



# Mayor and Council Communication

---

February 23, 2015

Page 1 of 2

**SUBJECT:** \*Resolution to Approve Memorandum of Understanding with Audubon Dakota - Urban Woods and Prairies Initiative

**RECOMMENDATION:** The Mayor and City Council are asked to consider a resolution to approve a Memorandum of Understanding with the National Audubon Society dba Audubon Dakota for the Urban Woods and Prairies Initiative.

**BACKGROUND / KEY POINTS:** The Moorhead River Corridor Master Plan, approved by the Mayor and City Council in May of 2014, identified *Habitat Enhancement and Water Quality* as a key principal along the corridor. Audubon Dakota, in partnership with Fargo Parks District, initially initiated the Urban Woods and Prairies Initiative (herein referred to as "Initiative") for six sites in Fargo. Goals of the Initiative include:

- Habitat creation, enhancement and restoration, and
- Creating urban native prairie habitat areas that benefit birds and other wildlife, are aesthetically pleasing, allow for community recreational and educational opportunities, increase flood resiliency and improve water filtration.

City of Moorhead and Audubon Dakota staff met in November 2014 to discuss the possibility of expanding the Initiative to sites in Moorhead. Seven sites in Moorhead were identified as primary candidates for the Initiative. All of the sites are along the River Corridor and all but one of the sites are owned by the City of Moorhead. The sites include:

1. Oakport Prairie Site\*
2. North River Drive
3. Homestead Prairie
4. Riverfront Park
5. Horn Park
6. Riverview Circle
7. River Oaks

*\*Property owned by the Buffalo-Red River Watershed District*

Audubon Dakota staff presented the sites and information on the Initiative to the Moorhead Parks Advisory Board at their January 20, 2015 meeting and the PAB was supportive of the Initiative. The Watershed District is also supportive of the Initiative.

The MOU outlines the framework by which Audubon Dakota and the City would proceed with developing the sites. The MOU framework includes:

- **Audubon** will prepare a restoration site plan for each site.
  - Each site plan will include detailed descriptions of proposed enhancements, restorations and improvements to the site.
  - **City Council** approval is required for each site plan and site access agreement prior to Audubon commencing work on the sites.
  - **Public and stakeholder input** on the site plans will be gathered prior to bringing the individual site plans to the City Council.
- Site preparation will be completed by the **City** (tilling, leveling, etc.).
- All site improvements (seeding, signage, plantings, fencing, etc.) noted within the site plans will be completed by **Audubon and Prairie Restorations, Inc.**
- **Audubon, with Prairie Restorations, Inc.**, will establish and maintain each site for a 3-year period. This is the most critical period when establishing native restoration sites.

- Following the 3-year establishment period, site maintenance will be completed by the **City**.
- **Audubon** will provide site specific maintenance and management plans for the City to utilize.
- **Audubon** will sponsor outdoor education programming at the sites.
- The **City** retains the right to add amenities to the sites.
- The sites are within the floodplain and subject to flooding. Neither party shall be held liable for loss or damage incurred.

**FINANCIAL CONSIDERATIONS:**

- Site preparation would be completed by the City of Moorhead and is included within the approved 2015 Capital Improvement Budget.
- Site enhancements, as outlined in the approved site plans, will be completed by Audubon and Prairie Restorations, Inc.
- Although natural resource restoration may require larger investments at the start, cost savings are recognized in the long term compared to mowing grass.

**VOTING REQUIREMENTS:** Majority of Quorum

*Disclaimer: Voting requirements may be subject to changes in the law, parliamentary procedural matters, or other unforeseen issues. The City Attorney provides opinion on questions of voting requirements in accordance with the Moorhead City Code, Minnesota State Statutes, and parliamentary procedure.*

Respectfully Submitted:



Michael J. Redlinger  
City Manager

**Department:** Planning and Neighborhood Services  
**Prepared by:** Kristie Leshovsky, City Planner and Zoning Administrator and the River Corridor Technical Advisory Group

**Attachments:** Draft Resolution  
 Draft Memorandum of Understanding  
 Site Map  
 Moorhead River Corridor Master Plan – Habitat Enhancement Excerpt



# Request for Council Action

<b>AGENDA SECTION:</b> Planning and Neighborhood Services Department		<b>ORIGINATING DEPARTMENT:</b> Planning	<b>MEETING DATE:</b> February 23, 2015
<b>ITEM NO. 9.</b>	<b>ITEM DESCRIPTION:</b> *Resolution to Approve Memorandum of Understanding with Audubon Dakota - Urban Woods and Prairies Initiative		<b>PREPARED BY:</b> Leshovsky

## DRAFT RESOLUTION

WHEREAS, the City Council of the City of Moorhead reviewed and approved the Moorhead River Corridor Master Plan (herein the “Plan”) in May of 2014; and

WHEREAS, the Plan identified *Habitat Enhancement and Water Quality* as a key principal along the corridor; and

WHEREAS, National Audubon Society dba Audubon Dakota and the City of Moorhead are desirous of entering into a Memorandum of Understanding (MOU) for the Moorhead River Corridor Urban Woods and Prairies Initiative (herein the “Initiative”); and

WHEREAS, the MOU between Audubon Dakota and the City of Moorhead would establish the steps by which certain sites along the river corridor would be developed for habitat creation, enhancement and restoration and the responsibilities of each party thereof.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Moorhead, Minnesota that the Mayor and City Manager and herein authorized and directed to enter into a Memorandum of Understanding with National Audubon Society dba Audubon Dakota for the Moorhead River Corridor Urban Woods and Prairies Initiative and any related amendments thereto.

PASSED: February 23, 2015 by the City Council of the City of Moorhead.

## MEMORANDUM OF UNDERSTANDING

**THIS MEMORANDUM OF UNDERSTANDING (“MOU”)** is entered into this \_\_\_\_ day of \_\_\_\_\_, 2015 (hereinafter referred to as the “Effective Date”), by and between the City of Moorhead, a municipal corporation and political subdivision of the State of Minnesota (hereinafter referred to as the “City”), and National Audubon Society, Inc. d/b/a Audubon Dakota, whose post office address is Black Building, 118 Broadway, Fargo, North Dakota 58102 (hereinafter referred to as “Audubon”).

**WHEREAS**, Audubon is a tax-exempt organization, as described in section 501(c)(3) of the Internal Revenue Code, whose mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and Earth’s biological diversity; and

**WHEREAS**, Audubon is interested in preserving and enhancing the habitat for birds and other wildlife within certain “riparian zones,” such as those found along the Red River, while at the same time providing vegetation that is beneficial in terms of water storage, filtration, purification, and flood mitigation, and also providing an aesthetically pleasing nature area for local residents; and all of these goals are in line with the City of Moorhead River Corridor Master Plan; and

**WHEREAS**, Audubon desires to work with the City on a project called the Moorhead River Corridor Urban Woods and Prairies Initiative (hereinafter referred to as the “Initiative”), the purpose of which is to make improvements to certain parcels of City-owned property designated as “Habitat Restoration Sites”, as such parcels are more fully described below, in order to achieve the above-described goals; and

**WHEREAS**, the City is agreeable to working with the Audubon on the Initiative to achieve said goals, subject to the terms and conditions set forth in this MOU.

**NOW THEREFORE**, in consideration of the parties’ mutual covenants contained in this MOU, and other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the City and Audubon hereby evidence their mutual understanding and acceptance of the following terms and conditions in connection with the above-described Initiative:

1. **Exhibits**. The following exhibits are attached hereto and by reference made a part of this Agreement:

**Exhibit A** – Depiction of Designated Habitat Restoration Sites.

**Exhibit B** – Area/Legal Description of Designated Habitat Restoration Sites.

2. **Habitat Restoration Sites**. For purposes of achieving the goals of the Initiative, the parties agree that certain parcels of real property owned by the City and located within the boundaries of the City of Moorhead, Clay County, Minnesota, as depicted in the attached Exhibit

A, shall be designated as “Habitat Restoration Sites.” An area/legal description of said Habitat Restoration Sites is attached hereto in Exhibit B.

3. **Site Plans.** Audubon shall, in counsel with the City, create a restoration site plan for each designated Habitat Restoration Site. Said plans must include detailed descriptions of any proposed enhancements, restorations, and improvements for the particular site, including without limitation, any plans to plant, enhance, or preserve vegetation; install or build fences, buildings, or other structures; install or construct landscaping; enhance or restore the natural habitats of land birds, waterfowl, and other wildlife; implement water retention, filtration, purification, and flood controls; stabilize banks and slopes and reduce erosion; and any other plans intended to create an aesthetically pleasing nature area. The site plans should also describe any necessary preparations that must be performed by the City pursuant to Section 5 of this MOU before the site plans may be implemented, including without limitation, any required herbicide applications, mowing, or disking. Site plans shall comply with all Federal, State and local requirements.

4. **Approval by City Council.** The site plans described in Section 3 of this MOU must be approved by the City Council of the City before their implementation. Audubon shall not commence the implementation of any of the enhancements, restorations, or improvements described in the site plans until it has procured the written consent and approval of the City Council of the City. If the City Council of the City reasonably withholds approval of the site plans, and Audubon is unable to modify the site plans in such a way as to earn the approval of the City Council of the City, this MOU shall terminate and the parties shall be released from any terms and conditions hereunder.

5. **Site Preparations.** If the City Council of the City approves the site plans submitted by Audubon, the City shall commence, as soon as weather conditions will allow, with the necessary preparations described in the site plans for each Habitat Restoration Site before Audubon begins implementing the improvements detailed on the approved site plans. Said preparations must be completed by the City within one (1) year after the date when the City Council of the City issued its written consent and approval of the site plans.

6. **Enhancement Period.** After the City completes the necessary site preparations, Audubon shall, at its own cost and expense, complete the preservations, enhancements, and improvements described in the approved site plans for each Habitat Restoration Site within three (3) years after the date when the City Council of the City issued its written consent to the site plans (hereinafter referred to as the “Enhancement Period”).

- a. **City Maintains Ownership.** The City will maintain ownership of the parcels of property designated as Habitat Restoration Sites throughout the Enhancement Period and the entire duration of the parties’ cooperative efforts with regard to the Initiative, but for the three-year Enhancement Period, the City and Audubon shall enter into an access agreement whereby the City will grant Audubon the right to access and use the Habitat Restoration Sites for preservation, enhancement, and improvement purposes for the duration of the Enhancement Period, and Audubon will agree to be responsible for the maintenance and upkeep of the Habitat

Restoration Sites during said time. The parties' specific responsibilities with regard to maintenance and improvements during the Enhancement Period will be set forth on the approved site plans.

- b. **Extension.** If the three-year Enhancement Period becomes an insufficient amount of time to implement the proposed improvements, due to unforeseen or unavoidable circumstances such as flood or drought, the parties may agree in writing to extend the Enhancement Period and the related access agreement.
  - c. **Failure to Implement Site Plans.** If Audubon fails to complete the preservations, restorations, and improvements described in the approved site plans for any of the Habitat Restoration Sites within the Enhancement Period, the City, in its sole discretion, may terminate this MOU, the access agreement, and any other related agreements with Audubon, in which event Audubon will remove any of its equipment and other personal property from the Sites and if requested by the City, will remove any signage or fences placed on the Sites by Audubon and restore any damage caused by such removal. In addition, if requested by the City, Audubon shall plant grass and other vegetation as necessary to cover any exposed soil areas on the Sites that have been disturbed by Audubon. In no event shall Audubon be reimbursed for the costs it incurred in commencing said improvements.
  - d. **Failure to Maintain and Repair.** If Audubon allows the preservations, restorations, and improvements on the Habitat Restoration Sites to fall into a state of disrepair during the Enhancement Period, the City, in its sole discretion, may demand that Audubon make the necessary repairs within fifteen (15) days after the date of the demand. Audubon will then have fifteen (15) days to come into compliance and satisfy the City's demands. If Audubon fails to come into compliance and satisfy the City's demands within the fifteen (15) day cure period, the City, in its sole discretion, may terminate this MOU, the access agreement, and any other related agreements with Audubon, in which event Audubon will remove any of its equipment and other personal property from the Sites and if requested by the City, will remove any signage or fences placed on the Sites by Audubon and restore any damage caused by such removal. In addition, if requested by the City, Audubon shall plant grass and other vegetation as necessary to cover any exposed soil areas on the Sites that have been disturbed by Audubon. In no event shall Audubon be reimbursed for the costs it incurred in commencing said improvements.
7. **Ongoing Site Management.** If Audubon has successfully completed the improvements described in the approved site plans for each Habitat Restoration Site by the end of the Enhancement Period, the City and Audubon shall enter into a site management agreement whereby the City will resume the exclusive control of the Habitat Restoration Sites and agree to use its best efforts to maintain the improvements made by Audubon, and Audubon will agree to continue to provide habitat management expertise to the City and to sponsor outdoor education programming at the Habitat Restoration Sites. The site management agreement shall remain in

full force and effect for a certain period of time to be agreed upon by the parties, which period shall not be less than thirty (30) years. The City retains the option to add amenities to the sites that are in general conformance with and enhance the site plans. Further, the City retains the option to change the use of, and terminate the site management agreement as to, any of the Habitat Restoration Sites prior to the expiration of the site management agreement upon the occurrence of any of the following unforeseen events: (i) a natural disaster or similar emergency, which requires a change in use of the Habitat Restoration Site(s) in order to protect the health, safety, and welfare of citizens of the City; (ii) a necessary modification to a flood mitigation project, which requires a change in use of the Habitat Restoration Site(s); or (iii) a change to applicable federal or state law, which requires the City to change the use of the Habitat Restoration Site(s). In the event the City must change the use of a Habitat Restoration Site for any of the above-stated reasons, the City will use its best efforts and cooperate with Audubon to continue to pursue the goals of the Initiative, as set forth in the site management agreement, at all of the remaining Habitat Restoration Site(s) where no change in use is required. The site management agreement will remain in full force and effect for those Habitat Restoration Sites not requiring a change in use.

8. **Flooding Situations.** The parties understand that the designated Habitat Restoration Sites are located within a floodplain and are therefore subject to occasional and unpredictable flooding outside of the parties' control. As a result, the parties agree to work cooperatively in flooding situations, by allowing for reasonable extensions of the deadlines contemplated in this MOU and working together to return to the status quo that existed before the flooding subject to the availability of sufficient funds to finance repairs. In the event that a Habitat Restoration Site is flooded, neither party shall be held liable to the other party for any loss or damage incurred as a result of the flood. Once the Enhancement Period has ended and the City has undertaken to maintain the improvements made to the Habitat Restoration Sites, the City will use reasonable efforts to repair any minor damage to the improvements resulting from a flood, so long as sufficient City funds are available to finance such minor repairs, but in no event shall the City be obligated to repair or replace improvements that have incurred substantial damage as the result of a flood.

9. **Marketing and Signage.** Audubon shall, at its own expense and with counsel of the City, develop and implement a marketing and communication strategy for the Initiative to inform local residents of the proposed improvements and to encourage support for the Initiative. The marketing and communication strategy may include signage at the Habitat Restoration Sites, news spots, community engagement events, and any other strategic items deemed beneficial by Audubon and the City. All marketing and communication events and advertisements with regard to the Initiative must be approved in writing by the City, including any signage posted at the Habitat Restoration Sites. Audubon is prohibited from posting any signage at the Habitat Restoration Sites, except for signage that is expressly approved in writing by the City prior to its posting.

10. **Utility Services.** No utilities may be provided for or connected to a Habitat Restoration Site without the express written consent of the City.

11. **Indemnification.** Audubon agrees to indemnify and hold harmless the City and

any of its officers, employees, contractors, consultants, representatives, agents, and assigns from and against any and all liability, damages, penalties, judgments, or claims of whatever nature arising from injury to person(s) or property resulting from the negligent acts or omissions of Audubon, or Audubon's contractors, successors, or assigns in connection with the use, enhancement, restoration, or improvement of any of the Habitat Restoration Sites in furtherance of the Initiative, and Audubon shall, at Audubon's own cost and expense, defend any and all suits or actions (just or unjust) which may be brought against the City or in which the City may be joined with other parties upon any such above-mentioned matter or claim(s). This agreement to indemnify and hold harmless will include indemnity against all costs, expenses, and liabilities, including any attorney fees, reasonably incurred in or in connection with any such claims or proceedings brought thereof. This indemnification provision will survive the termination of this MOU and any subsequent agreements of the parties contemplated herein.

12. **Assignment.** Neither party may transfer or assign this MOU, nor any rights or obligations under this MOU, without the express written consent of the other party.

13. **Amendments.** No amendment, modification, or waiver of any condition, provision, or term of this MOU will be valid or of any effect unless made in a writing signed by the party or parties to be bound, or a duly authorized representative, and specifying with particularity the extent and nature of such amendment, modification, or waiver. Any waiver by any party of any default of another party will not affect or impair any right arising from any subsequent default. Except as expressly and specifically stated otherwise, nothing herein will limit the remedies and rights of the parties thereto under and pursuant to this MOU.

14. **Governing Law.** This MOU will be controlled by the laws of the State of Minnesota. Any action brought as a result of any claim, demand, or cause of action arising under the terms of this MOU must be brought in an appropriate venue in the State of Minnesota.

15. **Merger Clause.** This MOU constitutes the entire agreement by and between the parties, and any other prior representations or agreements are deemed merged herein, and those not specified herein do not represent any agreements, promises, covenants, or representations on the part of either party hereto.

16. **Severability Clause.** Each provision, section, sentence, clause, phrase, and word of this MOU is intended to be severable. If any provision, section, sentence, clause, phrase, or word hereof is held by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such illegality or invalidity will not affect the legality or validity of the remainder of this MOU.

17. **Grammatical Construction.** Whenever the singular number is used herein, the same will include the plural where appropriate, and the words of any gender will include any other genders where appropriate.

18. **Agreement Binding on Successors.** This MOU will be binding upon and inure to the benefit of the parties hereto and their respective personal representatives, successors, and assigns.



19. **Headings.** Headings in this MOU are for convenience only and will not be used to interpret or construe its provisions.

IN WITNESS WHEREOF, the parties executed this MOU on the Effective Date:

CITY OF MOORHEAD

By: \_\_\_\_\_

Del Rae Williams

Its: Mayor

By: \_\_\_\_\_

Michael Redlinger

Its: City Manager

AUDUBON DAKOTA

By: \_\_\_\_\_

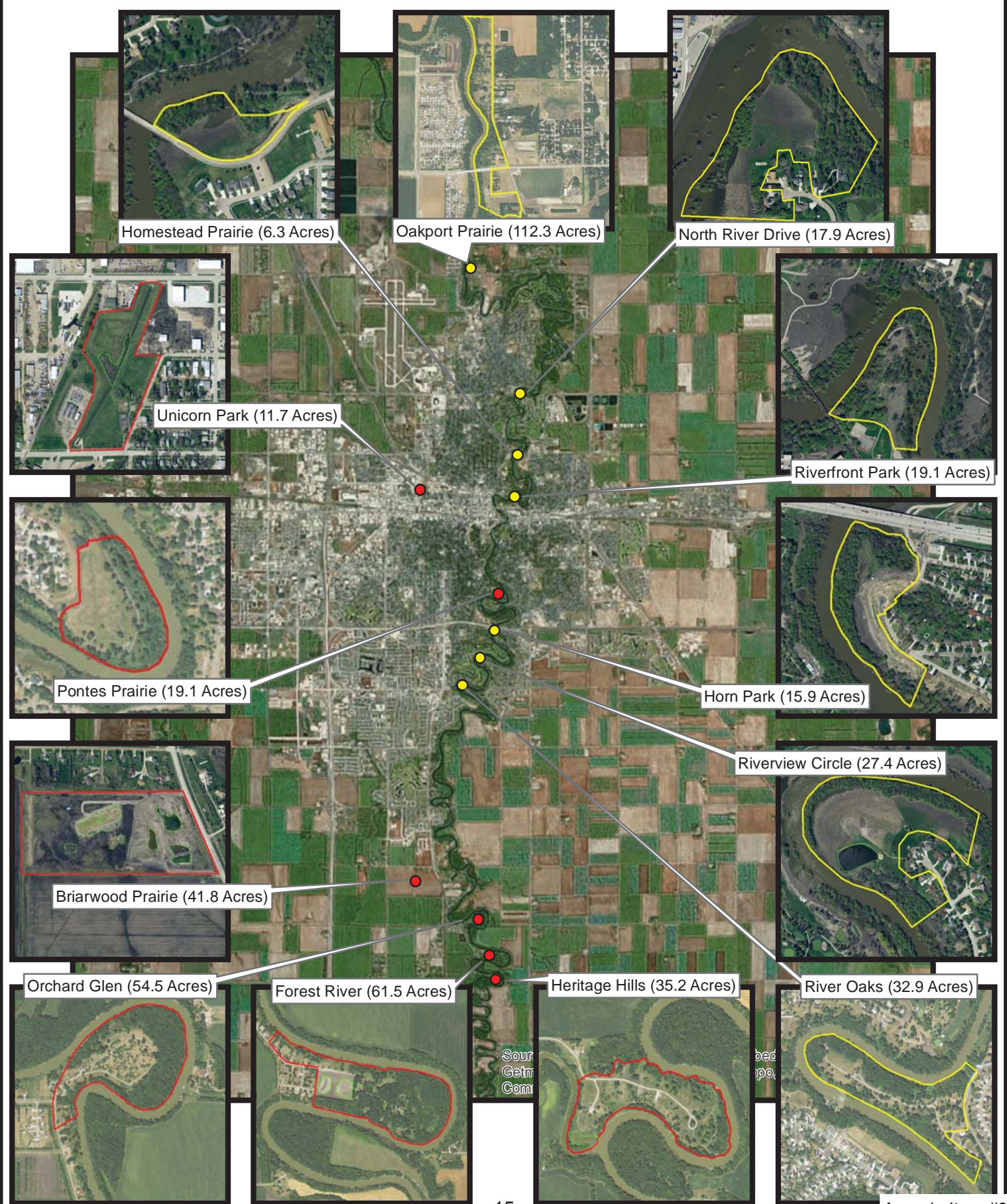
Its: \_\_\_\_\_

DRAFT

# Urban Woods and Prairies Initiative

**Legend**

- Fargo Sites
- Moorhead Sites
- Wetland Restorations



# Habitat Enhancement and Water Quality Plan

## HABITAT ENHANCEMENT

The primary goal of habitat enhancement is to increase the area of native vegetation through preservation and restoration, while maintaining an overall natural feel that appears cared for and intentional. Native vegetation provides several benefits including wildlife habitat, erosion and flood control, recreational opportunities, such as birding and wildflower viewing, and is an important component to the natural history of the Fargo-Moorhead area. Target restoration and preservation areas have been identified along the Red River Corridor in the Moorhead area and include restoration of habitats that are compatible with the riparian corridor and require minimal amounts of maintenance. Specifically, habitats that are proposed for restoration along the River Corridor include prairie, oak savanna, and floodplain forest. A description of each habitat type along with strategies for restoration and enhancement are below.



### PRAIRIE

Prairies once covered 18 million acres of Minnesota although due to agriculture and development, only 235,000 acres of original prairie remain. The prairies of western Minnesota were tallgrass prairies that were dominated by grass species such as big bluestem and Indiangrass, as well as wildflowers such as sunflowers, blazing stars, and many aster species. Prairies were historically maintained by fire, drought, and grazing by native herbivores such as bison and elk, meaning that these types of disturbances were necessary for maintaining the vast grasslands. Without such disturbances, trees and shrubs encroach on the prairies converting them to forests.

Prairies provide a number of ecosystem services that benefit both humans and wildlife. The plants of prairies are adapted to the conditions of Minnesota, including droughts and flooding. The strong roots of these plants provide stabilization and erosion control of the soils. As prairies were the natural vegetative plant communities that once covered 1/3 of the state of Minnesota, they are important for our natural history and provide a sense of place. Prairies are important for wildlife, including many rare species such as the state-listed regal fritillary and Dakota skipper. Prairies also offer aesthetic value to our landscapes with plants in flower from the early spring to the late fall, as well as recreational birding and butterfly observation opportunities.

### RECOMMENDATIONS

Several areas along the Red River Corridor in the Moorhead area are proposed to be restored to prairie, including:

- » Many areas along the corridor that were formerly residential have already been and will continue to be seeded with prairie plants by the City of Moorhead, including north and south of the Moorhead Country Club, Homestead Park, and north of River Oaks Park.
- » Restored prairie along the levees in many areas will serve as a transition between maintained turf and forested areas along the corridor and in several parks.
- » Portions of public parks including M.B. Johnson Park, Gooseberry Mound Park, and River Oaks Park.

Restoring and maintaining prairies in urban environments is relatively easy because once established, prairies require little maintenance compared to high maintenance turf which requires frequent mowing. Restoring prairies on land that has been used for other purposes, such as residential properties and areas currently maintained as turf, includes removing existing vegetation, such as turf grass or invasive species. After vegetation removal, the selected areas will be seeded with a local ecotype prairie seed mix. Because native plants are adapted to local climatic conditions, such as drought, once established they will require minimal maintenance, such as watering. During initial establishment, selective weed control will be implemented to remove invasive and undesirable species. After the prairie vegetation has become established, it should be mowed or prescribed burned every 3-5 years.

## **OAK SAVANNA**

Oak savannas are among the rarest habitats in North America. They are a transition habitat between the tallgrass prairie and woodlands. Oak savanna is comprised of prairie plant species with a sparse canopy of trees (typically bur oak) and shrubs. Similar to prairies, oak savanna was historically maintained by fire, drought, and grazing. Without such disturbances, oak savannas would fill in with trees and become forests.

Because oak savannas are a transition habitat, they are important for both forest dwelling species as well as prairie species (including both plants and animals). For example, red-headed woodpecker, indigo bunting, eastern kingbird, and karner blue butterflies occur in oak savannas. As such, this ecosystem provides an aesthetic and accessible landscape for birding and searching for insects, such as butterflies.



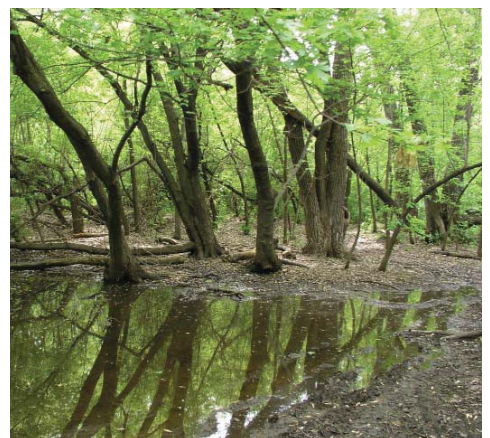
## **RECOMMENDATIONS**

Many areas along the River Corridor have bur oak saplings that have naturally recruited. Restoring bur oak savanna in these areas would entail protecting the saplings that are already growing, by enclosing them in tubes or mesh wiring. Protecting saplings will ensure survival and growth and will eliminate costs associated with purchasing, planting, and maintaining new trees. In addition to protecting existing bur oak saplings, native prairie plants will be seeded in these areas. As mentioned above, native plants are adapted to local climatic conditions which minimize the need for watering. During establishment of native plants, selective weed control will have to be implemented. Similar to prairie, once oak savanna becomes established, maintenance is minimal, and would include mowing or prescribed burning every 3-5 years.

## **FLOODPLAIN FOREST**

Floodplains are the broad, flat, low-lying areas at the bottom of river valleys that typically flood in spring and during periods of unseasonably high rainfall. Floodplain forests are dominated by trees such as cottonwood, silver maple, and black willow. The understory of these forests is typically sparse with many areas of bare ground due to the high frequency of flooding. These forests are important along rivers with a high frequency of flooding, such as the Red River, because the trees help stabilize the river banks and prevent excessive erosion.

Floodplain forests provide important habitat for many wildlife species, including migrating songbirds that rely on vegetative corridors. Ephemeral pools within the forest provide habitat for amphibians and invertebrates. Examples of wildlife include: wood duck, black-crowned night-heron, cerulean warbler, acadian flycatcher, warbling vireo, blue-winged warbler, prothonotary warbler.



## RECOMMENDATIONS

Floodplain forests provide many public use and recreational benefits including birding during spring and fall migrations, fishing along the Red River, and dog walking and passive recreation on hiking trails. Floodplain forests occur along many parts of the Red River in the Moorhead area, especially in parks and north and south of the core urban areas of the city. Restoring and maintaining these areas would entail maintaining permanent tree cover and allowing some areas to naturally succeed back to forest. Additionally, controlling invasive species, such as buckthorn, may be required.

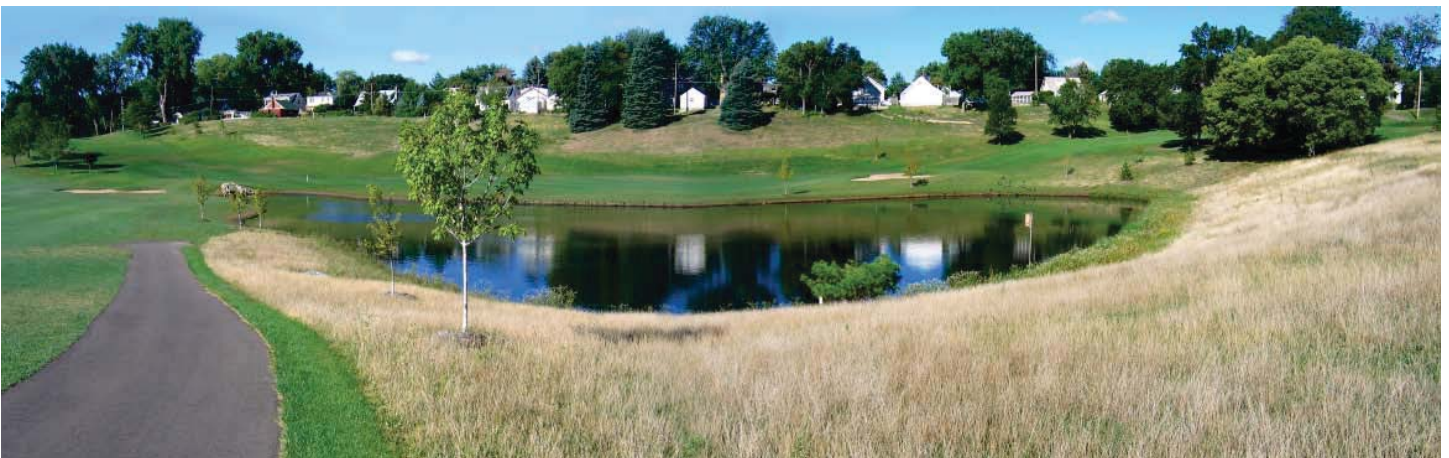
## WATER QUALITY

Creating wetland features along the Red River Corridor will provide ecosystem services such as water storage during large rain events, improve water quality through infiltration, and provide habitat for wildlife. Wetland features include wetland restoration, rain gardens, and created wetlands. Adding wetland features will increase heterogeneity in the landscape and add interest, as well as ensure the City of Moorhead meets its stormwater management needs. Such water quality improvement projects can also provide public education opportunities.

## RECOMMENDATIONS

- » Identifying areas where wetlands can be restored or water quality improvement features can be added is the first step. Recommendations for water quality improvement features include:
  - » Restoring a degraded wetland at M.B. Johnson Park.
  - » Wetland restoration/creation in a poorly drained area at Woodlawn Park.
  - » Decentralized stormwater best management practices, such as raingardens throughout and within the fabric of the corridor and contributing drainage.
  - » Finally, several stormwater outlets along the corridor serve as potential wetland feature creation sites that would improve water quality of stormwater that flows into the Red River.

Restoring existing wetlands will entail removing invasive species, such as reed canary grass and cattails, and planting native wetland plant species. Maintenance for restored wetlands will include invasive species control and monitoring establishment of native species and supplemental plantings as needed. Constructing rain gardens and created wetlands will involve dredging the target area, installing drainage and filtration systems, and planting native wetland species. Similar to restored wetlands, invasive species will have to be controlled as needed and native species establishment will have to be monitored and supplemented as necessary.



# HABITAT ENHANCEMENT & WATER QUALITY PROJECTS

## STUDY AREA 1

### H-1 PRAIRIE/SAVANNA RESTORATION AT THE NEW RECREATION NODE ON BUFFALO RIVER WATERSHED DISTRICT LAND

Maintenance of the existing seeded area is most important followed by protection of naturally recruited tree saplings.

### H-2 PRAIRIE RESTORATION AT M.B. JOHNSON PARK

### H-3 WETLAND RESTORATION AT M.B. JOHNSON PARK

### H-4 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST NORTH OF MOORHEAD COUNTRY CLUB

Maintenance of the existing seeded area is most important followed by protection of naturally recruited tree saplings.

### H-5 PRAIRIE/SAVANNA RESTORATION NORTH OF 15TH AVENUE NORTH

## STUDY AREA 2

### H-6 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST BETWEEN HOMESTEAD AND DAVY/MEMORIAL PARKS

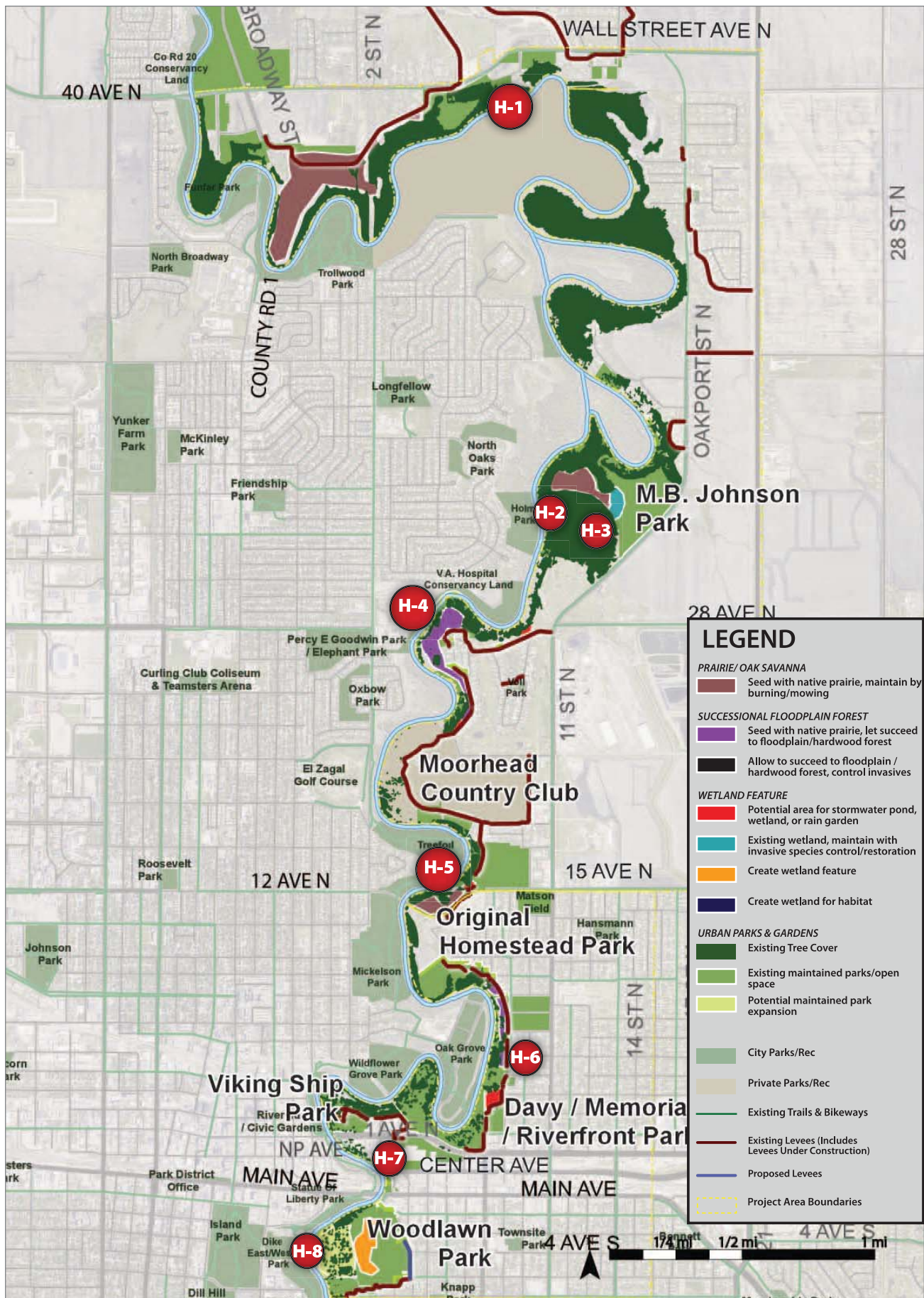
Maintenance of the existing seeded area is most important followed by protection of naturally recruited tree saplings.

### H-7 WATER QUALITY IMPROVEMENTS AT DAVY/MEMORIAL PARK, RIVERFRONT PARK, AND VIKING SHIP PARK

### H-8 RESTORED WETLAND IN WOODLAND PARK



FIGURE 52. PROPOSED HABITAT AND WATER QUALITY IMPROVEMENTS (STUDY AREAS 1 & 2)



### **STUDY AREA 3**

#### **H-9 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST SOUTH OF WOODLAWN PARK**

Maintenance of the existing seeded area is most important followed by protection of naturally recruited tree saplings.

#### **H-10 PRAIRIE/OAK SAVANNA RESTORATION IN GOOSEBERRY MOUND PARK**

#### **H-11 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST FROM GOOSEBERRY MOUND PARK TO HORN PARK**

#### **H-12 PRAIRIE/OAK SAVANNA RESTORATION IN HORN PARK**

#### **H-13 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST SOUTH OF HORN PARK**

Maintenance of the existing seeded area is most important followed by protection of naturally recruited tree saplings.

#### **H-14 PRAIRIE/OAK SAVANNA RESTORATION AT NEW RECREATION NODE AT RIVERVIEW CIRCLE SOUTH**

Tree protection should occur within 0-5 years, invasive species control and maintenance of the seeded area are all important in the near term to maintain the landscape.

#### **H-15 PRAIRIE/SUCCESSIONAL FLOODPLAIN FOREST IN RIVER CORRIDOR NORTH OF RIVER OAKS PARK**

Maintenance of the existing seeded area is most important followed by protection of recruited tree saplings.

### **STUDY AREA 4**

#### **H-16 PRAIRIE/OAK SAVANNA RESTORATION IN RIVER OAKS PARK**

#### **H-17 PRAIRIE SEEDING/SUCCESSIONAL FLOODPLAIN AND POTENTIAL WETLAND FEATURE IN TESSA TERRACE DEVELOPMENT**

#### **H-18 PRAIRIE SEEDING/SUCCESSIONAL FLOODPLAIN FOREST SOUTH OF BLUESTEM PARK**





FIGURE 54. PROPOSED HABITAT AND WATER QUALITY IMPROVEMENTS (STUDY AREAS 3 & 4)

