

Cooperative Wetland Mitigation Clearinghouse

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ABSTRACT

The Iowa Department of Transportation (Iowa DOT) currently performs wetland mitigation on a project by project basis. While the Iowa DOT is mitigating projects on a case by case basis, other agencies such as the Iowa Department of Natural Resources and the Natural Resource Conservation Service are performing wetland restoration projects, and counties and cities are mitigating wetland losses as well. The Iowa DOT desired to determine whether state and local resources may be utilized cooperatively in developing shared wetland mitigation projects in ways that will benefit both Iowa agencies and local governments.

The research objectives were to conduct a survey on wetland mitigation activities in Iowa to see if there is an interest and a demand to develop a wetlands clearinghouse concept, develop instruments for cooperative wetland mitigation, and exchange and publish the information discovered in the project.

The research results included development of a conceptual framework for cooperative wetland mitigation, reviewing the existing inventories available for wetlands mitigation, developing a template project outline and flow chart of the proposed Iowa Wetland Mitigation Clearinghouse concept, creating a template cooperative umbrella instrument, and raising the awareness of and appreciation for the value of local wetlands and their responsible use through educational materials, technical assistance, and workshops.

In a national-level review, the research did not discover other processes utilizing a clearinghouse concept for wetlands mitigation. As a result, a model was defined in the research.

Key words: clearinghouse—Iowa Wetland Mitigation Clearinghouse—wetlands inventories—wetlands mitigation

PROBLEM STATEMENT

The Iowa Department of Transportation (Iowa DOT) currently performs wetland mitigation on a project by project basis. While the Iowa DOT is mitigating projects on a project by project basis, other agencies such as the Iowa Department of Natural Resources (Iowa DNR) and the Natural Resource Conservation Service (NRCS) are performing wetland restoration projects, along with counties and cities that are mitigating wetland losses as well. The Iowa DOT desired to determine whether state and local resources may be utilized cooperatively in developing shared wetland mitigation projects in ways that will benefit Iowa agencies and local governments.

RESEARCH OBJECTIVES

The purpose of this project is to develop a framework for an Iowa Wetland Mitigation Clearinghouse (IWMC) and showcase typical inventories that will serve agencies and communities involved with wetland mitigation.

- Developed a conceptual framework for cooperative wetland mitigation that utilizes the concept of an IWMC.
- Reviewed the inventories available for wetlands mitigation in Iowa.
- Developed a template project outline and flow chart of the proposed IWMC concept.
- Created a template cooperative umbrella instrument (CUI) to be used in the approval process.

This paper will discuss the conceptual framework for cooperative wetland mitigation, the inventories currently available to identify and categorize wetlands along with flow charts for the proposed IWMC concept.

RESEARCH METHODOLOGY

The research methodology utilized several diverse activities. First, the results of the Iowa Highway Research Board (IHRB) project TR-526 was reviewed and used as a guide for the research team. The IHRB project recommended developing a framework for an IWMC. To assure themselves that this recommendation would meet the regulations included in the Clean Water Act of 1977, the team evaluated the Act and researched other processes across the nation currently used for wetlands mitigation.

The evaluation led the team to the conclusion that the concept of the IWMC would meet the requirements. The IWMC concept was developed along with the advantages, potential products that could be developed, and barriers that may need to be removed, managed, or overcome. The duties of the IWMC included developing manageable inventories, providing quality assessment and oversight, and completing the documentation when the site is closed. Finally the IWMC activities were developed as they would pertain to a typical roadway building project..

Iowa Highway Research Board (IHRB) Project TR-526

At the beginning of this research project there was a desire to assess the potential for collaborative development of wetland mitigation projects in Iowa. The IHRB initiated project TR-526 that completed a study of the interest to participate in wetlands banking. The study was conducted by the Center for Transportation Research and Education (CTRE), a center of Iowa State University. The Iowa DOT and the Iowa DNR were interviewed, and a survey of Iowa cities and counties was conducted.

The findings of the IHRB study indicate that most wetland mitigations conducted by the Iowa DOT in the last five years have constituted small acreages that are well under the 25-acre minimum adopted by Iowa's Mitigation Banking Review Team (MBRT) for considering wetland banking. The Iowa DOT staff in the Office of Location and Environment have a successful process in place for complying with the National Environmental Policy Act and for obtaining 401 and 404 permits when needed. Project delays do not appear to be associated with obtaining 404 permits. Accordingly, there is not a strong need for the Iowa DOT to change the current permitting process or to engage in wetland banking.

Moreover, wetland banking incurs financial risks. The Iowa DOT would have to spend state highway funds up front to build mitigation banks and hope to recoup the funds with project funds when the bank sells credits in the future. There are several cases around the country where a withdrawal of credits has not been approved after a bank was built, and thus the Iowa DOT should move very cautiously with regard to banking. An opportunistic approach is recommended. If a road building project requiring mitigation is in an area where partners can be found, the Iowa DOT should be open to banking or other collaborative actions. This concept opens the door for considering a clearinghouse process to facilitate collaborative action.

The Iowa DNR procures land annually for wetland restoration under the Prairie Pothole Joint Venture with the U.S. Fish and Wildlife Service. There is potential for the Iowa DOT to collaborate using this project, but only in the north central part of the state and under special location circumstances. The NRCS also purchases wetlands from landowners under the Wetland Reserve Program (WRP) and temporarily rents land under the Farmable Wetland Program (FWP). By viewing the NRCS as a local entity and by considering its activities in wetlands acquisition, there is potential for a clearinghouse function to be located with the NRCS.

The survey of Iowa cities and counties, included in the IHRB study, revealed that mostly very small mitigation activities (fewer than five acres) have occurred in the last five years. Cities and counties report administrative difficulties and expenditure of time and money on the 404 permit process. Based on the survey, counties, cities, and county conservation boards are willing to collaborate as partners if the conditions are right. However, only a few counties report mitigation projects that would support wetlands banking.

Two of the recommendations of the IHRB study focused on a wetlands clearinghouse process to facilitate collaborative actions.

1. *A site identification clearinghouse involving the NRCS should be established.* The current problems with mitigation include the following:
 - a. Obtaining wetland property for mitigation requires the Iowa DOT to purchase approximately four times the acreage required due to the real estate market.
 - b. The Iowa DOT does not want to manage wetlands or own excess property.
 - c. The sustainability of mitigation sites in Iowa, although good by national standards, could be improved.

Because of these problems, the IHRB report recommends an IWMC centered at the NRCS to help identify landowners willing to sell wetlands. The Iowa DOT should request that the NRCS contact applicants to the WPR and landowners exiting the FWP, in affected HUC 8 districts, to aid in obtaining mitigation sites. The NRCS would then bring the landowner and the Iowa DOT together for negotiations.

2. *A partnership clearinghouse should be established.* To help identify potential site managers or other agencies with mitigation needs, this report recommends an IWMC. While the partnering process currently happens on a project-by-project basis, the Iowa DOT should routinely contact cities, counties, the DNR, the Farm Bureau, the County Conservation Commission, and others as early as possible in the mitigation process to see whether others have mitigation or restoration needs in the area or are willing to consider a management contract.

NATIONAL REVIEW SUMMARY

The research looked into the regulations that guide the wetland mitigation process, the Clean Water Act of 1977 (the Act). Two collaborative methods that have been used to obtain compliance with these regulations in other locations across the nation are wetland mitigation banks and in-lieu fee mitigation. Both of these methods are discussed, and their shortfalls are identified. The research team did not find any indications that others are using or considering a concept similar to the IWMC for their collaborative wetlands mitigation efforts.

The U.S. Environmental Protection Agency (EPA) defines wetlands as follows:

As used in this regulation, [wetlands] shall include those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Historically, wetlands had been drained for farmland or developments because wetlands were considered unproductive and a nuisance. Advances in understanding the ecological function of wetlands led to placing a high value on preserving them, culminating in the Act.

Two sections of the Act require permits for projects with impacts on wetlands. Section 401 of the Act gives the EPA authority to regulate activities that have the potential to adversely affect water quality. Included in this category are projects that impact natural and artificial wetlands. When permitted activities disrupt wetlands, the Clean Water Act requires compensatory mitigation to offset the loss.

Section 404 gives the United States Corps of Engineers (Corps) the jurisdiction to grant permits for construction activities within waterways and wetlands. This section requires any construction project that may require the loss of an acre or more of wetlands to notify and apply for a permit from the Corps. The Iowa DOT and any other entity building a roadway project that impacts a wetland must file for a permit.

Section 404 of the Act regulates the “discharges” of “dredged or fill material” into waters of the United States. Since wetlands have water, they fall under this section of the Act. The section also states that the wetlands program goal is “no net loss of wetlands.” The Act does contain some wetland exemptions and allows some types of projects, such as highway building, to automatically receive general permits.

Wetland Mitigation Banks

The 1991 Intermodal Surface Transportation Efficiency Act specifically addressed the use of wetland mitigation banks and authorized the use of federal funds for this type of wetland remediation. In 1993, President Clinton released his wetlands protection plan called “Protecting America’s Wetlands: A Fair, Flexible, and Effective Approach.” This plan attempted to balance the needs of landowners with the need to prevent further wetland losses. This plan endorsed the increased use of mitigation banking. Further

direction was given to using wetland mitigation banks in a 1995 Corps Memorandum to the Field, titled “Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks.”

The EPA and the Corps established the National Wetlands Mitigation Action Plan in 2002. The goal of that plan was to provide no net loss of the nation’s wetlands. The following guiding themes are integral to the mission:

- Provide a consistent voice on compensatory mitigation matters
- Focus guidance, research, and resources to advance ecologically meaningful compensatory mitigation
- Provide information and options to those who need to mitigate the losses of wetland functions
- Provide technical and research assistance to those who undertake the work of mitigation

As part of this plan, the EPA and the Corps provided guidance for compensatory mitigation projects and appropriate use of preservation and vegetative buffers as a component of compensatory mitigation.

Iowa has established its MBRT as required under the terms of the 1995 Corps memorandum. The MBRT prepared “Mitigation Banking in Iowa,” a draft document that establishes procedures for creating a mitigation bank in Iowa.

In-Lieu Fee Mitigation

In-lieu fee mitigation occurs in circumstances where a permittee provides funds to an in-lieu fee sponsor instead of either completing project-specific mitigation or purchasing credits from a mitigation bank approved under the Banking Guidance as referenced in the Federal Register 2000.

In-lieu fee mitigation, or other similar arrangements wherein funds are paid to a natural resource management entity for implementing either a specific or general wetland or another aquatic resource development project, is not considered to meet the definition of mitigation banking because these projects do not typically provide compensatory mitigation in advance of project impacts. Moreover, such arrangements do not typically provide a clear timetable for the initiation of mitigation efforts.

The Corps, in consultation with other agencies, may find circumstances for which such arrangements are appropriate, as long as the arrangements meet the requirements that would otherwise apply to an offsite prospective mitigation effort and provide adequate assurances of success and timely implementation. In such cases, a formal agreement between the sponsor and the agencies, similar to a banking instrument, is necessary to define the conditions under which its use is considered appropriate.

In summary, when reviewing the current legislation, the collaborative wetlands mitigation processes don’t work very well for road building projects. Neither wetlands mitigation banking nor in-lieu fee mitigation meets the needs of agencies trying to provide small mitigation sites along a roadway corridor. The legislative review supports the recommendations of the IHRB study to provide another mechanism, the IWMC, to allow all levels of government and all agencies the opportunity to collaborate on wetlands mitigation efforts.

Defining the IWMC Concept

Following the lead from the IHRB study to develop a concept for the IWMC, the research team was interested in a management organization that is already established, working with all levels of

government and agencies and was positioned to carry out the duties of the IWMC. They focused on the NRCS and its local arm in central Iowa, the Prairie Rivers Resource Conservation and Development (Prairie Rivers RC&D).

Considering Prairie Rivers Resource Conservation and Development

The research team included the Iowa Division of the Federal Highway Administration (FHWA), the Iowa DOT, CTRE, and the Prairie Rivers RC&D. The Prairie Rivers RC&D is located in central Iowa and services the counties of Webster, Hamilton, Hardin, Boone, Story, and Marshall. Prairie Rivers RC&D was a logical research partner choice because it is located in Story County, close to CTRE, it has a board of public officials that provide oversight, it currently receives funding from the NRCS, and it has an existing staff available. Please refer to Figure 1. These elements were thought to be critical to the success of a pilot wetlands mitigation project in central Iowa.

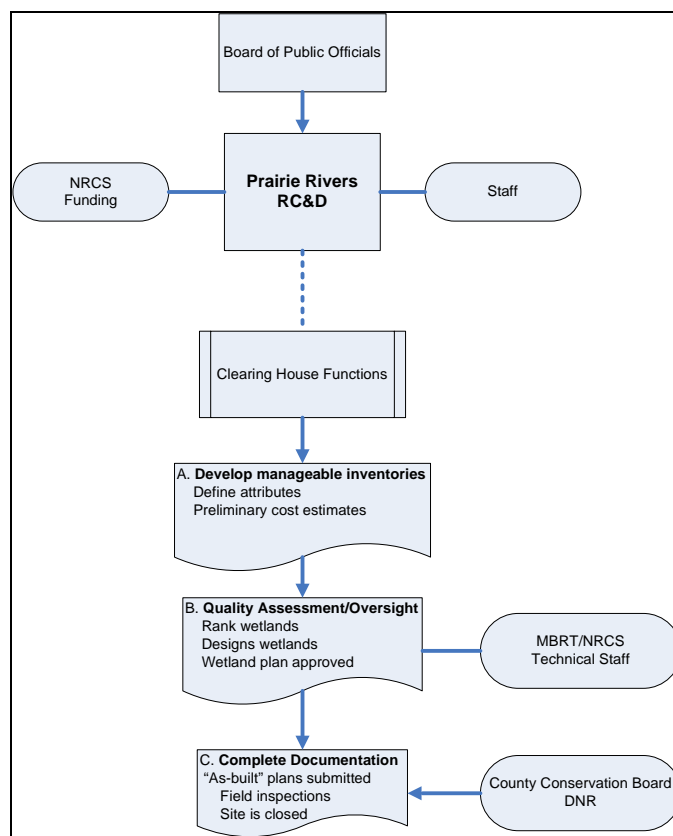


Figure 1. The IWMC concept

Advantages, Potential Products, and Barriers

As the research team evaluated Prairie Rivers RC&D as an organization to manage the IWMC they identified the advantages to the clearinghouse concept, the potential products that could be developed, and the barriers that may need to be removed, managed, or overcome.

Advantages

- This concept serves the NRCS in-agency mitigation needs and would fast-track mitigation procedures for the Iowa DOT, the Iowa DNR, along with cities and counties.
- This concept should result in better mitigation projects in general and an overall coordinated effort.

Potential Products

- Manageable inventories of potential banking sites and their attributes would be developed and would be envisioned as preservable and restorable.
- Preliminary cost estimates for restoration would be developed. The supply of banking sites would be priced and available for evaluating alternatives.
- A programmatic agreement would be developed and a banker agreement negotiated.
- Long-term monitoring would be available.

Barriers

- Funding would be required for the initial mapping exercise and for developing engineering cost estimates.
- Long-term funding would be required for quality assessment and administration duties.
- The price for mitigation sites may need to be moved into private ownership and out of government oversight.
- Developing and agreeing upon the determination of these wetland sites.

IWMC Responsibilities

The IWMC is envisioned to carry out tasks that include developing manageable inventories, providing quality assessment and oversight, and to be responsible for completing the documentation to close the wetland mitigation site activities. Please refer to Figure 1.

Manageable Inventories

Wetlands are classified by the vegetation that is growing in the area, the soil classifications, and the wetland hydrology. These are the three inventories that should be considered in the wetlands evaluation efforts.

To evaluate the vegetation, it is most common to visit the site and do an inventory of the plant species growing in the wetland area. The survey would attempt to document a prevalence of vegetation typically adapted for life in saturated soil conditions. On the other hand, recorded data is frequently available for the soil classification and the wetland hydrology.

The soils that are present in a wetland area have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions. These soils consist of unconsolidated natural materials that support, or are capable of supporting, plant life. Hydric soils are classified into two broad categories: organic and mineral.

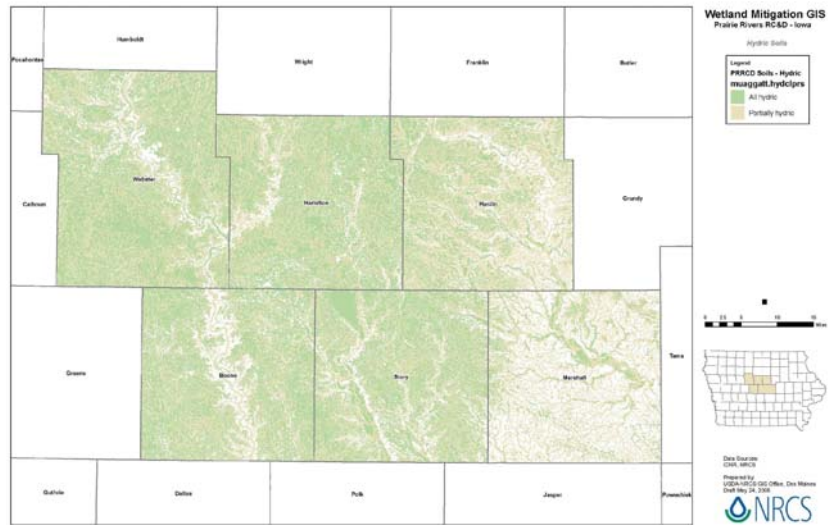


Figure 2. Hydric soils, Prairie Rivers RC&D District

Figure 2 is a soils map is of the six-county Prairie Rivers District, and Figure 3 was printed at the Marshall County–level. They are prime examples that illustrate the soils information that is already in existence and available as a resource for wetlands soil classification.

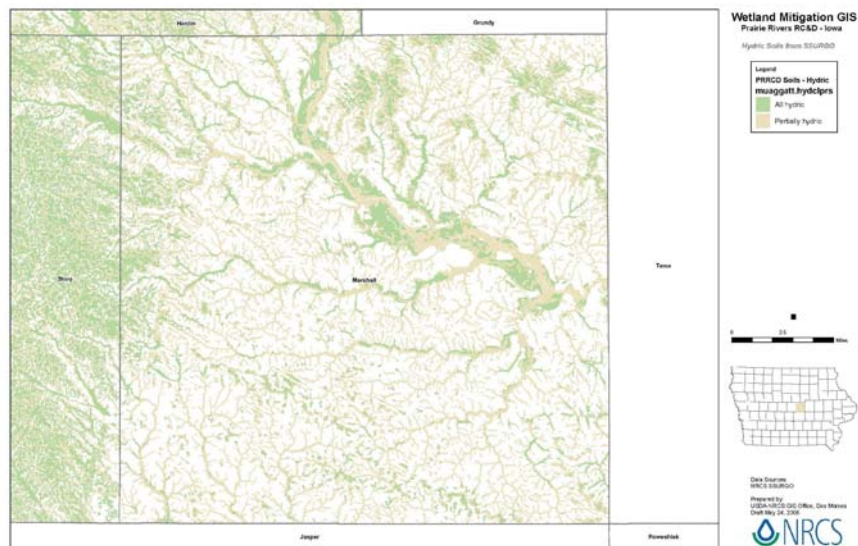


Figure 3. Hydric soils, Marshall County

Wetlands hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or contain soils that are saturated to the surface at some time during the growing season. Numerous factors can influence the wetness of an area, e.g., precipitation, topography, soil permeability, and plant cover. Indicators of wetland hydrology may include, but are not limited to, drainage patterns, drift lines, sediment deposition, watermarks, stream gage data and flood predictions, historic records, visual observation of saturated soils, and visual observation of inundation. Figure 4 is a map of the six-county soil drainage classifications and illustrates the hydrological inventory that is available for wetlands determination.

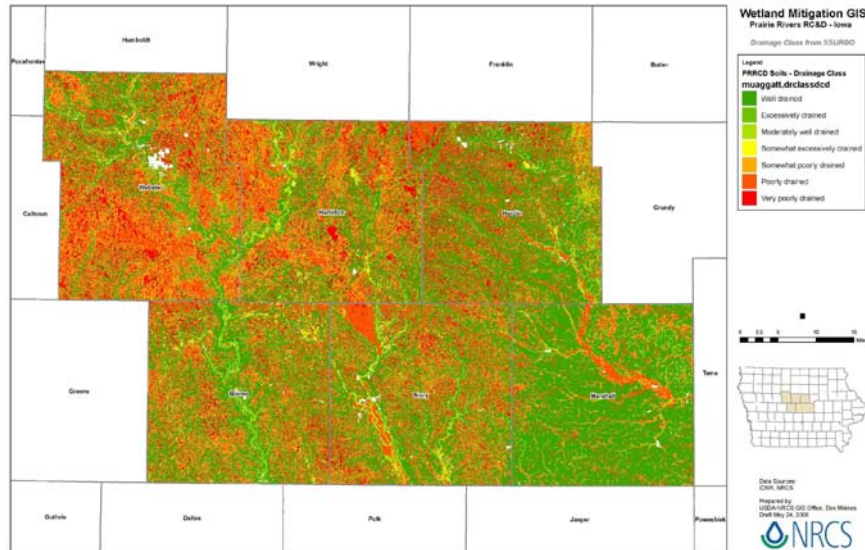


Figure 4. Soil drainage classification, Prairie Rivers RC&D District

Once the soil and hydrology facts are known in an area, the next step would be to determine the ownership of the land. There are several sources of this data and some of it has been mapped on geographic information system (GIS) based maps.

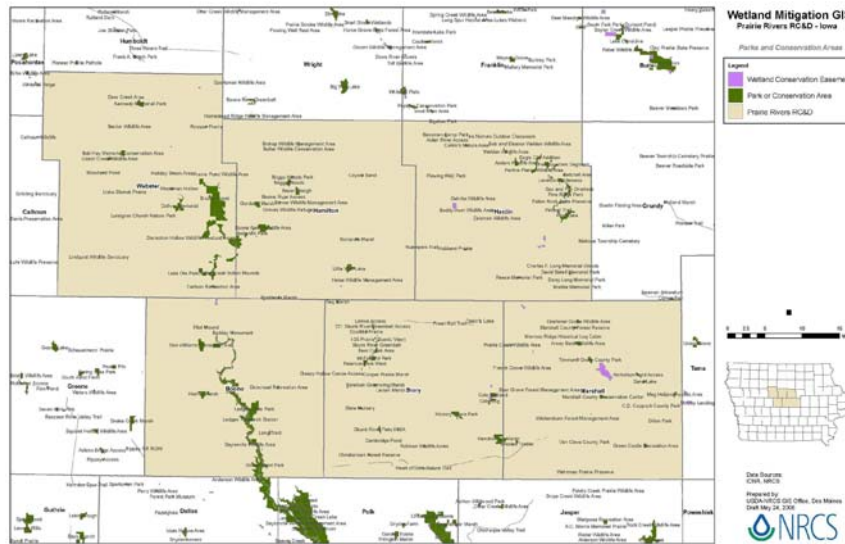


Figure 5. Wetlands ownership, Prairie Rivers RC&D District

Shown in Figure 5 are the six Prairie Rivers District counties that identify whether the land ownership is a wetland conservation easement, a park or conversation area, or a Prairie Rivers RC&D holding. Figure 6 is a Story County map showing parks and conservation areas ownership.

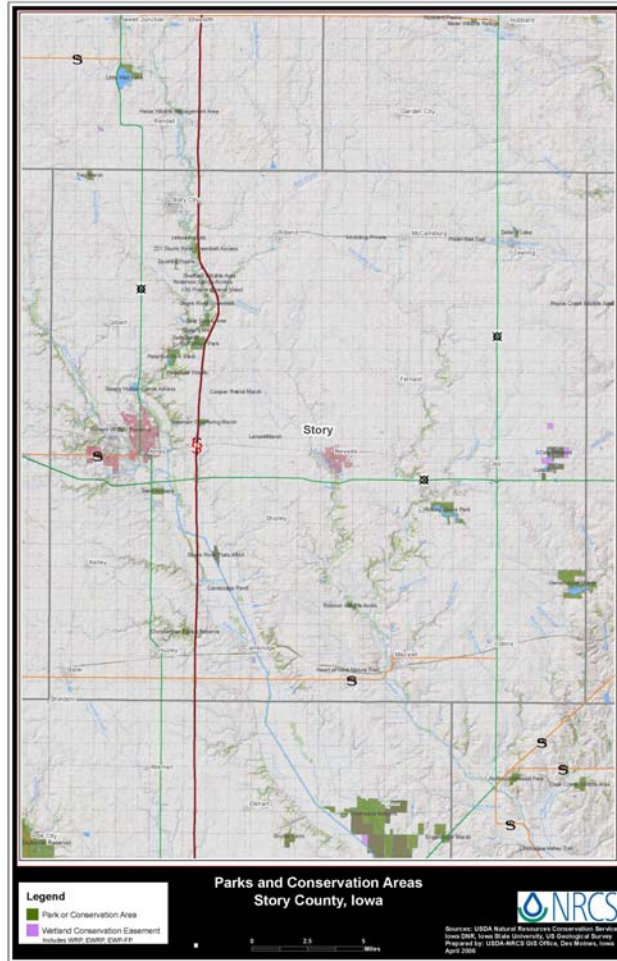


Figure 6. Wetlands ownership, Story County

In summary, the research team found the following to be true of the Iowa inventories that would be available for wetlands determination.

- Some data sets are not available for every Iowa county, or some data sets are incomplete: those of interest would be the remapped National Wetlands Inventory, drainage districts, and wetlands determination maps.
- It appears logical to select potential sites based on proximity to existing wetlands or natural areas.
- In order to narrow the hydric soils, it is logical to use drainage classification and ponding frequency.
- Nonfunded WRP applications may be a source of landowners who may have an interest in developing a wetlands mitigation project.
- After finding willing landowners, GIS could be used for field-scale analysis.

Complete Wetland Site Documentation

The documentation that is envisioned for the IWMC includes ranking the candidate wetlands mitigation sites, the development and approval of a wetland restoration and maintenance plan, overseeing the construction and maintenance activities, providing “as-built” plans, and finally closing the site at the end of its use. The concept also includes an annual report to the MBRT.

IWMC Mitigation Activities

The approach used for wetlands mitigation will vary, based on the area in question. There are two basic approaches: routine and comprehensive.

1. *Routine approach.* The routine approach will normally be used in the vast majority of determinations. The routine approach requires a minimal level of effort, using primarily qualitative procedures. This approach can be further subdivided into three levels of required effort, depending on the complexity of the area and the amount and quality of preliminary data available. The following levels of effort may be used for routine determinations:
 - a. Level 1. Onsite inspection unnecessary
 - b. Level 2. Onsite inspection necessary
 - c. Level 3. Combination of levels 1 and 2
2. *Comprehensive approach.* The comprehensive approach requires application of quantitative procedures for making wetland determinations. It should seldom be necessary, and its use should be restricted to situations in which the wetland is very complex and/or is the subject of likely or pending litigation. Application of the comprehensive approach requires a greater level of expertise than application of the routine approach, and only experienced field personnel with sufficient training should be used.

Figure 7 shows how the IWMC mitigation activities would be accomplished. A customer requiring mitigation first contacts Prairie Rivers RC&D to view options about site inventory. The customer then chooses options for the 401/404 permit based on site, location, and customer-specific goals. When the customer's permit is approved by the appropriate regulatory agencies, the customer pays mitigation fees to Prairie Rivers RC&D, the contract is finalized between the two parties, and Prairie Rivers RC&D begins the mitigation process. Prairie Rivers RC&D then hires a contractor (private, NRCS, or DNR) to design and construct the wetland, and the wetland management plan is created and approved. The wetland is then constructed and maintained according to the agreement with the regulatory agencies. "As-built" plans and specifications are submitted to the Corps. The wetland is monitored as per the wetland management plan specified in the agreement. Finally, the site is closed.

While the Prairie Rivers RC&D is completing the above process with the customer, they complete an agreement with the inventory site holder, and the site is removed from the inventory list of potential wetland mitigation sites.

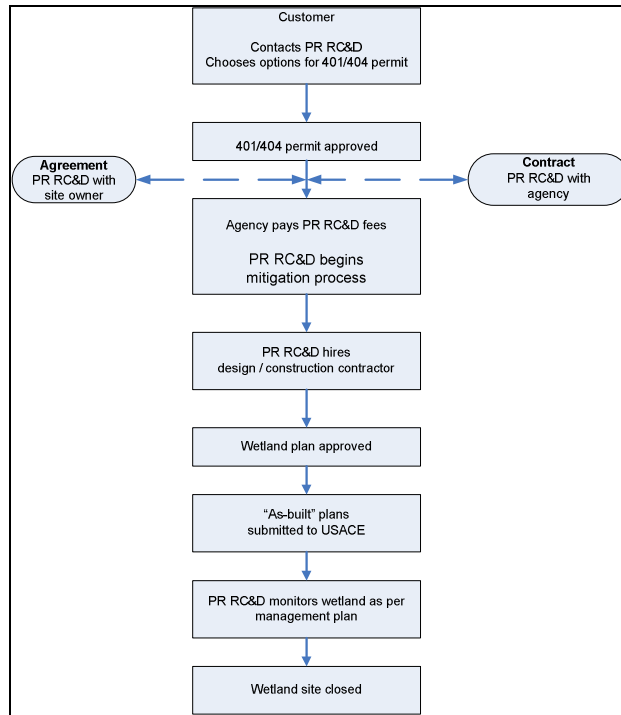


Figure 7. IWMC mitigation activities

KEY FINDINGS

The research team found the following to be the key findings from the research efforts:

- To facilitate collaborative wetland mitigation actions, the IHRB study established the desire to establish a wetlands clearinghouse process.
- The IHRB study recommended a partnership wetlands clearinghouse be established.
- Wetlands mitigation banks and in-lieu fee mitigation may not be the best options for meeting the requirements of the Clean Water Act of 1977.
- The research team did not discover another partnership clearinghouse concept while reviewing activities across the nation.
- Local arm of the NCRS, the Prairie Rivers RC&D provides basic structure.
- The duties of the IWMC are defined.
- Most inventories used for wetlands determination are available.
- A CUI was developed and is available for review in the research final report.

SUMMARY RECOMMENDATIONS

The following are the summary recommendations for this research project.

- Complete the pilot project for the purpose of testing the IWMC concept.
- Utilize the local arm of the NRCS, Prairie Rivers RC&D, as the mitigation agent; they have paid staff available; they are governed by a public official board, and they are established with government agencies in central Iowa.
- The Iowa DOT should contract with Prairie Rivers RC&D for a mitigation pilot project.
- The Iowa DOT should use Prairie Rivers RC&D as a statewide model.
- The Corps should work with the DNR on service area definitions.
- The Iowa DOT should develop a user's handbook for those new to using the RC&D in the wetlands mitigation process.

ACKNOWLEDGMENTS

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