

Winneshiek County Integrated Roadside Vegetation Management Plan

December 2015



Integrated Roadside Vegetation Management Plan Winneshiek County, Iowa

Preface

- A. Version 3, December, 2015
- B. Plan Contributors
 - Lee J. Bjerke, P.E. – Winneshiek County Engineer
 - Barbara Schroeder – Winneshiek County Conservation Director

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Executive Program

Summary

The purpose of the Winneshiek County IRVM Plan is to provide a long-term strategy for managing vegetation in the county owned rights-of-way. Road corridors that exist in the county are designed to transport people and goods safely and efficiently from one location to another. This plan will work to promote safer conditions for vehicles, control erosion, limit sedimentation, reduce herbicide use, and develop natural areas for wildlife and roadside beautification.

The roadsides of Winneshiek County vary greatly from one area to another. The topography is rolling prairie in the southern part of the county and hilly with timber in the north. This presents a wide variety of vegetation in the road right-of-way which requires individually designed methods of management.

History

In the 1980s the Winneshiek County Board of Supervisors appointed a subcommittee on roadside vegetation management, which then created a three-year plan. A roadside inventory was conducted during the summers of 1988 and 1989 with assistance from the conservation department.

Winneshiek IRVM was established in the 1990s; however, without a designated manager, the program remained minimal and consisted of spot spraying, mowing and brush cutting. In 2007 and 2009, the County Engineer partnered with the County Conservation Board to secure grant funding for seed and a no-till drill. The most notable project using these was the establishment of prairie along Trout Run Trail with IRVM funds.

In 2015 the Winneshiek County Board of Supervisors approved the job description for a permanent, full-time roadside manager with the intent of filling the position in April 2016.

Goals

Winneshiek County's vegetation management goals must meet certain safety and functional requirements before aesthetic, recreational, or economic considerations can be addressed. These IRVM goals are to attempt to maintain a clear zone area, meet minimal sight distance requirements and provide for erosion control. We are also required by Iowa law to mow or otherwise control noxious weeds.

The goals of the Integrated Roadside Vegetation Management Plan are to:

1. Maintain safe, functional, and environmentally improved corridors of travel throughout the county using native plants and proper management techniques.
2. Implement a long-term, integrated management program that promotes desirable and self-sustaining plant communities that are native to Winneshiek County through preservation of existing roadside vegetation and re-establishment of native vegetation whenever applicable.

3. Stabilize County road construction projects by seeding and providing adequate erosion control. Each site will be evaluated and cared for on an individual basis.
4. Reduce the visibility hazards created by trees and brush on county highways, road intersections, and other areas through selective brush control and stump treatment.
5. Use herbicide efficiently as a control method for undesirable brush and plants. Work towards using prescribed fire as an alternative treatment to chemicals.
6. Recognize and stop the spread of newly introduced invasive plant species countywide. These species need to be controlled before they become a major problem.
7. Enhance the scenic qualities of the roadsides and their value as roadside habitat when practical.
8. Inform the residents of Winneshiek County about the benefits of IRVM through education and publicity.
9. Stay informed about the best practices and new tools in the realm of IRVM.

IRVM Decision Making Process

The Winneshiek County IRVM program is managed by the County Engineer with input and consultation from the County Conservation Director.

Area Map

See Appendix B for a map of the county

Program Type

The IRVM of Winneshiek County is operated and housed within the Secondary Roads operation and budget.

Jurisdictional Recognition and Approval

Management

The IRVM is managed within the Secondary Roads Department. Therefore the County Engineer along with the Maintenance Superintendent may suggest areas that may need addressed. The County Conservation Director also makes suggestions on areas that need attention as well as recommend vegetation native to Winneshiek County.

Board of Supervisors

The Board of Supervisors accepts the IRVM plan and approves its expenditures through the Secondary Roads during their weekly meetings.

Iowa Code and Administrative Rules-State Laws and Regulations

See Iowa Codes 314 and 317

<https://coolice.legis.iowa.gov/Cool-ICE/default.asp?category=billinfo&service=IowaCode&ga=83&input=314>
<https://coolice.legis.iowa.gov/Cool-ICE/default.asp?category=billinfo&service=IowaCode&ga=83&input=317>

Section 314.22 of the Iowa Code, Integrated Roadside Vegetation Management states: *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.

Local Laws and Regulations

The Winneshiek IRVM program is regulated under local regulations and the Iowa Code.

Permits

The Winneshiek County IRVM program will operate under the laws cited in the Code of Iowa, and within local policies, agreements, and resolutions. Examples include but are not limited to:

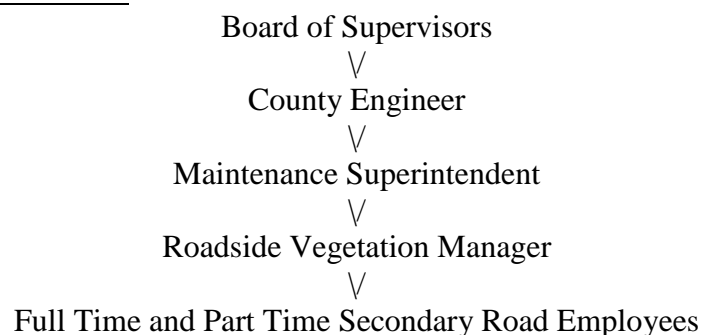
1. Chapter 314.22 Integrated Roadside Vegetation Management
2. Chapter 317 Iowa Noxious Weed Law
3. Chapter 318 Obstructions in the Right-of-Way
4. Winneshiek County IRVM Management Plan Resolution
5. Winneshiek County Driveway Entrance Permit
6. Winneshiek County Work within Right of Way Permit
7. Winneshiek County Utility within Right of Way Permit
8. No spray sign program
9. No mow sign program
10. Manure line permits
11. Snow ordinance

Permits are obtained at the County Engineer's Office or on the website:

<http://www.winneshiekcouny.org/eng-office.html>

Program Organizational Structure

Staff Organizational Chart



The IRVM decision making process is often influenced by projects that the Secondary Roads Department is working on, requiring communication with the Maintenance Superintendent. The full-time Roadside Manager decides the day to day operations, sets priorities, carries out the business management duties, and performs work as needed. The Roadside Manager is also responsible for managing and maintaining the IRVM budget. The Roadside Manager's duties are outlined further in the Winneshiek County Employee Job Description (Appendix A).

The Roadside Manager is responsible for all field operations, which include seeding projects, spraying roadsides, and brush control work. In the winter months Secondary Roads staff will work with the roadside manager on brush control.

Staffing Needs

County is actively working to hire a Roadside Manager and anticipates accomplishing that in April 2016. Staff needs are supplemented with help from the Secondary Roads Department and County Conservation Board. All persons performing work under the direction of the Roadside Manager will be trained in spraying, fire burns, sediment control and flagger safety, just to name a few.

Public Involvement

Education and Outreach

As part of the county's new IRVM plan, it will:

- Develop public awareness to gain support for integrated management through media, established organizations, seminars, websites, social media and brochures.
- Obtain educational and informational material on IRVM to be presented in seminars and distributed to adjacent landowners, the general public, and consultants, and contractors.
- Provide guidelines and directives for contractors and others who seed, plant, and maintain roadsides.
- Prepare and distribute instructions on preservation of desirable areas and treatment of areas that need improvement.
- Gather, develop, and distribute information with other jurisdictions to seek and share information with other counties.
- Encourage research in aspects of IRVM, i.e.: road design for improving IRVM, planting methods, management practices, seed sources, seed rates, seed mixes, planting equipment, etc.
- Encourage use of native seeds and plant materials native to northeast Iowa.
- Continuously educate members of the Secondary Road Department regarding best practices associated with IRVM.

Inventory and Analysis

Natural Resources

The original cover-type vegetation inventory from 1989 was cumbersome and never updated. Once a manager is on staff, a comprehensive roadside inventory will be required. A survey will aid in implementing an IRVM plan by providing information on vegetative cover, native vegetation stands, weed issues, brush encroachment, bare areas and areas of erosion.

With nearly 1,064 miles of roadside, Winneshiek County has a vested interest in preserving natural resources, improving water quality, reducing soil erosion, eradicating invasive species and enhancing the natural beauty of the landscape. Much of the water runoff from adjacent land

travels through county road ditches, amplifying the need for filtration and deposition in roadsides to prevent pollution run-off in streams, rivers, ponds, and lakes. Enhancing existing and establishing native vegetation benefits soil, water, and biodiversity. Native tall-grass prairie communities are less prone to collapse under heavy rain and are more effective in providing resistance to water flow and sediment movement. Native vegetation with deep, fibrous root systems accomplish the majority of our natural resource goals by holding soil, choking out unwanted weeds and brush, and filtering water run-off. Preserving remnant native vegetation and reconstructing new prairie plantings will be widely used in our program.

Native vegetation also provides needed habitat for a variety of wildlife, including microorganisms, insects, reptiles, birds, and mammals. Reconstructing part of the prairie habitat that once covered 85% of Iowa's landscape will be our main management tool. With pollinator populations declining the need for habitat with diverse plantings of wildflowers becomes more important. The linear habitat that roadside provide also benefits ground nesting birds and small mammals. Concerns of large wildlife such as deer living in the roadsides is unfounded; they use roadsides primarily as a pass-through area.

Winneshiek County is a karst topography that creates ecologies that are unique to the county. Sink holes, underground rivers, and cold air vents are scattered throughout the county. These geological features are impacted by and inversely impact the roadside and the practices we will need to implement.

Equipment

Currently there is only a Truax no-till drill specifically designated to the IRVM program. An inventory of Secondary Roads equipment that will be shared in IRVM activities is referenced in the appendices. IRVM equipment will be obtained as the budget allows. The need for certain equipment will continue to be prioritized and purchased as funds are available. The Roadside Manager will seek support from the Living Roadway Trust Fund (LRTF).

Program Operations

Annual Operations / Annual Calendar of Activities

January-March: Cut brush and trees in problem locations, service and repair equipment, assist with road snow and ice removal operations, present Annual Report to Weed Commissioner, write grant proposals, and order spring inventory of herbicides, cover crops, seed, mulch, and fertilizers..

April-October: Maintenance and construction area seeding operations, erosion and sedimentation mitigation, bare ground applications on shoulders and guardrails, brush and noxious weed applications, address noxious weed and roadside visibility complaints, submit grants, Adopt-A-Roadway Program and Roadside Maintenance Agreement Program management, service and repair equipment, and attend training and educational seminars.

November-December: Cut brush, finalize maintenance seeding, winterize equipment, and begin snow removal operations as needed.

Initial Work Schedule for the new Roadside Manager

3 Month Objectives

- Review IRVM plan
- Order/obtain seed for ditch cleanouts
- Pesticide Applicator License
- Air-brake endorsement for CDL
- Chainsaw safety training
- Review 1989 Roadside inventory and files

3 Month – 1 Year Objectives

- Identify and prioritize needed equipment through LRTF grants
- Write and secure funding for 2016 LRTF Grants
- Seed ROW ditch cleanouts
- Wildland Fire Training Certification
- Identify individuals to be on Winneshiek County IRVM Committee
- IRVM Committee in place and first meeting

1 Year Objectives

- Detailed month-by-month work schedule
- Write more detailed IRVM plan
- Begin inventory process
- Identify most heavily infested areas of noxious weeds to mow or spray
- Identify noxious weeds to spray
- Identify prairie remnants along hard-surface county roads
- Identify prairie remnants that would benefit from prescribed burns
- Seed ROW ditch cleanouts

1 – 3 Year Objectives

- Write and secure funding for LRTF Grants
- Obtain equipment with LRTF grants
- Continue ROW inventory
- Identify and begin systematic spray program of brush and noxious weeds
- Evaluate IRVM Plan and make changes as necessary
- Set short and long range goals

Work Area Types

Rural – When working around crops extra care is needed to not damage crop establishments or damage private property.

Urban – Special care is taken to not damage private property.

Vegetation Types for Specific Uses

Our main concern is to control erosion as soon as possible in our topography. We use mixes that establish thick root systems to help reduce erosion.

Special Projects

Work with the special needs of Winneshiek County Conservation, Winneshiek County Soil and Water District, IDNR, NRCS and established wildlife associations whenever possible.

Methods

Winneshiek County Secondary Road Department utilizes the IRVM Technical Manual in much of its practices.

Vegetation Establishment/ Ongoing Maintenance

1. *Cultural Methods:* Cultural controls can be achieved through the introduction and management of desirable plants or to control noxious weeds and other undesirable plants. Many native plants are poor competitors in their early stages of growth, but once established they crowd out some other plants with minimum management.
Controlled burning is recognized as a valuable tool for enhancing and maintaining native plant communities. At the same time, Winneshiek County recognizes the potential for creating possible problems when burning roadside vegetation. Therefore areas identified in the roadside inventory as showing potential for prairie restoration will be burned only under the safest atmospheric conditions by personnel trained in the use of fire, with some assistance from the conservation department.
2. *Mechanical Methods:* This involves anything from tractor mowers for cutting down weeds and managing road shoulders to pruning shears, chainsaws and boom mowers for controlling brush and maintaining clear zone.
3. *Biological Methods:* This involves the use of animals, insects, bacteria, or viruses to control plant growth. Natural enemies of noxious weeds could possibly be used in the ROW if necessary. Further research will be needed on other possible biological controls before the county will recommend them.
4. *Chemical Methods:* Selection of chemicals to be used shall be based on their label constraints and residual effects on the environment. They will be monitored to document their effectiveness and impacts upon target and non-target species. There are several new herbicides with very specific effects on specific plant species. These herbicides can be valuable tools for controlling undesirable plants on a short-term and long-term basis.

Material Procurement

Sourcing

For small projects Winneshiek County spreads out purchases to different vendors throughout the County and with larger quantities we take quotes on items to ensure the funds are spent wisely.

Material Handling and Storage

The seed for Winneshiek IRVM is stored in the Engineer's office basement, which is climate controlled and free of moisture. All other items are stored in a cold storage shed or outside.

WINNESHIEK COUNTY INTEGRATED ROADSIDE VEGETATION MANAGEMENT PLAN RESOLUTION


No. 116-22

WHEREAS: The Board of Supervisors is empowered under authority of Chapter 317 of the Code of Iowa to establish policies, practices and funding to control noxious weeds,

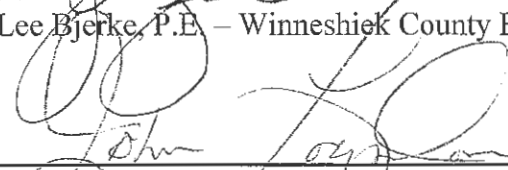
WHEREAS: The Board of Supervisors desire to establish a plan for the long term management of the roadside vegetation within the county.

NOW THEREFORE BE IT RESOLVED by the Winneshiek County Board of Supervisors that the county establish the following Roadside Vegetation Management Plan:

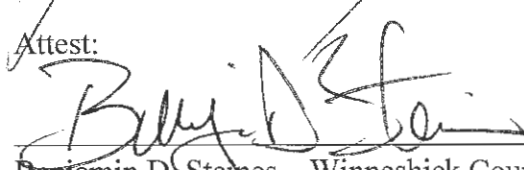
1. Improve public relations image on roadside management practices and procedures.
2. Inventory county roadsides to determine weed populations and concentrations, native prairie indicators, populations and concentrations, and brush problems.
3. Restore native prairie grass and flower species where appropriate.
4. Protect county roadsides from erosion, slump and siltation.
5. Take advantage of unique funding, management, and seed procuring opportunities.
6. Control brush and other vegetation that could interfere with snow removal and/or public safety.
7. Promote economic advantages of better roadside management throughout the county.
8. Investigate alternative methods for controlling weeds within the county right of way.
9. Evaluate program periodically to identify strengths and weaknesses.



Lee Bjerke, P.E. – Winneshiek County Engineer 3-28-16
Date



John Logsdon – Chair, Winneshiek County Board of Supervisors 3-28-16
Date

Attest:


Benjamin D. Steines – Winneshiek County Auditor 3-28-16
Date

Approvals

Chairman, Winneshiek County Board of Supervisors

Date

Winneshiek County Engineer

Date

Iowa DOT Roadside Coordinator

Date

Appendix A - Winneshiek County Roadside Manager Job Description

Class Title: Roadside Manager

Bargaining Unit: Non-Represented

Job Summary: The Roadside Manager shall administer, develop, plan and conduct a program of vegetative habitat management that seeks to control unwanted vegetation and promote desirable vegetation on Winneshiek County rights-of way and public drainage ditches and perform related duties as assigned. The Roadside Manager is hired in the Winneshiek County Engineer's office to address the provision of Section 314 of the Code of Iowa, the Integrated Roadside Vegetation Management (IRVM) Manual and Section 317, the Noxious Weed Law.

Major Duties/Performance Measures: Planting and maintenance of native and introduced grass/forb communities in newly graded, cleaned out, or otherwise disturbed sites on county rights-of-way. Development of a program of public information and education to promote public understanding of IRVM, and wise land use that contributes to the goals of the IRVM program.

Inventorying and documenting plant communities and trends along county rights-of-way. Managing those areas of native vegetation identified by the inventory process to improve their diversity and promote their continued health. Remove all trees and brush causing safety concerns along county roadways. Assist the Weed Commissioner with duties and responsibilities and performs other duties relating to the weed commissioner as assigned.

Control of noxious weeds in rights-of-way and public drainage ditches. Serves as the trainer/inspector/manager for staff dealing with seeders, tractors, mowers, sprayers and other roadside management equipment. Performs administrative duties such as successful grant writing, and writing of reports for monthly and annual updates as requested. Serves as the (IRVM) Integrated Roadside Vegetation Management coordinator for Winneshiek County and attends, organizes meetings and assists with the direction of the group's vision. Attend state and regional conferences relating to the field as directed. Assist to the best of their ability the enforcement of all Local, State, and Federal laws pertaining to the operation of roadside vegetation management within Winneshiek County and services as a liaison for previously mentioned law enforcement agencies. Supervises staff including, but not limited to, assigning, checking & planning the work schedules of fulltime and seasonal staff. Financial responsibilities would include long term planning for roadside development that meets the goals and objectives of the Secondary Roads, Weed Commissioner & Winneshiek County Conservation Departments, including long-term budgeting for capital expenditures. Assists the County Conservation Department in the planting of park lands where applicable to promote the expansion of native prairie in the State of Iowa. Winter duties would include assisting with snow removal as needed.

Background Requisites: To perform this job successfully, an individual must be able to perform essential duties satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. General knowledge of as Geographic Information System (GIS).

Education: Maintain a valid pesticide applicator's license in category 6 (Right-of-way) and category 1A (Agriculture). Have a minimum four-year college degree in a natural resource related field with major course work in botany and wildlife or equivalent work related experience. Have attended Wild Land Fire Training-S130, S190, and S290 or be able to attend within the first year of employment.

Work Experience:

Essential Skills: Ability to read, analyze, and interpret general business periodicals, professional journals, technical procedure or governmental regulation. Ability to successfully write reports for business correspondence and procedure manuals. Ability to utilize Microsoft Windows/Office. GIS & GPS equipment expertise as required for monitoring, demonstration of strong organization skills, good oral and written communications skills, knowledge of principles of land use and the environmental, social, and economic problems that affect it. Ability to plan work, think conceptually, analyze data, observe and evaluate, and make sound decisions and recommendations. Work well with the public and private sectors on diverse roadside projects. Ability to identify native and introduced plant species, including invasive or non-desirable. Knowledge of the principles of wildlife/management/protection and conservation practices relating to roadsides. Ability to supervise support staff engaged to carry our program. Ability to operate and maintain power equipment. Ability to multi-task and prioritize job activities to achieve maximum overall results.

Supplemental Information: Possession of a Class A Commercial Driver’s License and medical card; Must be able to perform duties of Equipment Operator II.

Relationships: Secondary Road personnel, IVRM, IDNR, County Conservation, County Weed Commissioner and other State and local conservation oriented entities.

Reports to: Secondary Road Maintenance Superintendent

Supervises: Secondary Road Employees performing roadside maintenance activities

Works with: Secondary Roads Department/Engineers Office Staff, County Conservation, County Sanitarian

Physical/Environmental Conditions: Office and Field Work

Hours of Work: Monday-Friday in accordance with the schedule of the Secondary Road crew

John Logsdon - Chair
Board of Supervisors

Date

Lee J. Bjerke, P.E.
County Engineer

Date

Appendix B – Map of Winneshiek County

(Insert)

Class Title: Roadside Manager

Bargaining Unit: Non-Represented

Job Summary: The Roadside Manager shall administer, develop, plan and conduct a program of vegetative habitat management that seeks to control unwanted vegetation and promote desirable vegetation on Winneshiek County rights-of way and public drainage ditches and perform related duties as assigned. The Roadside Manager is hired in the Winneshiek County Engineer's office to address the provision of Section 314 of the Code of Iowa, the Integrated Roadside Vegetation Management (IRVM) Manual and Section 317, the Noxious Weed Law.

Major Duties/Performance Measures: Planting and maintenance of native and introduced grass/forb communities in newly graded, cleaned out, or otherwise disturbed sites on county rights-of-way. Development of a program of public information and education to promote public understanding of IRVM, and wise land use that contributes to the goals of the IRVM program. Inventorying and documenting plant communities and trends along county rights-of-way. Managing those areas of native vegetation identified by the inventory process to improve their diversity and promote their continued health. Remove all trees and brush causing safety concerns along county roadways. Assist the Weed Commissioner with duties and responsibilities and performs other duties relating to the weed commissioner as assigned. Control of noxious weeds in rights-of-way and public drainage ditches. Serves as the trainer/inspector/manager for staff dealing with seeders, tractors, mowers, sprayers and other roadside management equipment. Performs administrative duties such as successful grant writing, and writing of reports for monthly and annual updates as requested. Serves as the (IRVM) Integrated Roadside Vegetation Management coordinator for Winneshiek County and attends, organizes meetings and assists with the direction of the group's vision. Attend state and regional conferences relating to the field as directed. Assist to the best of their ability the enforcement of all Local, State, and Federal laws pertaining to the operation of roadside vegetation management within Winneshiek County and services as a liaison for previously mentioned law enforcement agencies. Supervises staff including, but not limited to, assigning, checking & planning the work schedules of fulltime and seasonal staff. Financial responsibilities would include long term planning for roadside development that meets the goals and objectives of the Secondary Roads, Weed Commissioner & Winneshiek County Conservation Departments, including long-term budgeting for capital expenditures. Assists the County Conservation Department in the planting of park lands where applicable to promote the expansion of native prairie in the State of Iowa. Winter duties would include assisting with snow removal as needed.

Background Requisites: To perform this job successfully, an individual must be able to perform essential duties satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. General knowledge of as Geographic Information System (GIS).

Education: Maintain a valid pesticide applicator's license in category 6 (Right-of-way) and category 1A (Agriculture). Have a minimum four-year college degree in a natural resource related field with major course work in botany and wildlife or equivalent work related experience. Have attended Wild Land Fire Training-S130, S190, and S290 or be able to attend within the first year of employment.

Work Experience:

Essential Skills: Ability to read, analyze, and interpret general business periodicals, professional journals, technical procedure or governmental regulation. Ability to successfully write reports for business correspondence and procedure manuals. Ability to utilize Microsoft Windows/ Office. GIS & GPS equipment expertise as required for monitoring, demonstration of strong organization skills, good oral and written communications skills, knowledge of principles of land use and the environmental, social, and economic problems that affect it. Ability to plan work, think conceptually, analyze data, observe and evaluate, and make sound decisions and

recommendations. Work well with the public and private sectors on diverse roadside projects. Ability to identify native and introduced plant species, including invasive or non-desirable. Knowledge of the principles of wildlife/management/protection and conservation practices relating to roadsides. Ability to supervise support staff engaged to carry our program. Ability to operate and maintain power equipment. Ability to multi-task and prioritize job activities to achieve maximum overall results.

Supplemental Information: Possession of a Class A Commercial Driver's License and medical card; Must be able to perform duties of Equipment Operator II.

Relationships: Secondary Road personnel, IVRM, IDNR, County Conservation, County Weed Commissioner and other State and local conservation oriented entities.

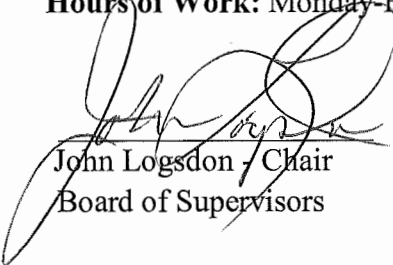
Reports to: Secondary Road Maintenance Superintendent

Supervises: Secondary Road Employees performing roadside maintenance activities

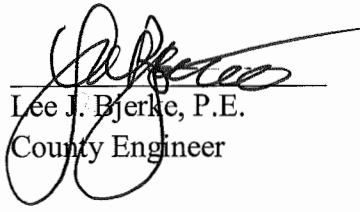
Works with: Secondary Roads Department/Engineers Office Staff, County Conservation, County Sanitarian

Physical/Environmental Conditions: Office and Field Work

Hours of Work: Monday-Friday in accordance with the schedule of the Secondary Road crew.


John Logsdon - Chair
Board of Supervisors

10-12-15
Date


Lee J. Bjerke, P.E.
County Engineer

10-12-15
Date

Addendum to Job Application & Description

Roadside Manager

Winneshiek County will be accepting applications for the position of Roadside Manager until 4:00 p.m. on Friday, February 26th, 2016 at the Winneshiek County Engineer's Office.

This position is for the implementation and managing of the Secondary Road's Roadside Program. The Roadside Manager will supervise the road crew and coordinate a wide variety of maintenance, repair and construction activities as related to roadside within the county; operates machinery when necessary; works closely with the office staff; write grants; performs related work as required. No compensation from the County will be allowed for travel time to and from work each day. The County will provide a vehicle for working hours. The Roadside Manager will be under the direction of the Maintenance Superintendent and will report to the Main Shop in Freeport.

Position requires a Class A commercial driver's license.

The Roadside Manager position is exempt from overtime according to Fair Labor Standards and the salary is set below:

Roadside Manager:	Current Salary	\$58,478 Non-Exempt
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The regular work day is currently 8 hours and the regular work week is 40 hours, Monday through Friday. The current hours are 7:00 a.m. to 3:30 p.m. Hours are subject to change with the union contract. This position is not covered under the Collective Bargaining Agreement.

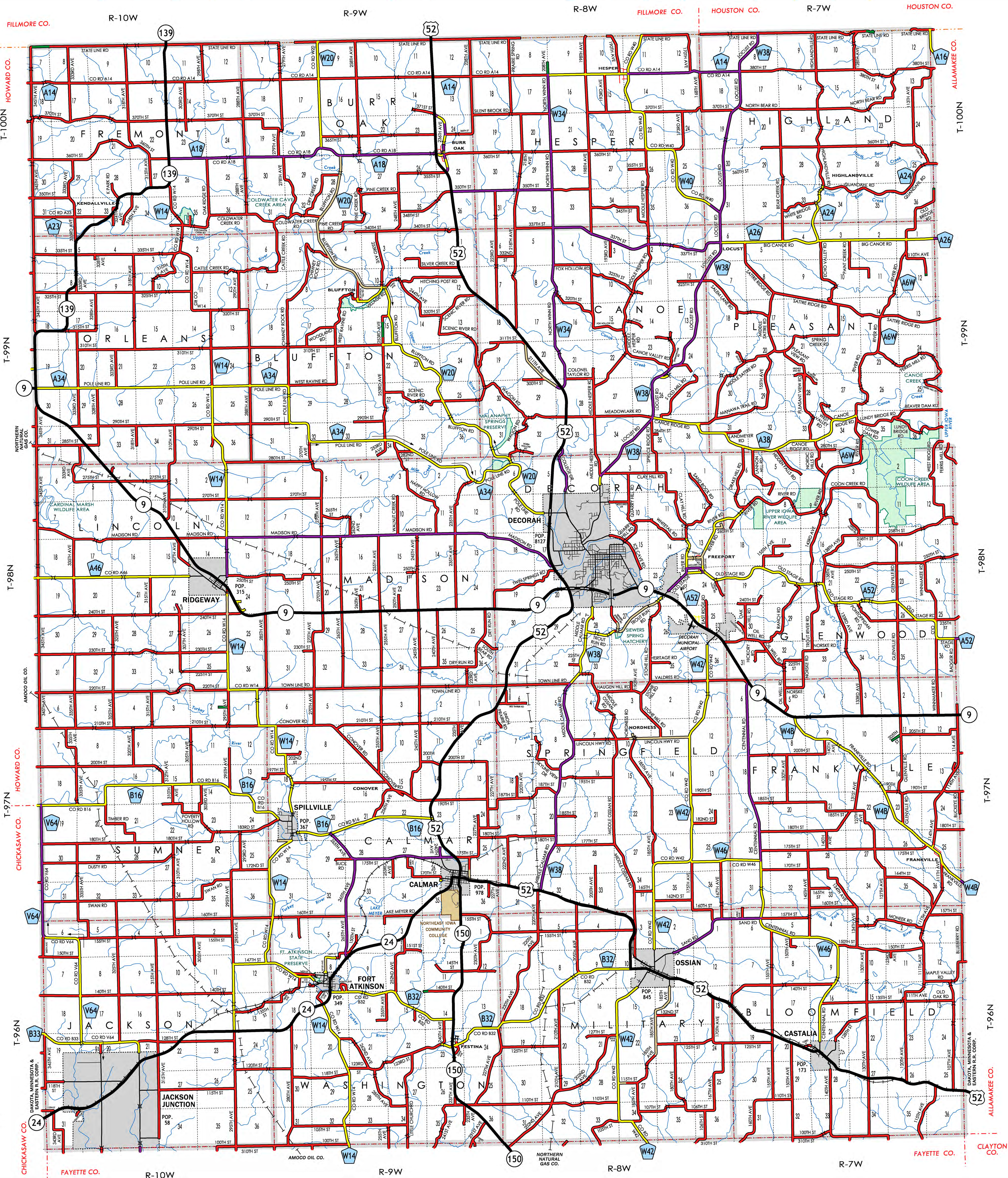
All full-time employees are covered by the Iowa Public Employees' Retirement System. Currently 5.95% of each payroll check is deducted for this retirement plan. In addition the County pays 8.93% to the plan. The County currently has Coventry Health Care. The County pays the single premium of \$750 per month for employees. Employees may select from 3 additional family coverage options, but must pay the additional cost of the premium per month deducted from the employee's checks. Health Savings Accounts (HSA) are available as well. The County also offers optical insurance and life insurance as well.

There are ten paid holidays each year. Vacation is earned as follows and is calculated from the anniversary date of employment. Vacation is on an accrual basis, and starts accruing when you begin employment.

1 week (5 work days)	During 1st year of continuous full-time employment
2 weeks (10 work days)	After 2 years of continuous full-time employment
3 weeks (15 work days)	After 8 years of continuous full-time employment
4 weeks (20 work days)	After 12 years of continuous full-time employment

Other paid leaves that are available are detailed in the Employee Handbook including funeral leave and military leave in addition to leaves without pay, etc.

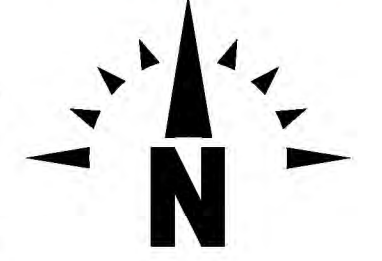
Upon offer of this job, you will be required to pass a pre-employment DOT drug test and successfully complete a physical assessment.



HIGHWAY AND TRANSPORTATION MAP WINNESHIEK COUNTY IOWA

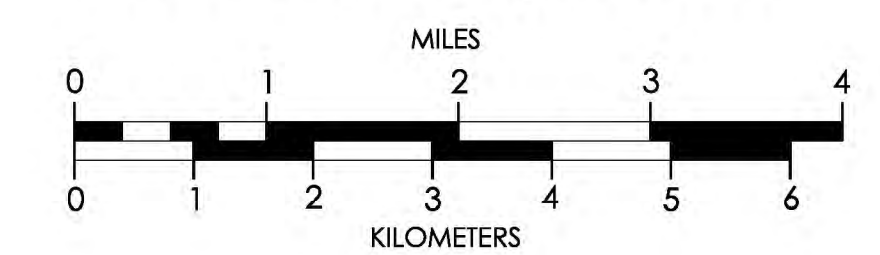


Office of Systems Planning
 Phone: (515) 239-1664
 WWW.IOWADOT.GOV/MAPS



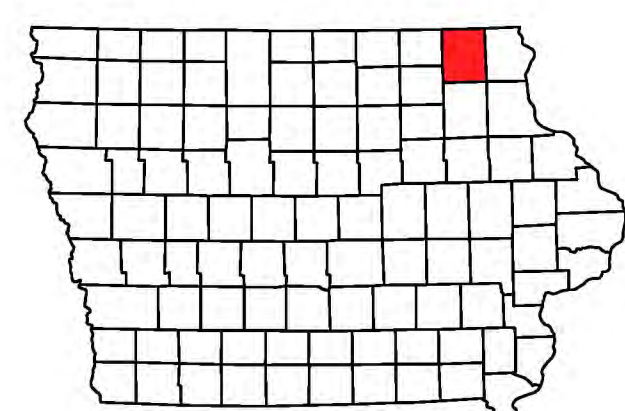
In Cooperation With
 United States
 Department of Transportation

JANUARY 1, 2015



LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY
- UNITED STATES HIGHWAY
- STATE HIGHWAY
- COUNTY HIGHWAY
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES
- UNINCORPORATED PLACE
- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND



TERESA BOCKMAN, COUNTY RECORDER
WINNESHIEK IOWA

THIS DOCUMENT PREPARED BY LEE J. BJERKE, P.E., WINNESHIEK COUNTY ENGINEER'S OFFICE, 201 W. MAIN, DECORAH, IA 52101, 563-382-2951

WINNESHIEK COUNTY

ORDINANCE NO. 13-171

AN ORDINANCE TO ESTABLISH THE POLICY AND LEVEL OF SERVICE IN RESPECT TO CLEARANCE OF SNOW OR ICE AND MAINTENANCE OF THIS COUNTY'S SECONDARY ROADS DURING THE WINTER MONTHS.

BE IT ORDAINED BY THE BOARD OF SUPERVISORS WINNESHIEK COUNTY:

SECTION 1 -- PURPOSE

The purpose of this ordinance is to establish Winneshiek County's policy and level of service in respect to clearance of snow or ice and maintenance of it's secondary road system during the winter months, specifically defined as November through April, as provided in Section 668.10(2) (2001), Code of Iowa, and pursuant to the provisions of Section 309.67, Code of Iowa. This policy and level of service are to be implemented within the amount of money budgeted for this service, and as contained in this County's secondary road budget as submitted to and approved by the Iowa Department of Transportation and adopted by the Board of Supervisors. The clearance of roads at any cost, under any circumstances, day or night, is not the County's policy.

SECTION 2 -- LEVEL OF SERVICE

Clearance of snow or ice and maintenance of the secondary road system during the winter months is primarily for the benefit of the local residents of this county. Each storm has individual characteristics and must be dealt with accordingly. The portion of the roadway improved for travel will have upon it snow and ice in compacted condition. These conditions may be continuous, or they may be more concentrated on hills, in valleys, curves, and/or intersections. The County's existing snow removal equipment will be utilized for this purpose. Clearance of snow or ice, sanding, salting, and other maintenance with respect to winter conditions shall be accomplished within the amount of money budgeted for this service and as practicable. The entire width of that portion of the road improved for travel may not be cleared of snow, ice, compacted snow and ice, or frost. Snow cleared from that part of the roadway improved for travel shall be placed on or in the adjacent shoulder, ditch, or right of way. Snow can be expected to accumulate adjacent to the traveled portion to the extent that a motorist's sight distance to both the left and right may be greatly reduced or impaired. The snow

removed from intersections will be piled in its corners in piles of unequal height. The lines of sight, sight distance, or visibility of motorists approaching these intersections may be greatly reduced or impaired. The County shall not be responsible for snow pushed or otherwise placed on the roadway or shoulders by others. Motorists shall drive their vehicles during these conditions with additional caution and watchfulness, especially in respect to the surface of the roadway, and reduced or impaired visibility, and are advised to reduce their speed at least 25 miles per hour below that legally permitted or advised under normal conditions.

On occasion, County personnel may be rendered unavailable due to the requirements of the Ontario Transportation Employee Testing Act of 1991.

On roadways that have only one lane open, further extreme watchfulness and caution should be exercised by the motorist, and their speed should not exceed 10 miles per hour. During these conditions, no additional warning or regulatory signs will be placed warning of impaired sight distances, visibility at intersections, road blockages, one-lane conditions, or that the road surface is slick or slippery, or what the advised speed should be.

SECTION 3 -- SEQUENCE OF SERVICE

In the implementation of snow and ice removal and other maintenance of the County's secondary road system during the winter months, the County Engineer shall select the actual sequence of roads to be cleared as provided for in this section of the ordinance, and shall determine when drifting, wind velocity, and additional snow or snowstorms require that the snow removal equipment be removed from the roadway, or that additional clearance of paved roads be accomplished prior to the clearance of gravel and dirt roads. The County Engineer's professional judgment shall prevail unless it is clearly erroneous.

PAVED ROUTES

1. The initial effort will be to get all routes open to one-lane traffic as soon as possible and as practicable.
2. After one-lane travel is possible, subsequent snow removal will be carried on during normal working hours.
3. The truck mounted snow plows and spreaders will not normally be in operation between the hours of 5:00 P.M. - 5:00 A.M. The trucks may be called off the road if snow and blowing reduces visibility to hazardous working conditions, in the professional judgment of the Engineer or his delegated representative.
4. When required, due to drifting snow, motor graders may be used to keep the paved roads open and the opening of gravel may be delayed.
5. It is not the policy of the County to provide a "dry" pavement condition.
6. After roads have been plowed, as provided in this section, intersections, hills, and curves may, but not necessarily,

have placed on them, salt, sand, or other abrasives. These intersections, hills, and curves may not be re-sanded, re-salted, or have other abrasives replaced on them between snowstorms unless, in the County Engineer's or his designee's professional judgment, the conditions are so hazardous that it is necessary to re-sand, re-salt or apply additional abrasives in some areas. This sequence of service shall only be performed between the hours of **5:00 a.m. and 5:00 p.m.**, each day, exclusive of Saturdays, Sundays and legal holidays observed by county employees.

There is no time limit after a snowstorm in which any of the above sequence of clearance, on paved roads shall take place.

UNPAVED ROADS

1. The initial effort will be to get all routes opened to one-lane traffic as soon as possible and/or practicable after a storm has passed.
2. After one-lane travel is possible, subsequent snow removal will be carried on during normal working hours.
3. Motorgraders and/or truck plows will not normally be in operation between the hours of 5:00 P.M. - 5:00 A.M.. The motorgraders and/or truck plows may be called off the road if snow and blowing reduces visibility to hazardous working conditions, in the professional judgment of the Engineer or his delegated representative.
4. Snow may not be removed from roads designated at Level B or Level C.
5. After roads have been plowed as provided in this section, intersections, hills and curves may, but will not necessarily, have placed upon them a granular abrasive material. These areas may not have the abrasive materials placed on them again between storms. This sequence of service will only happen during normal working hours. Motorists shall drive their vehicles during these conditions with additional caution.
6. Unpaved roads will not be plowed on Saturdays and Sundays if the snowfall amounts total less than four (4) inches and wind has not caused significant drifting, as determined by the engineer or his designee.

There is no limit after a snowstorm in which any of the above sequence of clearing on unpaved roads shall take place.

PRIVATE DRIVES

The County shall not clear snow from private drives. Normal snow removal operations may result in snow being deposited in private drives. Snow from private drives shall not be placed on the roadway or shoulders.

Snow deposited from a private drive onto the county road shall be removed by the county and the owner of the drive shall be billed for time and materials to clear off the deposited snow from the roadway.

In cases deemed an emergency by Law Enforcement, Fire Service or EMS, and if requested by said agencies, the county may plow any driveway to allow access for emergency services, as needed. The county shall not be held liable for any damage done by this action.

MAILBOX REPLACEMENT

The County will assume no liability for mailboxes and fences damaged due to the snow removal unless it can be determined that the act was malicious and intentional. The county will not replace mailboxes damaged or knocked down by the force of snow thrown from the plow.

SECTION 4 -- LIMITATION OF SERVICE

Notwithstanding anything else stated in this ordinance, the policy and level of service provided for in this ordinance shall not include the following, and the following services **may not be performed**:

1. Sanding, salting, or placing other abrasives upon the roadways that are slick, slippery, and dangerous due to the formation of frost.
2. Sanding, salting, or placing of other abrasives upon paved roadways due to weather conditions that occurs outside the County's usual working hours.
3. Placing of additional warning or regulatory signs warning of impaired sight distances, visibility at intersections, road blockages, one-lane conditions, or that the road surface is slick or slippery, or what the advised speed should be.
4. Salting or placement of other chemicals upon unpaved roads.
5. Removing or sand, salt or other abrasives.
6. Plowing, sanding, salting or placing abrasives on any road that is not under the jurisdiction of the county, unless it is agreed to do so under a 28-E agreement between the county and the entity having jurisdiction of the road or is deemed an emergency as stated herein.

SECTION 5 -- EMERGENCY

Service or the level or sequence of service may be suspended during "Emergency" conditions. An "Emergency" condition shall be considered as one where loss of life is probable unless emergency services can gain access, where a serious injury has occurred in an isolated location, or where extensive loss of property is imminent. These conditions should be verified through EMS, Fire Service or Law Enforcement. The County will respond to all "Emergency" conditions, either during or after a snowstorm. Any person who makes a false report of an "Emergency" to an officer, official, or employee of Winnebago

County or who causes a false report to be so made shall, upon conviction, be subject to a fine of not more than \$100.00 or imprisonment of not more than 30 days in the County jail and full reimbursement to the county for all incurred costs associated with the responding to the alleged emergency.

Service or the level or sequence of service shall be further suspended in the event the Governor, by proclamation, implements the State Disaster Plan, or the Chairman of the Board of Supervisors, by proclamation, implements the County Disaster Plan. If such occurs, the County personnel and equipment shall be immediately subject to the direction of the Governor or the Chairman of the Board of Supervisors.

SECTION 6 – WINTER WEATHER EMERGENCIES

The Board may grant the County Engineer, or his designee, the power to designate a "Winter Weather Emergency". This designation may be enacted when a winter storm event creates a condition where normal winter roadway maintenance, under this policy, is not improving road conditions as expected by the county.

Designation of a Winter Weather Emergency shall be based on, but not limited to the following; snow fall amounts, freezing rain, wind, ambient and wind chill temperatures, chemical and abrasive material availability, and equipment and personnel availability.

Once a Winter Weather Emergency is designated, the County reserves the right to selectively reduce service to a road or roads by not plowing or treating, or delaying substantially the plowing and treating of a road or roads.

Criteria for roads that are impacted by reduced service during a Winter Weather Emergency shall be based on, but not limited to, the following; location of occupied private residents', presence of livestock, bus routes, detour lengths, power lines, bridge restrictions and efficiency of the county in performing winter maintenance.

Winter Weather Emergencies shall affect only Class A roads on the Winneshiek County Secondary Road System.

SECTION 7 -- REPEALER

All ordinances and resolutions, or parts thereof, in conflict herewith are hereby repealed.

SECTION 8 -- SEVERABILITY CLAUSE

If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

SECTION 9 -- WHEN EFFECTIVE

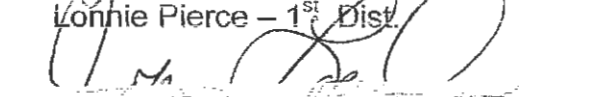
This ordinance shall be in effect immediately after its final passage and publication as provided by law. In addition, this ordinance shall remain in effect until such time the Board of Supervisors passes a future ordinance repealing this ordinance.

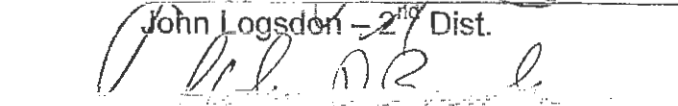
Passed and approved this 5th day of NOVEMBER, 2012.

Winneshiek County Board of Supervisors


Les Askelson - Chairman

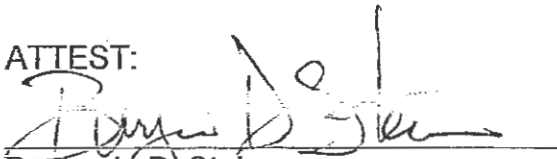

Lonnie Pierce - 1st Dist.


John Logsdon - 2nd Dist.


Steve Bouska - 3rd Dist.


William Ibanez - 5th Dist.

ATTEST:


Benjamin D. Steines
Winneshiek County Auditor

First Reading: 10-29-12

Second Reading: 11-5-12

Approved: 11-5-12

Published: 11-20-12

WINNESHIEK COUNTY ENTRANCE POLICY

OBJECTIVE:

Winneshiek County intends to have a policy for the creation, alteration or relocation of a driveway and or field entrance along the roads under the jurisdiction of Winneshiek County. This policy is to set forth the rules for creation, alteration or relocation of these driveways.

DEFINITIONS:

New Driveway/Field Entrance: Driveway or field entrance located where no current entrance exists. All entrances shall hereafter be referred to as "entrance".

Alteration: Change to an existing entrance other than change of surface type, with the centerline of the entrance remaining in the same location.

Relocation: removing an existing entrance and placing a new entrance in another location to serve the same parcel of property in the same manner.

Culvert: drainage structure in an entrance that may be a metal, plastic or concrete pipe, a reinforced box culvert or a bridge. There is no limit to the size of the structure.

Bridges: drainage structure that have piling, beam, decking or natural ground floor features and are interpreted by the county as a bridge.

PERMIT:

Any creation, alteration or relocation of an entrance shall require a permit that is obtained from the office of the County Engineer. There shall be no fee for the permit. No work on the entrance shall begin before a permit, signed by the County Engineer or his designee has been obtained. Failure to obtain a permit may result in removal of the entrance at the expense of the land owner whom the entrance provides accesses.

SPECIAL PROVISIONS:

Approval of driveway locations shall be at the discretion of Winneshiek County. Winneshiek County reserves the right to apply special provisions to any entrance that is felt to be in the best interest of the traveling public. The requesting party shall conform to any and all special provisions at their cost.

Winneshiek County may participate, partially or fully, in relocation of an entrance if it is felt by the county that the existing entrance poses a direct hazard to the traveling public. Relocation of an entrance that is not felt to be a hazard to the traveling public, by the county, shall have all costs associated with the relocation on the requesting party.

Entrances that are currently or will require a bridge shall be dealt with on a case by case basis and the County Engineer's judgement shall govern on the installation requirements. The Board of Supervisors judgement shall govern on the participation in the installation costs of the bridge by County, if any.

RESPONSIBILITY:

Responsibilities, both financial and logistical, shall be determined based on the work being performed as follows:

- a) New entrances shall be the sole responsibility of the requesting party. All costs and work to create the entrance shall be the responsibility of the requesting party.
- b) Alterations to existing entrances shall be the sole responsibility of the requesting party with one exception. If, in the opinion of Winneshiek County, the existing culvert in the driveway is no longer performing as designed, the county shall replace or repair the culvert at no cost to the requesting party. If the replacement culvert needs to be larger than the original due to land use changes, the requesting party shall pay the difference in price of the existing culvert length and the new culvert length.
- c) Relocation of an entrance shall be done in the same manner as a new entrance.
- d) Winneshiek County may, if available and within reasonable distance, haul fill material and charge the requesting party \$100 per tandem truck load for said material. Payment for material shall be made prior to hauling. The requesting party shall be responsible to shape the material as outlined by the county.

MATERIALS:

Culverts: All culvert material shall be new. No used pipe shall be installed or moved within the right-of-way. Once installed, the culvert becomes the property of the county if located fully or partially in the road right-of-way.

Fill: All fill material shall be free of large boulders, concrete or stone, vegetation, brush and trees or any other unsuitable material. Clean dry fill is to be used.

Surfacing: Any and all surfacing of a driveway, regardless of type shall be the responsibility of the requesting party.

REQUIREMENTS:**Paved Routes:**

- 1) Entrances off of paved roads shall meet the minimum accepted stopping sight distance standards at the time they are installed or relocated or 750', whichever is greater, either side of the entrance. The County reserves the right to lengthen the required sight distance at the time of installation. The County may allow entrances that do not meet the required sight distance if and when it can be shown to not cause additional risk to the traveling public or can be mitigated in an approved engineering fashion.
- 2) Entrances shall be constructed as near to right angles with the road centerline as possible.
- 3) Entrance grade shall be designed to minimize drainage from the entrance onto the roadway or its shoulder.
- 4) Cross slopes shall be a minimum of 6:1. Retaining walls shall not be allowed unless designed by an engineer and approved by the County Engineer to handle a bona fide design issue.

- 5) Paved entrances may be required to physically dowel into the existing roadway pavement. All associated costs shall be the responsibility of the requesting party.

Unpaved Class A Routes:

- 1) Stopping sight distance shall be no less than 500' either direction of the entrance for all local roads. Stopping sight distance for unpaved Farm-to-Market roads shall be as outlined for paved roads.
- 2) Cross slopes shall be a minimum of 3:1. No retaining walls shall be allowed unless designed by and engineer and approved by the County Engineer to handle a bona fide design issue.
- 3) Entrances shall be constructed as near to right angles with the road centerline as possible.
- 4) Entrance grade shall be designed to minimize drainage from the entrance onto the roadway or its shoulder.
- 5) Paved surfaces on entrances off of gravel roads may be required to end the pavement before meeting the shoulder line of the roadway. In addition, pavements may be required to have turn down ends.

Unpaved Class B & C Routes:

- 1) Entrances off of class B and C roads may be approved with no sight distance requirements.
- 2) All other requirements shall be at the discretion of the County on a case by case basis.

LIMITATION

Winneshiek County reserves the right to limit the number of entrances to any parcel of property from any single road or from multiple roads. This limitation will be at the sole discretion of the county and shall be reviewed on case by case basis.

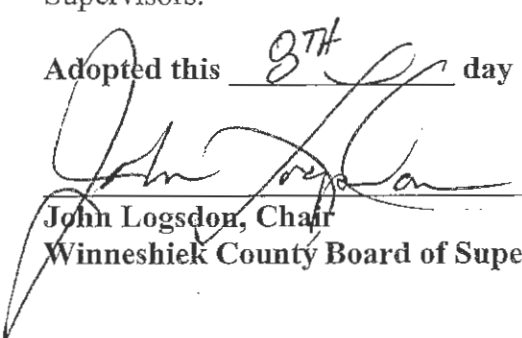
Permits will be valid for 180 days from the date of approval by the County.

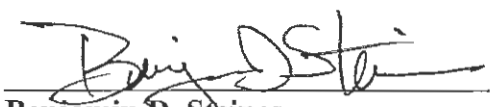
Any driveways/entrances that are found to be not built as required may be altered or removed by the County at the expense of the party requesting the entrance.

REPEALLER:

This policy shall remain in effect until amended by the Winneshiek County Board of Supervisors.

Adopted this 8TH day of SEPTEMBER, 2015


John Logsdon, Chair
Winneshiek County Board of Supervisors


Benjamin D. Steines
Winneshiek County Auditor

Winneshiek County
Permit No. _____

**APPLICATION FOR APPROVAL OF UNDERGROUND
CONSTRUCTION ON WINNESHIEK COUNTY
RIGHT-OF-WAY**

Applicant: _____

Name, Address and Phone Number of Individual or Company

Incorporated under the laws of the State of _____ with principal place of
business in _____
City State Date

Winneshiek County Board of Supervisors,
201 West Main
Decorah, IA 52101

Board of Supervisors:

Approval is hereby requested of underground construction of _____

**Plat of proposed underground construction showing location and other pertinent
information shall be attached to each copy of the application.**

The proposed construction will be located _____ miles _____ from _____
more specifically as follows: (direction) (place, town, etc)

AGREEMENTS: The applicant agrees that the following stipulations shall govern under this permit:

- 1) All trenches constructed longitudinally along the road shall be placed not closer than _____ feet from the edge of the pavement, or not closer than _____ feet from the centerline of unpaved highways.
- 2) The applicant will at any time be subsequent to placing the cable, pipe lines or tile line and at his own expense, relay, reconstruct or encase his lines as may become necessary to conform to new grades, alignment or widening right-of-way, resulting from maintenance or construction operations by Winneshiek County irrespective of whether or not additional right-of-way is acquired in connection with such highway improvement. The applicant agrees to do this promptly on order by the Board of Supervisors or their designee and without cost to the County. If the applicant is unable to comply promptly, the County may cause the work to be done, and the applicant will pay the cost thereof upon receipt of statement.

The County will endeavor to give the applicant sufficient notice of any proposed construction or maintenance work on either existing or newly acquired right-of-way, that likely to expose, cover up or disturb any cable, pipe line or tile line belonging to the applicant in order that the applicant may arrange to protect their lines. The County will inform contractors and others working on the job of the location of the lines so that reasonable care may be taken to avoid damaging the lines. The County assumes no responsibility however, for failure to give such notice.

- 3) The County assumes no responsibility for damages to the applicant's property occasioned by any construction or maintenance operations on said highway, including new or additional right-of-way acquired in connection therewith subsequent to the building of the said pipeline and conduit or tile line. No payment shall be made by the County to the applicant for damage to cables, pipelines or tile lines unless it can be shown that the action causing the damage was of gross negligence.
- 4) The applicant shall take all reasonable precaution during the construction of said cable, pipe line or tile line to protect and safeguard the lives and property of the traveling public and adjacent property owners and shall save the County harmless of any damage or losses that may be sustained by the traveling public or adjacent property owners on account of such construction operations.
- 5) Operations in the construction and maintenance of said cable, pipe line, or tile line shall be carried on in such a way as to not interfere with or interrupt traffic on said highway.
- 6) The applicant shall hold the County harmless from any damage that may result to said highway because of the construction of maintenance of said cable, pipe line or tile line, and shall reimburse the County for any expenditure that the County may have to make on said highway on account of said applicant's cable, pipe line or tile line having been constructed thereon.
- 7) The applicant agrees to give the County 48 hours notice of its intention to start construction on the highway right-of-way. Said notice shall be made in writing to the County Engineer.
- 8) Cable, pipe line and tile line crossings shall be constructed as follows:
Water mains 2" or less inside dia. shall be copper, steel, cast iron or schedule 40 PVC. Water mains of more than 2" inside dia. shall be steel or cast iron. Pressure sewer lines shall meet the same requirements as water mains. Gravity sewer lines and tile lines shall be cast iron or an approved extra strength pipe and need not be encased. Underground telephone and electric lines shall be installed in a casing. Natural gas service lines and mains in town distribution systems need not be encased except as may be required of (9) below. On paved roads cables, pipe lines and casings may be placed through the subgrade by jacking or by boring a hole just large enough to take the line; or if the County Engineer approves, the tunnel may be dug through and the cable, pipe line or casing placed therein. On roads not paved an open trench may be dug and the cable, pipe line or tile line placed therein and the trench backfilled over the line. All backfill of tunnels and trenches shall be thoroughly compacted in layers 5" or less in depth. All work shall be done in a workmanlike manner and the ground left in a neat condition satisfactory to the County Engineer. Applicant shall be responsible for all damage done to the road due to failure of their line and shall reimburse the County all costs in repairing of the road and roadbed.
- 9) Pipe lines conveying natural gas or artificial oil, gasoline, motor fuel or other inflammable substances under and across primary or secondary roads shall be installed according to the rules of the Iowa State Commerce Commission and American Standard Transmission and Distribution Piping System requirements.
- 10) This permit is subject to any laws now in effect or any laws which may be hereafter enacted.
- 11) This application is subject to revocation by the Board of Supervisors or the County Engineer at any time, when in the judgement of the Board or the Engineer, it is necessary in the improvement or maintenance of the highway or for other reasonable cause.
- 12) All markers and pedestals placed in the county right-of-way shall be of a conspicuous color or marked with a flag of conspicuous color.
- 13) Iowa One Call must be contacted by the applicant 48 hours before any digging is to begin. (1-800-292-8989)

AFFIDAVIT FOR NOTORITATION OF APPLICANTS SIGNATURE

I, _____ the _____
(Name of Individual) (official title)
 for _____ of _____
(Name of Company) (Address)
 do solemnly swear I have read the foregoing application and all statements and data contained herein are true and correct.

 Signature and Date

Recommended for Approval:

By _____
County Engineer Date

2 copies of the application and plat must be filed with the County Engineer, 201 W Main, Decorah, IA 52101 for each underground construction project on County right-of-way.

PERMIT FOR TRANSPORTATION OF LIQUID MANURE

The undersigned Applicant makes application for a permit for the transportation of liquid manure along or under the Winneshiek County Secondary Road System or within its adjoining right-of-way. The undersigned acknowledges that the terms of this permit would be as follows:

- 1) The Applicant is permitted to transport liquid manure from the origin and termini points shown on an attached map along the selected pumping routes indicated on said map. Map shall include all roadway crossing points and state the type of crossing. Map shall include the name, address and phone number of all adjoining landowners of the origin and termini properties and adjoining the proposed pumping routes.
- 2) Any and all risks and liability associated with this process are assumed by the Applicant and the Applicant shall indemnify and hold harmless Winneshiek County from any and all claims or notices of violation of every kind, including but not limited to liability for a manure spill, causing personal injury, the creation of a nuisance whether public or private, or the violation of any local, state or federal regulation pertaining thereto.
- 3) The permit shall be considered valid from the date of approval by the Winneshiek County Engineer until _____, 20____.
- 4) If for any reason the origin, termini or pumping routes do not coincide with this permit, the permit shall be considered null and void.
- 5) The county reserves the right to revoke the permit at any time and for any reason.
- 6) Prior to undertaking any transportation of liquid manure the Applicant shall name Winneshiek County as an additional insured on Applicant's liability insurance policy for the purpose of covering claims which may arise from any alleged negligence in the transportation of liquid manure under this permit.
- 7) This permit is binding upon the Applicant and Applicant's co-owners and/or partners, and if an entity other than a sole proprietor or partnership, its officers, directors, agents, employees or any other company or business entity, if any, that undertakes to transport liquid manure pursuant to this permit. If the Applicant hires another company/person to transport liquid manure as an independent contractor, the applicant shall provide written notice to said entity of the existence of this permit, and said entity shall acknowledge in writing that it is subject to the terms set herein.

I, the undersigned, hereby agree to the terms of the Permit For Transport of Liquid Manure listed herein.

Company Name/Person

Signature

Address

Title

City, State, Zip

Approval: _____

Permit No. _____

Lee J. Bjerke, P.E.
Winneshiek County Engineer

Appendix C – Referenced Iowa

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. The state department of transportation shall provide an integrated roadside vegetation management plan and program which shall be designed to accomplish all of the following:

- a. Maintain a safe travel environment.
- b. Serve a variety of public purposes including erosion control, wildlife habitat, climate control, scenic qualities, weed control, utility easements, recreation uses, and sustenance of water quality.
- c. Be based on a systematic assessment of conditions existing in roadsides, preservation of valuable vegetation and habitats in the area, and the adoption of a comprehensive plan and strategies for cost-effective maintenance and vegetation planting.
- d. Emphasize the establishment of adaptable and long-lived vegetation, often native species, matched to the unique environment found in and adjacent to the roadside.
- e. Incorporate integrated management practices for the long-term control of damaging insect populations, weeds, and invader plant species.
- f. Build upon a public education program allowing input from adjacent landowners and the general public.
- g. Accelerate efforts toward increasing and expanding the effectiveness of plantings to reduce wind-induced and water-induced soil erosion and to increase deposition of snow in desired locations.
- h. Incorporate integrated roadside vegetation management with other state agency planning and program activities including the recreation trails program, scenic highways, open space, and tourism development efforts. Agencies should annually report their progress in this area to the general assembly.

2. *Counties may adopt plans.* A county may adopt an integrated roadside vegetation management plan consistent with the integrated roadside vegetation management plan adopted by the department under subsection 1.

3. *Integrated roadside vegetation management technical advisory committee.*

a. The director of the department shall appoint members to an integrated roadside vegetation management technical advisory committee which is created to provide advice on the development and implementation of a statewide integrated roadside vegetation management plan and program and related projects. The department shall report annually in January to the general assembly regarding its activities and those of the committee. Activities of the

committee may include, but are not limited to, providing advice and assistance in the following areas:

- (1) Research efforts.
- (2) Demonstration projects.
- (3) Education and orientation efforts for property owners, public officials, and the general public.
- (4) Activities of the integrated roadside vegetation management coordinator for integrated roadside vegetation management.
- (5) Reviewing applications for funding assistance.
- (6) Securing funding for research and demonstrations.
- (7) Determining needs for revising the state weed law and other applicable Code sections.
- (8) Liaison with the Iowa state association of counties, the Iowa league of cities, and other organizations for integrated roadside vegetation management purposes.

b. The director may appoint any number of persons to the committee but, at a minimum, the committee shall consist of all of the following:

- (1) One member representing the utility industry.
- (2) One member from the Iowa academy of sciences.
- (3) One member representing county government.
- (4) One member representing city government.
- (5) Two members representing the private sector including community interest groups.
- (6) One member representing soil conservation interests.
- (7) One member representing the department of natural resources.
- (8) One member representing county conservation boards.

Members of the committee shall serve without compensation, but may be reimbursed for allowable expenses from the living roadway trust fund created under section 314.21. No more than a simple majority of the members of the committee shall be of the same gender as provided in section 69.16A. The director of the department shall appoint the chair of the committee and shall establish a minimum schedule of meetings for the committee.

4. Integrated roadside vegetation management coordinator. The integrated roadside vegetation management coordinator shall administer the department's integrated roadside vegetation management plan and program. The department may create the position of integrated roadside vegetation management coordinator within the department or may contract for the services of the coordinator. The duties of the coordinator include, but are not limited to, the following:

- a.* Conducting education and awareness programs.
- b.* Providing technical advice to the department and the department of natural resources, counties, and cities.
- c.* Conducting demonstration projects.
- d.* Coordinating inventory and implementation activities.
- e.* Providing assistance to local community-based groups for undertaking community entryway projects.
- f.* Being a clearinghouse for information from Iowa projects

as well as from other states.

g. Periodically distributing information related to integrated roadside vegetation management.

h. General coordination of research efforts.

i. Other duties assigned by the director of transportation.

5. *Education programs.* The department shall develop educational programs and provide educational materials for the general public, landowners, governmental employees, and board members as part of its program for integrated roadside vegetation management. The educational program shall provide all of the following:

a. The development of public service announcements and television programs about the importance of roadside vegetation in Iowa.

b. The expansion of existing training sessions and educational curriculum materials for county weed commissioners, government contract sprayers, maintenance staff, and others to include coverage of integrated roadside management topics such as basic plant species identification, vegetation preservation, vegetation inventory techniques, vegetation management and planning procedures, planting techniques, maintenance, communication, and public relations. County and municipal engineers, public works staffs, planning and zoning representatives, parks and habitat managers, and others should be encouraged to participate.

c. The conducting of statewide and regional conferences and seminars about integrated roadside vegetation management, community entryways, scenic values of land adjoining roadsides, and other topics relating to roadside vegetation.

d. The preparation, display, and distribution of a variety of public relations material, in order to better inform and educate the traveling public on roadside vegetation management activities. The public relations material shall inform motorists of a variety of roadside vegetation issues including all of the following:

(1) Benefits of various types of roadside vegetation.

(2) Long-term results expected from planting and maintenance practices.

(3) Purposes for short-term disturbances in the roadside landscapes.

(4) Interesting aspects of the Iowa landscape and individual landscape regions.

(5) Other aspects relating to wildlife and soil erosion.

e. Preparation and distribution of educational material designed to inform adjoining property owners, farm operators, and others of the importance of roadside vegetation and their responsibilities of proper stewardship of that vegetation resource.

6. *Research and demonstration projects.* The department, as part of its plan to provide integrated roadside vegetation management, shall conduct research and feasibility studies including demonstration projects of different kinds at a variety of locations around the state. The research and feasibility studies may be conducted in, but are not limited to, any of the following areas:

a. Cost effectiveness or comparison of planting, establishing

and maintaining alternative or warm-season, native grass and forb roadside vegetation and traditional cool-season nonnative vegetation.

b. Identification of the relationship that roadsides and roadside vegetation have to maintaining water quality, through drainage wells, sediment and pollutant collection and filtration, and other means.

c. Impacts of burning as an alternative vegetation management tool on all categories of roads.

d. Techniques for more quickly establishing erosion control and permanent vegetative cover on recently disturbed ground as well as interplanting native species in existing vegetative cover.

e. Effectiveness of techniques for reduced or selected use of herbicides to control weeds.

f. Identification of cross section and slope steepness design standards which provide for motorist safety as well as for improved establishment, maintenance, and replacement of different types of vegetation.

g. Identification of a uniform inventory and assessment technique which could be used by many counties in establishing integrated roadside management programs.

h. Equipment innovations for seeding and harvesting grasses in difficult terrain settings, roadway ditches, and fore-slopes and back-slopes.

i. Identification of the perceptions of motorists and landowners to various types of roadside vegetation and configuration of plantings.

j. Market or economic feasibility studies for native seed, forb, and woody plant production and propagation.

k. Impacts of vegetation modifications on increasing or decreasing wildlife populations in rural and urban areas.

l. Effects of vegetation on the number and location of wildlife road-kills in rural and urban areas.

m. Costs to the public for improper off-site resource management adjacent to roadsides.

n. Advantages, disadvantages, and techniques of establishing pedestrian access adjacent to highways and their impacts on vegetation management.

o. Identification of alternative techniques for snow catchment on farmland adjacent to roadsides.

7. Gateways program. The department shall develop a gateways program to provide meaningful visual impacts including major new plantings at the important highway entry points to the state and its communities. Substantial and distinctive plantings shall also be designed and installed at these points. Creative and artistic design solutions shall be sought for these improvements. Communications about these projects shall be provided to local groups in order to build community involvement, support, and understanding of their importance. Consideration shall be given to a requirement that gateways projects produce a local match or contribution toward the overall project cost.

8. *Vegetation inventories and strategies.*

a. The department shall coordinate and compile integrated roadside vegetation inventories, classification systems, plans, and implementation strategies for roadsides. Areas of increased program and project emphasis may include, but are not limited to, all of the following:

- (1) Additional development and funding of state gateways projects.
- (2) Accelerated replacement of dead and unhealthy plants with native and hardy trees and shrubs.
- (3) Special interest plantings at selected highly visible locations along primary and interstate highways.
- (4) Pilot and demonstration projects.
- (5) Additional snow and erosion control plantings.
- (6) Welcome center and rest area plantings with native and aesthetically interesting species to create mini-arboretums around the state.

b. The department shall coordinate and compile a reconnaissance of lands to develop an inventory of sites having the potential of being harvested for native grass, forb, and woody plant material seed and growing stock. Highway right-of-ways, parks and recreation areas, converted railroad right-of-ways, state board of regents' property, lands owned by counties, and other types of public property shall be surveyed and documented for seed source potential. Sites volunteered by private organizations may also be included in the inventory. Inventory information shall be made available to state agencies' staffs, county engineers, county conservation board directors and other.

317.1 DEFINITIONS.

As used in this chapter, unless the context otherwise requires, "book", "list", "record", or "schedule" kept by a county auditor, assessor, treasurer, recorder, sheriff, or other county officer means the county system as defined in section 445.1.

Section History: Recent Form

2000 Acts, ch 1148, §1

317.1A NOXIOUS WEEDS.

The following weeds are hereby declared to be noxious and shall be divided into two classes, namely:

1. Primary noxious weeds, which shall include quack grass

(*Agropyron repens*), perennial sow thistle (*Sonchus arvensis*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium lanceolatum*), European morning glory or field bindweed (*Convolvulus arvensis*), horse nettle (*Solanum carolinense*), leafy spurge (*Euphorbia esula*), perennial pepper-grass (*Lepidium draba*), Russian knapweed (*Centaurea repens*), buckthorn (*Rhamnus*, not to include *Rhamnus frangula*), and all other species of thistles belonging in genera of *Cirsium* and *Carduus*.

2. Secondary noxious weeds, which shall include butterprint (*Abutilon theophrasti*) annual, cocklebur (*Xanthium commune*) annual, wild mustard (*Brassica arvensis*) annual, wild carrot (*Daucus carota*) biennial, buckhorn (*Plantago lanceolata*) perennial, sheep sorrel (*Rumex acetosella*) 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 annus* L.) annual, puncture vine (*Tribulus terrestris*) annual, teasel (*Dipsacus*) biennial, and shattercane (*Sorghum bicolor*) annual.

The multiflora rose (*Rosa multiflora*) shall not be considered a secondary noxious weed when cultivated for or used as understock for cultivated roses or as ornamental shrubs in gardens, or in any county whose board of supervisors has by resolution declared it not to be a noxious weed. Shattercane (*Sorghum bicolor*) shall not be considered a secondary noxious weed when cultivated or in any county whose board of supervisors has by resolution declared it not to be a noxious weed.

Section History: Early Form

[S13, § 1565-b; C24, 27, 31, 35, § 4818; C39, § **4829.01**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.1]

Section History: Recent Form

85 Acts, ch 171, §1; 2000 Acts, ch 1154, §20
C2001, §317.1A
See also § 199.1

317.2 STATE BOTANIST.

The secretary of agriculture shall appoint as state botanist the head of the botany and plant pathology section of the Iowa agricultural experiment station whose duty shall be to co-operate in developing a constructive weed eradication program.

Section History: Early Form

[C39, § **4829.02**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.2]

317.3 WEED COMMISSIONER -- STANDARDS FOR NOXIOUS WEED

CONTROL.

The board of supervisors of each county may annually appoint a county weed commissioner who may be a person otherwise employed by the county and who passes minimum standards established by the department of agriculture and land stewardship for noxious weed identification and the recognized methods for noxious weed control and elimination. The county weed commissioner's appointment shall be effective as of March 1 and shall continue for a term at the discretion of the board of supervisors unless the commissioner is removed from office as provided for by law. The county weed commissioner may, with the approval of the board of supervisors, require that commercial applicators and their appropriate employees pass the same standards for noxious weed identification as established by the department of agriculture and land stewardship. The name and address of the person appointed as county weed commissioner shall be certified to the county auditor and to the secretary of agriculture within ten days of the appointment. The board of supervisors shall fix the compensation of the county weed commissioner and deputies. In addition to compensation, the commissioner and deputies shall be paid their necessary travel expenses. At the discretion of the board of supervisors, the weed commissioner shall attend a seminar or school conducted or approved by the department of agriculture and land stewardship relating to the identification, control, and elimination of noxious weeds.

The board of supervisors shall prescribe the time of year the weed commissioner shall perform the powers and duties of county weed commissioner under this chapter which may be during that time of year when noxious weeds can effectively be killed. Compensation shall be for the period of actual work only although a weed commissioner assigned other duties not related to weed eradication may receive an annual salary. The board of supervisors shall likewise determine whether employment shall be by hour, day or month and the rate of pay for the employment time.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, 27, § 4817; C31, 35, § 4817, 4817-d1; C39, § **4829.03**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.3]

Section History: Recent Form

83 Acts, ch 123, § 119, 209; 85 Acts, ch 160, §1; 94 Acts, ch 1173, §14
Referred to in § 331.321

317.4 DIRECTION AND CONTROL.

As used in this chapter, "*commissioner*" means the county weed commissioner or the commissioner's deputy within each county. Each commissioner, subject to direction and control by the county board of

supervisors, shall supervise the control and destruction of all noxious weeds in the county, including those growing within the limits of cities, within the confines of abandoned cemeteries, and along streets and highways unless otherwise provided. A commissioner shall notify the department of public safety of the location of marijuana plants found growing on public or private property. A commissioner may enter upon any land in the county at any time for the performance of the commissioner's duties, and shall hire the labor and equipment necessary subject to the approval of the board of supervisors.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, 27, 31, 35, § 4817; C39, § **4829.04**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, S81, § 317.4; 81 Acts, ch 117, § 1047]

Section History: Recent Form

83 Acts, ch 123, § 120, 209; 90 Acts, ch 1179, § 2

317.5 WEEDS IN ABANDONED CEMETERIES.

The commissioner shall control the weeds growing in abandoned cemeteries in the county as needed. Spraying for control of weeds shall be limited to those circumstances when it is not practical to mow or otherwise control the weeds.

Section History: Early Form

[C58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.5]

Section History: Recent Form

89 Acts, ch 246, §7

317.6 ENTERING LAND TO DESTROY WEEDS -- NOTICE.

If there is a substantial failure by the owner or person in possession or control of any land to comply with any order of destruction pursuant to the provisions of this chapter, the county weed commissioner, including the weed commissioner's deputies, or employees acting under the weed commissioner's direction may enter upon any land within the commissioner's county for the purpose of destroying noxious weeds. The entry may be made without the consent of the landowner or person in possession or control of the land. However, the actual work of destruction shall not be commenced until five days after the landowner and the person in possession or control of the land have been notified. The notice shall state the facts relating to failure of compliance with the county program of weed destruction order or orders made by the board of supervisors. The notice shall be delivered by personal service on the owner and

persons in possession and control of the land. The personal service may be served by the weed commissioner or any person designated in writing by the weed commissioner. However, in lieu of personal service, the weed commissioner may provide that the notice be delivered by certified mail. A copy of the notice shall be filed in the office of the county auditor. The last known address of the owner or person in possession or control of the land may be ascertained, if necessary, from the last tax list in the county treasurer's office. Where any person owning land within the county has filed a written instrument in the office of the county auditor designating the name and address of its agent, the notice may be delivered to that agent. In computing time for notice, it shall be from the date of service as evidenced on the return of service. If delivery is made by certified mail, it shall be from the date of mailing.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, § 4817; C27, 31, 35, § 4817, 4823-b1; C39, § **4829.05, 4829.06**; C46, § 317.5, 317.6; C50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.6]

Section History: Recent Form

2005 Acts, ch 39, §1
Referred to in § 317.16

317.7 REPORT TO BOARD.

Each weed commissioner shall for the territory under the commissioner's jurisdiction on or before the first day of November of each year make a written report to the board of supervisors. Said report shall state:

1. The name and location of all primary noxious weeds, and any new weed which appears to be a serious pest.
2. A detailed statement of the treatment used, and future plans, for eradication of weeds on each infested tract on which the commissioner has attempted to exterminate weeds, together with the costs and results obtained.
3. A summary of the weed situation within the jurisdiction, together with suggestions and recommendations which may be proper and useful, a copy of which shall be forwarded to the state secretary of agriculture.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, 27, 31, 35, § 4817; C39, § **4829.07**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.7]

317.8 DUTY OF SECRETARY OF AGRICULTURE OR SECRETARY'S

DESIGNEE.

The secretary of agriculture or the secretary's designee is vested with the following duties, powers and responsibilities:

1. The secretary or the secretary's designee shall serve as state weed commissioner, and shall co-operate with all boards of supervisors and weed commissioners, and shall furnish blank forms for reports made by the supervisors and commissioners.
2. The secretary or the secretary's designee may, upon recommendation of the state botanist, temporarily declare noxious any new weed appearing in the state which possesses the characteristics of a serious pest.
3. The secretary or the secretary's designee shall aid the supervisors in the interpretation of the weed law, and make suggestions to promote extermination of noxious weeds.
4. The secretary or the secretary's designee shall aid the supervisors in enforcement of the weed law as it applies to all state lands, state parks and primary roads, and may impose a maximum penalty of a ten dollar fine for each day, up to ten days, that the state agency in control of land fails to comply with an order for destruction of weeds made pursuant to this chapter.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, 27, 31, 35, § 4817; C39, § 4829.08; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.8]

Section History: Recent Form

85 Acts, ch 171, §2; 87 Acts, ch 115, §48

317.9 DUTY OF BOARD TO ENFORCE.

The responsibility for the enforcement of the provisions of this chapter shall be vested in the board of supervisors as to all farm lands, railroad lands, abandoned cemeteries, state lands and state parks, primary and secondary roads; roads, streets and other lands within cities unless otherwise provided.

Section History: Early Form

[S13, § 1565-c, -d, -f; C24, 27, 31, 35, § 4817; C39, § 4829.09; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.9]

317.10 DUTY OF OWNER OR TENANT.

Each owner and each person in the possession or control of any lands shall cut, burn, or otherwise destroy, in whatever manner may be prescribed by the board of supervisors, all noxious weeds thereon as defined in this chapter at such times in each year and in such manner as shall be prescribed in the program of weed destruction

order or orders made by the board of supervisors, and shall keep said lands free from such growth of any other weeds, as shall render the streets or highways adjoining said land unsafe for public travel.

Section History: Early Form

[SS15, § 1565-a; C24, 27, 31, 35, § 4819; C39, § **4829.10**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.10]

317.11 WEEDS ON ROADS -- HARVESTING OF GRASS.

The county boards of supervisors and the state department of transportation shall control noxious weeds growing on the roads under their jurisdiction. Spraying for control of noxious weeds shall be limited to those circumstances when it is not practical to mow or otherwise control the noxious weeds.

Nothing under this chapter shall prevent the landowner from harvesting, in proper season, the grass grown on the road along the landowner's land except for vegetation maintained for highway purposes as part of an integrated roadside vegetation management plan which is consistent with the objectives in section 314.22.

Section History: Early Form

[S13, § 1565-c, -d, -f; SS15, § 1565-a; C24, 27, 31, 35, § 4817, 4819; C39, § **4829.11**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.11]

Section History: Recent Form

89 Acts, ch 246, §8

317.12 WEEDS ON RAILROAD OR PUBLIC LANDS AND GRAVEL PITS.

All noxious weeds on railroad lands, public lands and within incorporated cities shall be treated in such manner, approved by the board of supervisors, as shall prevent seed production and either destroy or prevent the spread of noxious weeds to adjoining lands. Gravel pits infested with noxious weeds shall not be used as sources of gravel for public highways without previous treatment approved by board of supervisors.

Section History: Early Form

[S13, § 1565-c, -d, -f; SS15, § 1565-a; C24, 27, 31, 35, § 4817, 4819; C39, § **4829.12**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.12]

317.13 PROGRAM OF CONTROL.

The board of supervisors of each county may each year, upon

recommendation of the county weed commissioner by resolution prescribe and order a program of weed control for purposes of complying with all sections of this chapter. The county board of supervisors of each county may also by adopting an integrated roadside vegetation management plan prescribe and order a program of weed control for purposes of complying with all sections of this chapter. The program for weed control ordered or adopted by the county board of supervisors shall provide that spraying for control of weeds shall be limited to those circumstances when it is not practical to mow or otherwise control the weeds.

The program of weed control shall include a program of permits for the burning, mowing, or spraying of roadsides by private individuals. The county board of supervisors shall allow only that burning, mowing, or spraying of roadsides by private individuals that is consistent with the adopted integrated roadside vegetation management plan. This paragraph applies only to those roadside areas of a county which are included in an integrated roadside vegetation management plan.

Section History: Early Form

[S13, § 1565-c, -d; C24, 27, 31, 35, § 4821; C39, § **4829.13**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.13]

Section History: Recent Form

85 Acts, ch 171, §3; 89 Acts, ch 246, §9; 90 Acts, ch 1267, § 36
Referred to in § 317.14

317.14 NOTICE OF PROGRAM.

Notice of any order made pursuant to section 317.13 shall be given by one publication in the official newspapers of the county and shall be directed to all property owners.

Said notice shall state:

1. The time for destruction.
2. The manner of destruction, if other than cutting above the surface of the ground.
3. That unless said order is complied with the weed commissioner shall cause said weeds to be destroyed and the cost thereof will be taxed against the real estate on which the noxious weeds are destroyed.

Section History: Early Form

[S13, § 1565-c, -d; C24, 27, 31, 35, § 4822; C39, § **4829.14**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.14]

317.15 LOSS OR DAMAGE TO CROPS.

The loss or damage to crops or property incurred by reason of such destruction shall be borne by the titleholder of said real estate,

unless said real estate shall be sold under contract whereby possession has been delivered to the purchaser, in which event such purchaser shall bear such loss or damage, excepting where a contract has been entered into providing a different adjustment for such loss or damage.

Section History: Early Form

[S13, § 1565-c, -d; C24, 27, 31, 35, § 4822; C39, § **4829.15**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.15]

317.16 FAILURE TO COMPLY.

1. In case of a substantial failure to comply by the date prescribed in any order of destruction of weeds made pursuant to this chapter, the weed commissioner may do any of the following:

a. Enter upon the land as provided in section 317.6 and provide for the destruction of the weeds as provided in section 317.6.

b. Impose a maximum penalty of a ten dollar fine for each day, up to ten days, that the owner or person in possession or control of the land fails to comply. If a penalty is imposed and the owner or person in possession or control of the land fails to comply, the weed commissioner shall cause the weeds to be destroyed.

2. If the weed commissioner enters the land and causes the weeds to be destroyed, the actual cost and expense of cutting, burning, or otherwise destroying the weeds, along with the cost of providing notice and special meetings or proceedings, if any, shall be paid by the county and, together with the additional assessment to apply toward costs of supervision and administration, be recovered by an assessment against the tract of real estate on which the weeds were growing, as provided in section 317.21. Any fine imposed under this section shall be recovered by a similar assessment.

Section History: Early Form

[S13, § 1565-c, -d; C24, 27, 31, 35, § 4823; C39, § **4829.16**; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.16]

Section History: Recent Form

83 Acts, ch 123, § 121, 209; 85 Acts, ch 171, §4; 2005 Acts, ch 39, §2

Referred to in § 317.21

317.17 ADDITIONAL NOXIOUS WEEDS.

The board of supervisors shall order the weed commissioner, or commissioners, to destroy or cause to be destroyed any new weeds declared to be noxious by the secretary of agriculture, the cost of which shall be borne by the county.

Section History: Early Form

[C39, § 4829.17; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.17]

317.18 ORDER FOR WEED CONTROL ON ROADS.

The board of supervisors may order all noxious weeds, within the right-of-way of all roads under county jurisdiction to be cut, burned, or otherwise controlled to prevent seed production, either upon its own motion or upon receipt of written notice requesting the action from any residents of the township in which the roads are located, or any person regularly using the roads. The order shall be consistent with the county integrated roadside vegetation management plan, if the county has adopted such a plan, and the order shall define the roads along which noxious weeds are required to be cut, burned, or otherwise controlled and shall require the weeds to be cut, burned, or otherwise controlled within fifteen days after the publication of the order in the official newspapers of the county or as prescribed in the county's integrated roadside vegetation management plan. The order shall provide that spraying for control of noxious weeds shall be limited to those circumstances when it is not practical to mow or otherwise control the weeds.

Section History: Early Form

[C39, § 4829.18; C46, 50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.18]

Section History: Recent Form

83 Acts, ch 123, § 122, 209; 85 Acts, ch 171, §5; 89 Acts, ch 246, §10; 98 Acts, ch 1075, §14

317.19 ROAD CLEARING APPROPRIATION.

The board of supervisors may appropriate moneys to be used for the purposes of cutting, burning, or otherwise controlling weeds or brush within the right-of-way of roads under county jurisdiction in time to prevent reseeding or in a manner consistent with the county's roadside vegetation management plan, if the county has adopted such a plan. The moneys appropriated shall not be spent on spraying for control of weeds except in those circumstances when it is not practical to mow or otherwise control the weeds.

The board of supervisors may purchase or hire necessary equipment or contract with the adjoining landowner to carry out this section.

Section History: Recent Form

83 Acts, ch 123, § 123, 209; 84 Acts, ch 1219, § 20; 85 Acts, ch 171, §6; 89 Acts, ch 246, §11; 98 Acts, ch 1075, §15

317.20 EQUIPMENT AND MATERIALS -- USE ON PRIVATE PROPERTY.

The board of supervisors may appropriate moneys for the purpose of purchasing weed eradicating equipment and materials to carry out the duties of the commissioner for use on all lands in the county, public or private, and for the payment of the necessary expenses and compensation of the commissioner, and the commissioner's deputies, if any. When equipment or materials so purchased are used on private property within the corporate limits of cities by the commissioner, the cost of materials used and an amount to be fixed by the board of supervisors for the use of the equipment shall be returned by the county treasurer upon the collection of the special assessment taxed against the property. In the certification to the county treasurer by the county auditor this apportionment shall be designated along with the special tax assessed under section 317.21. The equipment and its use are subject to the authorization and direction of the county board of supervisors.

Section History: Recent Form

83 Acts, ch 123, § 124, 209
Referred to in § 331.559

317.21 COST OF WEED DESTRUCTION.

When the commissioner destroys any weeds under the authority of section 317.16, after failure of the landowner responsible to destroy such weeds pursuant to the order of the board of supervisors, the cost of the destruction shall be assessed against the land and collected from the landowner responsible in the following manner:

1. Annually, after the weed commissioner has completed the program of destruction of weeds by reason of noncompliance by persons responsible for the destruction, the board of supervisors shall determine as to each tract of real estate the actual cost of labor and materials used by the commissioner in cutting, burning, or otherwise destroying the weeds, the cost of serving notice, and of special meetings or proceedings, if any. To the total of all sums expended, the board shall add an amount equal to twenty-five percent of that total to compensate for the cost of supervision and administration and assess the resulting sum against the tract of real estate by a special tax, which shall be certified to the county auditor and county treasurer by the clerk of the board of supervisors, and shall be placed upon the tax books, and collected, with interest after delinquent, in the same manner as other unpaid taxes. The tax shall be due on March 1 after assessment, and shall be delinquent from April 1 after due. However, when the last day of March is a Saturday or Sunday, such amount shall be delinquent from the second business day of April. When collected, the moneys shall be paid into the fund from which the costs were originally paid.

2. Before making any such assessment, the board of supervisors shall prepare a plat or schedule showing the several lots, tracts of

land or parcels of ground to be assessed which shall be in accord with the assessor's records and the amount proposed to be assessed against each of the same for destroying or controlling weeds during the fiscal year.

3. Such board shall thereupon fix a time for the hearing on such proposed assessments, which time shall not be later than December 15 of the year, and at least twenty days prior to the time thus fixed for such hearing shall give notice thereof to all concerned that such plat or schedule is on file, and that the amounts as shown therein will be assessed against the several lots, tracts of land or parcels of ground described in said plat or schedule at the time fixed for such hearing, unless objection is made thereto. Notice of such hearing shall be given by one publication in official county newspapers in the county in which the property to be assessed is situated; or by posting a copy of such notice on the premises affected and by mailing a copy by certified mail to the last known address of the person owning or controlling said premises. At such time and place the owner of said premises or anyone liable to pay such assessment, may appear with the same rights given by law before boards of review, in reference to assessments for general taxation.

Section History: Early Form

[S13, § 1565-c, -d; C24, 27, § 4824, 4825; C31, 35, § 4824, 4825, 4825-c1, -c2; C39, § **4829.19**; C46, § 317.20; C50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.21]

Section History: Recent Form

85 Acts, ch 171, § 7; 92 Acts, ch 1016, § 4; 98 Acts, ch 1107, §7;
2005 Acts, ch 34, §2, 26
Referred to in § 317.16, 317.20, 331.502, 331.559

317.22 DUTY OF HIGHWAY MAINTENANCE PERSONNEL.

All officers directly responsible for the care of public highways shall make a complaint to the weed commissioners or board of supervisors, if it appears that the provisions of this chapter may not be complied with in time to prevent the blooming and maturity of noxious weeds or the unlawful growth of weeds or marijuana, whether in the streets or highways for which they are responsible or upon lands adjacent to the same.

Section History: Early Form

[S13, § 1565-c, -e; C24, 27, 31, 35, § 4826; C39, § **4829.20**;
C46, § 317.21; C50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.22]

Section History: Recent Form

317.23 DUTY OF COUNTY ATTORNEY.

It shall be the duty of the county attorney upon complaint of any citizen that any officer charged with the enforcement of the provisions of this chapter has neglected or failed to perform the officer's duty, to enforce the performance of such duty.

Section History: Early Form

[C24, 27, 31, 35, § 4828; C39, § **4829.21**; C46, § 317.22; C50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.23]
Referred to in § 331.756(56)

317.24 PUNISHMENT OF OFFICER.

Any officer referred to in this chapter who neglects or fails to perform the duties incumbent upon the officer under the provisions of this chapter shall be guilty of a simple misdemeanor.

Section History: Early Form

[S13, § 1565-i; C24, 27, 31, 35, § 4829; C39, § **4829.22**; C46, § 317.23; C50, 54, 58, 62, 66, 71, 73, 75, 77, 79, 81, § 317.24]

317.25 TEASEL, MULTIFLORA ROSE, AND PURPLE LOOSESTRIFE PROHIBITED -- EXCEPTIONS.

A person shall not import, sell, offer for sale, or distribute teasel (*Dipsacus*) biennial, the multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), purple loosestrife (*Lythrum virgatum*), or seeds of them in any form in this state. However, this section does not prohibit the sale, offer for sale, or distribution of the multiflora rose (*Rosa multiflora*) used for understock for either cultivated roses or ornamental shrubs in gardens. Any person violating the provisions of this section is subject to a fine of not exceeding one hundred dollars.

Section History: Early Form

[C75, 77, 79, 81, § 317.25]

Section History: Recent Form

89 Acts, ch 193, §1; 90 Acts, ch 1111, § 1; 91 Acts, ch 5, §1; 91 Acts, ch 258, §46; 2001 Acts, ch 91, §1; 2002 Acts, ch 1050, §31

317.26 ALTERNATIVE REMEDIATION PRACTICES.

The director of the department of natural resources, in cooperation with the secretary of agriculture and county conservation boards or the board of supervisors, shall develop and implement projects which utilize alternative practices in the remediation of

noxious weeds and other vegetation within highway rights-of-way.

318.1 DEFINITIONS.

As used in this chapter, unless the context otherwise requires:

1. *"Department"* means the state department of transportation.
2. *"Highway authority"* means the county board of supervisors, in the case of secondary roads, and the department, in the case of primary roads.
3. *"Highway right-of-way"* means the total area of land, whether reserved by public ownership or easement, that is reserved for the operation and maintenance of a legally established public roadway. This area shall be deemed to consist of two portions, a central traveled way including the shoulders and that remainder on both sides of the road, between the outside shoulder edges and the outer boundaries of the right-of-way.
4. *"Obstruction"* means an obstacle in the highway right-of-way or an impediment or hindrance which impedes, opposes, or interferes with free passage along the highway right-of-way, not including utility structures installed in accordance with an approved permit.
5. *"Officer"* means any department employee, county employee, or elected county official.
6. *"Traveled portion of the right-of-way"* means that area of the highway right-of-way, not including the shoulders, on which vehicles normally travel.
7. *"Utility"* means all private, public, municipal, or cooperative owned systems for water, sewer, natural gas, electric, telegraph, telephone, transit, pipeline, heating plants, railroads, bridges, street lights, or traffic control signals.
8. *"Utility structures"* means the aboveground devices, required by a utility, including poles, lines, and wires, used for telephone, electric, natural gas, and other distribution or transmission purposes, and natural gas and electrical substations.

Section History: Recent Form

2006 Acts, ch 1097, §1

318.2 PURPOSE.

The purpose of this chapter is to enhance public safety for those traveling the public roads and allow economical maintenance of highway rights-of-way.

Section History: Recent Form

2006 Acts, ch 1097, §2

318.3 OBSTRUCTIONS IN HIGHWAY RIGHT-OF-WAY.

A person shall not place, or cause to be placed, an obstruction within any highway right-of-way. This prohibition includes, but is not limited to, the following actions:

1. The excavation, filling, or making of any physical changes to any part of the highway right-of-way, except as provided under section 318.8.
2. The cultivation or growing of crops within the highway right-of-way.
3. The destruction of plants placed within the highway right-of-way.
4. The placing of fences or ditches within the highway right-of-way.
5. The alteration of ditches, water breaks, or drainage tiles within the highway right-of-way.
6. The placement of trash, litter, debris, waste material, manure, rocks, crops or crop residue, brush, vehicles, machinery, or other items within the highway right-of-way.
7. The placement of billboards, signs, or advertising devices within the highway right-of-way.
8. The placement of any red reflector, or any object or other device which shall cause the effect of a red reflector on the highway right-of-way which is visible to passing motorists.

Section History: Recent Form

2006 Acts, ch 1097, §3
Referred to in § 318.6, 318.8
See also §318.5, 318.10, and 318.11

318.4 DUTY OF HIGHWAY AUTHORITIES.

The highway authority shall cause all obstructions in a highway right-of-way under its jurisdiction to be removed.

Section History: Recent Form

2006 Acts, ch 1097, §4

318.5 REMOVAL AND COST.

1. An obstruction in a highway right-of-way which constitutes an immediate and dangerous hazard shall, without notice or liability in damages, be removed by the highway authority.
2. An obstruction not constituting an immediate and dangerous hazard shall be removed by the highway authority without liability after forty-eight-hour notice served in the same manner in which an original notice is served, or in writing by certified mail, or in any other manner reasonably calculated to apprise the person responsible for the obstruction that the obstruction will be removed at the person's expense. The highway authority shall assess the removal

cost.

3. Upon removal of the obstruction, the highway authority may immediately send a statement of the cost to the person responsible for the obstruction. If within ten days after sending the statement the cost is not paid, the highway authority may institute legal proceedings to collect the cost of removal. The removal costs shall be assessed against the following persons, as applicable:

- a. The vehicle owner in the case of an abandoned vehicle.
- b. The abutting property owner in the case of a fence, other than a right-of-way line fence, or other temporary obstruction placed within the highway right-of-way by the owner or tenant of the abutting property.
- c. The owner or person responsible for placement of any other obstruction.

4. All removals shall be without liability on the part of any officer ordering or effecting such removal.

Section History: Recent Form

2006 Acts, ch 1097, §5

Referred to in § 68A.406, 318.9, 318.10

Manner of service, R.C.P. 1.302--1.315

318.6 PUBLIC NUISANCE.

1. Any person who places, or causes to be placed, any obstruction in a highway right-of-way as prohibited under section 318.3 is deemed to have created a public nuisance punishable as provided in chapter 657.

2. If a person is found guilty of placing an obstruction within a highway right-of-way, the court may, in addition to any fine imposed, or judgment for damages or costs for which a separate execution may issue, order that the obstruction be abated or removed at the expense of the defendant. The costs for abatement or removal of the obstruction may be entered as a personal judgment against the defendant or assessed against the property where the obstruction occurred, or both.

Section History: Recent Form

2006 Acts, ch 1097, §6

318.7 INJUNCTION TO RESTRAIN OBSTRUCTIONS.

A highway authority may maintain a suit in equity aided by injunction to restrain an obstruction in a highway right-of-way. In such actions, the highway authority may cause the legal boundary lines of the highway to be adjudicated provided all interested parties are impleaded.

Section History: Recent Form

318.8 PERMIT REQUIRED.

A person shall not excavate, fill, or make a physical change within a highway right-of-way without obtaining a permit from the applicable highway authority. At the request of a permittee, a modification may be granted in the discretion of the highway authority. Work performed under the permit shall be performed in conformity with the specifications prescribed by the highway authority. If the work does not conform to permit specifications, the person shall be notified to make the conforming changes. If after twenty days the changes have not been made, the highway authority may make the necessary changes and immediately send a statement of the cost to the responsible person. If within thirty days after sending the statement the cost is not paid, the highway authority may institute legal proceedings to collect the cost of correction. A violation of the permit specifications shall be considered a violation of section 318.3. A public utility subject to section 306A.3 is exempt from this section.

Section History: Recent Form

2006 Acts, ch 1097, §8
Referred to in § 318.3

318.9 UTILITY STRUCTURES.

1. *a.* A utility structure in a highway right-of-way used for telephone, electric, natural gas, or other distribution or transmission purposes shall be removed by the owner or operator of the transmission lines upon written notice from the highway authority of not less than ninety days, to the owner and operator. The notice shall, with reasonable certainty, specify the utility structure to be removed and shall be served in the same manner that original notices are required to be served. If the owner or operator of the transmission line is unable to remove the utility structure within the required time due to circumstances beyond the control of the owner or operator, the owner or operator shall file a request with the highway authority for an extension of time to complete the work.

b. If the owner or operator of a transmission line needs authorization from the utilities board or other governmental authority to relocate a utility structure or to obtain a new private easement right for relocation of the utility structure, the owner or operator shall request an extension of time within which to remove the utility structure. The highway authority shall grant an extension of time for at least ninety days following the date authorization is granted or the easement right is obtained.

2. Upon written application, the highway authority shall locate the construction of new telephone, electric, or transmission lines or parts of lines, including natural gas pipeline, for the roads within the highway authority's jurisdiction, subject to the jurisdiction of

the utilities board under chapters 476, 478, and 479, as follows:

a. The county engineer, or the board of supervisors if a county engineer is not available, shall locate the lines for secondary roads.

b. The department shall locate the lines for primary roads.

3. The department and the county engineer, or the board of supervisors if a county engineer is not available, may designate the location of a utility structure within a highway right-of-way. A utility structure that is not properly located within the highway right-of-way shall be removed within a time prescribed to a designated location. If not so removed, the highway authority may remove the utility structure and recover costs as provided in section 318.5.

Section History: Recent Form

2006 Acts, ch 1097, §9

Referred to in § 306.46

Manner of service, R.C.P. 1.302--1.315

318.10 FENCES.

1. A fence which constitutes an immediate and dangerous hazard shall, without notice or liability in damages, be removed by the highway authority. In all other cases where a fence is an obstruction in a highway right-of-way, notice in writing of not less than thirty days shall be given to the owner, occupant, or agent of the land enclosed by the fence.

2. The notice shall, with reasonable certainty, specify the line to which the fences shall be removed and shall be served in the same manner that original notices are required to be served, or in writing by certified mail, or in any other manner reasonably calculated to apprise the person responsible for the fence.

3. The department and the county engineer, or the board of supervisors if a county engineer is not available, may designate the location of a fence within a highway right-of-way. A fence that is not properly located within the highway right-of-way shall be removed within a time prescribed to a designated location. If not so removed, the highway authority may remove the fences and recover costs as provided in section 318.5.

Section History: Recent Form

2006 Acts, ch 1097, §10

Manner of service. R.C.P. 1.302--1.315

318.11 BILLBOARDS AND SIGNS.

1. No billboard or advertising sign or device, except a sign or device authorized by law or approved by the highway authority, shall be placed or erected upon a highway right-of-way.

2. A billboard or advertising sign, whether on public or private

property, that obstructs the view of any portion of a public highway or of a railway track making the use of the traveled portion of the right-of-way dangerous is a public nuisance and shall be abated. The person responsible for the erection and maintenance of the billboard or sign may be punished as provided in chapter 657.

Section History: Recent Form

2006 Acts, ch 1097, §11
Referred to in § 331.756(57)

318.12 ENFORCEMENT.

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

Appendix D. – Secondary Roads Equipment Inventory for use in the IRVM program

- 2009 Truax FLXII 88U seed drill (funded by LRTF) – Very Good Condition
- 1997 International Dump truck w/ bed mounted 1800 gal water tank – Poor Condition
- 2003 Ford F150 – Poor Condition
- 2003 John Deere 7220 with boom mower – Good Condition
- 2000 John Deere 6410 with side and rear mower – Good Condition
- 1999 John Deere 6310 with side and rear mower – Good Condition
- 2006 New Holland TC55DA with rear seeder – Good Condition
- 2002 John Deere 7210 with side mower – Good Condition
- 2006 John Deere 6615 with side mower – Good Condition
- 1998 John Deere 6310 with side mower – Good Condition
- Tractor mounted disc – Fair Condition
- (3) skid mounted sprayers – Good Condition
- 1991 Vermeer 1250 Brush Chipper – Fair Condition
- Pull type drag – Fair Condition
- Hand seeders – Good Condition

Appendix E: Iowa DOT Section 2601. Erosion Control

2601.01 DESCRIPTION.

Perform the following erosion control measures on areas within and adjacent to the right-of-way according to the contract documents and this specification:

- Seeding and fertilizing,
- Stabilizing crop seeding and fertilizing,
- Overseeding and fertilizing,
- Mulching,
- Composting,
- Sodding,
- Special ditch control,
- Turf reinforcement mat,
- Slope protection,
- Outlet or channel scour protection (transition mat), and
- Mowing.

2601.02 MATERIALS.

- A. Furnish materials meeting the requirements of [Section 4169](#).
- B. Apply materials at no less than the minimum rate specified in the contract documents. Apply seed for native grass, wildflower, and wetland grass seeding on a PLS basis, as computed by the Engineer.
- C. Additional compensation will not be allowed for materials in excess of that specified, unless directed by the Engineer.
- D. If, after application of fertilizer, it is determined by test that the fertilizer fails to comply with minimum requirements, furnish and apply additional fertilizer to comply with minimum requirements as defined in [Article 4169.03](#).
- E. Perform work in a manner that provides the Engineer the opportunity to verify the quantity of material furnished and the rate of application. Divide project area into small natural areas that are to be constructed as identifiable units. Furnish a tally of the quantities of each material as it is used on each area. This may include the quantities below:
- Weights from approved scales of truck loads of bulk materials,
 - Other scaled weights,
 - Counts of containers, bags, or bales, or estimates of partially used packages of materials, as approved by the Engineer.
- F. Provide the Engineer with the opportunity to verify quality and quantities in a manner that will allow continuous operation with minimum delays.
- G. When handling inoculants and sticking agents, follow safety precautions as specified on the product label.

2601.03 PLACEMENT OF EROSION CONTROL.

A. Equipment.

Use equipment meeting the requirements of Section 2001 and the following, except that other equipment which produces similar results will be considered for approval. Use methods and procedures consistent with equipment manufacturers' recommendations; however, do not operate ground driven equipment at speeds greater than 10 mph.

1. Disk.

When preparing a seedbed on ground having heavy vegetation, use a disk having cutaway blades. Provide for the addition of weight to obtain proper cutting depth.

2. Slope Harrow.

Use a rolling weight attached by heavy chain to a tractor. Use a chain of suitable length, with picks attached and a means of rotating the picks as the rolling weight is pulled in a direction parallel to the movement of the tractor.

3. Field Tiller.

Use equipment designed for preparation of the seedbed to the degree specified.

4. Rotary Tiller.

Use equipment with rotary type blades designed for preparation of seedbed to the degree specified.

5. Spike Tooth Harrow.

Use equipment designed to:

- Provide adjustment of the spike teeth to level the ground, or
- Be used as specified by the Engineer.

6. Compaction Equipment.

a. Cultipacker.

1) Use a pull type cultipacker with individual rollers or wheels. Cultipackers having sprocket type spacers between the wheels may be used. Ensure the cultipacker produces a corrugated surface on area being compacted.

2) Use a cultipacker that operates separate from other operations. Attachment of cultipacker to the seeder or disk will not be permitted, except when the combined cultipacker seeder is manufactured to operate as a unit. Provide for the addition of weight.

b. Compaction Rollers.

Apply [Article 2001.05, A.](#)

c. Hand Tamping Equipment.

Use base plate type hand tamping equipment adapted to the performance of the work. Obtain the Engineer's approval.

d. Expanded Mesh Roller.

Use open grid type equipment or the cultipacker type equipment modified by covering with expanded metal mesh.

7. Hydraulic Seeder and Mulcher.

a. Use hydraulic seeding equipment with a pump rated at no less than 100 gallons per minute. Inoculant, seed, and fertilizer may be applied in a single operation, unless stated otherwise in the contract documents. Apply hydraulic mulch as a separate operation. Ensure the equipment has suitable working pressure and a nozzle adapted to the type of work.

b. Ensure supply tanks have a means of mechanical agitation. Calibrate the tanks and provide a calibration stick or other approved device to indicate the volume used or remaining in the tank.

8. Gravity Seeders.

a. Ensure gravity seeders:

- Provide agitation of the seed,
- Have an adjustable gate opening, and
- Uniformly distribute seed on the prepared seedbed.

b. Use a seed hopper equipped with baffle plates spaced no more than 2 feet apart. Ensure baffle plates extend from the agitator shaft to within approximately 2 inches of the top of the seed hopper.

c. Wind guards will be required to facilitate seeding when moderate wind conditions exist and when required by the Engineer. Place wind guards in front or in back (or both) of the seed outlet and extend to near the ground line.

d. This seeder may be used for the application of fertilizer.

9. Endgate Cyclone Seeders.

Ensure endgate cyclone seeders are:

- Suitably mounted,
- Provide movement by mechanical means, and
- Drop through an adjustable flow regulator onto a rotating, power driven, horizontal disk or fan.

10. Hand Cyclone Seeders.

Use a seeder that drops seed through an adjustable flow regulator onto a rotating, hand driven, horizontal disk or fan.

11. Native Grass Seed Drill.

Use a drill that:

- Is free of soil and seed when it arrives on the project,
- Accurately meters and uniformly mixes various seed types throughout drilling operation,

- Provides separate seed boxes to apply both small seeds and a large box with an aggressive picker wheel for continual mixing and applying fluffy bearded seed,
- Has disc furrow openers and packer assembly wheels that compact soil directly over drill rows,
- Contains a no till attachment manufactured by same manufacturer as the drill, and
- Has dimensions to ensure it maintains uniform soil contact over seeded area without bridging.

12. Pneumatic Seeder.

Use a pneumatic (air blower) system with enough power and hose to reach 300 feet.

13. Aerial Equipment.

When aerial application of seed and fertilizer is specified, use aerial equipment capable of providing a uniform distribution of seed and fertilizer on the specified area.

14. Straw Mulching Machine.

Use a type that will uniformly apply mulch material over the desired area without excessive pulverization.

~~Engineer may consider excessive pulverization as is~~ the general absence of straw longer than 6 inches after distribution.

15. Mulch Anchoring Equipment.

a. Use mulch anchoring equipment designed to anchor straw or hay mulch into soil by means of dull blades or disks. Use blades or disks that:

- Are flat,
- Have a nominal minimum diameter of 20 inches, and
- Are spaced at approximately 8 inch intervals.

b. The blades may have cutaway edges. Pull mulch anchoring equipment using mechanical means. Use equipment that weighs approximately 1000 pounds. When directed by the Engineer, increase the weight (mass) of the equipment by the addition of ballast.

16. Mechanical Trencher.

Use a machine designed for the specific purpose of constructing a trench for placement of check slots to depth specified.

17. Mowers.

Use rotary, flail, disk, or sickle type mowers that do not bunch or windrow mowed material.

18. Slit Seeder.

Use a gas, diesel, or electric powered mechanical slit seeder that:

- Is capable of cutting vertical grooves a maximum of 1/4 inch deep into the soil with a maximum horizontal blade spacing of 3 inches,
- Deposits metered seed directly behind the vertical grooves, and
- Contains packer wheels that press and firmly pack seed into the soil.

B. Seeding and Fertilizing.

1. On various portions of the right-of-way, except the traveled portion of the roadbed:

- Prepare the seedbed,
- Furnish, sow, and cover the seed, and
- Compact the seedbed.

2. Seed other areas as may be indicated in the contract documents or directed by the Engineer. The limits of areas to be seeded will be clearly marked before seedbed is prepared.

3. Do not disturb areas having a satisfactory growth of desirable grasses or legumes.

4. Sow seed only at times of the year when temperature, moisture, and climatic conditions will promote germination and plant growth. Normal seed application dates are according to [Article 2601.03, C](#) for each seed type. Perform seeding according to the following procedures:

a. Seedbed Preparation.

1) Ensure area to be seeded is relatively smooth. Fill washes and gullies to conform to desired cross section. When such fills exceed 6 inches, compact the material with a tractor wheel or other suitable field equipment. Coordinate preparation of ditches designated for special ditch control with the seedbed preparation.

- 2) Thoroughly work areas accessible to field machinery to a depth of no less than 3 inches. Use mechanical rotary tillage equipment to prepare the seedbed on earth shoulders, urban or raised medians, rest areas, and islands. Hand prepare areas inaccessible to field machinery to a depth of not less than 2 inches. Ensure entire width of shoulder and areas around headwalls, wingwalls, flumes, and other structures are prepared in the manner specified.
- 3) Where enough vegetative growth exists to sufficiently interfere with proper seedbed preparation, mow vegetative growth before seeding, at no additional cost to the Contracting Authority.
- 4) Use crawler type or dual wheeled tractors to prepare seedbeds. Operate equipment in a manner to minimize displacement of soil and disturbance of the design cross section.
- 5) Prior to rolling with cultipacker, harrow ridging in excess of 4 inches caused by operation of tillage equipment. Prior to permanent seeding, roll the area with no less than one pass of the cultipacker.
- 6) Remove ruts that develop during the sequence of operations before subsequent operations are performed.
- 7) After completing seedbed preparation, pick up and remove debris according to [Article 1104.08](#), including 3 inch diameter or larger stones, logs, stumps, cable, or other objectionable material that may interfere with seeding operation.

b. Application of Fertilizer.

- 1) Spread fertilizer over the areas at the rate designated in [Article 2601.03, C](#) for each seed type, unless specified otherwise in the contract documents.
- 2) Spread with a mechanical spreader which will secure a uniform application rate. Do not use truck mounted spreading equipment for bulk fertilizer. On areas accessible to field machinery, spread after the preliminary preparation of seedbed, but prior to sowing of seed. Disk in fertilizer and roll the area prior to application of permanent seed. If the roller cannot be operated satisfactorily, Engineer may permit substituting a harrow for the roller. Areas inaccessible to field machinery, spread fertilizer after preparation of seedbed and thoroughly rake into the soil.
- 3) If using a hydraulic seeder, apply fertilizer in combination with seeding as specified in [Article 2601.03, B, 4, d, 2](#). When the contract documents require two applications of fertilizer, perform second application during next permanent seeding period following initial seeding and fertilizer application.

c. Preparation of Seed.

- 1) ~~Except when a hydraulic seeder is used, thoroughly mix all seed specified for the contract prior to placing seed in seed hopper.~~ Seed mixing shall meet requirements of [Materials I.M. 469.02](#). Permanent rural, permanent urban, urban stabilizing, Native Grass, Wetland Grass, and Wildflower seeding mixtures shall be mixed off-site by a seed conditioner approved by the Iowa Crop Improvement Association or other state's Crop Improvement Association.
- 2) Inoculate legumes with a standard culture at the rate as specified by manufacturer of inoculant, according to [Article 4169.04](#). Use a type of inoculant specified for each legume seed and approved by the Engineer.
- 3) Do not allow inoculated seed to be exposed to direct sunlight for more than 30 minutes. Prior to use, reinoculate seed that is not sown within 8 hours after inoculation. Preinoculated seed with manufacturer's recommended protective coating may be used in lieu of seed with Contractor applied inoculant.
- 4) When gravity or cyclone seeder is used for application of seed, inoculate legume seed according to manufacturer's recommended procedures before mixing with other grass seeds for sowing. If hydraulic seeder is used, inoculant, in quantities specified above, may be applied directly into supply tank with seed, water, and other material. Furnish and apply inoculant.
- 5) Treat seed with a commercial sticking agent. Apply prior to application of inoculant, or as a mixture when the sticking agent is compatible with other materials, except with hydraulic equipment. A sticking agent optional if a liquid formulation of inoculant is used.
- 6) Use mechanical mixing equipment to apply sticking agent and inoculant on seed quantities over 50 pounds per batch.

d. Application of Seed.

1) Sowing, Covering, and Compaction

- a) On areas accessible to field machinery, seed may be sown with:
 - A gravity, cyclone, or hydraulic seeder,
 - A native grass seed drill, or
 - As specified in the contract documents.
- b) On areas inaccessible to field machinery, use of hand cyclone seeders may be used.
- c) Sowing of seed shall be performed as a split rate application (no less than two passes).
- d) Covering, compaction, rolling, dragging, or raking of seedbed will not be required provided the friable condition exists. For spring seeding (following fall seedbed preparation) after April 1, Contractor shall roll or harrow when, in the opinion of the Engineer, a friable condition does not exist. Cover stabilizing crop seeding and fertilizing with a light disking or other tillage equipment such as a rigid harrow, spring tooth harrow, or field cultivator.
- e) Follow sowing of grasses and legumes with at least one complete rolling with cultipacker. Roll shoulders immediately to prevent loss of seed due to air currents caused by passing traffic. For stabilizing crop seeding and

fertilizing, follow tillage by rolling area with a cultipacker. If cultipacker cannot be operated satisfactorily, Engineer may permit harrow to be substituted for cultipacker.

f) Where compaction equipment will not operate satisfactorily, lightly drag or rake in seeded area by hand. Roll seedbed with a cultipacker before and after seeding.

2) Seeding and Fertilizing with Hydraulic Seeder.

a) A hydraulic seeder may be used when seedbed has been prepared according to [Article 2601.03, B, 4, a](#). When a hydraulic seeder is used, apply seed or fertilizer, or both, at the rates specified in approximately 400 gallons of water slurry per acre.

b) Apply mixture within 1 hour after fertilizer and seed are placed in hydraulic seeder. Use continuous agitation. Seed remaining in the fertilizer solution for more than 1 hour will be unacceptable. Additional seed at the specified rate will be required.

3) Pneumatic Seeding.

Includes furnishing and applying compost to a depth of 1 inch on designated disturbed areas. Apply compost using a pneumatic (air blower) system with sufficient hose to reach 300 feet. Driving on soil to apply compost will not be allowed. Incorporate fertilizer into full depth of compost material. Prepare seedbed according to [Article 2601.03, C, 4, a, 1](#). Apply seed within top 1/4 inch of compost material.

C. Types of Seeding.

1. Stabilizing Crop Seeding and Fertilizing (Rural).

a. Preparation and Application.

1) Prepare seedbed according to [Article 2601.03, B, 4, a](#).

2) Prepare seed according to [Article 2601.03, B, 4, c](#).

3) Apply seed according to [Article 2601.03, B, 4, d](#).

4) For stockpile stabilization seeding, seedbed preparation will not be required for areas not accessible to field equipment.

b. Seed Mixture.

Unless otherwise specified in the contract documents, use rates and schedule shown in Table 2601.03-1.

Table 2601.03-1: Rural Stabilizing Crop Seeding Rates and Schedule

March 1 through October 31	
Oat	50 lbs. per acre
Grain rye	50 lbs. per acre
Canada wildrye (<i>Elymus canadensis</i>)	5 lbs PLS. per acre
November 1 through February 28 (or 29)	
Oat	62 lbs. per acre
Grain rye	62 lbs. per acre
Canada wildrye (<i>Elymus canadensis</i>)	7 lbs. PLS. per acre
For stabilizing crop only, Canada wildrye (<i>Elymus canadensis</i>) seed will not be required to be certified as Source Identified Class (Yellow Tag) Source G0-Iowa.	
Canada wildrye (<i>Elymus canadensis</i>) seed shall be debarbed or equal to facilitate application of seed.	

c. Fertilizing.

1) Apply to seeded areas at the rate of 250 pounds per acre of 13-13-13 (or equivalent) unless specified otherwise in the contract documents.

2) Apply provisions of [Article 2601.03, B, 4, b](#).

d. Application Dates.

Refer to Table 2601.03-1 for normal seed application dates.

2. Stabilizing Crop Seeding and Fertilizing (Urban).

a. Preparation and Application.

1) Use a rotary tiller for preparation of seedbed according to [Article 2601.03, B, 4, a](#). Prior to application of seed, ensure seedbed is firm, smooth, and free of material 1.5 inches in diameter or greater including clods, rocks, and other debris. Roll seedbed before and after application of seed. For rolling, use either open grid type equipment or cultipacker type equipment modified by covering with expanded metal mesh.

2) Prepare seed according to [Article 2601.03, B, 4, c](#).

3) Apply seed according to [Article 2601.03, B, 4, d](#).

4) Prepare, roll, seed, and fertilize areas inaccessible to field equipment by hand or using hand operated equipment, including lawn type, hand cyclone, or gravity equipment.

b. Seed Mixture.

Unless specified otherwise in the contract documents, use seeding rates shown in Table 2601.03-2 for urban areas.

Table 2601.03-2: Urban Stabilizing Crop Seeding Rates

Bluegrass, Kentucky ¹	122 126 lbs. per acre
Ryegrass, Perennial (fineleaf turf-type variety) ²	35 40 lbs. per acre
Fescue, Creeping Red	18 lbs. per acre
1. Choose three different cultivars of Kentucky bluegrass, at 42 lbs. per acre each.	
2. Choose two different cultivars of turf-type perennial ryegrass, at 20 lbs. per acre each.	

c. Fertilizing.

1) Apply prior to preparing seedbed.

2) Apply to seeded areas at the rate of 300 pounds per acre of 6-24-24 (or equivalent) unless specified otherwise in the contract documents.

3) Apply provisions of [Article 2601.03, B, 4, b.](#)

d. Application Dates.

Normal seed application dates are March 1 through May 31, and August 10 through September 30. Seed may be applied throughout the year unless ground conditions are unsuitable for seeding due to moisture or frost.

3. Rural Seeding.

a. Preparation and Application.

1) Prepare seedbed according to [Article 2601.03, B, 4, a c.](#)

2) Prepare seed according to [Article 2601.03, B, 4, c.](#) In areas without existing stabilized crop seeding residue, prepare seedbed according to [Article 2601.03, B, 4, a](#), and apply seed according to [Article 2601.03, B, 4, d.](#)

3) Apply seed according to [Article 2601.03, B, 4, d.](#) In areas with existing stabilized crop residue, apply seed with a native grass seed drill with a no till attachment through the small seed box. Seedbed preparation will not be required, except for areas with rills and gullies.

b. Seed Mixture.

Use seeding rates in Table 2601.03-3 for permanent seeding of rural areas, unless otherwise specified in the contract documents:

Table 2601.03-3: Permanent Seed Rates, Rural Areas

Fescue, Tall (Fawn)	100 lbs. per acre
Ryegrass, Perennial (Linn)	75 lbs. per acre
Bluegrass, Kentucky	20 lbs. per acre

c. Fertilizing.

1) Spread over the areas at the rate designated. Unless otherwise specified in the contract documents, use a rate of 300 pounds per acre of 6-24-24 (or equivalent).

2) Apply provisions of [Article 2601.03, B, 4, b.](#)

d. Application Dates.

Normal permanent seed application dates are March 1 through May 31, and August 10 through September 30.

4. Urban Seeding.

a. Preparation and Application.

1) Use rotary tiller for preparation of seedbed according to [Article 2601.03, B, 4, a.](#) Prior to application of seed, ensure seedbed is firm, smooth, and free of material 1.5 inches in diameter or greater including clods, rocks, and other debris. Roll seedbed before and after application of seed. For rolling, use either open grid type equipment or cultipacker type equipment modified by covering with expanded metal mesh.

2) In areas with existing urban crop stabilizing of 50% or greater density, full seedbed preparation and rolling will not be required. Apply seed using a slit seeder as defined in [Article 2601.03, A, 18.](#)

2 3) Prepare seed according to [Article 2601.03, B, 4, c.](#)

3 4) Apply seed according to [Article 2601.03, B, 4, d.](#)

4 5) Prepare, roll, seed, and fertilize areas inaccessible to field equipment by hand or using hand operated equipment, including lawn type, hand cyclone, or gravity equipment. Obtain Engineer's approval for such equipment.

b. Seed Mixture.

Use seeding rates in Table 2601.03-4 for permanent seeding of urban areas, including areas previously maintained as a lawn.

Table 2601.03-4: Permanent Seed Rates, Urban Areas

Bluegrass, Kentucky ¹	122 126 lbs. per acre
Ryegrass, Perennial (fineleaf turf-type variety) ²	35 40 lbs. per acre
Fescue, Creeping Red	18 lbs. per acre
1. Choose three different cultivars of Kentucky bluegrass, at 42 lbs. per acre each.	
2. Choose two different cultivars of turf-type perennial ryegrass, at 20 lbs. per acre each.	

c. Fertilizing.

- 1) Apply prior to preparing the seedbed.
- 2) Spread over the areas at a rate of 300 pounds per acre of 6-24-24 (or equivalent).
- 3) Apply the provisions of [Article 2601.03, B, 4, b.](#)

d. Application Dates.

Normal permanent seed application dates are March 1 through May 31, and August 10 through September 30.

5. Native Grass Seeding.

a. Preparation and Application.

- 1) In areas without existing stabilized crop seeding residue, prepare seedbed according to [Article 2601.03, B, 4, a.](#) Seed areas accessible to field equipment with native grass seed drill, gravity, or broadcast equipment. Cultipack as specified in [Article 2601.03, B, 4, d.](#) Broadcast seed other areas and follow with a light dragging or hand raking.
- 2) In areas with existing stabilized crop residue, apply seed with a native grass seed drill with a no till attachment. Seedbed preparation and cultipacking will not be required. Seedbed preparation is required for areas with rills and gullies.
- 3) Prepare seed according to [Article 2601.03, B, 4, c.](#)
- 4) Calibrate native grass seed drill to specified seeding rate for the project prior to operation at the project.
- 5) Plant seed at a maximum 1/8 inch depth. Do not perform seeding when wet soil conditions would cause seed to be placed deeper than specified.
- 6) Fill seed boxes loosely without packing seed to allow agitator wheels to run freely and seed flows freely through drill.
- 7) Set no-till coulters to penetrate between 1/4 and 1/2 inch below soil surface.
- 8) Operate drill so the drive wheel maintains ground contact. Perform two passes with drill, with second pass being offset from first pass.
- 9) Operate tractor between 3 and 5 mph to prevent drill from bouncing.
- 10) Remove seed remaining in drill at the end of each day. At the completion of seeding, remove remaining seed from drill by vacuum or other means. Hand broadcast remaining seed on project.

b. Seed Mixture.

Use seeding rates in Table 2601.03-5 for areas designated for native grass seeding, unless specified otherwise in the contract documents.

Table 2601.03-5: Native Grass Seed Rates

Species (Scientific Name)	Application Rate (PLS)
Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement.	
*Big bluestem (Andropogon gerardii)	6 lbs. per acre
*Canada wildrye (Elymus canadensis)	2 lbs. per acre
*Indiangrass (Sorghastrum nutans)	6 lbs. per acre
*Little bluestem (Schizachyrium scoparium)	6 lbs. per acre
Blackeyed susan (Rudbeckia hirta)	4 oz. per acre
Blue vervain (Verbena hastata)	1/2 oz. per acre

Gray-headed coneflower (<i>Ratibida pinnata</i>)	3 oz. per acre
Ironweed (<i>Vernonia fasciculata</i>)	3 oz. per acre
New England aster (<i>Symphyotrichum novae-angliae</i>)	2 oz. per acre
Pale purple coneflower (<i>Echinacea pallida</i>)	6 oz. per acre
Partridge pea (<i>Chamaecrista fasciculata</i>)	4 lbs. per acre
Side-oats grama (<i>Bouteloua curtipendula</i>)	4 lbs. per acre
Switchgrass (<i>Panicum virgatum</i>)	1 lbs. per acre
Oats (<i>Avena sativa</i>)	32 lbs. per acre
Butterfly weed (<i>Asclepias tuberosa</i>)	3 oz. per acre
*Note: Canada wildrye, Big bluestem, Indiangrass, and Little bluestem shall be debarbed or equal to facilitate the application.	

c. Fertilizing.

Not required unless specified otherwise in the contract documents.

d. Application Dates.

Normal seed application dates are April 1 through May 31 and November 1 until ground conditions are unsuitable for seeding due to moisture or frost.

6. Wetland Seeding.

a. Preparation and Application.

1) In areas without existing stabilized crop seeding residue, prepare seedbed according to [Article 2601.03, B, 4, a](#). Seed areas accessible to field equipment with a native grass seed drill, gravity, or broadcast equipment. Cultipack as specified in [Article 2601.03, B, 4, d](#). Broadcast seed other areas and follow with a light dragging or hand raking.

2) In areas with existing stabilized crop residue, apply seed with a native grass seed drill with a no till attachment. Seedbed preparation and cultipacking will not be required. Seedbed preparation is required for areas with rills and gullies.

3) [Prepare seed according to Article 2601.03, B, 4, c.](#)

b. Seed Mixture.

Use the seeding rates in Table 2601.03-6 for areas designated for wetland grass seeding, unless specified otherwise in the contract documents.

Table 2601.03-6: Wetland Grass Seed Rates

Common Name	Scientific Name	PLS (per ac)
Blue vervain	<i>Verbena hastata</i>	1 oz.
Boneset	<i>Eupatorium perfoliatum</i>	1 oz.
Nodding bur marigold	<i>Bidens cernua</i>	8 oz.
Swamp milkweed	<i>Asclepias incarnata</i>	1 lb.
Sneezeweed	<i>Helenium autumnale</i>	2 oz.
Water plantain	<i>Alisma plantago-aquatica</i>	4 oz.
Arrowhead	<i>Sagittaria latifolia</i>	4 oz.
New England aster	<i>Symphyotrichum novae-angliae</i>	2 oz.
Big Bluestem	<i>Andropogon gerardii</i>	1 lb.
Switchgrass	<i>Panicum virgatum</i>	8 oz.
Prairie cordgrass	<i>Spartina pectinata</i>	1 lb.
Virginia wild-rye	<i>Elymus virginicus</i>	5 lbs.
Bluejoint grass	<i>Calamagrostis</i>	1 oz.
Rice cutgrass	<i>Leersia oryzoides</i>	4 oz.
Dark Green	<i>Scirpus atrovirens</i>	1 oz.

bulrush		
Fox sedge	Carex vulpinoidea	4 oz.
Softstem bulrush	Schoenoplectus tabernaemontani	8 oz.
Spike rush	Eleocharis palustris	4 oz.
Porcupine sedge	Carex hystericina	8 oz.
Broom sedge	Carex scoparia	2 oz.
Tussock sedge	Carex stricta	2 oz.

c. Fertilizing.

Not required unless specified otherwise in the contract documents.

d. Application Dates.

Normal seed application dates are April 1 through June 30.

7. Wildflower Seeding.

a. Preparation and Application.

- 1) Uniformly apply seed to areas with the seedbed prepared as in [Article 2601.03, B, 4, a.](#)
- 2) Seed areas accessible to field equipment using a native grass seed drill at an approximate depth of 1/8 inch, or using gravity or broadcast equipment. Cultipack as specified in [Article 2601.03, B, 4, d.](#) Broadcast seed other areas and follow with a light dragging or hand raking.
- 3) In areas with existing stabilized crop seeding residue, apply seed with a native grass seed drill with a no till attachment. Seedbed preparation and cultipacking will not be required.

b. Seed Mixture.

As specified in the contract documents.

c. Fertilizing.

Not required unless specified otherwise in the contract documents.

d. Application Dates.

~~Normal seed application dates are April 15 through June 30.~~ Normal seed application dates are April 1 through May 31 and November 1 until ground conditions are unsuitable for seeding due to moisture or frost.

8. Special Seed.

a. Preparation and Application.

- 1) Apply at the rate specified in the contract documents or as directed by the Engineer as a separate operation either immediately before or immediately after sowing the regular grass mixture.
- 2) No additional work other than sowing of the seed will be required unless specified otherwise in the contract documents.
- 3) On limited areas, this seed may be applied by hand cyclone seeders.

b. Seed Mixture.

- 1) As specified in the contract documents.
- 2) When not shown in the contract documents but directed by the Engineer, a special seed or seed mixture may be required in addition to the regular seed mixture.

c. Fertilizing.

As specified in the contract documents.

d. Application Dates.

As specified in the contract documents.

D. Overseeding and Fertilizing.

1. Seedbed preparation will not be required, provided overseeding is applied when ground is friable from frost action after February 1 and before April 1 or as directed by the Engineer.
2. When, in the opinion of the Engineer, a friable soil condition does not exist, roll with a cultipacker or harrow.
3. Areas with rills or gullies require seedbed preparation according to [Article 2601.03, B, 4, a.](#)
4. Apply fertilizer according to [Article 2601.03, B, 4, b.](#)
5. Prepare seed according to [Article 2601.03, B, 4, c.](#)
6. Apply seed according to [Article 2601.03, B, 4, d](#) unless specified otherwise in the contract documents.

7. Overseeding will not be allowed on more than 1 inch of snow cover.

E. Mulching.

Mulch seeding areas unless otherwise designated otherwise in the contract documents. For disturbed areas that are mulched only, scarify area to a 3 inch depth prior to mulching.

1. Time of Mulching.

Apply to areas requiring mulch as soon as seed is sown and final rolling completed.

2. Application of Mulch.

a. Straw Mulch.

- 1) Distribute evenly and uniformly and anchor it into the soil. Use an application rate for reasonably dry material of approximately 1.5 tons per acre of dry cereal straw, native grass straw, or other approved material, depending on the type of material furnished.
- 2) In all accessible mulched areas, anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Operate equipment along the contour. Use crawler type or dual wheel tractors for mulching operation. Operate equipment in a manner to minimize displacement of soil and disturbance of the design cross section.

b. Hydraulic Mulches.

- 1) Apply at no less than 3000 pounds per acre using standard hydraulic mulching equipment, unless specified otherwise in the contract documents.
- 2) If using with hydraulic seeding, apply as a separate operation.

F. Composting.

Compost may be used as a top dress application or as an incorporated soil amendment.

1. Top dress applications may be used for urban seeding or on soils that are highly erosive or sloped soils to prevent surface or rill erosion and to provide organic material and nutrients needed for vegetative establishment. Ensure areas top dressed with compost have little or no drainage onto them.
2. In highly erosive soils or sloped embankments with drainage onto the area, incorporate compost by mixing it into the top soil a minimum of 2 inches to prevent the compost from washing off the slope.

G. Sodding.

1. Refer to the contract documents for areas to be sodded. Engineer may designate other areas for sodding.
2. Prior to shaping the sodbed, Engineer will define upon the ground the limits of areas to be sodded, and indicate the center lines of waterways. Cover the designated areas with live sod meeting requirements of [Article 4169.06](#).
3. Closely place and properly fit sod against structures and adjacent sod according to the following provisions:
 - a. Preparation of Sodbed.**
 - 1) Shape and prepare surfaces to be sodded. Ensure areas are firm and even surfaces. Ensure they are free of material 1.5 inches in diameter or greater including clods, rocks, and other debris. Ensure ditch channels, slopes, and flumes to be sodded have a typical cross section as shown in the contract documents.
 - 2) Construct ditch channel to secure a relatively level, flat bottom ditch cross section with a minimum depth of 6 inches, measured from the finished sodbed ground line at the edge of the ditch. Scarifying prior to shaping may be necessary to assure the minimum depth. A minimum sod ditch overall width of 7.5 feet (sloping sides) will be required.
 - 3) Use a soil compaction roller complying with [Article 2601.03, A](#), for compaction and reshaping of ditches. Limit layers of fill materials to no more than 8 inches in depth.
 - 4) After the surface of the layer has been smoothed and before material for the next layer is deposited upon it, compact the layer:
 - With no less than one pass of a soil compaction roller per inch of loose thickness of the layer, and
 - Until the roller is supported entirely on its tamping feet.
 - 5) The roller will be considered entirely supported on its tamping feet when the tamping feet penetrate no more than 3 inches into an 8 inch layer being compacted. A single section roller may be necessary for this operation in some locations.
 - 6) Extend the compacted area approximately 6 inches to 12 inches beyond the width of the ditch.
 - 7) After compaction, shape the ditch.

b. Fertilizer for Sod.

- 1) Two applications are required (initial and prior to final acceptance). After sodbed preparation and prior to placing sod, fertilize the area to be sodded and the adjacent disturbed area at a rate of 10 pounds per 1000 square feet. Use a commercial fertilizer specified for the project.
- 2) Place the final application of fertilizer at a rate of 10 pounds per 1000 square feet within 5 calendar days of the end of the 30 calendar day watering period and prior to final acceptance of the project. Place the final application when the grass is dry and with a dry form of fertilizer.
- 3) For both of the above applications, if the type of fertilizer is not specified, apply 13-13-13 (or equivalent). Spread with a mechanical spreader which will secure a uniform rate of application. Manipulation or mixing with the soil, other than that incidental to [Article 2601.03, G, 3, d](#), will not be required.

c. Placing Sod.

- 1) Do not place sod between May 31 and September 1, or on frozen ground unless otherwise directed by the Engineer.
- 2) Place in rows or strips. On slopes, place strips transverse to the flow of water over the area. On sides and bottoms of ditches and channels, place strips at right angles to center line of channel. Place tightly against each other so that no open joints are apparent.
- 3) Stagger joints at the ends of sod strips at least 1 foot on adjacent rows or strips of sod. Cut sod to be placed in road ditch channels, intercepting ditches, or sod flumes where the total sodded width is less than 7.5 feet into strips having lengths equal to the width of the sodded area. At the top of slope or at the edge of a channel, lay sod so water from adjacent areas will have free flow onto the sodded area. In road ditch channels and flumes, begin sodding at the outlet or lower end and progress upward. On slopes, begin sodding at the bottom and progress upward. If necessary to protect sod already laid, furnish (without extra compensation) ladders or planks for workers to use.
- 4) The Engineer may order sod flumes, slopes, and ditch channels to be staked to minimize erosion loss before establishment. Stake sod as shown in the contract documents and as required by the Engineer.

d. Finishing Sod.

- 1) Firm the soil along the edge of the sodded area. Properly shape and smooth the adjacent disturbed area to allow surface water to flow into the sod ditch. Excessive soil placed over the edge of the sod will not be permitted.
- 2) Prepare and seed the seedbed for all rural disturbed areas adjacent to the sod. Rake the seed in. Seed the disturbed area with the following seed mixture at the rate of 2 pounds per 1000 square feet:
Fescue, Fawn 80%
Ryegrass, Perennial 20%
- 3) For urban projects adjacent to sod, use the seed mixture specified for the project. Mulch disturbed area with grass, hay, or straw at the rate of 70 pounds per 1000 square feet.
- 4) After sodding and seeding, water the sod, sodbed, and disturbed areas according to [Article 2601.03, G, 3, e](#).
- 5) When sod ditches are constructed after October 1, overseed grasses the following spring, between March 1 and April 1, when weather and soil conditions are favorable.
- 6) When initial watering of the sod does not secure adequate bond between the sod and soil, the Engineer may require rolling. If sod is allowed to be placed between May 31 and August 10, and it is not to be staked, roll the sod using equipment approved by the Engineer. Remove from the project sod rejected from sod ditches. Remove from the site any other material not otherwise incorporated into the work.
- 7) In urban areas, islands, and rest areas, roll the sod prior to or following the initial watering using a hand operated, lawn type roller approved by the Engineer.

e. Watering Sod.

- 1) Provide watering equipment and an approved water supply before beginning any sodding operation. Six waterings will be required. Allow no more than 1 hour to elapse between laying and initial watering of sod. Perform the second, third, and fourth waterings at 4 calendar day intervals, and fifth and sixth waterings at weekly intervals. Perform waterings unless notified by the Engineer in writing at least 1 calendar day prior to the day the watering is to occur. A price adjustment will be assessed at a rate of \$200.00 per day for each calendar day that the Contractor fails to complete the watering from the day watering is to commence.
- 2) Ensure waterings are sufficient to thoroughly saturate sod, sodbed, and adjacent disturbed areas to a depth of approximately 4 inches.
- 3) Each watering may require a maximum of 100 gallons of water per square. Apply water as a spray or dispersion to prevent damage to the sod. Complete each watering within a 4 hour period. More than one application for each watering may be necessary to provide adequate saturation without runoff.

f. Urban, Island, and Safety Rest Area Sodding.

- 1) Prepare areas to be sodded, except ditch channels, according to [Article 2601.03, C, 4, a](#).
- 2) During the total watering period, mow sod once to a 3 inch height approximately 3 weeks after placement.

H. Special Ditch Control, Turf Reinforcement Mat, Slope Protection, and Outlet or Channel Scour Protection (Transition Mat).

Use material meeting the requirements of [Article 4169.10](#). Engineer will designate areas for each type of work.

1. Preparation of Area to be Treated with Special Ditch Control, Turf Reinforcement Mat, Slope Protection, and Outlet or Channel Scour Protection (Transition Mat).

- a. Shape ditch channel in the same manner as preparing a ditch for sod as provided in [Article 2601.03, G, 3, a](#).
- b. Apply provisions of [Article 2601.03, B, 4, a](#).
- c. Remove material 1.5 inches in diameter or greater, including clods, rocks, and other debris, which may prevent contact of the specified material with the seedbed.
- d. Coordinate preparation and placement of the specified material with the seedbed preparation, seeding (including sticking agent and inoculant), fertilizing, and mulching of the adjacent area of right-of-way.

2. Special Ditch Control.

a. Seeding.

- 1) Prepare seed according to the provisions of [Article 2601.03 B, 4, c](#). Sow seed prior to placement of special ditch control material according to [Article 2601.03 B, 4, d](#).
- 2) Seed ditches and depressed medians using the following seeding rates in Tables 2601.03-7 and 2601.03-8:

Table 2601.03-7: Ditches - Outside Shoulder Adjacent to Native Grass Seedings		
Oats	25 lbs/Acre	
Grain Rye	25 lbs/Acre	
Switchgrass (Panicum virgatum)	3 lbs PLS/Acre	
Side-oats grama (Bouteloua curtipendula)	4 lbs PLS/Acre	
Canada wildrye (Elymus canadensis)	9 lbs PLS/Acre	
Virginia wildrye (Elymus virginicus)	5 lbs PLS/Acre	
Partridge pea (Chamaecrista fasciculata)	4 lbs PLS/Acre	
Note: Canada wildrye shall be debarbed or equal to facilitate the application.		
Table 2601.03-8: Medians and Ditches - Outside Shoulder Adjacent to Rural Seedings		
Fescue, Tall (Fawn)	100 lbs. per acre	
Ryegrass, Perennial (Linn)	75 lbs. per acre	
Bluegrass, Kentucky	20 lbs. per acre	

b. Fertilizing.

- 1) After the area is prepared and prior to laying the special ditch control material, fertilize at the rate specified. Apply provisions of [Article 2601.03, B, 4, b](#). Spread with a mechanical spreader to secure a uniform rate of application. Manipulation or mixing with the soil other than that incidental to [Article 2601.03, H, 7](#), will not be required.
- 2) If the type of fertilizer is not specified for the project, apply 300 pounds per acre of 6-24-24 (or equivalent) to Medians and Ditches - Outside Shoulder Adjacent to Rural Seedings (Table 2601.03-8).
- 3) No fertilizer will be required for Ditches - Outside Shoulder Adjacent to Native Grass Seedings.

c. Application.

- 1) Space check slots on ditch channels so one check slot occurs within each 50 foot increment on slopes of more than 4%.
- 2) Apply special ditch control (wood excelsior mat) without tension and in the direction of the flow of water. Where more than one strip is required, lap the lap joint no less than 3 inches. Bury anchor slot on top edge of special ditch control (wood excelsior mat) from 6 inches to 12 inches, as designated by Engineer.
- 3) On junction slots, bury the upslope end of each strip of wood excelsior mat 6 inches. Firmly tamp the soil. Overlap the ends of the special ditch control (wood excelsior mat) at least 12 inches and staple, with the upgrade section on top.
- 4) Staple terminal end at bottom of special ditch control (wood excelsior mat).
- 5) Use staples meeting requirements of [Article 4169.10, A](#). Space staples as shown in the contract documents.

3. Turf Reinforcement Mat (TRM).

a. Seeding.

- 1) Prepare seed according to provisions of [2601.03 B, 4, c](#). Sow after TRM and soil fill have been placed and prior to laying the special ditch control (wood excelsior mat) according to [Article 2601.03 B, 4, d](#).
- 2) Apply in ditches and depressed medians using rates in Tables 2601.03-7 and 2601.03-8.

b. Fertilizing.

- 1) After TRM and soil fill have been placed and prior to laying special ditch control (wood excelsior mat), apply at the rate specified. Apply provisions of [Article 2601.03, B, 4, b](#). Spread with a mechanical spreader to secure a uniform rate of application. Manipulation or mixing with the soil other than that incidental to [Article 2601.03, H, 7](#), will not be required.
- 2) If the type of fertilizer is not specified for the project, apply 300 pounds per acre of 6-24-24 (or equivalent) to Medians and Ditches - Outside Shoulder Adjacent to Rural Seedings (Table 2601.03-8).
- 3) No fertilizer will be required for Ditches - Outside Shoulder Adjacent to Native Grass Seedings (Table 2601.03-7).

c. Application.

Place type specified on channel or slope after shaping. Apply according to the contract documents. Furnish and apply a minimum of 1 inch of soil suitable for the establishment of vegetation on the TRM. Furnish and apply seed and fertilizer. Furnish and apply special ditch control (wood excelsior mat) one soil fill.

4. Special Ditch Control over Sod.

When shown in the contract documents, place plastic netting or other approved material over sod and staple it in place. Space staples 3 feet apart in the row. Space rows no more than 2 feet apart. Place staples alternately to adjacent rows. No junction slots or check slots are required. Anchor slots and terminal ends will be required.

5. Slope Protection.

a. Seeding.

- 1) Prepare seed according to [Article 2601.03, B, 4, c](#). Sow prior to placement of slope protection according to [Article 2601.03, B, 4, d](#).
- 2) ~~Use mixture specified.~~ Seed slopes using seeding rates in Tables 2601.03-7 for slopes adjacent to native grass seedings and 2601.03-8 for slopes adjacent to rural seedings.

b. Fertilizing.

~~For slope protection, use fertilizer specified. Apply provisions of Article 2601.03, B, 4, b.~~

- 1) After area is prepared and prior to laying slope protection, fertilize at the rate specified. Apply provisions of [Article 2601.03, B, 4, b](#). Spread with a mechanical spreader to secure a uniform rate of application. Manipulation or mixing with the soil other than that incidental to [Article 2601.03, H, 7](#), will not be required.
- 2) If the type of fertilizer is not specified, apply 300 pounds per acre of 6-24-24 (or equivalent) to slopes adjacent to rural seedings.
- 3) No fertilizer will be required for slopes adjacent to native grass seedings.

c. Application on Backslopes.

- 1) Where erosive gullies or rills have developed in backslope, fill with soil and compact prior to placement of mat.
- 2) Apply slope protection without tension in a perpendicular direction on backslopes. Where more than one strip is required, lap the lap joint no less than 3 inches.
- 3) Bury the slope protection in an anchor slot on the top edge of the backslope from 6 inches to 12 inches, as designated by the Engineer.
- 4) On junction slots, bury the upslope end of each strip of slope protection 6 inches. Firmly tamp soil. Overlap ends of slope protection at least 12 inches and staple, with upgrade section on top.
- 5) Staple terminal end at bottom of slope protection.
- 6) Use staples meeting requirements of [Article 4169.10, A](#). Space staples as shown in the contract documents.

d. Application on Foreslopes.

- 1) If erosive gullies or rills have developed adjacent to shoulder material, fill with suitable soil and compact prior to placement of slope protection.
- 2) Apply slope protection without tension parallel to the roadway on foreslopes. Where more than one strip is required, butt strips together and staple 3 inches from each edge.
- 3) Install staples 3 inches from upside terminal and downside terminal.
- 4) Use staples meeting the requirements of [Article 4169.10, A](#). Space remaining staples as shown in the contract documents.

6. Outlet or Channel Scour Protection (Transition Mat) (TM).

a. Seeding

- 1) Prepare seed according to the provisions of [2601.03 B, 4, c](#). Sow prior to placement of TRM and TM according to [Article 2601.03 B, 4, d](#).
- 2) Seed outlets or channels using rates in Tables 2601.03-7 and 2601.03-8.

b. Fertilizing

- 1) Prior to laying the TRM and TM, apply fertilizer to the area at the rate specified. Apply provisions of [Article 2601.03, B, 4, b](#). Spread with a mechanical spreader to secure a uniform rate of application. Manipulation or mixing with the soil other than that incidental to [Article 2601.03, H, 7](#), will not be required.
- 2) If type of fertilizer is not specified, apply 300 pounds per acre of 6-24-24 (or equivalent) to Medians and Outlets/Channels - Outside Shoulder Adjacent to Rural Seedings (Table 2601.03-8).
- 3) No fertilizer will be required for Outlets/Channels – Outside Shoulder Adjacent to Native Grass Seedings (Table 2601.03-7).

c. Application

- 1) Place TM in channels or outlets at locations specified in the contract document.
- 2) Prior to the placement of the TM, place TRM - Type 2 according to [Article 2601.03, H, 3](#) to extend the entire length and width of the TM. No special ditch control (wood excelsior mat) or soil fill is required under the TM. Seed is placed under the TRM.
- 3) Place TM panels in such a manner as to produce a planar surface.
- 4) Place each TM panel longitudinally with the flow. Overlap panels upstream over downstream, and/or upslope over downslope.
- 5) Secure each TM panel to the soil with bullet anchors driven 30 inches into the ground. Anchors should be driven through both panels at the edges with overlapping panels. A minimum of eight anchors per panel is required.

7. Finishing Adjacent to Special Ditch Control, Turf Reinforcement Mat, Slope Protection Areas, and Outlet or Channel Scour Protection (Transition Mat).

For adjacent areas disturbed, uniformly shape, fertilize, seed, and rake in the seed in the same manner required for disturbed areas adjacent to sod ditches, except use the seed specified in [Article 2601.03, H](#). Complete this work during the normal permanent seeding period or by the date specified to complete seeding.

8. Watering of Special Ditch Control, Turf Reinforcement Mat, Slope Protection, and Outlet or Channel Scour Protection (Transition Mat).

- a. Provide watering equipment and an approved water supply before starting special ditch control, TRM, slope protection, or TM work. Water the area no later than the day following placement of the materials. If Contractor fails to water by second day following placement a price adjustment will be assessed at a rate of \$200.00 per calendar day until the watering has been completed.
- b. Apply three additional waterings at intervals of 5 to 8 calendar days. Perform waterings unless notified by Engineer in writing at least 1 calendar day prior to the day watering is to occur. If Contractor fails to complete watering before the 8th calendar day has elapsed, a price, adjustment will be assessed at a rate of \$200.00 per calendar day, beginning on the 9th day, until the watering is completed.
- c. Ensure waterings are sufficient to thoroughly saturate seedbed to a depth of approximately 2 inches.
- d. Each watering may require a maximum of 50 gallons of water per square. Apply water as a spray or dispersion to prevent damage to the seedbed. Complete each watering within a 4 hour period.
- e. More than one application for each watering may be necessary to provide adequate saturation without runoff.

I. Mowing.

1. Mowing may be required prior to permanent seeding and any time during the growing season following permanent seeding. Engineer will notify Contractor in writing prior to each mowing. Notification may be issued as early as 15 calendar days following execution of the contract. Contractor will be given 5 mowing days, plus 1 additional day for each 50 acre increment, that has been requested to be mowed. A mowing day is a calendar day, exclusive of Saturdays, Sundays, or recognized legal holiday, on which weather or other conditions (not under the control of the Contractor) will permit mowing operations to proceed for no less than 3/4 of a normal work day in the performance of a controlling item of work. When multiple projects are combined into a single contract, mowing days will be administered independently for each project. Mowing days will be charged starting on the day following the Contractor's notification. A price adjustment will be assessed at a rate of \$200.00 per mowing day after the work was to be completed.

2. Use suitable equipment for mowing. Bunching or windrowing mowed vegetation will not be permitted. When wet soil conditions result in rutting, suspend mowing. Repair rutting damage at the direction of the Engineer at no additional expense to the Contracting Authority. Hand equipment will be required for areas inaccessible to other equipment. Set the cutting height at approximately 6 inches. More than one pass may be required for each mowing.

J. Completion of the Work.

1. Complete all phases of this work, excluding the 30 calendar day maintenance of sodded areas, within the specified construction schedule.
2. If a fertilized or seeded area is damaged by rain prior to the required mulching, refertilize or reseed, or both, that area at a rate not to exceed the specified rate as designated by the Engineer. Perform this work at no additional cost to the Contracting Authority.
3. When any work included in the contract is washed out or damaged prior to final acceptance of the project, the Engineer may order replacement of the damaged portion at contract unit prices. The Engineer will advise the Contractor of the approximate quantity of replacement required. Perform these repairs during the normal seeding period for the seed type. Maintain the work in a manner satisfactory to the Engineer. Should the repair work not be done with reasonable promptness, payment for repair will be limited to the work described at the time of notification.
4. The Contractor is responsible for replacement in addition to the quantity directed by the Engineer to complete the work in an acceptable condition should the Contractor fail to:
 - Make this replacement when directed by the Engineer, or
 - Perform necessary maintenance to the area.

2601.04 METHOD OF MEASUREMENT.

Measurement for the various items of work involving erosion control, satisfactory completed, will be as follows:

- A. Engineer will compute in acres to the nearest 0.1 acre the surface areas of
 - Seeding and Fertilizing,
 - Stabilizing Crop Seeding and Fertilizing,
 - Native Grass Seeding,
 - Wetland Grass Seeding,
 - Wildflower Seeding,
 - Seeding Special Areas,
 - Overseeding and Fertilizing,
 - Mulching, and
 - Composting.
- B. Surface areas of Sodding: squares of 100 square feet calculated from measurements to the nearest foot.
- C. Debris picked up and removed according to [Article 2601.03, B, 4, a](#): cubic yards by cross sectional measurement or in the hauling units, at the option of the Engineer.
- D. Special Ditch Control, Turf Reinforcement Mat, and Slope Protection: squares of 100 square feet calculated from measurements to the nearest foot. Measurement of actual ditch area covered will be used, but will not exceed an area based on the actual measured length and design width. Materials used for anchor slots, junction slots, check slots, terminal folds, and lap joints are incidental. Seed, and fertilizer for Special Ditch Control and TRM are incidental.
- E. Outlet or Channel Scour Protection (Transition Mat): square feet calculated from measurements to the nearest foot.
- F. Watering: by counting loads from a transporting tank of known volume or by metering.
- G. Mobilization for watering: by count. Mobilization for the initial watering required at installation of the plant material will not be measured for count.
- H. Mowing described in [Article 2601.03, I](#): acres to the nearest 0.1 acre of surface area.

2601.05 BASIS OF PAYMENT.

- A. Payment for the various items of work involved in erosion control will be made as described below.

1. When suitable soil for filling holes, gullies, or washes is not available adjacent to the area to be filled or when soil must be removed, payment for necessary loading and hauling directed by the Engineer will be as extra work according to [Article 1109.03, B](#).
2. Contract unit price per acre to the nearest 0.1 acres for the following. Payment is full compensation for preparing the area and furnishing and applying each material.
 - Seeding and Fertilizing,
 - Stabilizing Crop Seeding and Fertilizing,
 - Native Grass Seeding,
 - Wetland Grass Seeding,
 - Wildflower Seeding,
 - Seeding Special Areas,
 - Overseeding and Fertilizing, and
 - Composting.
3. For sowing special seed as directed by the Engineer, but not provided for in the contract documents: delivered cost of the seed plus 10% of the contract unit price for Seeding and Fertilizing.
4. Sodding:
 - a. Contract unit price per square.
 - b. Payment is full compensation for:
 - Preparing the sodbed,
 - Furnishing, placing, and finishing the sod,
 - Fertilizing, and
 - Repair of adjacent areas disturbed by the sodding operation.
 - c. Payment will not be allowed for the Sod until the watering, as specified, has been completed. Replace or repair, at the discretion of the Engineer, Sod areas which are damaged by weather or other causes before the specified initial watering has been completed, at no additional cost to the Contracting Authority.
5. Squares of staking of sod flumes, slopes, and ditch channels: 25% of the contract unit price for Sodding in addition to payment for Sodding.
6. Mulch furnished and placed: ~~predetermined contract unit price per acre (hectare)~~ contract unit price per acre to the nearest 0.1 acre for mulching. Payment is full compensation for preparing the area and furnishing and applying mulch.
7. Debris picked up according to [Article 2102.03, C](#), for grading work:
 - a. Payment for debris pickup of additional boulders resulting from Stabilized Crop Seeding and Fertilizing will be as described in [Article 2102.05](#) for Class 12 boulders. If there is no Class 12 item, payment will be at 10 times the contract unit price for Class 10 excavation.
 - b. Payment for the number of cubic yards of debris picked up and removed in conjunction with other work will be paid at 25% of the contract unit price for Stabilizing Crop Seeding or Seeding and Fertilizing, as applicable.
8. Squares of Special Ditch Control or Special Ditch Control over Sod with material as specified:
 - a. Contract unit price per square.
 - b. Payment is full compensation for the special ditch control preparation and materials. This includes seedbed preparation, seed and fertilizer, special ditch control (wood excelsior mat), stapling and installation of materials.
9. Squares of Turf Reinforcement Mat of the type specified:
 - a. Contract unit price per square.
 - b. Payment is full compensation for the Turf Reinforcement Mat, preparation and materials including shaping channels, ditches and slopes, soil fill, seed and fertilizing, and special ditch control (wood excelsior mat).
10. Squares of Slope Protection with material as specified:
 - a. Contract unit price per square.
 - b. Payment is full compensation for the slope protection preparation and materials ~~in addition to the amount paid for seed and fertilizer~~. This includes seedbed preparation, seed and fertilizer, slope protection, stapling, and installation of materials.
11. Square feet of Outlet or Channel Scour Protection (Transition Mat) with material as specified:
 - a. Contract unit price per square feet.

b. Payment is full compensation for Outlet or Channel Scour Protection (Transition Mat), TRM, preparation and materials including shaping outlets/channels, ditches, soil fill (if required), seed, fertilizer and anchors.

12. When a large area is to be watered, the contract documents will include an item for watering. For the quantity of water applied to sod, [Article 2601.03, G, 3, e](#), and to special ditch control, TRM, slope protection, and TM, [Article 2601.03, H, 8](#), payment will be the predetermined contract unit price per 1000 gallons. When an item for watering is not included, the cost of watering is included in the amount paid for the item to be watered.

13. Mobilization for watering: pre-determined unit price for each mobilization for required watering. Payment will not be made for mobilization for watering for projects identified as erosion control or landscaping. Payment will not be made for mobilization for watering if labor and equipment is already onsite.

14. Mowing as described in [Article 2601.03, I](#): contract unit price per acre to the nearest 0.1 acres.

B. Payment for these items is full compensation for furnishing all materials, equipment, tools, and labor necessary to complete the work according to the contract documents.

C. Payment will not be allowed for any area seeded until fertilizer and mulch are