

DALLAS COUNTY, IOWA

**Integrated Roadside Vegetation Management - IRVM
Long-Range Plan (#5)**

2015-2020

Dallas County Road Department

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Replaces Plans 1-4 (1998, 1999-2003, 2006-2010, 2011-2015)

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TABLE OF CONTENTS

E-1 EXECUTIVE SUMMARY	3
1. JURISDICTIONAL RECOGNITION AND APPROVAL	5
2. IRVM LEGISLATION (IOWA CODE – Section 314.22)	5
3. MISSION STATEMENT	6
4. INTRODUCTION: A History of Roadside Management in Iowa and Dallas County	6
5. PROGRAM SCOPE	7
6. GOAL-DRIVEN PROGRAM OPERATIONS	7
6.1. Vegetation Control for Public Safety and Infrastructure Protection	7
6.2. Noxious and Invasive Weed Control	12
6.3. Vegetation Establishment	13
6.4. Erosion Control and Water Quality	17
6.5. Wetland Delineation/Mitigation activities	17
6.6. Right-of-Way Disturbance Control	18
6.7. IRVM Awareness	19
6.8. Native Seed Mixes	20
6.9. Planning	22
6.10. Inventory and Analysis	22
6.11. Outside Resources	23
6.12. Wildlife Habitat Priorities	23
6.13. Professional Development	24
7. MATERIAL PROCUREMENT	25
7.1. Seed	25
7.2. Erosion Control Materials	25
7.3. Herbicides and Adjuvants	25
8. BUDGET	25
9. CONCLUSION	26

APPENDICES

- A. Road Department Organizational Chart, IRVM Staff Job Descriptions and Qualifications
- B. List of State and Local IRVM related Laws, Regulations and Permits
- C. Highway and Transportation Map - Dallas County, Iowa
- D. Current Equipment in Service
- E. 2014 Annual Plan

E-1 Executive Summary

Highway rights-of-way (roadsides) exist for a variety of reasons but their primary functions are to manage stormwater runoff from adjacent land and the road surface, as well as provide a safe recovery zone for vehicles that may leave the roadway. Inherently, it is necessary for transportation departments to maintain roadside vegetation that protects the structural integrity of the roadway while not hindering the safety of the traveling public. Challenges to roadside vegetation management include soil erosion and weed invasion since roadsides are subject to multiple disturbances such as: roadway maintenance, utility work, soil deposition, herbicide drift, droughts and floods. Along with these factors, many roadsides across Iowa involve poor soils and steep slopes and were originally planted with Eurasian grasses which make weed invasion and soil erosion ongoing problems for transportation departments throughout the State.

Recognizing these challenges, a Roadside Vegetation Management committee was established by Black Hawk County, Iowa in 1985. Supported by science, the committee proposed seeding native prairie species in roadsides to establish a more stable plant community, and integrating various management methods to maintain stability. Thus, Integrated Roadside Vegetation Management or IRVM was born. Recognizing the benefits of IRVM, Dallas County established its program (DCIRVM) in 1998. The program is responsible for vegetation management within 4500± acres of County right-of-way along approximately 200 mile of paved and 700 miles of granular surfaced roadway – Appendix C.

As a unit within Dallas County Road Department, the primary goals of the IRVM program are to provide for motorist safety and to promote stable, low-maintenance plant communities in an economically and environmentally responsible manner. The program receives most of their instructions in the terms of goals and objectives from engineering staff (Assistants to Engineer, County Engineer) – Appendix A, with occasional specific tasks assigned. It also works closely with Road Foremen on many projects. Since instructions are typically very general, the Roadside Biologist and Assistant Roadside Biologist both use extensive judgment in the IRVM decision-making process.

Some of DCIRVM's primary activities include planting native vegetation in disturbed areas after road construction and maintenance projects, maintaining native vegetation and spot spraying weeds. Science has shown that the use of these practices opposed to traditional methods (planting Eurasian grasses and blanket spraying), not only provides for better weed and erosion control, but also improved wildlife and pollinator habitat, and thus is a more economical and environmentally responsible option.

Another main task of DCIRVM is to control unwanted vegetation that can pose safety hazards. Brush and trees in the roadsides can cause the motorist problems as well as make road surfaces difficult to maintain by causing sight distance problems, obstructing signs, and creating hazards for vehicles that may leave the traveled surface. Brush and trees can also block roads when damaged by storms and impede proper winter time functions by causing drifting, icing and making it difficult to push snow off of the roadway into the adjoining ditch. In addition, woody vegetation is less effective at preventing erosion compared to grassy vegetation and can also plug subsurface drainage lines with roots which can lead to softening of the road base and drainage problems for adjacent landowners. Given the above reasons, an integrated approach to brush control is used by employing various methods of herbicide application as well as mechanical removal. Unwanted herbaceous vegetation can also impede sight distance, damage structures and create fire hazards around maintenance and fuel storage facilities.

DCIRVM treats all bridge abutments, guardrails, shop compounds, fuel storage areas and emergency services radio towers annually for total vegetation control.

Another major goal of DCIRVM is to protect the roadway against soil erosion while protecting streams and rivers from pollution via sedimentation. DCIRVM applies Best Management Practices to prevent soil erosion in the roadsides and assists engineering staff with various erosion issues during design and construction.


Additionally, DCIRVM assists engineering staff with obtaining project permits whenever capable by conducting wetland delineations and other environmental assessments, as well as monitoring wetland mitigation projects and completing and submitting permit applications. By performing these tasks in-house, outside consultant expenses have been reduced. Moreover, a closer relationship has been developed with regulatory agencies and information can essentially be assembled 'on-demand' as assigned by engineering staff, thus speeding up permit acquisition.

In order to be effective and accomplish the many responsibilities listed above, the IRVM program needs to account for the changing of the seasons and factors such as weather, project volume, timing and available resources. Inevitably, these dynamics affect the timing of operations and direct the focus of the program, thus, the program's multiple duties are juggled on a seasonal and even daily basis.

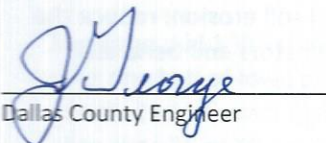
Ultimately, Dallas County's multi-faceted IRVM program provides value to the Dallas County Road Department in many ways. This has been recognized by the Road Department and Board of Supervisors as evidenced by their commitment to the program in providing support through supplies, equipment, labor and public relations.

1. Jurisdictional Recognition and Approval

IN WITNESS WHEREOF, the parties hereto recognize the efficiencies and benefits the Dallas County IRVM program provides for the citizens and traveling public of Dallas County and approve the following plan.


Chairman, Dallas County Board of Supervisors

5-12-15
Date


Dallas County Engineer

3/16/15
Date


Iowa DOT Roadside Coordinator

5/28/2015
Date

2. Iowa Code

Section 314.22 (1988 legislation) 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.

3. Mission Statement

The Dallas County IRVM program's stated purpose is to provide for motorist safety while guiding the establishment and maintenance of roadside flora toward plant communities that are economically and environmentally responsible.

The management of roadside vegetation will be conducted in such a way as to provide maximum benefits to all affected parties. Priority must be given to individuals and groups most directly affected by management decisions – the travelling public and adjacent land managers – but the needs and wants of all county citizens will be considered.

Management techniques used to achieve these goals will reflect the philosophy guiding IRVM – that the best approach to managing roadsides is an *integrated* one. In Dallas County roadsides we will strive to: establish and manage climax plant communities (with an emphasis on native vegetation); use proper techniques and products to control noxious weeds, brush and soil erosion; reduce the frequency and severity of disturbances; improve habitat for wildlife, pollinators and beneficial insects; enhance aesthetic value and provide opportunities for learning.

4. Introduction – A History of Roadside Management in Iowa and Dallas County

Shortly after the close of the 19th century, Iowa's rural roads underwent a transformation. An ambitious 'Get Iowa Out of the Mud' campaign launched in the 1920's was the impetus for modification of secondary roads from narrow, muddy trails to the all-weather routes we enjoy today. Roads were raised, graded and surfaced with crushed rock or gravel to accommodate a steadily increasing flow of motorized vehicles. Ditches on either side allowed water to drain from roads as well as from adjacent lands.

Reconstructed roadsides were seeded with plant materials readily available at that time including smooth brome, Kentucky bluegrass, alfalfa and redtop. Brome was extensively used because of its availability and adaptability. Brome monocultures, however, proved to be limited in their ability to compete with persistent weed species such as Canada thistle.

To battle noxious weed problems, counties began ambitious spraying programs in the 1950's taking advantage of the recent introduction of chemical herbicides. Typically all, or a significant fraction, of a county's roadsides were 'blanket' sprayed yearly. A non-selective approach, the objective of blanket spraying was to treat all areas of selected roadsides, with little regard to whether problem weed species were present. Blanket spraying had several advantages. It did not require applicators to identify weed species and did achieve a modicum of success in terms of short-term (single season) weed control. However, weed patches persisted in the same areas year after year and some began to question the effectiveness of this costly procedure.

Graduate students under the direction of Dr. Ackmann at Iowa State University conducted studies of native grass use in state roadside plantings in the 1940's and 50's. In the late 1960's, Dr. Roger Landers – then an associate professor of botany and plant pathology at Iowa State University – began experimenting with the use of native grasses for weed control in roadsides. Results from his trials and other research have demonstrated the value of these plants - not only for weed control - but also for erosion control, wildlife habitat and aesthetic appeal. Studies conducted in 1971 by Dr.

Paul Christensen and David Lyon on Linn County roadsides, yielded results supporting the practice of spot, rather than blanket, spraying and the use of native grasses and wildflowers in roadside planting projects.

Fourteen years later, in 1985, the Mitchell County Conservation Board began a program of planting switchgrass into roadsides disturbed by grading or cleaning operations. In 1986, Blackhawk County appointed a conservation employee as weed commissioner and included roadside vegetation management duties as part of the job description, thereby effectively creating the Iowa's first roadside biologist. A roadside inventory recently completed in Blackhawk County by a University of Northern Iowa graduate student provided a ready source of information for the new program and enhanced its ability to manage roadsides in a manner which preserved existing prairie remnants and promoted the use of native vegetation in plantings. Blackhawk County also developed a program of weed control in their roadsides utilizing mechanical, chemical and cultural techniques – an “integrated” approach.

Since the mid 1980's, over one third of Iowa's counties have hired full-time roadside biologists while over one half of Iowa's counties have implemented IRVM programs. Most other counties have adopted some practices and procedures of Integrated Roadside Vegetation Management (IRVM) as of to date 78 of 99 counties have received Transportation Enhancement Seed through the state IRVM Office. Establishment of the state IRVM Office at the University of Northern Iowa in 1988 and Living Roadway Trust Fund in 1989 provided invaluable support to the fledgling IRVM programs. In 1989, the Iowa Legislature passed the Integrated Roadside Vegetation Management Law mandating certain IRVM practices on state rights-of-way.

The Dallas County Integrated Roadside Vegetation Management (IRVM) program began in March 1998 when the Dallas County Board of Supervisors approved the hiring of a Roadside Biologist positioned within the Road Department. Since then the program has developed into two full-time staff (Roadside Biologist, Assistant Roadside Biologist) and two seasonal/summer positions (Roadside Technicians) – see appendix A. The mandate for the program emphasizes cooperative efforts and mutual support among the Board of Supervisors, Conservation Board and Road Department.

5. Program Scope

The scope of the Dallas County IRVM program shall include, but not be limited to, all roadsides under the jurisdiction of the Dallas County Secondary Road Department – Appendix C.

6. Goal Driven Operations

In order to accomplish the goals outlined in its mission statement, while adhering to the values of economic and environmental stewardship, Dallas County IRVM has identified the following 13 priority areas to keep its program goal oriented and customer focused.

6.1. Vegetation Control for Public Safety and Infrastructure Protection

Brush (trees and shrubs) and herbaceous vegetation, if not properly managed, can cause the motorist problems as well as make road surfaces difficult to maintain. Brush can cause sight distance problems and obstruct signs. It can also impede proper winter time functions,

whereas it can create snow drifts on the roadway and make it much more difficult to push snow off of the roadway into the adjoining ditch. Brush also enhances frost formation on the road surface as it blocks sunlight that will typically cause the frost to melt and evaporate. By blocking sunlight, it also prevents the melting of snow and ice. Since gravel roads cannot be salted, these conditions can quickly create an unsafe situation. Roots from brush can also plug subsurface tile lines in the roadsides and impede drainage; thereby softening the base of the road causing soft spots, dips and even pavement failure. Brush is also less effective at preventing erosion compared to grassy vegetation and greater erosion of the ditches will occur where shade has stunted or killed the grass. Trees can also pose hazards for vehicles leaving the traveled surface and can block roads when damaged by storms. Herbaceous vegetation can cause drifting and visibility problems in certain areas as well as damage rock shoulders, guardrails and bridge abutments thereby reducing their effective life span.

Hard-surface roads will be afforded highest priority for brush control efforts.

A. Brush control

I. Foliar

Treat trees and brush 10' and shorter (while avoiding ornamental species, crops and water) with a combination of various Triclopyr (e.g., Garlon®), Metsulfuron-methyl (e.g., Escort®) and Aminopyralid (i.e., Milestone®) herbicides during noxious weed spraying operations. Experiment with aminocyclopyrachlor (i.e. Streamline®) herbicide; evaluate its cost-effectiveness and incorporate into the spray program if evaluation is positive. Brush problems adjacent to sensitive aquatic areas will also be identified throughout the year and treated during mid-summer with aquatic labeled herbicides (i.e. Garlon® 3A, Element® 3A).

OBJECTIVE = Treat at least one-half of the county annually – four townships in the spring and four townships in the fall. Areas treated in the fall will be treated again the following spring to 'double-stress' target vegetation. Treatments will be made on a rotational basis following the schedule below.

Spring 2015 = SW quadrant (Linn, Colfax, Union and Adams)

Fall 2015 = NW quadrant (Dallas, Spring Valley, Lincoln, Washington)

Spring 2016 = NW quadrant

Fall 2016 = NE quadrant (Beaver, Des Moines, Sugar Grove, Grant)

Spring 2017 = NE quadrant

Fall 2017 = SE quadrant (Adel, Walnut, Van Meter and Boone)

Spring 2018 = SE quadrant

Fall 2018 = SW quadrant

Spring 2019 = SW quadrant

Fall 2019 = NW quadrant

Spring 2020 = NW quadrant

Fall 2020 = NE quadrant

II. High-volume foliar

Krenite S® brush control agent (fosamine) is a chemical that is listed by the EPA as practically nontoxic to birds and mammals, and is safe to use near sensitive crops (i.e., corn and soybeans). Using Krenite S®, sidedress large trees as needed to prevent roadways from

'closing in' and treat trees and brush up to 15' in sensitive areas. Treatments may begin July 1st and must end by August 31st each year.

OBJECTIVE = Spray a minimum of 30 gallons of Krenite S® (2000 gallons of 1.5% solution) annually to areas requested by foremen, district operators and sites identified by IRVM personnel.

III. Basal

Treat trees and brush up to 6" basal diameter in low to medium density stands. Also treat resistant species and highly sensitive areas. Treatments may be conducted any time during the year except when sap is rising. Probable treatment window is November through March.

NOTE: Thinline treatments may be substituted for basal when snow is present.

OBJECTIVE = Spray at least 30 gallons of basal bark material annually. Encourage and train district operators to perform these treatments.

IV. Cut stump

Use in areas where complete removal of the tree is the desired objective due to potential hazard, sight distance, snow or ice deposition/retention, aesthetics, tree size, etc.

Treatments may be conducted any time during the year, but best results will be achieved when sap is not rising. Ideal treatment window is October through early March. Use chemicals appropriate for site conditions and treat immediately after cutting when using water-based formulations. Only triclopyr (e.g., Garlon®) or glyphosate (e.g., Round Up®) products will be used in sensitive areas while picloram products (i.e. Tordon®, Pathway®) may be used in other areas.

OBJECTIVE = Treatments will be made in the following order

1st Priority = Legitimate landowner/citizen requests

2nd Priority = Requests by foremen

3rd Priority = Requests by district operators, truck drivers, etc.

4th Priority = Trees or areas identified by IRVM personnel

Encourage and assist Roads personnel to undertake this technique as weather conditions and workloads allow from fall through early spring.

B. Mowing

Mowing is primarily used to control weed pressure in first- and second-year native plantings. Plantings are typically mowed once in their first growing season. Late season plantings and areas with heavy weed pressure may be mowed in their second growing season.

I. Safety and Maintenance

Mowing may be used by **IRVM personnel** to: delineate the shoulder, improve sight distance, limit snow deposition, control brush and noxious weeds.

OBJECTIVE = Limit to critical areas and areas requested by the public and secondary roads personnel.

a. Shoulder mowing

Mowing throughout the growing season in order to delineate the shoulder for motorist safety is understood to be allowed by *Iowa Code Section 314.17(5)* – Appendix B, and is primarily conducted by **secondary road personnel**. A typical mowing regime involves several cuttings on the upper foreslope of hard-surface roads for shoulder delineation. Depending on weather and available manpower, many hard-surfaced roads are also mowed full width in mid to late fall to limit snow deposition and cut back small trees. District operators mow shoulders of gravel roads in the fall for these same purposes.

OBJECTIVE = Monitor mowing operations conducted by secondary road personnel and make recommendations as requested. Encourage prescribed use of this technique to limit impact on plant and animal resources in ROW and keep Road Department in adherence with Iowa Code 314.17.

b. Brush mowing

Spot mowing of brush is also primarily conducted by District operators in the summer and fall using a boom mower. IRVM personnel may also operate boom mower to assist maintenance personnel, respond to complaints and perform native planting maintenance.

OBJECTIVE = Coordinate brush mowing operations with foremen so they do not decrease efficacy of herbicide applications.

II. Reduce competition/weed pressure in new plantings

OBJECTIVE = Mow all first-year plantings once during the growing season. Mowing will be conducted between late June and early August. Mow second-year and older plantings as necessity and manpower dictate.

C. Seed mixes

In order to reduce concerns related to visibility problems and snow deposition resulting from taller native grasses, we will specify mixes that are not likely to cause these problems.

OBJECTIVE = Along shoulders and in critical areas seed mixes should be specified to include high percentages of shorter native grass species (little bluestem, sideoats grama, tall dropseed, western wheat). Seed mixes may also consist of non-native cool season species in areas where frequent mowing will occur.

D. Total vegetation control

I. Guardrails and bridge abutments

Treat vegetation and soil around guardrails and bridge abutments with appropriate products to eliminate vegetation while minimizing off-target damage and soil erosion problems. In order to avoid selecting tolerant and/or resistant biotypes, two mixes with differing modes of action will be used in alternating years. Methylated Seed Oil (MSO) will be included, and Glyphosate herbicides may be added to the following mixes to increase burndown if significant weed growth has occurred prior to the application window.

Years ending in an **odd** number:

<u>PRODUCT</u>	<u>RATE/ACRE</u>
Piper®	8-10 oz.
Prodiamine	2.3 lb.
Edict®	1 oz.

Years ending in an **even** number:

<u>PRODUCT</u>	<u>RATE/ACRE</u>
Perspective®	11 oz.
Esplanade®	5.33 oz.

Treatments will be conducted between late April and late May but may vary depending upon product(s) used and weather.

OBJECTIVE = Treat all 55 bridges with guardrails and 61 bridges with abutments each year within the recommended time period for the product(s) used.

- II. Maintenance facilities (County sheds) and Sheriff E-911 dispatch radio towers
Treat rocked areas in driveway, parking, storage, lock-up and other areas around county maintenance facilities and radio towers.

OBJECTIVE = Treat all 11 maintenance facilities (County sheds) and 2 radio towers each year as outlined above.

- III. Alternatives to herbicides
Continue to evaluate U-Teck weed preventer products in guardrail applications.

E. Safety

- I. Non-target effects
Use drift control products and proper application techniques to reduce the risk of damaging crops, ornamentals, etc.

OBJECTIVE = Maintain database of No-Spray areas and update agreements every 5 years.
No reports of damage each spraying season.

- II. Chemical storage
Chemicals should be stored in a facility that fulfills requirements for ventilation, spill containment, security, protection from elements and worker protection.

OBJECTIVE = Maintain current facility.

- III. Applicator training
The Iowa Department of Agriculture and Land Stewardship requires licensing for most pesticide applicators. Additional training will be offered in the following areas: equipment (e.g., chainsaws, chippers), methods, chemicals, public relations, safety, labels & MSDS sheets, environmental hazards and other topics.

OBJECTIVE = Require all IRVM employees to maintain a current Iowa Pesticide Applicator's License (Category 6) at County's expense. Work with Department Safety Officer to provide regular training opportunities for all applicators including maintenance personnel using only ready-to-use (RTU) products.

F. No-Spray Areas

Honor landowner requests to not spray requested areas, provided they submit required No-Spray Request Form – Appendix B, and adhere to its requirements.

OBJECTIVE = Maintain database of No-Spray areas and update agreements every 5 years.

6.2. Noxious and Invasive Weed Control

By statute, noxious weeds must be controlled in county roadsides. Noxious weeds typically pose an economic threat to pasture and cultivated crops and in some cases, can pose a human health hazard (i.e. poison hemlock) and have the potential to outcompete established roadside vegetation (e. g., Canada thistles in smooth brome). Other weed species, though not listed as ‘noxious’, can have similar and/or other undesirable effects (e. g., giant ragweed, wild parsnip, hemp).

A. Canada thistle, musk thistle and other weed species

Continue in-house spot spraying program to effectively and economically control Canada thistle, musk thistle, teasel, poison hemlock, and other noxious/nuisance species in roadsides.

- I. Make treatments to Canada thistle infestations using Milestone® herbicide (aminopyralid) alone or in combination with Telar® (chlorsulfuron) herbicide, or Perspective® herbicide (aminocyclopyrachlor and chlorsulfuron). Treatments will be made from mid/late May to mid-July (bolting through bloom stages) and late August to late October (fall translocation stage) yearly. Treat extensive infestations of giant ragweed and other nuisance/noxious species with high-deposition 2, 4-D products during mid/late May to mid-July treatments.

OBJECTIVE = Treat target weed species according to the schedule listed in “Brush Control-Foliar” in section 6.1.A.I.

- II. Collect GPS coordinate data each spray season and compose maps of areas sprayed.

OBJECTIVE = Compare Canada thistle acreages and locales sprayed in previous years to detect trends in weed abundance and treatment efficacy.

- III. Respond to weed complaints received from landowners, county personnel and IRVM staff. Where appropriate, complaints will be sprayed with a tank-mounted UTV in order to keep main spray apparatus on its designated route.

OBJECTIVE = Treat complaints received during treatment window within two days of notice.

B. “New” invasive species – Purple loosestrife / Japanese knotweed / Leafy spurge / Teasel / Serecia lespedeza / Plumeless thistle

Several highly-invasive species have a relatively recent history of infestation in Dallas County. A database of locations for these species on public and private ground has been created. DCIRVM will continue to treat and monitor these species annually in County ROW and will continue to provide support for landowners and other public entities.

OBJECTIVE = Continue current inventory, monitoring and control practices. Follow through with efforts to assist private landowners and public agencies.

C. Competitive species

Plant native grass and wildflower species that will compete strongly with weedy invaders. Increase species diversity in seed mixes to improve restored plant community resistance to disturbance and weed invasion.

OBJECTIVE = Plant native prairie species or, when factors preclude their use, suitable non-native species. Maximize species diversity (grass and wildflower) in all seed mixes.

D. Safety

See analogous goal under section 6.1.E.

6.3. Vegetation Establishment and Maintenance

Road construction and maintenance disturbs many acres of roadside each year. Left alone, these areas will undergo a process known as succession whereby the plant community moves through a series of stages until a best fit or 'climax' stage is established. Early successional stages are comprised of weedy species. Theoretically, the climax stage reflects the plant community present historically on the site – tallgrass prairie on 85% of Iowa. However, climax communities have the potential to be comprised of invasive and noxious species since numerous non-native species have been introduced to Iowa over the last 150 years. The objective of IRVM is to direct and accelerate the process of succession towards the historical climax community and away from non-native invasive species; then, maintain that community once in place.

A. Seeding projects

Sites may be prepared with a rake, drag or disk and cultipacked to firm the soil and break up clods. Seed will primarily be planted using a hydroseeder due to ease of application and benefit of erosion protection. A typical application involves a 'one-step' process where seed is directly applied with mulch at 1500 lbs. /acre; however, rates may vary depending on site conditions and other factors. In addition, other methods can be used including: hand or machine broadcasting (i.e., Vicon spreader), drilling (conventional or no-till native seed drill). Seeds may be incorporated with a rake, harrow or cultipacker.

Depending upon the characteristics of the site and seeding method used, seed and soil will be held in place using erosion control blankets (RECP), hydromulch or straw. Nurse crop seed (oats, winter wheat, annual rye, etc.) will be included in the seed mix to help control erosion. Contractors and county personnel will be encouraged to minimize creation of erosive grades.

I. Native

When and where possible, roadside construction projects will be seeded with mixes of native grass and wildflower species. When necessary, mixes will be tailored to the characteristics of a site (e. g., soil moisture, safety/maintenance considerations). See analogous goal under section 6.1.C.

Over the past few years, seed availability has allowed us to begin a shift in native grass species used in our roadside plantings. The native grass component of seed mixes is now dominated by shorter species such as little bluestem, sideoats grama and tall dropseed. A desire to enhance forb establishment along with visibility concerns expressed by maintenance personnel are driving this change.

Experience has shown that native seedings are best conducted during mid spring (mid-April through the end of May) and the dormant season (November to the end of February). However, construction projects are often completed at other times of the year and may require immediate seeding due to concerns about erosion, workloads and other factors. In summer months, the decision to seed will hinge on predicted rainfall. If droughty conditions are predicted, permanent seeding may be delayed and a cover crop used to provide temporary protection of the soil. In early fall, dormant seeding may occur earlier if soil temperatures are favorable.

Mowing will be the primary post-planting management tool used to control weeds in native plantings. At least one cutting will be made in the establishment year when weeds reach 12-15". Cutting height will be about 4". If a second cutting is made, cutting height will be increased to approximately 6". When mowing to reduce weed pressure, tailor cutting height to just exceed average height of the establishing native grasses and wildflowers. In the second growing season, a single cutting at about 10-12" may be made if weed pressure is heavy.

Herbicides may also be used to control weed growth prior to seeding or after planting for maintenance purposes. For example, glyphosate may be used during pre-planting should an area become excessively weedy prior to seeding; while spot spraying of brush or invasive species may occur periodically as a maintenance activity once a planting establishes.

OBJECTIVE = Plant at least 75% of permanently-seeded ROW acres with native grasses and wildflowers annually.

II. Cool Season

Time of planting and/or other factors (e. g., erosion potential, mowing) will occasionally necessitate the use of seed mixes that include non-native grasses and legume species (e.g. brome, alfalfa). Additionally, cool season species can be more practical for reseeding an area with a disturbance regime too great for the establishment/persistence of native species such as mowed areas or areas with chronic soil deposition problems.

Cool season seedings will be conducted during the following time periods.

- Spring = March 1 through May 31
- Fall = August 10 through September 31

Weather patterns may allow for the extension of these seeding dates

Fertilizer and other amendments may be added to the seed mix to enhance germination and growth. Weed control is typically minimal for this type of planting but prescribed mowing will be employed if necessary.

OBJECTIVE = Not more than 20% of permanent seeding projects yearly. Use when repeated disturbance is expected (e. g. mowing), recurrent soil deposition.

III. Turf

Lawn and other intensively managed areas typically found near homes or in an urban setting may be reseeded to turf-type grasses. Seed mixes may include Kentucky bluegrass, rye grasses and fescues. Starter fertilizer will be included as necessary.

Turf seeding will be conducted during the following time periods.

- Spring = April 1 through May 31 (April 10 through May 10 – preferred)
- Fall = August 10 through September 30 (August 21 through September 15 – preferred)

Timing of construction and other circumstances may warrant deviation from these standards if weather patterns are favorable for establishment.

OBJECTIVE = Plant all suitable areas.

IV. Nurse and stabilizer crops

Nurse crops are short-lived, rapidly establishing species that are planted along with the permanent species. Their purpose is to hold soil while the slower growing permanent vegetation gets established. They may also reduce weed pressure.

Erosive sites that cannot be immediately seeded to permanent cover may be planted to a *stabilizer or cover crop*. Stabilizer crops are used to hold soil in place until permanent species can be planted. To avoid competition with permanent species, nurse and stabilizer crops should not be allowed to set seed.

<u>Month</u>	<u>Nurse crop</u>	<u>Stabilizer crop</u>
Mar. – May	Oats @ 1-2 bu./ac. OR Annual rye @ 5-15 lb./ac.	Oats @ 2-3 bu./ac.
Jun. – Aug.	Oats @ 1.5-2 bu./ac. OR Annual rye @ 5-15 lb./ac. OR Pearl Millet @ 10 lb./ac	Oats @ 3 bu./ac.
Sep. – Oct. 15	Annual rye @ 10-15 lb./ac OR Winter wheat @ 0.5-1.0 bu./ac.	Oats @ 2-3 bu./ac. OR Winter wheat @ 1.5 bu./ac.
Oct. 15 – Feb.	Winter wheat @ 0.5-1.0 bu./ac. OR Rye Grain @ 0.5-1.0 bu./ac.	N.A.

Various factors may warrant a combination of crops being used (e.g., 5lb Annual rye + 5lb Pearl Millet). Sites planted to stabilizer crop will be seeded to permanent cover as soon as conditions allow.

OBJECTIVE = Control erosion in all areas where these crops are used.

B. Renovation projects

Replanting projects to date have focused mainly on areas disturbed by construction and maintenance activities. During years where abundant seed resources may be used to allow us to begin a process of 'renovation' on hard-surface ROW which are currently vegetated by primarily non-native plant species. The renovation process will involve removal of existing plant cover using herbicide application. Sprayed areas will be planted with native grasses and wildflowers and managed post-planting (mowing, burning) to ensure success.

Criteria for renovation may include the presence of a well-maintained fence (to reduce the potential for overspray and encroachment), history of mowing (to reduce the likelihood of unnecessary mowing), soil moisture (to match the species being planted), slope (to accommodate equipment), traffic count (to increase public awareness and enjoyment) and adjacent landowner (to improve prospects for long-term success of the seeding).

In the event a landowner requests a 'renovation project' along any county road adjacent to property they own, the area will be inspected by IRVM staff to determine the feasibility of the project. If the area is deemed appropriate for renovation by IRVM staff and the landowner is willing to do the necessary site prep (i.e. glyphosate application(s)), the IRVM program will seed the area if seed is available.

OBJECTIVE = Renovate cool season roadsides per landowner requests and as time and seed availability allow.

C. Prescribed burning

Prescribed burns will be conducted in roadsides supporting remnant native vegetation and those reseeded to native grasses and wildflowers as soon as sufficient fuel is available to sustain combustion. Burns will also be conducted for native planting maintenance to suppress brush and non-native species; and may be used in areas to help limit snow deposition. Maps of candidate locations will be prepared to guide work. Priority will be based upon length of time since previous burn, benefit potential, (desirable/indicator species and undesirable species present) and other factors. Wind direction, adjacent land use and roadside features (fences, utility poles, junction boxes, etc.) will influence the choice of roadsides burned on a given day. Burns may occasionally be conducted in areas outside the ROW (e. g. assisting other agencies).

In the spring, burning will commence as soon as roadsides are dry enough to carry fire and may continue until green up prevents effective combustion or there is a potential to harm nesting birds (ca. May 10). Late spring burns will occasionally be conducted for specific management purposes (e. g., inhibit nonnative cool season species). Burns may also be conducted in fall and winter if environmental conditions and workloads allow. Whenever possible, timing of burns will be linked to management objectives for individual roadsides (e. g., fall burns for woody species control). Burning may be repeated on an area annually or less frequently as management objectives dictate. Caution will be exercised to avoid stimulating undesirable species (e. g., biennials). Fire suppression, traffic control, weather monitoring and safety equipment will be used. Burns will be conducted with a minimum of two crew members and daily records will be maintained.

OBJECTIVE = Burn roadside remnants, plantings and brush problem areas as conditions and workloads allow.

6.4. Erosion Control and Water Quality

Proper establishment and maintenance of roadside vegetation is typically the best type of erosion control for most areas of the roadside as it is highly cost-effective. However, before and during establishment, temporary erosion control practices must be implemented in order to protect water quality, maintain the structural integrity of the roadway, protect germinating seed, and comply with National Pollutant Discharge Elimination System (NPDES) Phase II regulations. These practices include amending soil with fertilizer and other hydroseeding additives to facilitate quick establishment of nurse crops, utilizing various types and rates of hydromulch and employing rolled erosion control products (RECPs).

Where vegetation alone is not strong enough to prevent erosion, permanent erosion control features must be installed. Various geosynthetic products are becoming available that are used as 'green' alternatives to traditional hard armor methods (i.e., rip rap, concrete). Recently, IRVM personnel have been assisting engineering design staff with design and installation on projects where permanent erosion control practices are required, incorporating both hard armor and 'green' permanent erosion control methods.

IRVM personnel have also attended streambank stabilization trainings at the request of the Engineer. This has led to the IRVM program designing streambank protection projects (i.e. bendway weirs, rock spurs), applying for subsequent permits, and coordinating such projects to assist engineering staff.

OBJECTIVE = Apply appropriate and cost-effective erosion control methods in order to protect the road grade, structures and water quality. Monitor and evaluate current projects and become further educated on traditional and "green" erosion control methods. Continue to provide guidance and technical assistance to engineering and maintenance personnel. Assist with design and coordination of streambank stabilization projects as requested by engineering staff.

6.5. Wetland Delineation/Mitigation Activities and Special Environmental Assessments

Virtually all rivers, streams and associated wetland environments within Dallas County are jurisdictional waters subject to regulation under the Clean Water Act. Additionally, critical habitats for the federally endangered Topeka shiner and Indiana Bat exist within the County and are regulated by the Endangered Species Act.

A. Wetland Delineations

Wetland delineations are required in order to secure permits from the U.S. Army Corps of Engineers (USACE) and Iowa Department of Natural Resources (DNR) for bridge projects and various road and drainage district projects. To facilitate timely acquisition of permits, complete and accurate delineation reports must be submitted to USACE and DNR for their approval.

OBJECTIVE = Continue to conduct wetland delineations and prepare necessary reports at Engineer's request.

B. Endangered Species

The Indiana Bat is a federally endangered species whose summer range includes the southern part of Iowa. The species roosts under the bark of trees that are dead or dying or have naturally 'platy' bark and can be adversely impacted depending on the magnitude and timing of tree removal projects.

OBJECTIVE = Conduct tree surveys at request of Engineer and as required by state and federal agencies to obtain proper construction permits. Work with engineering and maintenance staff to identify potential roost trees at project sites and coordinate removal during time frame approved by the U.S. Fish and Wildlife Service – currently Oct. 1 – Mar. 31.

C. Wetland Mitigation Monitoring

Construction permit conditions may require that impacted wetlands be mitigated. The IRVM program has been involved with the establishment and monitoring of two small (< 7 acres) wetland mitigations on the Voas Nature Area managed by Dallas County Conservation Board. Mitigations are required to be monitored and managed to meet permit requirements for a minimum of 5 years after construction. One mitigation project - R16 (Van Meter) bridge/repaving project, has recently been approved and accepted.

OBJECTIVE = Continue to monitor and manage the mitigation project for the P46 (Dawson) bridge per permit requirements until no longer required by USACE.

D. Voas Wetland Mitigation Bank (VWMB)

The Secondary Roads Department has been assisting Dallas County Conservation Board (DCCB) in establishing the 247 acre VWMB (116 wetland acres, 131 native prairie acres). This is being done to provide mitigation opportunities for future public works (i.e., bridge and road construction) projects and economic development projects that are likely to occur within and near Dallas County.

OBJECTIVE = Continue to annually monitor the hydrology, soils and vegetation at the VWMB. Prepare annual reports and maps to fulfill necessary requirements set forth by the USACE. Assist DCCB with management activities as requested.

6.6. Right-of-Way Disturbance Control

Disturbance management is a key element of IRVM. Roadsides are prone to a number of types of disturbance that tend to reverse the process of succession and promote weed invasion. Limiting disturbance is a daunting challenge that requires good communication skills and a change in public perception of roadsides to 'manageable resources' rather than merely 'ditches'. By working with landowners and others, roadside professionals strive to improve the quality of the roadside resource for all parties.

E. Right-of-Way Maintenance ordinance

The right-of-way maintenance ordinance (Chapter 16 – Dallas County Code of Ordinances) – Appendix B, is designed to limit and control disturbance in County roadsides. The ordinance requires that parties obtain a permit prior to engaging in approved acts/uses in the right-of-way and defines consequences for working without a permit. Actions that will not be approved include refuse dumping and/or burning, encroachment, fencing, excessive soil deposition and recreational vehicle (e.g., ATV, dirtbike) use. Excessive or inappropriate mowing, spraying, cropping, burning or destruction of approved seedings or native prairie remnants is also prohibited.

OBJECTIVE = Help enforce provisions of right-of-way Ordinance.

6.7. IRVM Awareness

In order to gain further acceptance, county citizens (especially rural residents) need opportunities to learn the precepts guiding IRVM. Activities and programs that promote public involvement can be especially valuable in generating support.

A. Maintain IRVM website and provide local media with press releases, public service announcements, and other opportunities to publicize IRVM activities.

Press releases will focus on seasonal activities (e. g., roadside spraying), program accomplishments, information sharing and other topics.

OBJECTIVE = Update website annually. Provide two press releases per year to local newspapers. Provide public service announcements and other opportunities for coverage as available.

B. Make presentations to groups (civic, service, school, professional).

Availability of the roadside biologist to provide presentations will be publicized through press releases, letters and by word of mouth. As much as possible, presentations will be tailored to the group addressed. The Dallas County native seed production area (see section 6.8.B) has provided many opportunities for presentations (field days, tours, programs) and we anticipate that it will continue to do so in the coming years.

OBJECTIVE = Accept all invitations.

C. Involve organizations and individuals in the IRVM program.

I. Promote Adopt-A-Roadway (AAR) program.

The program provides opportunities for a variety of activities including litter pickup, wildflower and/or native grass planting, tree and shrub planting (special conditions only) and wildflower and/or native grass seed harvesting. Participation will be encouraged through press releases, presentations, signage and other means. Adoptions will be limited to paved roads.

Current sponsors will be encouraged to participate in activities other than litter control (especially native grass and wildflower planting).

OBJECTIVE = One new sponsorship per calendar year

- I. Provide information and assistance to groups and individuals involved in prairie restoration projects and invasive plant management.

OBJECTIVE = Assist or refer all contacts.

- II. Involve the public in roadside management activities.
Invite residents to assist with seed harvesting and cleaning and other appropriate activities as well as monitor nest boxes.

OBJECTIVE = Coordinate efforts through the Dallas County Conservation Department's volunteer program.

- III. Encourage service opportunities such as Boy Scout Eagle Projects.
Past Eagle Scout projects have included building nest boxes and informational signs for the NSPA.

OBJECTIVE = Attempt to accommodate all offers.

E. Distribute IRVM poster/calendar to appropriate agencies.

Calendars/posters have been annually provided by the UNI Roadside Office. Distribute available materials to: local high schools (ADM, Dallas Center-Grimes, Earlham, Perry, Van Meter, Waukee, West Central and Woodward-Granger), County Engineer, Board of Supervisors, Office of Budget and Personnel, County Conservation Board, ISU Extension, IaDNR biologist and forester, NRCS, FSA, Farm Bureau, IaDOT De Soto shed.

OBJECTIVE = Distribute annually in January.

F. Sign prairie remnants and restoration projects in roadsides.

Signs provided by UNI Roadside Office. Designed to identify and protect these sensitive areas.

OBJECTIVE = Sign remnants as they are located. Sign restorations as appropriate (weed levels low, wildflowers beginning to bloom, minimal sedimentation expected).

6.8. Native Seed Mixes

The more diverse a native planting is results in a more resilient plant community and provides for greater wildlife habitat. The beauty of wildflowers and native grasses can also be a powerful promotional tool for roadside programs. Most citizens appreciate the color they bring to roadsides and often desire to establish them in right-of-ways adjacent to their residences. However, native prairie seed mixes with a diverse and significant wildflower component are costly and methods to defray their expense must be sought.

A. Improve the quality of roadside seeding mixes.

Increase the diversity, quantity and integrity (local ecotypes) of wildflower seed in prairie seeding mixes as budgets and local availability allow. When feasible, tailor species selection to soil moisture, planting date, proximity to traveled surface, anticipated maintenance (i.e., mowed shoulders on paved roads) and other factors. Heavily traveled and other high profile areas will receive special consideration.

OBJECTIVE = 50:50 wildflower to native grass ratio in seeding mixes by seed weight (ca. 75:25 by seed count).

B. Adel Native Seed Production Area (NSPA)

The Adel NSPA is located on County Farm land north of Adel. Dallas County IRVM manages the area for native seed production.

Currently, 60+ species are grown and harvested on the 3.5 acres site. Harvested seed is dried, cleaned and processed and added to enhance mixes obtained from Transportation Alternatives Program seed and/or used in wetland mitigation projects.

OBJECTIVE = Manage seed plot, and harvest seed primarily on windy/rainy days not conducive for spraying and seeding operations. Process seed during fall/winter months primarily when conditions are not conducive for brush control activities (i.e. deep snow, extreme cold).

C. Dallas County Native Grass Production Area (NGPA)

In 2005, approximately 20 acres of land owned by the Dallas Center-Grimes Community School District was planted to plots of 11 species of native grass. The area serves a variety of purposes (wildlife habitat, environmental education, etc.) but primarily has been a source of seed for roadside and natural area plantings, with a significant portion having been seeded at the wetland bank project near the Voas Nature Area. Harvesting has occurred every year since 2006.

The area will continue to be managed to maximize seed production and practices may include, but not be limited to, prescribed burning, prescribed mowing, and herbicide applications. Seed will continue to be harvested with a Prairie Habitats pull-behind seed stripper. Seed cleaning will continue to be done in house.

OBJECTIVE = Continue management and harvest per objective in section 6.8.B. Rotate species as needed and time allows in order to maintain/maximize production.

D. Harvest from prairie remnants.

Native grass and wildflower species that are not being raised in production areas, or those whose demand cannot be met with seed from production areas only, will continue to be harvested from remnants.

OBJECTIVE = Harvest target species to maximize seed mix diversity as time allows while leaving a minimum of 20% from each population for natural regeneration purposes.

- E. **Encourage and assist participation in county Adopt-A-Roadway program (see Section 6.7.C.I.) and efforts by groups and individuals to establish native grasses and wildflowers in county rights-of-way.**

OBJECTIVE = Assist all interested parties.

6.9. Planning

It is easy to get caught up in the day-to-day requirements of a roadside program. However, proper planning cannot be overlooked as it is an essential component of a successful program.

A. Annual Planning

Each winter, a list of the past year's accomplishments and future year's goals is made and discussed with Engineer, Assistants to Engineer, and Foremen for approval. The Board of Supervisors is then made aware of such accomplishments and goals during the annual budget workshop in January. To facilitate achievement of the future year's goals, an annual plan is developed each January by the Roadside Biologist which is used to help guide the program for the upcoming year. See-Appendix E for sample annual plan.

OBJECTIVE = Complete list of accomplishments and goals by December 20th annually. Final revisions completed by January 10th annually. Using list of goals as a guide, compile annual plan by Jan 31st each year.

6.10. Inventory and Analysis

Not unlike planning, proper evaluation is essential as it allows a program to determine the efficacy of its operations. Given that, proper data inventory and analysis is needed.

A. Inventory

An initial, comprehensive inventory of Dallas County roadsides was conducted in 1998. Unfortunately, it has proven of little use as it is in a format that is large and unwieldy. It would be ideal to evaluate the program on a regular basis, but time restrictions and the seeming lack of a proven methodology are obstacles preventing this from occurring.

OBJECTIVE = Network with other county programs to determine if and what effective methods exist for conducting a practical, effective and useful comprehensive inventory. When one is identified, work to employ such a method or apply for funding through the LRTF grant program to obtain this data.

B. Tools

Initially, paper maps were used to all program operations (e.g. plantings, herbicide applications). Since the fall of 2005 plantings have been logged using an LRTF funded GPS unit and entered into an ArcGIS database by IRVM staff. In 2007, all planting records were digitized using ArcGIS as well. In 2002, the main spray apparatus was also equipped with a GPS receiver linked to the spray controller which allows for instantaneous data collection when herbicide is applied. Both GPS and GIS have provided more accurate, accessible and manageable data.

OBJECTIVE = Maintain current equipment and work with the county Information Services Department to keep equipment and software updated and functioning.

C. Vegetation

Currently, all plantings are recorded in digital format while roadside prairie remnants along with remnant native prairie species are recorded on paper maps. As stated above, spray records from our main spray truck since 2002 are in digital format; however, brush problem areas, and other brush control activities (i.e., basal bark applications, mechanical brush removal) are in hard copy format. For noxious and invasive weeds, see analogous sections 6.2.A.II and 6.2.B.

OBJECTIVE = Continue to inventory native roadside remnants and individual remnant species as identified. Work towards digitizing additional data as deemed necessary and as time allows.

6.11. Outside Resources

By tapping into resources beyond the 'borders' of the Dallas County Road Department, we can strengthen our program. Other agencies and individuals offer funding, information, equipment, manpower and supplies at little or no cost to Dallas County. Conversely, we will help those seeking our assistance as well.

A. Apply for grant funding.

Submit Living Roadway Trust Fund (LRTF) grant applications as needs dictate. Apply for Transportation Alternatives Program seed through the University of Northern Iowa. Explore other grant opportunities (Pheasants Forever, Leopold Center, etc.).

OBJECTIVE = One funded project per year. NOTE: LRTF deadline June 1st annually.

B. Share equipment, information and supplies with other county departments and agencies.

Cooperate with agencies having philosophies and goals in common with Dallas County IRVM program. Examples include: Dallas County Conservation Department, Dallas County Sheriff's Department, Pheasants Forever, Iowa DNR, colleges and universities, ISU Extension, Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), and neighboring counties.

OBJECTIVE = Pursue all opportunities.

6.12. Wildlife Habitat Priorities

The more than 4500 acres of ROW in Dallas County offer great potential benefits to wildlife. Roadsides are especially valuable in intensively-farmed areas (most of Iowa) as they provide a refuge for plants, animals and beneficial insects; especially certain pollinators whose populations have been in drastic decline in recent years (i.e. Honeybee, Monarch butterfly). To reduce impacts on wildlife, DCIRVM selects cost-effective chemicals with favorable environmental profiles. The use of spot spraying is also emphasized as it reduces both the quantity of chemicals introduced to our environment and total acres treated. Dallas County's computer controlled injection-type spray equipment further limits chemical use. IRVM also encourages planting diverse mixes of grass and forbs that can provide food and cover for a variety of wildlife. Other practices can enhance the attractiveness of roadsides to wildlife without compromising motorist safety.

A. Plant highly diverse seed mixes to maximize benefit to wildlife.

Research has shown that diverse plantings provide superior habitat for upland game birds, grassland song birds, small mammals and beneficial agricultural insects (i.e., pollinators and predatory species) when compared to traditional cool season grasses.

OBJECTIVE = Increase species diversity and proportions of desirable species in both native and cool season mixes if they are not cost prohibitive and will not adversely impact a roadside purpose (e.g., motorist safety).

B. Use the lowest toxicity chemical herbicides and adjuvants available.

When choosing between comparable products include toxicity in the decision-making process.

OBJECTIVE = Continue to stay informed on toxicity research of chemicals used in the DCIRVM program and evaluate potential alternatives. Revise spray program if better alternatives arise.

C. Educate citizens and public entities on new mowing legislation to help limit mowing in the right-of-way.

Excessive mowing removes potential wildlife habitat and creates disturbances that can lead to weed invasions. In addition to information provided at public forums (e. g., presentations, displays), launch a campaign aimed at rural residents of Dallas County to educate them on new mowing legislation passed by the Iowa Legislature. Promote prescribed mowing (mowing a specific area with a specific, sound purpose in mind) to help limit indiscriminate mowing.

OBJECTIVE = Prepare annual press releases for newspapers and County Conservation Newsletters

E. Participate in research projects in Dallas County roadsides.

Opportunities to assist or initiate roadside research projects may be made available from time to time.

OBJECTIVE = Pursue opportunities as time allows.

6.13. Professional Development

It is imperative that roadside professionals strive to keep abreast of advances in related fields (e.g., herbicide chemistry and application technology, erosion control methods, equipment developments, etc.). Professional development provides for increased technical, communication, management, supervisory and other skills. Involvement in professional organizations also stimulates creative processes and offers a forum for sharing ideas.

A. Association for Integrated Roadside Management in Iowa (AFIRM Iowa)

OBJECTIVE = Maintain membership. Attend Winter Meeting and Roadside Conference yearly.

B. Iowa Weed Commissioner's Association

OBJECTIVE = Continue service on Executive Board until term expires. Participate in the planning and development of training workshops and annual conference.

C. Other opportunities

OBJECTIVE = Attend conferences, workshops, seminars, etc. that relate to vegetation management, erosion control, and wetlands as time and finances allow.

7. Material Procurement

7.1 Seed

Native seed demands are typically estimated a year in advance and requests are made to the State Roadside Office to participate in their statewide seed disbursement to Counties funded by Transportation Alternatives Program (TAP) dollars. Additional seed is harvested to supplement TAP seed or use for projects not related to public right-of-way (i.e., wetland mitigations) – see analogous section 6.8. Cool season and turf mixes are purchased locally on an as-needed basis typically from local vendors.

7.2 Erosion Control Materials

A. Hydromulch

DCIRVM has found that Mat, Inc. products are cost-effective and work very well in its Finn Hydroseeder. Hydromulch needs are estimated during annual planning in January and if product is needed, pricing is requested in February for truckload purchases from vendors who distribute MAT, Inc products (e.g., Construction Materials – Cedar Rapids, IA; Stetson Building Products – Des Moines, IA). Past purchases have shown that the lowest pricing is obtained during this time using this method. Material is stored in the ‘Waukee shed’ which typically has enough room to hold 1.5 truckloads (1350 bales).

B. Other

Various other supplies are purchased locally as needed including, but not limited to Plant Marvel 16-45-7 water soluble fertilizer, Rolled Erosion Control Products, specialized hydromulch (Bonded Fiber Matrix, Flexible Growth Medium, and Verdyol Biotic Earth™ products). Two companies that have routinely provided competitive pricing and sound technical support include Coleman Moore Company and Quick Supply – both of Des Moines, IA.

7.3 Herbicides and Adjuvants

Similar to hydromulch purchases, product needs are estimated during annual planning. Pricing requests and purchases typically occur in late winter. Two companies that have routinely provided competitive pricing and sound technical support include CPS – Timberland of Spearfish, SD and Van Diest Supply Company of Webster City, IA.

8. Budget

The Roadside Biologist stewards the Chemicals/Gases (Herbicides) line item and Seed/Fertilizer (Erosion Control) line items within the Road Clearing Fund of the County budget. Labor, Equipment and Fuel costs are tied in with the Secondary Roads Budget.

Since 2009 the herbicide budget has been on a downward trend while the erosion control budget has been on an inverse or equally upward trend. Overall, the sum of these two line items has effectively remained static since fiscal year 2003/04. Budget estimates are submitted to the Road Department Office Manager in the fall or early winter. These needs then need to be justified by the Roadside Biologist during annual budget hearings with the Board of Supervisors, usually in January of each year.

9. Conclusion

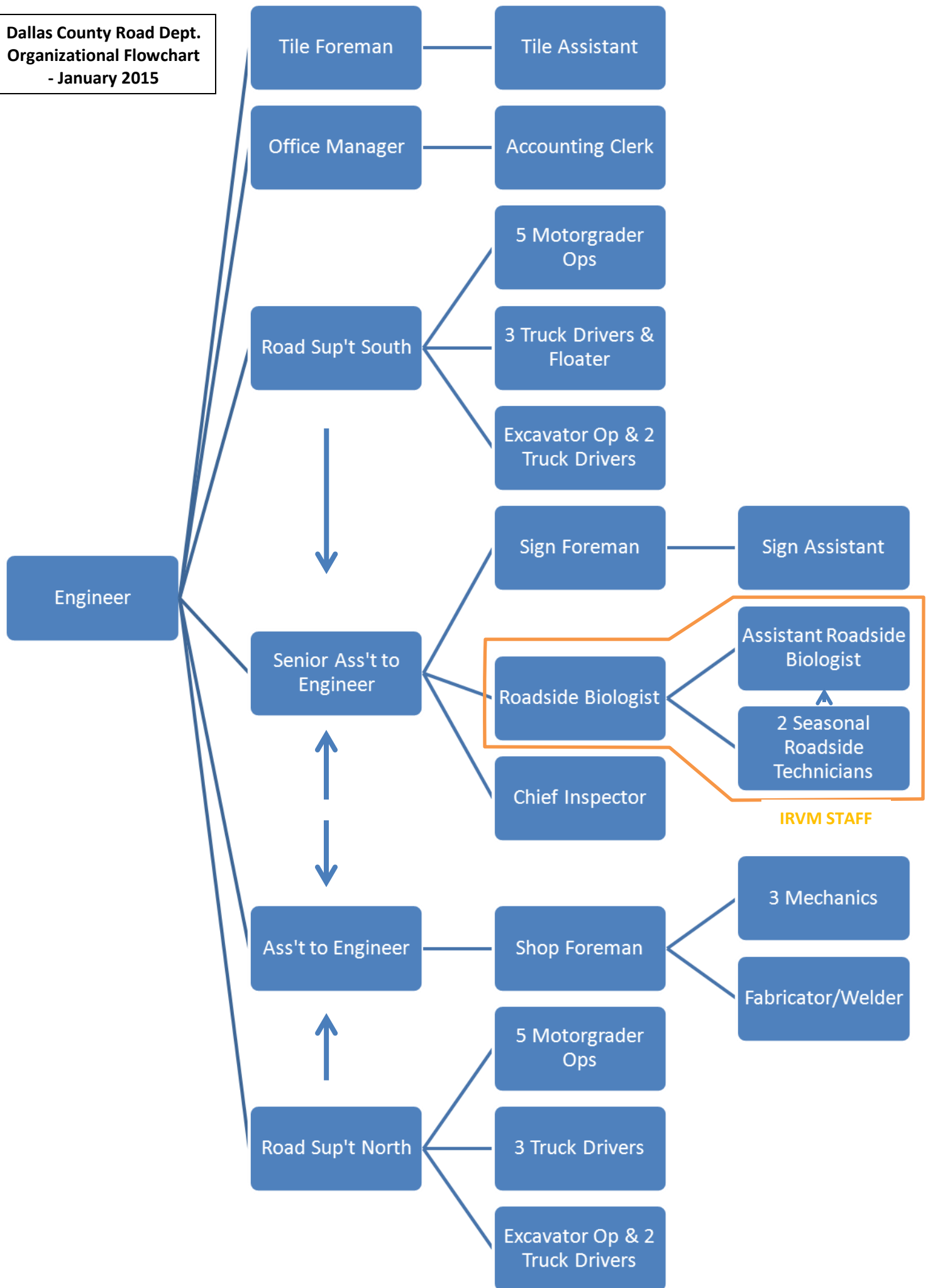
Dallas County has made a strong commitment to IRVM and its program is striving to become one of the best in the state. Our ability to achieve this overriding goal lies in our ability to carry out the provisions of the plan outlined herein and is dependent upon several factors including time, motivation, financial resources (supplies & equipment) and human resources (available labor).

We look forward to the year 2020, when we will evaluate the progress made in the previous five years and plan for the next five to come.

Appendix A

Road Department Organizational Chart, IRVM Staff Job Descriptions and Qualifications

Dallas County Road Dept.
Organizational Flowchart
- January 2015



Dallas County

Job Title: ROADSIDE BIOLOGIST

Effective Date: 7/5/13

Department: ROAD DEPARTMENT

Job Grade: 24

Location:

Union Scale: N/A

SUMMARY Coordinates the county Integrated Roadside Vegetation Management (IRVM) program. Performs related duties as required.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Identification, planting, prescribed burning and other maintenance of native prairie vegetation. Maintenance of native seed production areas; supervise and administer plant propagation, seed harvest and processing.	40
Supervise and schedule brush control, control of noxious weeds, mowing, seeding of construction and maintenance projects.	30
Informs and educates the public concerning roadside management techniques and policies, coordinates Adopt a Roadway Program with the public.	10
Responsible for establishing and maintaining the records of chemicals used, their amounts, and areas treated. Supervises the mixing of chemicals. Prepares and submits reports concerning chemical use	10
Investigates and acts upon brush and weed complaints and various other services within public right-of-way as needed.	5
Performs routine maintenance on various vehicles and equipment	5
May perform other duties as assigned.	
TOTAL =	100%

EDUCATION / EXPERIENCE

- Associate's Degree in Natural Resources or related field Biology, Botany, Horticulture, Agronomy, Soil Science, Wildlife Management or related field
- Or 2 – 4 years in Professional vegetation management, commercial pesticide application, prairie ecology and management, erosion control, plant or seed propagation and processing.
- Other: Additional education and/or experience in the following areas strongly preferred: general engineering and roadway maintenance procedures, automotive, diesel or small engine mechanics, agriculture, basic computer skills, personnel management and public relations.

LICENSING / CERTIFICATION

- Valid Iowa Driver's License
- Commercial Drivers License Class A within 30 days of employment
- Ability to obtain applicable continuing education recertification hours
- Ability to obtain an Iowa Commercial Pesticide Applicators License including Category 1A and six (6) qualifications within 30 days of employment
- Other: S-130, S-190 Fire Training, preferred

KNOWLEDGE / SKILLS/ ABILITIES

Technical Knowledge

- Computers and electronic data processing
- Word processing software (i.e. Microsoft Word)
- Spreadsheet software (i.e. Microsoft Excel)
- E-Mail (i.e. Outlook)
- Internet
- Other software programs including ArcGIS

Math Knowledge

- Basic math such as adding, subtracting, multiplying and dividing
- Add, subtract, multiply and divide in all units of measure using whole numbers, common fractions and decimals
- Compute rate, ratio and percent
- Other: Ability to apply concepts of basic algebra and geometry

Other Knowledge

- Administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms and other office procedures and terminology
- Sound environmental maintenance management practices
- Laws, regulation and ordinances governing area of assignment

Personal Skills

- Flexibility in adjusting to changing such as circumstances, information, personnel and customer needs
- Demonstrate a willingness to take initiative
- Having an understanding of and practicing safe work habits on the job site
- Brings others together to reconcile differences
- High level of integrity

Resource Allocation Skills

- Management of Financial Resources – determining how money will be spent to get the work done and accounting for these expenditures
- Management of Material Resources – obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work
- Management of Human Capital – supervising, motivating, developing and directing employees
- Time Management – managing one's own time and the time of others

Technical Skills

- Basic typing skills
- Basic word processing skills
- Basic spreadsheet skills
- Basic data base software skills
- Basic presentation software skills
- Excellent communication skills
- Good writing skills
- E-mail (i.e. Outlook)
- Ability to learn how to use the County's e-mail system within 10 days of employment
- Internet for research purposes
- Ability to learn how to use the County's internet system within 10 days of employment
- Public speaking skills
- Extract and record numerical data
- Carry out arithmetic and algebraic calculations with high levels of accuracy
- Perform routine maintenance on equipment and determine when maintenance is needed
- Conduct tests and inspections of products, services or processes to evaluate quality or performance
- Operation of tools and equipment such as tandem axle trucks, pick-ups and trailers, hydro seeders, utility vehicles, tractors, mowers, seed drills, various other implements
- Troubleshoot errors

Organizational Skills

- Problem solving identifying problems, gathering and analyzing appropriate data, arriving at a logical and/or appropriate conclusion
- Analytical thinking
- Negotiation skills
- Planning: Gather data, establish and manage a number of activities which are sequential or which overlap in time, establishing priorities and evaluating the effectiveness of the plan
- Working in teams: Contributing as an active member of a working group; taking one's share of the job by contributing skills, ideas, and/or physical work' cooperating with team members; and identifying and working toward the common goal
- Maintain a high level of confidentiality

Supervisory Skills

- Plan work assignments, activities, hours and scheduling
- Provide leadership and direction
- Manage others to make sure work gets done
- Mediate disputes

Communication Ability

- Communicate effectively
- Communicate with supervisors, peers, and/or direct reports by telephone, in written form, e-mail, and/or in person
- Communicate with persons outside the County' represent the County to customers, the public, other government entities and other external sources
- Develop constructive and cooperative working relationships with others and maintaining them other time
- Establish and maintain effective working relationships

- Use courtesy, discretion and sound judgment with the public
- Effectively meet and communicate with the public
- Deal effectively with customers

Technical Ability

- Use computers and computer systems (including hardware and software) to set up functions, enter data, or process information
- Observe, receive and otherwise obtain information from all relevant sources
- Understand and interpret legal and government documents such as the Iowa Code and Iowa Administrative Rules
- Comprehend and apply technical information

Math Ability

- Add, subtract, multiply and divide correctly
- Choose the right mathematical methods or formulas to solve a problem

Other Ability

- Perform and process paperwork
- Organize, plan and prioritize work
- Prepare reports
- Work independently with little or no supervision
- Analyze information and use logic to address work-related issues and problems
- Understand and comprehend simple instructions, short correspondences and memos
- Understand, comprehend and interpret documents, such as:
 - Safety Rules
 - Operating manuals
 - Maintenance instructions
 - Procedure manuals
 - Other: Prepare grant applications
- Take on responsibilities and challenges
- Be reliable, responsible, and dependable in fulfilling obligations
- Be open to change (positive or negative) and to considerable variety in the workplace
- Work under pressure with interruptions and challenging deadlines
- Obtain necessary certifications
- Physical ability to perform essential job functions
- Other: Prepare grant applications

PHYSICAL REQUIREMENTS / WORK ENVIRONMENT

Working Conditions

- Normal office environment
- Occasionally exposed to all outside weather conditions
- Wet or humid conditions: under 25%
- Work near moving mechanical parts: under 25%
- Work in high, precarious places: under 25%
- Toxic or caustic chemicals: under 25%
- Outdoor weather conditions: 25% - 50%
- Extreme cold: under 25%

- Extreme hot: under 25%
- Risk of electrical shock: under 25%
- Work with explosives: under 25%
- Vibration: under 25%
- Occasionally lifts, carries or otherwise moves and positions objects weighing up to 75 – 100 pounds
- Occasionally exposed to moving mechanical parts
- Typically bends, stoops and crouches on a regular basis to perform duties
- Constantly moves about to coordinate work
- Other: Occasionally mixes herbicides or supervises mixing

DISCLAIMER

The above statements are intended to describe the general nature and level of work performed by employees within this classification. It is not designed to contain or be interpreted as an exhaustive list of all responsibilities, duties and skills required of employees assigned to this job.

The job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.

Employee Name: _____

Employee's Signature: _____

Date: _____

Supervisor's Name: _____

Supervisor's Signature: _____

Date: _____

Dallas County

Job Title: ASSISTANT TO ROADSIDE BIOLOGIST

Effective Date: 7/5/13

Department: ROAD DEPARTMENT

Job Grade: N/A

Location: Administrative Office, etc.

Union Scale: Ass't Roadside Biologist

SUMMARY

Coordinates the county Integrated Roadside Vegetation Management (IRVM) program with Roadside Biologist. Performs related duties as required.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Administer all aspects of the weed and brush control program including operation of all types of spray equipment, operation of chainsaws, brush cutters, mowers, record keeping using GPS units and ARCGIS software, and safe chemical handling, mixing and loading	50
Establish and manage vegetation in the rights-of-way and other areas including operation of tractor, utility vehicle, tillage equipment and seeding equipment. Operation of hydraulic seeder, installation of erosion control practices and operation of prescribed burn equipment.	25
Manages seed production operation including planting, weed control and maintenance of wildflower and grass production areas, seed cleaning and processing.	10
Supervision of subordinate seasonal personnel. Serves as Deputy Weed Commissioner in absence of Weed Commissioner.	5
Performs routine maintenance, fabrication and repair of various equipment	5
Educate the public regarding IRVM policies and procedures and respond to questions, suggestions and complaints.	5
• May perform other duties as assigned.	
TOTAL =	100%

EDUCATION / EXPERIENCE

- Associate's Degree in Natural Resources or related field Biology, Botany, Horticulture, Agronomy, Soil Science, Wildlife Management or related field
- Or 2 – 4 years work related experience in Professional vegetation management, commercial pesticide applications, prairie ecology and management, erosion control, plant or seed propagation and processing
- Additional education and/or experience in the following areas strongly preferred:
General engineering and roadway maintenance procedures
Automotive, diesel or small engine mechanics, agriculture, basic computer skills, personnel management and public relations

LICENSING / CERTIFICATION

- Valid Iowa Driver's License
- Commercial Drivers License
- Ability to obtain a Commercial Drivers License Class A within 30 days of employment
- Ability to obtain applicable continuing education recertification hours
- Ability to obtain an Iowa Commercial Pesticide Applicators License including Category 1A and six (6) qualifications with 30 days of hire
- S-130, S190 Fire Training, preferred

KNOWLEDGE / SKILLS/ ABILITIES

Technical Knowledge

- Computers and electronic data processing
- Word processing software (i.e. Microsoft Word)
- Spreadsheet software (i.e. Microsoft Excel)
- E-mail (i.e. Outlook)
- Internet
- Other software programs including ArcGIS

Math Knowledge

- Basic math such as adding, subtracting, multiplying and dividing
- Add, subtract, multiply and divide in all units of measure using whole numbers, common fractions and decimals
- Compute rate, ratio and percent
- Ability to apply concepts of basic algebra and geometry

Other Knowledge

- Administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms and other office procedures and terminology
- Sound environmental maintenance management practices
- Laws, regulations and ordinances governing area of assignment

Personal Skills

- Flexibility in adjusting to changing such as circumstances, information, personnel and customer needs
- Demonstrate a willingness to take initiative
- Having an understanding of and practicing safe work habits on the job site
- Brings others together to reconcile differences
- High level of integrity

Resource Allocation Skills

- Management of Material Resources – obtaining and seeing to the appropriate use of equipment, facilities and materials needed to do certain work
- Management of Human Capital – supervising, motivating, developing and directing employees
- Time Management – managing one's own time and the time of others

Technical Skills

- Basic typing skills

- Basic word processing skills
- Basic spreadsheet skills
- Basic data base software skills
- Basic presentation software skills
- Good writing skills
- E-mail (i.e. Outlook)
- Ability to learn how to use the County's e-mail system within 10 days of employment
- Internet for research purposes
- Ability to learn how to use the County's internet system within 10 days of employment
- Public speaking skills
- Extract and record numerical data
- Perform routine maintenance on equipment and determine when and what kind of maintenance is needed
- Conduct tests and inspections of products, services or processes to evaluate quality or performance
- Operation of tools and equipment such as tandem axle trucks, pick-ups and trailers, hydroseeders, utility vehicles, tractors, mowers, seed drills, various other implements

Organizational Skills

- Problem solving identifying problems, gathering and analyzing appropriate data, arriving at a logical and/or appropriate conclusion
- Analytical thinking
- Planning: Gather data, establish and manage a number of activities which are sequential or which overlap in time, establishing priorities, and evaluating the effectiveness of the plan
- Working in teams: Contributing as an active member of a working group; taking one's share of the job by contributing skills, ideas, and/or physical work; cooperating with team members; and identifying and working towards the common goal

Supervisory Skills

- Plan work assignments, activities, hours, scheduling
- Provide leadership and direction
- Manage other to make sure work gets done
- Mediate disputes

Communication Ability

- Communicate effectively
- Communicate with supervisors, peers, and/or direct reports by telephone, in written form, e-mail and/or in person
- Communicate with persons outside the County; represent the County to customers, the public, other government entities, and other external sources
- Develop constructive and cooperative working relationships with others and maintaining them over time
- Establish and maintain effective working relationships
- Use courtesy, discretion and sound judgment with the public
- Effectively meet and communicate with the public
- Deal effectively with customers

Technical Ability

- Use computers and computer system (including hardware and software) to set up functions, enter data, or process information
- Observe, receive, and otherwise obtain information from all relevant sources
- Comprehend and apply technical information

Math Ability

- Add, subtract, multiply and divide correctly
- Choose the right mathematical methods or formulas to solve a problem

Other Ability

- Perform and process paperwork
- Organize, plan and prioritize work
- Work independently with little or no supervision
- Analyze information and use logic to address work-related issues and problems
- Understand and comprehend simple instructions, short correspondences and memos
- Understand, comprehend and interpret documents, such as:
 - Safety rules
 - Operating manuals
 - Maintenance instructions
 - Procedure manuals
 - Other: Herbicide labels and MSDS sheets
- Take on responsibilities and challenges
- Be reliable, responsible and dependable in fulfilling obligations
- Be open to change (positive or negative) and to considerable variety in the workplace
- Work under pressure with interruptions and challenging deadlines
- Obtain necessary certifications
- Physical ability to perform essential job functions
- Prepare grant applications

PHYSICAL REQUIREMENTS / WORK ENVIRONMENT

- Normal office environment
- Occasionally exposed to all outside weather conditions
- Wet or humid conditions: under 25%
- Work near moving mechanical parts: under 25%
- Work in high, precarious places: under 25%
- Toxic or caustic chemicals: under 25%
- Outdoor weather conditions: 25% - 50%
- Extreme cold: under 25%
- Extreme hot: under 25%
- Risk of electrical shock: under 25%
- Work with explosives: under 25%
- Vibration: under 25%
- Occasionally lifts, carries or otherwise moves and positions objects weighing up to 75 – 100 pounds
- Occasionally exposed to moving mechanical parts
- Typically bends, stoops and crouches on a regular basis to perform duties
- Constantly moves about to coordinate work

- Occasionally mixes herbicides or supervises mixing

DISCLAIMER

The above statements are intended to describe the general nature and level of work performed by employees within this classification. It is not designed to contain or be interpreted as an exhaustive list of all responsibilities, duties and skills required of employees assigned to this job.

The job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.

Employee Name: _____

Employee's Signature: _____

Date: _____

Supervisor's Name: _____

Supervisor's Signature: _____

Date: _____

Dallas County

Job Title: ROADSIDE TECHNICIAN - SEASONAL

Effective Date: 7/5/13

Department: ROAD DEPARTMENT

Job Grade: N/A

Location: Administrative Office, etc.

Union Scale: N/A

SUMMARY Assist in roadside vegetation management activities during growing season and as needed at other times of the year by performing the following duties.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Assist in weed spraying operations including equipment set up, repair and maintenance. Help prepare spray mixtures using herbicides and adjuvants. Apply chemicals and maintain spray records. Operate flatbed truck, pickup truck, ATV and backpack-type equipment. Acts as driver and applicator.	45
Assist in planting projects using hydraulic seeder (truck-mounted), tractor with seed drill, mechanical broadcaster or other means. Assist with ground preparation using implements and tools. Assist with post-planting maintenance (mowing, pruning) as needed.	20
Assists in erosion control projects including installation of erosion control blankets and other products. Uses hand tools to aid installation.	10
Assist with native seed production activities including seeding, transplanting, weeding, spraying, mowing, and harvesting. Use a variety of hand and power tools to accomplish tasks. Assist with seed cleaning and processing operations.	10
Assist Adopt-A-Roadway activities including trash pickup, sign installation and other duties as necessary.	5
Assists in brush removal activities using saws, chipper.	5
Performs basic maintenance, upkeep and minor repair to equipment.	5
May perform other duties as assigned.	
TOTAL =	100%

EDUCATION / EXPERIENCE

- High School Degree
- Or 1 – 2 years work related experience in Vegetation Management, soil science, horticulture, botany

LICENSING / CERTIFICATION

- Valid Iowa Driver's License
- Commercial Drivers License Class A or ability to obtain
- Certified Pesticide Applicator or ability to obtain

KNOWLEDGE / SKILLS/ ABILITIES

Technical Knowledge

- Computers and electronic data processing
- Word processing software (i.e. Microsoft Word)
- Spreadsheet software (i.e. Microsoft Excel)
- Laser measuring systems – handheld distance meters; laser measuring devices; ultrasonic distance measurers

Math Knowledge

- Basic math such as adding, subtracting, multiplying and dividing
- Add, subtract, multiply and divide in all units of measure using whole numbers, common fractions and decimals

Other Knowledge

- Sound environmental maintenance management practices
- Laws, regulations and ordinances governing area of assignment

Personal Skills

- Flexibility in adjusting to changing such as circumstances, information, personnel and customer needs
- Demonstrate a willingness to take initiative
- Having an understanding of and practicing safe work habits on the job site
- High level of integrity

Resource Allocation Skills

- Time Management – managing one's own time and the time of others

Technical Skills

- Perform routine maintenance on equipment and determine when and what kind of maintenance is needed
- Repair machines or systems using the needed tools such as basic maintenance to Roadside Management equipment
- Troubleshoot problems

Organizational Skills

- Problem solving identifying problems, gathering and analyzing appropriate data, arriving at a logical and/or appropriate conclusion
- Working in team: Contributing as an active member of a working group; taking one's share of the job by contributing skills, ideas, and/or physical work; cooperating with team members; and identifying and working toward the common goal

Communication Ability

- Communicate effectively
- Develop constructive and cooperative working relationships with others and maintaining them over time
- Establish and maintain effective working relationships
- Use courtesy, discretion and sound judgment with the public

Technical Ability

- Comprehend and apply technical information
- Handle machinery such as:
Roadside Management Equipment

Math Ability

- Add, subtract, multiply and divide correctly
- Choose the right mathematical methods for formulas to solve a problem

Other Ability

- Analyze information and use logic to address work-related issues and problems
- Understand and comprehend simple instructions, short correspondences and memos
- Understand, comprehend and interpret documents, such as:
Safety Rules
Operating manuals
Maintenance instructions
Procedure manuals
- Take on responsibilities and challenges
- Be reliable, responsible and dependable in fulfilling obligations
- Be open to change (positive or negative) and to considerable variety in the workplace
- Work under pressure with interruptions and challenging deadlines
- Obtain necessary certifications
- Physical ability to perform essential job functions

PHYSICAL REQUIREMENTS / WORK ENVIRONMENT

Working Conditions

- Occasionally exposed to all outside weather conditions
- Wet or humid conditions: 25% - 50%
- Work near moving mechanical parts: 50% - 75%
- Work in high, precarious places: 25% - 50%
- Toxic or caustic chemicals: 25% - 50%
- Outdoor weather conditions: 75% - 100%
- Extreme cold: under 25%
- Extreme hot: under 25%
- Risk of electrical shock: under 25%
- Vibration: 25% - 50%
- Occasionally lifts, carries or otherwise moves and positions objects weighing up to 75 – 100 pounds
- Typically bends, stoops and crouches on a regular basis to perform roadside management functions
- Constantly moves about to coordinate work
- Other: Occasionally mixes herbicides under supervision

DISCLAIMER

The above statements are intended to describe the general nature and level of work performed by employees within this classification. It is not designed to contain or be interpreted as an exhaustive list of all responsibilities, duties and skills required of employees assigned to this job.

The job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.

Employee Name: _____

Employee's Signature: _____

Date: _____

Supervisor's Name: _____

Supervisor's Signature: _____

Date: _____

Appendix B

List of State and Local IRVM related Laws, Regulations and Permits

Iowa Code 314.17 MOWING ON INTERSTATES AND PRIMARY HIGHWAYS.

Iowa Code 314.21 LIVING ROADWAY TRUST FUND.

Iowa Code Chapter 317 IOWA NOXIOUS WEED LAW.

Iowa Code 318.3 OBSTRUCTIONS IN HIGHWAY RIGHT-OF-WAY.

Iowa Administrative Rules – Natural Resources Commission [571]—Chapter 90 Aquatic Invasive Species

Dallas County Code of Ordinances, Chapter 16 – Right-of-Way Maintenance
<http://www.co.dallas.tx.us/government/board-of-supervisors/code-of-ordinances>

Dallas County Road Department – Utility Permit
<http://www.co.dallas.tx.us/departmentservices/road-department/forms>

Dallas County Road Department – Entrance Permit
<http://www.co.dallas.tx.us/departmentservices/road-department/forms>

Dallas County Road Department – No Spray Agreement
<http://www.co.dallas.tx.us/home/showdocument?id=608>

Appendix C

Highway and Transportation Map – Dallas County, Iowa

DALLAS COUNTY

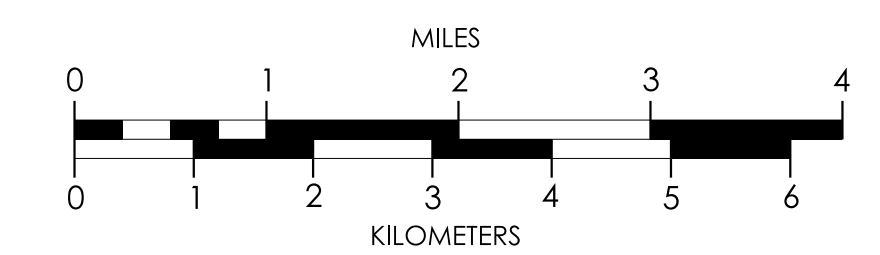
IOWA



Office of Systems Planning
Phone: (515) 239-1289
WWW.IOWADOT.GOV/MAPS

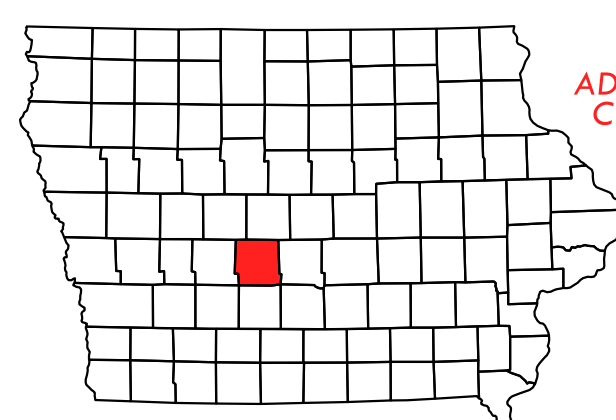
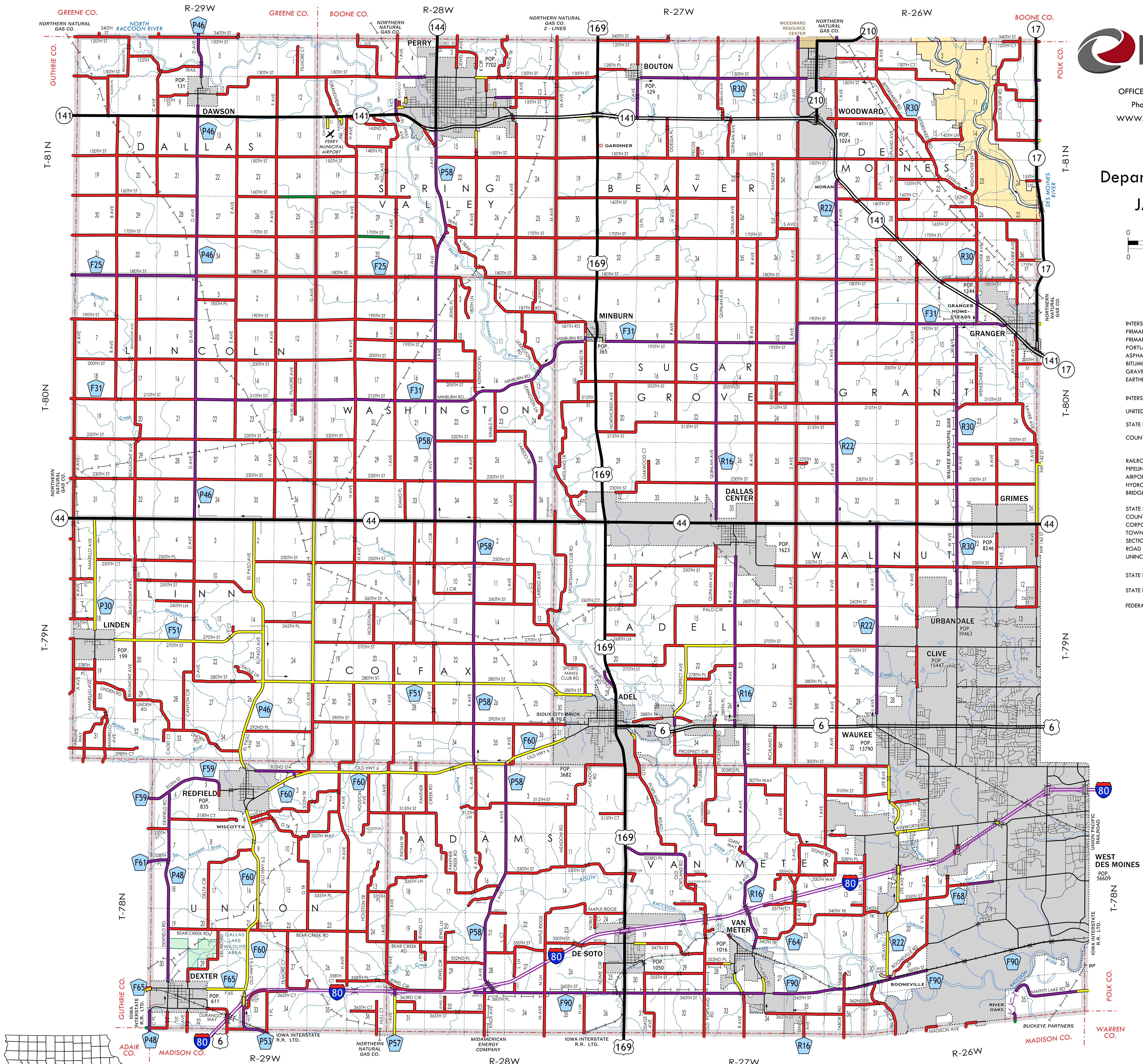
In Cooperation With
United States
Department of Transportation

JANUARY 1, 2014



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



Appendix D

Current Equipment in Service

Dallas County IRVM Equipment in Service

<u>Unit #</u>	<u>Year</u>	<u>Equipment Description</u>
406	1983	Ford tractor ("Tiger tractor")
412	2015	Morbark M12D wood chipper with winch
416	2012	Polaris Ranger 800 HD Utility Vehicle
417	2002	Road Husky Trailer
901	1998	Ford LT9000 Tandem Axle Truck
902	1998	FINN T330 Hydroseeder mounted on 901
903	2015	Chevrolet 3500 truck
904	1998	Smeal Brushwacker 275 gal wildland fire pumper unit
905	2014	3" water/trash pump with 4hp Honda engine
906	1998	Tye 2007 No-Till Drill with Native Grass box
907	1999	Ford F550 (spray truck)
908	1999	Spraytronics sprayer with 11hp Honda engine
909	1999	John Deere 6410 tractor
910	2001	Land Pride Disk for 909
911	2001	026 Stihl 16" chainsaw
912	2001	026 Stihl 16" chainsaw
913	?	Prairie Habitats seed stripper – used in 2002
914	2002	50 gal UTV sprayer
915	2008	DR pull-behind mower for UTV
916	2003	Ryobi RGBV3100 Blower vac
917	2004	Seed Dryer - homemade
918	2004	Dew Drop Drill for UTV
919	2003	Truax Cultipacker for UTV
920	2008	RKO mini fire pumper for UTV
922	2004	Winona Speed King hammermill
923	2004	Office Tester fanning mill by Clipper
924	2003	Lab Scarifier by Forsburg
925	?	Clipper M2B Fanning mill – Used, refurbished in 2004
926	?	Prairie Habitats hand harvester – used in 2004
927	2003	UTV Disc – homemade
928	2004	Gorman-Rupp irrigation pump
929	2005	Stihl FS 450 clearing saw (brush cutter)
930	?	Flowmeter
932	2005	Pallet forks for 406
933	2013	Stihl HT 131 Pole saw pruner
935	2005	Mankar Mini-mantra herbicide sprayer
936	2005	Mankar Mini-mantra herbicide sprayer
937	2005	Delta Dust collector Model 50-850
938	2006	Kappa High Pressure Diaphragm Pump with Glycerin Gauge, 13.5 HP Honda engine
939	2006	Honda 2" High Pressure water pump with Honda GX160 engine
940	2007	Cimbria Model 183 Deawner
941	2008	Stihl MS361 chainsaw with 25" bar
942	2009	Vicon 403 spreader
944	2013	Sydney Mfg. HTC ~14 Tree shearer attachment
	2005	Panasonic DMC-FZ20 digital camera 7mp with 12x zoom
	1995	Truax Flex II drill – refurbished in 2014, acquired through Iowa DOT
	2014	Trimble Juno 5B handheld GPS
	2010	Rifle Staple Gun

2010	Rifle Staple Gun #2
2010	Swift M27LED Dissecting Microscope
?	Drip torch #1
2004	Drip Torch #2 - Forestry Suppliers Sure Seal
2009	Fire resistant clothing - 2 sets

Appendix E

Dallas County 2014 Annual Plan

2014 Annual Plan – Dallas County IRVM

January

- Finish Voas Mitigation Bank Annual report
- Finish cleaning native seed
- Basal Bark Spraying
- Cut Brush on H Ave South of 320th
- Finish digitizing and editing planting records for 2013
- Send out bid requests and order herbicide
- Update Labels and MSDS sheets for herbicides and adjuvants
- Finish Winterfest presentation and give on the 22nd.
- Distribute IRVM calendars to schools etc.
- Clean shop

February

- Register for Weed Commissioner Association Invasive Species Conference
 1. Order Conference materials (paper and folders at Staples)
- Request bids and order hydromulch
- Write LRTF grant for new Chipper and GPS unit
- Cut brush on H and Jewel/I Ave area
- Basal Bark P58 and F60
- Advertise for seasonal positions at the end of month – get confirmation from last year's employees first.
- Clean and organize shop and mezzanine
- Continue to charge batteries on equipment in storage (Spray truck, hydroseeder, tractors)

March

- Weed Commissioner Association Conference
- Send clean-up reminder letters to Adopt a Roadway sponsors
- Stock equipment folders with fuel sheets for upcoming year
- Pull Irrigation Pumps no longer in use at seed production plot
- Arrange for skid steer and forks to unload hydromulch order week of 10th-14th
- Flush and scrub monitoring wells at wetland bank with UTV pumper
- Install dataloggers into monitoring wells
- Double check with survey crew: elevation and top of cap shots for monitoring wells
- Possibly take photos of wetland hydrology at bank, R16 and P46 bridge mitigation sites
- Spray plot with pre-emergent herbicide –Pendulum Aquacap
- Burning
 - F31 curve plantings (F31/K, F31/Kenwood)
 - Native Grass Production Area
 - Wildflower prod area (cord grass, lead plant, NE corner and demonstration area)

April

- Interview and Hire seasonal roadside techs.
- Turf seedings
- Inspect trees and replant trees in wetland mitigations
- Continue burning
- Take photos of hydrology of mitigations after good rain events
- Spray NGPA and reseed wild ryes and sideoats
- Spray dandelions and broadleaf weeds at Central Maintenance Facility
- Coordinate bendway-weir / streambank stabilization project with tile crew at U Ave and Beaver Creek - seed when done

May

- Finish Burning
- Seed native plantings on To Do List – Fox Creek Area, R Ave South of Van Meter
- Blanket areas on R Avenue
- Assist City of West Des Moines hydroseeding cleanouts on Booneville Road
- Hand scatter turf in thin areas at Granger Shed and check trees planted in 2012
- Talk to foremen re: repairing/adding Old Portland bridge rip rap
- Disk and Seed Drainage district on R22 North of Hwy 44
- Spray areas of plot with Pendulum (add Select to kill cheat grass)
- Spray wetland mitigations and wetland bank for reed canary grass with Habitat/Rodeo
- Spray Wildflower plot for Reed canary grass in the rows with round up
- Submit LRTF grant for chipper, GPS unit
- Spray wild carrot at WPA with ½ oz. per acre Escort – calibrate first!!!!
- Spray brush, thistle, wild carrot and crown vetch at NGPA
- Recalibrate Handgun on 908, Blow out air filters on 907,908 and 416
- Bareground – guardrails, abutments, shops, radio towers
- Identify musk thistle, poison hemlock and Canada thistle areas to be sprayed while baregrounding
 - For Hemlock areas - Add Telar or Escort, or use Perspective – Milestone is a little weak on hemlock
 - Check U Ave/Beaver Creek bridge for poison hemlock
 - Help DCCB spray hemlock at Wetland bank
- Change Oil in 907 before thistle and brush spraying
- Begin thistle and brush spraying with 907 in late May (SE ¼)
- Note areas to be sprayed with Krenite and straight Garlon 3A (applications near water)
- Spray Knotweed areas with 2.5% Habitat, .25% Liberate in late May – hand scatter native grass seed over bare areas to help with future thistle infestations; also take photos of knotweed for educational purposes.
- Spray musk thistle with UTV and take photos for educational purposes. Current known problem areas:
 - Maple Ridge culvert just W of 169
 - R16 south of Hwy 6
 - 255th St – Section 10 of Linn @ bridge
 - F Ave
 - Old Portland Road

- Spray for Canada thistle with UTV
 - Mitigation Bank in mid-late May
 - R16 and Dawson mitigations
 - Problem areas identified in ROW when baregrounding
- Take photos of hydrology for mitigations after good rains
- Monitor U Ave jetties after good rains.
- Turf, Cool season and Native seedings as requested
- Monitor wetlands!! Especially submergent vegetation in all basins, especially middle!
- Stabilize culvert outlet and road shoulder on R16 N of Hwy 6 with gabion baskets; coordinate with foreman for excavator work.

June

- Continue musk and Canada thistle spraying
- Spray Willows on F31 on S side between K and Kenwood per tile crew request
- Native seedings as requested
- Harvest June grass at Plot
- Spray Serecia lespedeza areas with Garlon
- Monitor wetlands – especially submergent vegetation in middle basin
- Blow out air filters on 907,908 and 416

July

- Finish spring thistle and brush spraying with in SE ¼ of the county.
- Krenite spraying
- Spray brush near water sources with Garlon 3A
- Try using ViewPoint or Streamline in tank 2 of 907 to treat bush honeysuckle infestations: Bible Camp Road, SW part of County; 145th and Wendover – use backpack or UTV here as ROW is wide.
- Spray purple loosestrife and teasel areas
- Mow 2012, 2013 and early 2014 native plantings with UTV and DR mower as needed.
- Monitor wetlands – especially submergent vegetation in middle basin
- Blow out air filters on 907,908 and 416

August

- Register for State Roadside Conference in Fayette County
- Order mulch for P48, F59 repaving project
- Monitor and if necessary respray Serecia lespedeza areas with Escort
- Spray resprouts on F90 from Hwy 169 to cemetery by Booneville from previous year's brush removal with forestry mower and tree shear. Try adding Streamline with Garlon since there was lots of honeysuckle here.
- Finish spraying Krenite
- Begin Fall thistle and brush spraying in SW ¼ with 907
- Native seedings and erosion control as requested through mid-August
- Begin cool season seedings in late August
- Harvest side-oats during last two weeks in August
- Continue spraying loosestrife and teasel areas and remove any teasel seedheads – double check Wiscotta cemetery in case any plants were missed.
- Check Serecia lespedeza areas and touch up with Escort if needed.
- Continue mowing native plantings with UTV and DR mower

- Monitor wetlands
- Blow out air filters on 907, 908 and 416
- Mix seed for P48/F59 repaving project

September

- Finish cool season and turf seedings and erosion control as requested
- Mail cleanup reminder letters to Adopt a Roadway sponsors
- Harvest prairie dropseed at NGPA mid Sept, Switchgrass in late Sept
- Harvest Indian grass, CWR last week of Sept. if ready
- Continue Fall thistle and brush spraying in SW ¼ with 907
- Roadside Conference – 11th-12th in Fayette County
- Blow out air filters on 907, 908 and 416
- Seed and protect P48, F59 repaving project
- Pull dataloggers from Wetland Bank monitoring wells

October

- Finish fall thistle and brush spraying
- Harvest CWR, Indian, Big Blue, Little blue first week of October
- Harvest tall dropseed the last two weeks of October
- Begin Dormant seedings in late October
- Survey newest 40 acre acquisition at wetland bank if time allows. Coordinate with tile crew to find tile line in fenceline for NRCS District Conservationist.
- Blow out furnace fans in shop
- Coordinate F61/South Raccoon River Streambank Stabilization project

November

- Dormant seedings
- Wrap up seed harvest
- Coordinate Old Portland Rd/South Raccoon River bridge rip-rap repair
- Clean native grass and wildflower seed
- Basal Bark spray
- Cut brush

December

- Dawson Bridge mitigation monitoring report
- Wetland Bank annual monitoring report
- Clean native grass and wildflower seed
- Basal Bark spray
- Cut brush