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Special acknowledgement is due Donald M. Reed, SEWRPC Principal Biologist, Rachel E. Lang, SEWRPC Biologist, and Laurie M. Gawin, SEWRPC Research Analyst, for their contribution to the preparation of this report.

### COMMUNITY ASSISTANCE PLANNING REPORT NUMBER 197

# A WILDLIFE HABITAT MANAGEMENT PLAN FOR THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

# CITY OF WAUKESHA AND TOWN OF PEWAUKEE WAUKESHA COUNTY, WISCONSIN

### Prepared by the

Southeastern Wisconsin Regional Planning Commission P. O. Box 1607 Old Courthouse 916 N. East Avenue Waukesha, Wisconsin 53187-1607

June 1991

Inside Region \$3.00 Outside Region \$6.00 (This page intentionally left blank)

# SOUTHEASTERN WISCONSIN REGIONAL PLANNING

COMMISSION

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June 6, 1991

The Honorable Paul G. Vrakas Mayor, City of Waukesha City Hall 201 Delafield Street Waukesha, Wisconsin 53188 Mr. Brent J. Redford Chairman, Town of Pewaukee Town Hall W240 N3065 Pewaukee Road Pewaukee, Wisconsin 53072

### Gentlemen:

In April, 1989, the City of Waukesha and the Town of Pewaukee requested the assistance of the Southeastern Wisconsin Regional Planning Commission in the preparation of a wildlife management plan for the General Electric Company, Medical Systems Group, lands in the City and Town. Acting in response to that request, and working in cooperation the General Electric Company, Medical Systems Group, the Regional Planning Commission has now completed the requested management plan.

This report describes that plan. The report provides an evaluation of existing wildlife habitat conditions on the General Electric Company, Medical Systems Group, lands and sets forth agreed-upon wildlife management, preservation, acquisition, and development objectives and standards relevant to the needs and values of the Company, as well as of the citizens of the City and Town; presents pertinent information concerning employee and visitor access facilities and recommendations for the enhancement of wildlife habitat; and identifies the roles which the General Electric Company, the City and Town, and other units and agencies of government can and should play in implementing the plan.

The recommended management plan sets forth three separate development phases, each of which is self-contained. Any one, or a combination, of the three phases may be adopted as a final development and management plan for the General Electric Company, Medical Systems Group, lands. These phases are believed to represent the basic choices practically available to the General Electric Company, Medical Systems Group, for the provision of an area with enhanced wildlife habitat and facilities for passive outdoor recreational use. Implementation of the management plan presented in this report would, over time, provide for an increased, expanded, and integrated wildlife-carrying capacity within the General Electric Company, Medical Systems Group, lands, thereby contributing positively to the continued ecologically and environmentally sound development of the City of Waukesha and Town of Pewaukee.

The Regional Planning Commission is pleased to have been able to be of assistance to the City of Waukesha, Town of Pewaukee, and General Electric Company, Medical Systems Group, in the preparation of this plan. The Commission stands ready, upon request, to assist the City, Town, and General Electric Company in presenting the information and recommendations contained in this report to the public and to elected and Company officials for review and evaluation prior to adoption and to assisting over time in the implementation of the plan.

Sincerely,

Kurt W. Bauer Executive Director (This page intentionally left blank)

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### Chapter I

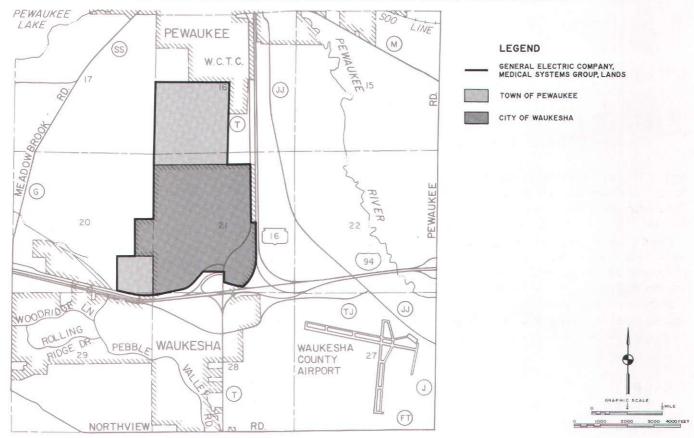
### INTRODUCTION

Rural lands in proximity to urban centers within southeastern Wisconsin are experiencing extensive development. Once covered by prairies, wetlands, and forests and later by cropland and pasture, much of southeastern Wisconsin is now being converted to urban uses. As a result, the few remaining areas of good wildlife habitat within the Region have taken on increased importance. Those remaining good wildlife habitat areas need to be preserved and restored for wildlife breeding, feeding, and shelter, not only to help sustain local and migratory wildlife populations, but also to contribute to environmental diversity and ecological stability within the Region.

On April 6, 1989, the Town of Pewaukee and on April 14, 1989, the City of Waukesha formally requested the Southeastern Wisconsin Regional Planning Commission to undertake a study of the General Electric Company, Medical Systems Group, lands, leading to the preparation of a wildlife habitat management plan for the site. These requests were made in response to the desire of the General Electric Company to enhance and further beautify the manufacturing site from a concern both for the interests of the employees of the Company and for the interests of the broader community involved. The planning effort was to include an assessment of the existing habitat conditions of the area and result in recommendations for wildlife habitat improvement and restoration. Cost estimates for each of the improvement and restoration recommendations were to be provided in the plan report.

The General Electric Company, Medical Systems Group, lands are located within U. S. Public Land Survey Sections 16, 20, and 21, Township 7 North, Range 19 East in the Town of Pewaukee and City of Waukesha, Waukesha County, Wisconsin (see Map 1). Consisting of wetlands, agricultural lands, and industrial development,

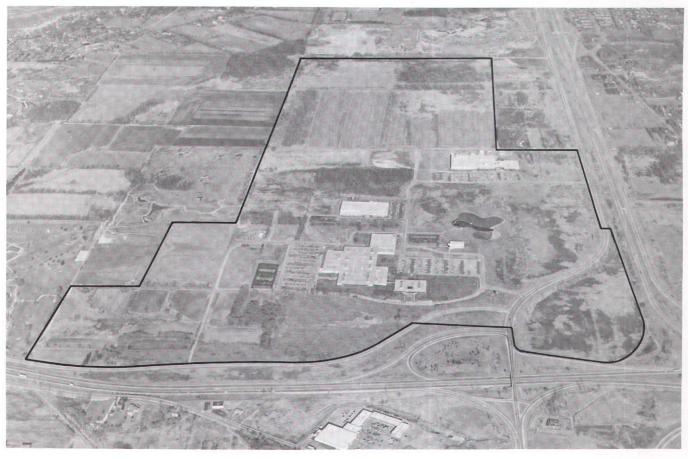
Map 1
GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



Source: SEWRPC

Figure 1

PHOTOGRAPH SHOWING THE GENERAL ELECTRIC COMPANY,
MEDICAL SYSTEMS GROUP, LANDS AND ENVIRONS



this 601-acre modern plant site, of which 233 acres (39 percent) are located in the Town of Pewaukee and 368 acres (61 percent) are located in the City of Waukesha, is comprised of a unique combination of industrial land use and open space as shown in Figure 1. With proper planning and management, this site can provide supporting habitat to resident and migratory wildlife and can provide good recreational and educational opportunities for General Electric Company employees and the public at large.

The findings and recommendations of the requested study are presented in this report. The Town of Pewaukee, the City of Waukesha, the Wisconsin Department of Natural Resources, and the U.S. Fish and Wildlife Service were asked to review a preliminary draft of this report; the resulting comments are reflected in this final report. The report is intended to serve as a practical guide for the sound management of wildlife habitat within the General Electric Company, Medical Systems Group, lands.

### Chapter II

### LAND USE AND SELECTED NATURAL RESOURCE FEATURES

### INTRODUCTION

Land use is an important determinant of both the supply of and the need for wildlife habitat. An understanding of the amount, type, and spatial distribution of the various land uses in and near the study area is essential both to the development of a sound wildlife habitat management plan and to the provision of passive recreational opportunities such as hiking and wildlife viewing for the surrounding communities. This section describes the existing (1985) land use pattern in the study area.

### WETLANDS

Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and with a duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include deep and shallow marshes, sedge meadows, fresh (wet) meadows, shrub carrs, alder thickets, low prairies, fens, bogs, lowland hardwoods, and conifer swamps.

Wetlands are an important part of the landscape in that they perform an important set of natural functions that make them ecologically and environmentally invaluable resources. These functions may be summarized as follows:

- 1. Wetlands enhance surface water quality. The aquatic plants which grow in wetlands change inorganic nutrients, such as phosphorus and nitrogen, into organic material, storing it in their leaves and in peat (the plant remains). In addition, the stems, leaves, and roots of these plants slow the flow of water through the wetlands, allowing silt and other sediment with the attached nutrients and other water pollutants to settle out. In this way, wetlands help protect surface water courses and bodies from siltation and pollution.
- Wetlands help to regulate surface water flows and stages. Wetlands act to release water during periods of drought and hold

- it back during periods of wet weather, thereby stabilizing streamflows and controlling flooding. At a depth of 12 inches, one acre of wetland is capable of holding more than 300,000 gallons of water.
- 3. Wetlands which are located along the shoreline of lakes and streams help protect the shorelines from erosion.
- 4. Wetlands may serve as groundwater recharge or discharge areas.
- 5. Wetlands are important resources for overall ecological health and diversity. They provide essential breeding and feeding grounds, and shelter and escape cover, for many forms of fish and wildlife. The water present in a wetland is also attractive to upland birds and other animals. These functions give wetlands recreational, research, and educational values; support activities such as hunting, trapping, and fishing; and add aesthetic value to the community.

Wetlands have severe limitations for residential, commercial, and industrial development. Generally, these limitations are due to the erosive character, high compressibility and instability, high water table, low bearing capacity, and high shrink-swell potential of wetland soils. In addition, the use of metal conduits in some wetland soil types is constrained because of high corrosion potential. If ignored in the land use planning and development process, these limitations may result in flooding, wet basements, unstable foundations, failing pavements, and excessive infiltration of clear water into sanitary sewer lines. In addition, there are significant onsite preparation and maintenance costs associated with the development of wetland soils, particularly as they relate to roads, foundations, and public utilities.

As shown on Map 2, wetlands within the General Electric Company, Medical Systems Group, lands in 1985 occupied about 242 acres, or about 40 percent of the total site. An additional approximately 85 acres of land currently drained or under agricultural use could be returned to

Map 2

DEMANUE

LEGEND

GENERAL ELECTRIC COMPANY,
MEDICAL SYSTEMS GROUP, LANDS

WETLANDS

WOODLANDS

WETLANDS

WOODLANDS

WETLANDS

WETLANDS

ACADEMIC SEALE

COUNTY

AIRPORT

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WETLANDS AND WOODLANDS ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

Source: SEWRPC.

wetlands with proper management. The specific wetland types include shallow marsh, fresh (wet) meadow, shrub carr, and southern wet to wetmesic lowland hardwoods. These four wetland types are included in the following three wetland classifications set forth on the 1980 Wisconsin Wetlands Inventory Maps: emergent, narrow-leaved, persistent, palustrine (E2K); scrub shrub, deciduous broad-leaved, wet soil, palustrine (S3K); and forested broad-leaved deciduous, wet soil, palustrine (T3K).

### WOODLANDS

Woodlands have both economic and ecologic value and under good management can serve a variety of uses. Located primarily on ridges and slopes and along streams and lakeshores, wood-

lands provide an attractive natural resource of immeasurable value. In addition to contributing to clean air and water, reducing stormwater runoff and flooding, and promoting groundwater recharge, woodlands contribute to the maintenance of a diversity of plant and animal life in association with human life and can thereby provide important recreational and educational opportunities. Valuable woodlands can be destroved through mismanagement in a short time, thereby contributing to the siltation of lakes and streams and the destruction of wildlife habitat. Thus, woodlands should be maintained for their scenic, wildlife habitat, educational, recreational, and watershed protection values as well as for their commercial value in producing forest products and contributing to the increased values of residential and other types of urban development.

Woodlands are defined as those areas one acre or more in size having 17 or more deciduous trees per acre, each measuring at least four inches in diameter at breast height and having 50 percent or more tree canopy coverage. In addition, coniferous tree plantations and reforestation projects are classified as woodlands by the Regional Planning Commission. As shown on Map 2, woodlands within the General Electric Company, Medical Systems Group, lands in 1985 occupied about 54 acres, or about 9 percent of the total site. This woodland cover is classified as southern wet to mesic hardwood forest.

### WILDLIFE HABITAT

Wildlife occurring in and adjacent to the General Electric Company, Medical Systems Group, lands in 1985 included pheasants, waterfowl, marsh birds, raptors, reptiles and amphibians, and a variety of mammals such as deer, muskrats, rabbits, raccoons, coyotes, and fox (see Appendix A, Tables A-1, A-2, and A-3). The site could also provide a staging area for migratory waterfowl and songbirds. This wildlife habitat area provides valuable recreational opportunities and constitutes an immeasurable aesthetic asset to the plant site and surrounding communities.

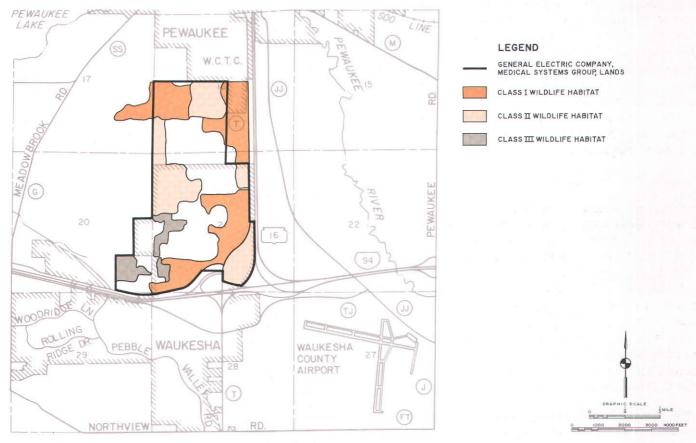
The complete spectrum of wildlife species originally native to Waukesha County has, along with its habitat, undergone significant change in terms of diversity and population size since settlement of the area by Europeans. This change is a direct result of conversion of the land from natural to agricultural and urban uses, beginning with the clearing of the forest and prairies and the draining of the wetlands, and ending with the development of intensive urban land uses. This process, begun early in the nineteenth century, is still operative in Waukesha County today. Successive cultural uses and attendant management practices, both rural and urban, have been superimposed on the overall land use changes, and have also affected the wildlife and wildlife habitat. In agricultural areas, these cultural management practices include draining land by ditching and tiling: expanding the use of fertilizers, herbicides, and pesticides; and introducing domestic animals. In urban areas, these cultural management practices include the use of fertilizers, herbicides, and pesticides; road salting; heavy motor vehicle traffic, which produces disruptive noise levels and damaging air pollution; and the introduction of pets. Settlement by Europeans also introduced alien species of plants and animals into the area.

All wildlife habitat areas remaining in southeastern Wisconsin were identified and inventoried by the Regional Planning Commission in 1970. This inventory was updated in 1985. The wildlife habitat areas were categorized as Class I, Class II, or Class III wildlife habitat. Class I wildlife habitat areas contain a good diversity of wildlife, are adequate in size to meet all of the habitat requirements for the species concerned, and are generally located in proximity to other wildlife habitat areas. Class II wildlife habitat areas generally lack one or more of the criteria for a Class I wildlife habitat; however, they do retain a good plant and animal diversity. Class III wildlife habitat areas are remnant in nature in that they generally lack two or more of the three criteria for a Class I wildlife habitat, but may, nevertheless, be important if located in proximity to Class I or Class II wildlife habitat areas, if they provide corridors linking higher value wildlife habitat areas, or if they provide the only available range in the area. The major factors considered in assigning value ratings to wildlife habitat areas are diversity, territorial requirements, vegetative composition and structure, proximity to other wildlife habitat areas, and disturbance.

Appendix B provides a list of tree, shrub, and forb species that can attract many local and migratory wildlife species to the General Electric Company, Medical Systems Group, lands by providing a diverse selection of food and shelter for those species. In attracting certain types of desired wildlife, specific species of trees, shrubs, and forbs should be planted to provide favored food and shelter types.

As shown on Map 3, wildlife habitat areas in and adjacent to the General Electric Company, Medical Systems Group, lands generally occur in association with existing wetland and woodland resources. Existing wildlife habitat areas cover about 312 acres, or about 52 percent of the General Electric Company, Medical Systems Group, lands. Of this total habitat acreage, 147 acres, or about 47 percent, were classified in 1985 as Class I wildlife habitat lands; 127 acres, or about 41 percent, were classified as Class II wildlife habitat, and about 38 acres, or 12 percent, were classified as Class III wildlife habitat.

Map 3
WILDLIFE HABITAT ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



### SOILS

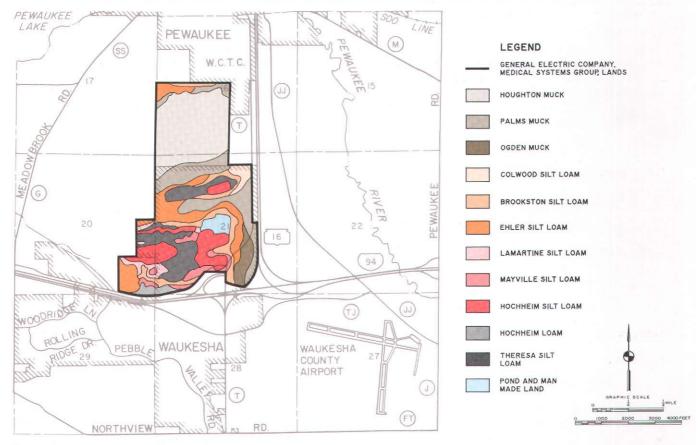
Soil properties exert a strong influence on the manner in which land is used. Soils are an irreplaceable resource, and development pressures upon land continue to make this resource even more valuable. Therefore, any planning program needs to examine not only how land and soils are presently used, but how they can best be used and managed. This requires a detailed soil survey which maps the geographic location of various types of soils; identifies their physical, chemical, and biological properties; and interprets these properties for land use and public facilities planning. Such a survey of the entire Southeastern Wisconsin Region was completed in 1965 by the U.S. Department of Agriculture, Soil Conservation Service, under contract to the Regional Planning Commission.

Eleven specific soil types occur on the General Electric Company, Medical Systems Group, lands: Houghton muck, Palms muck, Ogden muck, Colwood silt loam, Brookston silt loam, Ehler silt loam, Lamartine silt loam, Mayville silt loam, Hochheim loam, Hochheim silt loam, and Theresa silt loam. The location and extent of the areas covered by these soils are shown on Map 4. Table 1 indicates the suitability of these eleven soil types for various wildlife habitat-related plantings and recreation-related uses. Table 1 also sets forth the limitations of the soil types for various land uses.

### AGRICULTURAL LANDS

Properly managed agricultural lands, in addition to providing food and fiber, can enhance wildlife habitat. This is especially true for those

Map 4
SOIL TYPES ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



farms that maintain small fields and associated fencerows and which grow a variety of crops. By utilizing the underlying agricultural resource base in a manner consistent with wildlife habitat needs, important nesting and feeding habitat for many forms of wildlife can be supplied and local conditions for the management of resident or migratory wildlife can be substantially improved. In 1985, approximately 108 acres, or about 18 percent, of the General Electric Company, Medical Systems Group, lands were in agricultural use.

In addition, of the 108 acres of cropland, approximately 87 acres, or 81 percent, are covered by hydric soils and may therefore be eligible for tax relief under the federal Crop Reduction Program (CRP). Further, all of the cropland presently in agricultural use may be

eligible for cost-sharing funds under the federal Agricultural Conservation Program (ACP). Finally, the Wisconsin Upper Fox River priority watershed program anticipates having cost-sharing funds available in 1992 for assistance in wetland restoration, crop management, and provision of streamside buffer strips in areas with high sediment yields.

### **ENVIRONMENTAL CORRIDORS**

The Environmental Corridor Concept

One of the most important tasks undertaken by the Commission as part of its regional planning effort was the identification and delineation of those areas of the Region having high concentrations of natural, recreational, historic, aesthetic, and scenic resources and which, therefore, should be preserved and protected in order to

Table 1
SOIL TYPES ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

		Limitations of Soil			
Soil Type	Native Vegetation	Limitations for Nature and Hiking Trails	Cultivated Crop, Pasture, and Trees	Acreage	Percent of Coverage
Houghton Muck	Marsh	Very severe. High water table; trails soft and wet for long periods; low trafficability; diffi- cult to maintain	Moderate for crops, pasture, and trees when drained	145	24
Palms Muck	Marsh	Very severe. High water table; trails and paths are soft and wet; low trafficability; difficult to maintain	Moderate for crops, pasture, and trees when drained	95	16
Ogden Muck	Marsh	Very severe. High water table; trails and paths are soft and wet; low trafficability; difficult to maintain	Moderate for crops, pasture, and trees when drained	23	4
Colwood Silt Loam	Swamp forest	Severe. Trails and paths remain wet for long periods due to high water table; they are slippery and muddy when wet; may need surfacing	Slight for crops when drained; slight for pasture and moderate for trees	10	2
Brookston Silt Loam	Wet prairie	Severe. High water table; trails and paths are muddy and slippery during much of the year; may need surfacing; difficult to maintain	Slight for crops and pasture when drained; moderate for trees	57	9
Ehler Silt Loam	Wet prairie	Severe. High water table; remains wet for long periods after rains; trails and paths are muddy and slippery when wet; may need surfacing	Slight for crops when drained; slight for pasture and moderate for trees	69	11
Lamartine Silt Loam	Southern hardwood	Moderate. Trails and paths are slippery and muddy for short periods; may need surfacing	Slight for crops when drained; slight for pasture and trees	11	2
Mayville Silt Loam	Southern hardwood	Moderate. Trails and paths will remain muddy and slippery for several days following a rain; may need surfacing; erosive on slopes	Very slight on 0 to 2 percent, slight on 2 to 6 percent, and moderate on 6 to 12 percent slopes for crops; very slight for pasture and trees; erosive on slopes	37	6

Table 1 (continued)

		Limitations of Soil			
Soil Type	Native Vegetation	Limitations for Nature and Hiking Trails	Cultivated Crop, Pasture, and Trees	Acreage	Percent of Coverage
Hochheim Loam	Southern hardwood	Moderate on 0 to 12 percent and severe on steeper slopes. Slop- ing areas are subject to erosion; trails and paths are muddy and slippery when wet	Slight on 0 to 6 percent, moderate on 6 to 12 per- cent, and severe on steeper slopes for crops; slight for pasture and trees; erosive on slopes	23	4
Hochheim Silt Loam	Southern hardwood	Moderate on 0 to 12 percent and severe on steeper slopes. Slop- ing areas are subject to erosion; trails and paths are muddy and slippery when wet; may need resurfacing	Slight on 0 to 6 percent, moderate on 6 to 12 per- cent, and severe on steeper slopes for crops; slight for pasture and trees; erosive on slopes	71	12
Theresa Silt Loam	Southern hardwood	Moderate on 0 to 12 percent and severe on steeper slopes. Trails and paths are slippery and muddy when wet; may need resurfacing; erosive on slopes	Very slight on 0 to 2 per- cent, slight on 2 to 6 per- cent, and moderate on 6 to 12 percent slopes for crops; very slight for pastures and trees; erosive on slopes	59	10

maintain the overall quality of the environment. Such areas normally include one or more of the following seven elements of the natural resource base which are essential to the maintenance of both ecological balance and the natural beauty of the Region: 1) lakes, rivers, and streams and their associated undeveloped shorelands and floodlands; 2) wetlands; 3) woodlands; 4) prairies; 5) wildlife habitat areas; 6) wet, poorly drained, and organic soils; and 7) rugged terrain and high-relief topography. While these seven elements constitute integral parts of the natural resource base, there are five additional elements which, although not a part of the natural resource base per se, are closely related to or centered on that base and therefore are important considerations in identifying and delineating areas with scenic, recreational, and educational value. These additional elements are: 1) existing outdoor recreation sites; 2)

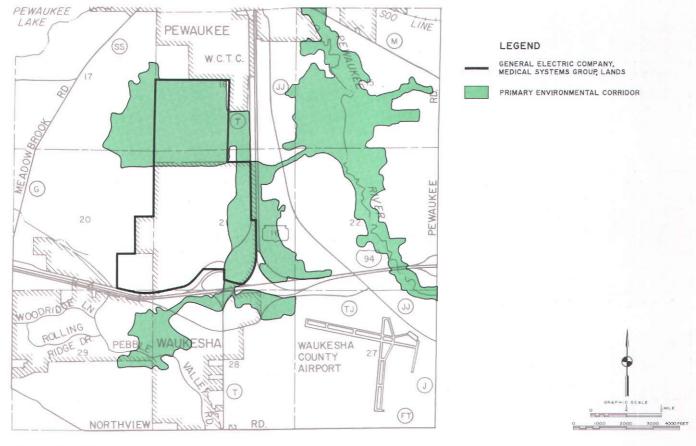
potential outdoor recreation and related open space sites; 3) historic, archaeological, and other cultural sites; 4) significant scenic areas and vistas; and 5) natural and scientific areas.

The delineation of these 12 natural resource and resource-related elements on a map results in an essentially linear pattern of relatively narrow, elongated areas which have been termed "environmental corridors" by the Commission.

Primary environmental corridors include a wide variety of the aforementioned resource and resource-related elements and are at least 400 acres in size, two miles long, and 200 feet wide. The preservation of these corridors in an essentially open, natural state will avoid the creation of costly environmental problems, such as flooding and water pollution, and will serve to maintain a high level of environmental quality

Map 5

# PRIMARY ENVIRONMENTAL CORRIDORS ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



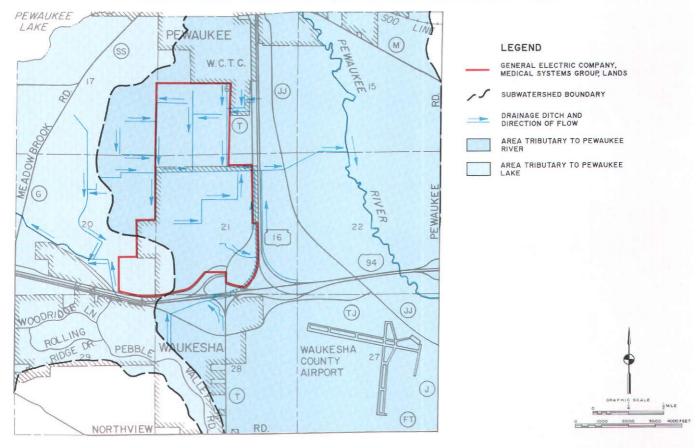
Source: SEWRPC.

in the City and Town of Waukesha, protect the natural beauty, and provide invaluable outdoor recreation opportunities. As indicated on Map 5, about 360 acres, or 60 percent of the General Electric Company, Medical Systems Group, lands, are located within a primary environmental corridor. These corridor lands lie in the Pewaukee Lake and Pewaukee River drainage basin, and as such, not only provide important wildlife habitat, but assist in maintaining and enhancing surface water quality conditions within the basin.

Selected Surface Drainage Features

Selected characteristics of the surface drainage system and related floodland features in the vicinity of the General Electric Company, Medical Systems Group, lands are shown on Map 6. These include subbasin and subwatershed boundaries and surface runoff patterns. These aspects of the natural resource base are particularly important considerations in any planning effort involving modifications to the drainageways. As can be noted, the General Electric Company, Medical Systems Group, lands generally are located in the vicinity of the divide between the lands draining generally eastward, to the Pewaukee River, and the lands draining westward, to a tributary to the Pewaukee River. The drainageway lands generally have flat grades so that the precise location of the divide is not well defined. However, field observations indicate that most of the General Electric Company, Medical Systems Group, lands flow to the east.

Map 6
SUBWATERSHED BOUNDARY AND STORMWATER DRAINAGE ALONG THE
GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



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### **Chapter III**

# RECOMMENDED WILDLIFE MANAGEMENT PLAN

The primary purpose of the planning effort desired by the General Electric Company, Medical Systems Group, was the preparation of a sound, workable plan to guide the preservation and management of the existing and potential wildlife habitat areas on the Group's lands. More specifically, the planning effort was intended to achieve the following three objectives: 1) a spatial distribution of various land uses and land covers and supporting management practices that will protect, preserve, and enhance the natural beauty of the area and encourage the utilization of the area by wildlife; 2) the protection and wise use of wetlands on the site as integral parts of the wetland system of the area; and 3) the provision of outdoor recreational facilities providing ample opportunity for General Electric Company employees and the general public to participate in passive, resourceoriented outdoor recreational activities. This chapter presents a recommended wildlife habitat enhancement and management plan which meets, to the extent practicable, these objectives. In addition, this chapter outlines the steps required to implement that recommended plan.

The first section of this chapter describes the recommended wildlife habitat protection and enhancement plan for the General Electric Company, Medical Systems Group, lands. It includes recommendations to protect and enhance the existing natural resource base for wildlife; to restore portions of the parcel to native plant communities; to purchase lands adjacent to the General Electric Company. Medical Systems Group, lands; and to develop the site for passive outdoor recreational activities. The second section of the chapter outlines the actions that must be taken to ensure that the recommended plan is carried out over time. It includes an outline of specific actions that should be taken by the General Electric Company to facilitate plan implementation and also an estimate of the costs likely to be incurred during plan implementation.

The recommended General Electric Company, Medical Systems Group, lands management plan has been designed so that it can be carried out in phases. The plan envisions three separate phases of development, each of which is an entity in itself. Any one, or any combination of the three phases, may be adopted as a final development and management plan for the General Electric Company, Medical Systems Group, lands.

In developing the recommended plan, review was made of the facility development plan prepared for the site in 1981 by Flad and Associates of Milwaukee, Inc. That plan indicates that one additional future building was being considered for the site. That additional building is located west of, and attached to, the current facility building at the north end of the site as a mirror image of the existing building. No incompatible uses, such as reforestation, have been considered for the building site.

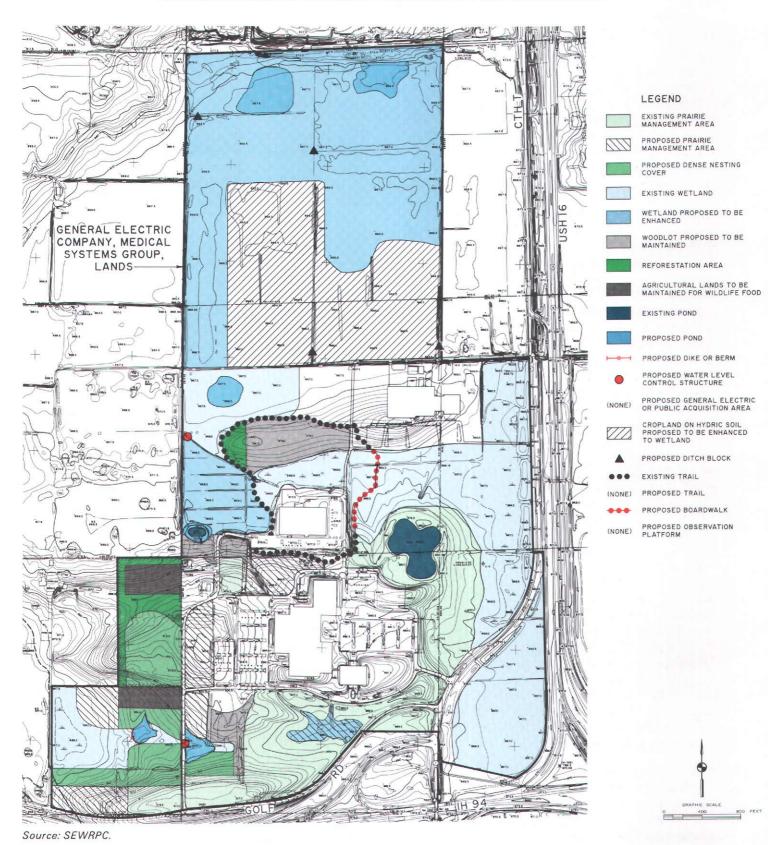
Each phase of the plan consists of improvements intended to enhance the natural resource base of the General Electric Company, Medical Systems Group, lands by diversifying existing wildlife habitat. Habitat diversification would be accomplished by methods such as pond construction, creation of supporting habitat, and conversion of agricultural lands to more native plant communities. These habitat modifications, along with others, would provide additional quality feeding and nesting habitat and shelter for resident and migratory wildlife. Also, the improvements are designed to encourage passive outdoor recreation by providing facilities that will promote the use of hiking trails, boardwalks, and observation platforms.

Phase One, as shown on Map 7, recommends the construction of six wildlife habitat ponds; the planting of 22 acres of dense nesting cover; the placement of four ditch blocks, two water control structures, and 200 feet of berm; the conversion of approximately 23 acres of agricultural lands and fallow old field to prairie cover types; maintenance of row crop production on prescribed agricultural acreage; seven acres of reforestation, and the construction of approximately 950 feet of boardwalk.

Phase Two, as shown on Map 8, includes the actions recommended in phase one along with the construction of approximately 1,000 feet of

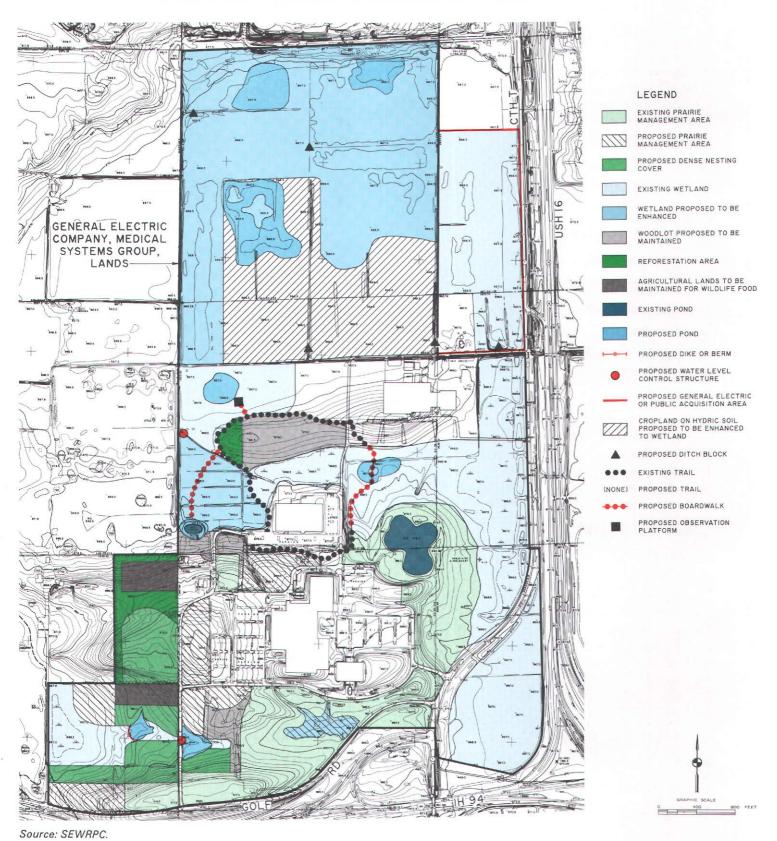
Map 7

WILDLIFE HABITAT MANAGEMENT PLAN FOR THE GENERAL
ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS: PHASE ONE



Map 8

WILDLIFE HABITAT MANAGEMENT PLAN FOR THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS: PHASE TWO



boardwalk and one wildlife observation platform, the re-creation of two acres of prairie cover types, and the acquisition of an additional 45 acres of lands to the east of the existing plant site. The land area proposed to be acquired would be maintained as wetland. In addition, Phase Two recommends further wetland enhancement by increasing to eight the number of wildlife habitat ponds and the placement of a ditch block at the south end of the drainage ditch on the acquired wetland site.

Phase Three, as shown on Map 9, is similar to Phase Two. However, the establishment of six additional wildlife habitat ponds is envisioned. Two additional water control structures are proposed, one to be placed in the drainage ditch adjacent to Fatima Drive at N. Grandview Boulevard, the other adjacent to STH 16 in order to regulate water levels in one of the proposed wildlife ponds. In addition, approximately 2.5 acres of land are proposed to be reforested and approximately 1,600 feet of new hiking trails are to be established.

# RECOMMENDATIONS FOR WILDLIFE HABITAT MODIFICATION

An evaluation of existing wildlife habitat at the General Electric Company, Medical Systems Group, lands was conducted by the Commission staff to determine the types and amounts of modifications that should be considered to maximize the potential for resident and migratory wildlife. Based on that evaluation, the Commission staff recommends that the following modifications to the existing wildlife habitat be implemented:

### Ponds and Wetland Restoration

The construction of ponds will diversify existing wetland habitat by providing areas of open water. The open water habitat will, in turn, provide important components of breeding and feeding habitat for local wildlife species such as mink, muskrat, waterfowl, shorebirds, and various species of reptiles and amphibians. In addition, areas of open water will provide important feeding and resting habitat for such migratory birds as trumpeter swans and Canada geese. In addition, ponds would also serve as sediment catch basins for rain and snowmelt runoff from surrounding urban and agricultural lands and thus help to maintain local water quality.

Wildlife ponds should have a surface area of approximately one acre, should not exceed five feet in depth, and should be constructed with intentionally gradual, minimum one-on-eight side slopes, as shown in Figure 2. An irregular pond configuration will increase the amount of edge at the water-wetland interface, thereby enhancing the value of the pond as wildlife habitat. Construction of the ponds should be by excavation. Excavated material should not be deposited in the General Electric Company, Medical Systems Group, wetlands, but rather should be disposed of at a suitable upland site or, if suitable, may be used for berm construction. Recommended pond sites are shown on Maps 7, 8, and 9.

In addition to the proposed wildlife ponds, the entire wetland area (on hydric muck soils) may be enhanced by restoring, to the extent practicable, water levels to their predrainage levels. In this regard, it is recommended that a system of water level control structures, as shown in Figures 3 and 4, and ditch plugs be constructed at the locations shown on Maps 7, 8, and 9. It is anticipated that restored water levels will favor more desirable wetland species, for example cattails, sedges, and bulrushes, and provide less desirable habitat for alien, or nonnative, plant species such as reed canary grass, and woody species such as boxelder and buckthorn. A list of more desirable wetland tolerant grasses, sedges, forbs, shrubs, and trees, which could be transplanted or seeded into or adjacent to the wetlands, is set forth in Appendix C.

It is recommended that the water level control structures affecting the ditch flows remain completely open until the end of the first week in June. At that time, the water level control structure stoplogs should be placed at the specifically desired water level. The level control structures should be designed so that an adjustable water level can be maintained in the drainageways from about 1.0 foot above the channel bottom to a depth of about 865.5 feet above National Geodetic Vertical Datum (NGVD) at the water level control structure proposed to be located at Fatima Drive and CTH T and about 868.0 NGVD at the water level control structure proposed to be located in the northwest one-quarter of U.S. Public Land Survey Section 21.

Map 9

WILDLIFE HABITAT MANAGEMENT PLAN FOR THE GENERAL
ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS: PHASE THREE

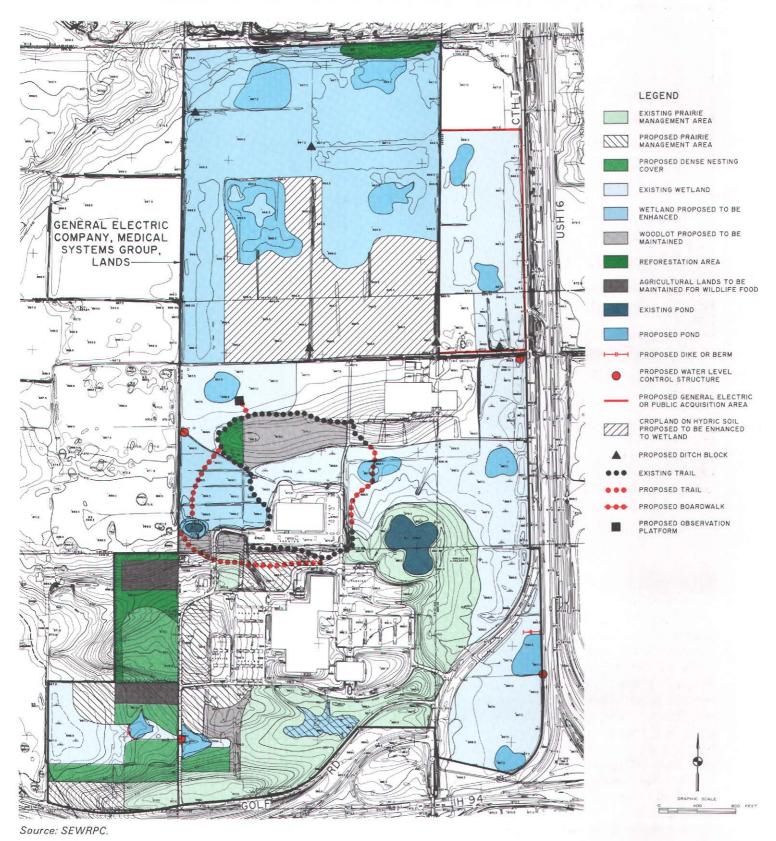
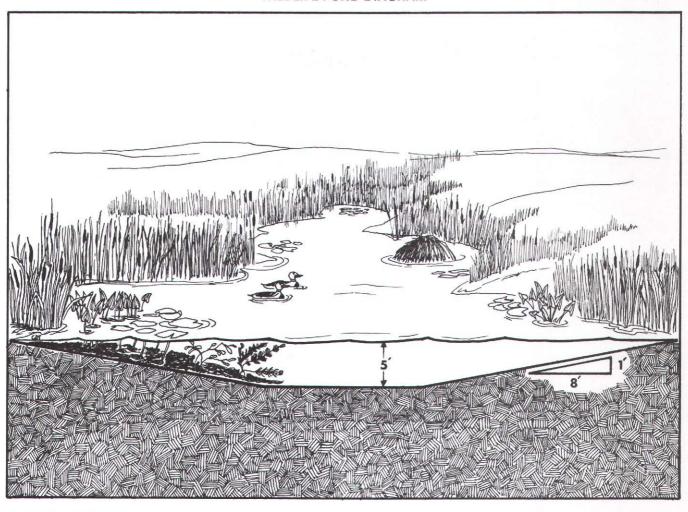


Figure 2
WILDLIFE POND DIAGRAM



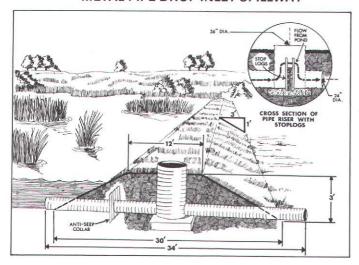
### Brush Piles

A system of brush piles and raptor perches would restore the balanced relationship between predator and prey. The brush piles will offer denning sites and cover for small mammals, such as cottontail rabbit and meadow voles. Properly placed brush piles would encourage the establishment and use of a system of trails by mammals traveling from brush pile to brush pile. Raptor perches provide perching and hunting sites for birds of prey such as hawks and owls. When correctly placed in relation to brush piles, these perches should provide additional opportunities for raptors to prey on small mammals and would thus encourage greater use of the area by local raptor species.

Two types of brush piles can be constructed. The materials for both consist of the tops of entire shrubs and the outer branches trimmed from bushes and trees; however, the dimensions and spacing are different for each type. Brush piles designed to attract smaller mammals such as deer mice and meadow voles are generally eight feet in diameter and four to five feet high, and spaced 20 feet from edge to edge. A railroad tie anchored vertically in the center of the pile supports the brush (see Figure 5). Hollow logs can also be placed in the brush pile to encourage nesting by small mammals. In addition, some brush may be placed between piles, or the piles may be situated closer to one another to encourage small mammal travel from pile to pile. A

Figure 3

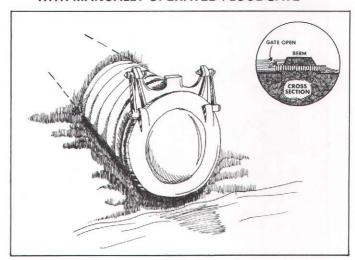
# CROSS-SECTION OF BERM WITH CORRUGATED METAL PIPE DROP INLET SPILLWAY



Source: U. S. Soil Conservation Service and SEWRPC.

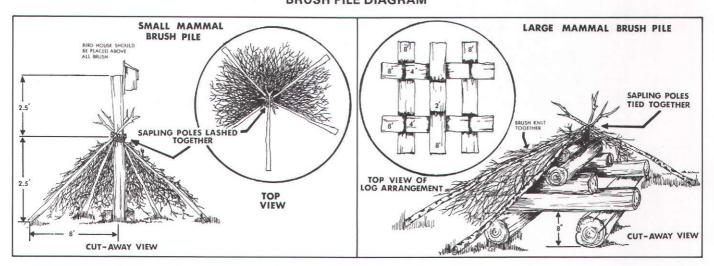
### Figure 4

# CORRUGATED METAL PIPE DROP INLET SPILLWAY WITH MANUALLY OPERATED FLOODGATE



Source: U. S. Soil Conservation Service and SEWRPC.

# Figure 5 BRUSH PILE DIAGRAM

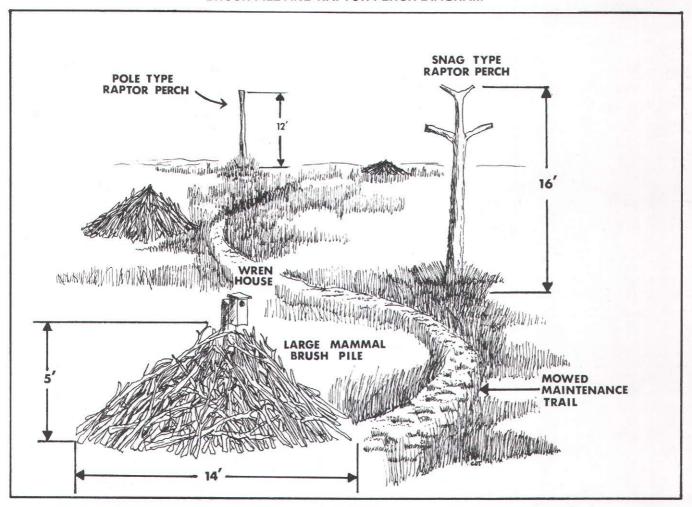


Source: Retzer Nature Center and SEWRPC.

three- to four-foot-wide mowed trail should be established and maintained around the brush pile network to facilitate brush pile checking and maintenance. The mowed trail will serve an additional function by creating supplementary edge habitat for wildlife species.

Brush piles designed to attract larger mammals, such as cottontail rabbits and woodchucks should be 12 to 14 feet in diameter and five feet high, and spaced 75 to 100 feet from edge to edge, with brush supported by several logs of varying length positioned crosswise on top of one another (see Figure 5). The construction of an artificial burrow underneath the brush pile is suggested as a further means of encouraging use of the brush pile by mammals. Finally, a nesting box may be placed on top of the railroad tie supporting the brush pile, since brush piles provide excellent foraging habitat for certain

Figure 6
BRUSH PILE AND RAPTOR PERCH DIAGRAM



Source: Retzer Nature Center and SEWRPC.

birds. However, it is important not to place bluebird houses (see Appendix D) on brush piles since such placement would probably result in increased predation upon these birds.

Raptor perches may be of two types: dead tree "snags" or telephone pole sections. Aspen and pine snags can provide ideal hunting perches because of their growth form. This type of raptor perch should be 14 to 16 feet in height. All branches except those near the top of the snag should be removed. Remaining branches should extend no more than 16 inches from the trunk. These snags can be expected to last a minimum of two years without creosote treatment of the

base. Telephone pole sections or elongated fence post raptor perches should extend 12 feet above the ground surface and should have a minimum diameter of five inches. This type of raptor perch can be expected to last a minimum of five years without creosote treatment of the base. The positioning of raptor perches in relation to brush piles is critical to their effectiveness as a hunting aid. Perches should be situated approximately five to 25 feet off center of an imaginary line connecting adjacent brush piles, as shown in Figure 6. Proper positioning should provide hunting raptors with a cone of coverage that includes brush piles, maintenance trails, and adjacent fields.

### Bird Nest Boxes

Many species of birds use tree cavities as nesting sites. These birds are collectively known as secondary cavity nesters because they nest in abandoned cavities previously excavated and occupied by primary cavity nesters, such as woodpeckers, or created by some other natural phenomenon. Lack of natural tree cavities can act as a limiting factor controlling the abundance of secondary cavity nesting species in an area. Areas that contain suitable foraging habitat but lack appropriate nesting sites are often bereft of cavity nesting species. The placement of artificially constructed nest boxes can help to ameliorate this situation by providing potential nesting sites for such species as eastern bluebirds and tree swallows.

It is recommended that a system of nest boxes be established on the General Electric Company, Medical Systems Group, lands to enhance breeding habitat for cavity nesting species. Suggestions for design, construction, and placement of nest boxes have been taken from the University of Wisconsin-Extension publication G2091-Shelves, Houses, and Feeds for Birds and Squirrels, and from Bluebird Restoration Association of Wisconsin (1990) materials, and are provided in Appendix D.

Prairie Restoration and Dense Nesting Cover

Prairies once covered extensive portions of southeastern Wisconsin. Since those presettlement times, native prairies have been reduced to small remnants scattered throughout the Region. Reestablishment of native grassland habitat types on fallow fields and in areas currently used for the production of row crops can return portions of the General Electric Company, Medical Systems Group, lands to near-presettlement vegetation conditions. Mammal and bird species such as meadow vole, upland sandpiper, kestrel, and northern harrier should benefit from the cover and quality nesting habitat that these plantings and restoration efforts will provide. In addition, these types of vegetative cover add aesthetic appeal to the area while contributing to soil stability, thereby reducing the potential for soil erosion. In designated areas, row crops can be maintained to provide a supplementary food source for resident and migratory wildlife.

Prairie establishment on former agricultural lands and upland areas should follow a prescribed series of steps. Prairie establishment may occur as prairie species seeded on "source strips" gradually establish themselves on "invasion strips." This alternating pattern of plowed source strips and unplowed invasion strips should be established on all plots designated for additional prairie restoration.

Depending upon the type of crop previously grown, plowing to a depth of five inches should occur in late fall and again in early spring, prior to the spring planting, on 12-foot-wide source strips. The source strips should be left in a plowed condition over winter. A 45-foot-wide unplowed invasion area should separate source strips. Establishment of an oats or annual ryegrass (Lolium sp.) cover crop on plowed source strips along with the prairie seed will reduce potential erosion at planting time the following spring. Spring discing should occur on source strips twice before the spring planting. Seed broadcasting should take place between the end of May and mid-June. In order to ensure an even distribution of prairie seed over source strips, the seed mix should be combined with fine, moist sand in a one-to-one volumetric ratio. The seed-sand mixture can be mixed in a cement mixer, and broadcasting can be accomplished with cyclone-principle fertilizer spreaders or by hand. Cultipacking may be done on source strips after seeding to prevent loss of seed and soil from erosion. Source strips should be moved to a height of six inches two to three times during the first year for weed control. Invasion strips should be moved biennially and burned biennially in alternating years to allow invasion of prairie species from source strips. Mowing and burning should occur between the middle and the end of April. After prairie species are adequately established, a biennial to triennial controlled burning program on specified plots is suggested to maintain the prairie condition. It may take approximately 10 years for prairie plots to develop into mature prairie. Prairie seed mixtures and suggested application amounts are listed in Table 2 and in Appendix E.

Restoration may also be accomplished for smaller areas by planting "plugs" of prairie plants. Spring or fall planting of plugs is recommended, with optimum planting periods occurring between April 25 and May 25, and between August 25 and October 7. Plugs should be planted in staggered rows at distances equal to the average foliage height of the species in question, and at depths equal to one and one-

### Table 2

# PRAIRIE RESTORATION AND DENSE NESTING COVER PLANTINGS

### I. Recommended Prairie Seed Mixture<sup>a</sup>

#### A. Grasses

Big Bluestem Indian grass Switch grass Canadian wild rye Andropogon gerardi Sorghastrum nutans Panicum virgatum Elymus canadensis

### B. Forbs

Prairie dock
Prairie coneflower
Bergamot

Common milkweed Black-eyed Susan Coreopsis New England aster

Western sunflower Blazing star Stiff goldenrod White baptisia<sup>b</sup> Silphium terebinthinaceum

Ratibida pinnata
Monarda fistulosa
Asclepias syriaca
Rudbeckia hirta
Coreopsis palmata
Aster novae-angliae
Helianthus occidentalis
Liatris aspera

Solidago rigida
Baptisia leucantha

### C. Comments

- Volumetric Ratio of Seed Mixture:
   1/2 2/3 grasses: 1/3 1/2 forbs
- Application Amounts:
   1/4 acre at 15 pounds of seed mix/acre
   Remaining acreage at seven pounds mix/acre

# II. Dense Nesting Cover Mixture (nonnative species)

### A. Grasses

Timothy grass Orchard grass Barnyard grass Oats

Phleum pratense
Dactylis glomerata
Echinochloa crusgalli
Avena sativa

B. Forbs

Red clover

Trifolium pratense

C. Comments

Each of the grass and clover species should be planted at three pounds of seed per acre. Oats should be applied at one and one-half bushels per acre.

Source: SEWRPC.

<sup>&</sup>lt;sup>a</sup>All seed should be obtained from local genotypic seed sources.

<sup>&</sup>lt;sup>b</sup>Seed of White baptisia (<u>Baptisia</u> <u>leucantha</u>) should be scarified before planting.

half times the diameter of the plug. Plugs should be watered once weekly for three to four weeks after planting. A companion crop of annual ryegrass should be planted on associated disturbed areas. The maintenance regime is the same as that recommended for the invasion strip/source strip prairie restoration technique.

Restoring prairie land, as done in the past, may be accomplished using the Nesbit drill. Using this method, fall plowing and removal of existing vegetation, as stated above, must be completed prior to seeding with the drill. However, because of difficulties in planting certain types of seeds, the difficulty in planting seed mixtures in exact locations, and mechanical failures common to this type of drill, it is recommended that the methods mentioned previously, hand broadcasting, and using cyclone-principle fertilizer spreaders, should be considered when restoring sites that require a diversity of seed mixtures.

Areas designated to be planted to dense nesting cover should be plowed and then disced. Seed should be broadcast over the entire site. Mowing twice during the first year suppresses weeds and encourages the establishment of desirable grasses and forbs. Maintenance practices should be limited to annual mowing well after the nesting season. Seed mixture and application strategies are listed in Table 2.

### WOODLAND MANAGEMENT PLAN

Restoration and enhancement of upland and lowland woodland areas on the General Electric Company, Medical Systems Group, lands can be valuable not only to provide wildlife with nesting and denning cover, but also to provide food and shelter from severe weather conditions. In addition, woodlands serve to hold and store water, facilitating groundwater recharge and improving water quality by helping keep topsoil and excess nutrients from washing into surface water bodies and contribute moisture and oxygen to the atmosphere.

With continued impacts upon, and destruction of, wooded natural areas for agricultural use, residential development, urban expansion, and firewood, much stress and overuse is placed on remaining woodlands. Action to restore or enhance wooded areas constitutes not only an important wildlife management and resource conservation action, but serves to provide important aesthetic, recreational, and educational

opportunities. Such action can help to insure that the increasingly valuable remaining woodland resources will continue to provide ecologically sound and esthetic environments for all life forms.

Enhancement of the approximately eight-acre woodland existing on the Company lands may be accomplished by removing nonnative shrubs and small trees, such as the alien honeysuckles and buckthorns. The removal of these more aggressive, nonnative species will reduce competition with, and shading of, the more desirable native forest plant species. Control of the nonnative trees and shrubs should be accomplished be cutting or girdling and, in certain instances, application of a recommended herbicide. Reforestation should include the introduction and reintroduction of upland native trees, shrubs, and forbs. In areas of heavy, weedy or nonnative vegetation, the application of a herbicide may be made during one or more seasons prior to planting. A list of upland and wetland trees, shrubs, and forbs which may be used in desirable reforestation efforts are identified in Appendix F.

Following site preparation, it is recommended that the tree and shrub species be established on the reforestation site before any herbaceous species are introduced. This will allow the establishment of the forest canopy before the introduction of the forbs. Failure to establish the canopy prior to such introduction will likely result in the more aggressive native pioneer species, such as smooth sumac or prickly ash, and nonnative species, such as burdock and garlic mustard, outcompeting the more desirable native forest forbs. Once a canopy is established, however, the more aggressive species should be naturally controlled. In the ongoing woodland management activities, dead trees with cavities should be allowed to remain standing provided they do not create a safety hazard for recreation trail users. Such trees provide shelter and nesting places for a number of forest wildlife species. Trees and shrubs may also be planted as windbreaks, visual buffers, and as travel corridors for wildlife moving between woodlands in the area.

It is recommended that two-year old deciduous shrub and tree seedlings between 14 and 16 inches high be planted in any reforestation efforts. Many such tree and shrub species are available through the Wisconsin Department of

Table 3

REFORESTATION PLANTING DENSITIES
FOR THE GENERAL ELECTRIC COMPANY,
MEDICAL SYSTEMS GROUP, LANDS

Description	Spacing	Number of Each to Be Planted
Shrubs	5 feet by 5 feet	425
Medium Trees <sup>a</sup>	8 feet by 8 feet	165
Large Trees <sup>b</sup>	18 feet by 18 feet	75
Evergreens	12 feet by 12 feet	35
Maximum Planting	700	

<sup>&</sup>lt;sup>a</sup>Between 15 and 50 feet tall.

Source: Wisconsin Department of Natural Resources and SEWRPC.

Natural Resources, although some species may be available only through commercial nurseries. Shrubs and trees should be over-planted by up to 10 percent, thereby allowing for normal losses of seedlings to disease and to animal predation. Other solutions of the disease and predation problems may be considered, such as protecting individual seedlings by fencing or planting additional stock in a protected nursery plot set aside from the restoration area before later replanting of the now older and more resistant stock. Recommended shrub and tree planting densities and spacings are provided in Table 3.

Planting of the shrubs and trees is best done between the time the frost leaves the ground in the spring and May 15. Cultivation may be needed for up to five years following planting in order to control unwanted weedy vegetation. Cultivation must be shallow and far enough from the plantings to avoid root damage. Additional help in this regard may be obtained from the local Department of Natural Resources forester, UW-Extension agent, or commercial nurseryman.

### Berm Construction

The construction of a berm will allow the manipulation of water levels in some of the wildlife pond areas. Water-level manipulation can be used as an additional wildlife management tool in the General Electric Company, Medical Systems Group, lands for species closely

associated with deep marsh or pond habitats. The presence of a berm will also add to the diversity of habitat types by providing a localized upland site in an area predominantly covered by wetlands. The recommended berm locations are shown on Maps 7, 8, and 9.

The recommended berms would vary in length from approximately 200 feet to 400 feet, depending on the elevation of each impoundment and the specific maximum water depth desired. The berms would be about 12 feet wide at the top and between three feet and six feet high, with oneon-three side slopes (see Figure 3). To facilitate water level control, berm construction should include the installation of two 34-foot-long, 24-inch-diameter corrugated metal pipe drop inlet spillways. The pipe located at the east end of the berm should be fitted with a four-foot-long. 36-inch-diameter full section of pipe riser with stoplogs, as shown in Figures 3 and 4. The stoplogs and manually operated floodgate should fitted with padlocks to preclude unauthorized manipulation of water levels. The spillway would serve as the primary means of water level control. Both pipes should be fitted with antiseep collars to help maintain the stability of the structures. In addition, after construction, the berm should be seeded with the recommended dense nesting cover seed mix (Table 2). Berms should be maintained by periodic burning or mowing to prevent tree and shrub invasion, since the growth of woody vegetation on the berms can contribute to their destabilization.

### **Public Access Recommendations**

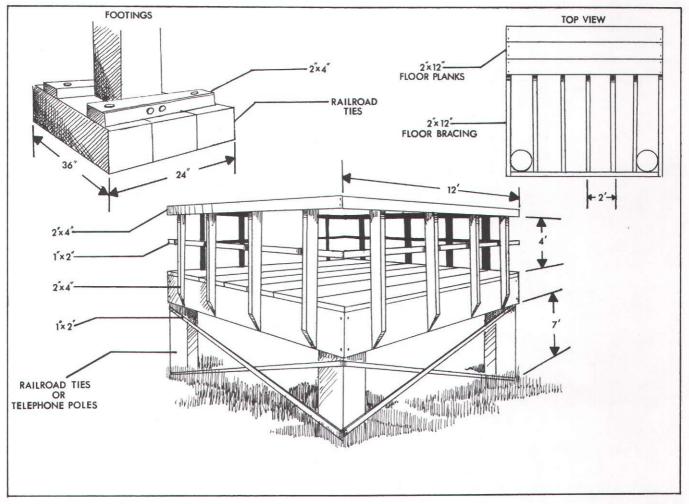
An evaluation of the facilities presently available at the General Electric Company, Medical Systems Group, lands was conducted by the Commission staff to determine the types and number of modifications that should be considered to facilitate public access to and use of the wildlife habitat areas by Company employees and the general public. All recommendations are intended to enhance existing opportunities for passive outdoor recreation while providing protection of the existing natural resource base. The following modifications are recommended.

### Hiking Trails and Observation Platforms

A network of hiking trails and observation platforms is intended to encourage passive outdoor recreational use of the General Electric Company, Medical Systems Group, lands by providing opportunities for close contact with

<sup>&</sup>lt;sup>b</sup>Between 50 and 100 feet tall.

Figure 7
OBSERVATION PLATFORM DESIGN



Source: Sarett Nature Center and SEWRPC.

wildlife and other natural resource amenities on these lands. The proposed hiking trails would serve a dual function of guiding the employees and visitors to unique or interesting natural resource amenities while limiting access to other areas considered to be fragile or susceptible to disturbance, thus ensuring their protection.

The proposed trail network would consist of cleared and maintained wood-chip and/or mowed trails in suitable upland areas connected by elevated boardwalks in lowlying wetland areas. Boardwalks would permit hiking and nature study during periods of high water and facilitate travel through terrain that, under normal circumstances, would be difficult to traverse. One wildlife observation platform would be included as part of the boardwalk trail system and would provide opportunities for

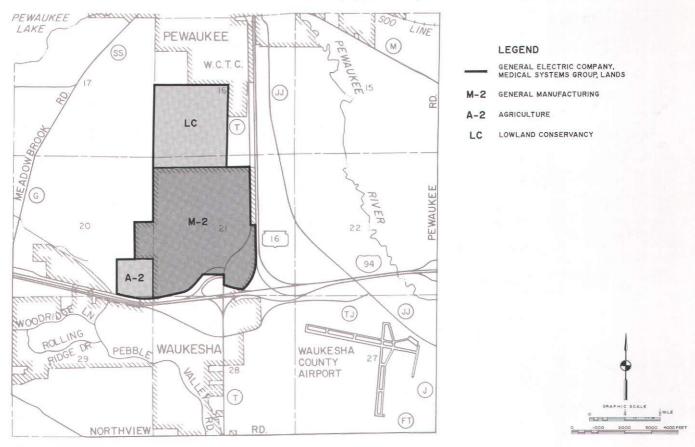
close, and in some instances, concealed, observation of wildlife throughout the year. A second observation platform and boardwalk system located near the north parking lot, under the phase three option, could be designed to facilitate handicapped access to, and use of, the northern portion of the General Electric Company, Medical Systems Group, lands. A typical observation platform design is illustrated in Figure 7. Trail and boardwalk locations are shown on Maps 7, 8, and 9.

### PLAN IMPLEMENTATION

The three phases of the recommended plan would provide three increasing levels of wildlife habitat enhancement and opportunities for passive outdoor recreational activities on the General Electric Company, Medical Systems

Map 10

EXISTING ZONING ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS



Group, lands. The basic differences between the phases are, in most instances, quantitative. While variations of the three phases are certainly possible, the three phases are believed to represent the best choices practically available to the General Electric Company, Medical Systems Group, for the provision of an area with enhanced wildlife habitat amenities and facilities for passive outdoor recreational use. Selection of a final plan from among the phases should be based upon the Company's analysis of which proposal best meets its wildlife habitat enhancement and passive outdoor recreational use objectives. As the landowner concerned, the General Electric Company, Medical Systems Group, has the legal authority to implement all of the various elements of a recommended plan.

Land Acquisition

To the extent practicable, the General Electric Company Medical Systems Group should consider acquisition of additional wetlands adjacent to the site. Such acquisition would serve three purposes. First, it is intended to facilitate good management practices on the General Electric Company, Medical System Group, lands by providing continuous tracts of land on which to implement habitat management or restoration techniques. Second, it is intended to provide protection for important wildlife habitat areas, such as wetlands, which are located adjacent to the wildlife areas on the General Electric Company, Medical Systems Group, lands and which would enhance the value of those wildlife areas. Third, it is intended to help protect and enhance the developed uplands of the site, adding aesthetic value and avoiding problems that could arise from the mismanagement of the lowland areas. Proposed uses of the parcels recommended for acquisition are shown on Maps 8 and 9.

Zoning

Lands presently contained within General Electric Company, Medical Systems Group, property were in 1985 placed by the City of Waukesha in the M-2, General Manufacturing Zoning District,

Table 4

MANAGEMENT COST ANALYSIS FOR THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

	Unit Cost	Phase On	9	Phase To	wo	Phase Th	ree
Item	1991 Dollars	Number/Size	Cost	Number/Size	Cost	Number/Size	Cost
Ponds (excavated)		6 ponds/15.5 acres	\$154.500	8 ponds/27.5 acres	\$ 274,500	14 ponds/39 acres	\$ 390,500
Off-Site Disposal <sup>b</sup>	25,000/pond <sup>8</sup>	6 ponds/15.5 acres		8 ponds/27.5 acres		14 ponds/39 acres	650,000
Berm/Dike	15/foot	200 feet	3,000	200 feet	3,000	400 feet	6,000
Ditch Block	1,500	4	6,000	5	7,500	5	7,50
Water Control Structure	3,000 each	2	6,000	2	6,000	4	12,00
Dense Nesting Cover and							l
Berm Stabilization	30/acre	22 acres	650	22 acres	650	22 acres	650
Prairie Restoration					]		1
Seed Mix	130/acre	23 acres	3.000	25 acres	3,250	25 acres	3,20
Seedbed Preparation	125/acre	23 acres	2,900	25 acres	3,250	25 acres 25 acres	
Prairie Management	Volunteer		Volunteer	20 acies	Volunteer	25 acres	3,15 Voluntee
Raptor Poles	20/pole	••	* O I I I I I I I I I I I I I I I I I I		volunteer	12	
Reforestation	0.20/tree	7 acres	1.000	7 acres	1,000	9.5 acres	250
Trails	2/foot			7 dc1 es		1,600 feet	1,350 3,200
Boardwalk							}
Single	13/foot	950 feet	12,350	1,950 feet	25 250	1.050 (	
Double	25/foot	950 feet	23.750	1,950 feet	25,350	1,950 feet	25,35
Observation Platform	400/platform			1	48,750 400	1,950 feet 1	48,750 400
Land Acquisition							
Wetlands	1,000/acre			45 acres	45,000 <sup>c</sup>	••	• •
Subtotal			\$470,650		\$ 876,050		\$1,151,850
Engineering and							
Contingencies	25 percent of to	tal cost	\$117,650		\$ 219,000	••	\$ 287,950
Estimated Total							
Maximum Cost			\$588,300	/	\$1,095,050	,	\$1,439,800

<sup>&</sup>lt;sup>a</sup>Cost for 1.5 acre pond.

Source: SEWRPC.

and the LC, Lowland Conservancy Zoning District, as shown on Map 10. It is recommended that the Company consider requesting the City to rezone the wetland portions of the General Electric Company, Medical Systems Group, land to C-1, Lowland Conservancy District, which would serve to protect and preserve the character of the existing natural resource base, permit the provision of compatible outdoor recreational facilities, prohibit urban and other incompatible uses, and permit a reduction in property taxes.

## Plan Costs

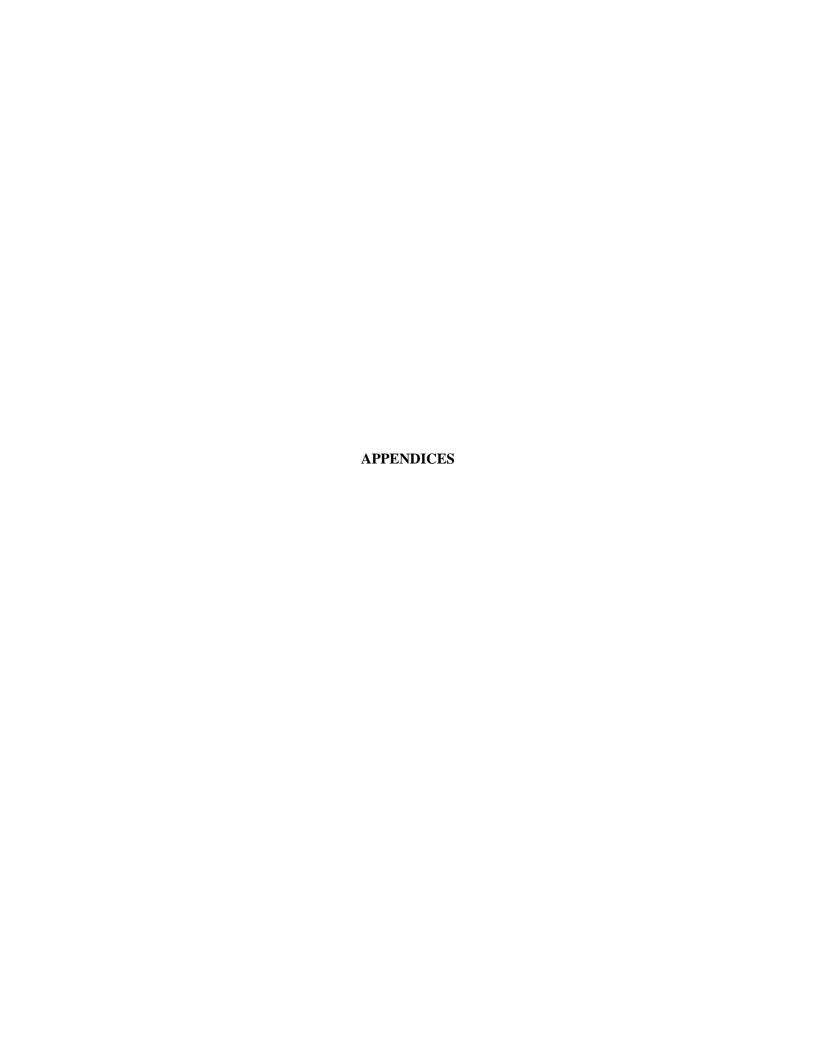
Implementation of the recommendations directed to the General Electric Company,

Medical Systems Group, under the recommended wildlife management plan presented herein would require a total capital expenditure of about \$588,300 for Phase One; an additional approximately \$506,750 for Phase Two; and an additional approximately \$344.750 for Phase Three. It should be noted that a significant portion of the total cost of each phase involves the off-site disposal of excavated materials from the recommended pond construction. The cost of such off-site disposal may be significantly reduced to the extent that the excavated pond materials may be stockpiled on nearby upland areas for future use or sale. Table 4 presents cost estimates for the various elements contained in all three phases of the plan.

<sup>&</sup>lt;sup>b</sup>The cost of off-site disposal may be significantly reduced to the extent to which the pond dredge material may be stockpiled on a nearby upland site for future use or sale.

<sup>&</sup>lt;sup>C</sup>Does not include cost of existing structures.

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## Appendix A

# WILDLIFE LIKELY TO OCCUR ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

Table A-1
BIRDS LIKELY TO OCCUR ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

Scientific (family)			-
and Common Name	Breeding	Wintering	Migrant
Podicipedidae			
Pied-Billed Grebe			l x
Ardeidae			
American Bittern		·	l x
Great Blue Heron	· · ·		l $\hat{x}$
Green-Backed Heron	x		l $\hat{\mathbf{x}}$
Anatidae			
Tundra Swan			×
Canada Goose	x		l x
Wood Duck	$\mathbf{\hat{x}}$		l $\hat{x}$
Green-Winged Teal	"		x
American Black Duck		x	x
Mallard	x	X	l $\hat{\mathbf{x}}$
Northern Pintail			x
Blue-Winged Teal	/ x		l $\hat{x}$
Northern Shoveler			X
American Wigeon			l x
Redhead			X
Ring-Necked Duck			X
Lesser Scaup			X
Common Goldeneye	·		x
Bufflehead			X
Cathartidae			
Turkey Vulture			l x
Accipitridae			
Northern Harrier		R	x
Sharp-Shinned Hawk		X	X
Cooper's Hawk		X	X
Northern Goshawk		R	X
Broad-Winged Hawk			X
Red-Tailed Hawk	1 x	X	X
Falconidae			
American Kestrel	x	X	X
Phasianidae			
Ring-Necked Pheasant (introduced)	x	X	· NA
Rallidae			
Virginia Rail	R		X
Sora	R		X
American Coot			X
Gruidae			
Sandhill Crane		<b></b>	X
Charadriidae			
Semipalmated Plover			X
Killdeer	x		X
Scolopacidae			*
Greater Yellowlegs			X
Lesser Yellowlegs		•,•	X
Solitary Sandpiper			X
Spotted Sandpiper	P		X
Upland Sandpiper	P		Р
Semipalmated Sandpiper			Р
Pectoral Sandpiper			X

Table A-1 (continued)

Scientific (family) and Common Name	Breeding	Wintering	Migrant
Scolopacidae (continued)			
Dunlin	·		P
Common Snipe	Р	P	X
American Woodcock	X	<b>F</b>	x
Wilson's Phalarope	^		1
Laridae			<b>X</b>
Ring-Billed Gull			v
Herring Gull	- <b>-</b>		X X
Forster's Tern			X
Black Tern			P(E)
Columbidae	ξη 1390° <del>-</del> -		X
Rock Dove (introduced)			
Mourning Dove	X	X	NA
Cuculidae	X	X	X
Black-Billed Cuckoo	<b>_</b> '	1	
Vellow-Billed Cuskes	P		X
Yellow-Billed Cuckoo	Р	·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·- ·	Х
Eastern Screech-Owl	X	X	NA
Great Horned Owl	X	X	NA
Snowy Owl			R
Barred Owl	Р	P	NA
Long-Eared Owl	• •	R	R
Short-Eared Owl			R
Northern Saw-Whet Owl	• •		X
Caprimulgidae			
Common Nighthawk	X		X
Whippoorwill			X
Apodidae			
Chimney Swift	Χ		X
Trochilidae			,
Ruby-Throated Hummingbird	Х		X
Alcedinidae			^
Belted Kingfisher	X	] [	х
Picidae	•		^
Red-Headed Woodpecker			x
Yellow-Bellied Sapsucker			x
Downy Woodpecker	Y		
Hairy Woodpecker	×	X X	NA NA
Northern Flicker	x	R	NA V
Tyrannidae	^	, n	X
Olive-Sided Flycatcher		1	<b>.</b>
Eastern Wood-Pewee			X
Yellow-Bellied Flycatcher	• •		X
Willow Flycatcher			X
east Flycatcher	Р		X
Least Flycatcher	••		X
Eastern Phoebe	X		X
Great Crested Flycatcher	X	{	X
Eastern Kingbird	X		X
Alaudidae		[	
Horned Lark	Р	) l	X
Hirundinidae		[ ·	
Purple Martin	X		X
Tree Swallow	<b>X</b>	<u>-</u> -	X
· · · · · · · · · · · · · · · · · · ·			

Table A-1 (continued)

Scientific (family) and Common Name	Breeding	Wintering	Migrant
Hirundinidae (continued)			
Northern Rough-Winged Swallow	X		X
Bank Swallow	X		X
Cliff Swallow	X		X
Barn Swallow	X	<b>-</b> ,-	X
Corvidae			
Blue Jay	X	×	x
American Crow	X	X X	X
Paridae			
Black-Capped Chickadee	x	×	<b>X</b>
Sittidae			4.19
Red-Breasted Nuthatch	·	l x	x
White-breasted Nuthatch	X	l $\hat{\mathbf{x}}$	NA NA
Certhiidae		<b>^</b>	'''
Brown Creeper		P -	×
Troglodytidae		'	^
Carolina Wren			R
House Wren	x	]	X
Winter Wren		l	X
Sedge Wren	x	]	×
Marsh Wren		<del></del>	î â
	X		^ -
Musicapidae			
Golden-Crowned Kinglet	••	X	X
Ruby-Crowned Kinglet			X
Blue-Gray Gnatcatcher	R		X
Eastern Bluebird	X	'	X
Veery	R?		· X
Gray-Cheeked Thrush			X
Swainson's Thrush			· X
Hermit Thrush		<b></b>	X
Wood Thrush	X		X
American Robin	X	<b>X</b>	X
Mimidae			
Gray Catbird	X		X
Brown Thrasher	X		X
Motacillidae			
Water Pipit			×
Bombycillidae			
Bohemian Waxwing		R	
Cedar Waxwing	X		×
Laniidae		<b>^</b>	^-
Northern Shrike		R	×
Sturnidae		<b>"</b>	<b>^</b>
European Starling (introduced)	x	<b>x</b>	x
Vireonidae	^	^	<b>^</b>
Solitary Vireo			x
Yellow-Throated Vireo			x
		_ <del></del>	X
Warbling Vireo	<b>X</b>		X
Philadelphia Vireo	,- <b>.</b>	·	
Red-Eyed Vireo	X		X
Emberizidae	_		
Blue-Winged Warbler	R .		X
Golden-Winged Warbler			X
Tennessee Warbler			×
Orange-Crowned Warbler			X

Table A-1 (continued)

Scientific (family) and Common Name	Breeding	Wintering	Migrant
Emberizidae (continued)			
Nashville Warbler			x
Northern Parula			X
Yellow Warbler	X		l $\hat{x}$
Chestnut-Sided Warbler			· · · x
Magnolia Warbler	••		x
Cape May Warbler.			l â
Black-Throated Blue Warbler .			
Yellow-Rumped Warbler	• •		X
Black-Throated Green Warbler.			X
Blackburnian Warbler	& -k		X
	• •		X
Palm Warbler			×
Bay-Breasted Warbler			X
Blackpoll Warbler			X
Black-and-White Warbler			X
American Redstart	R?		X
Ovenbird	R		X
Northern Waterthrush			X
Connecticut Warbler			X
Mourning Warbler		<b></b>	X
Common Yellowthroat	X	'	<b>x</b>
Wilson's Warbler			. x
Canada Warbler			X
Scarlet Tanager	Χ		x
Northern Cardinal	X	×	NA
Rose-Breasted Grosbeak	X		×
Indigo Bunting			l $\hat{x}$
Dickcissel			R
Rufous-Sided Towhee	X	1	l x
American Tree Sparrow		<b>x</b>	l â
Chipping Sparrow	X		x
Clay-Colored Sparrow		1	x
Field Sparrow	X		X
Vesper Sparrow	P	1:	X
Savannah Sparrow			
Gracehonner Sparrow	X		X
Grasshopper Sparrow	P		X
Henslow's Sparrow	Ρ		X
Fox Sparrow	X		X
Song Sparrow	X	X * *	X
Lincoln's Sparrow			<b>X</b>
Swamp Sparrow	X	R	X
White-Throated Sparrow		R	Х
White-Crowned Sparrow			X
Dark-Eyed Junco		<b>x</b>	· X
Lapland Longspur		R	X
Snow Bunting		R	X
Bobolink	X		X
Red-Winged Blackbird	X	x	X
Eastern Meadowlark	X	R	x
Western Meadowlark	R		x
Rusty Blackbird		R	x
Common Grackle	X	X	X
Brown-Headed Cowbird	x	X	X
Orchard Oriole	A R	^	
Northern Oriole			R
MOLINGITI OTIDIE	X		X

Table A-1 (continued)

Scientific (family) and Common Name	Breeding	Wintering	Migrant
Fringillidae			·
Purple Finch	·	X	X
Common Redpoil		X	X
Pine Siskin	• •	×	X
American Goldfinch	X	X	X
House Finch (introduced)	P		X
Ploceidae	,		
House Sparrow (introduced)	<b>x</b>	X	NA

NOTE: Breeding—Nesting species (nonnesting species present in summer are not included)

Wintering—Present January-February Migrant—Spring and/or fall transient

X - present, not rare

R - rare

NA - not applicable

(E) - endangered species in Wisconsin

? - seasonal status uncertain

P - Possibly present

Source: John E. Bielefeldt, Racine County Naturalist, and SEWRPC.

Table A-2

AMPHIBIANS AND REPTILES LIKELY TO OCCUR ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

Scientific (family) and Common Name	
Amphibians	
Ambystomatidae Blue-Spotted Salamander Eastern Tiger Salamander Bufonidae American Toad Hylidae Northern Spring Peeper Eastern Gray Treefrog Western Chorus Frog Ranidae Green Frog Northern Leopard Frog	

Scientific (family) and Common Name
Reptiles
Chelydridae
Common Snapping Turtle
Emydidae
Midland Painted Turtle
Western Painted Turtle
Blanding's Turtle <sup>a</sup>
Colubridae
Northern Water Snake
Northern Brown Snake
Red-Bellied Snake
Eastern Garter Snake
Butler's Garter Snake
Eastern Smooth Green Snake
Eastern Milk Snake

NOTE: The technique used in collating the amphibian and reptile species involved associating known county records with the historic and remaining habitat areas.

<sup>&</sup>lt;sup>a</sup>ldentified as threatened in Wisconsin.

#### Table A-3

## MAMMALS LIKELY TO OCCUR ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

#### Scientific (family) and Common Name

Didelphidae

Virginia Opossum

Soricidae

**Cinereous Shrew** 

**Short-Tailed Shrew** 

Vespertilionidae

Little Brown Bat

Silver-Haired Bat

Big Brown Bat

**Red Bat** 

**Hoary Bat** 

Leporidae

Mearn's Cottontail

Sciuridae

Southern Woodchuck

Striped Ground Squirrel (gopher)

Ohio Chipmunk

Minnesota Grey Squirrel

Western Fox Squirrel

Southern Flying Squirrel

Castoridae

American Beaver

Cricetidae

**Prairie Deer Mouse** 

Northern White-Footed Mouse

Meadow Vole

Common Muskrat

Muridae

Norway Rat (introduced)

House Mouse (introduced)

Zapodidae

Meadow Jumping Mouse

Canidae

Northeastern Coyote

Eastern Red Fox

**Gray Fox** 

Procyonidae

Upper Mississippi Valley Raccoon

Mustelidae

**New York Long-Tailed Weasel** 

Upper Mississippi Valley Weasel

Northern Plains Skunk

Cervidae

Northern White-Tailed Deer

## Appendix B

## SELECTED PLANT SPECIES PROVIDING COVER AND FOOD FOR WILDLIFE ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

## Cupressaceae

Thuja occidentalis—White cedar Juniperus virginiana—Red cedar

## Typhaceae

Typha latifolia—Broad-leaved cattail
Typha angustifolia—Narrow-leaved cattail

## Gramineae

Glyceria striata—Fowl manna grass
Glyceria grandis—Reed manna grass
Elymus virginicus—Virginia wild rye
Calamagrostis canadensis—Canada bluejoint grass
Panicum virgatum—Switch grass
Andropogon gerardi—Big bluestem grass
Sorghastrum nutans—Indian grass

## Cyperaceae

Cyperus esculentus—Chufa

#### Salicaceae

Populus deltoides—Quaking aspen deltoides—Cottonwood

## Juglandaceae

Carya cordiformis—Yellow-bud hickory
Carya ovata—Shagbark hickory

#### Betulaceae

Corylus americana—Hazelnut

#### Fagaceae

Fagus grandifolia—American beech
Quercus alba—White oak
Quercus macrocarpa—Bur oak
Quercus bicolor—Swamp white oak
Quercus borealis—Northern red oak

#### Moraceae

Morus rubra—Red mulberry Humulus lupulus—Common hops

## Polygonaceae

Polygonum spp.—Smartweed

## Saxifragaceae

Ribes missouriense—Missouri gooseberry cynosbati—Pasture gooseberry americanum—Wild black currant

#### Rosaceae

Physocarpus opulifolius—Ninebark
Fragaria virginiana—Wild strawberry
Fragaria vesca—Woodland strawberry
Rubus occidentalis—Black raspberry
Prunus americana—Wild plum
Pyrus ioensis—Prairie crab-apple
Crataegus spp.—Hawthorn
Amelanchier sp.—Serviceberry

## Anacardiaceae

Rhus glabra—Smooth sumac Rhus typhina—Staghorn sumac

## Balsaminaceae

Impatiens biflora—Jewelweed

## Vitaceae

Vitis sp.—Wild grape

#### Oleaceae

Fraxinus pennsylvanica—Green ash

## Apocynaceae `

Apocynum cannabinum—Indian hemp

## Solanaceae

Physalis sp.—Ground-cherry

#### Caprifoliaceae

Viburnum trilobum—High-bush cranberry
Viburnum lentago—Nannyberry

Sambucus canadensis—Elderberry

#### Cucurbitaceae

Echinocystis lobata—Wild cucumber

## Appendix C

## WETLAND PLANT SPECIES WHICH MAY BE TRANSPLANTED OR SEEDED ONTO WETLAND RESTORATION SITES AT THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

## Cupressaceae

Thuja occidentalis-White cedar

## Typhaceae

Typha latifolia-Broad-leaved cattail

## Sparganiaceae

Sparganium eurycarpum—Common bur-reed

## Alismataceae

Alisma plantago-aquatica—Water plantain Sagittaria latifolia—Common arrowhead

#### Gramineae

Glyceria striata—Fowl manna grass
Phragmites communis—Tall reed grass
Calamagrostis canadensis—Canada bluejoint grass
Spartina pectinata—Prairie cord grass
Zizania aquatica—Wild rice
Andropogon gerardi—Big bluestem grass

## Cyperaceae

 Scirpus
 fluviatilis
 River bulrush

 Scirpus
 cyperinus
 Wool grass

 Scirpus
 atrovirens
 Green bulrush

 Carex
 vulpinoidea
 Fox sedge

 Carex
 bebbii
 Sedge

 Carex
 bebbii
 Sedge

 Carex
 bystericina
 Bottlebrush sedge

 Carex
 comosa
 Bristly sedge

 Carex
 lacustris
 Lake sedge

#### Pontederiaceae

Pontederia cordata—Pickerelweed

#### Liliaceae

Lilium michiganense—Turk's-cap lily

## Iridaceae

Iris versicolor—Blue flag iris

## Salicaceae

Populus tremuloides—Quaking aspen
Populus deltoides—Cottonwood
Salix nigra—Black willow
Salix interior—Sand-bar willow
Salix bebbiana—Beaked willow

## Betulaceae

Betula lutea—Yellow birch
Betula pumila—Bog birch
Alnus rugosa—Tag alder

## Fagaceae

Quercus bicolor-Swamp white oak

#### Ulmaceae

<u>Ulmus</u> <u>americana</u>—American elm <u>Celtis</u> <u>occidentalis</u>—Hackberry

## Polygonaceae

Rumex orbiculatus—Water dock Polygonum pensylvanicum—Pinkweed

## Nymphaeaceae

Nuphar variegatum—Yellow water lily Nymphaea odorata—White water lily Nymphaea tuberosa—White water lily

## Ranunculaceae

<u>Caltha palustris</u>—Marsh marigold <u>Thalictrum dasycarpum</u>—Tall meadow rue <u>Anemone canadensis</u>—Canada anemone

## Saxifragaceae

Ribes americanum—Wild black currant

## Rosaceae

Physocarpus opulifolius—Ninebark
Fragaria virginiana—Wild strawberry
Geum canadense—White avens
Geum aleppicum—Yellow avens
Rosa palustris—Swamp rose
Spiraea alba—Meadow sweet

## Aceraceae

Acer saccharinum—Silver maple

## Balsaminaceae

Impatiens biflora—Jewelweed

#### Lythraceae

Decodon verticillatus—Water willow

#### Umbelliferae

Angelica atropurpurea—Angelica

## Cornaceae

<u>Cornus</u> <u>amomum</u>—Silky dogwood <u>Cornus</u> <u>stolonifera</u>—Red osier dogwood

## Oleaceae

Fraxinus pennsylvanica—Green ash Fraxinus nigra—Black ash

## Asclepiadaceae

Asclepias incarnata—Marsh milkweed

## Verbenaceae

Verbena hastata—Blue vervain

#### Labiatae

Pycnanthemum virginianum-Mountain mint

## Scrophulariaceae

Veronicastrum virginicum—Culver's root

## Caprifoliaceae

<u>Viburnum</u> <u>lentago</u>—Nannyberry <u>Sambucus</u> <u>canadensis</u>—Elderberry

## Lobeliaceae

Lobelia cardinalis—Cardinal flower Lobelia siphilitica—Great blue lobelia

## Compositae

Helianthus grosseserratus—Sawtooth sunflower Helenium autumnale-Sneezeweed Bidens cernua—Nodding bur marigold Bidens comosa—Swamp tickseed Bidens frondosa—Common beggar's ticks Bidens vulgata—Tall begger's ticks Bidens coronata—Tall swamp marigold Silphium terebinthinaceum—Prairie dock Solidago patula—Swamp goldenrod Solidago gigantea—Giant goldenrod Solidago graminifolia—Grassleaf goldenrod Aster novae-angliae-New England aster Aster lucidulus—Swamp aster Aster simplex—Marsh aster Eupatorium maculatum—Joe-pye weed Eupatorium perfoliatum-Boneset Liatris pycnostachya—Gayfeather Cirsium muticum—Swamp thistle

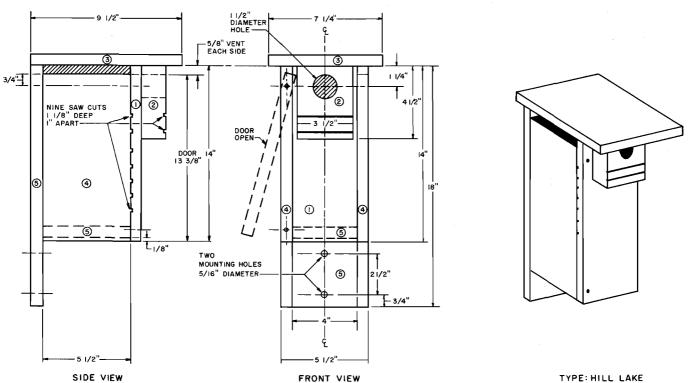
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## Appendix D

## NEST BOX CONSTRUCTION GUIDELINES

All nest boxes should be constructed of wood. Number 2 or 3 grades of pine or spruce are the most economical overall, and are generally considered easy to work with and durable. The wood should not be treated with creosote, pentachlorophenol, or greenish waterborne salts, since these preservatives may be injurious to wildlife. It is not necessary to finish the interior or exterior of the nest boxes. Unfinished structures made of pine or spruce typically turn gray and last for years. Assembly with rust-resistant nails or screws can be augmented by the use of waterproof glue, preferably liquid resorcinol with catalyst.

Appendix D-1
WREN, BLUEBIRD, OR TREE SWALLOW NEST BOX



To attract house wrens, place the box near, or actually in, the cover of a bush or small tree. Wrens seek the shade and protection of thick bushes where mated pairs find nesting materials and food for themselves and their young. The box may be placed three to ten feet from the ground. Studies conducted by the University of Wisconsin recommend that the wren boxes be placed at a height of about five feet. If cover is available, wrens will nest as high as 15 feet from the ground.

Bluebirds and tree swallows are more exacting. Bluebird nest boxes should be located in shrubby fencerows or in semi-open areas at least five acres in size, where undergrowth is not thick and shade is not too heavy. Areas of heavy pesticide use or high English sparrow populations should be avoided. Where raccoons are frequent, predator guards should be placed on fenceposts or trees, or nest boxes may be placed on single steel posts located ten feet from fencerows or woody cover. Typically, nest boxes should be placed five to six feet above the ground. If vandalism is a problem, nest boxes should be placed eight to ten feet high.

The tree swallow feeds on the wing and seeks open agricultural fields and meadows or treeless and shrubless wild areas as its nesting place. A nest box for the tree swallow should be placed in the open on a fencepost or special box support. A broad sweep of open country in front of the box opening is the best inducement for the tree swallow to accept the box. This swallow is not particular about the height of its nest cavity, provided the above requirements are met. It is recommended that tree swallow boxes be placed five to six feet above the ground.

Nest box spacing depends on the arrangement of the food and cover and the degree of isolation this arrangement affords. In farmyards or in rural areas, a tree swallow box should be at least 30 feet away from any other box. Boxes 150 feet apart are recommended for bluebirds. Nest boxes for both species should face away from the prevailing wind.

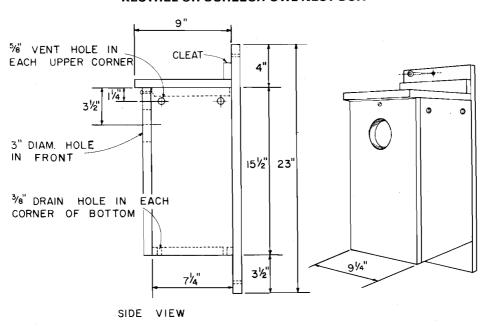
Nest boxes should be in place by March 15, prior to the birds' arrival from the south. Occasionally, unwanted birds such as the English sparrows or European starlings take over boxes. You can discourage them by repeatedly removing their nests. A periodic check will tell you if you have desirable tenants to encourage, or undesirable ones to evict. Always clean out the next boxes as soon as the young have fledged, as this will encourage both species to renest.

It may take several boxes placed in the most likely sites to attract one pair of birds.

Source: University of Wisconsin-Extension and Bluebird Restoration Association of Wisconsin, Inc.

Appendix D-2

#### **KESTREL OR SCREECH OWL NEST BOX**



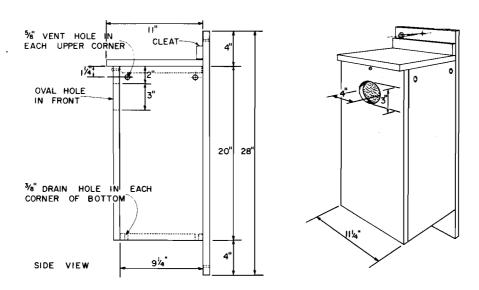
Sparrow hawks are birds of open fields and meadows. Therefore, locate houses on isolated living or dead trees, or possibly on poles. Houses should be at least 12 to 15 feet above the ground, with no obstructions in front of the hole. Place an inch or two of coarse sawdust in the house before putting it up.

Unlike sparrow hawks, screech owls are primarily woodland birds. Therefore, locate houses in wooded areas. Attach them to trees 15 feet or more above the ground. The owls use the houses for shelter during all seasons of the year, as well as for nesting sites during spring. During the winter, the owls often sun themselves at the entrance hole, so a small cleat should be nailed to the inside of the box five inches below the hole. Face the house in a direction where it will get the winter sun. Place several inches of sawdust or dry leaves in the house to make it more attractive to the birds.

Source: University of Wisconsin-Extension.

#### Appendix D-3

#### WOOD DUCK NEST BOX



Erect a next box in marshes by attaching it to a sturdy pole set four or more feet above the high-water level. Nest boxes may also be placed in trees up to one-quarter mile from a suitable water area. When placed in a tree, the house should be no more than 30 feet above ground level. Care should be taken to ensure that the box is plainly visible and that the entrance hole is not obstructed by leaves and branches. The box should be in a vertical position, but if it slants, it must slant forward. A backward slant prevents the young from climbing the sides and leaving the next box after hatching. Three or four inches of coarse sawdust or shavings should be placed in the house when it is erected.

Wood duck nests are subject to predation by raccoons and tree-climbing snakes, so they should be protected by suitable guards, such as metal shields around the tree trunk or post, wherever these animals are apt to present a problem.

If the inside surface of the front board is smooth, attach a three-inch by one-foot strip of hardware cloth on the inside. Have it extend from the bottom of the hole down 12 inches. Saw-cuts one-eighth inch deep and one-half inch apart in the same area are suitable.

Occasionally, birds such as starlings, flickers, and screech owls will take over wood duck houses; squirrels may also occupy them. Check the houses periodically to evict undesirable tenants or erect additional houses for the ducks.

Source: University of Wisconsin-Extension.

## Appendix E

# PRAIRIE PLANT SPECIES WHICH MAY BE TRANSPLANTED OR SEEDED ONTO PRAIRIE RESTORATION SITES ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

## Gramineae

Elymus canadensis—Canada wild rye
Sporobolus heterolepis—Prairie dropseed
Stipa spartea—Needle grass
Panicum virgatum—Switch grass
Andropogon scoparius—Little bluestem grass
Andropogon gerardi—Big bluestem grass
Sorghastrum nutans—Indian grass

#### Commelinaceae

Tradescantia ohiensis-Spiderwort

## Ranunculaceae

Anemone patens—Pasque flower Anemone cylindrica—Thimbleweed

#### Rosaceae

Rosa carolina—Prairie rose

#### Fabaceae

<u>Baptisia</u> <u>leucophaea</u>—Cream wild indigo <u>Baptisia</u> <u>leucantha</u>—White wild indigo <u>Petalostemum</u> <u>purpureum</u>—Purple prairie clover

## Violaceae

<u>Viola pedata</u>—Bird-foot violet <u>Viola pedatifida</u>—Prairie violet

## Onagraceae

Oenothera biennis-Evening primrose

#### Umbelliferae

<u>Taenidia</u> <u>integerrima</u>—Pimpernel <u>Zizia</u> <u>aptera</u>—Golden alexanders <u>Eryngium</u> <u>yuccifolium</u>—Rattlesnake-master

## Primulaceae

Dodecatheon meadia—Shooting star

## Gentianaceae

Gentiana andrewsii-Bottle gentian

## Verbenaceae

Verbena stricta-Hoary vervain

## Labiatae

Monarda fistulosa-Wild bergamont

## Compositae

Rudbeckia hirta—Black-eyed Susan
Ratibida pinnata—Grey-headed coneflower
Silphium integrifolium—Rosinweed
Silphium laciniatum—Compass plant
Solidago nemoralis—Grey goldenrod
Solidago rigida—Stiff goldenrod
Liatris aspera—Rough blazing star
Liatris cylindracea—Dwarf blazing star
Kuhnia eupatorioides—False boneset

## Appendix F

TREE, SHRUB, AND PLANT SPECIES WHICH MAY BE TRANSPLANTED ONTO UPLAND OR WETLAND FOREST ENHANCMENT AND REFORESTATION SITES ON THE GENERAL ELECTRIC COMPANY, MEDICAL SYSTEMS GROUP, LANDS

## Pinaceae

Larix laricina<sup>a</sup>—Tamarack

## Cupressaceae

Thuja occidentalis<sup>a,b</sup>—White cedar

Juniperus communis<sup>a</sup>—Common juniper

Juniperus virginiana—Red cedar

Juniperus horizontalis<sup>a</sup>—Creeping cedar

#### Araceae

Arisaema triphyllumb-Jack-in-the-pulpit

## Liliaceae

Allium tricoccum—Wild leek
Erythronium americanum—Yellow trout lily
Erythronium albidum—White trout lily
Smilacine racemosa—Solomon's plume
Polygonatum biflorum—Solomon's seal
Trillium recurvatum—Prairie trillium
Trillium grandiflorum—Trillium

## Salicaceae

Populus grandidentata—Large-toothed aspen
Populus tremuloides—Quaking aspen
Populus deltoidesb—Cottonwood
Salix nigrab—Black willow
Salix interiorb—Sand-bar willow
Salix bebbianab—Beaked willow
Salix discolorb—Pussy willow

## Juglandaceae

Juglans cinerea—Butternut
Juglans nigra—Black walnut
Carya cordiformis—Yellow-bud hickory
Carya ovata—Shagbark hickory

#### Betulaceae

Corylus americana—Hazelnut
Ostrya virginiana—Ironwood
Carpinus caroliniana—Musclewood
Betula luteaa—Yellow birch
Betula papyriferaa—Paper birch

#### Fagaceae

Fagus grandifolia—American beech
Quercus alba—White oak
Quercus macrocarpa—Bur oak
Quercus bicolorb—Swamp white oak
Quercus borealis—Northern red oak

## Ulmaceae

<u>Ulmus</u> <u>americana</u>b—American elm <u>Ulmus</u> <u>rubra</u>—Red elm <u>Celtis</u> <u>occidentalis</u>—Hackberry

#### Moraceae

Morus rubra-Red mulberry

## Ranunculaceae

Actaea rubra—Red baneberry
Aquilegia canadensis—Columbine
Thalictrum dioicum—Woodland meadow rue
Anemone quinquefolia—Wood anemone
Hepatica americana—Round-lobed hepatica

## Berberidaceae

Podophyllum peltatum—Mayapple

## Papaveraceae

Sanguinaria canadensis—Bloodroot

#### Hamamelidaceae

Hamamelis virginiana-Witch hazel

#### Rosaceae

Physocarpus opulifoliusb—Ninebark
Rubus occidentalis—Black raspberry
Agrimonia gryposepala—Agrimony
Prunus serotina—Black cherry
Prunus virginiana—Choke-cherry
Prunus americana—Wild plum
Crataegus sp.—Hawthorn

## Geraniaceae

Geranium maculatum—Wild geranium

#### Rutaceae

Zanthoxylum americanum-Prickly ash

## Aceraceae

Acer saccharum—Sugar maple
Acer rubrum—Red maple
Acer saccharinumb—Silver maple

#### Rhamnaceae

Ceanothus americanus—New Jersey tea

#### Vitaceae

Parthenocissus quinquefolia—Virginia creeper

#### Tiliaceae

Tilia americana—Basswood

#### Violaceae

Viola papilionacea—Common blue violet
Viola sororia b—Woolly blue violet
Viola pubescens—Downy yellow violet

#### Cornaceae

<u>Cornus</u> <u>alternifolia</u>—Pagoda dogwood <u>Cornus</u> <u>amomum</u>b—Silky dogwood

Cornus rugosa—Roundleaf dogwood stoloniferaa—Red osier dogwood

Cornus racemosa-Grey dogwood

#### Oleaceae

<u>Fraxinus</u> <u>americana</u>—White ash <u>Fraxinus</u> <u>pennsylvanica</u>a—Green ash

## Rubiaceae

Cephalanthus occidentalis-Buttonbush

## Caprifoliaceae

Viburnum trilobum b—High-bush cranberry Viburnum acerifolium—Maple-leaf viburnum

<u>Viburnum</u> <u>lentago</u>b—Nannyberry

Viburnum rafinesquianum—Downy arrowwood

Viburnum dentatum—Arrowwood

## Compositae

Helianthus strumosus—Woodland sunflower

<sup>&</sup>lt;sup>a</sup>Tree species native to Wisconsin, but not native locally.

bSpecies preferring or requiring wet soils.