DALLAS COUNTY

Integrated Roadside Vegetation Management
Long-Range Plan

1999-2003

Dallas County Road Department

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Mission Statement

The Dallas County Integrated Roadside Vegetation Management (IRVM) program's stated purpose is to guide 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 wildlife habitat; enhance aesthetic value and provide opportunities for learning.

Introduction - The Evolution of Roadside Management in Iowa

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, included roadside vegetation management duties as part of the job description and effectively created 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, approximately one-third of Iowa's counties have hired roadside biologists and most other counties have adopted some practices and procedures of Integrated Roadside Vegetation Management (IRVM). Establishment of the Roadside Office at the University of Northern Iowa in 1988 and Living Roadway Trust Fund in 1989 provided invaluable support to the fledgling IRVM program. 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. The plan for the program emphasizes cooperative efforts and mutual support among the Board of Supervisors, Conservation Board and the Road and Conservation Departments.

Listed below are the goals and objectives of the Dallas County IRVM program. The priorities are based upon survey responses from Hardin County. Without the benefit of similar research in Dallas County, these priorities will be adopted and modified as we receive input from the local customer (re: Goal #5H).

Goals and Objectives

GOAL #1. Control brush and other vegetation that is or will likely cause road maintenance and/or public safety problems.

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 contribute to snow drifting and ice retention in the winter months. They also pose hazards for vehicles leaving the traveled surface and can block roads when damaged by storms. Brush may also cause sight distance problems and obstruct signs. Herbaceous vegetation can cause drifting and visibility problems as well as damaging rock shoulders, guardrails and bridge abutments thereby reducing their effective life span.

A. Brush control

I. Foliar

Treat trees and brush 10' and shorter in safe areas (away from ornamental species, crops and water) with a combination of Tordon 22K® and Escort® herbicides during noxious weed spraying operations.

OBJECTIVE = Treat approximately 60 acres of brush annually.

II. High-volume foliar

Treat trees and brush up to 15' in sensitive and other areas with Krenite S® herbicide. Treatments will be conducted mid July through August each year.

OBJECTIVE = Cover four townships annually.

1999 = Dallas, Lincoln, Linn and Union
2000 = Spring Valley, Washington, Colfax and Adams
2001 = Beaver, Sugar Grove, Adel and Boone
2002 = Des Moines, Grant, Walnut and Van Meter
2003 = same as 1999

III. Basal

Treat trees and brush up to 6" basal diameter in extremely sensitive and inaccessible areas. Also treat resistant species. Treatments will be conducted mid November through mid March each year.
NOTE: Thinline treatments may be substituted for basal when snow present.

OBJECTIVE = Train crew of road maintenance workers in this application technique. Make follow-up treatment in townships sprayed with Krenite® the previous year.

1999 = Des Moines, Grant, Walnut and Van Meter
2000 = Dallas, Lincoln, Linn and Union
2001 = Spring Valley, Washington, Colfax and Adams
2002 = Beaver, Sugar Grove, Adel and Boone
2003 = same as 1999

IV. Cut stump
Treat trees and brush larger than 6" basal diameter and/or 25' tall. Treatments will be conducted mid November through mid March each year.

OBJECTIVE = Make follow-up treatment in townships where basal applications were made the previous year.
1999 = Beaver, Sugar Grove, Adel and Boone
2000 = Des Moines, Grant, Walnut and Van Meter
2001 = Dallas, Lincoln, Linn and Union
2002 = Spring Valley, Washington, Colfax and Adams
2003 = same as 1999

B. Mowing

I. Shoulders
Mow shoulders (12') on paved roads (181 miles). Make one cutting in June/July for shoulder delineation, sight distance and aesthetics and a second cutting in August/September for these reasons and to limit snow deposition.

OBJECTIVE = Limit shoulder mowing to stated parameters.

II. For sight distance and snow deposition
Cuttings will be made on an occasional basis to remove vegetation that is obstructing
sight distance or is likely to cause excessive snow deposition.

OBJECTIVE = Limit to critical areas.

C. Clear-Zone Policy

Draft a clear-zone policy modeled after similar policies in place with Iowa and other state departments of transportation. The policy will help define and guide brush control and mowing operations.

OBJECTIVE = First draft by December 31, 2000. Final draft by February 28, 2001.

D. Plant growth regulators (PGR)

Conduct trials of PGR's on shoulders of paved roads as an alternative to the first mowing cycle. Enlist assistance of chemical company representatives.

OBJECTIVE = Conduct trials and complete evaluation before 2001. If results are favorable, implement the procedure on all paved roads in subsequent years.

E. Seed mixes

Specify mixes that are not likely to cause non-target snow deposition, reduced visibility or other problems. Include high percentages of shorter native grass and wildflower species in seed mixes especially mixes planted along shoulders and other critical areas.

OBJECTIVE = No complaints of visibility problems or snow deposition.

F. 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. In order to avoid selecting tolerant and/or resistant biotypes, it is likely that various products and combinations will be used on a rotating basis. Treatments will be conducted between late April and mid May but may vary depending upon product(s) used. Candidate products include Sahara DG®, diuron + Oust®, Endurance® + Oust® and Milestone®.

OBJECTIVE = Treat all 39 bridges with guardrail and 91 bridges with abutments each year within the recommended time period for the product(s) used.

II. Maintenance facilities

Treat vegetation and soil in driveway, parking, storage and other areas around county maintenance facilities as above.

OBJECTIVE = Treat all 11 facilities each year as above.

III. Rock shoulders

Investigate the need for a program of total vegetation control on rock shoulders of paved roads. Weigh costs versus potential benefits.

OBJECTIVE = Make decision before 2000 and, if necessary, proceed with trials, evaluation and implementation.

G. Safety

I. Non-target effects

Use drift control products and proper application techniques to reduce the risk of damaging crops, ornamentals, etc.

OBJECTIVE = No reports of damage each spraying season.

II. Chemical storage

Store chemicals in a facility that fulfills requirements for ventilation, spill containment, security, protection from elements and worker protection.

OBJECTIVE = Include provision for approved facility in plans for new maintenance shop to be completed by October 2000.

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, methods, chemicals, public relations, safety, labels & MSDS sheets, environmental hazards and other topics.

OBJECTIVE = Provide additional training for all applicators including maintenance personnel using only ready-to-use products.

GOAL #2. Control target weed species in county roadsides which may adversely impact adjacent crops and/or roadside vegetation.

By law, noxious weeds must be controlled in county roadsides. Noxious weeds typically pose an economic threat to cultivated crops and in some cases, have the potential to out compete 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 and *Equisetum* sp.).

A. Canada thistle, musk thistle and other species

Initiate in-house spot spraying program to effectively and economically control Canada thistle, musk thistle, giant ragweed and other problem species in roadsides.

I. Map weed patches using GIS software and roadside inventory data.

OBJECTIVE = Complete roadside inventory data entry by May 15, 1999. Complete database-GIS coordination (with the Center for Transportation Research and Enhancement at Iowa State University) by June 15, 1999.

II. Purchase Spratronics 700 skid-mounted roadside injection sprayer.

OBJECTIVE = Delivery by June 7, 1999. Put in service by June 9, 1999.

III. Make treatments to known thistle patches using a combination of Telar®, Transline® and 2,4-D herbicides. Treatments will made from May 25 to July 7 (bolting through bloom stages) and September 1 to October 15 (fall translocation stage) yearly.

OBJECTIVE = Treat each known thistle patch at least once per season.

IV. Purchase GPS system for Spratronics unit to allow yearly updating of thistle and other problem weed location maps.

OBJECTIVE = Delivery by April 1, 2000. Put in service by April 8, 2000.

B. *Equisetum* sp.

Investigate the need for a program of *Equisetum* sp. control. Weigh costs versus potential benefits.

OBJECTIVE = Make decision before 2000 and, if necessary, proceed with trials, evaluation and implementation. Use Chem-Trol method or other program.

C. Competitive species

Plant species, which will compete strongly with weedy invaders. Increase species diversity to improve the plant community's 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 seed mixes.

D. Safety

See analogous section under Goal #1G.

GOAL #3. Protect roadsides from disturbance to prevent damage to vegetation, grade and/or structures.

Disturbance management is a key element of IRVM. Roadsides are prone to a number of types of disturbance which 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 as "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.

A. Right of Way Maintenance ordinance

The proposed right of way maintenance ordinance (Chapter 16 – Dallas County Code) 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 use. Excessive or inappropriate mowing, spraying, cropping, burning or destruction of approved seedings or native prairie remnants is also prohibited.

OBJECTIVE = Formal approval of ordinance by April 1,1999.

GOAL #4. Establish and manage for the "best fit" vegetation in roadsides.

Road construction 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 reached. 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. The objective of IRVM is to accelerate the process of succession to a climax stage as quickly as possible.

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 be sown by various methods including: hand or machine broadcast, native seed drill (conventional, low-till or no-till) and hydroseeder. Seeds may be incorporated with a rake, drag 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, hydromulch or straw. Nurse crop seed (oats, grain sorghum, annual rye, etc.) will be included in the seed mix to help control erosion. Contractors and county personnel will be educated in methods of minimizing creation of erosive grades.

I. Native

Whenever possible, roadside construction projects will be seeded with mixes of native grass and wildflower species. A minimum of four species of native grass and 10 species of wildflowers will be included in each mix. When necessary, mixes will be tailored to the characteristics of a site (e. g., soil moisture,

safety/maintenance considerations). See Section #1E.

Native seedings will be conducted during the following time periods.
- Frost = February and March
- Spring = April 1 through June 30
- Summer = August 1 through August 31
- Dormant = November

Mowing will be the primary management tool to control weeds in native plantings. One or two cuttings will be made in the establishment year when weeds reach 12-15". Cutting height will be 3" for the first cutting and 6" for the second cutting. In the second growing season, a single cutting at 10-12" may be made if weed pressure is heavy. Herbicides may also be used to control weed growth.

OBJECTIVE = At least 67% of permanent seeding projects yearly.

II. Cool Season

Time of planting and/or other factors (e. g., erosion potential) will occasionally necessitate the use of seed mixes, which are comprised primarily of non-native species. However, such mixes will include both native (e. g., western wheat grass, Canada wild rye) and non-native (e. g., tall fescue, perennial rye grass) *cool season* species. Cool season mixes will include a minimum of four grass species (at least two native) and two forb species (at least one native).

Cool season seedings will be conducted during the following time periods.
- Spring = March 1 through May 31
- Fall = August 10 through September 31

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.

OBJECTIVE = Not more than 33% of permanent seeding projects yearly.

III. Turf

Lawn and other intensively managed areas will 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
- Fall = August 21 through September 15 (BEST)

OBJECTIVE = Plant all suitable areas.

IV. Stabilizer crop

Areas that can not be seeded to permanent cover within the recommended time periods, and that are not good candidates for dormant native seedings, will be planted to a stabilizer crop. The following species may be planted at listed rates from October 1 through October 30.
- Rye grain @ 1.5 bushels per acre (bpa)
- Barley @ 2 bpa
- Oats @ 3 bpa
- Winter wheat @ 1.25 bpa
- ReGreen™ @ 40 pounds per acre (ppa)

- Annual rye @ 30 ppa
- Timothy @ 10 ppa

Sites planted to stabilizer crop will be seeded to permanent cover as soon as possible the following growing season.

OBJECTIVE = Plant all suitable areas.

B. Seeding equipment acquisition

Additional seeding and erosion control equipment will be obtained, as funds become available. Planned acquisitions include tractor, disk, mulch blower and mulch disc.

OBJECTIVE = Acquire by purchase or grant before December 31, 2000.

C. Prescribed burning

Prescribed burns will generally be conducted only in roadsides supporting remnant native vegetation. Roadsides recently reseeded to native grasses and wildflowers will also be burned as soon as they have sufficient fuel to sustain combustion. Information from the roadside inventory and direct observation will be used to identify candidate roadsides. Priority will be based upon the diversity and density of indicator and undesirable species present. Weather conditions, 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 other areas (e. g., demonstration areas, assisting other agencies).

Burning will commence in the spring as soon as roadsides are dry enough to carry fire and may continue through May 7, if necessary. Fall burns may be conducted on a limited basis. Whenever possible, timing of burns will be linked to management objectives for individual roadsides. Burning may be repeated on an area annually or less frequently as management objectives dictate. Caution will be exercised to avoid stimulating undesirable species. Fire suppression, traffic control and safety equipment will be used. Burns will be conducted with a minimum of two crewmembers and daily records will be maintained (see attached Burn Data Sheet).

OBJECTIVE = 15 miles of roadside / 40 acres of roadside annually.

GOAL #5. Improve the public image and awareness of integrated roadside vegetation management.

Roadside vegetation management is a new program in Dallas County. In order to gain acceptance, county citizens (especially rural residents) need opportunities to learn the precepts guiding IRVM. Activities and programs that promote public involvement and feedback can be especially valuable in generating support.

A. 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., prescribed burning), program accomplishments, information sharing and other topics.

OBJECTIVE = Three press releases per year to county newspapers. Provide PSA's and other opportunities for coverage as available.

B. Set up the roadside display at local events (e. g., Dallas County Fair).

The roadside display is available by request from the UNI Roadside Office.

OBJECTIVE = Two placements per year.

C. 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.

OBJECTIVE = Accept all invitations.

D. Involve organizations and individuals in the IRVM program.

I. Initiate a county Adopt-A-Roadway (AAR) program.
The program will be patterned after successful state and county programs. It will provide 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 harvesting. Participation will be encouraged through press releases, PSA's, presentations and other means. Adoptions will be limited to paved roads.

OBJECTIVE = Have program in place by March 1, 2000. Initiate four adoptions per year.

II. Research opportunities for educational projects with local schools and teachers.
Several programs (in addition to presentations and the AAR program listed above) are available if sufficient interest is shown. These include curricula developed to teach concepts of prairie restoration and integrated roadside vegetation management.

OBJECTIVE = Survey teachers and evaluate results from seven county school districts by March 31, 2000. If response is positive, invite participation; offer instructional materials and delineate level of involvement before December 31, 2000.

County school district contacted will include: Perry, Woodward-Granger, Dallas Center-Grimes, A-D-M, Waukee, Van Meter and West Central.

III. Provide information and assistance to groups and individuals involved in prairie restoration and/or roadside improvement projects.

OBJECTIVE = Assist or refer all contacts.

IV. Involve the public in seed harvest activities.
Invite residents to assist seed harvest by hand on local prairie remnants or production plots.

OBJECTIVE = Organize yearly Seed Harvest Day beginning fall 1999.

E. Assemble a Roadside Committee

The roadside committee functions to assist program development and planning, provide direction and guidance on program implementation. They have responsibility to review long and short range plans, the program budget and the year-end report.

If possible, the committee should include the following members: one member of the Board of Supervisors, one member of the County Conservation Board, one commissioner from the Soil and Water Conservation District, County Engineer, County Weed Commissioner, County Conservation Board Director and NRCS District Conservationist. Additional representatives from farm organizations, road maintenance personnel, related industries, federal and state conservation agencies, utility companies, universities/colleges (extension), private conservation organizations and interested rural residents may be included. The committee should include eight to twelve members and meet on a quarterly basis or more often if necessary.

OBJECTIVE = Organize committee and have first meeting by December 31, 1999.

F. Distribute IRVM poster/calendar to appropriate agencies.

Poster/calendars provided by the UNI Roadside Office. Distribute to: County Engineer, Board of Supervisors, Office of Budget and Personnel, County Conservation Board, ISU Extension, IaDNR biologist and forester, NRCS, FSA, Farm Bureau, Raccoon River Watershed Project, local schools (Perry, Woodward-Granger, ADM, Dallas Center-Grimes, Van Meter and Waukee) and others.

OBJECTIVE = Annually in December and January.

G. Sign prairie remnants and restoration projects in roadsides.

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

OBJECTIVE = Placements at five remnants and all second-year restoration projects annually.

H. Conduct a survey of Dallas County residents.

Design survey to ascertain awareness of and attitudes about integrated roadside vegetation management program and to guide program priorities. Will provide baseline information for future surveys.

OBJECTIVE = Surveys prepared and mailed before January 31, 2000. Results compiled, evaluated and reported to by March 31, 2000. Repeat survey in 2005.

GOAL #6. Beautify roadsides to provide visual relief and enjoyment for travelers and others.

The beauty of wildflowers and native grasses can be a powerful promotional tool for roadside programs. Most citizens appreciate the color they bring to previously plain roadsides and often desire to establish them in roadsides adjacent to their residences. Native prairie seed mixes with a diverse (>20 species) and significant (>10% of total seed weight) wildflower component are costly, however, and methods to defray their expense must be sought.

A. Include wildflower seed in roadside seeding mixes.

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

OBJECTIVES = 1999 – 25 ounces/acre (11.5%) – 23 species
2000 – 30 ounces/acre (13.5%) – 30 species
2001 – 40 ounces/acre (17.2%) – 35 species
2002 – 40 ounces/acre (17.2%) – 40 species
2003 – 50 ounces/acre (20.7%) – 45 species

Wildflower species will also be included in cool-season mixes.

NOTE: Native grasses also provide aesthetic benefits and additional species will be added when possible to all seed mixes.

B. Establish and harvest production areas for wildflower and native grasses species.

I. Select an area for production in county-owned land or easements.
Continue discussions with the County Conservation Board and Board of Supervisors regarding use of land formerly serving as the county farm. If unsuccessful, explore options in rights-of-way and other areas.

OBJECTIVE = Selection approved by June 31, 1999.

II. Create plan for production area.
The plan should include: species to be planted, plot layout, companion crops, ground preparation, weed control, planting date and method.

OBJECTIVE = Plan completed by December 31, 1999. Species selected by June 31, 1999.

III. Hand harvest seed from prairie remnants and roadsides.
Inventory areas with prairie indicators to determine species that may be harvested. Secure permission to harvest on privately held lands. Focus on species selected above. Use ethical collection techniques.

OBJECTIVE = Harvest necessary quantity for each species before October 31, 1999.

IV. Acquire seed harvesting and processing equipment.
The following equipment shall be obtained via competitive grant or local funds: fanning mill, hammer mill, pull-type combine or Flail Vac. Other equipment will be purchased as needed.

OBJECTIVE = Purchase hammer mill, fanning mill and combine or Flail Vac by December 31, 2001.

V. Clean and process seed.
Remove excess plant material, hulls and weed seed. Scarify and stratify seed. Cleaning may be contracted if equipment is not available in house.
OBJECTIVE = Complete by Feb 28, 2000.

VI. Plant and manage production areas.
Prepare ground as necessary and plant with a native seed drill or other suitable implement. Control weeds using prescribed mowing as needed.

OBJECTIVE = Seed planted by June 30, 2000.

VII. Manage and harvest production areas.

Continue to control weeds in second and subsequent years following seeding using prescribed mowing, prescribed burning, hand weeding and herbicides (Plateau, Surflan, Milestone, etc.). Weed control designed to reduce competition with desirable species, increase yields, comply with weed law, limit crop contamination and reduce cleaning time. When plots mature sufficiently, begin harvest using mechanical method (Flail Vac, combine, etc.) and hand harvesting. Continue these practices indefinitely.

OBJECTIVE = Begin harvesting plots summer and fall 2001. Full production by 2002.

VIII. Clean and process seed harvested from production areas and remnants.
Will be contracted until equipment purchased. Includes scarification of legumes and stratification of most species.

OBJECTIVE = Yearly before February 28.

IX. Evaluate and modify production areas.
Replant unsuccessful plots. Adjust plot sizes to meet demand. Overseed plots to thicken stands and increase genetic diversity.

OBJECTIVE = Yearly, or as needed, after third growing season.

C. Harvest from prairie remnants.
Continue to harvest from remnants, species that are not being raised in production areas or species which can efficiently be collected from remnants. Make supplemental collection of species whose demand can not be met with seed from production areas only. Mixes may also be harvested from local remnants.

OBJECTIVE = Yearly before October 31.

D. Pursue grant opportunities to fund special seed mixes for high profile projects.

OBJECTIVE = Pursue opportunities as they become available.

E. Encourage and assist participation in county Adopt-A-Roadway program (see Goal #5DI) and efforts by groups and individuals to establish native grasses and wildflowers in county rights-of-way.

OBJECTIVE = Assist all interested parties.

F. Initiate a program to provide native grass and wildflower seed to rural residents, groups and communities.
Individuals and groups desiring to plant native grass and/or wildflower seed in county rights-of-way must complete an application. Successful applicants will receive an inexpensive native grass and/or wildflower seed mix sufficient to plant an area up to one acre in size and instructions for planting and proper management using a variety of methods. Seed will not be given to applicants until ground preparation is complete. Technical assistance will be provided.

Seed will be purchased with grant money or will be provided from the previous season's harvest.

OBJECTIVE = Application drafted, program publicized and seed acquired by February

28, 2001.

GOAL #7. Plan and evaluate activities.

It is easy to get caught up in the day-to-day requirements of a roadside program. However, looking back (evaluation) and forward (planning) are often overlooked but essential components of a successful program.

A. Prepare an annual plan of work to guide and coordinate activities.
Submit to Board of Supervisors or Roadside Committee for approval.

OBJECTIVE = Complete by December 31 annually. Final revisions until February 28 annually.

B. Survey transects every other year to document changes in roadside vegetation.

I. Establish four east-west transects on secondary roads spanning the county at roughly equal intervals.

OBJECTIVE = Select transect routes by December 31, 1999.

II. Create methodology and data sheet for recording transect information. Model after Data Preparation methods as inventory information will provide the baseline for future comparisons.

OBJECTIVE = Complete by December 31, 1999.

III. Conduct semiannual surveys to document current conditions. Established transect routes will be used for every survey. Compare data over time and analyze results.

OBJECTIVE = Semiannually during the month of August beginning in the year 2000. Analysis completed by December 31.

C. Prepare an annual year-end report to summarize activities & accomplishments and evaluate results versus objectives established in the annual and long-term roadside plans.
Include results of above surveys if conducted. Submit to Engineer or Roadside Committee and Board of Supervisors.

OBJECTIVE = Complete by January 31 annually.

GOAL# 8. Pursue grant, sharing and information exchange opportunities .

By tapping into resources beyond the "borders" of the Dallas County Road Department, we strengthen our program considerably. Other agencies and individuals offer funding, information, equipment, manpower and supplies at little or no cost to Dallas County. Of course, we strive to provide benefits to those seeking our assistance as well.

A. Submit Living Roadway Trust Fund (LRTF) grant applications as needs dictate. Explore other grant opportunities (TEA-21, Leopold Center, etc.).

OBJECTIVE = Three funded projects per year. NOTE: LRTF deadline August 31 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. Examples include: Dallas County Conservation Board, Pheasants Forever, Ducks Unlimited, colleges and universities, ISU Extension, Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), neighboring counties.

OBJECTIVE = Pursue all opportunities.

GOAL #9. Enhance wildlife habitat in roadsides.

IRVM emphasizes the use of herbicide application methods (i. e., spot spraying) that reduce the quantity of chemicals introduced to our environment. Using modern injection-type spray equipment further limits their use. IRVM also champions planting diverse mixes of grass and forbes that provide food and cover for a variety of wildlife. Other practices can enhance the attractiveness of roadsides without compromising vehicular safety.

A. Design seed mixes to maximize species that are most valuable to wildlife.

Increase proportions of most desirable species if they are not cost prohibitive and will not unbalance the plant community. Use cover crops that provide food and cover (e. g., grain sorghum).

OBJECTIVE = Research wildlife use of grass and forb species. Adjust seed mixes to maximize the relative contributions of candidate species by February 28, 2000.

B. Use the lowest toxicity chemical herbicides available.

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

OBJECTIVE = Research toxicity of chemicals used in Dallas County program and potential alternatives. Revise spray program if necessary by February 28, 2001.

C. Encourage citizens to limit mowing and to time burns properly.

Excessive mowing and poorly timed burns remove habitat. In addition to information provided at public forums (e. g., presentations, displays), launch an education campaign - in partnership with Dallas County Conservation - aimed at rural residents of Dallas County to promote environmentally friendly roadside management practices.

OBJECTIVE = With County Conservation personnel, design materials and methods of dissemination (e. g., newspapers, direct mailings, newsletters, etc.). Distribute information and evaluate impact using roadside inventory and semiannual surveys. Begin project before November 30, 2000. Distribution to begin March 2001. Evaluation complete before December 31, 2003.

D. Initiate nest box programs.

American kestrels, eastern bluebirds and wood ducks readily accept artificial nest structures in roadsides. Model programs after successful predecessors (e. g., Iowa DNR kestrel box program). Enlist assistance of Dallas County Conservation personnel, other organizations and individuals. Apply for grants to fund projects.

OBJECTIVE = Establishment (construction, placement and maintenance) of 20-box programs for two of the three species listed above. Monitor boxes and band nestlings. Maintain nest records. Both programs in place by March 31, 2003.

E. Participate in wildlife research projects in Dallas County roadsides.
Opportunities to assist or initiate roadside wildlife research projects may be made available from time to time.

OBJECTIVE = Pursue all opportunities.

GOAL #10. Participate in professional organizations and development opportunities.

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.). Personal development allows professionals to better themselves by honing their 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. Serve on executive board as opportunities arise. Investigate possibility of hosting Roadside Conference between 2004 and 2008.

B. Iowa Weed Commissioner's Association
OBJECTIVE = Participate in annual conference and district meetings beginning in 2000.

C. Other opportunities
OBJECTIVE = Attend related conferences, workshops, meetings, field days, etc. as time and finances allow.

Conclusion

Dallas County has made a strong commitment to IRVM and is striving to become one of the best IRVM programs 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 (manpower).

As we plan for the future, the need for additional human resources stands as an issue that must be addressed in order to meet the goals and objectives outlined in this plan. The hiring of an assistant roadside biologist, although not a listed goal, deserves highest priority in the early stages of this long-range plan.

We look forward to the year 2003, when we will evaluate the progress made in the previous five years and plan for the next five to come.

Approvals

_____	_____
Chairman, Dallas County Board of Supervisors	Date
_____	_____
Dallas County Engineer	Date
_____	_____
Iowa DOT Roadside Coordinator	Date