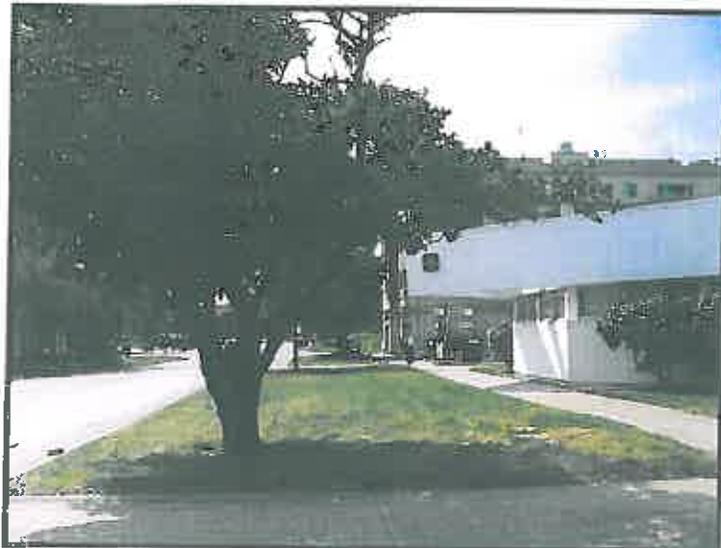


**APPENDIX C:**

**Section 2: University of Iowa Biological Resources Report – Music School Site**



*University of Iowa Biological  
Resources Report  
Music School Site*



**Iowa City, Iowa**

**Prepared for: Seneca  
September 12, 2011**

**GES Project No. 2011.024**

## *University of Iowa Rare Plants Report*

**Graham Environmental Services**  
S1095 Westland Drive, Spring Valley, WI 54767

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# Introduction

## Project Purpose and Objectives

This report summarizes the results of an inventory and analysis of the biological resources of an area on the University of Iowa campus at Iowa City, Iowa. The biological resources survey was conducted on September 8<sup>th</sup>, 2011. This project was undertaken by Graham Environmental Services in partnership with Seneca to provide baseline ecological information for a University of Iowa construction project. This report accompanies other reports on wetland resources and rare plant species biological resources for the project area.

The primary objectives of project are:

- To identify key biological resource for the project area
- To summarize resource opportunities for the project area

**Biologic Attributes covered in this report include:**

- Landscape Ecology
- Rare Plants and Animals
- Plant Communities
- Plant and Animal Diversity
- Stormwater Management
- Invasive Species
- Environmental Education



# Description of the Study Area

## Biological Context



The area of study for this project is located on the University of Iowa campus in Iowa City. Historically, this landscape was dominated by open prairies and savannas, and woodlands bordering rivers and streams. Mesic prairie dominated most of the landscape but it also included dry prairie species from the plains to the east and tree and shrub species found in the deciduous forest to the east. Fire that was started by Native Americans or lightening was the primary factor keeping the prairie landscape open and un-forested. In many cases, Native Americans started fires to maintain ideal habitat for Bison, elk and deer. Other species that relied on the prairie habitat included badger, prairie chickens, a wide variety of songbirds and even wolves.

Following European settlement, farmsteads started establishing across the landscape, and the rich prairie soils were plowed for crop production. Wetlands were also drained and trees cut down for building, heating and to expand fields. This process of landscape conversion from natural habitats occurred over several decades. Today around 60% of the landscape is in annual crops. The populations of many wildlife species decreased due to a combination of over hunting and habitat loss.

Scattered woodlots, wetlands and conservations plantings are also part of the rural landscape around Iowa City. The planting of native vegetation along roadsides has been a focus in Iowa and these areas add to the biological diversity of the rural landscape. Through restoration and conservation efforts many wildlife species such as turkey, deer, bobcat, peregrine falcons and trumpeter swans are re-establishing in the state.

The current landscape of Iowa City is a combination of commercial, residential and industrial development. North and south of the city the Iowa River winds through the agricultural landscape

creating an important corridor of wildlife habitat. As the river winds through the city the corridor shrinks in size but widens where there are parks, steep slopes, or ravines leading down to the river.

Much of the city is dominated with mature street trees including many oaks. A wide variety of plant species have been planted on the University of Iowa campus and in private residences in the area, including both native plants and horticultural varieties.

## Special Status Species

Lists of State and Federal Threatened, Endangered and Special Concern species have been developed for Iowa are available through the Iowa Natural Areas Inventory (INAI) Interactive Website. The information in the database is from a variety of sources, including surveys to locate rare plants and animals in their natural habitats, collection of information from museums, herbariums, and scientific literature, and observations from naturalists around the state. Over 8000 records are contained in the database, ranging from historical observations made in the 1800s to present day sightings. Records in the complete INAI Database are protected as "ecologically sensitive sites" within the Open Records Law (Iowa Code 22.7(21)) and are used by professional natural resource managers to identify opportunities for conservation, to improve natural resource management, and to conduct environmental reviews to avoid conflicts between development and listed species. (Iowa DNR)

The following are definitions for Endangered Species, Threatened Species and Special Concern Species from the Iowa Department of Natural Resources:

**Endangered Species** means any species of fish, plant life, or wildlife which is in danger of extinction throughout all or a significant part of its range. Protected by law.

**Threatened Species** means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Protected by law.

**Special Concern** means any species about which problems of status or distribution are suspected, but not documented. Not protected by the Iowa Threatened and Endangered Species law, but many animal species listed as Special Concern are protected under other state and federal laws addressing hunting, fishing, collecting, and harvesting.

The follow table is a summary of listed species for Johnson County Iowa where Iowa City and the project area is located. Appendix A of this report includes a complete list of endangered, threatened and special concern species for the entire state of Iowa.

**Natural Areas Inventory** The Iowa Department of Natural Resources

**JOHNSON County, IA**

**Summary by Species Report**

Total Unique Listed Species In This County: 61

| County  | Common Name         | Scientific Name          | Class              | State Status | Federal Status |
|---------|---------------------|--------------------------|--------------------|--------------|----------------|
| JOHNSON | Bald Eagle          | Haliaeetus leucocephalus | BIRDS              | S            |                |
| JOHNSON | Barn Owl            | Tyto alba                | BIRDS              | E            |                |
| JOHNSON | Northern Harrier    | Circus cyaneus           | BIRDS              | E            |                |
| JOHNSON | Freckled Madtom     | Noturus nocturnus        | FISH               | E            |                |
| JOHNSON | Orangethroat Darter | Etheostoma spectabile    | FISH               | T            |                |
| JOHNSON | Creeper             | Strophitus undulatus     | FRESHWATER MUSSELS | T            |                |
| JOHNSON | Fat Pocketbook      | Potamilus capax          | FRESHWATER MUSSELS |              | E              |
| JOHNSON | Pistolgrip          | Tritogonia verrucosa     | FRESHWATER MUSSELS | E            |                |
| JOHNSON | Purple Wartyback    | Cyclonaias tuberculata   | FRESHWATER MUSSELS | T            |                |
| JOHNSON | Round Pigtoe        | Pleurobema sintoxia      | FRESHWATER MUSSELS | E            |                |
| JOHNSON | Sheepnose           | Plethobasus cyphus       | FRESHWATER MUSSELS | E            | C              |
| JOHNSON | Yellow Sandshell    | Lampsilis teres          | FRESHWATER MUSSELS | E            |                |
| JOHNSON | Byssus Skipper      | Problema byssus          | INSECTS            | T            |                |
| JOHNSON | Purplish Copper     | Lycaena helloides        | INSECTS            | S            |                |
| JOHNSON | Spotted Skunk       | Spilogale putorius       | MAMMALS            | E            |                |
| JOHNSON | Cleft Phlox         | Phlox bifida             | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Cream Violet        | Viola striata            | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Earleaf Foxglove    | Tomanthera auriculata    | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Fineberry Hawthorn  | Crataegus chrysoarpa     | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Frost Grape         | Vitis vulpina            | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Hedge Nettle        | Stachys aspera           | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Hill's Thistle      | Cirsium hillii           | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Hortulan Plum       | Prunus hortulana         | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Humped Bladderwort  | Utricularia gibba        | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Lance-leaved Violet | Viola lanceolata         | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Limestone Rockcress | Arabis divaricarpa       | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Muskroot            | Adoxa moschatellina      | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Pearly Everlasting  | Anaphalls margaritacea   | PLANTS (DICOTS)    | S            |                |
| JOHNSON | Pinesap             | Monotropa hypopithys     | PLANTS (DICOTS)    | T            |                |
| JOHNSON | Pink Milkwort       | Polygala incarnata       | PLANTS (DICOTS)    | T            |                |
| JOHNSON | Sage Willow         | Salix candida            | PLANTS (DICOTS)    | S            |                |

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|         |                                |                                    |                         |   |   |
|---------|--------------------------------|------------------------------------|-------------------------|---|---|
| JOHNSON | Saskatoon Service-berry        | <i>Amelanchier alnifolia</i>       | PLANTS (DICOTS)         | S |   |
| JOHNSON | Spring Avens                   | <i>Geum vernum</i>                 | PLANTS (DICOTS)         | S |   |
| JOHNSON | Toothcup                       | <i>Rotala ramosior</i>             | PLANTS (DICOTS)         | S |   |
| JOHNSON | Water Shield                   | <i>Brasenia schreberi</i>          | PLANTS (DICOTS)         | S |   |
| JOHNSON | Water Starwort                 | <i>Callitriche heterophylla</i>    | PLANTS (DICOTS)         | S |   |
| JOHNSON | Wooly Milkweed                 | <i>Asclepias lanuginosa</i>        | PLANTS (DICOTS)         | T |   |
| JOHNSON | Bur-reed                       | <i>Sparganium angrocladum</i>      | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Capitate Spikerush             | <i>Eleocharis olivacea</i>         | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Chapman Bluegrass              | <i>Poa chapmaniana</i>             | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Eastern Prairie Fringed Orchid | <i>Platanthera leucophaea</i>      | PLANTS (MONOCOTS)       | E | T |
| JOHNSON | Glomerate Sedge                | <i>Carex aggregata</i>             | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Green Adder's Mouth            | <i>Malaxis unifolia</i>            | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Oval Ladies'-tresses           | <i>Spiranthes ovalis</i>           | PLANTS (MONOCOTS)       | T |   |
| JOHNSON | Pale Green Orchid              | <i>Platanthera flava</i>           | PLANTS (MONOCOTS)       | E |   |
| JOHNSON | Showy Lady's Slipper           | <i>Cypripedium reginae</i>         | PLANTS (MONOCOTS)       | T |   |
| JOHNSON | Slender Fimbry                 | <i>Fimbristylis autumnalis</i>     | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Slender Ladies'-tresses        | <i>Spiranthes lacera</i>           | PLANTS (MONOCOTS)       | T |   |
| JOHNSON | Slim-leaved Panic Grass        | <i>Dichanthelium linearifolium</i> | PLANTS (MONOCOTS)       | T |   |
| JOHNSON | Tall Cotton Grass              | <i>Eriophorum angustifolium</i>    | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Wolf Spike-rush                | <i>Eleocharis wolfii</i>           | PLANTS (MONOCOTS)       | S |   |
| JOHNSON | Crowfoot Clubmoss              | <i>Lycopodium digitatum</i>        | PLANTS (PTERIODOPHYTES) | S |   |
| JOHNSON | Ground Pine                    | <i>Lycopodium clavatum</i>         | PLANTS (PTERIODOPHYTES) | E |   |
| JOHNSON | Limestone Oak Fern             | <i>Gymnocarpium robertianum</i>    | PLANTS (PTERIODOPHYTES) | S |   |
| JOHNSON | Northern Adder's-tongue        | <i>Ophioglossum pusillum</i>       | PLANTS (PTERIODOPHYTES) | S |   |
| JOHNSON | Oak Fern                       | <i>Gymnocarpium dryopteris</i>     | PLANTS (PTERIODOPHYTES) | T |   |
| JOHNSON | Blanding's Turtle              | <i>Emydoidea blandingii</i>        | REPTILES                | T |   |
| JOHNSON | Common Musk Turtle             | <i>Sternotherus odoratus</i>       | REPTILES                | T |   |
| JOHNSON | Massasauga Rattlesnake         | <i>Sistrurus catenatus</i>         | REPTILES                | E |   |
| JOHNSON | Ornate Box Turtle              | <i>Terrapene ornata</i>            | REPTILES                | T |   |
| JOHNSON | Smooth Green Snake             | <i>Liochlorophis vernalis</i>      | REPTILES                | S |   |

Key: Threatened (T), Endangered (E), Special Concern (S), Candidate for Listing (C)



**Music School Site**

The Music School site includes the two lots shown below labeled 301 and 325.

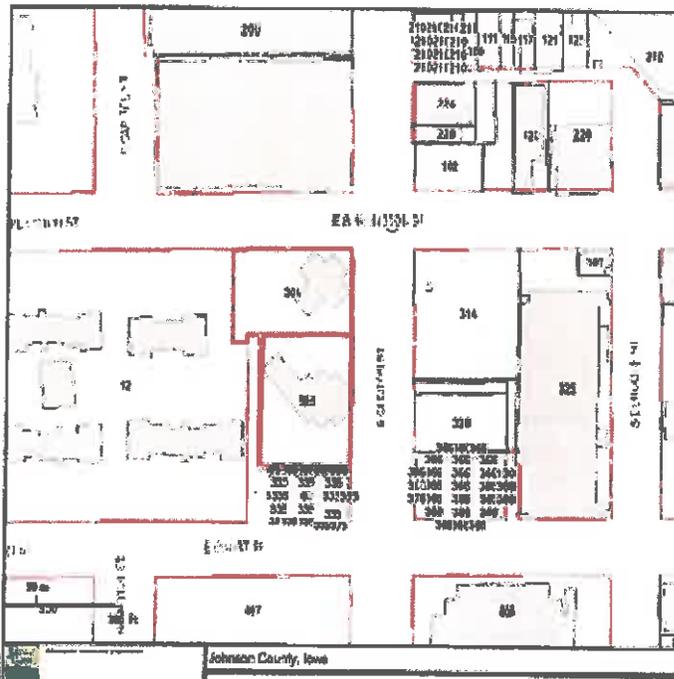
The site is located near downtown Iowa City, so it is surrounded by large buildings and road and contains few vegetated areas. Vegetated areas consist of lawns, street trees and foundation plantings around the two buildings. Plantings are generally contained in mulch or rock beds or boulevard trees planted in turf. There is little opportunity for stormwater to be infiltrated at the site, as it is generally directed to storm sewer drains.



Boulevard of lawn and street trees along South Clinton Street

Both common and glossy buckthorn and Tartarian honeysuckle (invasive shrubs) are found at the site, the plants were planted and maintained along with other foundation plantings around the buildings. Japanese barberry if also found at the site; this species can be invasive in some woodland areas.

No natural plant communities were found at the project site or in surrounding areas. Also, no State or Federally listed species were found in the Music School site.



The music school site is south of East Burlington St. and West of South Clinton Street

## Overview of Methods

### Planning and Pre-Survey Data Collection

Prior to the survey aerial images were studied to determine locations of plant communities, where State and Federally listed species would most likely be found at the site, as well as other biological attributes. Information was also collected about historical land use, as well as information about rare and declining species in the project area. This included species that have been documented in the County, as well as species that are State or Federally listed statewide. Information was also collected about key taxonomical differences between rare plant species that could be found at the project site, and more common species within similar genus. Examples are the *Poa* and *Vitis* genus that include both State listed species and species that are common in the landscape.

### Field Surveys

Upon visiting the site an analysis of the site boundaries and dominant plant communities was conducted, as well as an analysis of likely areas of listed species. This was followed by a detailed meander search of the project site to develop a complete list of species found, and to search for any species that were State or Federally listed. A complete list of all species found was developed to ensure that listed species in the same genus as common species (not listed species) could be differentiated. Any species that could not be positively identified in the field were photographed. Leaf samples were collected for trees, shrubs and vines and for herbaceous species if large populations were present. Notes were also taken during the field surveys about key biological attributes.

# Summary of Observations and Resource Opportunities

## Landscape Ecology

**Observations:** The project site is within a quarter mile of the Iowa River, but there is little habitat or natural hydrologic connection to the river as the site is located in the most urban portion of Iowa City which has few vegetated corridors and waterways.

**Opportunities:** New construction efforts may allow for plantings that can reconnect the river with other natural features in the landscape, and develop stormwater treatment systems that can treat and infiltrate water before it reaches the river.

## Rare Plants and Animals

**Observations:** Due to the urban landscape of the site no State or Federally listed plant species were found, and it is highly unlikely that any listed bird or animal species would be found, other than bird species that are using the river as a migration corridor.

**Opportunities:** The planting of additional trees may provide more roosting areas for migrating birds.

## Plant Communities

**Observations:** No natural plant communities were found at the project site.

**Opportunities:** The site is highly urban and has little opportunity for plant community restoration.

## Plant and Animal Diversity

**Observations:** The music school site is dominated by lawn with interspersed tree and shrub plantings.

**Opportunities:** As the site is highly urban there is little opportunity to improve habitat for plants and animals.

## Stormwater Management

**Observations:** Stormwater flowing over impervious surfaces at the project sites currently flows into stormwater inlets and is directed to the Iowa River which eventually makes its way to the Mississippi River.

**Opportunities:** The addition of new stormwater BMPs could help retain and infiltrate stormwater before it reaches the river.

## **Invasive Species**

**Observations:** The Music School site contains invasive buckthorn and honeysuckle shrub species.

**Opportunities:** Removal of these invasive species would prevent invasive species from spreading to other nearby wooded areas.

## **Environmental Educational**

**Observations:** The proximity of the study area to the Iowa River allows for several educational opportunities for students.

**Opportunities:** The shoreline of the river is degraded and has a narrow buffer in this portion of the city, and its restoration to native vegetation would help improve water quality and provide an educational resource for University of Iowa students. Stormwater treatment areas as part of new developments would also allow students to learn about innovative methods to improve water quality.

## Glossary of Terms Used in This Report

**Diversity** - The spectrum of life forms and the ecological processes that support and sustain them. Biological diversity is a complex of four interacting levels: genetic, species, community, and ecosystem. ((Matthiae et al., 1993)

**Fragmentation** – the breaking up of large and continuous ecosystems, communities, and habitats into smaller discontinuous areas that are surrounded by altered or disturbed lands or aquatic features.

**Inventory site** - The geographic location at which a biological survey has been conducted.

**Natural community** - an assemblage of plants and animals, in a particular place at a particular time, interacting with one another and the abiotic environment around them, and subject to primarily natural disturbance regimes. Those assemblages that are repeated across a landscape in an observable pattern constitute a community “type.” No two assemblages, however, are exactly alike.

## References

Iowa Natural Areas Inventory (INAI) Interactive Website

<http://www.iowadnr.gov/Environment/ThreatenedEndangered/NaturalAreasInventory.aspx>

Iowa’s Fragile Flora

<http://www.cgrer.uiowa.edu/herbarium/FragFloraIntro.htm>

USDA, NRCS. 2011. The PLANTS Database (<http://plants.usda.gov>, 11 September 2011). National Plant Data Team, Greensboro, NC 27401-4901 USA.



## Appendix A

### Endangered, Threatened, and Special Concern Plants and Animals and Native Natural Communities in Iowa County

**State Status:** THR - Threatened, END - Endangered, SC - Special Concern, SC/P - Fully protected, SC/N - No protection, SC/H - Take regulated by open/closed seasons, SC/FL - Federally protected as endangered or threatened, SC/M - Protected by Migratory Bird Act.

**Federal Status (In Wisconsin):** LE - Listed as Endangered, LT - Listed as Threatened, C - Candidate for listing.

**Groupname:** A - Indicates an aquatic/wetland element

#### Animals

| Scientific Name                    | Common Name                    | State Status | Federal Status | Groupname   |
|------------------------------------|--------------------------------|--------------|----------------|-------------|
| <i>Acipenser fulvescens</i>        | Lake Sturgeon                  | SC/H         |                | Fish-       |
| <i>Acris crepitans</i>             | Northern Cricket Frog          | END          |                | Frog-       |
| <i>Aeropedellus clavatus</i>       | Club-horned Grasshopper        | SC/N         |                | Grasshopper |
| <i>Aflexia rubranura</i>           | Red-tailed Prairie Leafhopper  | END          |                | Leafhopper  |
| <i>Alasmidonta marginata</i>       | Elktoe                         | SC/P         |                | Mussel-     |
| <i>Ammocrypta clara</i>            | Western Sand Darter            | SC/N         |                | Fish-       |
| <i>Ammodramus henslowii</i>        | Henslow's Sparrow              | THR          |                | Bird        |
| <i>Amplicephalus kansiensis</i>    | A Leafhopper                   | SC/N         |                | Leafhopper  |
| <i>Anguilla rostrata</i>           | American Eel                   | SC/N         |                | Fish-       |
| <i>Anodonta suborbiculata</i>      | Flat Floater                   | SC/P         |                | Mussel-     |
| <i>Apalone mutica</i>              | Smooth Softshell               | SC/H         |                | Turtle-     |
| <i>Aphredoderus sayanus</i>        | Pirate Perch                   | SC/N         |                | Fish-       |
| <i>Arcidens confragosus</i>        | Rock Pocketbook                | THR          |                | Mussel-     |
| <i>Attenuipyga vanduzeei</i>       | A Leafhopper                   | SC/N         |                | Leafhopper  |
| <i>Bartramia longicauda</i>        | Upland Sandpiper               | SC/M         |                | Bird        |
| <i>Bat Hibernaculum</i>            | Bat Hibernaculum               | SC           |                | Other       |
| <i>Bird Rookery</i>                | Bird Rookery                   | SC           |                | Other-      |
| <i>Buteo lineatus</i>              | Red-shouldered Hawk            | THR          |                | Bird-       |
| <i>Caenis hilaris</i>              | A Small Square-gilled Mayfly   | SC/N         |                | Mayfly-     |
| <i>Cercobranchys fox</i>           | Fox Small Square-gilled Mayfly | SC/N         |                | Mayfly-     |
| <i>Chlosyne gorgone</i>            | Gorgone Checker Spot           | SC/N         |                | Butterfly   |
| <i>Chondestes grammacus</i>        | Lark Sparrow                   | SC/M         |                | Bird        |
| <i>Cicindela lepida</i>            | Little White Tiger Beetle      | SC/N         |                | Beetle      |
| <i>Crotalus horridus</i>           | Timber Rattlesnake             | SC/P         |                | Snake       |
| <i>Crystallaria asprella</i>       | Crystal Darter                 | END          |                | Fish-       |
| <i>Cycleptus elongatus</i>         | Blue Sucker                    | THR          |                | Fish-       |
| <i>Dendroica cerulea</i>           | Cerulean Warbler               | THR          |                | Bird        |
| <i>Dendroica dominica</i>          | Yellow-throated Warbler        | END          |                | Bird        |
| <i>Ellipsaria lineolata</i>        | Butterfly                      | END          |                | Mussel-     |
| <i>Empidonax virescens</i>         | Acadian Flycatcher             | THR          |                | Bird        |
| <i>Emydoidea blandingii</i>        | Blanding's Turtle              | THR          |                | Turtle-     |
| <i>Epiaeschna heros</i>            | Swamp Darner                   | SC/N         |                | Dragonfly-  |
| <i>Erimyzon sucetta</i>            | Lake Chubsucker                | SC/N         |                | Fish-       |
| <i>Etheostoma asprigene</i>        | Mud Darter                     | SC/N         |                | Fish-       |
| <i>Etheostoma microperca</i>       | Least Darter                   | SC/N         |                | Fish-       |
| <i>Fundulus dispar</i>             | Starhead Topminnow             | END          |                | Fish-       |
| <i>Fusconaia ebena</i>             | Ebony Shell                    | END          |                | Mussel-     |
| <i>Glyptemys insculpta</i>         | Wood Turtle                    | THR          |                | Turtle-     |
| <i>Graptemys pseudogeographica</i> | False Map Turtle               | SC/H         |                | Turtle-     |
| <i>Haliaeetus leucocephalus</i>    | Bald Eagle                     | SC/P         |                | Bird-       |
| <i>Hendersonia occulta</i>         | Cherrystone Drop               | THR          |                | Snail       |
| <i>Herp Hibernaculum</i>           | Herp Hibernaculum              | SC           |                | Other       |
| <i>Hiodon alosoides</i>            | Goldeye                        | END          |                | Fish-       |
| <i>Ictiobus niger</i>              | Black Buffalo                  | THR          |                | Fish-       |
| <i>Ixobrychus exilis</i>           | Least Bittern                  | SC/M         |                | Bird-       |
| <i>Laccobius reflexipennis</i>     | A Predaceous Diving Beetle     | SC/N         |                | Beetle-     |
| <i>Lampsilis higginsii</i>         | Higgins' Eye                   | END          | LE             | Mussel-     |
| <i>Lampsilis teres</i>             | Yellow & Slough Sandshells     | END          |                | Mussel-     |

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|                              |  |              |               |                       |                  |
|------------------------------|--|--------------|---------------|-----------------------|------------------|
| Lanius ludovicianus          | Loggerhead Shrike                      | END          |               | Bird                  |                  |
| Lioporeus triangularis       | A Predaceous Diving Beetle             | SC/N         |               | Beetle-               |                  |
| Lithobates palustris         | Pickerel Frog                          | SC/H         |               | Frog-                 |                  |
| Macrhybopsis aestivalis      | Shoal Chub                             | THR          |               | Fish-                 |                  |
| Macrhybopsis storeriana      | Silver Chub                            | SC/N         |               | Fish-                 |                  |
| Microtus ochrogaster         | Prairie Vole                           | SC/N         |               | Mammal                |                  |
| Migratory Bird Concentration | Site Migratory Bird Concentration Site | SC           |               | Other                 |                  |
| Moxostoma valenciennesi      | Greater Redhorse                       | THR          |               | Fish-                 |                  |
| Mussel Bed Mussel            | Bed                                    | SC           |               | Other-                |                  |
| Myotis septentrionalis       | Northern Long-eared Bat                | THR          |               | Mammal                |                  |
| Notropis nubilis             | Ozark Minnow                           | THR          |               | Fish-                 |                  |
| Notropis texanus             | Weed Shiner                            | SC/N         |               | Fish-                 |                  |
| Noturus exilis               | Slender Madtom                         | END          |               | Fish-                 |                  |
| Oporornis formosus           | Kentucky Warbler                       | THR          |               | Bird                  |                  |
| Opsopoeodus emiliae          | Pugnose Minnow                         | SC/N         |               | Fish-                 |                  |
| Pantherophis spiloides       | Gray Ratsnake                          | SC/P         |               | Snake                 |                  |
| Pentagenia vittigera         | A Common Burrower Mayfly               | SC/N         |               | Mayfly-               |                  |
| Perimyyotis subflavus        | Eastern Pipistrelle                    | THR          |               | Mammal                |                  |
| Pituophis catenifer          | Gophersnake                            | SC/P         |               | Snake                 |                  |
| Plethobasus cyphus           | Bullhead                               | END          | C             | Mussel-               |                  |
| Polyamia dilata              | Prairie Leafhopper                     | THR          |               | Leafhopper            |                  |
| Polyodon spathula Paddlefish | THR Fish-                              |              |               |                       |                  |
| Protonotaria citrea          | Prothonotary Warbler                   | SC/M         |               | Bird-                 |                  |
| Quadrula metanevra           | Monkeyface                             | THR          |               | Mussel-               |                  |
| Quadrula quadrula            | Mapleleaf                              | SC/P         |               | Mussel-               |                  |
| Reithrodontomys megalotis    | Western Harvest Mouse                  | SC/N         |               | Mammal                |                  |
| Simpsonaias ambigua          | Salamander Mussel                      | THR          |               | Mussel-               |                  |
| Somatochlora hineana         | Hine's Emerald                         | END          | LE            | Dragonfly-            |                  |
| Sparbarus nasutus            | A Small Square-gilled Mayfly           | SC/N         |               | Mayfly-               |                  |
| Speyeria idalia              | Regal Fritillary                       | END          |               | Butterfly             |                  |
| Spinadis simplex             | Wallace's Deepwater Mayfly             | END          |               | Mayfly-               |                  |
| Stenelmis douglasensis       | Douglas Stenelmis Riffle Beetle        | SC/N         |               | Beetle-               |                  |
| Stenelmis knobeli Knobel's   | Riffle Beetle                          | END          |               | Beetle-               |                  |
| Sturnella neglecta           | Western Meadowlark                     | SC/M         |               | Bird                  |                  |
| Terrapene ornata             | Ornate Box Turtle                      | END          |               | Turtle                |                  |
| Tritogonia verrucosa         | Buckhorn                               | THR          |               | Mussel-               |                  |
| Truncilla donaciformis       | Fawnsfoot                              | SC/P         |               | Mussel-               |                  |
| Tyto alba                    | Barn Owl                               | END          |               | Bird                  |                  |
| Vireo bellii                 | Bell's Vireo                           | THR          |               | Bird                  |                  |
| Wilsonia citrina             | Hooded Warbler                         | THR          |               | Bird                  |                  |
| <b>Plants</b>                |  |              |               |                       |                  |
| <b>Scientific Name</b>       | <b>Common Name</b>                     | <b>State</b> | <b>Status</b> | <b>Federal Status</b> | <b>Groupname</b> |
| Agalinis gattereri           | Roundstem Foxglove                     |              | THR           |                       | Plant            |
| Agalinis skinneriana         | Pale False Foxglove                    |              | END           |                       | Plant            |
| Arabis shortii Short's       | Rock-cross                             |              | SC            |                       | Plant            |
| Asclepias lanuginosa         | Woolly Milkweed                        |              | THR           |                       | Plant            |
| Asclepias purpurascens       | Purple Milkweed                        |              | END           |                       | Plant            |
| Asplenium pinnatifidum       | Lobed Spleenwort                       |              | THR           |                       | Plant            |
| Botrychium campestre         | Prairie Dunewort                       |              | END           |                       | Plant            |
| Cacalia tuberosa Prairie     | Indian-Plantain                        |              | THR           |                       | Plant            |
| Calamagrostis stricta        | Slim-stem Small Reed Grass             |              | SC            |                       | Plant-           |
| Callirhoe triangulata        | Clustered Poppy-mallow                 |              | SC            |                       | Plant            |
| Calylophus serrulatus        | Yellow Evening Primrose                |              | SC            |                       | Plant            |
| Camassia scilloides          | Wild Hyacinth                          |              | END           |                       | Plant            |
| Carex laevivaginata          | Smooth-sheath Sedge                    |              | END           |                       | Plant-           |
| Carex schweinitzii           | Schweinitz's Sedge                     |              | END           |                       | Plant-           |
| Cirsium hillii               | Hill's Thistle                         |              | THR           |                       | Plant            |
| Cypripedium candidum         | Small White Lady's-slipper             |              | THR           |                       | Plant-           |
| Diarrhena obovata            | Beak Grass                             |              | END           |                       | Plant            |
| Dichanthelium wilcoxianum    | Wilcox's Panic Grass                   |              | SC            |                       | Plant            |
| Diodia teres var. teres      | Buttonweed                             |              | SC            |                       | Plant            |
| Eleocharis engelmannii       | Engelmann's Spike-rush                 |              | SC            |                       | Plant-           |
| Festuca paradoxa             | Cluster Fescue                         |              | SC            |                       | Plant            |
| Gentiana alba                | Yellow Gentian                         |              | THR           |                       | Plant            |
| Jeffersonia diphylla         | Twinleaf                               |              | SC            |                       | Plant            |

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|                                 |                            |     |    |        |
|---------------------------------|----------------------------|-----|----|--------|
| Juncus marginatus               | Grassleaf Rush             | SC  |    | Plant- |
| Lespedeza leptostachya          | Prairie Bush-clover        | END | LT | Plant  |
| Lespedeza violacea              | Violet Bush-clover         | SC  |    | Plant  |
| Melica nitens                   | Three-flowered Melic Grass | SC  |    | Plant  |
| Myosotis laxa                   | Small Forget-me-not        | SC  |    | Plant- |
| Nothocalais cuspidata           | Prairie False-dandelion    | SC  |    | Plant  |
| Orobanche fasciculata           | Clustered Broomrape        | THR |    | Plant  |
| Orobanche uniflora              | One-flowered Broomrape     | SC  |    | Plant  |
| Parthenium integrifolium        | American Fever-few         | THR |    | Plant  |
| Pediomelum esculentum           | Prairie Turnip             | SC  |    | Plant  |
| Phemeranthus rugospermus        | Prairie Fame-flower        | SC  |    | Plant  |
| Platanthera flava var. herbiola | Pale Green Orchid          | THR |    | Plant  |
| Platanthera hookeri             | Hooker's Orchid            | SC  |    | Plant  |
| Platanus occidentalis           | Sycamore                   | SC  |    | Plant- |
| Poa sylvestris                  | Woodland Bluegrass         | SC  |    | Plant  |
| Polygala incarnata              | Pink Milkwort              | END |    | Plant- |
| Polytaenia nuttallii            | Prairie Parsley            | THR |    | Plant  |
| Prenanthes crepidinea           | Nodding Rattlesnake-root   | END |    | Plant  |
| Rhexia virginica                | Virginia Meadow-beauty     | SC  |    | Plant- |
| Scleria triglomerata            | Whip                       | SC  |    | Plant- |
| Scutellaria ovata ssp. ovata    | Heart-leaved Skullcap      | SC  |    | Plant  |
| Senecio plattensis              | Prairie Ragwort            | SC  |    | Plant  |
| Senna marilandica               | Maryland Senna             | SC  |    | Plant  |
| Silene nivea                    | Snowy Champion             | THR |    | Plant  |
| Silene virginica                | Fire Pink                  | END |    | Plant  |
| Strophostyles leiosperma        | Small-flowered Woolly Bean | SC  |    | Plant  |
| Triphora trianthophora          | Nodding Pogonia            | SC  |    | Plant  |

**Communities**

- Dry cliff Community
- Dry prairie Community
- Dry-mesic prairie Community
- Emergent marsh Community-
- Ephemeral pond Community-
- Floodplain forest Community-
- Hemlock relict Community
- Mesic prairie Community
- Moist cliff Community
- Oak barrens Community
- Oak opening Community
- Pine barrens Community
- Pine relict Community
- Riverine Lake/Pond Community-
- Sand barrens Community
- Sand prairie Community
- Shrub-carr Community-
- Southern dry-mesic forest Community
- Southern mesic forest Community
- Southern sedge meadow Community-
- Stream--fast, hard, cold Community-
- Wet-mesic prairie Community-

## Appendix B

### Species Lists for the Project Site

| <b>Music Building Site Species List</b> |                      |                      |
|---|----------------------|----------------------|
| <b>Scientific Name</b>                  | <b>Common Name</b>   | <b>Percent Cover</b> |
| <i>Acer saccharinum</i>                 | Silver maple         | <1                   |
| <i>Amelanchier</i> variety              | Serviceberry variety | <1                   |
| <i>Berberis thunbergii</i>              | Japanese barberry    | <1                   |
| <i>Cercis Canadensis</i>                | Redbud               | <1                   |
| <i>Cotoneaster</i> variety              | Cotoneaster variety  | 1-5                  |
| <i>Digitaria sanguinalis</i>            | Hairy crabgrass      | 1-5                  |
| <i>Festuca ovina</i>                    | Sheep fescue         | <1                   |
| <i>Hemerocallis</i> variety             | Daylily variety      | 1-5                  |
| <i>Oxalis stricta</i>                   | Common yellow oxalis | <1                   |
| <i>Poa compressa</i>                    | Canada bluegrass     | <1                   |
| <i>Poa pratensis</i>                    | Kentucky bluegrass   | 75-100               |
| <i>Portulaca oleracea</i>               | Little hogweed       | <1                   |
| <i>Portulaca oleracea</i>               | Little hogweed       | <1                   |
| <i>Rhamnus cathartica</i>               | Common buckthorn     | <1                   |
| <i>Setaria pumila</i>                   | Yellow foxtail       | <1                   |
| <i>Spiraea</i> variety                  | Spiraea (cultivar)   | <1                   |
| <i>Taraxacum officinale</i>             | Common dandelion     | <1                   |
| Tartarian honeysuckle                   | Honeysuckle          | 1-5                  |
| <i>Taxus cuspidate</i> variety          | Chinese Yew variety  | 1-5                  |
| <i>Viburnum lantana</i>                 | Wayfaring bush       | 1-5                  |
| <i>Vinca minor</i>                      | Common periwinkle    | 1-5                  |