Integrated Roadside Vegetation Management Plan

Polk County, Iowa

Version Date: May 2024

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1. Preface

"The mission of the Polk County Integrated Roadside Vegetation Management program is to provide a safe and sustainable secondary roadside while economically restoring and preserving Iowa's natural ecosystems."

The following is a newly written IRVM plan for the Polk County IRVM program.

Update/Version

Version Date: May 2024

Contributors to the Plan

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2. Executive Program Elements

Executive Summary

The Polk County IRVM Plan was developed to provide structure to the IRVM program, clarify the objectives for the vegetation management in the right of ways, and to have an official roadside management document to submit to the Iowa Department of Transportation to utilize the benefits of the Living Roadway Trust Fund (LRTF).

This document details the goals, responsibilities of employees, strategies to be practiced, and the resources necessary to implement the plan. This is intended to be used as a reference for decisions made for vegetation management and to help evaluate the program's success. It is also meant to be used by anyone who wants to gain a better understanding of what the Polk County IRVM program encompasses.

Polk County has a population of around 500,000 people within 27 cities, towns and communities making it the most populated county in the state of Iowa. For comparison, the average Iowa county population has around 32,000 people. This presents Polk County with different opportunities and challenges most other counties do not share. The roads within the county are highly trafficked and require the ROW to be safe and in good condition, because of the increased chances for accidents or more serious injuries to occur when there are obstructions in the ROW. This concentrated population also greatly impacts our natural resources. There is a need to take responsibility for managing them for the Polk County residents and for everyone else that will be affected.

Polk County is responsible for approximately 800+ miles of roads, which is around 4,267 acres of land that the IRVM program manages. With this amount of land, resources need to be used efficiently and effectively. IRVM programs were established because of all the practical opportunities to improve water quality, soil quality, and native ecosystems within these areas.

The primary reason for managing a roadside right of way is to provide stormwater flow from the road surface and from the adjacent land. In addition to providing a route for stormwater runoff, roadside right of ways must provide a safe recovery zone for a vehicle that unintentionally exits the road and be maintained to provide visibility for any potential hazards to road users. This includes anything that obstructs a road sign and limits sight distance further down the road for any potential issues. Polk County has identified several main challenges for right of way management which include preventing soil erosion, keeping drains clear of obstructions, reducing invasive weeds, and controlling overgrown brush and trees.

The contents in this document recognize those main reasons and challenges for managing a roadside right of way and this ultimately influences the decisions made by the IRVM program.

Polk County also recognizes the importance of water quality and the need to utilize different stormwater practices in the ROWs. As communities continue to grow and develop in Polk County, the need to implement integrated approaches to vegetation management will be even more important. Where prairie plants used as filter strips on their own in the ROWs are insufficient at

filtering water and reducing flooding, other practices are implemented. These include installing infiltration basins, bioretention cells, bioswales, constructed wetlands, and other similar structures within the ROW or directly adjacent to the ROW.

Program Goals

The Polk County integrated roadside vegetation management (IRVM) program goals that will need to be adaptive as the program develops over time to maintain a safe and effective road system through sustainable vegetation management.

Short Term Goals:

1. Annually Review IRVM plan to make necessary changes for program success.
2. Vegetation Assessment of all Polk County owned and managed roads and paved bike trails to be completed in 2024.
3. Prioritize management of remnant and native restoration areas.
4. Targeted areas in Appendix E.
5. Effectively control brush and trees in Polk County right of ways (ROWs).
6. Effectively control noxious and invasive weeds in Polk County ROWs.
7. Implement practices to prevent erosion and improve soil quality.
8. Re-establish no spray and no mow areas with updated signs.
9. Determine areas to delay mowing and areas to reduce mowing.
10. Acquire and plant Transportation Alternative Program (TAP) seed.
11. Obtain funding from Living Roadway Trust Fund Grants.
12. Purchase a designated spray truck with a chemical injection system.
13. Purchase spray tracking equipment for spray truck and utility task vehicles.
14. Plant native species in bioretention cells and provide vegetation maintenance.
15. Create an IRVM steering committee.
16. Staff obtain S-130, S-190, and L-180 to conduct prescribed burns.

Long Term Goals:

1. Increase prairie plantings throughout the county.
2. Increase public awareness at public events, designated webpage, social media, and educational displays.
3. Stay current with technology, equipment, pesticides, erosion control methods, and vegetation practices.
4. Develop an Adopt a Road Program for vegetation management or establishing a new native planting.

5. Develop a landowner education program to improve the understanding of native vegetation.
6. Digitalize records and develop GIS tools for record keeping and planning.
7. Identify and promote opportunities to manage stormwater in ROWs.
8. Purchase additional IRVM equipment to better manage ROWs and replace any damaged equipment beyond repair that occurs in the future.
9. Locate encroachment areas and develop a policy to work with neighbors.
10. Develop a Polk County mowing procedure to improve efficiencies, maximize roadside habitat benefits, and provide public safety.
11. Implement a more extensive prescribed burn program with certified staff.

Program History

Integrated roadside management has a long history starting from a few innovative individuals who saw a need for better vegetation management in the right of ways around the 1950s. By the mid-1980s, the integrated roadside vegetation program was formed to protect water and soil quality. Planting native prairies achieved both of these goals. They also helped with weed control from invasive species with the added benefit of restoring native ecosystems while being economical. This is the essence of what the Integrated part of the IRVM program means.

In 1990, Polk County recognized the benefits of an IRVM program and hired their first Integrated Roadside Vegetation Manager. Over the following years, the new roadside program planted native species, completed prescribed burns, and effectively integrated selective spraying and mowing with Polk County staff.

In the early 2000s, the Polk County Conservation Board grew and the Roadside Vegetation Manager transitioned to working within natural resources for the county parks. When this occurred, experienced Polk County staff continued the vegetation management keeping with IRVM practices but without a designated IRVM Manager until 2023.

As of 2023, an IRVM management plan was not on file with the state of Iowa. Polk County moved to re-establish an active IRVM program and hire a Roadside and Trail Biologist with intent to submit an official plan. Polk County also identified the need and opportunity to provide additional resources to establish a vegetation management plan for the right of ways (ROWs) on the paved bike trails, which provide an important recreational resource to Polk County residents.

IRVM Decision Making Process

Several individuals are part of the decision-making process for the IRVM Program.

The overall decisions will be determined by the leadership of the Polk County Board of Supervisors, Public Works Director, County Engineer, Weed Commissioner, and Water Resources Supervisor. They oversee the program and provide guidance for the IRVM objectives. They also review the program's financial needs to determine the budget and dictate the program's overall priorities.

The daily decision making is primarily determined by the Secondary Roads Operation Manager and the Secondary Roads Superintendents. They oversee daily operations and determine the work assignments of the Equipment Operators and other field staff.

The Roadside Biologist provides technical expertise, planning assistance, and provides cohesive bond for the IRVM program and all decision makers.

The Polk County Conservation Board will be consulted to get additional advice for the direction on different projects and goals.

Program Type

The Polk County IRVM program is housed under the Water Resources and the Secondary Roads Division within the Public Works Department.

The Roadside and Trail Biologist is also directly partnered with Polk County Conservation for the management of Paved Bike Trail ROWs.

This collaborative multi-department effort utilizes equipment, resources, and personnel based upon needs and availability to achieve countywide goals.

Area Map

An area map of the Polk County Roads can be found in Appendix H.

3. Jurisdictional Recognition and Approval

Management

The Roadside Biologist is the primary manager for the IRVM program. They will oversee the overall operations to reach the goals of the IRVM plan. They will work closely with the Secondary Roads Operation Manager for the day-to-day operational staffing and provide technical expertise and input for IRVM activities. The Roadside Biologist position description will be in Appendix A for the rest of their responsibilities.

The Secondary Roads Operation Manager will manage the day-to-day field operations following the objectives of the goals of the IRVM program. They are in charge of Secondary Roads purchases and the Equipment Operators' daily tasks.

The Water Resources Supervisor oversees the Roadside Biologist. They assist in making decisions that affect the IRVM program, setting goals, and for acquiring additional funds apart from the Secondary Roads budget.

Board of Supervisors

The Board of Supervisors approved the hiring of the Roadside Biologist in order to support an IRVM program. They also approve the Public Works budget and then the Public Works Director appropriates funds within the department. The resolution to approve and adopt the Polk County IRVM plan is in Appendix I.

Iowa Code and Administrative Rules – State Laws and Regulations

The Polk County IRVM program operates under the Iowa Code. Below is a list of relevant state codes.

- Chapter 314.22 Integrated Roadside Vegetation Management. 1. Objectives. It is declared to be in the general public welfare of Iowa and a highway purpose for the vegetation of Iowa's roadsides to be preserved, planted, and maintained to be safe, visually interesting, ecologically integrated, and useful for many purposes.
- Chapter 306.3 Definitions used throughout Code.
- Chapter 314.17 Mowing on interstates, primary highways, and secondary roads.
- Chapter 314.19 Reseeding open ditches.
- Chapter 314.22 Integrated roadside vegetation management.
- Chapter 317.1A Noxious weeds
- Rule 21-58 (317) Iowa Administrative Rules Noxious Weeds.
- Chapter 318.3 Obstructions in highway right-of-way.
- Chapter 314 Administrative Provisions for Highways
- Chapter 317 Weeds

- Chapter 318 Obstructions in highway right-of-way.
- Chapter 481B Endangered plants and wildlife.

Local Laws and Regulations

The local laws and regulations that relate to the Polk County IRVM program reflect those of the State laws and regulations. Policies that pertain to the IRVM program may need updated or created as the program develops and will be added in the future.

Polk County Open Burn Regulation. No person shall allow, cause or permit open burning of combustible materials within Polk County except as provided in 5.7(1-9).

Polk County Snow Removal Policy Ordinance.

Permitting

The current permits that pertain to the Polk County IRVM program are listed in the Appendix C. These can also be found on the given Polk County Public Works website.

Right of Way Grant Permit Application – Click for direct PDF link

https://www.polkcountyiowa.gov/public-works/engineering-operations-division-permits-policies/ - Click for Engineering and Operations Division Permits and Policies webpage

Burn Permit Application – Click for direct PDF link

https://www.polkcountyiowa.gov/public-works/air-quality/open-burning/burn-permit-forms/ - Click for Open Burning Forms webpage

No Spray Agreement Application- Click for application in Appendix C.

Obstructions, Nuisance, and Enforcement

The laws, regulations, and policies above will be monitored. If a violation is brought to the staff's attention from a citizen or a Polk County Staff member observes a violation, it will be investigated. Under most circumstances, communication with the individuals involved will be first. Informational documentation will be provided for most issues that involve the IRVM program. Depending on the infraction, law enforcement will be involved.

318.12 Enforcement. A highway authority shall enforce the provisions of this chapter by appropriate civil or criminal proceeding or by both such proceedings.

2006 Acts, ch 1097, §12

4. Program Organizational Structure

Staff Organization Chart

The Water Resources Supervisor, Operations Manager, Roadside and Trail Biologist, and the Equipment Operators are all full-time employees. The current staff organization chart for Polk County IRVM is in Appendix B.

Polk County has one Roadside and Trail Biologist that is designated to vegetation management for county roads and county managed paved bike trail right of ways year-round.

There are currently two Equipment Operators that are designated to county roadside vegetation management during the growing season. If additional help is needed, one other trained equipment operator assists.

Additional Equipment Operators for Polk County mow the right of ways, boom mow the woody species, and manage road signs.

The goal is to complete as many projects as possible using Polk County employees without using external contractors. Contractors may be used if the project needs the extra resources. Collaborating with other organizations and municipalities will also be sought after to help the IRVM program grow and succeed within Polk County.

Staffing Needs

- Staff:
  - The present staff is necessary to complete the current work operations. An additional part time position would be beneficial. As the program develops, the need for additional seeding preparations and maintenance, spraying, prescribed burning, and other tasks will be needed to increase productivity of IRVM goals.
- Training and Education:
  - Current and future staff will need to have or be able to obtain appropriate training for certifications and licenses.
  - Current Iowa Pesticide Applicators Certifications in Category 2 (forestry) and 6 (right of way)
  - Valid Iowa Class A Commercial Driver's License (CDL) for full time employees.
  - Valid Iowa driver's license for part time employees.
  - National Wildland Coordinating Group (NWCG) certifications in S-130, S-190, and L-180.
  - Additional pesticide categories, NWCG certifications, and other trainings will be encouraged but not required.
  - Opportunities for continued education for related current topics. This includes recertification trainings and attending conferences, workshops, or webinars.

Succession Plan

If the Roadside and Trail Biologist or the Equipment Operators performing IRVM tasks were to leave, their vacant positions would be filled. With the approval from the Board of Supervisors, Human Resources would advertise the position internally and publicly. The candidates would be evaluated and hired based on knowledge, skills, and abilities.

5. Public Involvement

Steering Committee

The Polk County IRVM Program does not currently have an official steering committee, but the goal is to create a committee in the future.

Currently input for the IRVM plan included separate meetings with the Roadside and Trail Biologist, Water Resources Supervisor, Water Resources Outreach Coordinator, County Engineer, Assistant County Engineer, Operations Manager, Superintendents, Equipment Operators, Weed Commissioner, Accountant, Director of the County Conservation Board, Natural Resource Manager, and Natural Resource Technicians.

Current Members

Currently there is not an official committee. When a committee forms, members will primarily include those listed above from other meetings.

Qualifications

Ideally the members will have a connection to the IRVM program and have knowledge of roads, conservation, public relations, agriculture, or other related background to contribute to the IRVM program.

Term Limits

Term limits will be determined depending on individuals' position and established when a committee is formed.

Partners

- Polk County Conservation Board:
  - The Roadside and Trail Biologist is a shared position. The roadside program is through Public Works but the trail vegetation management program is through Polk County Conservation Board (PCCB). Besides a shared position other resources are temporarily shared like equipment and personnel for tasks such as prescribed burns. The PCCB also have knowledgeable staff to consult and an Environmental Education Program to help with additional promotion of the IRVM program.
- Polk County Soil and Water Conservation District:
  - Consulting with erosion and native vegetation in ROWs. Future resource for private land owners to convert prairie in ROW and into their property, including providing funding for eligible landowners through state, local, and federal programs. Polk SWCD also houses an Urban Conservationist who can provide technical assistance for stormwater management in the ROW.

- Neighboring Counties:
  - Collaborating with neighboring counties will benefit each other by forewarning about advancing weeds or other issues that may be similar because of the near proximity to each other. It may also be beneficial to help with projects near or on County Line Roads to save money and time in the future for proactive preventative measures for weeds. Surrounding counties have already been beneficial with answering questions to help guide Polk County's IRVM program.

- Cities and Communities within Polk County:
  - Cities and communities have active partnerships with Polk County on several projects, but not directly with the IRVM program. As the Polk County IRVM develops, the goal is to build these partnerships to collaborate on vegetation management projects in the ROW and to positively impact decisions for management in their ROWs. Also, many people from the cities use the secondary roads and educating these road users will be important for the success of the IRVM program. Working with cities with existing partnerships will offer more effective educational opportunities to provide the public.

The Polk County IRVM program will be looking for ways to continue building good partnerships and finding new partners to work with.

Stakeholders

Individuals can help support the Polk County IRVM program by learning what the goals and objectives are for the program to help spread awareness for all the benefits it provides. Visible changes that occur will be more widely accepted if more of the public understands what is being done and why.

As the program grows, this will be beneficial to also have knowledgeable neighbors that Polk County can collaborate with to help ensure weed species do not go unnoticed through good communication, native seedings have support for the many years it takes for a prairie to establish, and knowing better locations for initial plantings to have success throughout the county where they have support.

Local organizations or other landowners that want to collaborate on implementing native plantings in the right of way adjacent to their properties will be very beneficial. The extra involvement will help ensure the success of the plantings by extra management assistance and providing a more consistent watch of the area to help stay informed about the project's progression to take appropriate actions. When finished, this will help provide more visible and higher quality examples of what native vegetation can provide and show the process that is involved.

The Polk County IRVM program will also be interested in any volunteers who want to spend their time helping. As the program develops volunteer events may occur, but until then, volunteers should reach out to the Roadside and Trail Biologist to see where they can provide help.

Education and Outreach

Polk County IRVM staff will utilize IRVM brochures provided by the Tallgrass Prairie Center and the Iowa Living Roadway Trust Fund in each vehicle to hand out to the public who have questions while out working. Staff is also encouraged to take this opportunity to talk with the public to answer any other questions they have and explain any additional information about IRVM. Information will also be made available by contacting the Roadside and Trail Biologist. Additional outreach materials may be made in the future for directly related information about the Polk County IRVM if there is a demand.

Another way the IRVM program will help educate the public is through educational signage. The IRVM program wants to include additional information with No Mow and No Spray signs and to place new educational signs on bike trails that are shared with the Polk County Roads.

The Roadside and Trail Biologist, or another knowledgeable staff member, may provide environmental educational presentations or programs relating to IRVM upon request. The Water Resource Outreach Coordinator has environmental education resources to utilize for programing and presentations.

Communication Mechanisms

The main way the Polk County IRVM will communicate and promote the program is through events. The Water Resource Outreach Coordinator already hosts a booth at many events that the IRVM program can have information at or be aware of to host their own booth.

Special designed informative post cards may also be made to send to individuals for certain projects or areas that need more specific information to better educate those who are affected.

Polk County has a website, but currently the IRVM program does not have information on the website to provide the public. The IRVM program will be working towards obtaining a dedicated webpage for the public to reference in the future.

6. Inventory and Analysis

Natural Resources

A main objective for the Polk County IRVM program is to protect its natural resources. The IRVM program manages over 4,000 acres of land in the roadside right-of-way alone.

This is a large amount of land that Polk County already owns that has the potential to protect existing native ecosystems or convert back to native ecosystems for the promotion of plants and animals that are decreasing in population that depend on this ecosystem. Originally seventy to eighty percent of Iowa was prairie and it is now one of the most altered ecosystems with only about one percent of Iowa's prairie remains. Within that percent, only about one tenth of this prairie is still an original remnant prairie.

Using native species is one of the most effective practices to achieve objectives for the ROWs. This presents a perfect opportunity because it not only restores native plant communities but protects our other natural resources. Native plant roots filter water improving water quality, reduce soil erosion, build healthier soil, improve air quality, decrease invasive weed populations, and increase native animal populations.

- Tools
  - Currently maps for pesticide applications, seeding records, and other operations are kept through physical copies. The IRVM program has an ArcGIS account and access to ArcGIS Field Maps. This is a geographic information system (GIS) that provides services for using spatial analysis to create data-based maps. Future records will be digitalized and live tracking with GPS will be preferred for record tracking. Physical copies may still be used but will be converted to digital maps.
  - The use of digital cameras will also be utilized to assist with tracking progress of vegetation restorations and higher concentrated areas of noxious weeds.
  - Phone applications like GrassSnap will be used for more detailed photo documentation. GrassSnap is an application created by the Nebraska Institute of Agriculture and Natural Resources. Currently this is a free application meant to monitor grasslands. Each picture gets a photo stamp with the custom assigned name, GPS location coordinates, date, and the direction the picture was taken. Photos are saved and an overlay image can be used on future pictures to maintain consistent images for visual progress tracking. This is useful for tracking problem weed areas or progression of new prairie plantings.
- Vegetation
  - A roadside inventory has not been completed for Polk County. The plan is to contract an environmental consultant to perform a roadside vegetation survey during the summer of 2024. The completed survey will be digitized to be more accessible for future use and to be able to map the data within ArcGIS. This will allow for more prescriptive management for what happens at a given time. Any additional plant species found in the future in the

ROWs will be continue to be added into the initial survey to keep a more expansive species inventory.

- The Polk County Conservation Board implemented the Save the Pieces Program in the early 2000s. This identified all the potential remaining natural areas in the county. The areas include some roads within the county that have remnant prairies but also shows areas near roads that will be areas of interest to initially focus on. Most of these are recognized as important but do not have specific inventory of species. They were evaluated by historical aerial maps and records, along with identifying a few plants typically found only in higher quality areas.

- Plants and Animals
  - Several plants and animals live in Polk County. Many of these species are doing well while others need improved management to avoid species extirpations from the county or extinctions. The state of Iowa protects endangered species through Chapter 481B and the Polk County IRVM program recognizes the importance of management for these species. The plant and animal species recognized by the Iowa DNR that are endangered, threatened, or special concern species for Polk County, Iowa is in Appendix D.
  - There are certain native plants that are in Polk County like Asclepias viridiflora, Cirsium altissimum, and Gentiana puberulenta that are only in one or few locations. These species listed are limited in number and are in a ROW along NW 58th Street. This also may be the only location they can be found in Polk County and it is an area managed by the IRVM program. These species along with others have healthy populations elsewhere in the state or country that they are not included as a listed protected species. This may mean that the species may be replaced if lost but it is not guaranteed. The reestablishment of the plant is greatly dependent on if seed is available for purchase and the plant still may not grow well in the new location. Adaptations led to the success of species at their location creating local ecotypes that thrived until the prairie ecosystem was greatly altered by people.
  - Local ecotypes are populations of a species that have adapted to specific areas. This means that various populations of plants within the state, even though they are the same species, have acquired different adaptations based on their unique environmental conditions. Local ecotypes of a species are widely accepted by conservationists and restorationists to be very important, so it is essential to especially manage for our Polk County plants that are scarce and not just the federally and state listed species.

- Special Road Designations
  - The Dragoon Trail is a special road designation that follows the east side of the Des Moines River through Polk County. The trail starts in Knoxville Iowa and goes along the Des Moines River to Fort Dodge. This road is marked with Dragoon Trail signs along the road for its historical significance.
  - Polk County manages sections of the designated roads along this trail. Any roads part of this trail that may have remnant prairies will be a priority to manage more intensively. Any

sections that are not remnant will be assessed with more consideration for additional management.

Equipment

Polk County Public Works IRVM equipment and equipment available

- Polaris Ranger 1000 with 70 gallon sprayer
- Polaris Ranger XP with 100 gallon sprayer
- Polaris Ranger 1000 with 60 gallon skid sprayer
- 3 single axle trailers
- 1 Water Resource Truck
- 2 Secondary Road Trucks
- 300 gal skid sprayer
- Finn t120 hydro seeder (2006)
- 1920 Ford Tractor
- John Deere 5100E Tractor
- Three point brush mower
- Great Plains 3p606nt 6’ no-till compact drill
- Gandy slit seeder
- 1 UTV broadcaster (Snowex salt spreader)
- 2 hand broadcasters (Seedslinger)
- 1 push broadcaster (Andersons)
- Harrow
- Land Pride Straw Crimper
- Land Pride rotary tiller
- Cosmo Fertilizer Spreader
- 300 gallon tank trailer
- Fire equipment- Drip torch, rakes, flapper
- Land Pride finishing mower
- 6 ft lawn roller with three sections

Desired Equipment

- Chemical injection spray truck
- Cultipacker
- Skidsteer with forestry mower

- UTV pendulum seeder
- Harley Rake or other landscape rake
- Climate controlled seed storage

Polk County Conservation has additional equipment that can be utilized if the equipment loaned does not conflict with their projects. This requires permission for use for every separate occasion.

7. Program Operations

Annual Operations

Listed below are the overall expected IRVM activities that should occur annually. This timeframe is meant to guide the program while being flexible. The intent is not to constrain the activities if they need to happen at different times.

Examples:

- January
  - Dormant seed areas if needed
  - Brush cutting
  - Register for Annual Invasive Species Conference (IWCA)
  - Review IRVM plan and update as needed
  - Finish GIS maps and digitalize remaining records
  - Equipment maintenance
- February
  - Finish any dormant seeding areas
  - Brush cutting
  - Fire refresher class
  - Write burn plans and submit burn permit applications
  - Start LRTF grant application
  - Advertise for seasonal internship
  - Equipment maintenance
- March
  - Brush cutting
  - Winter AFIRM meeting and Invasive Species Conference (IWCA)
  - Complete LRTF grant application
  - Prepare fire breaks and spring burn areas
  - Prescribed burns
  - Start seasonal internship interviews
  - Input meeting for IRVM program
- April
  - Interview and hire seasonal intern
  - Prescribed burns

- Start native spring seedings
- Finish any turf seedings from previous year and start new turf seeding areas
- Calibrate spray equipment
- Start bare ground applications and monitor potential weed areas while spraying
- Assess previous problem noxious weed areas

- May
  - Bare ground applications and monitor potential weed areas while spraying
  - Finish planned native spring seedings and continue turf seedings
  - Finish prescribed burns
  - Seasonal intern starts
  - Submit LRTF grant application if not already done
  - Start the county weed and brush control rotation
  - Start storm water structure vegetation maintenance
  - IRVM Public outreach
- June
  - County weed and brush control rotation
  - Begin maintenance mowing of native seedings from previous two years
  - Start native ditch mix seedings and continue turf seeding
  - Storm water structure vegetation maintenance
- July
  - County weed and brush control rotation
  - Maintenance mowing of native seedings
  - Ditch mix and turf seeding
  - Stormwater structure vegetation maintenance
  - IRVM Public outreach
- August
  - County weed and brush control rotation
  - Maintenance mowing of native seedings
  - Ditch mix and turf seeding
  - Start preparing areas for dormant and spring native seedings
  - Stormwater structure vegetation maintenance
  - Begin seed harvesting
  - Register for fall Roadside Conference
- September

- Finish the county weed and brush control rotation
- Maintenance mowing of native seedings
- Ditch mix and turf seeding
- Stormwater structure vegetation maintenance
- Prepare areas for dormant and native seedings
- IRVM public outreach
- Seed harvest
- Submit request for TAP seed

- October
  - Finish additional brush spraying and spray first year biennial weeds
  - Finish ditch mix and turf seeding
  - Start roadside mowing for vegetation density in areas that need mowed and are not signed
  - Roadside Conference
  - Input meeting for IRVM program
  - Pesticide Applicator Recertification Course if still needed for the year
  - Finish seed harvesting
  - Start winterizing equipment
- November
  - Finish winterizing equipment
  - Inventory and assess equipment
  - Purchase additional seed for dormant seeding projects
  - Start roadside mowing for vegetation density in areas that need mowed and are signed
  - Begin brush cutting for the winter season
- December
  - IRVM calendar year annual report
  - Digitalize IRVM field work
  - Dormant seed areas if needed
  - Brush cutting
  - Equipment Maintenance
- Pesticides and erosion control purchases are made throughout the year when inventory is low and needs replaced.
- Equipment maintenance during growing season will occur as needed.
- IRVM education and outreach will occur throughout the year as opportunities arise.

Work Area Types

Rural

The rural areas are the primary area of focus for the IRVM work. In these areas the management along paved roads are the priority with the unpaved roads being the second. Both road types will be managed the same for the road shoulder, brush control, and weed control. The shoulder will be mowed more often to maintain a short plant height for road users' safety and the areas past the shoulder will be mowed less frequently. Taller native species will be used when areas need planted if feasible. The management will be discussed more specifically in the Methods chapter.

Management in front of houses will be reduced unless communicated with the land owner. Most of these areas are mowed turf grass and will be treated like the urban areas.

Urban

The urban areas comprise a large portion of Polk County, but are only a small portion of what the Polk County IRVM program is responsible for. Most of these urban areas are planted with cool season turf species and are mowed. When these areas need to be replanted due to construction or other dirt work, the seed mix will depend on who is actively mowing the ROW.

If Polk County is mowing the ROW or contracting the area to be mowed, then the area will be planted with native species if feasible. If the neighboring land owner is performing the mowing maintenance, then they will be considered in the decision. A native seed mix will be encouraged for the replacement planting, but if the neighbor wants to keep the area turf grass, then that will likely be used to reseed the area.

Stormwater structures such as bioretention cells managing roadway water runoff will be planted with native species selected or approved by the IRVM staff. The management may be done by the Polk County IRVM or by an agreed upon partner.

Noxious weeds and brush will still be selectively sprayed with pesticides or mowed if needed. Since most of these areas are mowed, they are not priority areas.

Vegetation Types for Specific Uses

Most of the native plantings for the Polk County IRVM program will utilize the transportation alternative program (TAP) seed provided by the Tallgrass Prairie Center. The two mixes are a ditch clean out mix and a high diversity mix.

A high diverse native tallgrass seed mix will be used near existing native prairie areas. A ditch clean out mix or another lower diverse native tallgrass seed mix will be for all other areas if feasible. Areas that need more visibility due to urban settings or areas at intersections, a more forb intensive mix of shorter species will be used if possible. The species selected in each mix will be determined by soil type and condition.

Areas that mowing is desired will be planted with a lawn and turf grass seed mix when planting a native seed mix is not possible.

Areas that need to be seeded out of a normal native planting time frame because of dirt work exposing bare soil will be seeded with an appropriate cover crop until natives can be planted at an appropriate time.

Special Projects

Polk County is currently working on a major road construction project on Broadway Avenue. The construction began in 2023 and the completion is anticipated to be in 2026. One part of this project involves the construction of 23 bioretention cells (bio-cells) to manage stormwater. The Polk County IRVM program is selecting native prairie species, designing the layout, and planting the bio-cells with the support and additional help from the Polk County Conservation Board. The City of Des Moines Public Works will take over vegetation management of bio-cells within their city limits after the first year of planting.

Training

Polk County IRVM full time employees will be required to maintain any certifications and licenses as specified in their job description. Opportunities will be given to stay current by attending online or in person courses. New employees will be given a designated time to acquire these and the training necessary to do so.

Trainings that do not require certifications but are needed for the job will be given by an approved qualified person. This could be for using any new equipment, doing an unfamiliar task, or annual safety operation refresher trainings.

Addition training opportunities may occur but the appropriate supervisor or manager needs to give approval.

Temporary seasonal staff will be given opportunities to obtain pesticide certifications if they do not possess them when hired.

Safety Procedures

Safety is a high priority for the Polk County IRVM program. Associated risks with the implementation of the program will be assessed prior to any work to take the necessary precautions to mitigate any hazards. The decisions made consider the safety of the public to provide safe right of ways for traveling as well as the employees performing the work.

Employees must follow all rules and laws set by the county and the state. Employees must wear appropriate personal protective equipment (PPE), follow traffic laws, and only perform work in which they have been properly trained.

A majority of the IRVM work includes the use of pesticides, so it is especially important for each employee using pesticides to read and understand each product's label and to follow what is stated, including wearing all required PPE while mixing and spraying.

8. Methods

Vegetation Establishment

Site Preparation

The site preparations will depend on if the area is for a prairie reconstruction, prairie remnant restoration, or turf seeding. The majority of rural areas in the ROW will be prairie reconstructions and they will differ depending on if the planting follows an *excavation project* or an *independent prairie reconstruction* project.

The site preparations for the reconstructions are intended for larger areas and may differ if the area is for adjacent private land or smaller areas.

- Step 1- Brush and Tree Removal

  All trees and shrubs will be removed from the site with the exception of special instances of saving native shrubs or short trees in certain areas on the back slope.

- Step 2- Herbaceous Plant Removal

  Excavation projects: will manipulate the soil and vegetation through mechanical means to kill the vegetation. This will typically not require chemically treating herbaceous vegetation after excavating. Known persistent noxious weeds that are present may be treated before work to prevent unintentionally spreading plant roots or seed around.

  Independent reconstructions: will require removing thatch by mowing or burning and then spraying herbicides to kill existing vegetation. The amount of times spraying will depend on the area and resources available. Six to eight feet of the foreslope that gets regular maintenance mowing will be left unsprayed to prevent soil erosion.

- Step 3- Soil Preparation

  Excavation projects: will require only a little soil preparation after excavation. Before large equipment leaves the site, soil will be smoothed out without compacting soil. The soil should be a little rough but still soft from after their work. Planting will then occur directly after excavation project is done. Hydroseeding will be the preferred method but different seeding methods will be used depending on soil conditions.

  Independent reconstructions: will require more soil preparation. The dead herbaceous layer will be removed by burning or mowing to expose more soil. The soil will be harrowed before seeding for better seed contact and disking will be avoided to limit weeds. If disking is needed for broadcasting seed, a light disking of the top one to two inches of soil may be acceptable.

- Prairie restorations

  Prairie restorations will be similar but not as intrusive as the reconstructions. Trees and shrubs will be cut during the dormant season and the stumps of non-native species will be chemically

treated. Native trees and shrubs that are cut will not be chemically treated to reduce pesticide use. The herbaceous layer will be thinned by burning or mowing to promote seed contact with the soil.

- Turf

  Areas planned on being mowed turf grass will be hydroseeded or broadcasted without extra preparations after excavation projects. Before equipment leaves worksite, the soil in the area will be smoothed out breaking up larger dirt clods.

Seed Mixes and Rates

- Most of the native plantings for the Polk County IRVM program will utilize the transportation alternative program (TAP) seed provided by the Tallgrass Prairie Center. The two mixes are a ditch clean out mix and a high diversity mix.
- The high diversity mix includes roughly twice the number of species as the ditch clean out mix and is more concentrated with forbs. The higher diversity mix will be used in areas that are going to remain undisturbed for longer lengths of time and in higher visible areas. The ditch clean out mix will be used in areas that are harder to establish and ROWs that may require more frequent disturbance.
- All additional native seed purchased will be local Iowa ecotypes. Yellow tag seed will be the first choice to purchase if it is available. Yellow tag seed is certified by the Association of Official Seed Certifying Agencies (AOSCA) with the known location of the original source of the seed. If yellow tag seed is not available, then known local ecotype seed that is not certified will be purchased from reputable vendors. Vendor priority will be chosen by nearest proximity and availability. Seed will primarily be purchased from within the state but some instances may require the purchase from a state directly adjacent to Iowa.
- The native purchased seed mixes will be custom made or selected for the specific site using native grasses, sedges, and forbs. The species selected will consider visibility for safety, soil type and condition, sunlight, proximity to other prairies, and amount of traffic that will be noticing the plants. The mixes will aim for 50 percent grass and sedges and 50 percent forbs with 40 seeds per square foot. If the seeds are planted on steeper slopes or the seed will be exposed longer to predation because of the time of the planting the seed and its germination, 60 to 80 seeds per square foot will be used if possible.
- All native seedings will include a nurse crop and depending on the time year either oats or a winter wheat will be used. Native seedings will typically not occur in summer, so a temporary seeding will be done. The preferred plants to use will be oats with sorghum in the summer and winter wheat in the fall.
- Nonnative plantings will be done in areas that mowing is desired or a native seed mix is not feasible. This includes six to eight feet of the road's foreslope, intersections, and in front of privately owned buildings. These areas will be planted with a lawn and turf grass seed mix.

Seeding Techniques

- Seed will be planted using a hydroseeder, broadcast seed spreader, no till drill, slit seeder, or by hand. The hydroseeder and broadcast seed spreader will be the primary means to plant native seed and turf grass mixes.
- The hydroseeder will be used for most areas but especially for areas with bare soil, steep slopes, wet areas, and areas that a turf mix will be used. The site will need to be prepared for slightly roughed up soil. Most applications will include hydromulch because it is an efficient and quick way to stabilize soil to reduce erosion. The hydromulch can be added to the seed mix to save time or by itself during a separate application for better seed contact with the soil.
- The no till drill will be used when the ground is harder or existing vegetation is still present. The broadcaster will be used for most other plantings when the no till drill or the hydroseeder are not able to be used. A cultipacker will be used, if available, after broadcast seedings. The slit seeder may be used for turf mixes or cover crops. Lastly, seeding by hand will be done in small areas or in areas that are steep that the hydroseeder cannot get to.
- Seeding techniques may be used in combination if the planting requires more attention. An example would be broadcasting seed and then cultipacking it, followed by using the hydroseeder with hydromulch. Another option that may be used is drilling a nurse crop in softer soil and then broadcasting or hydroseeding the native seed.

Erosion and Sediment Control

- The main solution for the long- term erosion control is to properly establish and maintain native vegetation in as many areas as possible. Native plant roots can reach up to six to fourteen feet long providing more surface area to hold soil in place and to slow down water. This is typically the most economical and best option in most situations. This even includes short native grasses that do not need to be mowed as often for visibility.
- Native prairie plants do take time to establish and are more successfully planted in the spring and fall, which makes the temporary control before planting and until the native plant establishment very important. This includes utilizing cover crops, hydromulch, erosion control blankets, and erosion control wattles.
- Cover crops are very important to include in native seed mixes as a nurse crop or to plant as temporary crop on its own until native seed can be planted. This helps stabilize the soil sooner and also prevent weeds with shorter roots to establish. Hydromulch can be used when hydroseeding to prevent erosion and there are many different types and grades for different slopes and the amount of time the hydromulch will be effective. Erosions control blankets will be used on steeper slopes if hydromulch is not used. Lastly erosion control wattles will be used in areas with the hydromulch or the erosion control blankets that need extra support due to higher flows of water.
- Permanent erosion control structures will be in installed in areas where native vegetation by itself will not be enough to prevent soil erosion. Turf reinforcement mats, geogrids, geotextiles, and flexamats will be used to provide more structure but still allow water to flow

through and vegetation to grow. Riprap may also be used around bridges or other structures if the other control structures are not enough on their own.

Vegetation Establishment Maintenance

The primary objective for establishing a healthy native vegetation area is to reduce weed species at the beginning. This allows the desired native species to be able to compete against weeds on their own when they are mature. The site preparation, seed mix, seeding technique and continued vegetation maintenance are very important for the success of the native vegetation establishment.

- First Growing Season

  Maintenance mowing will be performed during the growing season in the first years of establishment. When the plant height is around twelve to sixteen inches it will be mowed to four to six inches in the first year. The mowing will occur around three to five times during the first year of the growing season. This will depend on the weather and how fast the plants grow.

  During these first years of establishment the mowing will be very beneficial but will not kill all weeds if they are present. Weeds that may be spot sprayed in the fall after mowing is done for the season will be done if necessary.

  If mowing is delayed at any point during the first two years and the weeds happen to produce seed, then the seed heads will be clipped to avoid spreading the seed by mowing. Pulling weeds by hand during this time will be limited to avoid disturbing the soil. Once more natives are established then selected species may be pulled by hand.

- Second Growing Season

  The plants will be mowed to a height of twelve inches during the second year growing season to help with weed pressure. This will allow the new natives to compete with weeds while not becoming too stressed. This should be around two to three times during the season. If some areas are better in the same planting and do not need mowed, then the areas with more weed pressure will be selectively mowed if needed.

  Weeds may be selectively sprayed in between mowing during the second growing season. Selective spraying will occur throughout the third year depending on the weed species present.

- Successional Growing Seasons

  The third-year prairie plants should not need mowing to reduce weeds, but one more mowing to twelve inches in June may be acceptable depending on the species present.

  Prescribed burning will not occur until after the third growing season unless vegetation is thick. Ideally the burns will be in the spring going into the fourth year for these plantings to promote native plant growth and stress weeds. A third-year fall burn will take place if the

conditions are right and there is time available to burn. Annual burns will occur the next couple of years until the areas are healthy and can be put into the burn schedule rotation.

- Planting Natives from Containers

  Plants grown from seed in containers may be used in specific plantings. The plants will be native species and used for stormwater projects or in high visible areas. These include bioretention cells for quicker establishment for improving water quality, butterfly gardens to increase bio-diversity, and other gardens for aesthetics for the public. Each planting using container plants will be designed to be functionally cohesive.

  Planting into existing vegetation of restoration areas will be avoided. The plants will primarily be used in garden settings, where they can be managed easier.

  During the first growing season, the plants will be watered until they are established and the areas will be maintained to be weed free to the best ability of the staff.

Planting Evaluation and Documentation

- The more detailed and frequent documentation during the entire process of the native planting that occurs will help evaluate the success to improve on future plantings. Records will be kept for each site on everything from the beginning and continue to be ongoing on anything else that happens. This includes what the dominant vegetation was there initially.
- Initially information will be documented in more detail on a computer. As the continued management occurs, the Field Maps program will be utilized. Previous information will already be documented, so only new tasks will need recorded. This can be done easily with check boxes for specific management for efficiency.
- Written documentation is important but pictures will be just as important to track progress. During the first three years, pictures during the growing season will be taken to track progress. This will be done using an application like SnapGrass discussed in Chapter 6 Section A1 under Tools.
- Plant species will be inventoried on new plantings and after the roadside vegetation survey is completed, any future plant species noticed will be added to the records. Vegetation sampling is not a priority for data to collect because pictures of the areas or unofficial window surveys will be the main source for evaluating and documenting the roadside prairie health. If vegetation sampling were to happen, the priority areas would be in the remnants to better evaluate their management.
- Everything that was documented will be evaluated yearly by the Polk County IRVM staff and the information will be used to better manage the site and other sites in the future.
- Turf grass plantings will be documented with when it occurred and what species where in the mix. Visual evaluations will occur to determine management but will not need the same level of documentation as the native plantings.

Mowing

Mowing helps reduce weeds, trees, brush, and vegetation density. Mowing is an effective vegetation management option when properly utilized.

Equipment for mowing will be done with batwing mowers, brush mowers, side deck mowers, boom mowers, or turf mowers. Selective mowing for weeds is best with a front deck mower.

- Prairie Establishment Mowing

  One of the most important uses of mowing is to help establish new native prairie plantings. Mowing the new native plantings will not necessarily kill the weeds, but it will stress them out for the natives to compete when they mature. This is especially important for the control of the rhizomatous spreading weeds. More details for when and how to mow for new prairie plantings is in Chapter 8 Section A5 under Vegetation Establishment Maintenance.

- Selective Mowing for Weeds

  Selective mowing for specific weeds instead of mowing entire areas can be effective to control weeds. Plants are typically most vulnerable right before going to seed. Mowing at this time reduces the amount of energy the plant has for recovery and prevents the plants from going to seed or producing as many seeds. This also helps to limit the seeds from spreading farther into new areas. The mower blades can throw seed or the seed can get caught on the equipment and travel to new locations to spread. Follow up mowing or spraying will be needed to be the most effective. This method especially works well for controlling annual and biennial weeds. If a weed is throughout an entire right of way and does not make sense to selectively mow, then the entire area may be mowed to help control the targeted weed.

  At times when weeds have already gone to seed, they may be mowed to attempt at containing the seed source to the existing location. Any debris on equipment should be blown off and equipment cleaned onsite before moving to any new location. This is especially true for known problematic weeds, in which more frequent cleanings should occur.

- Annual Mowing

  Areas that will get more frequent mowing throughout the growing season to turf grass height include the road's shoulder up to eight feet and intersections. Areas on paved roads will be more of a priority and could be mowed more than unpaved roads. All other ROWs that will be mowed from road to fence will occur after October. Mowing entire ROW should not occur after every growing season and only be mowed when needed to thin out vegetation, to improve the health of the plant stand, or to improve visibility. The areas mowed first will occur on the North and West sides of the paved roads and then unpaved. The East and South sides of the roads will follow the same order. Some areas will be not be mowed depending on if a fall or spring prescribed burn is intended.

- Woody Species Mowing

  Mowing for woody species can be done year-round but should be focused on late summer into winter to allow native herbaceous plants to grow and give ground nesting birds a chance to reproduce and mature. Maintaining ROWs from larger woody species is important to maintain a safer recovery zone for unintentional vehicles leaving the road.

Chemical Control for Noxious Weeds, Other Invasives, and Bare Ground

- Utilizing different herbicides to control vegetation is essential to the ROW management success. Chemicals will not be the primary vegetation control when a better alternative control measure is available. When mowing, burning, planting native species for competition, biological controls, or other methods will be used first if they are practical and produce the same end results. The goal is to utilize native forbs, grasses, and sedges to compete with weeds and woody species to reduce the amount of pesticide used. When these options are not as effective or the amount of area covered will not be enough due to time, chemicals will be used.
- Bare ground applications will be used to remove vegetation needed in areas for safety or to make room for working operations. Selective spraying will be used for noxious weeds, other weeds determined necessary to control, and small trees and brush that encroach into the right of ways. The Polk County IRVM program's goal is to reduce weeds and woody species to reduce future chemical usage. This means all applications will follow the label of the specific chemical and stay within the IRVM program's management plans.
- Bare ground applications will occur every year starting as early as April into early June depending on the weather. Follow up spraying may occur mid to late summer if needed. Herbicides will alternate every year or every other year depending on chemical costs to reduce plant resistance to specific herbicides. Bare ground applications may be used around the different Polk County shop compounds, parking lots, bridges, guardrails, or other Polk County managed areas.
- Selective spraying will mainly target weeds listed on Iowa's noxious weed list. Other weeds will be controlled if they pose problems to other desirable vegetation. The species targeted will be evaluated by the Polk County IRVM staff and the pesticide products and rates to control them will be assessed frequently. A list of pesticides regularly used and additional weed species can be found in Appendix F. Pesticides will be selected by safety to applicators and environment, efficacy of treatments, and availability. The pesticides and rate may change at the discretion of the IRVM staff.
- All pesticide applicators are state certified in applicable categories for species and areas they spray. Spray records will be kept whenever pesticides are used. Individual utility vehicles are currently set up for the majority of the spraying. A larger 300-gallon spray skid is also used in the back of a pickup truck. This is mainly used for bare ground applications. A dedicated spray truck with chemical injection tanks, a larger 750-gallon water tank, GIS mapping capabilities, and an oscillating spray head is intended on being purchased for the 2025 growing season.

- The county will be divided to spray the entire county in a two-year time and be on a rotation to ensure all the right of ways get treated if the time becomes unavailable to finish.
- Remnants with weeds will not be foliar sprayed. Other treatments such as mowing or frequent prescribed burning will be done at a time when these techniques are the most effective. Plants that can be cut and have their stems treated may be done sparingly. Stems of weeds that can be treated when native plants are dormant will be done at that time.

Tree and Brush Control

- Trees and shrubs will be removed to provide better visibility for motorists, reduce impact for vehicles accidently leaving the roadway, reduce snow drifting from brush, and to remove shade in winter that causes ice buildup on the road.
- The Polk County IRVM program will follow the Iowa DOT laws for clearing and grubbing for the threatened and endangered bats. This includes the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*). The guideline states that trees three inches or more in diameter be cut between October 1st and March 31st. The specifications are *1107.18, B, 2* and *2101.01, A*. The exception is for tree removal necessary for contracted construction and any hazardous trees needed for removal.
- Shorter trees and shrubs will be reduced with prescribed fire or mowing while they are still small. The foliar spraying will occur when they can still be treated with pesticides before they overtake areas. Mowing and foliar spraying will be done selectively and occur every year. Burning will occur on a rotation or as needed basis. The priority areas to reduce the woody vegetation will be along the paved roads, woody species in the foreslope, or any areas that may be hazardous. As stated in the previous section about chemicals, the goal is to utilized native forbs, grasses, and sedges to compete with weeds and woody species to reduce the amount of pesticide needed in the future.
- Foliar spraying for woody species will occur to reduce numbers of brush and small trees in the right of way during the growing season as soon as plants have leaves. Spraying will stop mid-summer if it is too hot and the woody plants will not likely take in chemical as readily. Spraying will begin after the intense heat from the summer. The best time to spray will be the fall when the trees and brush still have leaves but herbaceous below have senesced. Trees that are too big for spraying will be individually basal bark treated or cut using tree shears or using a chainsaw. The stumps that are left from cutting will then be chemically treated and will mainly be done in the dormant season.
- The county will be divided into areas to spray the entire county in a two-year time and be on a rotation to ensure all the right of ways get treated for woody species as well as the weeds. Selective mowing and boom mowing will occur every year to reduce woody species to maintain a safe ROW.

Prescribed Burning

- Prescribed burning is an important management technique that will be used whenever possible and when it makes sense to perform one. Every burn will have a purpose and best practices will be followed to ensure the safety of the workers and the public.
- Polk County employees will be required to complete relevant National Wildfire Coordinating Group (NWCG) courses. These include Firefighter Training (S-130), Introduction to Wildland Fire Behavior (S-190), and Human Factors in the Wildland Fire Service (L-180). An Annual Fireline Safety (RT-130) will need to be completed at least every other year to maintain current certifications. Additional NWCG training is encouraged but will not be required.
- Additional Polk County employees and volunteers who do not have the above certifications may still help. They will only be allowed to use hand tools and be required to stay with a certified staff member.
- All personnel will be required to wear appropriate PPE. This includes a minimum of wearing fire resistant clothing, leather gloves, leather boots, eye protection, helmet, and have hearing protection available.
- Burning helps promote native herbaceous seed production, increase early season plant growth, recycle nutrients into soil, reduce nonnative woody species and weeds, and thin out vegetation density for improved plant diversity.
- The majority of the burns will be conducted in the spring or fall. Each time of year has it benefits but spring and fall will be simpler for ROWs. The adjacent agriculture fields will either not have crops growing yet for the year or will have been harvested. This allows the burns to be safer because of reduced amount of available fuel that could be burned. Summer burns may occur but more precautions and preparations will need to occur to be safe.
- Early spring burns are important to warm up the ground to promote natives to grow sooner to compete with nonnative species that grow in cooler temperatures and normally get a head start. This can be more effective with a follow up spray application for the nonnative weeds.
- Late spring is a better time to target cool season weeds and to stress woody species more when they have their energy above ground.
- Fall is a good time to thin out vegetation and to assist with the native seed stratification process. Some native shrubs that need controlled are also easier to manage with fall burns. These native shrubs have adapted to fire and can grow denser stands following a burn. A main contributor is an excess of nitrogen. Nitrogen and other nutrients have the winter to dissipate in the soil but retain the carbon. This helps control excess growth that follows a spring burn.
- Soil erosion will be considered for fall burns because the soil will be more exposed throughout the winter. Depending on the site, the benefits of the outcome will be considered to determine whether or not a burn should be conducted.
- The goal will be to perform burns that meet several of the objectives, but if that is not possible, most burns will be beneficial anytime it is possible to do one.

- The equipment used will be the same tanks used for spraying pesticides. These will need to be thoroughly cleaned before use on burns. The additional equipment will be different hand tools and drip torches to conduct the burns. All equipment will be properly maintained and checked before each burn before any ignition occurs.
- An application will be submitted to the Polk County Air Quality division to acquire a permit for different burns. The burn permit application is listed in Appendix C. After a burn permit is issued, burns will be conducted according to the burn plans to burn at appropriate times and during safe weather conditions. Polk County residents will be notified through a public posting online. Adjacent landowners and landowners within 1,000 feet downwind of smoke may be notified prior to burning if determined necessary for a specific burn. The local dispatch or fire marshal will be contacted directly before and after every burn. For safety, orange diamond hazard signs for burning will be placed along the roads to alert motorists. Depending on the burn, roads may temporarily be closed with a designated person on each end to address the motorists.

Burning Plan and Records of Previous Burning

- A burn plan will be created for each burn to help dictate when and how burns will be conducted. Since most of the burns will be done in the spring and fall, there will be a limited number of optimal days to burn. Having a burn plan ready will help ensure more areas can be burned and done safely.
- The burn plan will include a location, vegetation present, objective, safety concerns, timeframe, weather parameters, ignition point, and the equipment and personnel needed for each burn. Several burns may be similar, but will still be important to make individual plans. This helps ensure that nothing is overlooked and the burn goes as smoothly as possible. Issues do occur and being as prepared as possible will help those issues to stay minor.
- Records will be kept of the dates burned to track frequency and to help assess if goals were achieved. Notes will be kept on how the fire went and any weather during the time. This helps to make modifications to the burn plan to improve the management of the areas. When spot forecasts are requested from the National Oceanic and Atmospheric Administration (NOAA), the weather data tracked will be reported to help with more accurate future spot forecasts. The weather will be taken onsite with a handheld weather meter.
- Burns will occur on a rotation basis throughout the county. Remnant prairies and newer constructed prairies will be the priority with more frequent burns. All others will occur when time and conditions allow. Burns for most areas will be attempted to complete every three to five years. Areas that need thinning but cannot be burned will be mowed if necessary. These areas will still be on the list to burn, but this way they still get managed.
- Depending on staff availability and the size of the burn, Polk County Conservation will be asked to help or to loan additional equipment for burns that require more assistance or equipment. With this expectation, the Polk County IRVM program will assist with any burning needs they have that is within the capabilities of the program to be able to do so.

- No burns will be done if appropriate staff or equipment are not available and the criteria for the burn plan is not met. This even means if it is an area that should be burned and the weather is favorable. Burns will also not occur during state or county burn bans.

Ongoing Maintenance

Procedures:

- Site Preparation

  There should not be any continuing site maintenance for prairie restorations once the area is prepared for seed. The maintenance for the prairie reconstructions will only occur if the area did not get seeded in an appropriate time. More pesticide may be needed to control weeds or the soil may need to be reworked to loosen soil again.

- Seed Mixes and Rates

  Interseeding or reseeding may occur if the first planting did not take or if natives are more sparse than desired to establish a better-quality prairie to compete with weeds without extra continued maintenance.

- Seeding Techniques

  Areas that did not take will need reapplications. If the seed germinated but is just sparse, the same equipment and method will be used unless site conditions are different. If the planting did not take at all, then the site will need to be assessed to determine a possible reason to why it did not work. An alternative planting method will most likely be used depending on the first application's failure.

- Erosion and Sediment Control

  All sites will need to be monitored for erosion and addressed if issues are found. Depending on the severity of the erosion will determine the priority of the maintenance work performed. Some areas with only vegetation may need additional erosion control. This may include adding additional cover crop seed or including permanent structures to the site.

  Areas with existing permanent erosion control structures should not need a lot of maintenance if installed correctly. Water can cut around structures and may need additional improvement to make it work better. In some extreme cases the structure may need to be taken out and reinstalled to ensure the proper function of the structure and is working as it was designed.

- Vegetation Establishment Maintenance

  Site visits over the first three to five years will be very important to actively monitor the plantings progress to determine how and when tasks should happen. This is a time period that can save a lot of time and energy in the future if management is proactive. Most instances

should follow the same routine but may need to change timing, frequency, and technique depending on the site.

Plantings will be considered a success when the majority of the species are natives in a stand and follow up maintenance for weeds is minimal.

Native container plantings will be weeded annually, vegetation will be thinned out, and bare spots from loss of plants will be replaced if plants are available.

- Planting Evaluation and Documentation

  Most of the documentation should initially be completed digitally, but information recorded on paper will need to be digitalized and organized with the appropriate files. The tools used to document will also need to be assessed to determine if they are still the best way tool for the program as technology develops.

- Mowing

  Areas where selectively mowing for weeds or higher density woody areas should have continued annual maintenance until area is under control. If mowing is not enough, other practices should be implemented for controlling plants.

  All areas mowed will be evaluated for long term maintenance to determine the frequency. Reducing mowing areas when possible is important for staying efficient, improving vegetation health, and to reduce soil erosion.

- Chemical Control for Noxious Weeds, Other Invasives, and Bare Ground

  Plants that are sprayed will be checked at a time following an application when physical signs of the chemical should be visible. This helps make sure the application was effective and non-target species were not affected. This also helps identify any plant resistance to the chemical.

  All pesticides used will be recorded at the time of application. This includes locations, date, weather, target species, and chemicals used. These records will be digitalized at a later date if not done initially.

  Staying current on new pesticides and application methods will help the program continue to stay safer and be the most effective and efficient. Refresher pesticide courses and other trainings to communicate with other vegetation managers to learn what they do is important. Purchasing from reputable pesticide businesses will also be important.

- Tree and Brush Control

  Additional mowing or cutting may be needed in denser areas with trees and brush during the dormant season. Additional equipment may need to be rented if other equipment is not available.

- Prescribed Burning

The areas burned will be assessed over that year and following years to observe if the goals of the burn plan worked or not. Burns are an effective resource, but with other management techniques, they can be even more effective. By assessing the burns, better decisions can be made for follow up practices. If the burn did not accomplish its goal, then that also allows for a more educated change for what needs to be done in the future.

- Burning Plan and Records of Previous Burning

  Directly following each burn, an after-action review will occur. This will provide an opportunity to discuss how the burn went and the explain any actions that were taken. This helps make the future burns safer and more efficient. Notes will be taken and recorded to adjust anything in the burn plan if needed.

The procedures for the vegetation establishment and the ongoing maintenance stated above is the foundation for the Polk County IRVM practices. These procedures were influenced by the Integrated Roadside Vegetation Technical Manual, The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest, and The Tallgrass Restoration Handbook. Not all procedures are included in full detail in this plan, but can be referenced in these resources. Practices may deviate from the stated plan depending on the project, site conditions, and time frame. Any deviations or needed extra guidance will still refer to these guides, or other experienced conservation land managers.

Urban vs Rural Implications

Vegetation establishment takes time and uses many resources to successfully implement native species into a ROW. As Polk County continues to grow, these plantings need to be preserved. The most effective way to ensure this is to plant in areas that will stay undeveloped for the foreseeable future. Since integrated vegetation management is beneficial for multiple reasons, native plantings should also be utilized in areas near development.

This means the Polk County IRVM program will need to collaborate with the different growing cities and communities to help promote a transition towards an integrated vegetation management approach. Plantings near development may still be destroyed, but the risk is worth the reward. Lower diversity mixes that are cheaper and easier to establish would be used, so the loss would not be as great. Even if those plantings do get damaged, their importance may be recognized and the native plantings could be replaced. If the practice were to be continued and adopted, that would be very beneficial to Polk County as a whole.

9. Material Procurement

Sourcing

Seed, erosion control materials, pesticide products, and other materials will be purchased locally if possible. The source will depend on the price and the availability of the products. These materials will be purchased as needed when the Polk County IRVM programs supply starts to run low.

The purchases that are higher in cost will be put on BidNet for vendors to have an equal opportunity to sell their product. The product will have to meet the criteria listed and be similar in the desired quality requested. The winning vendor will also likely get reoccurring business for other purchases that same year. More detailed information can be found on the Polk County website for Procurement Procedures and Information or from the Polk County Best Practices Procurement Manual.

Most seed will be requested from the Tallgrass Prairie Center for the TAP seed, but any other seed will be purchased from different seed companies.

Material Handling and Storage

Materials and equipment stored for the Polk County IRVM program is located at the Polk County Public Works Compound. The majority of the storage will be in one storage building.

The pesticide will be stored separately in a 20 foot by 30 foot temperature controlled room with a ventilation fan. All the chemicals are stored on a secondary spill containment pallet.

The seed, erosion control materials, and the majority of the equipment are stored in the same building as the pesticides, but in a different room. This storage space is 30 feet by 70 feet with two overhead doors. Currently seed is stored off the ground but is not in a temperature or humidity controlled room.

Additional equipment that does not fit will be stored at different locations at the Polk County Public Works Compound. A small amount of native prairie seed may be stored at the Polk County Conservation Natural Resource Headquarters temperature and humidity controlled room, if space is available.

10. Research Opportunities

Currently the Polk County IRVM program does not have any official research being done, but recognizes the importance. If the opportunity arises, any research projects that pertain to conservation management or management of ROWs will be encouraged if it does not interfere or go against the program's plan. This will be a good way to establish or strengthen different partnerships.

Records will be kept by the IRVM program to track and assess the management that is being done. Different practices from other programs may occur and may turn into unofficial research projects. This may be beneficial to help guide future research projects or contribute data when needed.

11. Program Evaluation

The Polk County IRVM program is new and will frequently be evaluated by the IRVM staff and by the leadership at Polk County Public Works that are involved in the decision-making process for the IRVM program for the first several years.

After the program is more established, the program will primarily be evaluated at the biannual steering committee meetings for the IRVM program. These meeting will give the opportunity to see what is going well, what is not going well, and make suggestions for the direction for the program.

12. Appendices

Appendix A. Position Descriptions and Qualifications

Roadside Biologist

Distinguishing Features of the Class:

Under general supervision of the Water Resources Supervisor, coordinates the operations and performs labor associated with the Polk County Integrated Roadside Vegetation Management (IRVM) program.

Illustrative Examples of Duties:

1. Prepares and updates a five-year Polk County Integrated Roadside & Trail Vegetation Management Plan; carries out plans, programs, and tasks outlined in the plan and updates the plan as required to maintain eligibility for Living Roadside Trust Fund grants.
2. Performs and maintains an inventory of roadside and trail conditions, including but not limited to vegetation types, noxious weed issues, physical characteristics, safety concerns, erosion issues, and other features germane to the effective management of roadside and trail rights-of-way.
3. Controls noxious weeds, invasive species, brush, and trees through mechanical or chemical methods, including mowing, cutting, spraying, competitive seeding, prescribed fire and/or other appropriate methods; performs manual labor as required to haul equipment and materials in trucks or trailers and cleaning up debris within rights-of-way.
4. Performs vegetative and/or structural stabilization of areas disturbed by construction and maintenance activities within county roadside and trail rights-of-way.
5. Helps plan, implement, and maintain green infrastructure and water quality features in rights-of-way.
6. Leads seasonal, part-time, or volunteer staff for various types of work including but not limited to noxious weed/brush control, mowing, prescribed burning, seeding and equipment operation.
7. Informs and educates property owners about the principles of Integrated Roadside Vegetation Management; drafts correspondence and/or educational information for the Polk County Public Works website.
8. Represents Polk County at the annual Roadside Conference and other meetings related to roadside vegetation management. Service in leadership positions of related organizations is encouraged, but not required.

9. Coordinates with Public Works management personnel to identify and apply for grants and other cost-sharing opportunities.
10. Operates assigned equipment skillfully, safely and in conformance with regulations and directions; performs preventative maintenance on assigned equipment.
11. Trains employees in the operation of specified equipment as needed; ensures the proper use of safety devices, equipment, and signage on work projects.
12. Assists Public Works and Conservation crews with tasks and projects, including snow removal operations, as needed.
13. Performs related duties as assigned.

Required Knowledge, Skills, and Abilities:

- Knowledge of basic mechanical principles.
- Knowledge of the safe operation of equipment.
- Knowledge of advanced methods and techniques in vegetation establishment, management and control.
- Knowledge of advanced principles and practices of noxious weed control and the safe use of pesticides.
- Knowledge of elementary engineering principles and practices involved in road and trail maintenance and construction.
- Knowledge of green infrastructure and water quality principles and practices.
- Knowledge of advanced erosion control principles.
- Knowledge of basic GIS applications for tracking practices (e. g. spraying), roadside infrastructure, and other features/uses.
- General knowledge of grant funding processes.
- Skill in the identification of trees, shrubs, grasses, wildflowers, noxious weeds and invasive plant species.
- Skill in the operation of medium to heavy trucks, trailers, tractors and attachments, mowers, chainsaws, chippers, lift/boom trucks, skid steers, hand & power tools and other equipment used in vegetation management.
- Skill in record keeping for seeding, spraying and other operations.
- Skill in operating spraying equipment and utilizing herbicides appropriately and safely.
- Ability to effectively plan and lead projects designed to address roadside vegetation and natural resource management needs.
- Ability to efficiently use a personal computer and Microsoft Office programs.
- Ability to communicate effectively verbally and in writing.

- Ability to establish and maintain effective working relationships with co-workers, vendors, landowners, other agency representatives, and the general public using courtesy, patience, and tact.
- Ability to lift up to 75 pounds.
- Ability to intermittently sit, stand, stoop, bend, crouch and walk.
- Ability to climb, use tools requiring high degree of dexterity, distinguish shades of color, and utilize sense of smell.
- Ability to work outdoors in all types of weather and tolerate exposure to dust, dirt, grease, chemicals, poisonous plants, machinery with moving part and other hazards while wearing appropriate personal protective equipment (PPE) such as masks, goggle, gloves, etc.

Training and Experience:

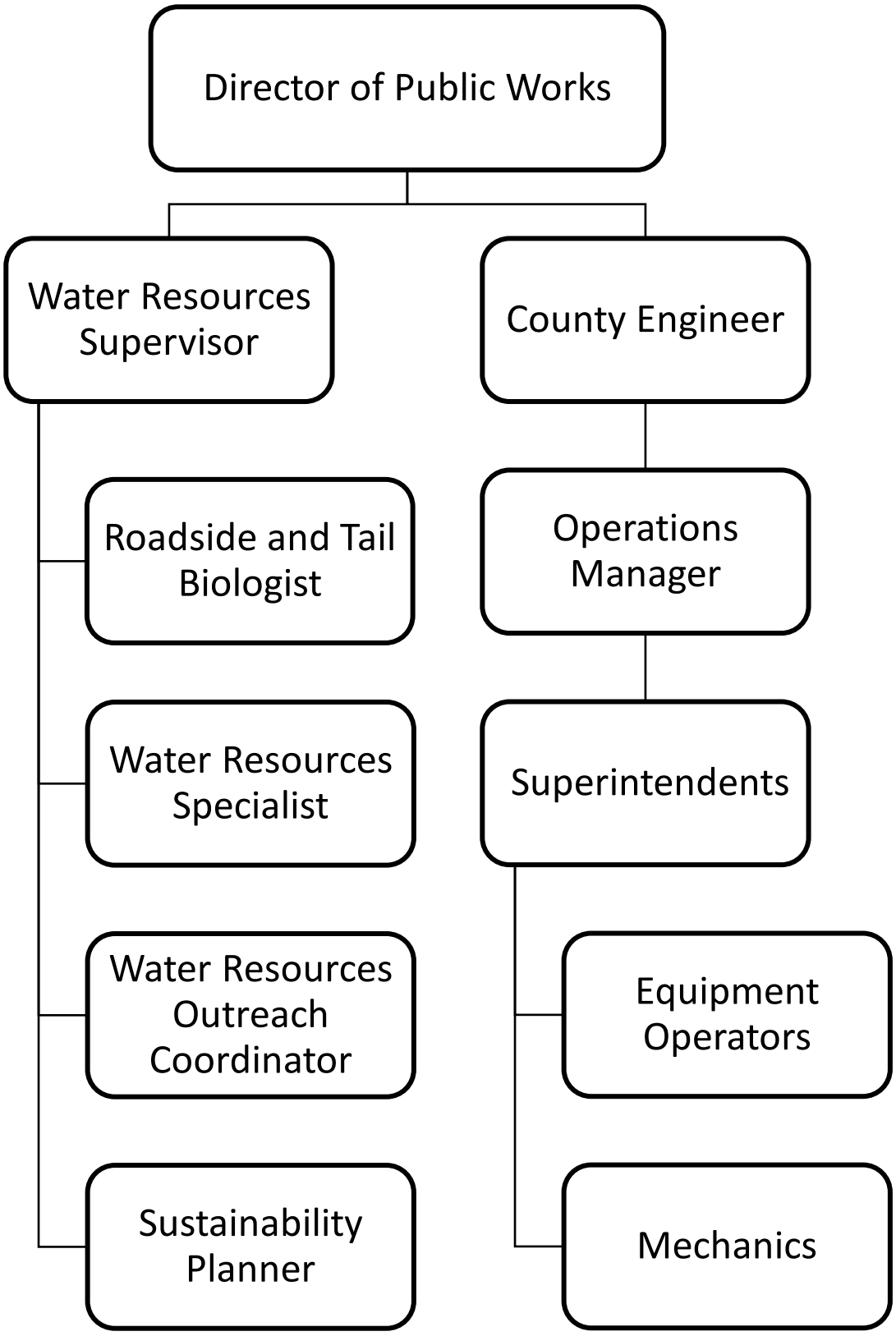
- Bachelor's degree from an accredited college or university with a major in natural resource management, AND
- Two years' experience in vegetation management, OR
- Any equivalent combination of training and experience that will have provided the required knowledge, skills, and abilities.

Special Requirements:

- Candidate must pass a post-employment offer physical examination and Physical Capacity testing to ensure candidate meets the essential physical requirements of the position.
- A criminal background check is required.
- A drug screen is required prior to final offer of employment.
- CPR/AED and First Aid training is required within three months of hire.
- Iowa Pesticide Applicators Certifications in Categories 2 (forestry) and 6 (right of way) per Code of Iowa Sections 206.4 and 206.5 is required within six months of hire.
- A valid State of Iowa driver's license is required. A Class A Commercial Driver's License issued by the State of Iowa for the type of vehicle or equipment operated is required within six months of hire.
- Completion of National Wildland Coordinating Group (NWCG) coursework including S-130, S-190 and L-180 is required within six months of hire.

Adopted: 7/01/2023

Appendix B. Public Works IRVM Organization Chart



Appendix C. Permits and Applications

Polk County Public Works
5885 NE 14th Street, Des Moines, IA 50313
Phone: 515-286-3705 FAX:515-286-3437
Email:publicworks@polkcountyiowa.gov

RIGHT-OF-WAY GRANT PERMIT APPLICATION

Permit Fee: $263.00

PLEASE PRINT OR TYPE

APPLICANT/COMPANY_____

APPLICANT REPRESENTATIVE: (if applicable)_____

APPLICANT MAILING ADDRESS:_____

CITY:_____STATE:_____ZIPCODE:_____

PHONE:_____ALT PH:_____

EMAIL:_____

NAME OF CONTRACTOR DOING WORK (if applicable): _____

CONTRACTOR REPRESENTATIVE: _____

CONTRACTOR MAILING ADDRESS: _____

CITY:_____STATE:_____ZIPCODE:_____

PHONE:_____ALT PH:_____

EMAIL: _____

CURRENT CERTIFICATE OF INSURANCE ON FILE? YES ☐ NO ☐ (SEE ATTACHED)

CURRENT PERMIT BOND ON FILE? YES ☐ NO ☐ (SEE ATTACHED)

TYPE OF WORK (Check One):

NEW UTILITY INSTALL ☐ REPAIR OF EXISTING UTILITY ☐ OTHER ☐

CONSTRUCTION PLAN ATTACHED? YES ☐ NO ☐

WORK SITE INFORMATION

BEGINNING ADDRESS_____ENDING ADDRESS_____

OR SERVICE REPAIR ADDRESS _____

DESCRIPTION OF WORK:

CHECK THOSE ASSURANCES THAT APPLY:

☐ I affirm the work described in this permit is accurate and correct to the best of my knowledge and belief and that I am the owner or the designated agent of the Applicant.

☐ I understand the work must be inspected and completed within one year of the issue date or this permit will be null and void.

☐ I understand that a License and Permit Bond in the amount of $2,000 must be filed with the Polk County Public Works Department before the Permit will be issued.

☐ I understand that a Certificate of Insurance must be on file with the Polk County Public Works Department naming Polk County as additionally insured before permit will be issued.

☐ I affirm that I have read and understand the special instructions No. 1-26 listed on the attached form and will complete all work in accordance with these instructions and the current Polk County Accommodation Policy, Procedures and Standards Manual (UAPPS).

_____

APPLICANT SIGNATURE DATE

ROW GRANTPERMIT STIPULATIONS

PRIOR TO CONSTRUCTION

1. No utility facility shall be constructed so as to adversely affect the design, construction, operation, maintenance or stability of a highway or any proposed or existing highway facility, and applicant shall save the County harmless from all damages to claims on this account.
2. The utility owner is responsible for construction, removal, relocation, and future maintenance of facilities, when changes to the roadway for maintenance or reconstruction purposes are required.
3. Applicant is responsible to obtain in writing, permission from downstream property owners when he desires to concentrate or drain water across said property.
4. When deemed necessary by the County Engineer, a pre-planning and/or pre-construction conference will be arranged.
5. Applicant to locate all utilities in accordance with the UAPPS.
6. Applicant shall contact the Polk County Engineer 48 hours prior to beginning construction, by letter or by telephone (286-3705) 7:30 a.m. to 4:00 p.m. weekdays.
7. Applicant to notify all companies having existing utilities located with county ROW 48 hours prior to starting construction for field locates. Include telephone number of responsible contacts as part of Special Provisions or General Notes of the plans.

CONSTRUCTION

8. Applicant shall take all reasonable precautions to protect lives and property and save the County harmless of damage or loss on account of such construction.
9. Applicant shall conduct their work to cause a minimum interruption of traffic flow. (Do not close road to through traffic.) Proper signing and advance warning will be required, as outlined in THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) "Part VI, Traffic Control for Street and Highway Construction and Maintenance Operations." All signing will be in compliance with the above and same shall be in place and maintained by the contractor for the duration of construction.
10. No excavation shall be made within Polk County ROW except as designated on approved plans, and shall be completed in one day, tamped, regraveled and/or paved. Any extension of this one-day completion must be approved by the County Engineer or the permit is null and void. In all cases, a closed ditch will be maintained overnight.
11. Applicant shall place backfill in 6-inch layers, mechanically compacted by tamping or rolling into place, using the specified density and standards contained in the UAPPS. Any settlement occurring after backfill has been completed shall be refilled and compacted as directed by the County Engineer at applicant's expense.
12. Applicant will not park construction equipment on the roadway that is not necessary for the actual work. All equipment on the roadway that is necessary for construction will have the proper signing. Overnight equipment storage is to be outside of Polk County ROW.
13. Applicant shall provide minimum bury in accordance with the UAPPS throughout total length of installation.
14. A copy of the approved permit and any plans shall be on the job site at all times.
15. Applicant shall auger or push all roadways and driveways, unless otherwise stipulated.
16. When given permission to trench across driveways, applicant shall close driveway trenches same day trench is open and provide access at all times and shall repair all driveways to their original conditions.
17. Applicant shall apply "SPECIAL CARE" in working under or near existing surface or subsurface drainage structures and shall replace in kind, any tile broken during construction.
18. Applicant shall make neat saw cuts before making any necessary pavement removals.
19. Applicant shall notify all affected consumers one hour in advance before any closing of valves of the existing water system. (Des Moines Water Works must close valves that are part of their system.)
20. Crawler tractors with lugs will not be allowed on pavement surfaces. Bridging will be required. (Use planks or old tires.)
21. Applicant shall maintain natural drainage at all times.
22. Applicant shall be responsible for the care and maintenance of partially complete work on the ROW. Silt basins may be required in possible erosion areas at the applicant's expense.

CLEANUP

23. Applicant shall replace, in accordance with the UAPPS, any surfacing material removed, covered up, or mixed with earth.
24. Applicant shall restore to their original condition or better any improvement removed or damaged during the construction process, such as fences, driveways, utility poles, signs, roadways (paved or gravel), structures, etc.
25. Any damage to private property shall be restored to satisfaction of property owner. Written release from property owner may be required.
26. Applicant shall restore all disturbed areas to their original condition or better. Seeding, fertilizing, and mulching will be required in accordance with the UAPPS or as attached herein. Otherwise, the County will be responsible for placing any erosion control materials. Sodding will be required when specified by the County Engineer.

Burn Permit Application – Air Quality Division, Polk County- Iowa

(1) Organization or Applicant:

- ☐ Federal, State, County, Municipality or Political Subdivision
- ☐ Civic, Fraternal, Religious, Educational or Similar organization
- ☐ Other, specify:_____

For Polk County Office Use Only:

Date Received:_____

Permit Fee:_____

Check Number:_____

AIRB-_____-_____

POLK COUNTY
Leading the Way

(2) Applicant Name/Responsible Party:

I certify that based on information and belief formed after reasonable inquiry, the submitted application including the attachments are true, accurate, and complete. Applicant/Responsible Party:

Print Name:_____ Title:_____

Signature (required):_____ Date:_____

(3) Applicant/Responsible Party Information & Mailing Address

Name:	Telephone:	Email:	
Street Address:	City:	State:	Zip:

(4) Contractor Information & Mailing Address (complete section if applicable)

Name:	Telephone:	Email:	
Street Address:	City:	State:	Zip:

(5) Burn Permit Type Selection (*Check only one type A-K per application*)

Burn Permit Types (Fee Exempt, if applicable check one A-D)

- ☐ A. Bonfire Permit (Recognized Organizations)
- ☐ B. *Fire Department Training Fire Permit (Do not submit this form for this burn type, submit the Fire Department Application)*
- ☐ C. Flag Retirement Ceremony
- ☐ D. Landscape Waste Permit(Government)
- ☐ E. Right-of-way Cleanup Permit(Government)

Burn Permit Types with fees: (If A-E above doesn't apply then check one E-K)

- ☐ ($26) F. Prairie or Woodland Maintenance Permit (Each Location, properties that are adjacent or directly across a road can be combined into one permit application)
- ☐ ($63) G. Industrial Training Fire Permit
- ☐ ($263) H. Clearing & Grubbing Permit (with public notifications included)
- ☐ ($263) I. Flare Stack Permit (Each Emission Point(EP))

Variance Permits required in Des Moines, West Des Moines, Clive, Windsor Heights, Urbandale and Pleasant Hill

- ☐ ($525) J. Variance Application Permit (with public notifications included)
- ☐ ($105) K. Variance-Prairie Maintenance Residential (with public notifications included)

$Amount enclosed:_____

(6) Burn Site Information: ***A site map indicating the proposed burn site location must be submitted with the application.***

Burn site location (Zoning/Use Classification): ___Residential Property ___Commercial Property

Burn Site Map Attached & Burn Site Address:	City:	State: Iowa	Zip:

Requested Burn Permit Start & End Dates: Start(mm/dd/yyyy):_____ End(mm/dd/yyyy):_____

Requested Burn Permit Start & End Times: Start (hh:mm):_____ AM PM End(hh:mm):_____ AM PM

(7) Make check payable to: Air Quality Division (Do not send cash, if you need assistance please call (515) 286-3705)

Mail to:
Polk County Public Works Department- Air Quality Division
5885 NE 14th Street
Des Moines, Iowa 50313-1202

No Spray Agreement Application

Polk County Public Works - Weed Commission

The undersigned hereby makes application to Polk County Public Works Department-Weed Commission and to refrain from spraying herbicides on the right-of-way at the location identified below. The no spray agreement application must be submitted, reviewed and approved prior to taking affect and is based on the information provided within this application or attached thereto.

1. Titleholder _____ _____
(please print) Phone

_____ _____

Address, City, State and Zip Email

2. Subject Property Information

_____ _____

Property Address District and Parcel Number

Legal Description (attach if necessary)

_____
_____

3. Please complete the following statements regarding the subject property. (Attach information if necessary)
   a. List total area of the no spray request _____ x _____
   b. Is there currently a fence on the right-of-way line? y/n
   c. Are there currently “no spray” signs on each end of the area requested to be exempted? y/n
      1. “No spray” signs will be required at $XX/ sign
      2. # of “No spray” signs needed _____
      3. Include payment for signs along with this request application.
   d. Please state the reason the no spray request is being made:
      _____
      _____
   e. Please provide any additional information which may be helpful in reviewing the application (attach if necessary):

      _____
      _____
      _____

   f. Please attach a site diagram or map indicating the area of the no spray request. Including the adjacent property and proposed or existing sign locations.

4. Certification

I hereby acknowledge that the no spray exemption if granted by Polk County Public Works - Weed Commission that I am now responsible for the vegetation management on the above described portion(s) of right of way, including height control, noxious weeds and annual weed control. I further acknowledge that this exemption is only valid for the portion of right-of-way

adjacent to my property. I also acknowledge that if I improperly and/or fail to manage by non-chemical means the right-of-way, Polk County reserves the right to spray the affected area and the existing no spray agreement becomes null and void and the property will be returned to the regular Roadside Spraying Program. I further agree to indemnify and hold harmless Polk County for any and all injury to persons or property that may occur as a result of the Owner's weed control efforts on County property. To the best of my knowledge, the foregoing information is true and correct.

_____ _____

Signature of Titleholder Date

Return forms to: Polk County Public Works - Weed Commission 5885 NE 14th Street, Des Moines, IA 50313

▪ Phone (515) 286-3005 ▪ Fax (515) 286-3437

OFFICIAL USE ONLY			
Date Submitted:		Received by:	
Site Inspection Date:		Site Inspection by:	
Date Issued:		Issued by:	

Appendix D. Polk County Endangered, Threatened, and Special Concern Species

Iowa DNR listed endangered, threatened, and special concern species in Polk County, Iowa.

Summary by Species Report
Total Unique Listed Species In This County: 43

January 4, 2024

Common Name	Scientific Name	Class	State Status	Federal Status
Bald Eagle	Haliaeetus leucocephalus	BIRDS	S	
Barn Owl	Tyto alba	BIRDS	E	
Henslow's Sparrow	Ammodramus henslowii	BIRDS	T	
King Rail	Rallus elegans	BIRDS	E	
Least Tern	Sterna antillarum	BIRDS	E	E
Long-eared Owl	Asio otus	BIRDS	T	
Northern Harrier	Circus cyaneus	BIRDS	E	
Red-shouldered Hawk	Buteo lineatus	BIRDS	E	
Blacknose Shiner	Notropis heterolepis	FISH	T	
Grass Pickerel	Esox americanus	FISH	T	
Western Sand Darter	Ammocrypta clara	FISH	T	
Creeper	Strophitus undulatus	FRESHWATER MUSSELS	T	
Pistolgrip	Tritogonia verrucosa	FRESHWATER MUSSELS	E	
Dion Skipper	Euphyes dion	INSECTS	S	
Regal Fritillary	Speyeria idalia	INSECTS	S	
Wild Indigo Dusky Wing	Erynnis baptisiae	INSECTS	S	
Zabulon Skipper	Poanes zabulon	INSECTS	S	
Northern Long-eared Bat	Myotis septentrionalis	MAMMALS		T
Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E	
Southern Flying Squirrel	Glaucomys volans	MAMMALS	S	
Spotted Skunk	Spilogale putorius	MAMMALS	E	
Cliff Conobea	Leucospora multifida	PLANTS (DICOTS)	E	
Cream Violet	Viola striata	PLANTS (DICOTS)	S	
Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S	
False Loosestrife	Ludwigia peploides	PLANTS (DICOTS)	S	
Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S	
Pretty Dodder	Cuscuta indecora	PLANTS (DICOTS)	S	
Toothcup	Rotala ramosior	PLANTS (DICOTS)	S	
Tunnel-formed Penstemon	Penstemon tubiflorus	PLANTS (DICOTS)	S	
Virginia Rockcress	Sibara virginica	PLANTS (DICOTS)	S	
Waxleaf Meadowrue	Thalictrum revolutum	PLANTS (DICOTS)	E	
Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S	

Great Plains Ladies'-tresses	Spiranthes magnicamporum	PLANTS (MONOCOTS)	S	
Oval Ladies'-tresses	Spiranthes ovalis	PLANTS (MONOCOTS)	T	
Richardson Sedge	Carex richardsonii	PLANTS (MONOCOTS)	S	
Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S	
Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S	
Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T
Blanding's Turtle	Emydoidea blandingii	REPTILES	T	
Bullsnake	Pituophis catenifer sayi	REPTILES	S	
Ornate Box Turtle	Terrapene ornata	REPTILES	T	
Slender Glass Lizard	Ophisaurus attenuatus	REPTILES	T	
Smooth Green Snake	Liochlorophis vernalis	REPTILES	S	

https://programs.iowadnr.gov/naturalareasinventory/pages/RepDistinctSpeciesByCounty.aspx?CountyID=77

Appendix E. Annual Calendar of Activities

2024 Annual Operations

1. January
   - Dormant seed bioreactor areas
   - Dormant seed bike trail areas in Bondurant
2. February
   - Finish Rough Draft of IRVM plan to send out for peer review
3. March
   - Address suggested revisions to IRVM plan
4. April
   - Seed Chevalia Run with a cover crop
   - Cut trees and burn prairie along bike trail near NW Irvinedale DR. in Ankeny
   - Seeded newly constructed wetland at Creekview
   - Burn remnant prairie west of Bondurant on GWT
5. May
   - Submit IRVM plan to the Iowa DOT
   - Assess Chevalia Run to determine if phragmites needs to be sprayed
   - Burn remnant along NW 58th Street
   - Start Public Works Compound Pond preparations for natives
6. June
   - Plant native prairie plugs in Broadway biocells
   - Water Broadway biocells
   - Mow Crown Vetch along NW 58th Street
   - Start bioreactor site seedings
   - Start preparations for ROW prairie restorations (Areas to be determined/approved)
7. July
   - Water Broadway biocells
   - Continue to spray weeds in ROWs
   - Bioreactor site seedings
   - Roadside Vegetation Survey
8. August
   - Mow Crown Vetch a second time along NW 58th Street

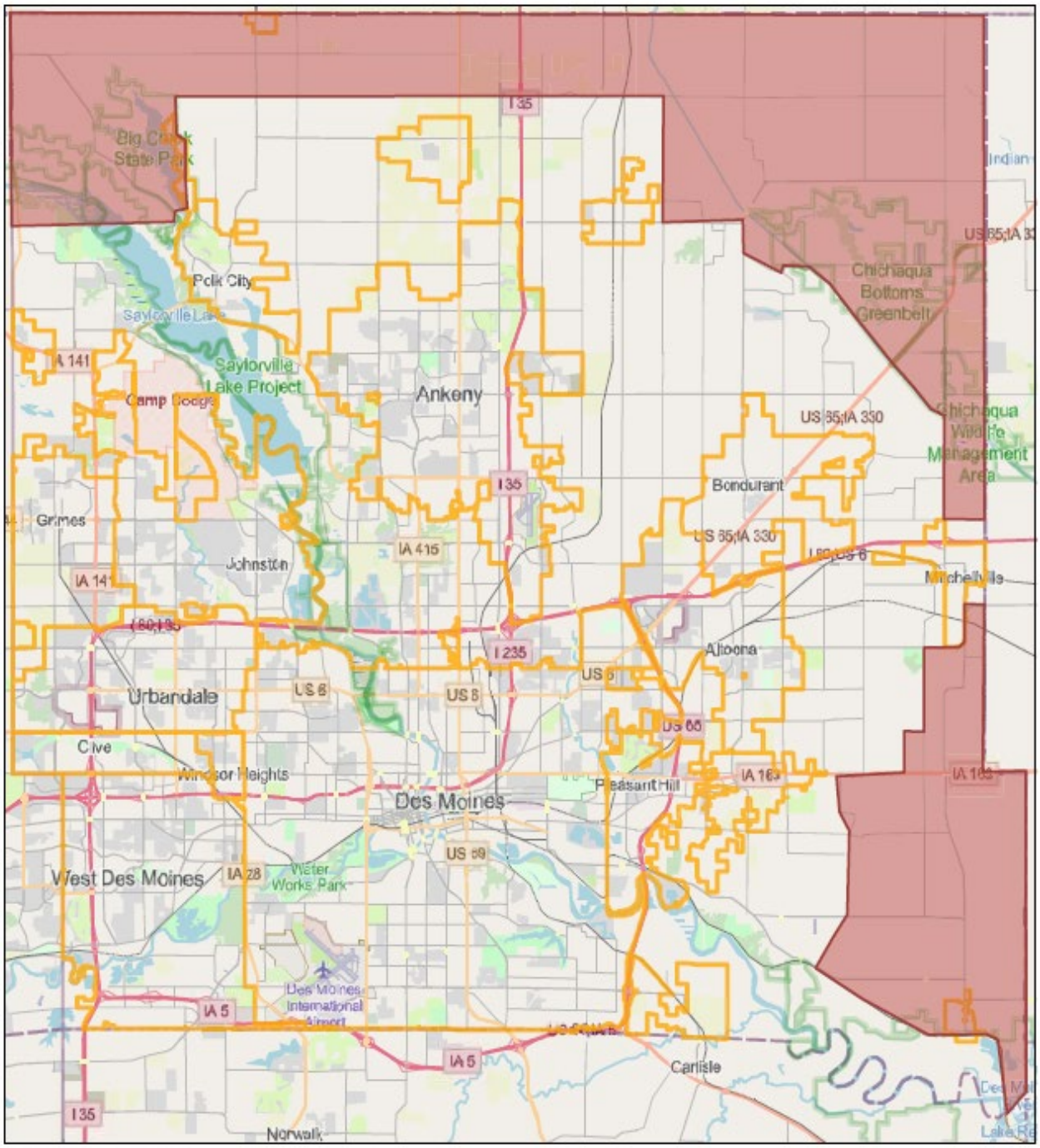
- Water Broadway biocells
- Bioreactor site seedings
- Roadside Vegetation Survey

9. September
    - Water Broadway biocells
    - Bioreactor site seedings
    - Plant native prairie plugs for Public Works Compound Project
10. October
    - Bioreactor site seedings
11. November
    - Start timber stand improvements on GWT
12. December
    - Start dormant seeding of ROW restoration areas
    - Dormant seed area for Public Works Compound Project

No mow and Spray signs to be inventoried and updated throughout 2024.

The Map included below indicates the areas in the county that will be a priority to maintain as native areas with high diversity ROWs. All other areas will be maintained with low diversity natives. This will be determined case by case and if feasible depending on the location, regardless of its designation.

Polk County IRVM Vegetation Plan



3/25/2024, 11:50:29 AM

1:288,895

0 1.75 3.5 7 mi

0 2.75 5.5 11 km

High Diversity Areas

City Limit Lines

Appendix F. Pesticides and Target Weeds

Pesticides for Weed Control and Bare Ground:

- Pesticides:
  - Glyphosate (Makaze, Buccaneer Plus)- non-selective post-emergent
  - Glyphosate (Roundup Custom)- non-selective aquatic and terrestrial post-emergent
  - Imazapyr (Arsenal)- non-selective post emergent
  - Piper EZ- grass and broadleaf control to maintain bareground
  - Esplanade 200 SC- pre-emergent for annual grasses and broadleaf weeds
  - EVADE- selective pre-emergent control for grassy and broadleaf weeds
  - Triclopyr (Element 3A, Garlon 3A)- broad spectrum control for growing woody plants
  - Triclopyr (Garlon 4 Ultra, Element 4, Pathfinder II) -broad spectrum control for dormant woody plants
  - Pathway- broad spectrum control for broadleaf and woody plants
  - Krenite- foliar control for woody species
  - Vida- broadleaf control
  - Escort XP- broad spectrum post-emergent control
  - Plateau/Panormaic 2SL- selective control of grasses and some broadleaf plants (leafy spurge)
  - Milestone- controls broadleaf plants (thistles)

Newer product to incorporate- TerraVue- broadleaf control and basically non-volatile

- Adjuvant:
  - Corral Poly/Reign- drift control agent and improves coverage
  - Spreader 90/Liberate- non-ionic surfactant
  - LI 700- non-ionic surfactant and reduces drift
  - Unfoamer- antifoaming agent
  - Succeed Ultra- improves droplet sizing
  - Signal/Bigfoot- spray colorant and indicator

Target Weeds:

- A. Primary noxious weeds:
  - Quack grass (*Elymus repens*).
  - Perennial sow thistle (*Sonchus arvensis*).
  - Horse nettle (*Solanum carolinense*).
  - Perennial pepper-grass (*Cardaria draba*).
  - Russian knapweed (*Acroptilon repens*).
  - Buckthorn (*Rhamnus* spp., not to include *Frangula alnus*, syn. *Rhamnus frangula*).
  - Palmer amaranth (*Amaranthus palmeri*).

- B. Secondary noxious weeds, which shall include:
  - Butterprint (*Abutilon theophrasti*) annual.
  - Cocklebur (*Xanthium strumarium*) annual.
  - Wild mustard (*Sinapis arvensis*) annual.
  - Wild carrot (*Daucus carota*) biennial.
  - Buckhorn (*Plantago lanceolata*) perennial.
  - Sheep sorrel (*Rumex ace*tosella) perennial.
  - Sour dock (*Rumex crispus*) perennial.
  - Smooth dock (*Rumex altissimus*) perennial.
  - Poison hemlock (*Conium maculatum*).
  - Multiflora rose (*Rosa multiflora*).
  - Wild sunflower (wild strain of *Helianthus annuus* L.) annual.
  - Puncture vine (*Tribulus terrestris*) annual.
  - Teasel (*Dipsacus* spp.) biennial.
  - Shattercane (*Sorghum bicol*or) annual.

Additions/Changes

- Class B secondary noxious weeds
  - Canada thistle (*Cirsium arvense*).
  - Bull thistle (*Cirsium vulgare*).
  - Leafy spurge (*Euphorbia esula*).

- Multiflora rose (*Rosa multiflora*).
- European morning glory or field bindweed (*Convolvulus arvensis*).
- All other species of thistles belonging in the genus of Carduus.

The Iowa noxious weed list and the amendments will be the priority species to control. Additional weeds that will be controlled because of their invasiveness or health concerns for the public are listed below. This is not an all-inclusive list and the control will be dictated by the IRVM program.

- Crown Vetch (*Securigera varia* syn. *Coronilla varia*)
- Chinese Bushclover (*Lespedeza cuneata*)
- Silvergrass (Miscanthus species)
- Common Reed (*Phragmites australis*)
- Wild Parsnip (*Pastinaca sativa*)
- Day Lily (*Hemerocallis fulva*)
- Garlic Mustard (*Alliaria petiolata*)
- Poison Ivy (Toxicodendron species- *T. radicans* and *T. rydbergii*)
- Purple Loosestrife (*Lythrum salicaria*)
- Hemp (*Cannabis sativa*)
- Spotted Knapweed (Centaurea stoebe)
- Japanese Hops (*Humulus japonicus*)
- Japanese Knotweed (*Polygonum cuspidatum*)

Appendix G. Pesticide Spray Record Sheets

POLK COUNTY ROADSIDE SPRAY RECORD:

Address: 5885 NE 14th St., Des Moines, Iowa **Phone: 515-286-3705License #'s P00040200**

Surrounding Land Use: Ag Urban

Equipment used for application: Pickup Ranger 300 Gallon Tank

Application Rate: Spot spray Spray to wet

Date: _____ **Time:** _____**AM**_____**PM**

Wind Speed: (MPH) AM_____PM_____

Wind Direction: AM_____PM_____

Humidity: AM_____PM_____

Temperature: AM_____PM_____

Cloud Cover: AM %_____PM %_____

Brush Formulation: **Miles:** _____ **Total Gallons:** _____

1. _____ oz. of _____to Gallon of Water.
2. _____ oz. of _____to Gallon of Water.
3. _____ oz. of _____to Gallon of Water.

Thistles Formulation: **Miles:** _____ **Total Gallons:** _____

1. _____ oz. of _____to Gallon of Water.
2. _____ oz. of _____to Gallon of Water.
3. _____ oz. of _____to Gallon of Water.

Guardrail Formulation: **Miles:** _____ **Total Gallons:** _____

1. _____ oz. of _____to Gallon of Water.
2. _____ oz. of _____to Gallon of Water.
3. _____ oz. of _____to Gallon of Water.

Location's Applied: _____

Notes: _____

SPRAY RECORD SHEET

Date: _____

Polk County Conservation
12130 NW 128th Street
Granger, IA 50109

Remember your PPE!
Application – LS shirt, long pants, boots, hat & neoprene gloves
Mixing – Add to above – Chem. resistant apron & goggles

Applicator Name(s): _____ **IDALS Certification No.:** _____

_____ _____

Weather Start		**Weather Midday** (optional)		**Weather Stop**	
Time	_____	Time	_____	Time	_____
Temperature	_____	Temperature	_____	Temperature	_____
RH	_____	RH	_____	RH	_____
Wind direction	_____	Wind direction	_____	Wind direction	_____
Average wind speed	_____	Average wind speed	_____	Average wind speed	_____

Mixing & Application Specifications – List **EXACT** trade name of product and units (g or oz. for dry products / oz. for liquid)

Tank #1

Carryover Tank Info (All relevant mix information including: date mixed, gallons carried over, and target species.)

_____

OR ***New Mix:***

Pesticide: _____ Quantity: _____ Water: _____

Pesticide: _____ Quantity: _____ Volume mixed: _____

Pesticide: _____ Quantity: _____ + Carryover from Previous Tank: + _____

Adjuvant: _____ Quantity: _____ = Total Gallons in Tank: = _____

Adjuvant: _____ Quantity: _____ - Total Gallons Sprayed Today: - _____

Adjuvant: _____ Quantity: _____ = Gallons Remaining in Tank: = _____

Area treated (circle): Woodland / Wetland / Prairie / Parking lot / Other-list _____

Application method (circle): Foliar / High volume foliar / Basal bark / Cut stump / Bare ground / Boom / Other (list) _____

Species controlled _____

Tank #2

Pesticide: _____ Quantity: _____ Water: _____

Pesticide: _____ Quantity: _____ Volume mixed: _____

Pesticide: _____ Quantity: _____ + Carryover from Previous Tank: + _____

Adjuvant: _____ Quantity: _____ = Total Gallons in Tank: = _____

Adjuvant: _____ Quantity: _____ - Total Gallons Sprayed Today: - _____

Adjuvant: _____ Quantity: _____ = Gallons Remaining in Tank: = _____

Area treated (circle): Woodland / Wetland / Prairie / Parking lot / Other-list _____

Application method (circle): Foliar / High volume foliar / Basal bark / Cut stump / Bare ground / Boom / Other (list) _____

Species controlled _____

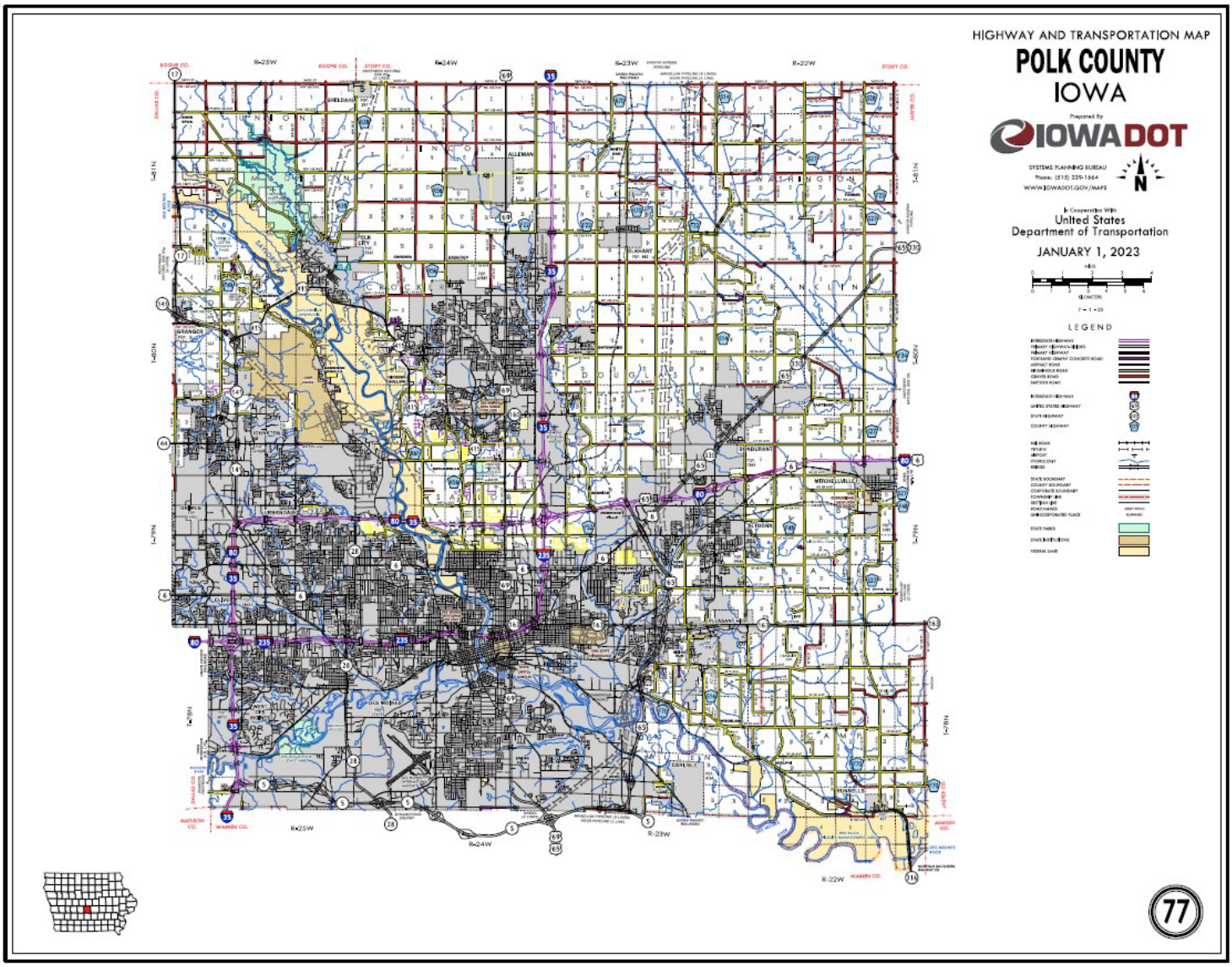
Equipment used: (spray rig description) _____

Comments & Application Location: Mark map on reverse

_____
Signature of Individual Completing Form

Appendix H. Maps

Polk County Area Map



Appendix I. Resolution

Res. No. 108-24
May 21, 2024

RESOLUTION

Moved by Van Oort, Seconded by Hockensmith that the following Resolution be adopted:

WHEREAS, Polk County hired a Road and Trailside Biologist in 2023 to develop and implement an Integrated Roadside Vegetation Management (IRVM) Plan; and

WHEREAS, IRVM incorporates the management of vegetation in road and trail right of way properties to improve safety, wildlife habitat, and water quality; and

WHEREAS, the IRVM Plan was written following an assessment of current activities and input from Polk County Public Works and Conservation Staff; and

WHEREAS, if approved by the Polk County Board of Supervisors, the plan will be submitted to the Iowa Department of Transportation (IDOT) for approval; and

WHEREAS, once approved by IDOT, the County will begin implementing the Plan and be eligible for state grants and funding opportunities to assist with purchases such as seed and equipment.

BE IT ~~FURTHER~~ RESOLVED Polk County, Iowa approves the Integrated Roadside Vegetation Management Plan and authorizes Public Works to submit the plan to the Iowa Department of Transportation on behalf of Polk County.

Approved this 21st day of May, 2024.

POLK COUNTY, IOWA

Angela Connolly, Chair
Polk County Board of Supervisors

RECOMMENDED FOR APPROVAL:

Bret VandeLune, Director
Polk County Public Works Department

APPROVED AS TO FORM:

Kimberly Graham
Polk County Attorney

Assistant County Attorney

ROLL CALL FOR ALLOWANCE

Matt McCoy	Yea	Nay
Robert Brownell	Yea	Nay
Tom Hockensmith	Yea	Nay
Steve Van Oort	Yea	Nay
Angela Connolly	Yea	Nay

MAY 21 2024

ALLOWED BY VOTE OF BOARD Yea 5 Nay 0

CHAIRPERSON

Above tabulation made by

#27