

# **Integrated Roadside Vegetation Management Plan**



**Black Hawk County**

FEBRUARY 2024

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# 1. Preface

In 1988 Section 314.22 on Integrated Roadside Vegetation Management was added to the Iowa Code. “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.”

Black Hawk County supports the objectives and initiatives of IRVM.

## Update/Version

Version Date: January 2024

Previous Version: April 2017

## Contributors to the Plan

Plan developed by Griffin Cabalka, the Black Hawk County Integrated Roadside Vegetation Manager.

With Support from the Black Hawk County Board of Supervisors and Catherine Nicholas, the Black Hawk County Engineer.

## 2. Executive Program Elements

### Executive Summary

The primary goal this year is to use current practices and past successes and failures to improve all facets of the IRVM plan. Black Hawk County's main goal is to utilize the new IRVM manager's knowledge, experience, and ideas to apply new programs and tactics to better manage the right of ways. The IRVM Technical Manual and advice from the advisory board and fellow roadside managers will be a reference and used to assist with the work and how the work is done. Conducting a roadside inventory will greatly aid the path that is taken to create an IRVM plan for Black Hawk County. A map of Black Hawk County can be found in Appendix A.

### Goals

The goal of the Black Hawk County Integrated Roadside Vegetation Management (IRVM) Roadside Manager is to re-establish the IRVM program that was in effect in previous years. It is the intent of the Roadside Vegetation Manager to update procedures and equipment and do a better, more efficient job to monitor roadsides for noxious weeds, brush and all safety concerns from the general public that are addressed in §314.22-Integrated Roadside Vegetation Management and §317-Iowa Weed Law of the Code of Iowa. Roadway corridors' prime purpose is to transport people and goods safely and efficiently.

The primary goal of roadside vegetation is to hold soil in place by reducing erosion. This vegetation must be managed in a way that allows for a safe recovery area for vehicles that leave the roadway, meet minimum sight requirements for vehicles, manage storm water runoff, and control Iowa's noxious weeds. A second goal is to identify the equipment needed for the IRVM department and acquire said equipment. A third goal is to implement the Roadside Management Plan and make necessary changes that best address the needs of Black Hawk County. A long-term goal is to reduce roadside maintenance by the establishment of a strong plant community using Iowa's native vegetation.

### Program History

Through employment changes over several years there has been a lack of attention to roadside vegetation requirements and Black Hawk County is in need of an IRVM plan with updated thinking, tools and equipment. The Secondary Road Department has continued to cut brush as time and weather allow. Some brush spraying is done using a tank in a truck with a person spraying brush with a wand. Vegetation along guardrails is sprayed to control plant growth. Roadside mowing occurs two times per year on hard-surface roads with two six-foot swaths being mowed. On gravel roads, one six-foot swath is mowed up to two times per year. Spot spraying of noxious weeds, guardrails and cut stumps with herbicides also occurs.

During the 2016 budget process the County Engineer proposed to the Board of Supervisors to recommit to a roadside vegetation plan and the need for a Roadside Vegetation Manager. A part

time Roadside Vegetation Manager job description was created, and the job was posted in July 2016. The Roadside Manager began employment in August 2016. This position was split part time between doing IRVM activities during the spring, summer, and fall and moved to a plow truck in the winter months to aid in snow removal with secondary roads. This position sparked an interest in getting a full-time position and in the summer of 2022, we hired our current Roadside Biologist.

## IRVM Decision Making Process

The full-time Roadside Manager decides the department's day-to-day operations, sets priorities, carries out the business management duties, and performs the needed work. The Roadside Manager is also responsible for managing and maintaining the IRVM budget and serves as the County Weed Commissioner. The Roadside Manager's duties are outlined further in the Black Hawk County Employee Job Description (Appendix F).

## Program Type

The Black Hawk County IRVM Manager is in the Engineering Department under the supervision of the County Engineer, IRVM advisory board, and works alongside the Secondary Roads Superintendent. The Roadside Manager will work in cooperation with the Secondary Roads Department to manage vegetation on county roadsides right-of-way, reduce herbicide applications and noxious weeds, and promote native vegetation.

## 3. Jurisdictional Recognition and Approval

### Management

The full-time Roadside Manager decides the department's day-to-day operations, sets priorities, carries out the business management duties, and performs the needed work. The Roadside Manager is also responsible for managing and maintaining the IRVM budget and serves as the County Weed Commissioner. The Roadside Manager's duties are outlined further in the Black Hawk County Employee Job Description (Appendix F).

### Board of Supervisors

The Roadside Manager, acting as the County Weed Commissioner, presents the Board of Supervisors an annual report detailing herbicide use. He will also recommend equipment evaluations, personnel changes, and other pertinent facts to the County Engineer during budget preparation. See the Statement of Support in Appendix E.

### Iowa Code and Administrative Rules – State Laws and Regulations

Black Hawk County's IRVM plan will be directed by laws and regulations cited in the *Code of Iowa*. Examples include, but are not limited to:

1. 314.17 Mowing law-no mowing of Right-of-Way before July 15
2. 314.19 Reseeding Open Ditches
3. 314.21 Living Roadway Trust Fund (LRTF)
4. 314.22 Integrated Roadside Vegetation Management
5. 317 Iowa Weed Law
6. 318.3 Obstructions in Highway Right-of-Way

### Local Laws and Regulations

Iowa Code 314.17: [Iowa Mowing Law for Roadsides | Black Hawk County IA](#)

Mowing and Wildlife: [Mowing and Wildlife | Black Hawk County IA \(iowa.gov\)](#)

Managing Roadsides for Bees and Butterflies: [Roadsides DRAFT-04-web.pub \(iowa.gov\)](#)

Chapter 317 of the *Code of Iowa*: [Iowa Noxious Weeds and the Iowa Weed Law | Black Hawk County IA](#)

Iowa Code 318: Obstructions in the ROW: [3183 \(iowa.gov\)](#)

Dust Control: [DustControlPolicy \(iowa.gov\)](#)

Snow Removal: [Snow Removal | Black Hawk County IA \(iowa.gov\)](#)

## Permitting

Field Entrance and Driveway Permits and Excavation within the Right-Of-Way Permits (Appendix G) are obtained at the County Engineer's Office. Applicants complete the appropriate permit which is reviewed by the Road Supervisor with final approval by the County Engineer. Once approved, the permit is issued to the individual and a copy is filed in the Engineer Department. After the work is completed, the Roadside Manager will inspect to see if the area in the right-of-way needs to be seeded.

## Obstructions, Nuisance, and Enforcement

### Obstructions

Around the county there are several areas where visual obstructions are present. This is due to the absence of a full-time Roadside Biologist for a period time. These areas of obstructions occur in ROW's, driveways to homes, over hanging trees, and tall species of noxious weeds.

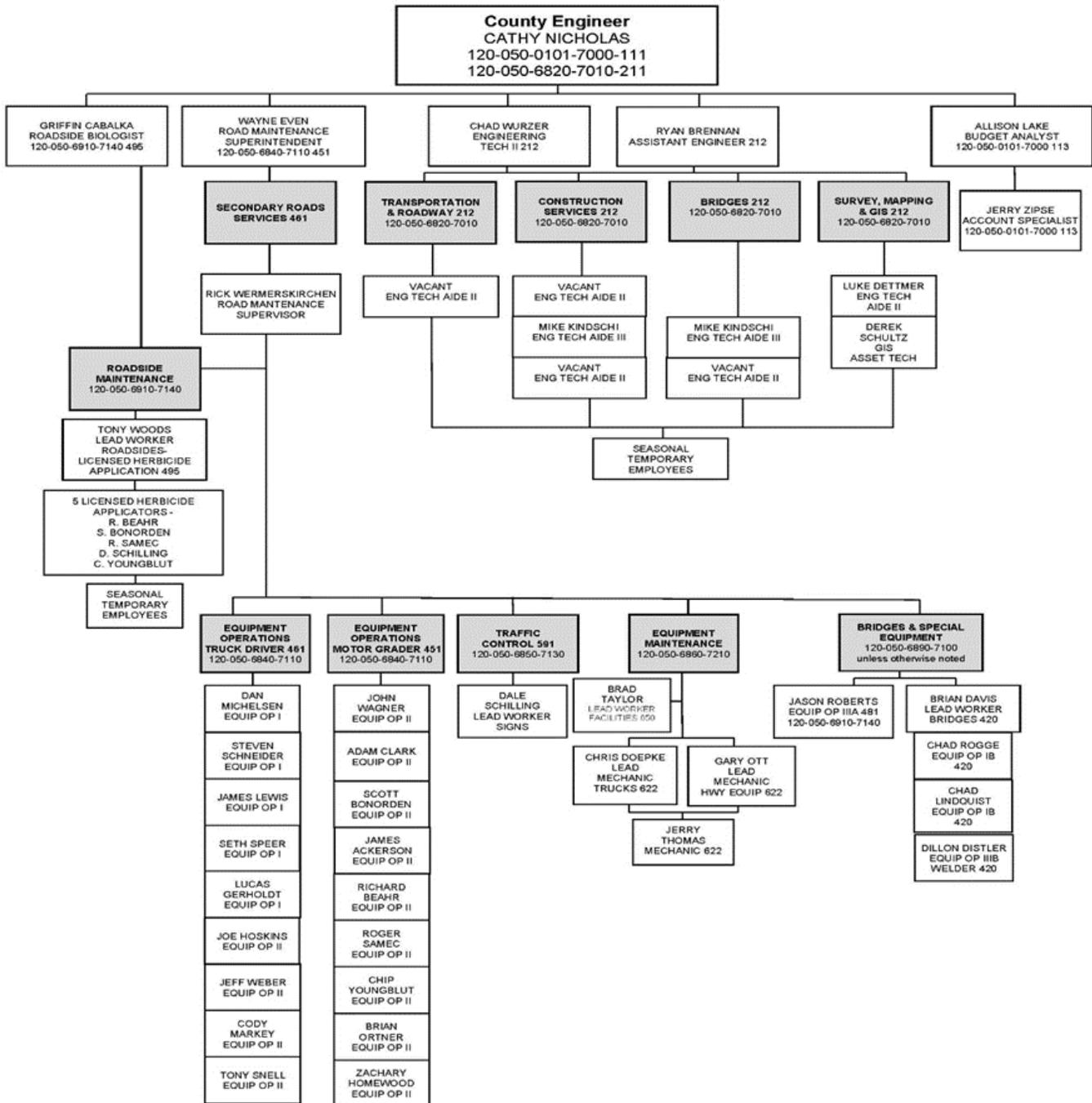
### Nuisance and Enforcement

There are several noxious and nuisance weed, tree, and brush species that have been found since the new Roadside Biologist has started. Examples of these species are Canada Thistle, Japanese Knotweed, Curly Doc, Giant Ragweed, Siberian Elm, volunteer Cottonwood and Ash species, Buckthorn, and Honeysuckle. Nuisance weeds, trees, and brush are being manually and chemically managed throughout the county. Enforcement on privately owned land is done in the county by the appointed Weed Commissioner where they have the full extent of the law under Iowa code 317.1a and Iowa Agriculture and Land Stewardship chapter 58.

# 4. Program Organizational Structure

Figure 1. Staff Organization Chart

BLACK HAWK COUNTY ENGINEER'S OFFICE ORGANIZATIONAL CHART



## Staffing Needs

The Roadside Manager is currently the sole employee for the IRVM Program. This individual will need to stay current with the latest developments in roadside management practices. To help achieve this, the roadside manager will consult with Roadside Managers in other counties, attend roadside and prairie conferences, and visit with the staff at the Tallgrass Prairie Center at the University of Northern Iowa. This individual will need to have continuing instruction courses to fulfill the responsibilities as Black Hawk County's Weed Commissioner and to maintain the pesticide applicator's license.

The Roadside Manager will require assistance from the Roadside Maintenance Lead Worker, Summer Internship, and Secondary Roads staff with spraying, maintenance mowing, prescribed burning, brush cutting, hydro seeding and some broadcast seeding. This will allow for more work to be done in a timely manner and will be important for safety reasons.

## 5. Public Involvement

### Advisory Board

Developing an advisory board will be a valuable asset for providing direction for the IRVM program. The committee members will need to have an interest in conservation and/or understanding of IRVM and attend 2 meetings throughout the year. This committee will help drive the priorities of the IRVM Department. This committee will also be useful in educating the public about the benefits of IRVM. Members on the committee could include: a county supervisor, county conservation board director/member, county engineer, county roadside manager, county extension, public, and landowner/farmer.

### Education and Outreach

As Black Hawk County begins developing and implementing an IRVM plan the opportunity to educate and involve the public will be critical to moving the plan forward as well as to the future success of the plan.

Landowners and the public will need to be educated about the benefits of IRVM. Knowing that this program will provide long-term benefits to the public should help sell the program and lead to the overall success of the program. Different ways to help educate the public will be providing public presentations, brochures and information to local media and the addition of the IRVM Plan information to the county's webpage.

## 6. Inventory and Analysis

### Natural Resources

The last roadside survey completed in Black Hawk County was in 2010. With the Roadside Manager and a new IRVM Plan in place, a new inventory will be done in the 2024 fiscal year. The need for roadside inventory is a critical part of planning, mapping, and management of right of ways in Black Hawk County. Items to be included in the inventory are vegetative cover, native vegetation stands, weed concerns, brush, encroachment, bare areas, and areas of erosion. These inventory items will aid in implementing future IRVM plans and help identify native plant communities that would benefit from prescribed burns.

### Equipment

Black Hawk County's current equipment is aging and in need of replacement. The Roadside Manager will work with the County Engineer to decide what equipment is needed and will begin prioritizing to ensure funds are available for purchase. An important funding source will be applying for and obtaining grant money through the Living Roadway Trust Fund.

**Table 1. Inventory of IRVM Equipment**

#	Item	Condition
1	#52 1995 Ford 4WD Pickup	Poor
2	#62 1994 ADCO Allis Tractor	Fair
3	#400 1985 Flatbed Trailer	Good
4	#200 1985 Bowie Aero Hydro Mulcher	Fair
5	#201 1985 Bowie Aero Hydro Straw Blower	Fair
6	1990 Truax 6 Point Seed Drill	Fair
7	#830 100 Gallon Pick Up Box Wand Sprayer (Gas)	Good
8	#831 100 Gallon Pick Up Box Wand Sprayer (Gas)	Excellent
9	#832 50 Gallon UTV Sprayer	Excellent
10	#804 825i Gator UTV	Excellent
11	#833 Dew Drop No-Till Drill	Excellent

# 7. Program Operations

## Annual Operations

- ▶ January
  - Present Weed Commissioner Report to the board of Supervisors for approval
  - Sign up for Weed Commissioner Conference (March)
  - Review management plan
  - Perform equipment maintenance
  - Complete calendar year-end report
- ▶ February
  - Order herbicide
  - Perform equipment maintenance
  - Review IRVM plan, update, and send to IDOT
- ▶ March
  - Weed commissioner appointment due to BOS
  - Publish noxious weed process in all County newspapers
  - Spring seeding (weather permitting)
  - Order hydro mulch for spring use
  - Pick up seed from Tallgrass Prairie Center
  - Interview and hire Roadside Technician
  - Prescribed burning begins in late March
- ▶ April
  - Seed all fall and winter projects
  - Begin bare ground herbicide applications
  - Prescribed burning continues
  - Prescribed burning of re-construction projects
  - Burndown herbicide spray re-construction projects
- ▶ May
  - Finish spring seeding
  - Finish bare ground applications
  - Start weed and brush rotation
  - Prescribed burning continues
  - Maintenance mowing of 1<sup>st</sup> year and 2<sup>nd</sup> year seedings begin

- ▶ June
  - Continue weed and brush spray rotation
  - Search hard surface for thistle
  - Some seeding when not spraying
  - IRVM Plan due June 1st
  - Maintenance mowing of 1<sup>st</sup> and 2<sup>nd</sup> year seedings continues
- ▶ July
  - LRTF grant review
  - Herbicide spraying
  - Second burndown spray application on re-construction projects
  - Ditch clean out seedings
- ▶ August
  - Regional Weed Commissioner meeting
  - Herbicide spraying
- ▶ September
  - Continue weed and brush spray rotation
  - Start fall seeding projects
  - Fall brush and tree cutting starts
  - IRVM Roadside Conference
  - Assess primary needs for next fiscal budget
- ▶ September
  - Continue weed and brush spray rotation
  - Start fall seeding projects
  - Fall brush and tree cutting starts
  - IRVM Roadside Conference
  - Assess primary needs for next fiscal budget
- ▶ October
  - Fall seeding (top priority)
  - Brush and tree cutting
  - Continue education applicator license
  - Winterize sprayer
  - Submit budget needs for next fiscal budget

- ▶ November
  - Finish fall seeding
  - Brush and tree cutting
  - Update chemical inventory
  - Winterize all spray rigs
- ▶ December
  - TAP seed order due to UNI
  - Van Diest Chemical Seminar
  - Brush cutting
  - Begin Weed Commissioner Report

## Work Area Types

Black Hawk County IRVM works primarily in rural areas. The most appropriate vegetation will be chosen for given areas.

## Vegetation Types for Specific Users

Rural ROW cleanouts, prairie re-construction, and engineering projects will be seeded with native grass and wildflower seed. Vegetation areas adjacent to rural residences will be seeded with cool season grasses unless other arrangements are made.

## Special Projects

### Educational Roadside Prairies

Throughout the county along hard surface roads there are several large sections of ROW. These larger areas consist of 2 to 6 acres of ROW in size, for example a future educational roadside prairie is planned along a bridge project. The prairie would be located along both sides of the road at each corner of a bridge and corners of intersection. These areas will be surveyed and prepared using the prairie maintenance and reconstruction standard. Once the prairie is planted an educational sign will be displayed for road users to read about the importance of IRVM, pollinators, living snow fence, filtration of chemicals and nutrients, and importance of prairie and soil erosion.

## Training

- Weed Commissioners Invasive Species Conference
- IRVM Roadside Conference
- Van Diest Chemical Seminar

## Safety

Black Hawk County has implemented several policies and training to keep staff safe in the workplace. The Engineering and Secondary Roads Department implements a boot policy and high visibility vest for all staff to mitigate the risks when working around the county. SDS sheets located in our Secondary Roads Department shops and in each spray truck to insure reference sheets in case of an emergency. Black Hawk ensures that all chemical applicators have their chemical license through the state of Iowa and adequate training on how to use, handle, and store chemicals in a safe and proper manner. Every person within the Secondary Roads Department is trained in chainsaw, woodchippers, and other forestry related equipment.

## 8. Methods

The IRVM manager's knowledge, expertise, past experiences, and technical manual will be utilized in the development of the Management Plan as well as the processes involved in the plan. Items include equipment, obtaining funding for the equipment, day-to-day operations, how to seed different areas of the roadsides, what seed to use, erosion control measures, maintenance of new native seedings, weed control, and using fire as a management tool.

Meeting and developing contacts with roadside managers in other counties are also important. These Roadside Managers have experience that can be used to outline items to address and how to go about implementing the plan. The best way to learn and gather experience will be doing the work and using the manual and advice obtained from other Roadside Managers.

The County Burn Plan can be found in Appendix C and the Maintenance Standard in Appendix D.

### Vegetation Establishment

#### Site Preparation

Appropriate site preparation, as the terrain allows, will increase the success of the planting. Site preparation may include some or all the following methods: mowing, spraying, disking, and cult packing. Hydro mulching and seeding is the main method of seeding that is used to establish plantings. However, seeding with a drill seems to be a more effective way to get new grasses to germinate and grow with greater seed to soil contact. No-till drill will be utilized when site conditions and grades are favorable.

#### Seed Mixes and Rates

Native seed will need to be acquired to be used as a means to control long-term erosion of ROW clean-outs. Obtaining TAP seed through the IRVM Program at UNI will be a primary source for native seed. In addition to the native seed, cover crops will be planted to help hold the soil in place until the native plants are established. In the spring and summer, oats, buckwheat, sorghum Sudan grass, wild long grain rice will be used. In the fall, winter rye or triticale will be used. These cover crops are considered nurse or companion crops. The seeding mixes and seeding rates in the IRVM Technical Manual will be used as guidelines. Any seeding rates included with the TAP seed will also be followed.

#### Seeding Techniques

The seeding method will be dictated by site conditions and slope. The site to be seeded will be inspected prior to any preparation or seeding work. This inspection will help determine what seeding method to use. If gullies, culverts, and other obstacles are present, a determination will be made of how large the area is and how much seed is needed.

On smaller areas with steep grades, hydroseeding will be used to apply seed, mulch, and water in one pass. On larger areas with steep to nominal grades, a two-pass approach with a hydro seeder may be used. The first pass will be the seed, minimal mulch, and sufficient water to cover the area to be

seeded. The second pass will be a higher rate of mulch, tackifier, and water. This two-pass approach will allow greater seed-to-soil contact, which should help improve seed germination rates.

On large areas with more level slopes, a drill may be used for the first pass. Drills do a better job of ensuring seed-to-soil contact than hydroseeding. To aid in germination and to help prevent erosion, a pass of oat straw or wheat straw will be applied with bale mulcher at the rate of 1 to 1 ½ tons per acre.

## Erosion and Sediment Control

Erosion control measures and hydro mulch may be needed as evaluated on a site-by-site basis. These could include rolled erosion control blankets, sediment logs, and filter socks.

## Vegetation Establishment Maintenance

To help reduce competition from weeds, the newly planted areas will be mowed when the weeds reach knee height as a general gage and weeds will be mowed at a height of 8 to 10 inches before weeds get too tall. This may need to be done two times during the first season, and possibly at a higher height in the second season. Native plants need at least two years before they can begin competing with weeds. When enough fuel is present, prescribed burns may be used to aid the establishment of the native vegetation.

## Noxious Weed and Brush Control

Weed control along roadsides will require a multi-pronged approach. The establishment of native vegetation on bare soil will help minimize weeds taking over the disturbed soil. The controlled use of mowing will help prevent weeds from seeding. Using herbicides to carefully spot-treat weeds in ¼ of the county will be needed to control certain noxious weeds.

Fire may also be used as a management tool to suppress weeds and lead to a healthier stand of native vegetation. Fire discourages the growth of invasive and woody plants. Fire invigorates the growth of native plants since nutrients are recycled.

Brush control along roadsides will also require a multi-pronged approach like weed control. A systematic approach will be needed to control brush. Brush needs to be controlled where visibility is reduced at any intersection. Also, the control of brush from the fore slope to ditch bottom should be managed countywide. As time and resources allow, additional areas of the ROW can be controlled for brush.

Brush cutting one quadrant ahead of that year's spraying quadrant will be done by Secondary Road crews as time and conditions. Stumps will be treated with herbicides to help prevent regrowth. Foliar applications of herbicides to brush will occur along with the control of noxious weeds in the quadrant behind brush cutting. A spray unit will be needed to apply herbicides selectively to control noxious weeds and brush. A map of management quadrants can be found in Appendix B.

## Ongoing Maintenance

Describe your procedures for ongoing maintenance. This may include site preparation, seed mixes and rates, seeding techniques, erosion and sediment control, vegetation establishment maintenance, planting evaluation and documentation, mowing, chemical control for noxious weeds, tree and brush control, prescribed burning, burning plan and records of previous burning, and erosion control.

## Urban vs Rural Implications

Here in Black Hawk County, there is a variety of Urban and Rural areas that are managed differently for native prairies, noxious weeds, and trees/brush. For native plantings, prescribed burning in rural areas are done up to the  $\frac{1}{4}$  of a mile radius unless the owner consents. For management of natives in urban settings we tend to mow rather than burn. Noxious weeds and trees/brush in urban areas are manually destroyed, where in the rural areas of the county herbicide spot spraying is the main mode of eradication.

## 9. Material Procurement

All equipment is purchased from a budget approved by the Board of Supervisors. The Roadside Manger will decide what is required to do daily tasks safely and efficiently.

### Sourcing

The Roadside Manager will be involved in ordering new equipment with the County Engineer and the final approval by the Board of Supervisors. LRTF funding and other grant sources will be used to help grow the department's equipment inventory.

Black Hawk County has been awarded \$52,369 in funding from the LRTF in the past which has been used to purchase a mulcher, UTV, hydro mulcher, seeder, small sprayers and some miscellaneous technical equipment as well as obtain spray equipment for setting up a spray truck, spray logger system, seed and chemical storage rooms, roadside inventory, new hydro-seeder, and round bale shredder.

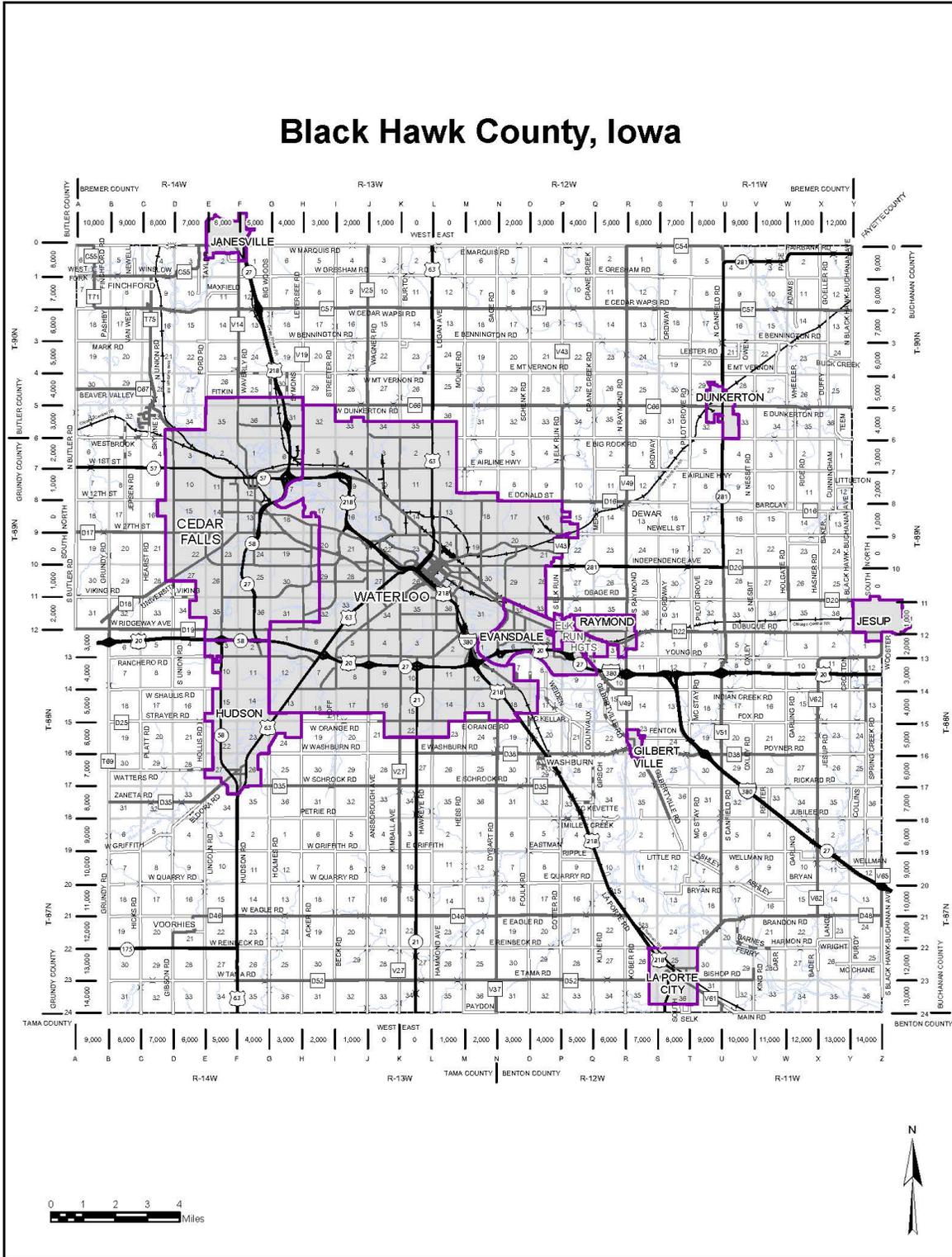
### Material Handling and Storage

Seed and all other IRVM equipment are stored in the west end of the truck storage building.

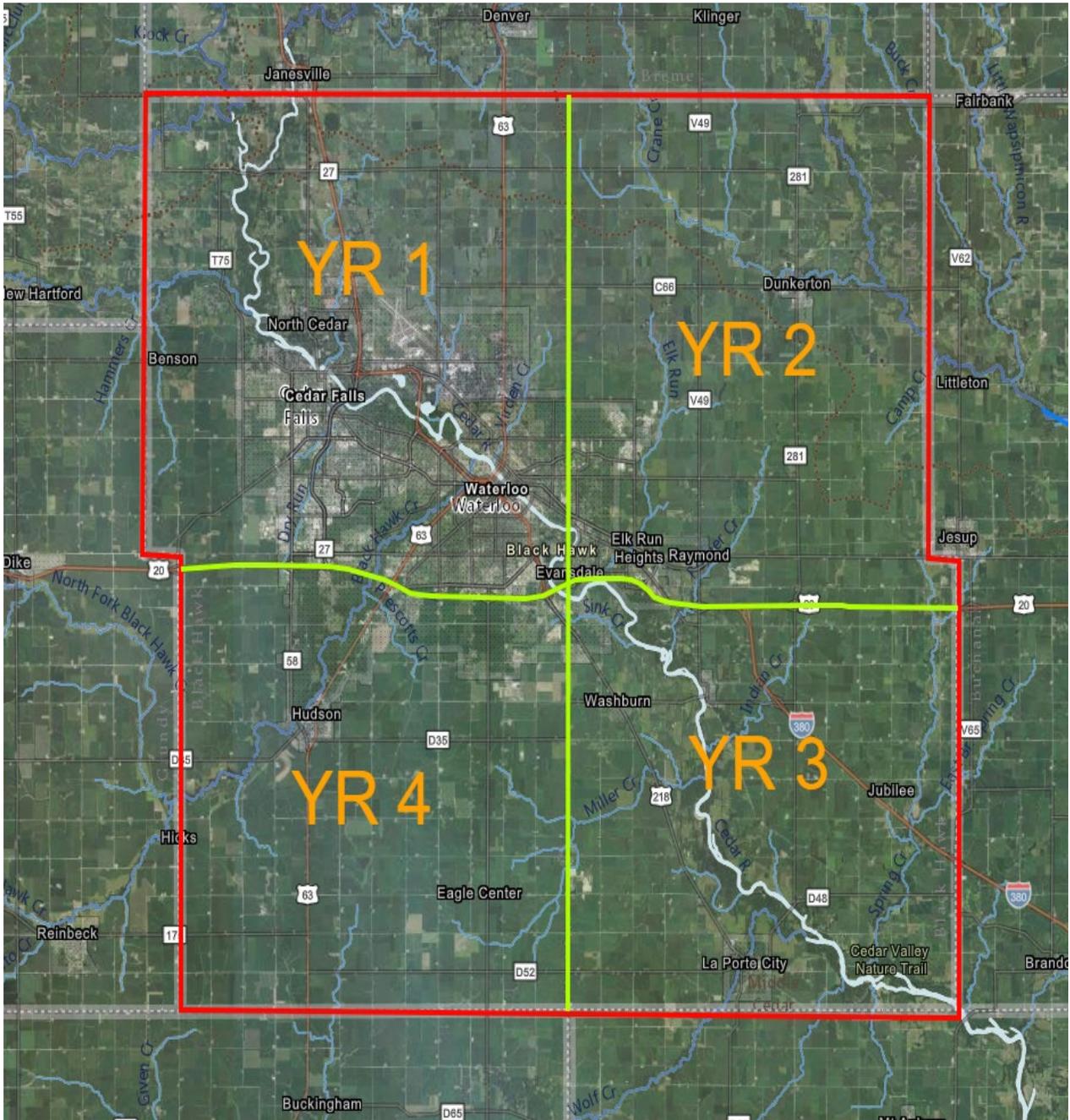
# Appendices

Appendix A. County Map

# Black Hawk County, Iowa



## Appendix B. Management Quadrant Map







**PRESCRIBED BURNING NOTIFICATION PLAN**

Crew Members	
Crew Members Present	

Name:	Telephone:
Address:	County:
City, State, Zip Code:	
Ranch Name (if any):	

Description of area to be burned:
Approximate acres to be burned:
Written description of location:
Projected time frame:
Date of previous burn:
Objectives to be accomplished through the prescribed burn:

**Ignition Plan**  
 Draw and write ignition plan and add as attachment to fire plan

Go-No Go Check List <small>If answer to any is NO, do not burn until corrected</small>			
Firebreaks prepared	Yes <input type="checkbox"/> No <input type="checkbox"/>	Adequate crew available	Yes <input type="checkbox"/> No <input type="checkbox"/>
Neighbors contacted	Yes <input type="checkbox"/> No <input type="checkbox"/>	Smoke management goals within prescription	Yes <input type="checkbox"/> No <input type="checkbox"/>
Fire departments contacted	Yes <input type="checkbox"/> No <input type="checkbox"/>	Crew briefed on plan and safety hazards	Yes <input type="checkbox"/> No <input type="checkbox"/>
Weather conditions within prescription	Yes <input type="checkbox"/> No <input type="checkbox"/>	Can burn objectives be met	Yes <input type="checkbox"/> No <input type="checkbox"/>
Equipment ready	Yes <input type="checkbox"/> No <input type="checkbox"/>	All hazards in unit identified	Yes <input type="checkbox"/> No <input type="checkbox"/>

Contact information:		
Rural Fire Department Name	Location	Phone No.
Forestry Division Office (for protection areas):		
Adjoining landowners:		

**Escaped Fire Plan**  
 1. If fire escapes all ignition stops until escape is contained, unless needed to control the fire  
 2. Use standard fire suppression methods to control escaped fire  
 3. If fire cannot be contained by standard methods other tactics will be used (i.e. backfires)  
 4. If other methods do not work or are not practical fire boss or designated person will call for assistance

This Prescribed Burn plan was prepared by:	
Name:	Date:



POST BURN EVALUATION

Wildlife Unit/Park/Forest: \_\_\_\_\_
Burn Unit Name: \_\_\_\_\_ County: \_\_\_\_\_
Location (Section, Township, Range): \_\_\_\_\_
Latitude/Longitude (http://touchmap.com/latlong.html): \_\_\_\_\_

A. Operational Data
Date of prescribed burn: \_\_\_\_\_ Acres burned: \_\_\_\_\_
Time ignition started: \_\_\_\_\_ Time ignition completed: \_\_\_\_\_
Time mop-up completed: \_\_\_\_\_
Fire Planner: \_\_\_\_\_
Burn Leader: \_\_\_\_\_
Apprentice Burn Leader: \_\_\_\_\_
Total number personnel in fire crew: \_\_\_\_\_

B. Weather & Vegetation Conditions
Vegetation stage (cured, transitional, green): \_\_\_\_\_
at start at completion
Wind speed \_\_\_\_\_
Wind direction \_\_\_\_\_
Temperature \_\_\_\_\_
Relative Humidity \_\_\_\_\_

C. Fire Summary
Type fire used (head, back, strip back, ring, combination): \_\_\_\_\_
Fire escapes or problems of note: \_\_\_\_\_
Summarize immediate results (litter reduction, areas of incomplete burn, etc.):
Recommendations for future burning or management:

Burn report completed by: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## Appendix D. Maintenance Standard

### Black Hawk County Prairie Planting & Maintenance Standard

- **Pre-Planting**
  - o Ditch Clean outs
    - Once the secondary roads crew is done with ditch clean out's there is some seed bed preparation to be done to loosen the hard pack from the bucket of the excavator. We do this with a small drag section, Harley rake, small 3 pt cultivator. This ensures good seed to soil contact for an ideal seed bed for the cover crop and native seeds.
  - o Prescribed Burn & Burn down herbicide spray for total native re-construction.
    - First do an early May burning to help suppress the cool season grasses as well as getting the dead duff layer off the landscape.
    - Second, after a few weeks after the prescribed burn spray a grass broad leaf herbicide mixture (Burn Down) when the new growth is at least 6 inches in height and no more than a foot. By targeting the young growth get a better kill on the plant because it is using all of it resources to grow new. This also ensure the plant is not too old and makes termination harder.
- **Planting prairie**
  - o Broadcast
    - Using a 3pt pto driven Vicon Seeder attached to a small tractor. This system can be calibrated so there is the correct seeded evenly in the ROW.
    - Hand broadcasting is the other method of seeding that is used to seed ROW. This is done by feeling where and how much seed is thrown out to cover the small area.
  - o No-till Drill
    - The drill is to be set a no greater than ¼ inch in planting depth, once the depth is set then need to calibrate the drill for 15 lbs. of native seed per acre and in the small seed box 4 lbs. of forbs per acre. The use of a no-till drill is some of the most effective and successful seeding strategies due to precise seed placement and seed to soil contact under ideal ROW conditions.
  - o Hydro-seed
    - When hydro-seeding one needs to fill with 700 gal. of water or until side wall line then one can add the 15 lbs. of native grasses and 4 lbs. of forb seed when on job sight. Once the seed is in the hydro-seeder 5 bales of hydro-mulch. This size of application can cover just shy of 1 acre of ROW and is also a safe and effective choice when ROWs are too steep or narrow for a no-till drill.

- **Spot spraying**
  - Why we spot spray
    - Once the two years of maintenance mowing's are complete and the prairies are now becoming established, spot spraying for invasives and tree species is the next objective. Spot spraying is an important way of getting rid of small patches of weeds, so they do not take over the native plants. Once those weeds are killed from spot spraying prairie plants will soon take their place and out compete the weeds.
  - When we spot spray
    - There can be several different types of weeds and trees in prairie plantings, however a good rule of thumb is when weeds and trees are actively growing in the springtime and in the fall when the weeds and trees are about to flower or when they are putting energy into their roots before the frost kills the plant/ leave drop.
    - Use of broadleaf herbicides on trees and broadleaf weeds and use grass selective herbicides when targeting invasive grasses.
  
- **Prescribed burns**
  - Why we have burns
    - Prescribed fire has many benefits for native prairie like rejuvenation of prairie plants, weed and tree suppression, promotes native forb production. The main reason for doing prescribed fire is to keep the prairie healthy and promote a healthy ecosystem.
  - When we burn
    - Timing of burning in the ROW is very important when keeping no-desirable cool season grasses, weeds, and trees out of the plantings in general burns can take place to control cool season grasses, weeds, and small trees from the last week in April to the middle of May.
  - What years to burn in
    - When establishing a native prairie, the ideal time to burn in in year 4 or 5 depending on the dead material load. This dead material load is the fuel for the fire and is what helps feed the fire. For prescribed fire after years 4 or 5 on an established prairie expect to burn every 2 to 3 years as the established prairie grows faster than a recently established seeding.

## **Timeline of new prairie seeding maintenance in a ROW after a fall seeding or a spring seeding**

### **Year 1**

- From time of seeding to late spring evaluate your seeding area to determine timings of mowing (knee high is the gage of when to mow)
- Mow seeding end of May at 8 inches tall if fall seeded
- Evaluate seeding depending on weather and rain fall and if the vegetation is knee high
- Mow seeding middle of June at 8 inches tall
- Evaluate seeding depending on weather and rain fall and if the vegetation is knee high
- Mow seeding beginning of July at 8 inches tall
- Stop mowing around the 1<sup>st</sup> of August
- Evaluate the stand in early fall

### **Year 2**

- Evaluate seeding depending on weather and rain fall and if the vegetation is knee high
- Mow seeding at the start of June at 8 inches tall
- Evaluate seeding after the mowing of the second year for any patches of annual weeds and spot mow those areas (Canada Thistle at the bud stage in June – July)
- Evaluate seeding in the fall

### **Year 3-5**

- Evaluate seeding yearly
- Spot spraying in established stands can start
- Evaluate seeding to determine fuel loads for future prescribed burns
- Prescribed burn in years 3,4, or 5 (with a burn management plan)

### **Year 5-10**

- Evaluate seeding yearly
- Spot spraying continues
- Evaluate seeding to determine fuel loads for future prescribed burns
- Prescribed burn in year 10 (with a burn management plan)

## Appendix E. Statement of Support

The Black Hawk County Board of Supervisors, Black Hawk County Engineer, and the Black hawk County Integrated Roadside Vegetation Manager come together in cooperation, common goals and shared ideas to manage roadsides in Black Hawk County by and through integrated roadside principals.

We realize that IRVM will be beneficial to our roadside management goals while being economically and environmentally beneficial.

We understand that working in unison toward improving roadside vegetation is the most efficient way to accomplish the goal of improved, safe, and wee free roadsides. These roadsides will also add to the habitat and natural beauty of Black Hawk County.

We hereby agree to manage Black Hawk County roadsides according to the provisions described within this management plan.

\_\_\_\_\_  
Linda Laylin, Chairman Board of Supervisors

\_\_\_\_\_  
Date

\_\_\_\_\_  
Catherine Nicholas, Black Hawk County Engineer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Griffin Cabalka, Roadside Vegetation Manager

\_\_\_\_\_  
Date

## Appendix F. Roadside Biologist Job Description

### BLACK HAWK COUNTY Job Description Roadside Biologist

**Position #:** 50-09-282-01  
**Job Title:** Roadside Biologist  
**Department:** Engineer  
**Pay Grade:** GS-16  
**FLSA Status:** Exempt

#### **BASIC FUNCTIONS AND RESPONSIBILITIES:**

Under general supervision of the County Engineer, develops and administers a program to control noxious weeds and promote desirable vegetation along Black Hawk County right-of-way and public drainage ditches. Responsible for supervising support staff engaged in roadside vegetation duties. Operates and maintains all equipment relating to roadside vegetation establishment. Works directly with other departments and the general public to provide educational training and recommendations for vegetation management.

#### **ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Must be capable of regular and predictable attendance at a specified location in order to perform assigned tasks.
- Performs roadside vegetation maintenance tasks and maintains control of invasive weeds, brush, and trees through mechanical and/or chemical methods, including herbicide spraying, mowing, cutting, and prescribed burning.
- Serves as Black Hawk County Weed Commissioner; maintains records and enforces Iowa's Noxious Weed laws.
- Coordinates with the budget administrator to develop and maintain budget for Black Hawk County IVRM program; assists with grant writing and budget planning.
- Promotes healthy re-growth and stabilization of vegetation disturbed by construction or roadside maintenance.
- Orders supplies and maintains inventory for roadside vegetation maintenance, including seed, chemicals, and replacing/purchasing equipment.
- Works with GIS staff to develop and maintain a mapping system to keep accurate records.
- Provides educational training and information to the public concerning roadside vegetation management techniques.
- Implements an Adopt-a-Roadside program, provides outreach to community regarding program.
- Supervises support staff on a variety of work including but not limited to noxious weed/brush control, mowing, prescribed burning, seeding, and equipment operation; ensures the use of proper safety devices and equipment.
- Performs erosion control projects including installation of erosion control blankets and other products.
- Collaborates with Conservation to share knowledge regarding noxious weeds, coordinate and maintain controlled burns.
- Performs manual labor and operates equipment in a variety of roadside construction and maintenance activities; inspects equipment to determine when maintenance is needed.
- Other duties as assigned.

#### **SUPERVISION RECEIVED:**

- Supervision is received from the County Engineer.

#### **SUPERVISION EXERCISED:**

- Functional supervision is exercised over support staff.

#### **QUALIFICATIONS:**

- Bachelor's Degree in biology, botany, horticulture, wildlife management or related field and at least two (2) years or related work experience, OR any equivalent combination of training, education and experience that provides the required knowledge, skills and abilities.
- Must also have a valid Iowa Commercial Driver's License (CDL) Type A – Tanker and Air Brake Endorsement or the ability to obtain the endorsement within one (1) year from date of hire.
- Must have a valid State of Iowa Commercial Pesticide Applicator's license – Categories 1A – Agricultural Weed Control, 3OT – Ornamental and Turf Pest Control, 5 – Aquatic Pest Control, 6 – Right of Way Pest Control or the ability to obtain the license within six months from the date of hire.
- Must have a valid certification or completion of training in National Wildfire Coordinating Group S-130 – Firefighter Training, S-190 Introduction to Wildland Fire behavior training and US Army Corps of Engineers Regulatory IV Wetland Delineation or the ability to complete the training within one year from the date of hire.
- Demonstrated job-related experience in a governmental environment is preferred.
- Knowledgeable of state, federal, and local laws, rules, and regulations, and their application to vegetation management programs.

- Ability to read/comprehend written materials, e.g., policies, procedures, operating instructions and safety notices
- Ability to make accurate calculations, keep accurate records and maintain organized documentation.
- Ability to establish and maintain effective working relationships with co-workers, supervisors, contractors and members of the public.
- Ability to work independently with limited supervision and be a self-starter; assume ownership in setting goals, organizing work, and completing assigned tasks.
- Excellent written and verbal communication skills are required.
- Good diagnostic and trouble shooting skills to solve work problems.
- Good analytical skills in applying guidelines, policies, and precedents and in adapting standard methods to fit facts and conditions.
- Must be proficient in computer software applications.
- Must have a valid Iowa Driver's License and be insurable under county guidelines.

**WORK ENVIRONMENT AND PHYSICAL DEMANDS:**

The work environment and physical demand characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. Refer to the "Essential and Marginal Function Analysis" statement for a complete description of essential functions and functional requirements.

- Position requires the frequent exposure to undesirable conditions which may include heat, cold, live or dead animals, human or animal waste, odors, filthy environments and insects.
- Position requires frequent walking up and down steep slopes of ditches or on rough and uneven surfaces or ground such as sloping terrain, plowed or furrowed areas or construction sites; frequent driving of a vehicle with automatic controls
- Position requires frequent use of heavy equipment, power and hand tools and exposure to loud noises.
- Position requires frequent stooping, bending, reaching, lifting and carrying of items up to 50 lbs.



Office Use Only

This Permit Expires On	Sight Distance Left	Sight Distance Right	Permit Number
Road Name	Section No.	Township (87, 88, 89, 90) N	Range (11, 12, 13, 14) W
Location is approved as requested Yes                      No		Location should be moved to:	
Required Culvert Size	Culvert Length	Side Slope	Top Width
Remarks			

Site Reviewer Signature \_\_\_\_\_ Date \_\_\_\_\_

Black Hawk County Engineer \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Acceptance of Work \_\_\_\_\_ Date \_\_\_\_\_

**SECTION ONE – APPLICATION**

Any property owner desiring an access to any county road shall make written application on the prescribed form available through the Office of the County Engineer. This permit shall expire one year after date of approval by Black Hawk County, if proposed driveway or entrance construction is not completed within that time.

**SECTION TWO – LOCATION AND REVIEW**

All field entrances and driveway applications shall be reviewed by the County Engineer or representatives for location, safety, and drainage. Each access shall be located to ensure a minimum sight distance of 550 feet. One access will be allowed for each parcel; unless it is divided by a non-crossable obstruction (streams, RR, etc.)

**SECTION THREE – CONSTRUCTION**

All field entrances and driveways shall be constructed in a workmanlike manner to acceptable standards with privately owned equipment. See diagrams below. Top width: 18 ft. to 40 ft. Side Slopes: 3:1 – non-paved county roads; 6:1 – paved county roads. Profile slope: 2% - 4% down from shoulder; 10% Maximum grade.

Field entrances and driveways should approach the roadway on an uphill grade. Field entrances and driveways approaching the roadway on a downhill grade shall be shaped to drain surface water before reaching the shoulder line of the roadway. This prevents runoff onto the road and helps with snow removal and maintenance. Maximum grade for a field entrance or driveway shall be 10%.

The Applicant must seed all disturbed areas upon completion of project. The County recommends a diverse seed mixture; for more information please call our office.

**SECTION THREE – CONSTRUCTION CONTINUED**

Fill for accesses shall be soils only. NO BROKEN CONCRETE, STONES, BRICKS, TILE, WOOD, OR OTHER RUBBLE WILL BE ALLOWED. Driveways to be used as home drives shall be surfaced with 2" of Class A crushed rock.

**SECTION FOUR – PIPE**

The County Engineer will determine size and length of pipe required at the time of application review. Acceptable pipe materials are new corrugated metal pipe and reinforced concrete pipe which meet the standard specifications of the Iowa DOT. Placement of the pipe is to be at the toe of the back slope. List of available suppliers provided upon request.

**SECTION FIVE – COST**

Owner assumes all costs associated with the installation or reconstruction of a field entrance or driveway.

**SECTION SIX – MAINTENANCE**

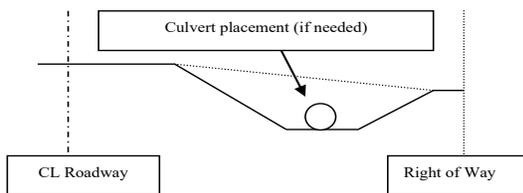
Black Hawk County will only assume maintenance of the drainage structure, upon inspection and acceptance as dated on this permit. Owner assumes maintenance of the surface. County will return surface of entrance or drive to original condition, in the event of pipe maintenance. County will not rock beyond roadway shoulder line.

**SECTION SEVEN – SURFACE PAVING**

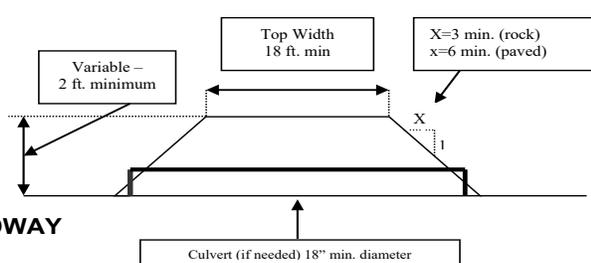
The owner is to call the Engineer's Office for inspection of culvert pipe 2 weeks prior to placing hard surface. The County will not replace or maintain paved surfaces.

**COUNTY MAY REMOVE ANY ENTRANCE NOT BUILT TO THESE CONSTRUCTION SPECIFICATIONS**

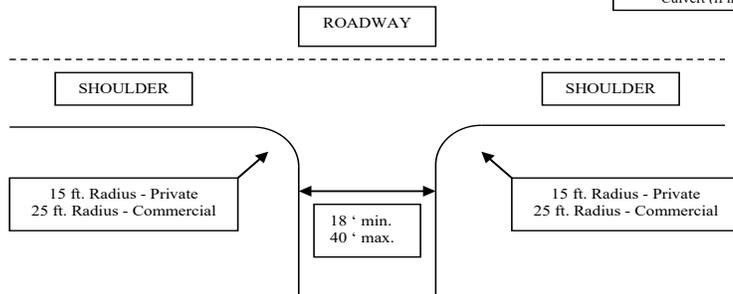
**PROFILE PARALLEL TO ROADWAY**



**PROFILE PERPENDICULAR TO ROADWAY**



**PLAN VIEW OF ROADWAY**





**PERMIT FOR UTILITY WORK WITHIN THE RIGHT-OF-WAY**

**Black Hawk County Engineers Office**  
 316 East 5<sup>th</sup> Street, Room 211 Waterloo, IA 50703  
 Phone: (319) 833-3008 Fax: (319) 833-3139  
 Email: Permits@co.black-hawk.ia.us

Permit Number:
----------------

**THE BLACK HAWK COUNTY BOARD OF SUPERVISORS hereby grants permission to:**

Owner/Applicants Name \_\_\_\_\_ Address \_\_\_\_\_

Phone Number	Fax Number	City	State	Zip
Cell Phone Number		Email Address		

Contractor's Name \_\_\_\_\_ Address \_\_\_\_\_

Phone Number	Fax Number	City	State	Zip
Cell Phone Number		Email Address		

**To place overhead/buried conduit, cable, gas pipe or water pipe on the County right-of-way described as follows:**

Road Name(s)	Section No.	Township (87, 88, 89, 90) N	Range (11, 12, 13, 14) W
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Location \_\_\_\_\_

**10. APPLICANT RESPONSIBILITIES:**

1. Applicant **MUST** contact **Iowa One Call** for utility locations within the excavation area. A request can be made by calling (800) 292-8989 or on their website at Iowa One Call - Contractors and requires at least a 48 hour notice. **NO EXCAVATION MAY BEGIN UNTIL LOCATIONS HAVE BEEN MARKED.** Keep the "Iowa One Call Work Request Number" for this number is your confirmation that a work request was made.
2. Black Hawk County must be notified at least one week prior to the beginning of work so that Secondary Roads can relocate windrow, as required.
3. The Applicant will at any time subsequent to placing this overhead or underground construction at their own expense, relay or reconstruct the facility and/or connecting facilities as may be necessary to conform to new grades, alignment or widening of right-of-way resulting from maintenance or construction operations by Black Hawk County or its representatives.
4. The Applicant shall take all reasonable precautions during the construction and operation of the facility to protect and safeguard the lives and property of the traveling public and adjacent property owners. This provision is intended to include any damage to fences, watersheds, tiling, and drainage construction owned by either Black Hawk County or adjoining property owners.
5. The Applicants operations and the construction and maintenance of said facilities shall be carried on in such a manner as not to interfere with or interrupt traffic on said county roads.
6. Utilities to be placed along **Paved Roads:**
  - a. Shall be installed along the top of the back slope of the right-of-way.
  - b. Shall not cut or disturb any drainage tiles. The Applicant must bore under tile lines a minimum of thirty-six (36) inches.
  - c. All trenches shall be backfilled and compacted.
7. Utilities to be placed along **Gravel Roads:**
  - a. May be installed along the shoulder. All trenches in the shoulder shall be backfilled with gravel and compacted.
  - b. Shall not cut or disturb any drainage tiles, culverts or bridges. The Applicant must bore under the tiles and culvert a minimum of forty-eight (48) inches.
  - c. Utilities may be installed around a culvert or bridge. A minimum of 5 feet shall be maintained from all sides of the structure.
8. The minimum depth of cover shall be as follows. Additional depth shall be added if ditch has silted. Additional depth shall be thickness of the deposited silt.
 

Telecommunications	36"	Gas and Electric	48"	Water and Sewer	60"
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9. **Roadway Crossings**
  - a. All utilities should cross the road at a 90° angle.
  - b. All **Cross Road Trenches and Bore Pits** on **Gravel Roads** shall be backfilled in layers not more than eight (8) inches in loose thickness. Each layer shall be thoroughly compacted before the next layer is placed. The top four (4) inches shall be DOT Class "A" road stone, alternatively the utility can be bored.
  - c. All **Paved Roads** shall have the utility bored.

1. The Applicant must seed all disturbed areas upon completion of project. The County recommends a diverse seed mixture; for more information please call our office.
2. Overhead utility poles shall be placed near the top of the back slope of the right-of-way. Any wires crossing a road should be a minimum of twenty (20) feet above the roadway surface.
3. Any applicant or contractor doing work within the county's right of way must restore the area to the previous condition and leave the area in a clean and neat condition. Any future complaints about cut or damaged tiles or poorly finished slopes or surfaces will be directed back to the applicant or their contractor to be corrected.

**10. INSURANCE REQUIREMENTS:**

1. The applicant shall meet Black Hawk County's minimum insurance requirements. A Certificate of Liability Insurance with **ALL** of Black Hawk County's requirements must be on file with the County Engineer's office before the permit can be approved. Black Hawk County requires General Liability in the amount of \$1,000,000 per occurrence and \$2,000,000 aggregate, automobile insurance in the amount of \$1,000,000, statutory limits for Workers Compensation. It is further understood that Black Hawk County must be named as Additional Insured for General Liability and also Automotive Liability and Black Hawk County (not the Engineer's Office) must be listed as Certificate Holder.
2. The applicant shall provide the County Engineer with proof of said insurance when requested, but, in any event, no later than annually and as long as this agreement exists. Failure of the applicant to maintain insurance shall not relieve said applicant of the indemnification duties hereunder, but may be grounds for termination of this agreement.

**11. HOLD HARMLESS: The Applicant shall indemnify and hold harmless Black Hawk County**

- a. its agents and employees, from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to the damage to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and is caused in whole or in part by any negligent act or omission of the outside party or its subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.
- b. from any damage that may result to said roadway because of the construction, operation or maintenance of said facility and/or connecting facilities and shall reimburse Black Hawk County for any expenditures it may have to make on said highway on account of said construction, operation or maintenance by the applicant, and shall replace and restore any roadway, including surface and sub-surface materials. The applicant shall also hold Black Hawk County harmless from any damages that said County would otherwise be responsible for, that flow directly or indirectly from said project, because of construction, operation, or maintenance of said facility.
- c. agrees that for all work done in the County road right of ways, easements and county property, it shall be solely responsible for work zone safety and shall hold the County harmless and agree to indemnify the County for all claims that arise from its work in the right-of-way, and further, it agrees that it will adhere to the Manual on Uniform Traffic Control Devices (MUTCD) during the project. The utility owner, or their contractor, is responsible for providing, installing, maintaining, and cleaning warning signs and protective devices; removing warning signs and protective devices when the work is complete; and providing flaggers for the protection of the traveling public and workers on the site.
- d. **For a complete copy of the Black Hawk County insurance Requirements Policy please go to:**  
<http://www.co.black-hawk.ia.us/DocumentCenter/View/777>

12. **Application must be received by 4:30 pm on Tuesday** to be placed on the following Tuesday's Board of Supervisors agenda for approval.

**Acceptance of Conditions**

I certify that the statements contained in the application are true and correct and that I will comply with the conditions outlined above.

Applicant Signature \_\_\_\_\_ Date \_\_\_\_\_

Black Hawk County Engineer \_\_\_\_\_ Date \_\_\_\_\_

Approved by the Black Hawk County Board of Supervisors on: \_\_\_\_\_



**PERMIT FOR EXCAVATION WITHIN COUNTY PROPERTY**

Black Hawk County Board of Supervisors  
 316 East 5<sup>th</sup> Street, Room 203  
 Waterloo, IA 50703  
 Phone: (319) 833-3003  
 Fax: (319) 833-3070  
 Email: supervisors@blackhawkcounty.iowa.gov

Permit Number:
----------------

Owner/Applicants Name		Address		
Phone Number	Fax Number	City	State	Zip
Cell Phone Number		Email Address		
Contractor's Name		Owner	Address	
		<input type="checkbox"/>		
Phone Number	Fax Number	City	State	Zip
Cell Phone Number		Email Address		
Location				
Road Name	Section Number	Township (87, 88, 89, 90) N	Range (11, 12, 13, 14) W	
Description of Work				

This permit is granted for the removal or the disturbance of soil from the county right of way and is governed by the following:

**10. APPLICANT RESPONSIBILITIES:**

- a. Applicant **MUST** contact **Iowa One Call** for utility locations within the excavation area. A request can be made by calling (800) 292-8989 or on their website at Iowa One Call - Contractors and requires at least a 48 hour notice. **NO EXCAVATION MAY BEGIN UNTIL LOCATIONS HAVE BEEN MARKED.** Keep the "Iowa One Call Work Request Number" for this number is your confirmation that a work request was made.
2. The Applicant shall take all reasonable precautions during the construction and operation of the facility to protect and safeguard the lives and property of the traveling public and adjacent property owners. This provision is intended to include any damage to fences, watersheds, tiling, and drainage construction owned by either Black Hawk County or adjoining property owners.
3. The Applicants operations and the construction and maintenance of said facilities shall be carried on in such a manner as not to interfere with or interrupt traffic on said county roads.
4. The Applicant must seed all disturbed areas upon completion of project. The County recommends a diverse seed mixture; for more information please call our office.
5. Applicant will notify the Board of Supervisors office when work is to begin and when the work is completed.
6. Applicant agrees to make any corrections to the work upon the County's inspection.

**11. INSURANCE REQUIREMENTS:**

1. The applicant shall meet Black Hawk County's minimum insurance requirements. A Certificate of Liability Insurance with **ALL** of Black Hawk County's requirements must be on file with the Board of Supervisors office before the permit can be approved. Black Hawk County requires General Liability in the amount of \$1,000,000 per occurrence and \$2,000,000 aggregate, automobile insurance in the amount of \$1,000,000, statutory limits for Workers Compensation. It is further understood that Black Hawk County must be named as Additional Insured for General Liability and also Automotive Liability and Black Hawk County (not the Engineer's Office) must be listed as Certificate Holder.

