 are similar to Alternative 1 for most RFSS species. However, there would be an immediate decrease in fragmented grassland bird habitat because of treeline and fencerow removal, benefiting all the area-sensitive RFSS birds that prefer pastured grasslands, notably the upland sandpiper. This action would result in both an improvement and increase in sandpiper habitat, and could contribute to the long-term presence of this RFSS bird at Midewin.

Alternative 3: The No Action Alternative would not have adverse cumulative impacts on Federal Threatened, Endangered, or Proposed species within the project area. However, the Hotshot facility will eventually need a permanent location, and the site selected for construction would need to be evaluated for impacts on Federal Threatened, Endangered, or Proposed species.

Under Alternative 3, cumulative effects resulting from the actions described for Alternatives 1 or 2 would not occur. RFSS species would continue to benefit from habitat restoration on Midewin, and Midewin would remain important in maintaining these species' presence in northeastern Illinois. The grasslands around the Midewin SO would eventually become less suitable for certain grassland birds, even without construction of the Hotshot facility. Development of the industrial park and landfill, and increased traffic on IL State Highway 53, would have adverse impacts on birds using the grasslands around the Midewin SO.

4.4 MANAGEMENT INDICATORS

The Forest Service is required to address Management Indicator Species (MIS) under the current planning regulations 36 CFR §219 to gauge the effects of management activities implemented under land management plans. MIS are plant and animal species, communities, or special habitats selected for emphasis in planning (FSM 2620.5). Species selected are those that "best represent the issues, concerns, and opportunities to support the recovery of Federally-listed species, provide continued viability of sensitive species, and enhance management of wildlife and fish…" (FSM 2621.1). A set of Management Indicators for Midewin has been identified in the Prairie Plan (Appendix C of Plan). Midewin's MIS includes several species and ecological conditions or selected vegetation communities that will be monitored to determine population trends and evaluate effects of management activities on selected species.

Affected Environment

Management indicators associated with the proposed action include the following habitats: short-stature grassland habitat, medium-stature grassland habitat, upland typic prairie, wet typic prairie, and savanna.

Short-stature grassland habitat is preferred by the upland sandpiper, a Regional Forester Sensitive Species (RFSS) and Illinois Endangered Species, and the loggerhead shrike, an RFSS and Illinois Threatened Species. Bobolinks (RFSS) also use short-stature grassland habitat on Midewin, although they prefer medium-stature grassland habitat.

Medium-stature grassland habitat is preferred by the bobolink (RFSS). Other grassland birds, including Henslow's sparrows (RFSS), use medium-stature grassland habitat on Midewin, although they prefer tall-stature grassland habitat.

At present, approximately 2800 acres of agricultural grasslands are available as grassland bird habitat at Midewin and approximately 50% are maintained as short-stature grassland habitat through livestock grazing and brush mowing. The remaining grasslands are maintained as medium-stature or tall-stature grassland habitat. Conditions of grassland habitats are monitored by grass height, litter depth, shrub density, total area, and degree of fragmentation. The grasslands around the Midewin SO and surrounding the 12-acre woody vegetation removal site (Alternative 2) are primarily short-stature grassland habitat, although they become medium-stature grassland habitat during years when livestock are absent. The grasslands around the temporary Hotshot facility are maintained as medium-stature grassland habitat.

Upland typic prairie, wet typic prairie, and savanna are management indicators associated with restoration of native vegetation. Elements used to monitor the condition of these habitats include native plant diversity, seasonal flowering diversity, cover by native vegetation, and cover by woody species (shrubs in prairie habitats, trees and shrubs in savanna). Long-term restoration around the temporary Hotshot base will be upland typic prairie and savanna. Long-term restoration of grasslands surrounding the 12-acre woody vegetation removal site (Alternative 2) would be upland typic prairie and wet typic prairie. The grasslands around the Midewin SO would be managed primarily to meet the needs of grassland birds.

The other management indicator that could be affected by the proposed action is Henslow's sparrow, an RFSS and Illinois Endangered species. This species was selected because it has specific habitat requirements, including sensitivity to fragmentation, habitat structure, and fire frequency. See Appendix A for discussions of project-related Regional Forester Sensitive Species.

Environmental Consequences

Alternative 1: The proposed Hotshot facility would immediately affect 1/3-acre and, over several years, up to two acres within the 5.9-acre transferred site. A two-acre decline in Midewin's current acreage of 1400 acres of short-stature grasses is not expected to have an impact on this management indicator, as future grassland restoration is expected to exceed 6600 acres.

Removing the temporary Hotshot base would free this site for either for short-term management as medium-stature grassland bird habitat, or for long-term restoration of upland prairie and savanna habitats.

Alternative 2: The effects of this alternative on management indicators are similar to those described in Alternative 1, but with the addition of the 325-acre short-stature grassland improvement that would result from removing 12 acres of treelines and fencerows. Removal of the woody vegetation would offset any habitat lost around the Midewin SO or within the project area. Long-term, this 325-acre site would be restored to a mix of upland typic prairie and wet typic prairie after sufficient short-stature grasslands are restored in permanent locations elsewhere on Midewin.

Alternative 3: If no action were taken within the project area, there would be no effect on short-stature grassland habitat from construction of a Hotshot fire crew facility. However, maintaining the Hotshot base at the temporary site would prevent restoration of other MIS, including upland typic prairie and savanna. If another site is chosen for the Hotshot facility, there would likely be impacts on other MIS requiring analysis.

Cumulative Effects

As described in Sections 4.2 (Vegetation and Wildlife) and 4.3 (Threatened, Endangered, and Sensitive Species), all the management indicators (short-stature grassland, medium-stature grassland, upland typic prairie, wet typic prairie, and savanna) have been greatly reduced throughout northern and central Illinois because of human activities that have converted natural habitats and agricultural grasslands to other uses, usually row crop production or developed land. Because of Midewin's size, future restoration and management of these habitats will contribute to the survival of associated flora and fauna in northern and central Illinois.

Alternative 1: Midewin will eventually provide a large area of short-stature grassland (at least 3300 acres) sufficient to support stable populations of upland sandpipers (RFSS) and loggerhead shrikes (RFSS). This action would not reduce the total amount of this habitat by more than 2 acres. Some short-term adverse effects may occur because of

temporary habitat loss and fragmentation, and some of these effects may have negative consequences for certain bird species such the upland sandpiper. Otherwise, there will not be any cumulative effects that differ from those discussed above.

Alternative 2: Cumulative effects would be similar to those described above, with one difference. Immediate habitat improvement through removal of 12 acres of woody vegetation to enhance 325-acres of presently fragmented short-stature grassland habitat would mitigate for any impacts to grassland birds. Long-term changes in the acreage restored to short-stature grassland or native prairie habitats would be unaffected.

Alternative 3: Cumulative effects would not occur if there is no action. However, maintaining the temporary Hotshot base at its present site or selecting another site might result in localized effects, such as habitat fragmentation, on management indicators.

4.5 RECREATION, SCENIC QUALITY, & HERITAGE RESOURCES

Affected Environment

Midewin is the largest single public land holding in the northeastern Illinois area. The public anticipates opportunities to recreate in what they believe to be a large open and natural setting, although Illinois State Highway 53, a four-lane divided highway, runs north and south through Midewin. Within the Highway 53 corridor are a high-speed rail line, private and U.S. Army properties, farmhouses, an agricultural products supplier, and grain silos.

Two Management Areas are delineated for Midewin: Management Area 1 for restoration areas, and Management Area 2 for administration and developed recreation sites. Administrative sites include all current and proposed sites for the Supervisor's Office complex, including work centers, seedbed production areas, parking areas, and fire crew facilities.

Scenic Integrity Objectives (SIOs) are the result of the compilation of analyses and survey to classify the desired scenic quality of the land. The objectives are used to guide management practices to ensure that the scenic and ecological integrity of the land is maintained or improved. The relative visibility of the landscape, the level of concern for the landscape, and the inherent scenic attractiveness of the land are combined to form the SIOs for Midewin. High Scenic Integrity is proposed for much of Midewin, including the areas proposed for construction of the Hotshot facility, the current location of the temporary Hotshot base along Illinois State Highway 53, and most of the mitigation area

proposed for hedgerow removal. Moderate and Low Scenic Integrity are proposed for smaller areas within Midewin.

A heritage resource survey was conducted within the proposed project site and mitigation area, resulting in the discovery of no archaeological sites or historic features. Extensive alteration of these areas has taken place in the form of plowing, cattle grazing, and the planting of woody hedge and fencerows in the proposed mitigation area.

Environmental Consequences

Alternative 1: The Prairie Plan goal is to create and maintain high scenic integrity along the Illinois State Highway 53 transportation corridor. Architectural design of the proposed facility would be consistent with a prairie theme, utilizing natural materials and colors that blend with the natural environment. Utilization of native plant species would further enhance landscaping of the Hotshot facility. Any adverse impacts to scenic integrity would be mitigated through adding such features as vegetative screening to ensure that scenery along Highway 53 is not compromised by new construction. No impacts to future recreational opportunities would occur as the result of implementing Alternative 1. Also, removal of the modular Hotshot offices would create a more natural appearing area along that small section of the highway. Removal of the temporary Hotshot facility would be consistent with SIOs in the Prairie Plan.

Alternative 2: Environmental consequences are identical to those discussed for Alternative 1, except for consequences related to the addition of a 12-acre woody vegetation removal mitigation area. Removing previously planted hedgerows and fencerows to enhance 325 acres of grassland bird habitat would gain the appearance of undivided grassland. The fragmenting presence of fencerows and treelines would be gone, and the Prairie Plan goal of natural looking scenery would be partly achieved through creating larger, unbroken grassland vistas. Removal of the temporary Hotshot facility would be consistent with SIOs in the Prairie Plan.

Alternative 3: The existing temporary Hotshot facility would continue to be used if the decision is made to defer construction of a permanent base at this time. The temporary facility is visible from Illinois State Highway 53, and from existing interim trails and the proposed permanent trail development currently in the planning stages. The temporary modular offices do not meet Midewin's Thematic Design Guidelines (OZ Architecture and USDA Forest Service 1999); nor do these buildings blend with the natural environment. Midewin would not be able to meet the SIOs identified in the Prairie Plan (pp. 4-11, 4-12 and 2-9, 2-10) if the temporary facility were to remain, although mitigation measures such as vegetative screening would aid in reducing some impacts; other impacts would persist.

No effects on heritage resources would occur from implementing any of the alternatives because no archaeological or historical remains were discovered during surveys for this project.

Cumulative Effects

No adverse cumulative effects of either of the two action alternatives have been identified that would affect recreation opportunities, heritage resources, or scenic quality along the Illinois State Highway 53 transportation corridor. Alternative 2 would have more positive cumulative effects because the additional removal of fragmenting hedgerows and fencerows would create more natural looking scenery in the grassland bird habitat mitigation area. The effects of maintaining the temporary Hotshot facility in its present location would not be permanent under Alternative 3.

4.6 SOCIO-ECONOMICS AND ENVIRONMENTAL JUSTICE

Affected Environment

Executive Order 12898 (February 11, 1994) directs Federal agencies to focus attention, identify, and address as appropriate, any disproportionately high and adverse human health and socioeconomic impacts of Federally funded projects in minority and low-income communities. The principle behind environmental justice is simple: people should not suffer disproportionately because of their ethnicity or income level.

The proposed action affects Forest Service lands on the Midewin National Tallgrass Prairie in Will County, Illinois, a fairly affluent area ranking tenth in Illinois in per capita income. The poverty rate is 6%, where statewide, the rate is 12%. Approximately 11% of Will County's population is minority, compared to 17.8% statewide. The area's economy has steadily changed from a manufacturing base to a more service-oriented economy since the early 1970s.

Environmental Consequences

Alternatives 1 and 2: Funding of $750,000 from Forest Service appropriated funds has been appropriated for construction of a portion of the Hotshot fire crew facility in FY 2003 (including the office building, garage, and parking lot), pending completion of the environmental analysis and a decision by the Prairie Supervisor to authorize the project. The crew quarters and training area would be constructed in phases over several years, resources and additional funds permitting. There is no evidence that this project would disproportionately affect any minority or low-income communities. The proposal deals with constructing a Hotshot facility based on resource conditions and capabilities.

Alternative 3: If no action were to be taken, funding would not be expended at this time for construction within the proposed project area. Eventually, however, the Hotshot

facility will have to be located elsewhere, as the current temporary location is planned for prairie habitat restoration and will need to be vacated; the site was not intended to be a permanent base for the Hotshot fire crew.

The cost of adapting existing buildings, whether former U.S. Army buildings or the farmhouse located on the Supervisor's Office parcel, would be far higher than that planned for constructing a new facility at the proposed location. New infrastructure, rights-of-way for utilities, and improved access roads would entail costly expenditures of Federal resources. Please see Section 3.2 for a detailed cost estimate of converting a former Army buildings for re-use by the Forest Service.

Cumulative Effects

The area of consideration for cumulative effects includes Will County, Illinois, covering 543,043 acres of land. It is estimated that this region is about 46% cropland, 9.9% urban, 30.4% pasture and other grasslands, 2.7% open water, 3.1% wetland, and 7.7% forest. The county includes the watersheds of the Kankakee, Des Plaines, and Calumet Rivers; the Kankakee and the Des Plaines Rivers are the only two major rivers in the county. The landscape of Will County is primarily open farmland, with one of the largest concentrations of open grassland in Illinois.

Past activities that occurred on the Joliet Arsenal prior to 1940 include timber cutting, wetland drainage, and conversion of natural vegetation to agricultural fields and pasture. The U.S. Army later improved existing roads and added infrastructure to support the ordnance plant (new roads, railroads, power lines, security fences, buildings, drainage ditches, reservoirs, wells, water towers, water lines, and other features).

Present and potential future activities at Midewin include projects related to prairie restoration, continued row crop production, building demolition, road removal, hazardous materials cleanup, scientific research, environmental education, trails, and recreation facilities construction. Present and future actions on other portions of the former arsenal include development of two industrial parks, management of lands at the Abraham Lincoln National Cemetery, and construction and operation of the Will County landfill.

The proposed action, when combined with the cumulative effects of all past, present, and reasonably foreseeable future actions, is not expected to impact socio-economic conditions or environmental justice in Will County.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

There would not be an irretrievable commitment of natural resources. There would not be an irreversible commitment of resources with either of the action alternatives.

4.8 APPLICABLE REGULATORY REQUIREMENTS, REQUIRED COORDINATION, LICENSES, PERMITS

1. National Forest Management Act (36 CFR 219.27)
    - ✓ This project is consistent with NFMA guidelines.
    - ✓ This project includes measures to prevent the destruction or adverse modification of critical habitat for Threatened and Endangered species.
    - ✓ This project will protect soil and water conservation resources.
2. National Environmental Policy Act (40 CFR Parts 1500-1508)
    - ✓ This Environmental Assessment is tiered to the Supervisor's Office EA in accordance with the Council on Environmental Quality (CEQ) guidance regarding NEPA regulations (FSH 1909.15,65.14).
3. Section 7(c) of the Endangered Species Act (16 U.S.C. 1531 et seq.)
    - ✓ This project will include concurrence with the U.S. Fish and Wildlife Service.
    - ✓ This project will protect Federal Threatened and Endangered species
4. Clean Water Act (33 U.S.C. 1251 et seq.); Executive Order 11990, Protection of Wetlands (42 F.R. 26961)
    - ✓ This project will protect all navigable waters; including all tributaries and wetlands connected to navigable waters.
5. Section 106 of the National Historic Preservation Act of 1966 (U.S.C. sec 470) as amended
    - ✓ This project will not affect historic properties.

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APPENDIX A

REGIONAL FORESTER SENSITIVE SPECIES

Crawe's Sedge (*Carex crawei*) – This sedge is a rhizomatous, short-stature, perennial graminoid plant of calcareous prairies, dolomite prairie, fens, and pannes. Crawe's sedge often grows where environmental conditions reduce competition from taller grasses; such conditions may include shallow soils, high pH, or seasonally high water tables. Crawe's sedge is able to survive under grazing and certain other disturbances. Crawe's sedge has not been found in the grasslands around the Midewin SO, but there has not been a systematic survey for this species at the site. The nearest known population of Crawe's sedge near the SO is a formerly pastured prairie on U.S. Army land located 3500 feet southeast of the proposed Hotshot facility, where the plant community and vegetation is similar to that of grasslands in the immediate vicinity of the SO.

Sullivant's Coneflower (*Rudbeckia fulgida sullivantii*) – This perennial, broad-leaved forb is locally common on Midewin, especially on outwash plain soils west of IL State Highway 53, where it occurs in prairie remnants, permanent pastures, seeps, and forest edges. A population of Sullivant's coneflower is present east of, and along the highway and in grasslands around the Midewin SO. The plants occur grazed and ungrazed grasslands, with both native and non-native associates. Some plants may occur in the 5.9-acre site proposed for the Hotshot facility.

Henslow's sparrow (*Ammodromus henslowii*) – This grassland passerine requires tall-stature grassland habitat for breeding, primarily grasslands that were not mowed, burned, or pastured in the year prior to the breeding season. Henslow's sparrow is also area-sensitive, usually requiring unfragmented grasslands of at least 100 acres. Henslow's sparrow may also be sensitive to road noise and other disturbances. Habitat structure in the grasslands around the Midewin SO is currently unsuitable for Henslow's sparrow. However, singing Henslow's sparrows have been recorded from these grasslands in the past, primarily during years when livestock were not present and grass structure reached suitable height. During some years, singing male Henslow's sparrows have been present in grasslands adjacent to the temporary Hotshot base and in the grasslands proposed for habitat improvement under Alternative 2; nesting has not been confirmed at either site.

Short-eared Owl (*Asio flammeus*) – This grassland owl requires open grasslands for hunting, and usually nests where grass stubble or herbaceous vegetation provides cover. This owl visits Midewin during the winter; there are no nesting records. As prairie and grassland restoration proceed, this species may eventually nest at Midewin during years when vole populations are high. Short-eared owls have not been seen in the grasslands

around the Midewin SO, even during the winter, although the grasslands appear to provide suitable foraging habitat. During some winters, short-eared owls have been observed foraging and loafing in the grasslands where fencerow removal has been proposed under Alternative 2.

Upland Sandpiper (*Bartramia longicauda*) – Preferred habitats for upland sandpipers include open grasslands, prairies, and pastures dominated by short-stature grasses 15-30 cm tall, with some areas <15 cm tall for brood-rearing. Upland sandpipers are also sensitive to habitat fragmentation, requiring contiguous tracts of at least 75 acres in Illinois, but preferring larger tracts. Midewin has the largest breeding concentration of upland sandpipers in Illinois, although numbers have declined in recent years (unpublished data from Midewin grassland bird surveys). Upland sandpipers (at least 1-2 pairs) are present during the breeding season in the grasslands around the Midewin SO, where territorial behavior, courtship, and juveniles have been observed. Upland sandpipers have also been observed in the grasslands proposed for habitat improvement under Alternative 2; sandpiper presence in these grasslands is sporadic, and nesting has not been confirmed. Prior to the late 1990s, upland sandpipers were occasionally present during the breeding season in the grasslands south of the temporary Hotshot base (installed in 2001); these tracts are marginal for sandpipers because of fragmentation by fencerows, roads, and shrub thickets.

Northern Harrier (*Circus cyaneus*) – This diurnal raptor forages in open grasslands, but also over crop field stubble and wetlands. Nests are usually located on the ground amid taller herbaceous vegetation. Northern harriers are frequent visitors to Midewin while on migration and during the winter; however, there is only one confirmed nest. Other harriers observed during late spring and summer may represent nesting pairs. Northern harriers do nest at nearby Goose Lake Prairie State Park and may eventually become more frequent at Midewin. The grasslands around the Midewin SO are suitable foraging habitat for this species. Northern harriers are often observed foraging over the grasslands in fall, winter, and early spring, although they have not been found nesting in these grasslands, as the habitat structure may not be suitable. During fall, winter, and spring, northern harriers have been observed foraging over the grasslands adjacent to the temporary Hotshot facility and in the grasslands proposed for habitat improvement under Alternative 2; however, nesting has not been confirmed at either location.

Bobolink (*Dolichonyx oryzivorus*) – This grassland bird may use a variety of habitats, including prairie, pastures, and hay fields, although bobolinks appear to be sensitive to road noise and may be sensitive to other types of human activity. Requirements appear to include a relatively low amount of grass litter (2-4 cm depth) and medium-stature grasses (20-40 cm tall). Bobolinks are also sensitive to the presence of shrubs and habitat size; unfragmented grasslands greater than 75 contiguous acres are required. Bobolinks breed

in agricultural grasslands throughout Midewin and are conspicuous in the grasslands around the SO. Bobolinks are also present in the grasslands around the temporary Hotshot base, and small numbers maintain territories in the grasslands proposed for habitat improvement under Alternative 2.

Migrant Loggerhead Shrike (*Lanius ludovicianus migrans*) – Loggerhead shrikes prefer short-stature grasslands as foraging habitat, using patches of dense shrubs and thorny trees as perches from which to scan the grassland for prey. The shrikes also use dense, thorny shrubs and young trees as nesting and prey impalement sites. Loggerhead shrikes are not considered area-sensitive; a nesting pair requires, on average, 25 acres of foraging habitat. Although the grasslands around the Midewin SO appear suitable for loggerhead shrikes, shrikes are not known to nest here. The nearest known nest sites for loggerhead shrikes are ¾-mile east and one mile northwest of the SO. Loggerhead shrikes have been observed foraging in grasslands around the SO in late summer and autumn; these are probably birds dispersing after breeding, but may also be migrants from breeding populations elsewhere. Nesting loggerhead shrikes have been found in the fields south of the temporary Hotshot base, and have also nested around the grassland tract proposed for habitat improvement under Alternative 2.

Plains Leopard Frog (*Rana blairi*) – This amphibian occurs in wetlands along Prairie Creek, 1-1/4 to 2 miles northwest of the Midewin SO. Despite periodic surveys for the plains leopard frog in the vicinity of the SO (in the seed production beds and around horticultural facilities), this species has not been found. All leopard frogs captured around the Supervisor's Office have been identified as the northern leopard frog (*Rana pipiens*).
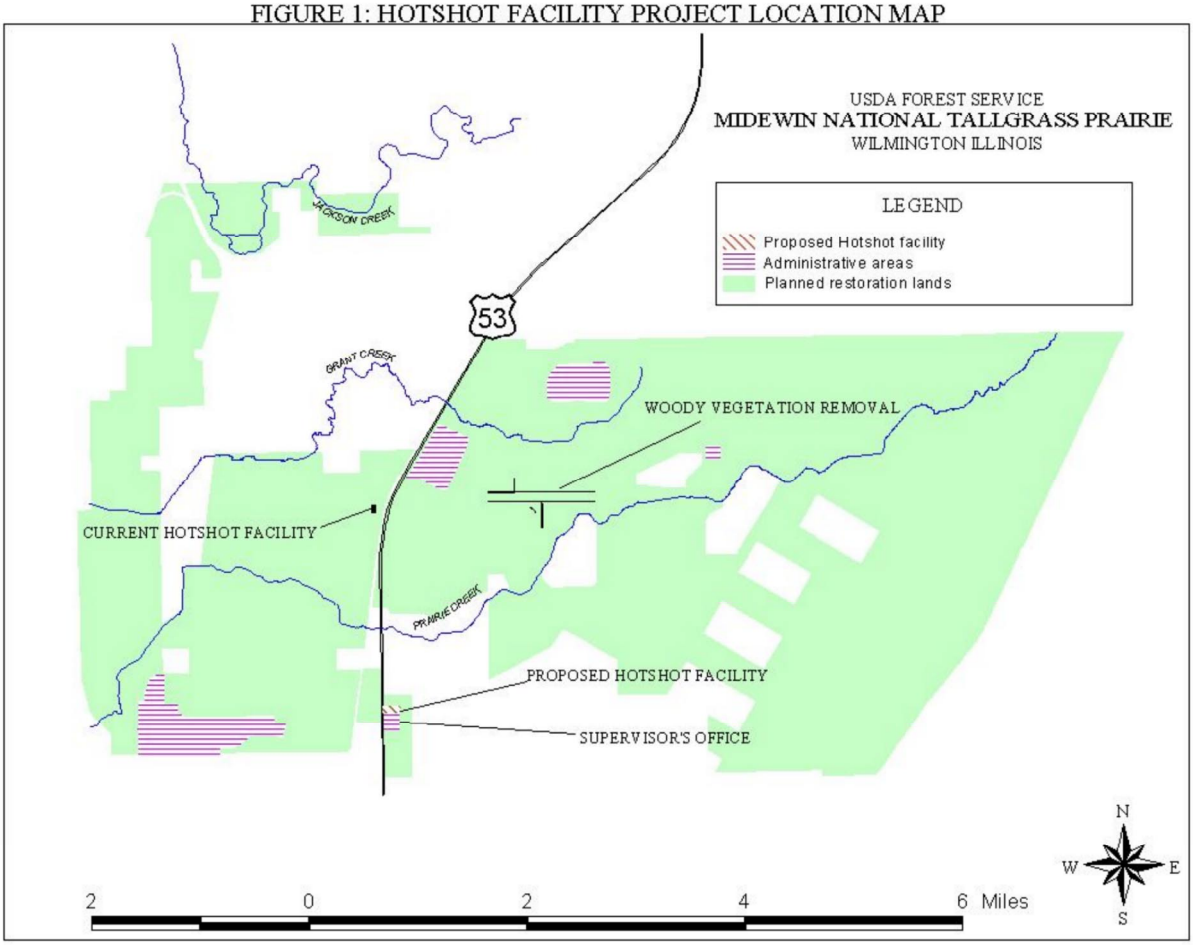
FIGURE 1: HOTSHOT FACILITY PROJECT LOCATION MAP