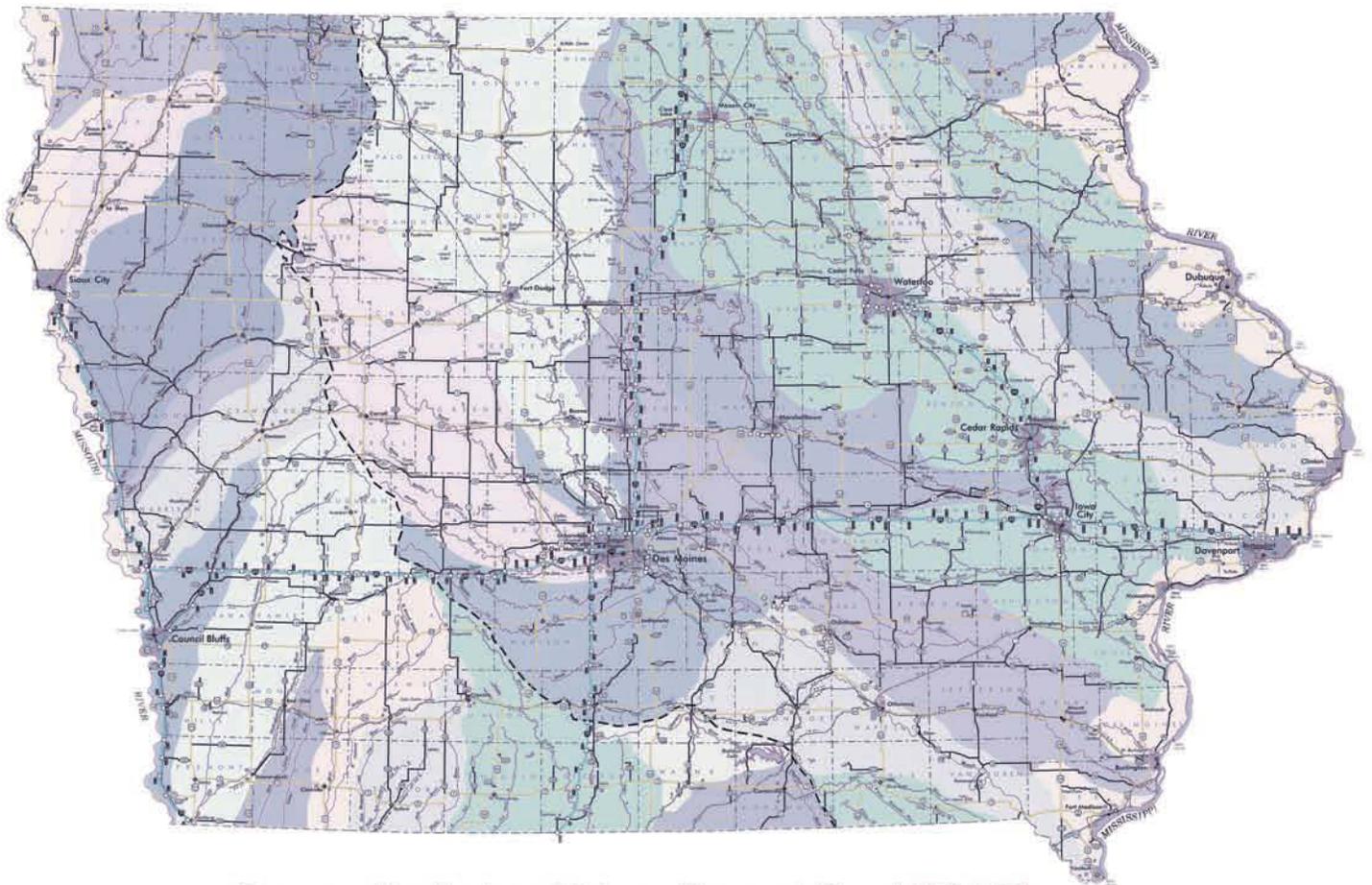




Iowa Drainage Law Manual



Sponsored by the Iowa Highway Research Board (TR-497)

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1. Introduction, Disclaimer, Observations of a Drainage Attorney

INTRODUCTION

The relationship between Iowa's roads and drainage developed when rural roads were originally constructed. The land parallel to roadways was excavated to create road embankments. The resulting ditches provided an outlet for shallow tiles to drain nearby fields for farming.

Iowa's climate and terrain are nearly ideal for farming, and more than 90 percent of the land suits the purpose. Much of the land, however, needs to be artificially drained to achieve maximum productivity. Most of this drainage has been accomplished with an extensive network of levees, open ditches, and underground tiles. The U.S. Census Bureau estimated that as early as 1920 approximately nine million acres of Iowa farm land had been artificially drained or needed to be.

Couple this drainage system with Iowa's extensive surface transportation system—approximately 100,000 miles of roads and streets, 90,000 on local systems—and potential for conflicts will naturally arise. This is particularly true with urban expansion resulting in residential and commercial development of rural land.

Drainage laws

Iowa relies on a broad system of drainage-related laws established in several forms: common law, statutory law, and case law. For many aspects of drainage law, however, specific legal rules are not available.

Most of the pertinent legal precepts were established early in the twentieth century. Some, as with case law, may be more precisely defined even today. Federal statutes further define requirements regarding drainage of rural lands.

In general, perpetuating natural drainage is the recommended course of action. Essentially, water runs down hill, so it's natural that downstream or lower land receives drainage from upstream or higher land. Iowa

courts have ruled that lower lands are obligated to receive all natural drainage and cannot obstruct that natural flow to the detriment of upstream property.

Property owners can make *reasonable* drainage improvements to their land, even if they have some effects on neighboring property. But the courts may consider other improvements *unreasonable*, and may consequently assess damages and/or order the improvement removed.

Under Iowa common law precepts, cities and counties have the same rights and obligations as private citizens in the control and disposition of drainage. Cities and counties are also subject to the same liabilities. Public agencies, however, are generally held to higher standards than private interests.

Definitive solutions to all conflicts won't be found in established law. To avoid conflict and potential liability over drainage issues, agencies should always look for solutions and opportunities for cooperative action with other jurisdictions and property owners. Common sense, good judgement, and a cooperative problem-solving approach will serve agencies well.

About this manual

This manual contains summaries of and references to the laws most relevant to drainage in Iowa. It also includes frequently asked questions about transportation agencies' responsibilities related to drainage. Typical policies and agreement forms used by agencies to address drainage issues are illustrated and a glossary of common terms is included.

DISCLAIMER

This manual should not be considered a substitute for legal advice. Counsel from a qualified attorney should be sought whenever solutions to specific legal controversies cannot be readily determined. Opinions presented are those of the contributors and authors only and should not be used as the basis for legal decisions.

This manual references the 2003 Iowa Code and the 2004 Administrative Code. It does not contain all the laws and regulations that may affect a specific situation. Users should check for any recent revisions in the code.

OBSERVATIONS OF A DRAINAGE ATTORNEY

By James W. Hudson, Attorney at Law

Editor's note: James Hudson has more than 50 years of experience as an attorney dealing with drainage law. Since 1951 he has represented supervisors, trustees, and landowners in more than half the counties in northern Iowa. These observations result from that experience.

Old common law

A drainage district as we know it in Iowa did not exist under the old common law. The old common law water law was very general but also somewhat restrictive and did not permit landowners to properly utilize the potential of their land. Basically, the courts did not permit much alteration of a natural watercourse. A dominant landowner, being a landowner of higher elevation, was entitled to drain his water onto the lands of the servient landowner, being the lower in elevation. The dominant landowner could not increase the flow or divert the flow in or out of the natural watercourse. The servient landowner could not obstruct the flow of water, and a person could not divert water out of or into another watercourse.

Laws pertaining to drainage districts

The Iowa Legislature first adopted statutes describing and defining a drainage district in about 1890. The Iowa Constitution was amended in 1908 specifically providing drainage districts with the authority necessary to carry out the purposes of drainage districts as provided by statute. Drainage districts have the right of eminent domain to acquire lands for the public purpose of establishing and maintaining drainage district facilities.

Over the years the drainage statutes have been amended and expanded in many areas. I have participated in the recommendation of many of these amendments to the statutes.

For many years, the law for drainage districts existed in 13 chapters—Chapters 455–467 of the Code of Iowa. About twenty years ago the legislature decided to consolidate those thirteen chapters into one, namely, Chapter 468. The consolidation resulted in confusion for the many people who seek a specific statute in the chapter containing nearly 500 sections.

Drainage district basics

A drainage district is not required to follow the natural watercourse and can divert water in or out of a natural watercourse if it is more efficient in the management of the drainage of water. Ordinarily, however, a drainage district is established along watershed lines since the natural watersheds collect much of the surface water.

Wetlands and drainage districts

It has been said that over 90 percent of the wetlands in the state of Iowa have been drained. This is perhaps true, and the establishment and existence of drainage districts has probably contributed to the draining of the great majority of said wetlands. Drainage districts have drained some wetlands as have individual landowners who acquired outlets from a drainage district. By virtue of the drainage of these lands, the agricultural economy in the state of Iowa has been greatly enhanced.

Establishing a drainage district

Two or more landowners can petition to establish a drainage district by filing a petition with the county auditor's office and the board of supervisors in the county where the district is located. The basic purpose is to provide facilities for draining the excess water in a watershed area. All lands within the watershed area

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that are benefited by the drainage facilities are included in the drainage district and are assessed for drainage taxes accordingly.

When a drainage district is first established, the board of supervisors serves as trustee for the district. After the district has been legally established, the landowners in the district may petition the county auditor to call for a special election to elect three trustees from the membership of the landowners in the district. If the trustees election is completed, the three trustees take over the administration of the drainage district and the supervisors are relieved of further responsibility. The trustees must, of course, follow the exact same statutes that the supervisors follow under Chapter 468 of the Code of Iowa.

Tax assessments

In most drainage districts, the method of classification of the assessment is referred to as the relative benefit method of assessment. To arrive at this schedule of assessment, the board of supervisors appoints a classification commission consisting of a qualified engineer and two landowners, neither of whom can own land or be interested in lands in the drainage district. That commission reviews the lands in the district and arrives at a classification and assessment schedule.

The statute provides that the land having the greatest need for drainage would be taxed on the basis of 100 percent and other lands in relation thereto. The classification is done by 40 acre tracts or fraction thereof, and each tract of land has a separate classification. In addition to the need factor, the classification commission also considers two proximity factors:

1. The distance of the 40 acre tract from the drainage facility for which it is being classified.
2. How much of the district facility is necessary to provide an outlet for the tract of land.

The commission also considers other factors such as the type of soil—some soils require more drainage than others—and can consider any other special factors with a bearing on the benefit to the land by virtue of the existence and maintenance of the drainage district facility.

The classification and assessment of a tract of land does not depend on the landowner's use of the drainage facility. Rather, the basis for assessment is the availability of the outlet for drainage, not the utilization of an outlet. If there is modification in the facility which is the basis for the assessment, it is possible for the supervisors to reclassify a district reflecting any change of benefit which might result.

No federal or state funds are used for drainage districts, although there are occasional exceptions. In 1993, due to excessively heavy rainfall, some drainage district ditches incurred flood damage. Some drainage districts received Federal Emergency Management Administration funds for partial reimbursement for needed repairs. The state of Iowa also partially reimbursed some counties for the cost of drainage district projects which were designed solely to provide alternate outlets to allow existing agricultural drainage wells to be closed.

Drainage district projects

The two basic types of drainage projects are repairs and improvements. Generally, a repair is defined for drainage purposes as that work which is necessary to restore the facility to its original design or intended efficiency. If the project is a repair, the supervisors have a mandatory duty to perform it. According to statute, the supervisors shall maintain the district facilities in a reasonable state of repair. If the board of supervisors fails to maintain that appropriate repair status, any one landowner in the district can petition

the court in that county to compel the board to make the repair.

An improvement usually consists of work that would enhance or enlarge the district facility. Pursuing an improvement is at the discretion of the board.

Right of remonstrance

There is a right of remonstrance available to landowners when a new drainage district is proposed for establishment. A majority of the landowners in the district must comply with the remonstrance provision, and they must own at least 70 percent of the total land in the district. If the remonstrance provision is met by the landowners, then the supervisors must terminate that procedure and pay for preliminary expenses of the bond furnished by the petitioners.

Before January 1957, this right of remonstrance only applied to a new district. In January 1957 a committee appointed by the legislature and governor filed a report with the legislature about a new water law and revisions in the drainage law. The report recommended that the right of remonstrance also applies to an improvement in a drainage district if the costs of the improvement exceeded the original cost of the drainage district. Therefore, under current law, if an improvement is proposed by the board which exceeds the original cost of the district, the landowners can terminate that procedure by filing a remonstrance.

Drainage subdistrict

In the event a landowner has land that is separated from the main drainage district or watercourse by the land of others and they cannot agree to terms and conditions for crossing their lands to obtain the outlet into the drainage facility, that landowner can file a petition for a subdrainage district.

When the petition is filed with the board of supervisors, the board appoints an engineer and goes through the same process for the establishment of a subdrainage district as for a regular drainage district. The new subdistrict also includes the intervening lands so that they all pay according to their respective benefit. The fact that a subdrainage district is available to an outlying landowner usually prompts the intervening landowners to be more compatible and usually results in the landowners entering into a written agreement providing for the outlying landowners to have access to the district facility.

Annexation

Occasionally the board finds that lands outside a drainage district are benefiting from the district facilities. In such cases, the board can go through a procedure to annex those lands to the district. In that way all who benefit from the drainage district facilities also help pay for their maintenance.

Dissolution

In order to dissolve a drainage district, there are two conditions which must exist:

1. The drainage district must be solvent and all obligations of the district paid.
2. The board must find that there is no longer any need to maintain the facilities of the drainage district.

As a practical matter, this condition seldom exists as the land usually does not lose its need for drainage.

Appeals

By statute, anytime a landowner is aggrieved by the final action of the board of supervisors or board of trustees in regard to drainage district procedure, the

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landowner has the right to appeal the board's decision to the district court in the county where the district is located. The landowner must follow a specific procedure to have a successful appeal. The drainage statute also provides that this particular procedure shall be the exclusive remedy for a landowner who is aggrieved by a final action of the board of supervisors. This right of appeal and procedure for appeal is part of the due process of law which the Iowa Constitution and the United States Constitution provide for persons.

Drainage district immunity

For many years governmental entities had immunity which provided that they could not be found liable for damages for negligence. In 1968 the Iowa Legislature modified the governmental immunity statute and removed immunity from most governmental entities. Drainage districts, however, maintained their immunity against claims for negligence and damages. While this does not affect the landowner's right to appeal to the court for any final action of the board, it does protect drainage districts from much litigation for negligence.

Note to public officials

Public officials working with drainage districts in Iowa should be aware of the potential conflict that can occur between the purpose of drainage districts and the focus of federal wetland programs. Some drainage districts have been requested to enter into agreements with certain state and federal agencies to remove or discontinue certain drainage facilities to permit collection and/or diversion of water to enhance or establish a wetland. In one instance, the Department of Natural Resources (DNR) installed a long dike across an open ditch in an established district. The dike acted as a dam to stop the flow of water in that drainage area. The dam was installed without any contact

between the DNR and the county board of supervisors or the board that had jurisdiction over the drainage district. This action could be in violation of the district's legal rights and easement for the ditch. As of this writing, this matter has not been resolved and the dam still retards the flow of drainage.

If efforts are made by governmental agencies to seek agreements or legislative changes to permit modification of drainage district facilities to enhance or create wetlands, supervisors and/or trustees of drainage districts should be fully advised by competent independent drainage engineers and drainage attorneys before entering into any such agreement or proposed legislation to ascertain that the rights of the drainage district and member landowners are protected.

Disclaimer

This article does not intend to cover all of the possible problems or conflicts which can arise regarding drainage districts in Iowa, but it is intended to alert persons working with drainage districts to be aware of rights under the Code of Iowa and urge that competent advice be sought before relinquishing any of the rights of the legal drainage district.

2. Frequently Asked Questions

FREQUENTLY ASKED QUESTIONS

Introduction

The following list of frequently asked questions about drainage and related issues is presented for reference. It should not be considered totally conclusive. Additional advice and investigation may be warranted in specific circumstances.

Tile Lines—Installation

For construction and maintenance activities, should drainage improvements such as tile connections be placed on private property or public right-of-way?

If the modifications will primarily benefit an adjacent property owner, future ownership and maintenance will probably be that owner's responsibility. In those instances, location on private property is recommended even if the public agency is obligated for initial cost of the improvement.

What references are available for designing tile systems and connections?

The Iowa Drainage Guide (Special Report 13, Cooperative Extension Service, Iowa State University, March, 1997) is an excellent reference. The Natural Resources Conservation Service (NRCS) provides valuable advice. NRCS assistance may add credibility to any modifications of existing tile lines. The NRCS web site is www.ia.nrcs.usda.gov.

For a construction or maintenance project, can a landowner hire a contractor to make necessary revisions to a tile system with reimbursement by the road agency?

Yes, and in some instances this may be advantageous for all parties. A concise agreement with the property owner must be negotiated prior to any

work associated with reimbursement. However, the landowner's contractor must ensure that his or her work will not hamper the construction schedule or contract administration.

What are agency/private property owner responsibilities for tile installation and/or maintenance, whether in a drainage district or not?

The courts have generally found that higher land owners have the right to discharge water upon lower land, whether it is surface water or from a natural watercourse, either open or tiled. However, a landowner may not substitute a tile drain for an open ditch if drainage from adjoining lands is rendered less efficient.

General principles pertaining to surface water drainage are equally applicable to drainage of underground water collected by tiling. So the responsibilities of lower land owners for maintenance of tile lines would be similar to those described earlier for open ditches.

In a drainage district, maintenance responsibilities are undertaken by the Board of Supervisors or district trustees.

When designing crossroad pipes for tile extensions, what dimension should the pipes be?

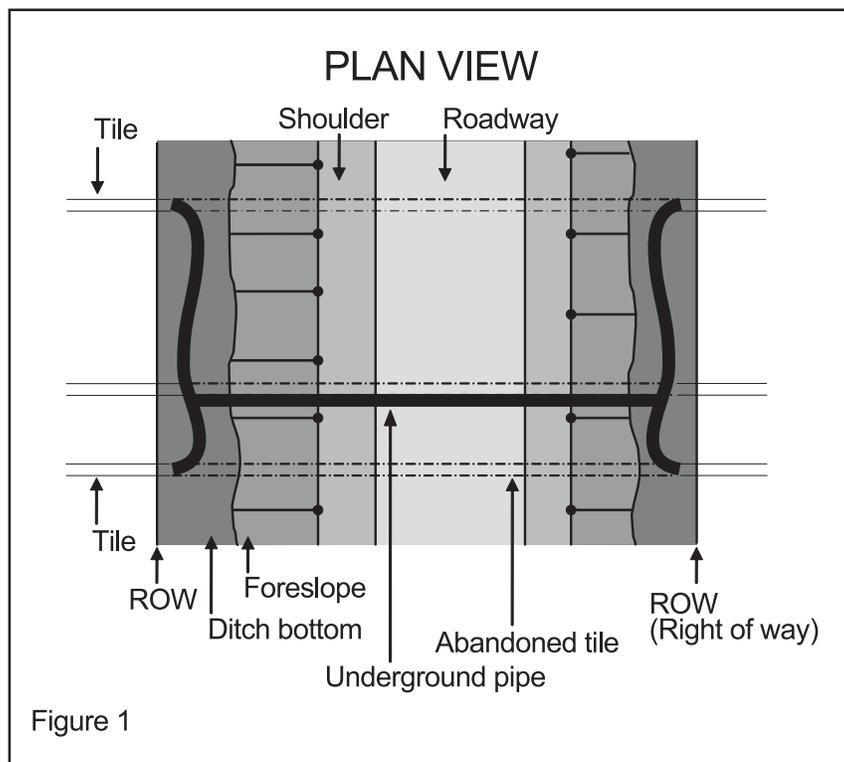
See the Iowa Drainage Guide for design guidance. Allow extra capacity in anticipation of possible future changes in land use. If possible, avoid inverted siphons because of their propensity for siltation and resultant maintenance.

What steps can be taken to reduce potential future maintenance for tile crossings of public roads?

Access tees can be installed at the ROW line to permit inspection of tile, identification of standing water and siltation, and performance of needed cleaning. This may be especially important for paved roads where open cutting for maintenance is costly. Agencies may also want to consider requiring encasement pipes for tile crossings of major roads.

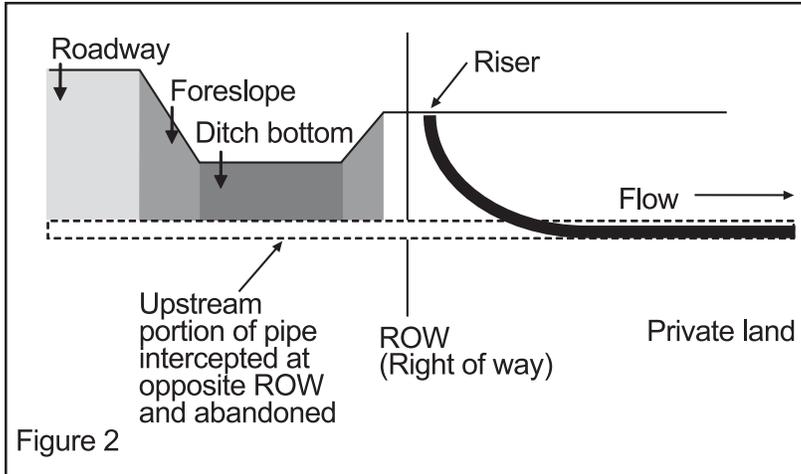
If several small, closely spaced tiles are encountered, can these be combined into a single larger pipe to cross the roadway?

Yes, but it may be difficult to properly redistribute tile flow at the outlet of the combined pipe, especially if the upstream pipes have differing heads driving the flow. Design a junction box with a weir for each outlet tile. If the junction box is constructed level, proper redistribution of flow among the outlet tiles should result. See Figure 1.



What is a “riser” and how is it used?

A riser is an upstream termination of a tile line to allow for inspection and cleaning. Risers are often installed when a tile line is severed due to roadway construction. Incoming drainage from the upstream tile may be outlet into an open ditch or intercepted by a lateral line. The down stream tile is terminated

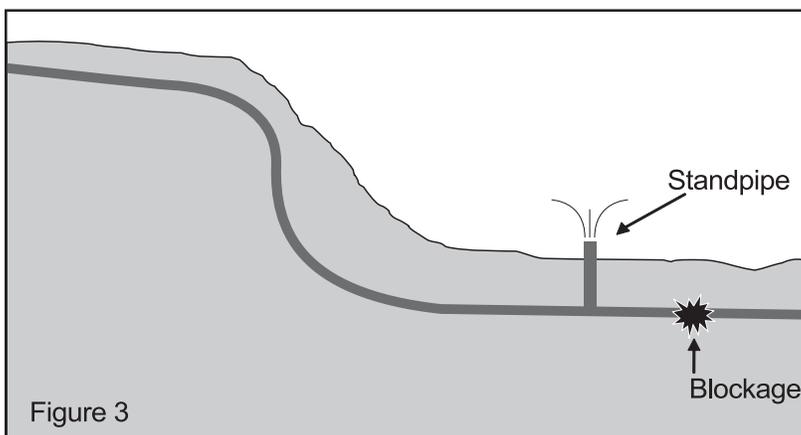


at the right-of-way line with a riser, as shown in Figure 2. (A cap prevents debris or animal intrusion.)

What is a “standpipe” and how is it used?

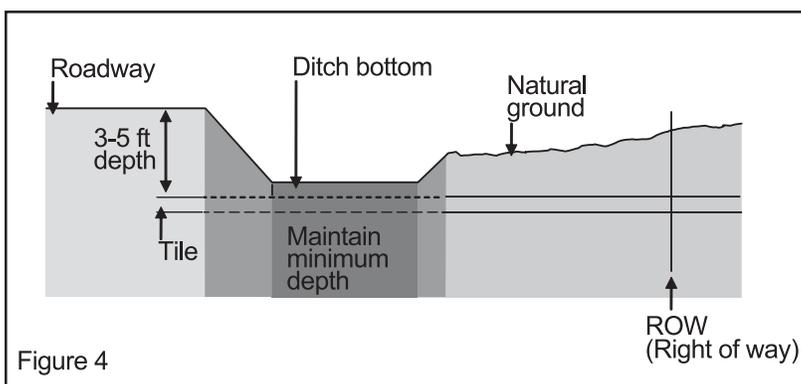
A standpipe is a vertically installed pipe from a tile line to the ground surface (Figure 3). In case of a downstream blockage, standpipes allow water in the tile an outlet to the surface.

Sometimes the term “standpipe” actually refers to a “riser” (see above). (A screen at the standpipe inlet retards debris and animal intrusion.)



What is the required depth for a tile line? What steps are available if the road ditch elevation does not provide that much cover?

A depth of 3 to 5 feet is recommended by the Iowa Drainage Guide. If a minimum cover is not available, a lateral pipe below the ditch bottom to a suitable outlet might be feasible. See Figure 4.



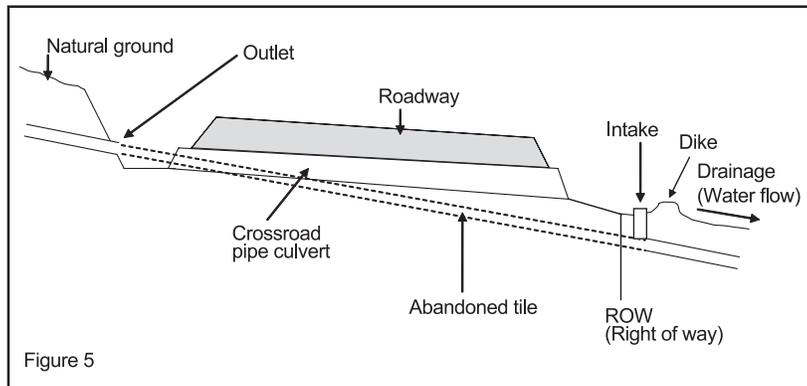
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When should a tile line be made to outlet into a road ditch?

This action is not recommended in most situations because a poorly draining ditch and possible future maintenance may result. A minimum of one foot of fall should be available at the outlet. It may be necessary to provide a lateral drain to accommodate the tile flow.

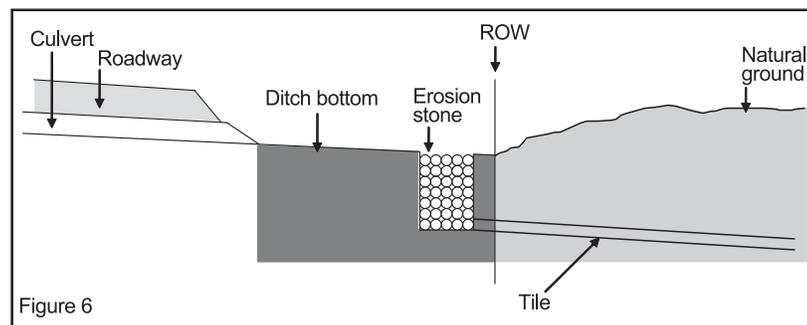
How can surface drainage be inlet to an existing downstream tile?

Drainage in an open ditch can be conveyed into a downstream tile by an intake, preferably installed on private property and supplemented with a dike to prevent surface drainage from flowing onto the adjacent field. Stone sumps and beehive intakes used for this purpose may become clogged with silt or debris and become a maintenance issue. See Figures 5 and 6.



If an agency constructs a drainage improvement, can part of the cost be assessed to benefited adjacent lands?

Generally no, except by mutual agreement. However Iowa Code sections 468.335-345 provide for the establishment of a "highway drainage district" wherein a procedure is described to identify benefited lands for proposed highway drainage improvements and determine the relative benefits.



Tile Lines—Maintenance

Who is responsible for maintenance of a tile system after modification?

On private property, the landowner would assume maintenance for all parts of the system. Within an established drainage district, the governing board would assume maintenance responsibilities. Within public right-of-way, the controlling agency is generally responsible for maintenance.

What is an agency's responsibility for continuing tile lines across public right-of-way, both inside and outside an established drainage district?

Iowa Code Section 468.622 requires a highway agency to accept responsibility for the initial cost and maintenance of tile or ditch extensions across the right-of-way. This section allows a property owner the right to enter on public right-of-way to connect a drain or ditch to existing drains or ditches along or across the highway. However, only "natural" drainage is required to be accepted by the public agency. Property owners cannot increase the volume of flow if that would cause damages downstream, and the direction of flow cannot be changed.

It is not the agency's authority or responsibility to determine whether or not downstream damages might occur from this action. The duty to prove damages is that of the downstream owner, and mitigation of those damages is the responsibility of the upstream owner.

If within a drainage district, the project engineer designing the drainage improvement must provide specifications. If outside a drainage district, the highway right-of-way must be restored to acceptable conditions, and the agency engineer's

specifications must be followed in making the connection.

Property owners may also request a public agency to install culverts or tiles under roads to drain property. Cost for these improvements is paid by the public agency. Usually a formal process is followed to accomplish this work, unless an informal agreement can be reached. See Code Section 468—Subchapter V for description of individual drainage rights.

What are agency responsibilities for maintenance of parallel tile lines in roadway right of way?

Although Iowa Code section 468.622 requires a highway agency to accept responsibility for the initial cost and maintenance of tile or ditch extensions across the right of way, the code does not address those responsibilities when related to parallel tile lines. Since most parallel tile lines were installed many years ago, maintenance is the major issue to be addressed. Several situations could be considered:

Is the required maintenance the result of an improvement to the roadway? If so, that maintenance could be the responsibility of the road agency.

If deterioration has occurred naturally and the tile line is within a drainage district, maintenance costs could be the responsibility of the district. The road agency would have been assessed for the initial installation costs.

If the line is not in a drainage district, the road agency may have responsibility for some maintenance costs, as described in Iowa Code Section 468.622, but not necessarily for the entire reach of

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the parallel tile line. Perhaps out-letting to an open ditch would be possible, or a direct crossing could be installed to replace the parallel line. However a direct crossing could be costly where existing buried utility lines and paved roadway are involved.

A road agency should address these situations in a written policy, if possible. As allowed in 468.622, agency-derived specifications must be followed when extending tile or ditches across public right-of-way. In all such situations, the agency should base the final decision on what is best for the road and general public.

Can a road agency block tile lines that cross the right-of-way?

No. Any tile lines or ditches must be extended to provide a suitable outlet, across the roadway if necessary, and the cost of that work must be borne by the agency. See discussion of Iowa Code Section 468.622 in the legal section of this manual.

May a road agency choose to outlet a tile line into a ditch in lieu of extending the tile under a road?

Yes. Iowa Code 468.621 allows this option. However, some agencies have established policies to continue subsurface drainage in tiles if preferred by the downstream landowner. Tile lines can be made to outlet in a right-of-way ditch if the flow is conveyed to an established waterway before returning to private property. Take care, however, that natural drainage patterns are not violated by this action.

Landowner Rights and Responsibilities

What rights do upstream and downstream landowners have regarding drainage?

In general, the Iowa Code and courts have held that upstream landowners may outlet drainage onto downstream property, and downstream owners must accept all natural drainage within certain limitations. Refer to additional discussion of dominant (upstream) and servient (downstream) rights in the article “Drainage Easements and Agreements” in this manual.

If a property owner obstructs drainage, willfully or not, what are possible recourses for upstream owners?

Courts have held that landowners have a duty to keep ditches on their property running openly and free from obstruction. Furthermore, blockage that unreasonably obstructs a time honored flowage system from upstream land is an enjoined nuisance. Upstream owners may seek an injunction from the courts to require a downstream owner to remove an obstruction, but it must be shown that substantial damages, real or potential, will result if action is not taken. In a drainage district, willful obstruction of a ditch, drain, or watercourse is considered a serious misdemeanor and the governing body has authority to repair the obstruction after due notice to the person or persons who caused the blockage. Refer to Iowa Code Chapter 468 for details.

Do “water rights” exist for property owners? Can alleged well damage due to groundwater draw-down be assessed to activities by others?

An owner has the right to “reasonable” use of property. In the case of subsurface water, an owner can utilize that resource for the benefit of agriculture, manufacturing, irrigation, etc., pursuant to the reasonable use of the property even if that interferes with underground waters of neighbors. However, the definition of “reasonable” may vary from case to case. Highway construction that includes a deep excavation that may adversely affect underground water to the detriment of adjacent owners might not be considered “reasonable.”

Also refer to Iowa Code Section 455B.281 and Iowa Administrative Code [567] Chapter 54 for information about compensation for well interference.

Public Agency Obligations

What obligations do transportation agencies have to downstream property owners if road construction concentrates flow from an existing waterway into a culvert?

Agencies may not change either the volume of flow or the manner of discharge so that it causes injury to a downstream landowner. An upstream owner may place additional water on the downstream property if that action does not cause substantial damage. However, an agency or upstream owner may be responsible for any damages to downstream property caused by siltation, erosion due to increased flow, or loss of use of property.

What are the responsibilities of a public agency or developer if their activities cause downstream erosion or siltation on private property?

Riparian landowners are required to exercise ordinary care in the use of property so as not to cause damage to neighboring lands. If actions by an upstream owner cause a substantial increase in volume or change in the method of drainage, and these changes result in actual damages such as a deposit of silt, a downstream owner is entitled to relief.

A public agency should not make improvements to roads or structures that would accommodate unlawful or diversionary acts by upstream owners or developers.

Often a city may be asked to mitigate excess runoff concentration that might occur as a result of development. Several design techniques, called “low impact development,” have evolved recently to specifically address erosion problems. Advice on these and other mitigation options are available from the NRCS.

Refer to Iowa Code Section 468 for legal responsibilities in drainage districts.

Are counties responsible for removing silt from right-of-way ditches? If so, can they assess part of the cost to property owners?

The Iowa Code and courts have consistently ruled that maintenance of ditches in the right-of-way is the responsibility of the agency having jurisdiction. This would apply to removal of silt that might be obstructing drainage. However, if the source of silting is readily identifiable and accumulation is causing an obstruction, agencies can seek to have the condition abated through the courts. The most

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advisable action would be to seek an agreement to address the situation with the property owner(s).

Another option would be to contact the NRCS for assistance and advice. A soil loss complaint can be filed with that agency.

What are the obligations of private property owners and public agencies regarding the diversion of drainage from the natural path? Is it necessary to maintain historic diversions?

Numerous court rulings have addressed this issue, generally finding that natural drainage cannot be diverted by one landowner to the damage of others, including decreased land value. (Two court decisions of note are *Sheker v. Machovec*, 1908 and *Kaufmann v. Lenker*, 1914.) Owners of higher land may not collect and discharge water onto lower land in such a manner as to cause a streambed to be formed. Highway authorities cannot turn surface water from the natural channel to the injury of adjacent landowners. Openings must be placed in roadway embankments to permit surface water to continue in natural paths. However, some exceptions to diversion rules can be made if substantial damages do not result.

Iowa Code Section 306.27 describes allowable diversions of drainage by governmental agencies as part of certain roadway improvements. If damage results from the improvements, compensation may be due.

Following an uncontested period of 10 years, historic diversions may become “natural drainage ways” by prescription. However, prescriptive rights apply only to private ownership.

Is a public agency responsible to make drainage improvements to accommodate increased flow

from upstream land improvements? How about providing and maintaining an outlet for formerly un-drained land? Are downstream owners required to provide an outlet for ditches and/or tile constructed to drain low-lying land?

The state and counties are liable for the costs of extending drainage improvements through roadways to achieve suitable outlets, which might include freely discharging a tile drain to the surface. Cities are not required to pay for crossings, but they cannot deny the extension to a suitable outlet. Included in these responsibilities is the obligation to provide an outlet for un-drained lands. However, downstream landowners are not required to provide an outlet for ditches, but they must responsibly maintain existing ditches and cannot obstruct drainage.

Iowa Code Sections 468.600–618 describe procedures that enable upstream owners to construct drains across downstream property to a suitable outlet. This is commonly accomplished through establishment of a drainage district. When an existing drainage district facility is available as an outlet, Iowa Code sections 468.63–64 and 468.141 offer the option of establishing a sub-drainage district to accomplish this.

What are an agency’s responsibilities for maintaining cattle passes?

According to Iowa Code Section 320, maintenance responsibilities for cattle passes (cattleways) are primarily the property owner’s. Following contact and negotiation with owners, if these structures are no longer needed, agencies should consider backfilling to eliminate a roadside hazard for motorists. However, cattle passes may also serve as drainage structures. In such cases, a smaller

diameter pipe could be inserted into the larger structure prior to backfilling.

Iowa Code Chapter 320 describes the responsibilities of agencies and property owners in the installation and maintenance of cattle passes. Right-of-way agreements for highway improvements may also stipulate specific conditions.

Drainage Records

What sources of records are available for reference on drainage construction and maintenance issues, such as locating existing tiles?

County recorders maintain a record of private drain tile installations that have been filed voluntarily by landowners. County auditors maintain drainage district plans and records, and these plans may show private tile locations. Individual drainage districts may maintain records as well. Local NRCS offices also have some records, especially for tile lines installed with federal assistance over the past several years. In addition, local tile contractors often keep records of tile installations for landowners' information and to facilitate possible future modifications.

Spills, Untreated Discharge

What liability does a road agency assume if a roadway crash results in a hazardous material release into a private ditch or tile system?

In general, the courts and Iowa Code hold the company or person who caused the spill to be liable. Agency legal staff and the Department of Natural Resources should be contacted to assure

that clean up from a hazardous spill is handled by the responsible party.

If untreated discharge from a sanitary (septic) system is encountered in the right-of-way, what is the best course of action?

When discovered, an active sanitary outlet on public right-of-way should be documented and reported to the local sanitation official or DNR for action. Iowa Code Section 455B.186 prohibits the disposal of inadequately treated sewage into any water of the state, including right-of-way ditches. Consult local ordinances and polices for additional restrictions.

What course of action is recommended to address runoff from animal feedlots onto downstream property?

A property owner who has suffered damages from manure waste runoff from a neighboring feed lot can bring action for abatement of a temporary nuisance and seek injunctive relief and damages.

Iowa Code Section 459.309 addresses minimum requirements for manure control and Sections 459.310 and 459.311 describe minimum distance requirements from water sources.

Entering Private Property

Can a public agency enter on private property to restore outlet flow? If so, what is the recommended process?

Condemnation measures may be undertaken for maintenance and construction of roadways (Iowa Code Section 306.19). Persons in charge of improvement or maintenance work on any highway may enter upon adjoining lands for the purpose of

Frequently Asked Questions

removing natural channel obstructions that impede the flow of water (Iowa Code Section 314.7). However, prior to exercising such a right, consultation with proper legal authorities is recommended.

In a drainage district, the board of supervisors has authority to do whatever is necessary to restore a drainage improvement to the original capacity or efficiency (Iowa Code Sections 468.126 and 468.138). Iowa Code Section 314.9 also allows entry on private property after due notice for certain roadway construction-related activities.

Drainage Districts

How are assessments for drainage districts determined?

In general, property assessments are based on a calculated percentage of benefit for each 40 acres or less of land. The benefit relates to the value of the agricultural use as a result of the drainage improvements. Poorly draining land would receive more benefit than well drained property. Other factors can also be considered, such as proximity to the ditch or tile constructed and distance from the outlet. Payment of drainage district assessments are generally made with property taxes. Several sections in Iowa Code Chapter 468 describe assessment procedures for drainage districts, including the following:

- Section 468.25, assessment of damages in the establishment of a district
- Section 468.41, assessments for lateral ditches
- Section 468.48, notice of increase assessments
- Section 468.126, repairs
- Section 468.184, assessments in levees districts
- Section 468.586, assessment of costs in urban areas

The Iowa DOT Maintenance Division's instructional memorandum describes drainage district assessments on primary highways.

Is drainage district membership included on abstracts for property?

No, drainage district membership, whether private or public, is not usually included on abstracts for property.

Wetlands, Wildlife

What procedures are required to restore a wetland within an established drainage district?

No specific procedures for establishing or restoring a wetland within a drainage district are known to exist. However this action has been undertaken in some areas, with drainage district boards generally requiring notification, an engineering plan, and a possible public meeting/hearing to review. An example of a resolution for establishment of a wetland in a Greene County drainage district is included in the appendix. Also, the Iowa Drainage District Association has developed a template agreement for use by its members when considering requests to establish wetlands within a drainage district.

Can an agency or property owner remove a beaver dam that is obstructing drainage?

If possible, property owners should seek approval of the conservation officer prior to removing a beaver dam because wild animals are owned by the state (Iowa Code Section 481.2) and the local officer in charge is the county conservation officer. However, a den, lodge, or house of a fur bearing animal may be destroyed to protect property

without written permission of the conservation officer (Iowa Code Section 481.90). This authority is further described in Code Section 481A.87.

A beaver dam that obstructs drainage in an established drainage district can be removed on order from the district's governing board.

If a beaver dam is in an established wetland site, a permit from the U.S. Corps of Engineers may be needed prior to disturbance.

Sources

Corpus Juris Secundum: Complete Restatement of the Entire American Law as Developed by All Reported Cases. Waters Section 193, page 451. 1936.

"Field Tile Issues in Highway Construction." Iowa DOT, Ames, Iowa.

Hibbard, Dave, Polk County Assistant Attorney.

Model Drainage Manual 1991. American Association of State Highway and Transportation Officials, Washington, D.C., 1991.

3. Examples of Practical Solutions

EXAMPLES OF PRACTICAL SOLUTIONS

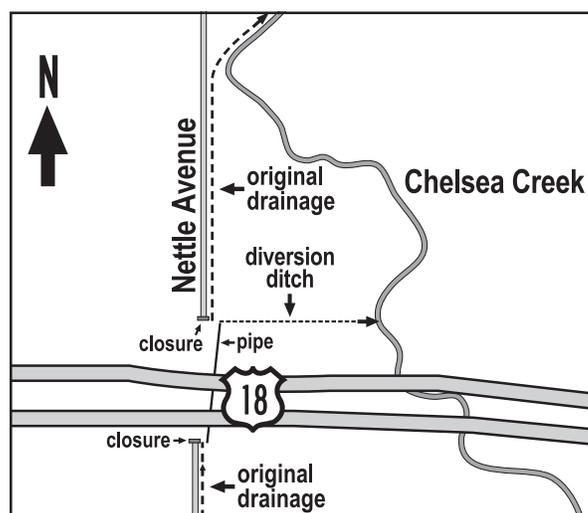
The following examples are presented for reference in addressing similar situations. Unique issues in specific instances may require modification of these solutions or elimination from consideration. Appropriate judgment should be applied in each circumstance.

Diverting Drainage

Iowa Code Section 314.7 allows that public agencies should use diligence in maintaining surface flow of water in natural channels, and any turning of natural drainage patterns must avoid injury to adjacent property owners. In general, any diversion of surface drainage from natural patterns is avoided by public agencies during construction or maintenance activities. However, on occasion that practice may prove beneficial to both property owners and the agency.

Scenario

As part of the construction of relocated US 18 in Cerro Gordo County, an intersecting local road, Nettle Avenue, was closed and a section of it subsequently obliterated. Prior to obliteration, surface drainage was



Map of the change in drainage due to relocation of US 18

conveyed to nearby Chelsea Creek in lateral ditches along the local road. Eliminating this outlet would result in a backup of drainage on US 18 right-of-way and beyond. To prevent this backup, a diversion ditch was proposed along US 18 to the same Chelsea Creek, but this action would affect historic drainage patterns through an additional property. Surface drainage would enter Chelsea Creek upstream of that property in lieu of downstream. However, since the volume of diverted flow was quite low compared to creek capacity, the adjacent owner did not object to the action and acceded to an agreement documenting the relocation of surface drainage.

Tip

Prior to undertaking such an action, agencies should ascertain that minimal probability for property damage would incur from a drainage diversion, even if all current property owners are willing to sign a release. If subsequent damages are realized, assessment of responsibility to the road agency may still be awarded by the courts.

Obstructing Drainage

Under common law principles and Code of Iowa requirements, downstream (servient) land owners are prohibited from obstructing flow in natural channels to the detriment of upstream (dominant) owners. When a dispute arises between adjacent owners, occasionally a public agency may be drawn into the matter and identification of a solution is in the best interest of all parties.

Scenario 1

In a Polk County instance, an upstream land owner complained to the Iowa Department of Transportation

Examples of Practical Solutions

(Iowa DOT) of inadequate drainage across the public right-of-way. Using surveys and historic photos, the Iowa DOT determined that an existing culvert under the highway was constructed properly with a flow line that would provide proper drainage. However, the Iowa DOT further found that silting and farming practices on the immediate downstream property had resulted in an obstruction to natural flow approximately three feet higher than the highway culvert flow line. This difference in elevation caused significant water ponding on public right-of-way and other upstream land. The downstream owner had installed a tile system at the approximate elevation as the highway culvert, together with a beehive intake just outside the public right-of-way.

After a thorough review, the Iowa DOT offered a possible solution to mitigate the ponding issue. It proposed to install a short pipe from the highway ditch to connect with the downstream tile on private property. An agreement between the owners would be needed for a right of entry to construct the connecting pipe and future maintenance thereof. This initiative would not restore ideal natural drainage but would alleviate a significant amount of the occasional ponding. Barring acceptance of this solution, the upstream owner could seek injunctive relief through the Iowa courts.

Tip

Activities by downstream owners can result in silt build-up as well as ponding, but sometimes through negotiation a solution can be found.

Scenario 2

A landowner adjacent to a county road constructed a dike just downstream from an existing pipe culvert. This dike caused ponding of water and silting, eventually filling the culvert. The county authorities met with

the property owner and discussed the problem. It was agreed that a right of entry would be granted; the county would then remove the dike and deposit the excavated material further downstream. The property owner re-built the dike so as not to back water onto public right-of-way.

Scenario 3

Two adjacent landowners in an established drainage district are separated by a county road. Tile installed and maintained by the district drains both properties, outletting in a stream channel beyond the downstream owner's land. Over time erosion from the upstream owner's fields had flowed through a county road culvert and caused silt to fill an open ditch across the downstream owner's land. To alleviate the problem and re-establish flow, the upstream owner requested the drainage district board to remove the silt from the ditch as allowed in Iowa Code Section 468.126.

The drainage district was originally designed and established to function with tile, not open ditches, in this area. As such, the district was under no obligation to maintain surface drainage in the ditch across the downstream property; the sole responsibility of the district is maintenance of the tile. Since the tile continued to function properly, it was not considered advisable for the drainage district to address overland flow in this instance.

Options for the upstream landowner would be the following:

- Petition the drainage board to include the open ditch in the district. This would require the same procedures as establishment of the original district: engineering, assessment, hearing, etc.
- Contact the Natural Resource Conservation Service (NRCS) for advice and assistance. NRCS involvement may require establishment of good

farming practices to reduce erosion from the upstream fields.

- Initiate legal action against the downstream owner.

Agency Responsibility for Drainage Improvements

Chapter 468 of the Iowa Code describes certain responsibilities for public agencies in extending tile lines across public rights of way. However, those duties are limited to a continuation of “natural” drainage patterns. This case study presents an alternate response to differing circumstances.

Scenario

An upstream landowner wanted to drain a poorly draining area by constructing a ditch. However, the elevation of an existing culvert under an adjacent highway was too high to accommodate an open ditch. The owner petitioned the Iowa DOT to lower the culvert that had been in place for many years. The Iowa DOT denied the request, holding that the open ditch proposed by the landowner was not to accommodate “natural” drainage. The landowner then constructed a short tile system to connect the open channel on private property to the highway right-of-way ditch. In addition, the downstream land owner provided a positive outlet for this tile by lowering an existing draw. Considering these changed conditions, the Iowa DOT concluded that Iowa Code section 468.622 would compel a public agency to provide drainage accommodations for the upstream owner’s tile system. An appropriately sized pipe was subsequently installed under the highway to satisfy the upstream land owner’s request.

Flood Plain Obstructions

Severe flooding events in the past several years raised awareness of potential property damages for improvements built in areas prone to flooding. Even when unintentional and without prior notification, public agencies can incur responsibilities for obstructions placed in natural flood plain areas.

Scenario

In 1993 the Iowa Department of Transportation completed a bypass of a community in northern Iowa. Design for the highway improvement had been completed several years earlier using methodology commonly applied at that time. After the design phase but before actual highway construction, the local community completed and adopted a flood insurance study that established a regulatory floodway with 100-year frequency flood discharges and elevations. Unaware of these limitations, the Iowa DOT proceeded to construct the bypass resulting in an encroachment on these established floodway parameters. After the bypass was constructed, a major flood caused considerable damage to upstream private property. Since the road project resulted in a violation of Federal Emergency Management Agency (FEMA) regulations, mitigation was sought to satisfy FEMA requirements and relieve future damages.

Several options were considered including construction of an additional drainage structure, extension of the bypass bridges to provide more drainage capacity, construction of a flood protection levee, and/or buyout or flood proofing of improvements in the flood prone areas. In considering total cost and resultant impacts on the public, it was decided to expand the existing bypass bridges together with associated re-grading upstream. This option would satisfy FEMA requirements and meet the local Flood Plain Management Ordinance criteria.

Agency Responsibilities for Damages to Private Improvements

Construction of roadway improvements can result in many changes in the adjacent environment, some actual and some perceived. Planning and design of public projects must consider potential impacts to private property, both immediately and indirectly affected by the new facility.

Scenario

In the mid 1990s, the Iowa DOT constructed two new bridges as part of a highway bypass project in eastern Iowa. Situated between these two structures was a railroad bridge that had been constructed in the late 19th century. Both Iowa DOT bridges were designed and constructed using standards and criteria accepted at that time. Subsequent to completion of the two highway bridges, a significant flood event resulted in severe damage and closure of the railroad bridge with economic consequences for the company. Alleging that the state did not follow generally recognized engineering practices and that construction of these new bridges resulted in increased flow and velocity in the stream, the company brought suit against the Iowa DOT in District Court. The state answered that immunity from liability should be held as accepted practices for design and construction were followed. Furthermore the state alleged the damages to the railroad bridge were caused by an "Act of God," and lack of proper maintenance by the railroad company contributed to the damages to the older bridge.

Citing Iowa Code Chapter 669, the state Tort Claims Act, and a previous court action, Connelly vs. Dallas County, the court found that the company failed to establish that the state had not met applicable engineering or safety standards in the design and construction of the two bridges. Furthermore, the court

found that the company did not establish that the new upstream bridge constructed by the state contributed in any way to the failure of the railroad bridge. The company petition was dismissed and damages against the state were denied.

Transfer of Public Improvements to Private Ownership

Local agencies often face difficult decisions regarding needed maintenance and/or replacement of very low-volume roads and structures. Options for providing continued service at the most beneficial cost to the public are worthy of consideration.

Scenario

A county in northern Iowa owned a bridge and short section of roadway serving only a single family property. The structure was deteriorated and in need of future repair. Since the bridge and road only provided access to a single farmstead, an agreement was reached between the county and property owner with the following stipulations:

- The county agreed to remove and replace the existing bridge, re-channel the creek and grade the farm access.
- The county provided a warranty against future damages from flooding for a 35-year period and agreed to repair any such damages at no cost to the property owner.
- Following completion of this improvement and in recognition of the warranty, the property owners agreed to accept ownership and future maintenance of the access road and structure.

While an agreement of this type results in an immediate expense to a local agency, long term savings and reduced maintenance are a worthwhile consideration.

4. Summary of Iowa Law Related to Drainage

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IOWA CONSTITUTION SUMMARY

The Constitution of the State of Iowa was adopted in 1857. Following are sections related to drainage law:

Bill of Rights, Article I, Section 18, Eminent Domain: Drainage Ditches and Levees

“Private property shall not be taken for public use without just compensation first being made, or secured to made to the owner thereof, as soon as the damages shall be assessed by a jury, who shall not take into consideration any advantages that may result to said owner on account of the improvement for which it is taken.”

1908 Amendment

“The general assembly, however, may pass laws permitting the owners of lands to construct drains, ditches, and levees for agricultural, sanitary, or mining purposes across the lands of others, and provide for the organization of drainage districts, vest the proper authorities with power to construct and maintain levees, drains, and ditches and to keep in repair all drains, ditches, and levees heretofore constructed under the laws of the state, by special assessments upon the property benefited thereby. The general assembly may provide by law for the condemnation of such real estate as shall be necessary for the construction and maintenance of such drains, ditches and levees, and prescribe the method of making such condemnation.”

CODE OF IOWA SUMMARY

Introduction

This information is presented as an overview of selected sections of the 2003 Iowa Code pertinent to drainage issues and represents the opinion of the authors as to the general intent of the described code sections. The reader may draw different conclusions and should use this information as a quick reference only. Please refer to the official current code for actual language, and always consult an attorney if a legal interpretation is needed.

Chapter 28E: Joint Exercise of Governmental Powers

Levee and drainage districts have broad discretion to enter into cooperative agreements with other public or private agencies and in jointly exercising powers to accomplish improvements. Included as potential partners are state offices, other local governmental agencies such as soil and water conservation districts, municipalities, and even private companies. Creation of separate entities for special projects is possible. Appropriate action by ordinance, resolution, or other as required by law is needed before any such agreement can be effective.

Chapter 161A: Soil and Water Conservation

Division I – Division of Soil Conservation (Sections 161A.1–4)

This chapter is also known as “Soil Conservation Districts Law.” The policy of the legislature is described in Section 161A.2: *“It is hereby declared to be the policy of the legislature to integrate the conservation of soil and water resources into the production of agricultural commodities to insure the long-term protection of the soil and water resources of the state of Iowa, and to encourage the development of farm*

management and agricultural practices that are consistent with the capability of the land to sustain agriculture, and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist and maintain the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands and promote the health, safety, and public welfare of the people of this state.”

A committee is established to perform the functions and duties described, consisting of a chairperson and eight voting members appointed by the governor for six-year terms. Several ex-officio members without voting privileges also serve. The Iowa county engineers can appoint a non-voting advisor. The committee recommends an administrative director to the secretary of agriculture and an annual budget. The committee also assists soil and water conservation districts across the state, providing advice, financial assistance, etc. and files a state conservation plan. The committee also establishes a state drainage coordinator for drainage and levee districts to communicate and facilitate with districts, provide advice, and disseminate information.

Division II – Soil and Water Conservation Districts (Sections 161A.5–12)

The 100 soil and water districts in existence prior to 1975 are continued, each governed by five commissioners with staggered four-year terms. Commissioners serve without compensation, although expenses may be reimbursed. Powers of soil and water districts include conducting surveys of erosion, floodwaters, etc., undertaking demonstration projects for control of erosion, cooperating with the Iowa State University experiment station, carrying out methods, entering agreements, assisting landowners, developing a comprehensive plan, and administering state cost-sharing funds for conservation projects. A prescribed number of landowners can petition for dissolution of a district. Upon a 65 percent affirmative vote, the district

is dissolved. The division of soil conservation must report annually to the governor on the number and acreage of districts and submit a statement of expenditures to the department of management.

Division III – Subdistricts (Sections 161A.13–22)

Subdistricts may be formed upon the proper submittal of a petition by landowners. Notices and a hearing are required. Commissioners can establish and then act as governing board. Authority to impose a special tax for improvements is allowed as is the power of eminent domain for acquisition of land. Warrants and bonds can be issued for improvements.

Division IV – Alternate Method of Taxation for Watershed Protection and Flood Prevention (Sections 161A.23–41)

After agreements have been reached and at least 50 percent of farm plans received, the governing board may proceed to assess benefits as a means of determining tax for improvements. The process is similar to that described for levee and drainage districts, using appraisers to assess benefits and a hearing to consider the report. Appeals can be heard. Recommended assessments are then transmitted to the board of supervisors for imposition of property tax. Lands can be reclassified for benefits, if needed. The governing board decides which taxing method to apply for subdistricts, special annual tax or special benefits assessment.

Division V – Soil and Water Conservation Practices

Part I – Duties and Obligations (Sections 161A.42–69)

Landowners have a duty to establish and maintain good erosion control practices, but liability is limited in this regard primarily to matters of gross negligence. Soil and water districts shall establish maximum soil loss limits in tons per acre based on a land classification of topography, soil characteristics, and use

(different classification for varying soils), and work with landowners to achieve compliance. Any proposed regulations must be submitted to the state committee for review and a hearing held to consider. Upon a complaint, commissioners shall inspect land for excess sediment or erosion. If findings are positive, commissioners may issue an administrative order to correct the problem. Non-compliance with an administrative order can be petitioned to district court. Cost-sharing programs are made available to landowners for permanent or temporary erosion control measures.

Commissioners have the right to enter private lands to make classifications or determine the extent of soil erosion. Soil and water conservation districts may enter into cooperative agreements with federal, state, and local agencies to prevent and control erosion. State agencies owning agricultural land are required to enter agreements with soil and water districts. Commissioners may also inspect lands suspected of large erosion loss or of improperly maintaining a previously cooperatively funded permanent practice.

Commissioners may prepare a soil conservation plan for each farm unit, or owners may prepare their own plan. Certain land disturbing projects may require filing of an affidavit with the soil and water conservation district assuring that erosion will not exceed prescribed limits.

Part 2 – Financial Incentives (Sections 161A.70–76)

Financial incentive programs are established to protect productivity of soil and water resources from erosion and sediment damage and to encourage adoption of good agricultural management practices. A conservation practices revolving fund exists for providing loans to landowners for establishing new permanent soil and water conservation practices as approved by the district commissioners. Funds are provided by the legislature. This loan fund may be used in lieu of other cost-sharing funds.

Summary of Iowa Law Related to Drainage

Code of Iowa Summary

Financial incentives can be offered for establishment of conservation practices such as terraces, grassed waterways, stabilization structures, and installation of fencing to protect forests from grazing livestock. Most practices are voluntary but some might be mandated as determined by the district commissioners. Certain lands, such as those not cropped for 15 years, may be restricted from receiving cost-sharing funds for conservation practices.

Chapter 161B: Agricultural Energy Management (Section 161B.1)

The agricultural energy management fund was created to fund educational and demonstration projects that use tillage practices and management of fertilizer and pesticides to reduce potential groundwater contamination and energy use. An advisory committee has been formed of several prescribed state officials, with the secretary of agriculture as chair. Members of the legislature are also appointed as non-voting members. An annual report is made to the legislature on projects conducted using this fund.

Chapter 161C: Water Protection Projects and Practices (Sections 161C.1–6)

Each district alone or with other districts shall carry out projects to protect groundwater and surface water from contamination with emphasis on agricultural drainage wells, sinkholes, sedimentation, and chemical pollutants. Various funding opportunities are available to landowners for establishing water protection practices. Cooperation with other agencies through agreements is allowed. A water protection fund exists, appropriated by the legislature and other sources. There are two accounts in the fund: water quality protection projects and the establishment of water protection practices of prescribed uses. An organic

nutrient management fund is also provided by the legislature and other sources to support this program primarily through management of livestock wastes.

Chapter 161D: Loess Hills Development and Conservation Authority (Sections 161D.1–2)

A Loess Hills development and conservation authority was created. Several western Iowa counties are eligible to participate in developing plans to restore and protect infrastructure and natural resources in this unique area. A Loess Hills development and conservation fund was created to assist in funding projects. Gifts are also accepted to augment legislative appropriations.

Chapter 161E: Flood and Erosion Control (Sections 161E.1–15)

A board of supervisors may authorize construction, operation and maintenance of flood or erosion control improvements in cooperation with federal agencies. Federal funds may be accepted for this purpose and cooperation with other agencies also allowed. Counties are authorized to levy a tax for flood and erosion control projects. Payments from the federal government for operation of flood control projects are allocated in a prescribed manner: to the secondary road fund, school districts, local fire departments, etc.

Chapter 161F: Soil Conservation and Flood Control Districts (Sections 161F.1–6)

Conservation of water resources, flood damage prevention, and drainage of surface waters are presumed to be a public benefit. Boards of supervisors have the power and authority to establish districts for soil conservation and flood control, including mining

areas. A board can require replacement of top soil removed in strip mining of coal. Levee and drainage districts can include soil conservation and flood control projects, and a board can establish a new district for that purpose, upon petition. If so affected, soil and water conservation district commissioners shall approve such a combination of districts as shall the Department of Natural Resources. Provisions of Chapter 468 shall apply.

Chapter 306: Establishment, Alteration, and Vacation of Highways

Changes in Roads, Streams, or Dry Runs (Sections 306.27–37)

The state Department of Transportation or county boards of supervisors may change the course of a stream, watercourse, or dry run and/or may pond water as part of prescribed construction or maintenance activities. Acquisition of land for this purpose by eminent domain is allowed, if necessary. Proper notices and a hearing are necessary and appeals are permitted.

Soil and Water Conservation Impact (Sections 306.50–54)

Highway authorities shall provide copies of annual construction programs to soil and water conservation district commissions in each county. Commissioners shall determine any impacts on soil and water drainage from the program and may also review any plans that include a drainage structure. Soil and water commissioners shall submit recommendations to highway authorities, including possible cost-sharing for erosion control structures. A report of any disagreements between highway authorities and soil and water districts must be made to the legislature annually.

Chapter 314: Administrative Provisions for Highways (Sections 314.1–28)

Highway agencies are prohibited from removing trees in certain locations that do not materially interfere with the roadway or obstruct the highway or tile. Agencies are also prohibited from denying reasonable access to any property or diverting drainage if injury results. However, drainage of surface water from roadways in the natural channel is required and, if needed, agencies can enter adjacent lands to remove obstructions that impede the flow of water (Section 314.7).

Chapter 352: County Land Preservation and Use Commissions (Sections 352.1–13)

A farm or farming operation in an agricultural area is exempt from nuisance claims with certain exceptions such as negligent operations, pollution, excessive erosion, and changed conditions in drainage. If necessary to allocate water use, the Department of Natural Resources shall give priority to farm operations, exclusive of irrigation, except for ordinary household use (Section 352.11).

Chapter 427: Property Exempt and Taxable

Structures and areas used for impoundment purposes are not taxable (Section 427.1, Part 20). Any real estate acquired as use for public roads, levees, and established, open, public drainage improvements is not to be taxed (Section 427.2).

Summary of Iowa Law Related to Drainage

Code of Iowa Summary

Chapter 455A: Department of Natural Resources (Sections 455A.1–21)

The Department of Natural Resources (DNR) has the primary responsibility for state parks and forests, protecting the environment, and managing energy, fish, wildlife, and land and water resources in the state. The Iowa Resources Enhancement and Protection Fund (REAP) is described along with the allocation of funds there from. County resource enhancement committees are created in each county with a prescribed membership to coordinate plans and projects.

Chapter 455B: Jurisdiction of Department of Natural Resources

Division III – Water Quality

Part 1 – General (Sections 455B.171–199)

Jurisdiction of the DNR and local boards is outlined. Duties of the commission include developing comprehensive plans and programs for prevention, control and abatement of water pollution, establishing rules and standards, and cooperating with other agencies. Director’s duties include investigating water pollution, conducting surveys and random inspections, and issuing permits for disposal systems or water supply systems. Violations are handled by the director. Criteria considered by the commission in establishing, modifying, or repealing water standards are listed. Written permits are required for several activities, such as construction or modification of disposal or public water supply systems, construction or use of new point source for discharge of pollutants, and operation of waste disposal or public water supply system. A water quality protection fund is created, funded by the legislature and fees collected. A program to assist public water supply systems is established. Water well contractors must be registered or certified. Procedures for construction of wells are defined. Plugging of

abandoned wells is described and several definitions are listed. Penalties for violations are established.

Part 4 – Water Allocation and Use: Flood Plain Control (Sections 455B.261–290)

Duties of the commission include developing a general ground water protection strategy, coordinating planning with other groups, and approving agreements with the federal government. Jurisdiction of the DNR over public and private waters is described. Permits are required for diversions, storage, or withdrawal of waters over 25,000 gallons per day (regulated use). Under prescribed conditions, the DNR may prioritize water use. Details pertaining to permits are explained including, when required, modifications or cancellations, termination, and disposal. Prohibited acts are enumerated. The commission shall adopt rules addressing development in flood plains and cooperate with and assist local agencies in establishing encroachment limits and flood plain regulations.

Part 5 – Water Pollution Control Works and Drinking Water Facilities (Sections 455B.291–300)

It is in the public interest to establish a water pollution control works and drinking water facilities program and revolving loan fund for projects. Four separate funds are created for water pollution control and drinking water facilities. Loans are made to eligible entities to finance projects.

Chapter 455E: Groundwater Protection (Sections 455E.1–11)

The chapter is also known as the “Groundwater Protection Act.”

The legislature has found that groundwater is an important resource and must be protected. Groundwater has been contaminated in the past by chemicals, hazardous substances, and wells. Prevention of contamination is of paramount importance. Liability is

not imposed on agricultural producers for clean-up or damages associated with nitrates and pesticides if proper application procedures were followed. All state and local agencies shall consider groundwater protection policies in their programs and cooperate with the DNR in these efforts.

Chapter 459: Animal Agriculture Compliance Act

Subchapter III – Animal Feeding Operations-Water Quality (Sections 459.301–318)

Construction of confinement feeding operations may be restricted in 100-year flood plains. The DNR shall approve applications for construction or expansion of certain confinement feeding operations per adopted rules. Separation distance requirements for confinement feeding operations exist for major water sources, wells, sinkholes, and designated wetlands. Confinement feeding operations shall not discharge manure directly into waters of the state or into tiles that discharge into water of the state. Manure shall be disposed of in a manner that will not pollute surface or groundwater.

Subchapter VI – Violations (Sections 459.601–605)

Investigations of complaints of violations shall be conducted by the board of supervisors and the DNR.

Chapter 460: Agricultural Drainage Wells and Sinkholes (Sections 460.101–305)

The owner of land with an agricultural drainage well shall prevent surface water from draining into the well. Tile can drain into wells if the line does not include a surface intake. The DNR has guidelines to assist counties in making inspections. Agricultural drainage wells in designated agricultural drainage well areas

shall be closed by owners. Owners of agricultural drainage wells shall register the well with the DNR. Alternatives to agricultural drainage wells shall be sought by owners, assisted by the DNR, including funding of replacements.

Chapter 461A: Public Lands and Waters

Water Recreational Areas (Section 461A.76)

Governing boards for levee and drainage districts are allowed to enter into contracts and agreements with municipalities and corporations for establishment of water recreational areas. Any agreements must be in writing and can be negotiated in advance or after establishment of such an area. Certain prescribed subjects must be addressed in the agreements, including funding and easements. If expenditure from district funds for a cooperative project will exceed 50 percent of the original cost of the district, notice and a hearing is required.

Chapter 468 Subchapter I – Establishment

Part 1 – General (Sections 468.1–200)

Any county board of supervisors is authorized to establish a drainage district whenever that action will be of public utility or conducive to public health, convenience, and welfare. Included in this power is the authority to construct levees, ditches, drains, water-courses and settling basins as well as straightening, widening, deepening, or changing of a natural water-course. Drainage of surface water from agricultural lands and the protection of such lands from flooding is presumed to be a public benefit and the provisions of Iowa drainage laws are to be liberally construed to promote reclamation of wet and swampy lands. As a general rule, drainage improvements should be located

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along natural drainage courses, but where more economical and practical, straightening and shortening of a natural channel is allowed.

Landowner petition for establishment of a drainage or levee district

Two or more landowners may petition the county auditor for establishment of a drainage or levee district. The petition must include a description of the land involved, statement that public benefit will result, a proposed drainage or levee layout, and possible land classification. A bond is required with the petition covering the incurred costs if the district is not established. If the board of supervisors accepts the validity of the petition, an engineer is appointed to survey the lands in question, plus adjacent others that might also benefit. The engineer's report to the board will include a detailed survey, construction recommendations, and estimated cost. A classification of lands will be included if requested by landowners.

If the engineer's report is approved, the board will set a hearing date and serve notice to all affected landowners. Following the hearing and receipt of any damage claims, the board may approve establishment of the district if it is concluded to be in the public interest. At that point, three qualified appraisers are appointed to assess damages and right-of-way needs. After reviewing the engineer's and appraisers' cost estimates to determine comparative economic benefit, the board shall establish the district. Right of way for drainage improvements is normally acquired by permanent easement. If a prescribed majority of landowners remonstrate against the establishment of the district at or before the final hearing or if no progress toward construction is made in a two-year period, the board shall dissolve the proposed district. After appointment of a supervisory engineer, the drainage improvement work is advertised and let for bids.

Process for establishing a drainage or levee district

Following establishment of a drainage or levee district, three commissioners are appointed by the board to classify the lands to be improved, determine benefits, and assess costs to each property served, in 40-acre or less tracts. Benefits are prorated to each. Lands owned by railroad companies and the state of Iowa are included in the assessment of benefits. The commissioners must submit a detailed report of benefits and cost assessments to the board. Then a hearing is set and objections heard. Once the classification of lands is adopted, that will remain the basis for all future drainage assessments in that district unless a reclassification takes place. For any subdivision of tracts following classification, the assessment of costs is prorated by mutual agreement of owners, or as directed by the board if agreement cannot be made.

Tax assessments

Assessments are levied as a tax against each benefited tract. Collected taxes are kept in a separate fund known as the "county drainage or levee fund." The county auditor keeps records of each district's funds. Dispersal only for proper purposes is made on order of the governing board. If surplus funds are accumulated, the board may refund to landowners on a prorated basis.

If changed conditions are encountered before construction has been completed, the initial plan may be modified. An additional hearing is not required if costs are not increased more than 25 percent.

After district is established

After the district is established, other owners wishing to connect to the main ditch or drain across the land of others may petition the board for establishment of a sub-district. The board will add to the district if public benefit will result. For changed conditions or substantial needed repairs, the board may order a reclassification of lands for assessment of costs.

A governing board may also add other adjacent benefited lands to the district with or without a petition and establish a levy of taxes for benefits received. Affected landowners may appeal, but right of remonstrance does not apply. If desired, the board may establish a new district if the old district is insufficient to drain all tributary lands.

Paying for the work

Improvement costs can be funded by drainage warrants, certificates, or bonds at the board's discretion. Records of bonds issued are kept by the county auditor. Aggrieved parties can appeal any board action to district court for resolution. During construction the supervising engineer shall provide the auditor with monthly estimates of work completed and payments due to the contractor. At completion of the work, the engineer shall file a report to the board and certify completion. Board shall set a date to consider the report and notify landowners. Following the hearing of any objections and settlement of claims, the board will accept the work and authorize final payment to the contractor.

Construction and right of way

Construction of a drainage improvement near a highway shall not interfere with public travel (468.106). Highways may be established on levees or embankments, but not so as to obstruct any drain or ditch. Building or modification of bridges to accommodate drains or levees may be necessary on either primary or secondary highways.

When a district drain or ditch crosses railroad property, the company is directed to construct a bridge or culvert to accommodate the crossing. If the company fails to respond, the district may proceed with that work and bill the company for costs.

Passage across private utilities' right of way by drainage contractors and improvements is allowed. If a railroad or utility right of way is abandoned after establishment of the drainage or levee district, a

permanent easement for the drainage improvements is granted.

Repairs

Repairs needed in a drainage district are the responsibility of the governing board. Routine repairs may be ordered whenever needed and an engineer's report may also be ordered. If the estimated cost of repairs exceeds \$10,000 or 75 percent of the original district cost, a hearing is necessary. Repairs cannot be divided to avoid need for a hearing.

A report by the soil and water conservation district may also be required. Minor maintenance, such as brush removal, may be accomplished by county forces and billed to the district. Repairs of private tile outlets may be assessed directly to the owners.

Improvements

An "improvement" to an existing drain or ditch is defined as a project that expands, enlarges, or increases the capacity of the drain or ditch above the original design. If improvements are deemed necessary, the board shall appoint an engineer to make a survey and submit a report. If the work does not exceed \$10,000 or 25 percent of the original cost of the district, no hearing or notice is required, but the work cannot be divided to avoid notice.

Following a hearing, the board shall order feasible improvements and a reclassification of benefits if necessary. If additional right of way is required, acquisition is authorized. Payment for repairs or improvements must be from district funds or additional assessments. If the proposed improvements exceed either \$25,000 or the original cost of the district, a prescribed majority of landowners may remonstrate (plead in opposition) against the improvement. If a remonstrance (an act of objecting) is filed, the governing board must dismiss any further action.

Improvement of a common outlet of two or more districts, when needed, requires a hearing. Cost of such work is prorated to contributing districts. Commis-

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sioners shall be appointed to determine benefits and assessment of costs. A report is presented at the hearing, following which the board will take final action. Levy of costs by district shall be made under the original classification if costs are less than 25 percent of the original district cost. If more than 25 percent, a reclassification may be ordered by the board.

If a public improvement, including drainage, levees, or highways separates a district such that one part no longer benefits, the governing board may, upon notice and hearing, remove the lands so severed without reclassification or may divide the district, with each part operating independently. Any inequalities in value of improvements, contribution of lands, and maintenance between divided sections shall be settled by the governing board.

Obstructions

Any obstructions to drains or ditches shall be removed following board direction. Trees and hedges outside the right of way causing obstructions can also be removed, even if acquisition of additional right of way is needed. (468.138 & 468.139)

Subdistricts

Boards may establish subdistricts in adjoining areas, even when located in another county. Boards are allowed to construct suitable outlets for drainage in other counties or even other states. If a properly executed mutual agreement for combined drainage is filed with the county auditor, the board shall establish a drainage district therein.

Damage liability

Any person who willfully damages or obstructs a ditch, drain, or levee is liable for twice the cost of any damages caused. Any subsequent similar offense is cause for triple damages. (468.148) Repair costs shall be assessed to persons causing damages. (468.149) Damages and trespass are deemed serious misde-

meanors. Any obstructions are declared a nuisance and can be removed upon board action.

Assistance for county auditor

If drainage district work becomes burdensome for a county auditor, the board can authorize assistance and pay from district funds. Outside counsel and appraisers can also be sought by the governing board and paid from district funds.

Tax delinquent land

Governing boards may purchase lands delinquent in taxes at a tax sale and pay from district funds. Any excess lands or property so acquired can be disposed as desired and any acquired funds from rents or sales deposited in the district fund. Tax certificates may be purchased by the governing board and terms of redemption negotiated between the board and property owner of the land involved.

A receiver may be appointed by the district court to take charge of tax delinquent real estate, upon application by the governing board.

Inspections

Periodic inspections of levee and drainage improvements by a competent engineer shall be periodically ordered by the governing board. Watchpersons can also be employed by the board to observe levees and make needed repairs during emergencies.

Assessing value

When a levee district is established or improved or if the assessed benefits are determined to be deficient, the county auditor shall determine the assessed taxable value to be used as a basis for classification or reclassification as ordered by the board. A hearing is required and notices to property owners provided. If a remonstrance is filed by a prescribed majority of landowners, the board shall abandon this alternative method and proceed with classification or reclassification as described previously, on the basis of benefits

received. If this method is also remonstrated by a prescribed majority of landowners, the board shall dismiss any reclassification plan. If no remonstrance is received, the board shall decide the most appropriate method of classification or reclassification. In lieu of a hearing, the board may decide the matter based on a vote by landowners, either at a regular or special election. A 60 percent affirmative vote is required for approval.

Under certain conditions, a levee district may elect to classify benefits and assess costs equally on a per acre basis across the district. This method may be adopted by either a hearing or vote of landowners. Similar procedures can be used for classification or reclassification for maintenance or repair work in drainage districts, but assessment of costs only apply to lands served by drains and laterals, not for improvements to the general drainage system.

Utilities

If a person or company desires to construct a utility on or across a drainage or levee district right-of-way, an easement is required in advance. Any resultant adjustment of drainage facilities are paid by the person or company. Any future modification or relocation of the utility due to drainage improvements shall be at the expense of the person or company. If highway or utility work permanently exposes a tile drain of less than 20 inches in diameter, that section shall be replaced with a steel or polyvinyl chloride pipe of prescribed dimensions, gauge, and wall thickness.

Flood control

Levee and drainage districts are empowered to construct impoundment areas and/or flood control devices when found to be cost effective.

Income

Income from incidental use of drainage facilities is permissible, including contracting with cities to permit

discharge of properly treated sewage into district drains.

Damage from locks and dams

Levee and drainage districts are authorized to take legal action or negotiate with the United States government for any damages suffered as a result of locks and dams on the Mississippi or Missouri Rivers.

Waste banks

Landowners may use waste banks from ditches provided no adverse effects result.

Drainage records

The board shall cause drainage records to be kept by the auditor; all pertinent accumulated records and documents are the property of the district.

National Drainage Association

Any district may be a member of the National Drainage Association and pay prescribed membership fees from district funds.

Service agreements

Drainage or levee district agreements may be reached with landowners, other districts, or municipalities to furnish certain services provided district facilities are not overburdened, no cost accrues to the district, and the written agreement contains prescribed considerations.

Part 2 – Federal Flood Control Co-operation (Sections 468.201–219)

When U.S. Government agencies plan improvements or repairs of existing improvements that will further the purposes for which an existing district has been established, a county board of supervisors is authorized to enter into an agreement of cooperation with the U.S. Government. If a repair or alteration is contemplated, and its cost is less than 25 percent of the original improvement cost to a district, a board may proceed without notice, hearing, and appraisalment. Procedures for these cooperative ventures are similar

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to those described for establishment and/or repair of drainage or levee districts, including appointing of an engineer, reports required, notices, hearings, appraisal, and assessment of benefits. Payment of assessments can be made in a single installment or over a longer period, at the discretion of the board. Warrants may also be authorized by the board to pay initial costs. All procedures described above for boards of supervisors also apply to boards of trustees, if a district is so governed.

Part 3 – State Lands (Sections 468.220–229)

A levee or drainage district may occupy and use for any lawful purpose land owned by the state of Iowa with proper permission from the controlling agency. The state of Iowa is held responsible for any drainage or special assessments against state land that is located in established drainage districts.

Part 4 – Board of County Drainage Administrators (Sections 468.230–234)

A county board of supervisors may by resolution elect to establish a board of county drainage administrators to oversee all activities related to drainage or levee districts in a prescribed area. Part 4 describes details of this action including areas of coverage, compensation, and payment from district funds. Drainage and levee districts must adhere to duly adopted rules and plans of soil and water conservation districts.

Part 5 – County-City Drainage District (Sections 468.240–249)

Counties with populations over 200,000 may use federal grants, revenue sharing moneys, or other funds not derived from local tax levies to pay for improvements in drainage districts that have been established partly within the corporate limits of a city. General obligation bonds issued to pay for drainage improvements are also allowed by this section.

Part 6 – Dissolution of Drainage Districts (Sections 468.250–269)

Drainage or levee districts may be dissolved, abandoned, or assimilated under certain conditions outlined in this part. If a district is debt free but no longer provides cost effective service to lands in that district, a board of supervisors or board of trustees, upon petition of a majority of landowners, may proceed to dissolve and abandon the district. In addition, if a district is wholly encompassed by a larger district, a board of supervisors or board of trustees may elect to dissolve the contained district. Part 6 includes a description of the process for dissolution including hearings, abandonment of rights-of-way, and refund of expenses. For dissolution of contained districts, Part 6 also allows voting by drainage district members in lieu of a hearing to decide approval. The obligations and responsibilities of the overlying district relative to the contained district following dissolution are listed.

Subchapter II – Jurisdictions

Part 1 – Intercounty Levee or Drainage Districts (Sections 468.270–304)

One commissioner is to be appointed for each county and a competent engineer, who also serves as a commissioner, is selected by joint action of the counties. Duplicate reports from the commissioners and engineer must be filed in each county. If establishment of a district is recommended, notices to owners in each county and hearings by joint boards are comparable to those required for single county application. Appointment, duties, and reports of appraisers for each county are also similar to those described in previous Code sections for establishment in a single county. Joint board meetings are described and procedures for equalizing voting when boards are of unequal sizes are explained. After benefits and costs have been determined, each county shall levy and collect apportioned

taxes. Warrants, bonds, or certificates may be used to finance initial improvements, at the discretion of the boards. For construction of improvements, a competent engineer must be appointed by the joint boards of supervisors, with duties such as those described for single county application. Letting procedures, payment for work in each county, and final settlement for completed work is described. If any board fails to act in a reasonable time to any petition from land owners, procedures for transfer to District Court are presented. Records of all proceedings are to be kept in each county, but the county with the largest acreage in the district must maintain the official records. Also, the county with the largest district acreage shall act as the depository for all district funds.

Part 2 – Converting Intracounty Districts into Intercounty District (Sections 468.304–314)

Whenever drainage districts in one county outlet into a common ditch, drain, or watercourse as a drainage district in an adjacent county, a new, inter-county district may be established. Only benefited lands can be included in the combined district. Either property owners or boards of trustees may appeal such a district's establishment.

Part 3 – Drainage Districts Embracing City in Whole or Part (Sections 468.315–334)

Boards of supervisors have authority to include all or part of any city in an established drainage or levee district. Notices for inclusion of cities and assessments are required. Options for funding of improvements include bonds, certificates, and waivers. A board of supervisors may relinquish control of a drainage district to a city if it finds that 25 percent or more of the area of a district is located within that city's boundaries (Section 468.322). Cities are bound to accept control of said districts upon relinquishment by a county. This part also describes the jurisdiction authority and control of drainage districts by a city, either by the city council or delegated to a board of trustees.

Part 4 – Highway Drainage Districts (Sections 468.335–354)

A county board of supervisors may elect to establish a drainage district for any public highway under its jurisdiction together with any abutting lands, including railroad property and primary highways. This action may be initiated without petition. An engineer must be appointed to provide surveys and a report; the county engineer is eligible for this duty. Various funding options for improvements include payment from the primary and secondary road funds. A county board of supervisors may use eminent domain procedures, if necessary, to establish a suitable outlet for the drainage of highways. Trees and hedges that cause damage to ditches or drains may need to be removed (Sections 468.346–347).

Part 5 – Drainage and Levee Districts with Pumping Stations (Sections 468.355–389)

Boards of supervisors may establish and maintain pumping stations when needed to provide a proper outlet for a drainage or levee district. Pumping stations cannot be established without a petition from at least one-third of the property owners in that district. Additional pumps may be installed and existing pumps transferred; several payment options exist. A board of supervisors is allowed to divide districts served with pumping stations upon petition by at least one-third of the property owners of the land served. If a settling basin is needed to improve drainage and reduce flooding damage, the board of supervisors may acquire land for the basin by eminent domain power if needed. Bonds may be used for funding. Bankruptcy proceedings are allowed for governing bodies regarding indebtedness for drainage districts with pumping stations. Any construction of buildings, ditches, or removal of earth within 300 feet of a levee is prohibited, and there are penalties for such action, including liability.

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Part 6 – Drainage Districts in Connection with United States Levees (Sections 468.390–399)

Drainage or levee districts may be established by a board of supervisors in cooperation with the United States government in relation to an existing U.S. government levee along a navigable stream that forms a boundary of the state. Costs may be assessed for improved lands, and taxes may be collected for improvements and incurred maintenance.

Part 7 – Interstate Drainage Districts (Sections 468.400–499)

When a drainage area lies partially in an adjacent state, a board of supervisors may seek to establish a drainage district using the necessary agreements between states, letting of construction contracts, and assessment of costs for improvements and management of the district.

Subchapter III – Management of Drainage or Levee Districts by Trustees (Sections 468.500–539)

For any drainage or levee district in which the original construction has been completed and paid for, management may be placed under control of a board of trustees by a city council or county board of supervisors following receipt of a petition signed by a majority of landowners. Three trustees are elected from prescribed sub-districts if the drainage or levee district exceed 3,000 acres or extends into more than one county. Trustees must be United States citizens, at least 18 years of age, and landowners or stockholders of land in the district. Landowners, 18 years of age and older and corporations owning land in the district may vote for trustees. Elected trustees serve for three years on a staggered term basis. Trustees have the same powers and duties in the control, supervision, and management of districts as those described for county boards of supervisors or city councils. Certificates and bonds to fund improvements may be issued by boards

of trustees and periodic reports of activities must be filed with the county auditors.

Subchapter IV – Financing

Part 1 – Drainage Refunding Bonds (Sections 468.540–569)

A board of supervisors may elect to extend the time of payment for any outstanding drainage bonds and assessments and may renew or extend payment of legal bonded indebtedness. Drainage refunding bonds may then be issued. Refunding bonds are issued in denominations of \$100–\$1,000, with a life not exceeding 40 years and at an interest rate prescribed by code. A resolution of the board is required for this action and a record of issued bonds maintained by the county treasurer. The treasurer shall sell the bonds at the best rate available or exchange them for outstanding drainage bonds. Existing property liens are not affected by issuance of refunding bonds. Other agreements with creditors may be sought by the governing board of the district, including refinancing with the Reconstruction Finance Corporation.

Part 2 – Defaulted Drainage Bonds (Sections 468.570–584)

When drainage bonds that have been issued for improvements are in default for failure to pay either principal installments or accrued interest, a specified number of land owners or bond holders may apply to District Court requesting an extension of payment time, a re-amortization of assessments, a revised schedule of payments, and issuance of new bonds. The court has the jurisdiction and power to fully adjudicate all issues in the matter.

Part 3 – Funding of County Drainage Districts (Sections 468.585–599)

A county may assess costs for improvements in urban drainage districts, using the same procedures as described in Iowa Code Section 384, Division IV, City

Finance. Issuance of special assessment bonds by a county is allowed. Cities and counties cooperating in a drainage district improvement may enter into a 28E agreement outlining cost sharing, amount of special assessments, methods of determining benefits, amount of other funds to be contributed to the project, and rates to be imposed upon property to pay for expenses and maintenance.

Subchapter V – Individual Drainage Rights (Sections 468.600–634)

When an owner or owners of land desire to make drainage improvements by construction of levees, ditches, tiles, or underground drains for agricultural or mining purposes across the land of others, including railroads and highways, a descriptive application may be filed with the county auditor. The auditor must fix a hearing time with the board of supervisors and issue notices to all affected property owners. If the board finds the petitioned improvement to be beneficial, general specifications shall be drawn, including details of construction, repair procedures, connections, and any compensation due to affected property owners. Damages and compensation for property must be paid before any construction begins. Railroad companies may elect to undertake construction on that property.

If anyone obstructs an outlet, he/she is liable for double the cost of damages sustained by upstream owners. If such action occurs a second time, liability increases to triple the cost of sustained damages (468.618). A board of supervisors can decide disputes between adjoining landowners.

Owners may drain their land in the course of natural drainage using open or covered drains without liability to downstream owners, unless substantial changes in quantity or manner of discharge occurs. Replacement drains are covered in the same manner, if due care is exercised with the improvement (468.621).

When natural drainage runs to a highway, a land owner may enter the right-of-way to make the necessary outlet connection, but must follow specifications established by the highway authorities and leave the right-of-way in good condition. If a tile or ditch must extend across a highway right of way, payment for materials, installation, and repairs must be paid from highway funds (468.622).

A county recorder may be requested to make private drainage systems a matter of record, using prescribed methods and procedures. Such records are not considered an essential part of the title to lands.

When mutual drain records are incomplete or when an owner believes cost apportionment is not equitable, the board of supervisors may be petitioned for relief. A hearing on the petition must be held after which the board will decide equitable assessments and re-establish records.

If land owners do not pay apportioned costs or if a needed repair is not made in a timely manner, the board shall by resolution establish a drainage district.

Owners of a mutual drain can petition a board of supervisors to combine with an existing drainage district. Following a required hearing, the board may by resolution dissolve the mutual drain and combine with the drainage district.

Chapter 568: Islands and Abandoned River Channels

When a formerly navigable river shifts its channel, land found within the former channel, if not previously surveyed, can be sold or leased by the State of Iowa. Occupants of the subject land have the first right to purchase, but if none, advertisement and sale proceeds. If sale does not occur, lands may be reappraised, re-advertised for sale, or leased. Any title disputes are decided by the state. Islands in the Mississippi and Missouri rivers are not included.

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Chapter 657: Nuisances

Nuisances are anything that is injurious to health, indecent, unreasonably offensive, or an obstruction to free use of property. An extensive list of potential nuisances is given, but other code sections also describe particular nuisances, such as Section 468.149 for levees and drainage ditches. Penalties for nuisances include an aggravated misdemeanor and court action may also order nuisances removed. Animal feeding operations are mostly exempted from this section.

Chapter 670: Tort Liability of Governmental Subdivisions

All local governmental units including their officers and employees, except soil and water conservation districts, are described in this section as liable in tort for any wrongful death or injury caused to persons or property by negligence, error or omission, breach of duty, or other deficient official act. Several types of claims are exempted however, including some arising from negligent design and/or construction. Advice of an attorney should always be sought when issues of potential tort arise.

IOWA ADMINISTRATIVE CODE SUMMARY

To explain and define details of legislation, departments in the executive branch of Iowa government adopt and publish rules. After prescribed public review and comments, these rules are published as the Iowa Administrative Code. Drainage issues are addressed in the published rules of several state departments. Selected provisions are summarized below from the 2004 Administrative Code.

Agriculture and Land Stewardship [21]

Chapter 1 – Administration

Sections 1.4(1) and 1.4(4), description is presented of the Soil Conservation Division's Field Services Bureau and Water Resources Bureau with focus in such areas as soil and water conservation, agricultural well closures, watershed improvements, and conservation reserve enhancements.

Soil Conservation Division [27]

Chapter 12 – Water Protection Practices-Water Protection Fund

This chapter presents procedures to be followed by soil and water conservation districts and the Iowa Department of Agriculture and Land Stewardship in establishing water protection practices with land owners in such areas as agricultural drainage well management and stream bank stabilization, etc.

Chapter 14 – Levee Reconstruction and Repair Program

This chapter provides rules for a levee reconstruction and repair program including funding, application, and eligibility. Section 14.63(2) states that these funds shall not be used to reimburse other units of government for implementation of these practices.

Chapter 21 – Water Quality Protection Projects-Water Protection Fund

Projects described in this chapter are intended to protect Iowa's groundwater and surface water from point and non-point contamination. Agricultural drainage wells and sinkholes are included in the program.

Chapter 22 – Soil and Water Resource Conservation Plans

This chapter establishes procedures for development of resource plans in all soil and water districts in Iowa, as well as developing a comprehensive conservation plan for the entire State as required by Iowa Code Section 161A.4.

Chapter 30 – Agricultural Drainage Wells-Alternative Drainage System Assistance Program

This chapter describes funding procedures for closing of agricultural wells and providing alternative drainage systems that are part of a drainage district. Definitions, allocation of funds, eligibility, and payment are addressed.

Attorney General [61]

Chapter 17 – Iowa Mediation Program

Sections 17.15(3), 17.18(3), and 17.27(3) procedures for wetland designation mediation are described.

Utilities Division [199]

Chapter 9 – Restoration of Agricultural Lands During and After Pipeline Construction

This chapter describes drainage structures in section 9.1(3), and repair of drain tile damaged during pipeline installation is explained in section 9.4(2).

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Procedures for future installation of tile in the area of buried pipelines is covered in section 9.4(7).

Natural Resources Department [561]

Chapter 9 – Groundwater Hazard Documentation

In accord with Iowa Code Section 558.69, this chapter describes documentation required to be submitted to the county recorder for the transfer of land regarding the existence of wells, disposal sites, underground storage tanks, and hazardous waste on that property.

Environmental Protection Commission [567]

Chapter 38 – Private Water Well Construction Permits

This chapter includes definitions, permit requirements, and fees for construction of private wells. Section 38.15 describes the process for delegation of this authority to the county board of supervisors.

Chapter 39 – Requirements for Properly Plugging Abandoned Wells

Iowa Code Section 455B.190 requires that abandoned wells be properly plugged. This chapter establishes procedures for accomplishment. Definitions, well classification, schedules, and responsibilities are presented. Section 39.8 describes approved plugging procedures to be used.

Chapter 49 – Nonpublic Water Supply Wells

Section 49.15(1) declares that abandoned wells are a contamination hazard to water bearing formations, as well as a physical hazard for people.

Chapter 51 – Water Permit of Registration—When Required

Section 51.6(2) allows that withdrawal of water to lower the water table at construction sites does not require a permit if material damages to public or private interests do not occur as a result.

Chapter 52 – Criteria and Conditions for Authorizing Withdrawal, Diversion, and Storage of Water.

This chapter presents criteria for issuance of permits to withdraw, divert, and store water for various purposes. Sources of water are further described including conditions pertinent to streams and groundwater sources. Section 52.8 lists certain streams with a protected low flow restriction for withdrawal. Section 52.21 addresses permits that are required to divert water to an agricultural drainage well and closure of these wells.

Chapter 60 – Scope of Title, Definitions, Forms, Rules of Practice

This chapter describes forms, application procedures, and other requirements for complying with the EPA storm water regulations.

Chapter 63 – Monitoring, Analytical, and Reporting Requirements

This chapter presents guidelines for establishing procedures to analyze pollutants. It also describes the required monitoring records, permits, and procedures for submitting these records.

Chapter 64 – Wastewater Construction and Operation Permits

This chapter describes the National Pollutant Discharge Elimination System (NPDES) permits, public participation, and reporting of permit holders. Also included are storm water discharge guidelines for municipal separate storm sewer systems (MS4s).

Chapter 65 – Animal Feeding Operations

Section 65.2(9)e allows that a release of manure into a drainage tile line or intake may not require notification to the department if a discharge into a water of the state does not result. Section 65.4(2) describes conditions when an operations permit for a feedlot is required for manure discharged directly through a drainage system into a water of the state. Section 65.5(2) further describes conditions under which an operations permit is required. Section 65.9(1) describes construction requirements for confinement feeding operations that impede drainage through established tile lines that cross property boundaries. Further, section 65.10(2)b4 describes comments from the county to the department that may be required if construction of an animal feeding operation impedes drainage through established tile lines that drain adjacent property. Section 65.15 provides detailed requirements for addressing existing drain tile lines during construction of a manure storage structure. Guidelines for removal, relocation, and plugging of tile lines are included. Section 65.18 requires certification by a licensed engineer that confinement feeding operation construction complies with tile removal standards previously described.

Chapter 69 – Onsite Wastewater Treatment and Disposal Systems

This chapter provides an extensive list of definitions, restrictions, and requirements for handling of wastewater. Section 69.1(3)b prohibits the discharge of onsite wastewater, except under NPDES permit, into any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, land drain tile, or surface of the ground. Disposal into an agricultural drainage well, abandoned well, or sinkhole is expressly prohibited. Section 69.2 describes requirements for discharging effluent into surface water.

Flood Plain Development, Title V

Chapter 70 – Scope of Title, Definitions, Forms, Rules of Practice

The DNR “has jurisdiction over all flood plains and floodways in the state for the purpose of establishing and implementing a program to promote the protection of life and property from floods and to promote the orderly development and wise use of the flood plains in the state.”

Pertinent definitions include agricultural levees or dikes, channel change, dam, drainage district ditch, flood plain, and water source. Required forms are listed. Procedures for requesting flood plain development include review, approval, and appeal activities.

Chapter 71 – Flood Plain or Floodway Development—When Approval is Required

This chapter establishes rules for obtaining approval from the Department of Natural Resources for construction and maintenance work in a flood plain or floodway. Minimum thresholds of 10 square miles of drainage in rural areas and 2 square miles in urban locations are set. Improvements such as bridges, culverts, embankments, channel changes, dams, levees, excavations, and stream bank protection are addressed. Section 71.2(4) describes channel change work by drainage districts, exempting some maintenance and repair work from prior approval.

Chapter 72 – Criteria for Approval

There are special criteria for various types of development such as bridges and road embankments, channel changes, dams, levees, and dikes. An extensive list of protected streams throughout the state is included in Division III. Special accommodations are required for these streams. This chapter also includes the protected stream designation procedures and the declassification process.

Summary of Iowa Law Related to Drainage

Iowa Administrative Code Summary

Chapter 73 – Use, Maintenance, Removal, Inspections, and Safety of Dams

This chapter presents requirements for approval of operating plans for certain types of dams, manipulation of impoundment levels, inspections, removal, and designation of unsafe conditions.

Chapter 75 – Management of Specific Flood Plain Areas

The Department of Natural Resources has jurisdiction over all flood plains and floodways in Iowa for the purposes of protecting life and property from flood damages and for promoting wise use and orderly development in these areas. This chapter describes the program for those purposes, including the issuance of flood plain management orders, approval of management regulations adopted by local agencies, and approval of flood plain development on a case-by-case basis. Section 75.4 describes the establishment of a floodway, section 75.5 presents minimum standards for flood plain and floodway use, and section 75.7 provides for the delegation of authority to local agencies in the approval of regulations.

Natural Resource Commission [571]

Chapter 77 – Endangered and Threatened Plant and Animal Species

This chapter lists certain plant and animal species that have been determined to be threatened or endangered in Iowa. Section 77.4(8) excludes drainage district repairs and improvements to open ditches from the Department's efforts to protect the Topeka shiner, a fish species.

Personnel Department [581]

Chapter 21 – Iowa Public Employee's Retirement System

Section 21.5(1)a(14) allows that drainage district employees are covered by IPERS unless they opt out of the program.

Revenue Department [701]

Chapter 17 – Exempt Sales

This chapter lists certain activities and materials that are exempt from sales taxes. Section 17.9(3) lists the sale and installation of drainage tile used for certain purposes as exempt from tax.

Chapter 18 – Taxable and Exempt Sales Determined by Method of Transaction or Usage

Section 18.35 exempts drainage tile from taxation if used for certain purposes, such as disease and weed control and health promotion of plants and livestock produced for market. Tile used for other purposes is subject to tax.

Chapter 19 – Sales and Use Tax on Construction Activities

Iowa Code Section 422.43 imposes taxes on the gross receipts for sales of certain tangible property and listed services. This chapter further describes assessment of those taxes. Section 19.10(2)e allows that most drainage improvements are considered to be part of the property realty.

Transportation Department [761]

Chapter 112 – Primary Road Access Control

This chapter details Department of Transportation rules regarding control of access along primary highways in Iowa. Section 112.3(4)b allows that

drainage structures within the public right-of-way will be maintained by the Department except for concrete box culverts and bridges constructed as part of an entrance permit. Section 112.6 describes drainage considerations related to entrance construction. Section 112.13(3) states that the property owner is responsible for all costs of special access connections, including drainage structures.

Chapter 115 – Utility Accommodation

This chapter addresses installation, adjustment, and maintenance of utility facilities within the right-of-way of primary highways in Iowa. Section 115.17(1) requires that utility poles, guys, anchors, and other devices on non-freeway primary roads not be located in ditches, at drainage structures, or on the roadway shoulders. These devices shall be located to minimize potential conflicts with highway maintenance activities.

Chapter 150 – Improvements and Maintenance on Primary Road Extensions

The Iowa DOT and cities are jointly responsible for extensions of freeways and primary highways in incorporated areas. The chapter describes the provisions for sharing costs of drainage district assessments and storm sewer construction, as well as obligations for maintenance.

5. Iowa Case Law

IOWA CASE LAW

Interpretation of Iowa's law in the court system provides valuable guidance for practice and decisions in drainage related matters. Following are brief summaries of pertinent drainage issues that have been addressed at the appellate and supreme court levels. This information is presented for general reference only; for definitive guidance in the interpretation of Iowa's drainage laws, always consult an experienced attorney.

Eminent Domain

Phelps v. Board of Supervisors, 211 N.W.2d 274 (Iowa 1973)

The Iowa Supreme Court compelled the county to compensate property owners for damages to their lands caused by an increase in flooding due to construction of a bridge and causeway. The court determined that the landowners had a right to compensation because there was substantial interference with the landowners' use and enjoyment of their property due to intermittent flooding and that permanent damage had been caused by the flooding.

The court noted that it is the character of the invasion rather than the amount of damage that determines a taking. Only a difference in degree exists between a permanent overflow by backwater and damages from intermittent but inevitably recurring flooding.

Hammer v. Ida County, 231 N.W.2d 896 (Iowa 1975)

In an eminent domain case, compensation can only be awarded to a landowner for losses directly resulting from the use made of the condemned land. Compensation cannot also be awarded for damages from improvements made nearby merely in conjunction with the original condemned land use that may also affect other remaining property.

Where one portion of a tract of land was condemned for relocation of a road upon it, compensation could not also be awarded for damages to the remaining land due to flooding allegedly caused by raising the elevation of another intersecting road bordering the property, even if part of the same project.

The work done on an intersecting road and the alleged damages caused were readily separable from the construction on the road for which the parcel was taken by condemnation proceeding. Compensation could only be made for damages caused by the use for which the condemned land was taken, namely relocation of the main road.

Peterson v. Board of Trustees of Drainage District No. 5, 625 N.W.2d 707 (Iowa 2001)

After a board of trustees for a drainage district makes an assessment of damages due to improvements made under Iowa Code section 468.25, the amount of damages is final. The board may not later award additional damages even if subsequent harm suffered by the landowner was unanticipated when the original assessment was made.

The board of trustees assessed damages to landowners resulting from the construction of a drainage ditch. Several years later, one landowner lost federal wetlands designation for a portion of his land due to that ditch improvement. As a result of the loss of wetlands designation, the USDA imposed a sanction on the owner, denying use of 28 acres of cropland. To avoid the sanction, the owner acquired other land to be converted to wetlands. It was ruled that the board could not award the owner supplemental damages to reimburse for the cost of the additional land.

Concurrent Powers: Iowa Natural Resources Council and Drainage Districts

Polk County Drainage District No. 4 v. Iowa Natural Resources Council, 377 N.W.2d 236 (Iowa 1985)

The Iowa Supreme Court held that the Iowa Natural Resources Council (INRC) and drainage district trustees had concurrent powers under Iowa Code sections 445.135 and 445A.33 (1981). The trustees had authority to decide whether to initiate proceedings to restore the efficiency of a floodway in a remnant of the Skunk River, but the INRC had the authority to grant or refuse a permit for the work. The INRC had the power under Iowa Code section 445.33(1) to deny the trustee's application for a permit because it was determined that the project would adversely affect the efficiency of the floodway, utilization of the state's water resources, or adversely affect or interfere with the state comprehensive plan for water resources or an approved local water resources plan.

Improvements or Repairs by Drainage Districts

Johnson v. Monona-Harrison Drainage District, 68 N.W.2d 517 (Iowa 1955)

An engineer's report and recommendations were sufficient under Iowa Code section 455.135 as the basis for a drainage district's approval of a plan to repair a drainage system. Even though the report relied on outdated information and the survey was general and incomplete, it met the statutory requirement since it was adequate to apprise anyone interested in the general nature and extent of the project proposal and included a cost estimate.

The board did not abuse its discretion in accepting and approving the general, and perhaps incomplete, plan and survey as appropriate, especially after

extended hearings took place concerning the adequacy of the plan, survey, and estimate.

Hicks v. Franklin County Auditor, 514 N.W.2d 431 (Iowa 1994)

The court noted that a drainage repair involves actions to maintain or restore the efficiency or capacity of a drainage system, while an improvement involves expanding or enlarging the capacity of an existing system. The court found that the proposed construction in this case was a repair because the project's scope was to restore a drainage ditch to original specifications. It concluded that the landowners were entitled to compensation for that portion of the project exceeding the boundaries of the drainage easement, but not for land within the easement that they had been farming.

Consequently, the drainage district could reclaim waterway easement it had obtained when the drainage district had originally been established. The court awarded compensation only for the portion of the project exceeding the boundaries of the drainage easement.

Alteration of Natural Flow by Private Landowners

Sheker v. Machovec, 116 N.W. 1042 (Iowa 1908)

For a lower land owner to recover damages for water flow diverted from a natural drainage course, the Iowa Supreme Court held that it is not necessary for the lower land owner to show that the flow of water substantially increased or that the method of discharge was significantly altered. It is enough to show that the fair market value of the lower land decreased as a result of the altered flow patterns.

Kaufman v. Lenker, 146 N.W. 823 (Iowa 1914)

As long as drainage is wholly upon a landowner's own property, the landowner may drain water along the natural course of drainage and discharge it into a natural depression or water course without liability for

damages to others. However, the landowner may not cut through natural barriers and divert water from its natural flow, discharging it on or close to a neighbor's land, if it would increase the discharge substantially, put the discharge in a different place from its natural flow, or unnecessarily cause damage.

Anton v. Stanke, 251 N.W.2d 153, 156 (Iowa 1933)

The owner of a dominant estate may not divert surface water from one natural watercourse to another natural watercourse on his or her land if the flow of water is greatly increased or is of an unnatural volume and the waters ultimately flow upon a public highway at a point where they would not naturally flow.

Furthermore, a county board of supervisors may not construct or maintain a culvert to dispose of unlawfully diverted waters, causing these waters to pass through the highway at a place where they would not naturally flow and causing substantial damages to servient lands.

Droegmiller v. Olson, 40 N.W.2d 292 (Iowa 1949)

Landowners who, in the first instance, had no right to divert water from their land could not then compel the county to furnish them permanent protection from the water they diverted. Servient landowners are not entitled to have ditches along a highway constructed and maintained so as to fully protect their lands from water naturally flowing over them or to change the natural course of drainage.

The rights to the use of a roadway within the right-of-way belong to the public. These rights are not to be impaired in favor of an individual even though the person's actions, such as diverting the flow of drainage, does no damage to the highway.

The diversion out of its natural course of a large quantity of surface water to a public highway, with its resulting deposit of much silt, constitutes an obstruction and a nuisance which a county may have abated

without showing of injury or pecuniary damage.

However, removal of accumulated silt in ditches to maintain drainage patterns is a responsibility of a public agency.

Moody v. Van Wechel, 402 N.W.2d 752 (Iowa 1987)

In determining which adjacent tract is dominant, relative elevation and not general movement of floodwaters is controlling. Water from a dominant estate must be allowed to flow in its natural course onto a servient estate. The flow may not be diverted by obstructions erected or caused by either estate holder.

The owner of the dominant estate may divert water by surface drainage constructed upon his or her own land even though some different or additional water may thereby enter the servient estate. However, the owner of the dominant estate may not go so far as to collect and discharge water on the servient estate in such a manner as to cut a stream bed. The servient estate is obliged to receive water from higher lands, but not in such a way as to cut channels that did not previously exist.

A fence row should be maintained so as to allow the free passage of surface water. When fences become filled with debris or soil, they should be cleared. When the parties cannot agree on a plan to clear obstructions, a court should devise one.

Easement by Prescription

Nixon v. Welch, 24 N.W.2d 476 (Iowa 1946)

Landowners within an established drainage district may assert their surface water drainage rights in accord with natural drainage patterns.

Two landowners were separated by a county road. Historically, drainage moved from the dominant property, through a road culvert, across the servient land to a lake. Improvements as part of a drainage district relocated drainage from the dominant property.

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The county then regraded the road and removed the culvert. The dominant owner sued to reestablish the historic drainage flow.

The Iowa Supreme Court found that a natural easement existed in favor of the dominant estate for the flow of surface water through the road and across the servient land. This easement was established either by concerted action by historic owners or by prescription since this was the watercourse openly used for conveying surface water to the lake. If the drainage established by the drainage district is not satisfactory, the dominant owner has the right to demand the reestablishment of historic patterns.

The court ruled that the county must bear the cost of replacing the culvert to permit free flow of surface water. The plaintiff (dominant landowner) was responsible for cleaning a ditch across the servient estate to reestablish historic drainage because the dominant estate was the only beneficiary of that action.

McKeon v. Brammer, 29 N.W.2d 518 (Iowa 1947)

When an easement for an underground drain on the servient estate in favor of the dominant estate is created by prescription or agreement by the parties, it is not extinguished when the servient estate is sold without notice of the easement.

Maisal v. Gelhaus, 416 N.W.2d 81 (Iowa App. 1987)

The owner of a servient estate was required to lower the elevation of land near a fence line caused by his method of plowing, which resulted in a diking effect that altered the natural flow of water and caused flooding on the dominant estate.

A prescriptive easement was created by agreement between the previous owner of the dominant estate and owner of the servient estate. The easement

created a permanent right of drainage from the dominant estate to the servient estate.

Franklin v. Sedore, 450 N.W.2d 849 (Iowa 1990)

Owners may drain their land in the general course of natural drainage by constructing or reconstructing open or covered drains and discharging the drains in any natural watercourse or depression so the water will be carried into some other watercourse. If the drainage is wholly upon the owner's land, that owner is not liable for damages from the drainage unless it results in a substantial increase in the quantity of water or changes in the manner of discharge on the land of another.

The owner of a dominant estate may waive his or her rights to an original watercourse by prescription. A ditch altering a natural waterway will not be enjoined after it is maintained for 10 years with expressed or implied consent.

The exception to the prescription rule is limited to rights of the public. An artificial ditch may, under some circumstances, become a natural watercourse when the rights of the public are involved, since neither the statute of limitations nor prescriptive rights can be urged or claimed against the public. However, such easements still run against rights of private individuals.

Negligence Actions—Private Landowners

O'Toole v. Hathaway, 461 N.W.2d 161 (Iowa 1990)

The Iowa Supreme Court found owners of a dominant estate to be liable for negligence when a terrace break on their land, due to torrential rains, flooded a neighbor's home. The court determined that the manner used by the owners of the dominant estate to alter the natural drainage was not reasonable, given the location of the terrace, and that a break in that terrace was foreseeable. In doing this, a breach in the duty of care to neighboring landowners occurred.

Under “natural flow” doctrine, the dominant owner is entitled to drain surface water in a natural watercourse from his land over servient owner’s land and, if damages occur, the servient owner is without remedy. However, if the volume of water is substantially increased or if the manner or method of drainage is significantly changed and actual damage results, the servient owner is entitled to relief. This rule applies even in connection with governmentally approved soil conservation practices that substantially alter the natural flow of water.

In addition, there is an overriding requirement that one must exercise ordinary care in the use of his or her property so as not to injure the rights of neighboring landowners.

Terracing may substantially change the manner and method of surface water drainage, even though terraces are not generally designed to divert or decrease the flow of water.

While the court did not hold that the conservation terraces at issue were an inherently dangerous activity, they did point out that landowners employing such terraces (even when mandated by federal farm program conservation requirements) must construct and place the terraces in such a location that terrace breakage would not damage an adjoining landowner.

Counties—Inverse Condemnation

Connolly v. Dallas County, 465 N.W.2d (Iowa 1991)

A county is exempt from liability for certain actions under Iowa Code section 613.4(7) and (8*). However, if a public road flood control project, when functioning as it was designed, causes flooding to a particular area that would not have been flooded in the absence of

that improvement, an inverse condemnation claim may arise.

(*Per Iowa Code at the time of this decision.)

Counties—Duty to Repair and Maintain

Perkins v. Palo Alto County Board of Supervisors, 60 N.W.2d 562 (Iowa 1953)

When a county, with the acquiescence of the former landowner, constructs a ditch that changes the direction of a natural watercourse and the ditch continues to be used as the watercourse for a number of years with the knowledge of the successor to the land, it becomes the natural watercourse. The new owner of the land cannot require the county to add improvements that will direct the water back in the direction of the original natural watercourse. However, the county does have a duty to maintain the ditch and keep it open.

Koenigs v. Mitchell County Board of Supervisors, 659 N.W.2d 589 (Iowa 2003)

An easement created by contract between a private landowner and a public agency was limited in duration to the time required by the agency to dredge a ditch and build a road. The agency did not have a duty to maintain an obstructed ditch after the road was completed, according to the terms of the original contract.

Counties—Authority to Regulate Application of Livestock Waste to Protect Groundwater

Goddell v. Humboldt County, 575 N.W.2d 486 (Iowa 1998)

The Iowa Department of Natural Resources (DNR) is the only entity authorized under Iowa Code section

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455B.172(5) (1975) to regulate the disposal of animal waste from confinement facilities. Local agencies cannot regulate such waste disposal.

Injunctive Relief

Schmitz v. Iowa Department of Natural Resources, No. 2-070/01-0436 (Iowa App. 2002)

The Iowa Supreme Court denied plaintiff landowners injunctive relief that would have forced the DNR to remove a water control structure it had erected on a public wetland, the Shimon Marsh, that adjoined their farm.

The landowners failed to prove the elements for injunctive relief. They did not establish there was an invasion or threatened invasion of a right and/or that substantial injury or damages would result unless an injunction was granted. Neither did the plaintiffs prove that removal of the water control structures in the Shimon Marsh would improve drainage on their land. Finally, they were unable to show that no adequate legal remedy was available to them, since they could have filed a suit to recover damages for any alleged negligent actions by the state.

Injunctive Relief—Administrative Powers

Myers v. Caple, 258 N.W.2d 301 (Iowa 1977)

A landowner is not required to exhaust administrative remedies before filing for an injunction when an action of the Iowa Natural Resources Council under Iowa Code chapter 455A affects his or her property.

An injunction is an extraordinary remedy that is only invoked when necessary to prevent irreparable harm or afford relief where there is no adequate remedy at law. In the instant case, an injunction should not have been issued where the building of a levee would only ordinarily cause a slight additional increase in the volume of water on plaintiff's land.

Injunctive Relief—Repair of Drain Outlet by Servient Owner

Sloan v. Wallbaum, 447 N.W.2d 148 (Iowa 1989)

Injunctive relief is appropriate when the owner of a servient estate blocks the outlet of a drainage ditch, resulting in substantial potential damages to the dominant estate.

Drainage Agreements—Private Landowners

Vannest v. Flemming, 44 N.W. 906 (Iowa 1890)

The owner of a dominant estate has the right to drain surplus surface or ground water through tiles from his or her land onto a servient estate. There is no difference between surface water and underground water that is collected by tiling.

When a drain has been established by the acquiescence of two adjoining landowners as required by the best interests of both, if the manner of drain construction is in accord with the natural flow of water and the quantity of water has not increased nor its flow diverted by the owner of the dominant estate, the servient owner cannot obstruct or abolish the ditch without the consent of the owner of the dominant estate.

Where a ditch for the drainage of surface water has been constructed jointly by adjoining landowners under an oral agreement to its course, each party having contributed money and/or labor to the construction, and the owners having recognized the ditch by plowing and farming in accord with it, neither can set aside nor disregard it without the consent of the other.

Challenge to Assessments

Voogd v. Joint Drainage District No. 3-11, 188 N.W.2d 387 (Iowa 1971)

A county may approve a drainage repair without providing notice and a hearing, based on an estimated cost of repair that is less than 50 percent of the original

total cost of the district and subsequent improvements if the approval is made in good faith (Iowa Code Sections 455.135(1), 455.20–24)*. If the estimate proves to be in error, this in itself does not detract from the governing body's power to act.

However, if the board becomes aware that the actual costs of a project are greatly exceeding the original estimate so as to render it meaningless, it has no authority to approve continuation of the repair work without first providing a notice and hearing under Iowa Code section 455.135. Costs in excess of the 50 percent allowed under the statute are void and cannot be assessed against private property if proper notice was not given.* The failure to provide notice and give hearing voids the entire assessment.

(*Per Iowa Code at the time of this decision.)

Immunity of Drainage Districts and Counties from Negligence Suits

Fisher v. Dallas County, 369 N.W.2d 426 (Iowa 1985)

A drainage district cannot be sued in tort for monetary damages. Neither can a county nor board of supervisors be held vicariously liable for a monetary judgment against a drainage district.

Liability of Upstream Landowner for Erosion Damages

Oakleaf County Club, Inc. v. Wilson, 257 N.W.2d 739 (Iowa 1977)

An upstream riparian owner may be liable for damages to downstream properties caused by acceleration or hastening of the flow of a watercourse due to his or her actions.

The downstream landowners may bring an action for damages if a project was approved after the fact by the Iowa Natural Resources Council without providing notice and a hearing as required by Iowa Code sections 455A.19 and .20.

Easement of Highway Commission—Apportionment of Maintenance Costs

Bellville v. Porter, 130 N.W.2d 426 (Iowa 1964)

Plaintiffs, who were servient owners, were within their rights in cutting a dike on a slough that had been built by the former owner of property and extended by others, in accordance with the well established principle that when water, no matter what its character, flows in a well-defined course, be it only a swale, and seeks discharge in a neighboring stream, its flow cannot be arrested or interfered with by one landowner to the injury of another.

The cost of repairing and maintaining a drainage ditch needed to be apportioned between all who benefited, in this case the highway commission, plaintiffs, and intervening landowners.

Liability of Municipalities for Drainage Maintenance

Elledge v. City of Des Moines, 144 N.W.2d 283 (Iowa 1966)

The City of Des Moines was held liable for the negligent maintenance of a storm sewer and the resultant diversion of water from its natural course onto a homeowner's property.

Governmental immunity was not a defense available to the city in the negligence suit because the municipality's duty to keep its storm sewers clear and free from obstructions was a ministerial or proprietary function.

Fischer v. City of Sioux City, 654 N.W. 2d. 544 (Iowa 2002)

The City of Sioux City was found immune from liability for its allegedly negligent design and construction of a storm sewer and for not rebuilding or replacing the system due to changed conditions in the area served by the sewer. So long as the sewer was constructed in accordance with generally accepted

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engineering or safety standards or design theory in effect at the time of construction, the city did not behave negligently. Iowa Code 670.4(8)

In addition, the city was found immune from liability when exercising discretionary functions. The exercise of a discretionary function occurs when a city (1) applies an element of judgment or discretion in making a decision and (2) that decision is the type of judgment that the discretionary function immunity was intended to shield from liability, such as when a city legitimately considers social, economic, or political policies in making that judgment. Iowa Code 670.4(3)

6. Federal Law

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FEDERAL STATUTES

Federal statutes do not address drainage topics extensively, but some sections do contain pertinent and potentially significant information. Some of the most controversial issues for drainage districts in the past 20 years have been initiated through federal legislation. The federal Clean Water Act as implemented through the states and interpreted and applied by the Corps of Engineers and Fish and Wildlife Service has undoubtedly had significant impact on drainage district maintenance in many instances. The Food Security Act represented a major shift in the federal government's emphasis in agricultural activities, particularly the wetland conservation provisions of that act.

With the implementation and enforcement of these federal acts, the expansion and even maintenance of drainage facilities has changed. Agencies and landowners are exploring ways to reduce the need to clean ditches and outlets. Preserving the facilities already built to ensure they provide the intended drainage is more important than in the past. Many successful projects are being completed by those who recognize opportunities to work with other government and private groups to mitigate wetland loss and address common concerns.

Food Security Act of 1985 (As amended through Public Law 108-7, February 20, 2003)

Transportation implications

Significant implications for transportation agencies are not obvious, but the many references to wetlands may be of interest to governmental agencies and others when dealing with transportation issues relating to drainage. Road or other improvements affecting existing United States Department of Agriculture (USDA) jurisdictional wetlands will impact property owner rights to participate in all USDA agricultural

programs including crop price supports, marketing loans, and conservation programs such as Wetlands Reserve. Any such potential impacts should be thoroughly considered and discussed with land owners and Natural Resources Conservation Service (NRCS) staff.

Overview

This act includes provisions designed to promote the conservation of wetlands on agricultural lands. These provisions, commonly known as the "Swampbuster" provisions, are codified in the United States Code as Title 16, Chapter 58, "Erodible Land and Wetland Conservation and Reserve Program." The 1990 Farm Bill strengthened the swampbuster provisions by making violators ineligible for farm benefits. A system was also created for allowing inadvertent violators to regain lost benefits by restoring converted wetlands.

This statute, under Title XII-Conservation, contains the following subtitles:

A: Definitions

Included are converted wetland, highly erodible land, hydric soil, and hydrophytic vegetation.

B: Highly Erodible Land Conservation

With limited exceptions, the Act provides that persons who produce agricultural commodities on highly erodible lands are ineligible for certain federal subsidies.

C: Wetland Conservation

This section describes program ineligibility and the process of identifying and delineating the different classes of USDA jurisdictional wetlands. Exemptions to the ineligibility provisions are listed, including any conversions initiated prior to December 23, 1985. The mitigation process for restoring wetland converted after 1985 to regain benefits is also described. The Secretary of Agriculture is directed to delineate wetlands on

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maps for reference by property owners. Any restoration and mitigation plans, as well as monitoring activities, are the responsibility of the NRCS.

D: Agricultural Resources Conservation Program

Chapter 1 – Comprehensive Conservation Enhancement Program

This chapter contains many references to wetlands on agricultural lands. Both Subchapter B, Conservation Reserve, and Subchapter C, Wetlands Reserve Program, extensively describe programs available to eligible landowners for preserving, enhancing, and restoring wetlands. Responsibilities of owners, payments, and penalties for non-compliance are also described. While the preponderance of the impact from the Act is directed toward private property owners, Department of Agriculture agreements with states, political subdivisions, and other agencies regarding wetland preservation are also briefly described in Subchapter C. Other than brief mention in Chapters 4 and 5, further reference to wetlands is not made in the Act.

- Subchapter A: General Provisions
- Subchapter B: Conservation Reserve

The Conservation Reserve Program is intended to protect eligible land (highly erodible croplands, marginal pastures, etc.) through contracts with owners and operators to conserve and improve the soil, water, and wildlife resources of the land.

- Subchapter C: Wetlands Reserve Program

The Wetlands Reserve Program assists eligible owners and operators in restoring and protecting wetlands on agricultural lands. Acreage is enrolled into the wetlands reserve

system through use of permanent easements, 30-year easements, restoration cost share agreements, or a combination of these options.

Chapter 2 – Conservation Security And Farmland Protection

- Subchapter A: Conservation Security Program
- Subchapter B: Farmland Protection Program
- Subchapter C: Grassland Reserve Program

Chapter 3 – Environmental Easement Program

Chapter 4 – Environmental Quality Incentives Program

Chapter 5 – Other Conservation Programs

E: Funding and Administration

G: State Technical Committees

Clean Water Act, Section 404, Title 33, Chapter 26, Subchapter IV, Section 1344

The Clean Water Act is the common name for the Federal Water Pollution Control Act Amendments of 1972. The Act was further amended in 1977, 1981, and 1987.

Transportation implications

State and local agencies are required to comply with the requirements of this Act when constructing transportation projects, typically those involving grading, widening, structures, and stream modification. Any proposed improvement that includes right-of-way acquisition and that may impact aquatic resources should be reviewed for Section 404 compliance. In Iowa, two agencies are responsible for administering the permit programs, the U.S. Army Corps of Engineers (COE) and the Iowa Department of Natural Resources (DNR). Assistance and advice should be

sought from the COE, the DNR, the Iowa Department of Transportation, and/or NRCS.

Overview

This Act describes the permitting process required for the dredging or discharge of fill materials into navigable waters of the United States. General permits are described and certain activities are exempted. States are allowed to develop and administer individual and general permit programs. Additional information can be found in the following regulations:

- 33 CFR 320 to 330 – Corps of Engineers' regulations specifying the procedures and criteria for the issuance of section 404 permits.
- 40 CFR 22 – EPA regulations that outline options available to the agencies to enforce the provisions of section 404.
- 40 CFR 230 – EPA guidelines that constitute the substantive environmental criteria used in evaluating activities regulated under section 404.
- 40 CFR 231 – Clarifies the EPA's authority to restrict or prohibit the use of an area for discharge of dredged or fill material if the discharge will have unacceptable adverse effects.
- 40 CFR 232 – Program definitions and permit exemptions.
- 40 CFR 232.2 – "Tulloch Rule" – In an effort by the EPA and the Corps of Engineers to improve protection of wetlands and increase fairness, this action closed a previous loophole, clarifying that small discharges of dredged or fill material that destroy or degrade wetland do require a permit.
- 40 CFR 233 – Specifies the procedures and criteria used by the EPA in assessing state assumption of section 404 programs.
- 40 CFR 233.60 to 233.62 – Tribal assumption regulation.

Additional information

This section of the US Code is online:

www4.law.cornell.edu/uscode/33/1344.html.

See also the article on stormwater management in this manual.

FEDERAL CASE LAW

Several federal court decisions provide useful guidance in interpreting specific federal code provisions. Cited here are several summaries of cases regarding interpretation of the Food Security Act of 1985, which includes provisions commonly designated as “Swampbuster,” 16 USC, Section 3801, 3821–24.

This section of the Act provides that any agricultural production on a converted wetland causes the farmer to forfeit eligibility for a number of federal farm assistance programs. Some exceptions to this rule exist; i.e., if the wetlands had been converted prior to December 23, 1985, farming of that land would not negate benefits.

***Gunn v. USDA*, 118 F.3d 1233 (8th Cir. 1997) cert. denied, 522 US 1111, 113 S. Ct. 1042, 140, L. Ed. 2d 108 (1998)**

Part of the Gunn property had been improved in 1906 to permit farming activity. In response to a certification request in 1991, the Soil Conservation Service (SCS) ruled that the land in question was in fact rendered “farmed wetland,” not “converted wetland,” by the 1906 improvement since significant wetland characteristics remained. In 1992, a drainage district which contained the Gunn property initiated a further improvement that more completely drained the property. The SCS ruled that the action of the drainage district changed the character of the property to “converted wetlands” and there would be a loss of benefits if the land were farmed.

In response to an action filed by the property owner, the U. S. District Court held that Gunn’s land was “farmed wetland” because it retained wetland characteristics continuously from 1906 to 1992 and had never become “converted wetland.” Consequently, the drainage system was required to remain in its December 23, 1985, condition with the result that the land could not be farmed without Gunn losing eligibility for farm program benefits. The court reasoned that the

1992 drainage activity was unrelated to the 1906 drainage even though the “commenced conversion” regulations allow a farmer to demonstrate that conversion to wetlands occurred before December 23, 1985, through the commitment of substantial funds to another party for performance of drainage activities. The court reached this conclusion even though drainage district assessments had been paid on the land for decades. This decision was later affirmed by the 8th Circuit Court of Appeals.

In addition, the 8th Circuit Court held that the district court did not have jurisdiction for a claim of inverse condemnation and the “outside agent” exception to the Act, 16 USC section 3824 (1990), did not apply in this case. The statute does not exempt a property owner from the provisions of the Act simply because the conversion of wetlands is accomplished by a drainage district. Since the property in question was benefited by the drainage district action and the property owner contributed to the cost of the improvement, that owner can be held responsible for the resultant conversion of the wetland and thus is not entitled to exemption from the regulations.

Unfortunately, the Gunn court did not precisely address the issue of the original “scope and effect” of the 1906 drainage activities. Under USDA regulations, farmed wetland can be used as it was before December 23, 1985 (NFSAM Sec. 514.23), and a hydrologic manipulation can be maintained to the same “scope and effect” as before December 23, 1985. The USDA is responsible for determining the scope and effect of original manipulation on all farmed wetlands. Arguably, if the 1906 drainage improvements allowed crop production to occur on all of the land at issue at that time, then the effect of that improvement on the wetland was to convert it to crop production, and that status could be maintained by additional drainage activities after December 23, 1985. However, for farmed wetlands, the government has interpreted the “scope and effect” regulation such that the depth or

scope of drainage ditches, culverts, or other drainage devices be preserved at their December 23, 1985, level regardless of the effect any post-December 23, 1985, drainage work actually had on the land involved.

Comments on the Gunn Case

by James W. Hudson, Attorney at Law

In recent years, legislation at both the federal and state levels has placed considerable emphasis on restoring or establishing wetlands. The basic purpose for a wetland enhancement project is to collect and retain water to establish or improve a wetland. The basic purpose of drainage districts is to remove excess water from a given area to make the land more productive. In pursuit of optimum productivity, landowners have spent literally millions of dollars over the years in establishing and maintaining drainage districts. Thus, the goals of drainage districts and the focus of wetland laws and regulations may not be compatible at times.

An example of such a disagreement was the recent experience in Drainage District No. 5 in Greene County, Iowa. That district was established in 1906 and consisted of approximately 4,300 acres of land south of US 30 and west of Grand Junction. The district's facilities originally consisted entirely of underground drainage with tile; no surface drains or open ditches were installed. The drainage co-efficiency for the facilities in this district was 1/18th inch for part of the district and 1/12th inch for the remaining areas. Drainage experts recommend that a drainage co-efficiency of ½ inch be sought. District No. 5's existing facilities were woefully inadequate to drain all the land in the district, resulting in much ponding and land too wet for cultivation on many farms.

In 1992, the Greene County board of supervisors instigated a project to upgrade the efficiency of the district system to improve drainage. An engineer was appointed by the board to prepare and file a report.

The report, approved by the board, provided for installing approximately three miles of open ditch to dramatically increase the capacity and efficiency of the district drainage facilities. The engineer's report noted that a wetland was located in the district on the farm of Charles Gunn. When the proposed open drainage ditch was constructed, it would pass through this wetland.

In consideration of conflicts some landowners had experienced with wetland legislation interpretation by federal government agencies, as attorney for the board, I directed the engineer to file a copy of his report with the Army Corps of Engineers (COE). With that filing I recommended that the location of the wetland be specifically addressed and inquiry be made with the COE ascertaining whether or not that agency would anticipate any problems or if any specific license or permits would be required before the district proceeded to establish the proposed open ditch. After review, the COE returned the plans and advised that no problems were anticipated and the project could proceed.

At about this same time, several landowners in the district petitioned the county auditor for election of trustees to administer District No. 5 and subsequently three trustees were elected. The trustees advertised for bids and entered into a contract for the construction of the proposed open ditch. Even though the existing wetland area was very small, the constructed open ditch passed through and replaced the wetland in that area. The Gunn farm was assessed appropriately for a respective share of the drainage improvement.

About a year later, the USDA notified Mr. Gunn that he was in violation of wetlands regulations and that he would be deprived of utilizing approximately ten acres of his tillable ground for farming purposes or possibly forfeit certain farm program benefits. The USDA can deny participation in the farm program as an enforcement mechanism to obtain compliance by landowners with established wetland regulations.

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Mr. Gunn appealed the decision through all levels of the USDA, from the local board to Washington, D.C. At each step of the appeal process, the subsequent reviewing board recommended increasing the number of acres that Mr. Gunn would be required to remove from production. When the appeal was finally heard in Washington, D.C. it was decided that Mr. Gunn would lose 28 acres of tillable ground from production to compensate for loss of the wetland. Even though no change had occurred in the size of the original wetland or the open ditch construction from the first determination by the local board, each subsequent appellate board seemed disposed to recommend additional acres be taken out of production.

After the decision was made by the appeal board in Washington, D.C., Mr. Gunn returned to Iowa and employed legal counsel to litigate the same issues with the federal government. After losing in the federal district court and circuit court of appeals, Mr. Gunn attempted an appeal to the United States Supreme Court. The Supreme Court refused to hear the case, which meant Mr. Gunn was bound by the lower court decision, and 28 acres of tillable land would be lost to production due to the wetland violation.

The USDA then offered Mr. Gunn a mitigation agreement, suggesting that if he would purchase 13 acres of land from a neighboring farmer, convert that ground to wetland, and convey title to the federal government for maintenance as a wetland, he could then restore use of the 28 acres of tillable ground which had been denied by the previous decision.

Mr. Gunn purchased the neighbor's 13 acres for \$2,000 an acre or a total of \$26,000 and employed a contractor to modify the land according to specifications furnished by the USDA for wetland purposes. He was then permitted to farm the 28 acres of crop land and participate in USDA farm program benefits.

Following this action, the board of trustees for District No. 5 decided to reimburse Mr. Gunn the \$26,000 he had paid for the land from his neighbor.

The board concluded that Mr. Gunn did not construct the open ditch across his farm which was ruled a violation of wetland regulations, but that this ditch was in fact installed by the board on behalf of the drainage district. Mr. Gunn could not have impeded installation of the ditch if that had been his desire.

As board attorney, I was directed to prepare an appropriate notice and request the county auditor to serve notice to all district landowners of a hearing on the proposed application of the trustees to reimburse Mr. Gunn the \$26,000 paid for the replacement wetland acres. The hearing was held in the Greene County court house in Jefferson and was attended by a number of farmers who were opposed to this action. Following the hearing, the board of trustees adopted a resolution authorizing reimbursement of \$26,000 to Mr. Gunn.

The landowners who were opposed appealed this decision through their attorney to the district court of Greene County. The court affirmed the position of the trustees. These landowners appealed that decision to the Iowa Supreme Court which reversed the trial court and found that the trustees could not reimburse Mr. Gunn for this land purchase. The court ruling explained that the hearing on the acquisition of right-of-way for initial ditch construction as approved was a final decision and that the trustees could not later increase the compensation to Mr. Gunn for right-of-way acquired even though he had no knowledge of the USDA requirement for wetland mitigation until over a year after the hearing on the original acquisition of right-of-way.

The court did not consider that the additional expense incurred by Mr. Gunn for furnishing right-of-way for the ditch across his land nor that Mr. Gunn did not destroy the wetland but that this action was undertaken by the drainage district as a part of the ditch improvement project. The court apparently did not consider Iowa Code Section 468.2 (2) which states as follows: "The provision of this subchapter and all other

laws for the drainage and protection from overflow of agriculture or overflow lands shall be liberally construed to promote leveeing, ditching, draining, and reclamation of wet, swampy, and overflow lands.”

See also the Iowa Supreme Court case, *Peterson vs. Board of Trustees of Drainage District No. 5*, in the Iowa case law section of this manual.

Barthel v. USDA, 181 F.3d 934 (8th Cir. 1999)

The Barthels’ 450-acre hay meadow, purchased in 1957, is drained by a ditch that runs along the south side of their property. The ditch, a straightened portion (in 1916) of the south fork of the Elkhorn River, passes through a culvert under a county road and runs adjacent to property owned by Gene Liermann. Liermann’s land is directly downstream from the Barthels’ tract. In 1951, the ditch was dredged to clean out obstructions and silting. The ditch was dredged again in 1983, and Liermann gave permission for the work to be done to the portion of the ditch on his property. In 1984, the county replaced the culvert and, in 1986, lowered it 18 inches. In 1987, the ditch again needed to be cleaned out, but Liermann refused to allow access to the ditch on his land even though he was (and still is) required to clean out the portion of the ditch on his property pursuant to state law.

At Liermann’s request the USDA reviewed the matter and eventually held that the Barthels could not dredge the ditch below 18 inches from the bottom of the county culvert on the basis that the drainage structure had to be maintained at the elevation it was on the effective date of the 1985 Farm Bill (December 23, 1985). At that level, the Barthels’ meadow is flooded.

In district court action, the USDA position was upheld. However, on appeal and review of the district court’s opinion against the Barthels, the 8th Circuit Court invalidated the USDA’s “scope and effect”

regulation, holding that the Barthels are entitled to farm their land as they did on or before December 23, 1985, “so long as the previously accomplished drainage or manipulation is not significantly improved upon, so that the *wetland characteristics* are *further* degraded in a significant way....” Thus, the court held that the Barthels are entitled to dredge and clean the ditch in the manner necessary to accomplish the “water and farming regime” that they experienced prior to enactment of the 1985 Farm Bill. The focus is on the effect of the drainage structure on the land, not on the drainage structure itself.

To this day, the USDA has not accepted the court order. This ruling could have important implications for Iowa since it would allow increases in drainage efficiency and capacity of farmed wetlands to maintain historic productivity.

See the Federal Statutes section of this manual for more information about the Food Security Act.

Branstad v. Glickman, 118 F. Supp. 925 (N.D. Iowa 2000) (Branstad I)

In 1995, the Branstads purchased a tract of land that contained a tile system installed circa 1900. The previous owner had farmed the property for several years, but inadequate maintenance of the tile had rendered the tract only suitable for pasture. Rulings by the USDA in 1987 and 1997 classified the property as wetland under the “Swampbuster” provisions of the Food Security Act, 16 U.S.C. sections 3821–24. In 1996, the Branstads received authorization of the USDA to replace the existing tile with the understanding that the new tile would not exceed the capacity or depth of the historic system.

Responding in part to a complaint from a neighbor, the NRCS ruled that part of the land had been converted from wetlands and that the Branstads would be ineligible for USDA farm benefits subsequent to that conversion. Branstads appealed this decision to the

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Farm Service Agency and later entered into a “Wetlands Restoration Agreement” that specified needed restorations to restore benefits. Following several time extensions to fulfill the terms of this agreement, the USDA advised the Branstads that further delays would not be granted and eligibility for past and future benefits would be lost, plus severe penalties imposed if the terms of the agreement were not met.

The Branstads brought action in U.S. District Court seeking declaratory action and injunctive relief pending completion of judicial review. In deciding the case, the court considered the following relevant factors on a motion for a preliminary injunction:

1. Probability of success on the merits
2. Threat of irreparable harm to the movant
3. Balance between harm and injury that an injunction would inflict on other interested parties, and
4. Whether issuance of an injunction would be in the public interest

The court concluded that all of these factors supported issuance of a preliminary injunction and ruled that injunctive relief from enforcement actions by the USDA for violations of the “Swampbuster” provisions was proper while judicial review was underway.

***Branstad v. Veneman*, 145 F. Supp.2d 1011 (N.D. Iowa 2001) (Branstad II)**

As in the prior case, *Branstad v. Glickman*, 118 F. Supp. 925 (N.D. Iowa 2000) *Branstad I*, the court determined the plaintiffs were entitled to preliminary injunctive relief from enforcement actions by the USDA while they pursued judicial review of an administrative determination. The USDA had determined that the Branstads were violating the “Swampbuster” provisions of the Food Security Act. The injunctive relief was in place while the court reviewed the USDA’s determination that the Branstads improperly converted wetlands

by repairing an existing tile drainage system on their farm.

The court also held that it had subject matter jurisdiction because the plaintiffs’ failure to exhaust administrative remedies, as required by 7 C.F.R. section 11.13, was attributable to the arbitrary action of the agency, not to any voluntary or willful conduct on the part of the plaintiffs.

After conducting an analysis similar to that described in *Branstad I*, the court found that the various required factors weighed in favor of issuance of the injunction.

***B & D Land and Livestock Co. v. Veneman*, 231 Supp.2d 895 (2002)**

B & D Land and Livestock Co. requested the NRCS to make a wetland determination for a tract of land in Cerro Gordo County. Following certification, the NRCS advised B & D that certain “woody” vegetation could be removed from the tract. Subsequent to removal of this vegetation, B & D was informed that a violation of 16 U.S.C. sections 3821–24 (“Swampbuster”) had occurred. After a series of administrative appeals and notice of loss of benefits, B & D filed suit for judicial review.

Using similar reasoning as in *Branstad I* and *Branstad II*, the court issued a preliminary injunction enjoining the USDA from enforcing wetlands violation sanctions pending completion of the judicial review process that would determine whether B & D had violated “Swampbuster” provisions in removing certain “woody” vegetation from a wetland site.

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STORMWATER MANAGEMENT

For municipalities, there are two major areas of concern regarding the management of watersheds and stormwater: quality of runoff and the volume of stormwater to be accommodated. Each of these issues has unique requirements and can present special challenges for cities.

In 1987 the Clean Water Act was amended to require the Environmental Protection Agency (EPA) to develop regulations for storm water discharges from industrial activities. The intent of these regulations is to improve water quality by reducing or eliminating contamination in stormwater. Stormwater can include runoff from precipitation, surface, drainage, or snow melt. In Iowa, the Department of Natural Resources (DNR) has been designated by the EPA to administer permits under the federal National Pollutant Discharge Elimination System (NPDES) program.

Permits are required for any construction activity that disturbs one acre or more. Each such project must also have a Storm Water Pollution Prevention Plan (SWPPP). The Natural Resources Conservation Service (NRCS) can provide useful advice in developing and implementing these plans. In addition, forty-five cities and the two largest universities are required to have permits for their Municipal Separate Storm Sewer Systems (MS4s). These cities and universities are required to

- control erosion and sedimentation from construction sites,
- improve storm water management to control flooding and protect water quality,
- inspect storm drain outlets to identify undesirable discharges,
- implement good practices to ensure operations do not degrade water quality,
- provide public education about issues such as household contribution to poor water quality, and
- institute public participation in a plan to improve that quality.

In addition to the NRCS, the DNR, and Iowa Statewide Urban Design and Specifications (SUDAS) are excellent sources of information and advice on this subject.

SUDAS is cooperating with the Iowa Stormwater Management Partnership, which includes the IDNR, NRCS, and Iowa Association of Municipal Utilities (IAMU), and others to develop design guidelines and specifications for construction site erosion control and stormwater quality maintenance and improvement for developments. These guidelines and specifications will be incorporated into the SUDAS manuals for local jurisdiction use.

Stormwater utilities have been established in several Iowa communities to provide a funding source for NPDES stormwater mandates. In addition, many cities have adopted stormwater management ordinances. Information about this topic can be found on the IAMU website, www.iamu.org.

Managing rapid runoff in developments is a common concern in many expanding communities. Erosion damage and silt deposit can result from inadequately designed developments and often cities are requested to find solutions to these problems. Strategies have been devised to address erosion concerns in development areas and excellent results have been shown. Low Impact Development techniques such as bioswales, infiltration trenches, and native landscaping can be explained by the NRCS. Other erosion control measures might include filter strips, sediment basins, rock check dams, and silt fences.

Controlling volume and velocity of storm runoff is an important issue in many communities, with principal goals of preventing damage and reducing erosion. Use of detention and storage can allow for a reduced release rate for stormwater to minimize the undesirable effects of excessive and rapid runoff. Costs of these facilities must be balanced against potential public

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benefit. Restrictive covenants, easements, or other property rights may be needed, but careful planning is mandatory to avoid shifting problems in one area to another. The SUDAS design manual contains valuable guidelines and recommendations for controlling the rate of stormwater runoff. Included in the SUDAS manual are such specific topics as preparation of a drainage report for projects, determination of runoff volumes, design of storm sewers, culverts, open ditches, and appurtenances, and recommendations for use of detention facilities to reduce the runoff rate and improve water quality, as well as possibly lower overall drainage costs. The manual also discusses use of easements for storm sewers, presents several useful forms for that purpose, and describes required permits for waterways and wetlands.

WETLANDS AND MITIGATION

State and local agencies are required to comply with the requirements of the Clean Water Act, the primary authority for the regulation of wetlands, when constructing transportation projects that may affect wetlands. These projects typically involve grading, widening, structures, and stream modification.

The act (specifically Sections 401 and 404) requires permits for improvements that affect wetlands. In Iowa, two agencies are responsible for administering the permit programs, the U.S. Army Corps of Engineers (COE) and the Iowa Department of Natural Resources (DNR). The COE grants permits for construction activities in waterways and wetlands. Any proposed improvement that may affect aquatic resources should be reviewed by the COE and DNR for compliance. The DNR regulates any activities that may potentially adversely affect water quality, including projects that affect natural or artificial wetlands.

When it appears that wetland impacts may result from project activities, the Clean Water Act requires the following approach:

1. attempt to avoid wetland impacts if possible,
2. minimize any impacts that cannot be avoided, and
3. mitigate or replace any unavoidable remaining impacts.

When activities allowed by permit damage wetlands, mitigation is required to compensate for the loss. Mitigation should be in-kind and preferably in the same HUC 8 Watershed. If mitigating outside this area, mitigation ratios may be increased.

The Iowa Department of Transportation Office of Local Systems has developed instructional memoranda (IMs) as reference for county engineers. The IMs address the Section 404 permitting process and the procedure for submitting preliminary bridge and culvert plans. Several lists from the DNR regarding flood plains and meandered streams are included.

Mitigation efforts in Iowa have historically been undertaken on a project specific basis. However

another approach is under consideration: using mitigation banking that would permit impacts from small projects to be compensated in a larger, more potentially beneficial area, but not located in the immediate locality of the transportation project. A program such as this could be used to mitigate wetland impacts on a cooperative basis for both state and local projects.

Procedures for restoring wetlands within drainage districts have been established in some counties. An example resolution of such an action is in the appendix of this manual.

Additional assistance and advice should be sought from the COE, the DNR, and/or the Natural Resources Conservation Service (NRCS) when needed. Other regulatory authority for transportation improvements may be found under the National Environmental Policy Act, the Endangered Species Act, and the National Historic Preservation Act (none of which are addressed in this manual).

Wetland impacts from agricultural activities are regulated by provisions of the Food Security Act. An overview of this act is contained under the federal statutes section of this manual.

DRAINAGE EASEMENTS AND AGREEMENTS

The Nature of Easements

An easement is the right to use the land of one person for a specific purpose to benefit another's interests. Traditionally the term "easement" is applied to two adjoining property owners. An easement holder has the right to use his neighbor's property in some prescribed manner to benefit his own adjoining land. An obvious example is an access easement which allows a landowner to use a specific part of a neighbor's land for access to his property. That easement is a benefit to the easement holder's property. But the easement is also a burden to the neighbor's property. Technically, the easement belongs to the dominant estate, rather than the person who actually owns that land. (Historically, the easement holder's land was termed the "dominant estate" and the neighbor's land was the "servient estate.") Similarly, the easement burdens the servient estate, rather than the neighbor who holds title.

The benefit possessed by the easement holder does not include the right to use the easement land to make a profit or to deny access to the landowner. For example, an access easement across a farm field would not allow the easement holder to raise crops on the easement area. Nor would it prevent the owner of the servient estate from growing crops in the easement area so long as that use didn't hinder the purpose of the easement. (If a person has the exclusive right to use another person's property to grow crops, that right is generally termed a "tenancy," not an easement. Tenancies are temporary and are valid only for a defined period of time, usually involving the payment of rent.) Most easements are permanent or for as long as needed and do not include lease payments.

As government and quasi-government (such as utilities) use of private land has become much more common, the nature of easements has changed. The beneficiary of an easement today is often not a neighbor. An easement may benefit the general public, such as for installation of high voltage electrical lines,

or it may benefit all of the land in a governmental entity, such as the drainage easement created as part of a drainage district. Because of these modern uses, the terms "servient estate" and "dominant estate" may no longer adequately describe the rights and duties created by easements.

Easements are sought and granted for many purposes, such as the use of a strip of land for a driveway, railroad right-of-way, discharging smoke and soot onto the premises of another, underground pipes, utility lines, sewers, water mains, and roads.

Easements can be created in three ways: by express written grant, by implication, or by prescription.

Express Grant

An express grant is similar to a deed and must be in writing. The document should contain a precise description of the boundaries covered by the easement. In addition, the purpose or use of the easement should be specified and the persons who own the dominant estate and servient estate must be identified. And of course, it must be signed.¹

For example, consider an 80-acre field with a lane on one side providing access from a public road to the rear half of the property. The owner decides to sell the front half but wants to keep using the lane for access to the remaining back part. In the deed conveying the front parcel, the seller would include a clause allowing continued use of the lane to access the remaining part. The location and dimensions of the lane would be described in this clause. This verbiage in the deed reserving the access easement is an express grant.

Implied Easement

Now consider the same example except that a clause reserving the easement isn't included in the deed. After the sale, the seller asks the buyer to agree that the seller has an easement for use of the lane, but the buyer won't agree. The seller can ask the district court to declare that an easement must have been intended because the remaining portion of the property

has no other access to a public road. If a judge agrees, finding that the seller used the lane previous to the sale and that the access must continue in order for the back half to be useable, the decision creates an easement by implication.²

Prescriptive Easement

An easement by prescription is sometimes described as adverse possession. The existence of an easement can be declared by a court if the evidence shows (1) that use has continued for at least 10 years; (2) the user has expressly informed the owner of the servient estate that it is believed that a legal right to the easement exists; and (3) the owner of the servient estate has disagreed that the dominant estate has such an easement.³

Prescriptive rights cannot be claimed against public property.

Private Drainage Easements, Natural and Legal

A land owner has the right to drain accumulated rainfall naturally from that estate over adjoining neighboring property. Neighbors have the duty to accept that natural drainage flow. In that regard, upstream owners have the right to use downstream property for benefit. The benefit received is in having water drain off higher elevation land, allowing more beneficial use of that property. A downstream neighbor cannot adversely affect that benefit by blocking drainage, even if receiving the runoff water damages property or limits its usefulness.

Rights of upstream owners and duties of downstream owners are what make up a natural drainage easement.⁴ The higher elevation property is the “dominant estate” and neighboring downstream property is the “servient estate.” In like manner, the downstream neighbor has the right to drain that property naturally across further adjoining lands. This chain of private natural easements continues until the

drainage water reaches a lake or river that is acknowledged as owned by the public.

Drainage must flow off property in a natural watercourse.⁵ But that watercourse does not have to look like a creek and it does not require a channel with well defined banks.⁶ A slight swale can represent a natural watercourse.⁷ The sheet flow of runoff drainage across land might be a natural watercourse if occurring uniformly or routinely as a result of normal rains.⁸ A watercourse must be at least partially natural, rather than entirely manmade. Excavating a ditch where a slight swale exists to partially divert and concentrate the natural flow of surface water which subsequently becomes a living, flowing stream of water can be a natural watercourse over time.⁹

There are limits and conditions on property rights and duties regarding drainage accommodations. A property owner cannot dam or divert the flow of water if doing so causes harm to either upstream or downstream lands.¹⁰ The existence of a natural drainage easement across neighboring land does not allow upstream owners to increase the volume of water cast off or to increase the velocity of flow if that increase causes significant damage to adjacent properties.¹¹

For many years, the Iowa legal system did not describe this inherent natural easement. The law simply recognized that a property owner had the right for a waterway to flow in the accustomed course across neighboring lands.¹² However, in the last half of the 20th century, Iowa courts recognized these rights and duties as “legal and natural easements.”¹³ In 1990, the Iowa Supreme Court refined the basic rules of natural easement in more modern terminology, ruling that the dominant owner is entitled to drain surface water in a natural watercourse from his land over the servient owner’s land and, if any damage results, the servient owner must bear the damage. However, both the dominant and servient owners must exercise ordinary care in the use of their property so as not to injure the rights of neighboring land owners by block-

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ing, diverting or substantially increasing or decreasing the flow of water.¹⁴

Drainage easements can also be created or ended by the actions of agencies, private companies, or persons. A written drainage easement (easement by express grant) can be created specifically addressing the right to enter onto lands of others to install improvements or for repair and maintenance. This is the optimal manner of establishing easement rights. Such easement documents generally include the following information:

- a detailed description of the lands involved, including the area to be drained
- names of all owners and/or tenants with an interest in the lands
- description of the drainage feature addressed: tile, ditch, etc.
- explanation of the rights conveyed by the easement: to enter for initial installation and later repair or maintenance purposes, etc.
- methods of installation
- rights of owners to use the drainage facilities for their own purposes
- any cost assessments
- statement that the easement must be recorded and is permanently assigned to the land in question

These written easements primarily affect the owners' use of the land only during times of initial installation and subsequent maintenance and repairs.

Public Drainage Easements, Natural and Legal

A natural easement exists in every natural water course for the benefit of all land which normally drains into it.¹⁵ The land through which such an easement runs is burdened by that easement and all land owners along the water course must observe the rights that others have in the easement.¹⁶ Artificial channels may

also be considered water courses which create an easement. This easement exists either because of the concerted action between historic owners of the lands through which a created ditch runs or simply by prescription.¹⁷

Public agencies could reduce land acquisition costs for drainage improvements if appraisers and design engineers considered the existence of these natural drainage easements. In most cases, Iowa law requires that the value of the property to be acquired must be estimated by an appraiser and that value used in negotiation or condemnation.¹⁸ However, an appraiser might not take into account the existence of natural or prescriptive easements since they may not be filed with a county recorder or established by court order. Likewise a design engineer may describe a larger parcel of land than is necessary to acquire. In addition, final determination of the extent and scope of natural or prescriptive public easements may require the filing of declaratory judgments prior to or during the land acquisition process.¹⁹ Since land acquisition costs are often the most expensive part of a drainage improvement, public agencies should consider the existence of natural or prescriptive easements early in the planning process.

Easements Acquired by Drainage Districts

The construction of drainage district facilities requires the acquisition of right-of-way for open ditches, underground tile, and other improvements.²⁰ A drainage district acquires either permanent easement or fee simple title for all right-of-way needed for these improvements.²¹ One of the first steps in establishing a drainage district is to prepare a report describing the location and survey of ditches, drains, and other necessary improvements.²² After the district is established, the survey and report of the engineer, or the permanent survey, plat, and profile, if made, describe

the scope and dimensions of the drainage easements. These documents are filed with the county auditor. When filed, they constitute constructive notice of the existence of the drainage district easements.²³

Frequently, old drainage district records have been lost or did not identify the location and dimensions of the easements. When that occurs, the board of supervisors or board of trustees may survey the drainage improvements and define the right-of-way of the drainage easements. After completing a hearing process, the new description of the improvements constitutes a permanent easement in favor of the drainage district for drainage purposes.²⁴

Additionally, drainage district easements may be created by prescription. If a property owner knew or should have known that a drainage district improvement was located on the owner's land, that owner has a duty to discover the existence of the drainage records and determine the extent of the easement.²⁵ Without regard to the existence of drainage district records in the auditor's office, a drainage district may acquire a prescriptive easement at the location of ditches, tiles, or other drainage improvements. When the owner of the property has consented to the construction of the drainage improvements and the district has expended funds as consideration for an agreement to construct the improvements, a prescriptive easement is established simply by the existence of the drainage improvement for more than ten years. In such case, it is not necessary to show that the district had made a claim of ownership or that the claim was not agreed to by the property owner.²⁶

Agreements

Agreements are another form of documentation that protect the legal rights of all concerned. Agreements are especially important when two or more owners are involved because pertinent rights and obligations are enumerated and thus misunderstandings are mini-

mized. Agreements, like easements should be signed before a notary public and properly recorded.

Caveat

This summary of drainage easements provides a general overview only; specific cases and individual situations may lead to different results than suggested here. The summary is believed to be correct, but should not be applied to specific situations without additional research and/or legal advice.

Additional Case Law

Additional information can be found in the following court decisions:

Definitions

Dawson v. McKinnon, 226 Iowa 756, 285 N. W. 258, 263 (Iowa 1939)

Hawk v. Rice, 325 N. W.2d 622

Types of Easements

Kahl v. Clear Lake Methodist Camp Association, 265 N. W.2d 622, 624 (Iowa 1978)

Wiegmann v. Baier, 203 N. W.2d 204 (Iowa 1972)

Riverton Farms, Inc. v. Castle, 441 N. W.2d 405 (Iowa 1989)

Murrane v. Clarke County, 440 N. W.2d 613 (Iowa 1985)

Anderson v. Yearous, 249 N. W.2d 855 (Iowa 1977)

National Properties v. Polk County, 352 N. W.2d 509 (Iowa 1984)

Allamakee County v. Collins Trust, 599 N. W.2d 448

Tamm, Inc. v. Pildis, 249 N. W.2d 823 (Iowa 1976)

Schwab v. Green, 215 N. W.2d 140 (Iowa 1974)

Kline v. Richardson, 526 N. W.2d 166 (Iowa App.1994)

Webb v. Arterburn, 246 Iowa 363, 379 67 N. W.2d 504, 513 (Iowa 1954)

Articles

Drainage Easements and Agreements

Extent of Easement

Hagenson v. United Telephone Company of Iowa, 209 N. W.2d 76 (Iowa 1973)

Gilmore v. New Beck Levee District Harrison County, 212 N. W.2d 477 (Iowa 1973)

Notes

1. Iowa Code §§ 558.1, 558.41, 558.49-.60, 564.1 et. seq., 622.32.

2. *Schwob v. Green*, 215 N.W.2d 240 (Iowa 1974); *Loughman v. Couchamn*, 242 Iowa 885, 47 N.W.2d 152 (1951); *Rank v. Frame*, 522 N.W.2d 848 (Iowa App. 1994).

3. Iowa Code § 564.1 et. seq.

4. An easement is an interest in land which entitles the owner of the easement to use or enjoy land which is in the possession of another. Restatement of Property, §450 et. seq. (1944); An easement is an interest in land which is a privilege without profit which the owner of one neighboring tenement has of another tenement, by which the servient owner is obliged to suffer, or not do something on his own land, for the advantage of the dominant owner. *Churchill vs. Burlington Water Company*, 94 Iowa 89, 93, 93 N.W. 646, 647 (1895).

5. *Hinkle vs. Avery*, 86 Iowa 241, 55 N.W. 77 (1893).

6. *Hull vs. Harker*, 130 Iowa 190, 106 N.W. 629 (1906).

7. *Parisek vs. Hinek*, 144 Iowa 568, 123 N.W. 180 (1909).

8. *Hull vs. Harker*, 130 Iowa 190, 106 N.W. 629 (1906).

9. *Falcon vs. Boyer*, 157 Iowa 745, 142 N.W. 427 (1913).

10. *Moffett vs. Brewer*, 1 Greene 348 (Iowa 1848).

When Iowa was settled in the mid 19th century, the flow of water in streams and rivers provided power to run mills that made everything from flour to clothing.

The right to receive a natural flow of water was as important as the right to cast off surface water. Many early Iowa court cases determined the right of mill owners to receive a natural flow of water and the amount of damages they would be entitled to if their upstream neighbor stopped the flow of water.

11. *Rosendahl v. Iowa State Highway Comm.*, 171 N.W.2d 530 (Iowa 1969).

12. *Moffett vs. Brewer*, 1 Greene 348 (Iowa 1848).

13. *Witthauer v. City of Council Bluffs*, 257 Iowa 493, 133 N.W.2d 71 (1965).

14. *O'Toole v. Hathaway*, 461 N.W.2d 161 (Iowa 1990).

15. *Chicago N. W.Ry .Co.v. Drainage District #5*, 142 Iowa 607, 121 N.W. 193 (Iowa 1909); *Maben v. Olson*, 187 Iowa 1060, 175 N.W. 512 (Iowa 1919).

16. *Maben v. Olson*, 175 N.W., at 513; *Hayes v.Dyer*, 164 Iowa 697, 146 N.W. 857 (Iowa 1914).

17. *Nixon v. Welch*, 238 Iowa 34, 24 N.W.2d 476 (Iowa 1946).

18. Iowa Code § 6B.45.

19. *Hervan v. Drew*, 216 Iowa 315, 249 N.W. 277, 278 (1933); *Hunt v. Smith*, 238 Iowa 543, 28 N.W.2d 213 (1947).

20. Section 468.3(5), 468.11, 468.12.

21. Iowa Code § 468.27.

22. Iowa Code § 468.11.

23. Iowa Code § 468.27.

24. Iowa Code § 468.126(8).

25. *National Properties Corporation v. Polk County*, 351 N.W.2d 509 (Iowa 1984); *National Properties Corporation v. Polk County [National Properties II]*, 386 N.W.2d 98 (Iowa 1986).

26. *National Properties II*, 386 N.W.2d, at 105, and citations therein. § 468.27.

8. Resources

LOCATING HISTORIC PHOTOS AND MAPS

In reviewing drainage issues and discussing concerns with property owners, using historic records such as aerial photography can be valuable. The information can also prove helpful during the design process for roadway improvements. Several excellent sources of information are available for Iowa.

Iowa Department of Transportation (Iowa DOT)

The Iowa DOT has maintained an extensive library of aerial photography for many years, with some records dating to the 1930s. Many counties in Iowa have been totally covered. Currently all records are available in hard copy photography at a scale of 13 = 6602. (Digital imagery will be initiated in the near future.) Copies of photos may be requested, but originals cannot be taken from the Iowa DOT office. Local agencies can contact the Iowa DOT Office of Design and request a schedule for viewing. The Iowa DOT also maintains GIS-based maps in GEOMEDIA format. See www.iowadotmaps.com.

A statewide drainage map is available from the Iowa DOT at this website:
www.msp.dot.state.ia.us/trans_data/drainage.html.

For more information, contact

Mark Hansen
Iowa Department of Transportation
Transportation Data
800 Lincoln Way
Ames, IA 50010
515-239-1990
www.state.dot.ia.us

Earth Resources Observation Systems (EROS), U.S. Geological Survey

The EROS Data Center in Sioux Falls, South Dakota maintains an extensive variety of photography, some dating to the 1940s. EROS is part of the U.S. Geological Survey's National Mapping Division. Many choices of mapping are available for ordering including satellite images and aerial photographs. Query and order online:

<http://edcsns17.cr.usgs.gov/EarthExplorer/>.

For more information, contact

Customer Service
U.S. Geological Survey
EROS Data Center
47914 252nd Street
Sioux Falls, SD 57198-0001
800-252-4547
<http://edc.usgs.gov>

Aerial Photography Field Office (APFO)

The Aerial Photography Field Office in Salt Lake City, Utah is the primary source of aerial imagery for the U.S. Department of Agriculture (USDA). More than 10 million images are contained in the APFO library dating to 1955. Aerial photography acquired prior to 1955 by the USDA is maintained by the National Archives and Records Administration. Many choices are available at APFO, including hardcopy and some digital imagery of agricultural lands. The files include complete coverage of the nation's cropland. For more information, contact

USDA-FSA-APFO
2222 West 2300 South
Salt Lake City, UT 84119-2020
801-975-3503
www.apfo.usda.gov

Resources

Locating Historic Photos and Maps

Iowa State University (ISU)

The Iowa Geographic Image Map Server provides digital orthophoto quarter quads, topographic, relief, and land cover maps via an ISU website:

<http://ortho.gis.iastate.edu/>.

Color infrared orthophoto images are available. As of this writing, only the year 2002 is available, but good general information is provided with complete coverage of the state. The website was developed by the ISU Geographic Information Systems Support and Research Facility in cooperation with the USDA Natural Resources Conservation Service and the Massachusetts Institute of Technology.

WEBSITES

Center for Transportation Research and Education	www.ctre.iastate.edu
Center for Watershed Protection	www.cwp.org
Iowa Association of Municipal Utilities	www.iamu.org
Iowa Code and Administrative Law	www.legis.state.ia.us (Click on Iowa Law)
Iowa Department of Natural Resources	www.iowadnr.com
Iowa Department of Transportation	www.dot.state.ia.us
Iowa Statewide Urban Designs and Standards	www.iowasudas.org
Natural Resources Conservation Service	www.ia.nrcs.usda.gov
State of Iowa	www.iowa.gov/state/main
Stormwater Manager's Resource Center	www.stormwatercenter.net
U.S. Code of Federal Regulations	www.gpoaccess.gov/cfr
U.S. Corps of Engineers – Mississippi River	www.mvr.usace.army.mil
U.S. Corps of Engineers – Missouri River	www.nwd.usace.army.mil
U.S. Environmental Protection Agency	www.epa.gov
U.S. Fish and Wildlife Service	www.fws.gov
U.S. Geological Survey	www.usgs.gov

9. Glossary of Common Drainage Terms

GLOSSARY OF COMMON DRAINAGE TERMS

This glossary provides a list of words and terms common in drainage issues, many used in this manual. It is not intended to be a complete reference; other sources should be sought for additional information. Definitions presented were obtained from existing references such as the *Highway Drainage Guidelines, Model Drainage Manual 1991* and *Water and Wastewater Control Engineering, Third Edition*.

- ABSTRACTION:** That portion of rainfall that does not run off, including interception, infiltration, and storage in a depression.
- ABSORPTION:** The taking up of one substance into the body of another.
- ACCRETION:** A process of natural or artificial accumulation of silt, sand, etc. resulting in a buildup of land.
- ACRE-FOOT:** The quantity of water required to cover one acre of land to a depth of one foot, equally a quantity of 43,560 cubic feet or 326,000 gallons.
- ACT OF GOD:** Under the law, a direct, sudden, irresistible action of natural forces, that could not have reasonably been foreseen or prevented.
- AERATION:** The bringing about of intimate contact between air and a liquid by one or more of the following methods: spraying, bubbling, and/or agitating.
- AEROBIC:** The state of requiring, or not being harmed by, the presence of free elemental oxygen.
- AGGRADATION:** A general and progressive buildup of the longitudinal profile of a stream or channel from the deposit of sediment.
- ALKALINE:** The condition of water, wastewater, or soil which contains a sufficient amount of alkali substances to raise the pH above 7.0.
- ALLUVIAL:** Relating to material deposited by flowing water.
- ANAEROBIC:** A condition where no free oxygen is present. A state not requiring or destroyed by the absence of free oxygen.
- ANGLE OF REPOSE:** The greatest angle to the horizontal assumed by any unsupported granular material. Also called the natural slope.
- AQUIFER:** A porous, water-bearing geologic formation, generally restricted to materials capable of yielding an appreciable supply of water.
- ARTESIAN:** Pertains to groundwater or things associated with groundwater, such as wells, where water under pressure will rise to a higher elevation if allowed to do so.
- AUGMENTED FLOW:** The increased volume of water entering a channel or permitted to flow overland from the diversion of surface flow of water from another stream or watershed or from waters withdrawn or collected upstream and then released after use.
- AVULSION:** A sudden change in a channel course that occurs when a stream breaks from its banks usually during a flooding event.
- BACKWATER:** Water backed up or retarded relative to natural flow conditions due to obstructions in the channel such as structures or another stream at a higher stage.
- BASIN:** A natural or artificially created space or structure on the surface or underground, which exhibits a shape and character of confining material that enables the holding of water.
- BASIN, DETENTION:** A stormwater management facility that temporarily stores run-off, discharging flow through an outlet structure, designed to attenuate peak flow volume.
- BERM:** A horizontal strip or shelf built on or cut into an embankment to break the continuity of a long slope, usually to reduce erosion or increase the size of the embankment.

Glossary of Common Drainage Terms

CATCHMENT AREA: The intake area of an aquifer and all adjacent areas that contribute surface water to that area or the area tributary to a lake, stream, sewer, or drain. Also called a catchment basin.

CHANNEL: A natural or artificial waterway where a stream of water flows periodically or continuously or forms a connecting link between bodies of water. Also a conduit such as a pipe that conveys water.

CHECK DAM: A relatively low, fixed dam or weir across a drainage channel to retard or divert flow from a channel, ditch, or canal, generally for the purpose of reducing erosion and scour.

CIVIL LAW: The system of jurisprudence established by a nation or state to regulate ordinary private matters. Civil laws regarding the management of naturally occurring waters establish the rights or easements, favorable and restrictive, of riparian owners individually and with respect to others. Generally are directed toward equitable use and continuation of natural drainage conditions.

CIVIL LAW DOCTRINE OR RULE: A rule of law pertaining to the disposal of drainage waters, under which the owner of higher ground has the right or easement to dispose of surplus or excess waters to the lower lands, unobstructed by the downstream owners.

CODE OF FEDERAL REGULATION (CFR): Federal regulations currently in force, codified, and published at least annually. The CFR is kept current by the *Federal Register*.

COMMON ENEMY DOCTRINE OR RULE: A common law precept recognized in some states holding that surplus or excess waters are a “common enemy” from which a land owner has a right to protect property without regard to harm possibly caused to others.

COMMON LAW: A body of unwritten law based on long-standing usages and customs. Court deci-

sions and decrees may recognize, affirm, and enforce these customs and usages.

COMPLAINT: A written statement that is filed with a court and that asks for relief from some injustice described in the complaint. The filing of a complaint formally initiates a lawsuit.

CONDENSATION: The process whereby a substance changes from a vaporous state to a liquid or solid.

CONFINED AQUIFER: An aquifer which is surrounded by formations of less permeable or impermeable materials.

CONTAMINATION: The introduction of microorganisms, chemicals, or wastewater in such concentrations that water is made unfit for use.

CONTOUR: A line of equal elevation above a specified level.

CONVERTED WETLAND: Wetland that has been drained, dredged, filled, leveled, or otherwise manipulated (including any activity that results in impairing or reducing the flow, circulation, or reach of water) for making the production of an agriculture commodity possible, if production would not have been possible but for this action, and before this action the land was wetland, and neither highly erodible land nor highly erodible cropland.

The term converted wetland does not apply if production of an agricultural commodity on the land during a crop year is possible as a result of a natural condition, such as drought, and is not assisted by an action of the producer that destroys natural wetland characteristics.

COST-BENEFIT RATIO: The ratio of the costs of a regulatory action or engineering improvement to the economic value of the benefits achieved.

COVER: The vertical thickness of soil above the crown of a tile, pipe, or culvert.

CULVERT: A closed conduit or structure used to convey surface drainage through an embankment such as a roadway. In highway usage, a culvert has a span less than 20 feet.

DAM: A barrier constructed across a waterway to confine or raise water for storage or diversion.

DEBRIS: Material transported by a stream either floating or submerged such as logs, brush, suspended sediment, or trash that may lodge against or plug a structure.

DEGRADATION: General and progressive lowering of the profile of a stream, channel or earth surface due to long term erosion or scour.

DEPLETION: The continued withdrawal of water from a stream, groundwater, or reservoir at a rate greater than the replacement rate.

DESIGN DISCHARGE: The maximum rate of flow for which a drainage facility is designed and expected to accommodate.

DETENTION DAM: A generally small dam constructed to temporarily retard or impound surface water.

DIKE: An impermeable linear structure for the containment of over-bank flow. Dikes are similar to levees, but generally much shorter.

DITCH: An artificial open channel or waterway constructed through earth or rock to convey water. A ditch is generally smaller than a canal.

DIVERSION: The taking of water from a stream or other body of surface water into a canal, pipeline, or other conduit.

DOMINANT OWNER OR PROPERTY: In terms of drainage, dominant refers to that land which is situated at a higher elevation than adjacent, contiguous property. Water would naturally flow from the higher or dominant land to lower or servient property.

DRAIN: A ditch and any watercourse or conduit, whether open, covered, or enclosed, natural or artificial, or partly natural and partly artificial, by which waters coming or falling upon a property are carried away.

DRAINAGE: Four definitions may be used: 1) The process of removing surplus groundwater or surface waters by gravity or pumping; 2) The manner in which the waters from an area are removed; 3) The area from which waters are drained; 4) The flow of all liquids under the force of gravity.

DRAINAGE AREA: Many definitions could be used. Common usage would be an area of land confined by drainage divides or boundaries, usually with only one outlet, expressed in acres, square miles, or other units of measure.

DRAINAGE DISTRICT: An organization created and operating under statutory authority for the purpose of financing, constructing, and operating a drainage system. Also can refer to the area of land within the boundaries of an established drainage district.

DRAINAGE STRUCTURES: Structures other than drains, levees, and pumping plants intended to promote or aid drainage. Such structures may be independent from other drainage work or may be a part of or incidental to it. The term includes, but is not restricted to, catch basins, bulkheads, spillways, flumes, drop boxes, pipe outlets, junction boxes, and structures whose primary purpose is to prevent the erosion of soil into a district drain.

DRAINAGE SYSTEM: A system of drains, drainage structures, levees, and pumping plants that drains land or protects it from overflow.

DRAWDOWN: The magnitude of change in surface elevation of a body of water as a result of withdrawal of water. Drawdown could refer to a well or groundwater.

Glossary of Common Drainage Terms

DREDGING: The removal of sediment or deposited material, generally in a body of water.

EASEMENT: An acquired right to cross or use another's property in some prescribed manner.

EFFLUENT: A liquid which flows from a process or confined space. Could be wastewater or other liquid, in the natural state, partially or completely treated, flowing from a reservoir, basin, or treatment plant. Also, an outflowing branch of a main stream or lake.

EMINENT DOMAIN: In law, the right of a government agency to take or authorize the taking of private property for public use, with just compensation provided to the owner.

ENJOIN: To direct a person or agency to desist in a certain activity or to perform a certain act, through the use of a court order or injunction.

EPHEMERAL STREAM: A stream that does not flow continuously for most of the year, generally flowing in response to precipitation, not springs or groundwater.

EQUALIZER: A culvert, pipe, or opening placed to balance water head and elevation on both sides of an embankment and reduce possible seepage flow.

EROSION: The wearing away or eroding of material on the land surface or along channel banks by wind, flowing water, or wave action.

EVAPORATION: The process by which water becomes vapor or the quantity of water that is evaporated.

FEEDLOT WASTES: Solid or liquid wastes from concentrated animal feeding operations.

FEDERAL REGISTER: A daily publication of the federal government making federal regulations, legal notices, presidential proclamations, executive orders, etc. known to the public as they are proposed and subsequently issued.

FIXED GROUNDWATER: Water in saturated rocks so fine grained that the water is assumed to be permanently attached to the rock particles.

FLAP GATE: A gate that opens and closes by rotation around hinges at the top of the gate. Flap gates are used to contain undesirable back flow during flood events.

FLOOD: A relatively high flow as measured by either gage height or discharge quantity.

FLOOD FREQUENCY: The average time interval, in years, in which a given storm or volume of flow in a stream will be exceeded, i.e., one hundred-year flood.

FLOODPLAIN: A nearly flat, alluvial lowland bordering a stream and commonly formed by stream process, that is subject to inundation by flooding.

GABION: A rectangular basket made of steel wire fabric or mesh that is filled with rock or similar material of suitable size and gradation. Gabions are used for bank protection, flow control structures, dikes, etc. Also called a pannier.

GROUNDWATER: Subsurface water that is in the zone of saturation, from which wells, springs, and groundwater run-off are supplied. Sometimes called phreatic water.

HEAD: The height of the free surface of fluid above any point of reference in a hydraulic system or a measure of force or pressure exerted by the fluid.

HYDRATION: The chemical process of combining of water with other substances.

HYDRIC SOIL: Soil that, in undrained condition, is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that support the growth and regeneration of hydrophytic vegetation.

HYDROLOGY: The applied science concerned with the waters of the earth in all possible states, occur-

- rence, distribution, and circulation through the unending cycle of precipitation, runoff, stream-flow, infiltration, storage, evaporation, and re-precipitation. Hydrology is concerned with the physical, chemical, and physiological reactions of water with the earth and life thereon.
- HYDROPHYTIC VEGETATION:** Plants growing in water or in a substrate that is at least periodically deficient in oxygen as a result of excessive water content.
- IMPERVIOUS:** Not allowing, or allowing only with great difficulty, the movement of water through a substance; impermeable.
- IMPOUNDMENT:** A pond, lake, tank, basin, or other space, natural or created which is used for the storage, regulation, and control of water.
- IMPROVEMENT:** As related to drainage, an improvement is a project that will enlarge, expand, or otherwise increase the capacity of an existing drainage facility. Adding drainage accommodations to an existing facility would also be considered an improvement.
- INDUSTRIAL WASTE:** Generally the liquid, solid, or gaseous wastes originating from the manufacture of specific products.
- INFILTRATION RATE:** The rate at which water enters the soil under given conditions, usually expressed in inches per hour, feet per day, or cubic feet per second.
- INJUNCTION:** A legal writ or command issued by a court and directed to a particular person or corporation, requiring that the person or corporation do or refrain from doing certain acts.
- INVERTED SIPHON:** (Sometimes called a depressed sewer or sag culvert, not a true siphon). A structure, generally a length of pipe, made to pass under an obstruction in such a manner that a concavity in the flow line results. The inlet and outlet of a sag culvert are at a higher elevation than a mid point flow line. Flow through an inverted siphon occurs under pressure, with a flow velocity in excess of 3 ft/sec needed to keep particles in suspension. May be problematic where drainage is subject to freezing.
- INVERSE CONDEMNATION:** A legal action brought by a land owner generally against a public agency alleging damages to property from an improvement that may not have been fully compensated through an earlier agreement or condemnation. These actions provided a means of obtaining compensation where governmental agencies maintained sovereign immunity.
- JETTY:** An obstruction consisting of piling, rock or other material extending into a stream or river in induce scour and bank building or to retard erosion.
- LAND USE:** A term that relates to both the physical characteristics of the land surface and the associated human activities thereon. Type of land use can affect the amount and character of runoff and erosion.
- LANDOWNER OR OWNER:** The owner of a real property. This term refers to an owner of an undivided interest, a life tenant, a remainderman, or a trustee under an active trust, but not to a mortgagee, a trustee under a trust deed in the nature of a mortgage, a lien holder, or a lessee.
- LEGAL LIABILITY:** Liability between litigants recognized and enforced by the courts.
- LEVEE:** An embankment generally constructed along the top bank of a stream to confine flow during high water periods.
- LIABLE:** Subject to civil action against or for redress from infringement of private rights.
- LITHOSPHERE:** That portion of the earth which is composed predominantly of rocks, together with everything in this rocky crust.

Glossary of Common Drainage Terms

MEANDER: The changes in direction and winding of flow, usually in an alluvial channel that is sinuous or winding in character.

MUNICIPAL WASTE: The untreated wastewater entering a municipal treatment plant. Also liquid or solid wastes originating from domestic, industrial, or commercial sources.

NATURAL DRAINAGE DOCTRINE OR RULE: A precept in civil law that deals with the management and use of naturally occurring waters, based on the preservation and continuation of natural drainage systems and run-off conditions.

NATURAL FLOW: The flow of a stream or river as it occurs under natural, not regulated conditions.

OPEN CHANNEL: Any natural or artificial waterway or conduit in which water flows with a free surface.

ORGANIC: Refers to volatile, combustible, and sometimes biodegradable chemical compounds containing carbon atoms bonded together and with other elements.

OUTFALL SEWER: A sewer that receives wastewater from a collection system or from a treatment plant and conveys it to a point of final discharge.

OUTLET: Downstream opening or discharge end of a pipe, culvert, ditch, or canal.

PERCHED GROUNDWATER: Groundwater separated from underlying layers by an unsaturated zone which exhibits such low permeability that downward percolation is severely hampered or nonexistent.

PERCOLATING WATER: Water passing through the ground beneath the surface of the earth without any definite channel and not part of a body or flow of any surface or underground water course.

PERENNIAL STREAM: A stream that flows continuously for all or most of the year, generally fed by groundwater.

PERMEABILITY: The property of a material that permits through movement of water when saturated and actuated by hydrostatic pressure.

pH: A measure of the hydrogen ion content of a solution, low pH (< 7.0) indicates an acidic condition, high pH (>7.0) indicates alkalinity.

PHREATIC: Pertaining to that layer of soil or rock through which water may enter wells or from which springs and seeps emerge.

PIEZOMETER: An instrument for measuring pressure head in a conduit, tank, or soil.

PILE: A long, slender stake or structural element of timber, steel, or concrete which is driven, jetted, or otherwise embedded to support a structure or compact the soil.

POLLUTION: A specific impairment of water quality by agricultural, domestic, or industrial wastes to a degree that has an adverse effect upon the beneficial use of the water.

PRECIPITATION: The total measurable supply of water received directly as rain, hail, snow, or sleet, usually measured as depth per period of time. Also the process whereby atmospheric moisture is discharged onto land or water surfaces.

PRESCRIPTION: Acquirement of a title or right through open and continuous use or actual possession over a legally recognized period of time.

PRESCRIPTIVE DRAINAGE EASEMENT: A prescriptive right that has been established through a long, uninterrupted, and undisputed use of a drainage facility or channel; the free or unencumbered use of a drainage facility for drainage or other purposes for a period of 10 years or more. Prescriptive rights only apply to private ownership, not public.

QUICKSAND: Sand that has lost grain-to-grain contact by the buoyancy effect of water flowing upward

- through the voids. This represents a condition, not a type of material.
- QUORUM:** A majority of those entitled to act. An official board cannot do business unless a quorum is present.
- RAINFALL:** Precipitation generally in the form of water. The amount of rain, usually expressed in inches over an area, that reaches the surface of the earth.
- REASONABLE USE DOCTRINE OR RULE:** A rule used in some jurisdictions where a riparian owner, acting in good faith for a legitimate purpose, may use and/or alter the natural flow of water from his/her land without liability to other owners. Reasonable care must be taken to avoid unnecessary injury or hindrance to the downstream land.
- REMONSTRANCE:** A representation by one or a group of citizens to a governmental body intended to demonstrate why a contemplated action should not be undertaken.
- REPAIR:** As relating to drainage, a repair is an action that will maintain or restore a drainage facility to original efficiency or capacity.
- RESERVIOR:** A pond, lake, tank basin, or other space, natural or created, which is used for the storage, regulation, and control of water for recreation, power, flood control, or consumption.
- RETENTION:** That part of precipitation falling on a drainage area which does not escape as surface stream-flow during a given period. It represents the difference between total precipitation and total runoff during that period, including evaporation, transpiration, leakage, and infiltration.
- RIGHT-OF-WAY:** A general term describing land, property, or interests acquired for roadway purposes.
- RILL:** A very small stream, also called a rivulet or streamlet.
- RIPARIAN:** Pertains to anything connected with or adjacent to the banks of a stream or other body of water.
- RIPARIAN DOCTRINE OR RULE:** A precept holding that the owner of adjacent property to a surface body of water has the first right to withdraw and use that water. This rule may be superceded by state statutes.
- RIPARIAN OWNER:** A property owner who owns those banks of a river, stream, or other body of water.
- RIPARIAN RIGHTS:** The rights of owners of lands along a watercourse, relating to such issues as water, use thereof, the soil below the stream, and accretions.
- RIPRAP:** Stones, masonry, or similar man-made materials such as broken concrete placed along the banks and bed of rivers, streams, or other bodies of water to protect against erosion.
- RULE OF LAW:** A legal principle of general application and sanctioned by the recognition of authorities and usually expressed as a maxim or logical proposition.
- RUNOFF:** That portion of precipitation that flows off the surface of a drainage area after accounting for all abstractions, such as interception, evaporation, infiltration, and surface storage.
- SANITARY WASTEWATER:** Domestic wastewater with storm and surface water excluded, discharged from sanitary conveniences in dwellings, office buildings, industry, and institutions. Also the water supply of a community after use and discharge into a sewer.
- SATURATED SOIL:** Soil that has all pores or void spaces filled with water to the point that run-off occurs.
- SCOUR:** The displacement and removal of channel bed material due to flowing water, usually localized as compared with general bed degradation.

Glossary of Common Drainage Terms

SEDIMENTATION: The deposit of soil particles that have been carried by flooding or other moving waters, not to be confused with silting. Usually occurs due to a decrease in velocity of flow below that which permits transport of suspended materials.

SEEP: A more or less poorly defined area where water oozes from the earth in small quantities.

SEMI-PERCHED WATER: Groundwater that has a greater pressure head than an underlying body of groundwater, from which it is not completely separated hydraulically.

SERVIENT OWNER OR PROPERTY: As related to drainage, servient refers to land that is situated at a lower elevation than adjacent, contiguous property. Water would naturally flow from higher or dominant land onto lower or servient property.

SEWAGE: Household and commercial wastewater that contains human waste.

SEWER: A pipe or conduit that carries wastewater or drainage water.

SILT: Material passing the No. 200 (0.074 mm) U.S. Standard Sieve that is non-plastic or only slightly plastic and exhibits little or no strength when air dried.

SIPHON: A closed conduit, a portion of which lies above the hydraulic grade line, resulting in a pressure less than atmospheric, and requiring a vacuum within the conduit to initiate flow.

SLOUGH: A small, sometimes muddy marshland often connected at both ends to the parent body of water.

SPILLWAY: A waterway in or about a dam or other hydraulic structure for the passage of excess water.

SPRING: A surface where, without human action, water issues from a rock or soil onto the land or into a

body of water, with the place of issuance being relatively restricted in size.

STANDPIPE: A pipe or tank connected to a closed conduit and extending to or above the hydraulic grade line of that conduit. Often installed to afford relief from surges of pressure in pipelines.

STATUTORY LAW: Law established by a legislative body and set forth in a formal document. In specific application, law implies prescription and enforcement by the ruling authority.

STORAGE: The long-term impounding of water, either in surface or in underground reservoirs, for future use.

STORMWATER: Surface water from rain, snow, or ice melting and flowing off the surface of a drainage area. It is normally collected in sewers, separate from sanitary sewers and discharged with little or no treatment.

STORMWATER RUNOFF: That portion of the rainfall over a given area which finds its way into natural or manmade drainage channels.

STREAM: A course of running water usually flowing in a particular direction in a definite channel and discharging into some other stream or body of water.

STATUTORY LAW: Law established by a legislative body and set forth in a formal document. In specific application, law implies prescription and enforcement by the ruling authority.

SUBDRAIN: A drain constructed beneath a lined conduit such as a sewer, storm drain, canal, or other structure such as a roadway. The purpose of a subdrain is to intercept and collect groundwater to avoid damage to the structure.

SURFACE DRAINAGE: The removal of surplus or excess surface water collecting on land, accomplished by natural or artificial means.

TERRACE: A flat, level, or nearly level area of land bounded on at least one side by a definite steep slope rising upward and on the other sides by downward slopes.

TILE DRAINAGE: The removal of surplus groundwater by means of buried pipes, with water entering through unsealed joints, perforations, or through surface inlets.

TORT: A private or civil wrong committed against a person or property independent of a contract. Elements of a tort action are legal duty of defendant to plaintiff, a breach of that duty, and damage as a result.

TREATED WATER: Water which has been subjected to a treatment process.

WASTEWATER: Spent or used water from communities, industries, or private residences which contain dissolved or suspended matter. From a legal aspect, water that is not needed or which has been used and is permitted to discharge, or which unavoidably escapes from ditches, canals, or other conduits, or reservoirs of the lawful owners of such structures.

WATER DISTRICT: An organization, created and operating under statute, for the purpose of financing, constructing, and operating a water supply. Also, the land or area within the boundaries of a water district, possibly embracing one or more political subdivisions.

WATER DRAINAGE RIGHTS: The right of a land owner to dispose of excess or surplus water that accumulates on his/her land, over the land of others.

WATER QUALITY: The chemical, physical, and biological characteristics of water with respect to its suitability for a particular purpose.

WATER RIGHT: An adjudication of waters, usually by a public agency, to a specified user for a beneficial purpose.

WATERSHED: The catchment area for rainfall that is delineated as the drainage area producing run-off. Generally considered as the area contained within a divide above a specified point on a stream.

WATER TABLE: The upper level of a zone of saturation in the earth, except where that surface is formed by an impermeable body (see perched ground water).

WEIR: A small dam across a channel for the purpose of diverting flow, measuring volume of flow, or reducing erosion.

WELL: An artificial excavation that derives water from the interstices of the rocks or soil penetrated.

WELL CONE OF INFLUENCE: The depression, roughly conical in shape, produced in a water table or other piezometric surface by the extraction of water from a well at a given rate. The volume of the cone will vary with the rate and duration of withdrawal of water.

WETLAND: Generally an area that has a predominance of hydric soils and is inundated or saturated by surface or ground water at a frequency or for a duration that supports hydrophytic vegetation, typically adapted to those conditions. Wetland includes swamps, bogs, marshes, and similar areas.

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11. Appendix A: Sample Documents

APPENDIX A: SAMPLE DOCUMENTS

Drainage and tile policies	2
Petition for drainage district	9
Request for drainage repairs	13
Notice of assessment	15
Work in ROW applications and permits	16
City stormwater utility user fees	25
Resolution to establish wetland	26

Motion By: _____ Seconded By: _____

To adopt the following resolution as policy for Kossuth County, Iowa.

TILE CROSSING POLICY FOR KOSSUTH COUNTY, IOWA

Be it resolved by the Board of Supervisors of Kossuth County, Iowa, to adopt the following tile crossing policy for Kossuth County, Iowa.

The Kossuth County Board of Supervisors desires to adopt a road crossing policy that includes an option which will expedite procedures relating to projecting a tile line across a public highway to a suitable outlet.

Therefore, be it resolved and enacted by the Kossuth County Board of Supervisors that Kossuth County, Iowa, agrees to pay for the cost of materials used to cross the road right-of-way installed to Kossuth County's specifications and Kossuth County, Iowa, will pay Seventy-five Dollars (\$75.00) to offset against the expense to cut across a gravel road and One Hundred Fifty Dollars (\$150.00) to offset against the expense to bore under a paved surface road all as approved by the Kossuth County Engineer.

If a landowner chooses not to be bound by the above policy, then, the procedures for securing such crossing shall be in accordance with applicable sections of the 1995 Code of Iowa 468.600 through 468.622.

A summary of those procedures is shown below:

1. File application in writing with the Kossuth County Auditor and provide that information required by Iowa Code Chapter 468.600.
2. A public hearing shall be set by the Kossuth County Auditor pursuant to Iowa Code Chapter 468.601.
3. File claims for damages at or before hearing pursuant to Chapter 468.604 of the Code of Iowa.
4. A public hearing shall be held in compliance with Iowa Code Section 468.605. If the Board of Supervisors find that the purpose is to secure more complete drainage or a better outlet and the levee, open ditch, tile or other underground drain is found to be beneficial it will be approved. If the Board of Supervisors find that a proposed drain runs in the course of natural drainage to a public road the owner of such land shall have the right to enter upon such highway for the purpose of connecting

owners drain or ditch with any drain or ditch constructed along or across said road.

5. If the supervisors approve the merits of the application Iowa Code Section 468.606 shall be followed.

The landowner, however, in making such connections or crossings shall do so in accordance with specification furnished by the Secondary Road Department at the time of filing a crossing application.

6. If the Board of Supervisors approve the tile line to be projected across the right-of-way to a suitable outlet, the expense, of both material and labor used in installing the tile line across the highway and any subsequent repair thereof shall be paid from funds available for the highway affected.

7. If funds are not available in the Kossuth County Secondary Road Fund for reimbursement of the applicant for the cost of said tile crossing at the time of the construction of the crossing, it is understood that the applicant will be reimbursed at such time as funds are available in the Kossuth County Secondary Road Fund. It is further understood that said reimbursements will be made in chronological order of approved and completed crossing.

8. The Kossuth County Board of Supervisors reserves the right to negotiate any type of cost sharing arrangement with the applicant.

**CLINTON COUNTY
SECONDARY ROAD DEPARTMENT
POLICY AND PROCEDURES
FOR DITCH CLEANING AND TILE CROSSINGS**

GENERAL: The County Engineer and the County Board of Supervisors deem this work important as a means of maintaining proper roadside drainage. Ditch cleaning work is a priority for the Clinton County Secondary Road Department and will be done only within the limits of the county budget. The county will not spend funds in excess of its budget unless the Clinton County Board of Supervisors dispenses additional funds.

SCOPE: The purpose of this policy is to establish the manner in which the county will perform ditch cleaning and road improvement work. This policy will set forth the manner in which the county will implement ditch-cleaning projects, the manner in which ditch cleaning can be requested, use of the excavated material, complaint handling, and public relations. The program will also address prevention of farming within the right-of-way and processing of requests for house and tile drain outlets.

PROCEDURES: Each year priority sites will be selected by the County Engineer and staff for participation in the ditch cleaning program. Projects that directly affect roadway frost heave and projects where landowners are attempting to stem soil erosion are given additional consideration and a higher priority for ditch cleaning.

Additional ditch cleaning work will still be done based on the needs of the County Secondary Road Department outside of this program. Ditch cleaning work may also be done as the site coordinates with the needs of the county for road or driveway fill and ditch cleaning at the site would be appropriate and to the advantage of the roads.

- A) Requests for work: Requests for participation in the county ditch cleaning program may come from secondary road staff, county board members, land owners, tenants, and soil conservation staff. The sites will all be reviewed by the County Engineer and Secondary Road staff and, may be prioritized by the Department.
- B) Project site selection: Sites will be prioritized, selected and placed on the ditch cleaning list for ditch cleaning based on the following criteria.
 - 1. Drainage problems on site are causing road problems adjacent to the filled ditch. The plugged or filled ditch may be failing to drain resulting in water ponding adjacent to the road base. This moisture may contribute to frost boils and soft spots developing in the road during the spring thaw or other rainy periods. Due to road safety concerns, these sites are first priority.
 - 2. Drainage problems on site are damaging tile or adjacent waterways or tile on upstream properties.
 - 3. Ditch cleaning requests by property owners where poor ditch drainage is not contributing to drainage problems on the road.

4. The order in which the ditch cleaning requests were received.
5. Property owners may hire private contractors to perform ditch-cleaning work on ditches adjacent to their property. The owner must first obtain a work in ROW permit from the Clinton County Secondary Roads Department prior to completing any work. The limits of excavation shall be set in the permit and the work will be inspected during cleaning operations. Any nonconforming work shall be repaired at the direction of the Clinton County Secondary Roads Department at the owner's expense. Excavation of the foreslope will not be allowed. The owner/contractor shall be responsible for cost of completing the work, utility company notification, traffic control and disposal of material. Road closure and operation of excavation equipment on county roads is not allowed.

PRIORITY USES OF CLEANED MATERIAL

Soil removed from ditches in the course of ditch cleaning will be used to best meet the needs of Clinton County. One of the goals of this program is to retain soil on the original property and work with the property owners to avoid and prevent erosion. The cost of cleanup is fully born by the taxpayers of Clinton County and the material excavated will be used for the best interest of the county as determined by the County Engineer and the Secondary Road Department staff. Consideration for use of the excavated material will be as follows:

1. First Priority: Clinton County Secondary Road needs for use of soil excavated from the ditches for driveway construction and widening, road grade building, and other construction and road related purposes. Requests for excavated soil by all others will only be considered after Secondary Road needs are met.
2. Second Priority: Adjacent landowners will be offered material excavated from ditches. The material will be deposited at a location easily accessible to the secondary road equipment – priority will be given to casting into fields adjacent to ditches. Responsibility for placing the material in its final location and any rough grading necessary will be by the property owner. County crews will level material cast into adjacent fields if requested by the property owner. Property owners are encouraged to use the material in areas that promote the conservation of soil. The property owner, tenant, or contractor of the property owner will be responsible to be present to shape and compact the material in a timely manner so that the deposited soil does not become a hazard to traffic or an additional erosion problem. County crews will deposit the material only; they will not shape and/or construct earth structures.

3. Third Priority: Landowners within five miles of ditch. Priority will be given to persons requesting material with the minimum haul from the ditch-cleaning site. For example, a person one mile away from the ditch cleaning site will get material before someone five miles away from the project site. Material to be hauled over five miles must have the approval of the County Engineer. Unless the sub-foreman determines it to be the most efficient, no consideration will be given to giving equal shares of soil to parties requesting material. The prime consideration will be assuring the efficiency and speed of the ditch cleaning operation. The county crew will deposit the material only; they will not shape final material. Material cannot be used to redirect water flow on to adjacent property.
4. Final Priority: Sub-foremen may direct the final load of any county truck returning to its respective sheds to dispose load between ditch and shed at convenient location requested by landowners.

COMPLAINTS BY LANDOWNERS ON UPSTREAM SOIL LOSS

Complaints of upstream soil loss and deposition on downstream property by private property owners will be directed to the Clinton County Soil and Water Conservation District (SWCD). The county shall, if soil deposition is excessive within the county right-of-way, file official written complaint with the SWCD on its own behalf. The site will be reviewed by the County Engineer and, at their option, the Board of Supervisors, prior to filing of an official complaint with the SWCD.

DITCH FILLING FOR LANDSCAPING

Clinton County does not require property owners mow the right-of-way area adjacent to their property. Landowners desiring to do so will not be prohibited from mowing the right-of-way unless the right-of-way area is designated prairie-planting area. If property owners desire to flatten a backslope to allow mowing, the property owner must **make a request to the Clinton County Secondary Roads Department. The request will be reviewed in accordance with the Roadside Ditch Alteration Policy.** Secondary road department staff will review the site to see if the desired alteration can be permitted. Clinton County does not allow ditch-filling projects if the construction will restrict the natural flow of water, restrict planned ditch drainage or eliminate needed areas for snow removal storage. The final work must meet all design standards for the road classification.

TILE OUTLETS

Placement of tile outlets **into** the county right-of-way is allowable. Persons desiring to outlet field tiles into county ditches must obtain a permit from the county engineer's office. Prior to issuance of a permit, county maintenance staff will review the desired outlet location. There is no charge for the permit or review. Following issuance of the permit, the landowner may have the work completed. The county maintenance superintendent will be contacted at the completion of the work to ensure that the work was completed adequately and the ditch, backslope and road embankment have not been damaged by the contractor's work. The contractor will restore and re-seed all disturbed areas to avoid erosion damage. **Repair work requested by the county not completed by the landowner and/or his contractor will be** completed by county crews and billed to the landowner.

TILE CROSSINGS

All requests to have underground field tile crossings installed through the county right-of-way must be directed to the county engineer's office for a permit and standards for installation. The contractor shall coordinate field installation with the county maintenance crews and local utility companies. The county will furnish and install material necessary to complete tile crossing as their schedule allows. The county will not be responsible for material or contract labor completed adjacent to county right-of-way, that which is part of drainage districts, or work performed at the direction of the landowners with or without County Engineer approval. Cost for newly permitted and approved tile installations and roadway restoration shall be borne by the County. After initial construction tile repair work costs shall be borne by the County including any road repairs that are associated with the tile repair.

The landowner may employ a private contractor to construct a tile outlet or crossing at the property owner's expense. The permit and approval process shall be the same. The landowner is responsible for ensuring that all work complies with wetland legislation as determined by the Natural Resources Conservation Service and/or the Corps of Engineers. Clinton County will not review or coordinate these activities on the landowner's behalf. Construction that results in the ponding of water in county right-of-way is not allowed. Permit is required before beginning work. Secondary road staff will inspect the work and any work not meeting the county requirements will be removed and replaced at the owner's expense. The owner is responsible for utility location for the private contractor. The County will provide traffic control.

Schedule 40 PVC pipe or equivalent shall be used for all crossings. Drop inlets or risers **are required five feet inside ROW lines.** Any material or labor to be billed to the county must be pre-approved in writing and separate from any billing for other work completed. Private individuals installing the tile must have an approved permit and notify the county 48 hours in advance of tile crossing installation, and will be reimbursed for material and labor costs only. The county will provide any rock necessary to restore the condition of the road surface after new installations. The contractor or landowner is to notify the county per the permit terms to allow county maintenance staff to inspect the finished crossing for conformance with county standards **before pipe backfilling and after work is complete.**

SEPTIC SYSTEMS – NUISANCE COMPLAINTS & HOUSE DRAIN OUTLETS

If a septic system is noted in an area requiring ditch cleaning, and the septic system outlet is determined to be causing a health and safety hazard for personnel attempting to do ditch cleaning, the area will be bypassed for ditch cleaning and the septic tank outlet location will be passed on to the county environmentalist's office for attention and upgrading.

House drain outlets into the road right-of-way are allowed as long as the drain only carries gutter rainwater, foundation drains, or non-septic floor drains. House drains determined to be a nuisance, due to the out letting of soapy or suspect water will be reported to the county health department office for investigation.

FARMING IN THE COUNTY RIGHT-OF-WAY

Cultivating farm crops within the right-of-way leads to possible degradation of the ditch bottom and increased erosion. Farm crops within the right-of-way are not conducive to soil conservation or proper roadside drainage. Farming of the right-of-way is not permitted under the county's permanent easement for road purposes and need not be allowed. This is not intended to prevent haying of the roadside, which is expressly allowed by the Code of Iowa, but only prevent the cultivation of the right-of-way leading to the encroachment of and eventual loss of the county road ditch.

If it is observed that a property owner or their tenants till the ground and plant crops within the county right-of-way, the landowner will be sent notice by certified mail upon the observation of tilling into the ditch to cease planting in the right-of-way. The property owner will be asked to restore and reseed the area affected. The county will, at the request of the landowner, delineate the approximate right-of-way line by placing ROW stakes on the right-of-way line for the reference of the property owner. If the right-of-way is not restored, the county will, without notice, mow the crop, restore the ditch and backslope to the outside of the right-of-way and bill the landowner for the cost of the restorative work. If the bill is not paid, the cost of restorative work will be placed as a tax lien upon the landowner's property.

APPROVED BY THE CLINTON COUNTY BOARD OF SUPERVISORS

David T. Anthony, P.E. & L.S.
County Engineer
Dorothy M. VanMeter
Secretary

OFFICE OF
BOONE COUNTY ENGINEER
COURT HOUSE
TELEPHONE: 515 / 432-6321
BOONE, IOWA 50036

Charles Musser
Asst. to Co. Engr.
Charles Westberg
Asst. to Co. Engr.
Robert Kieffer, E.I.T. & L.S.I.T.
Asst. to Co. Engr.

Dear

A petition has been presented to the Boone County Board of Supervisors, as Trustees for Boone County Drainage District No. _____, requesting that an investigation be conducted and repairs be made (i.e. open ditch cleanout) as soon as possible. This proposed ditch cleanout would extend beyond the current drainage district boundary and your property may be involved.

Pursuant to the 1990 Farm Bill each property owner that may be affected must fill out the Form No. 1026 at the Boone County A. S. C. Office, located in Boone on U. S. Highway 30, prior to the time that any further work may proceed in this matter. The S. C. S. Office will then make a technical determination as to the impacts this project may have on the designated wetland areas and if the project will be allowed.

Please fill this form out as soon as possible to expedite this project.

Sincerely,

David T. Anthony, P. E. & L. S.
Boone County Engineer

DTA/dvm

DRAINAGE DISTRICT PETITION

The undersigned hereby petition the Boone County Drainage District Trustees for the improvement of the following problem in Drainage District Number 177 in Yell Township.

Return this form to the Boone County Auditor.

Problem:

Allow petitioner to modify existing outlet of said DD #177

PETITIONERS SIGNATURES

NAME	OWNER TENANT	LOCATION OF LAND OWNED OR FARMED
------	-----------------	-------------------------------------

(Additional names may be placed on back of this form)

Date received by the Boone County Auditor _____

Date received by the Boone County Drainage district Trustees _____

Action Recommended:

PRELIMINARY DRAINAGE BOND

STATE OF IOWA, _____ COUNTY, SS.

KNOW ALL MEN BY THESE PRESENTS:

That we, _____
 _____ of the County of _____ and
 State of Iowa, are held and firmly bound unto the County of _____, in the sum of _____ DOLLARS
 for the payment of which well and truly to be made, we bind ourselves, our heirs, executors, administrators, and every
 one of them, firmly by these presents.

THE CONDITION of the above obligation is such, that whereas _____

 has this day made application by petition to the _____
 of said County, to appoint an engineer to examine and survey _____
 _____ and take the necessary steps to drain said lands.

Now if the said _____
 shall pay all costs and expenses that may be adjudged against them by the Board of Supervisors in accordance with the
 statute in such case made and provided, then this obligation to be void, otherwise to be and remain in full force and ef-
 fect.

WITNESS our hands, this _____ day of _____, A. D., 19____.

STATE OF IOWA, _____ COUNTY, ss.

I do solemnly swear that I am a resident and freeholder of the State of Iowa, and have property in said State beyond
 the amount of my debts in the sum of _____ DOLLARS
 and have property in this State exempt from execution equal to the sum of _____
 _____ DOLLARS.

I do solemnly swear that I am a resident and freeholder of the State of Iowa, and have property in said State beyond
 the amount of my debts in the sum of _____ DOLLARS
 and have property in this State exempt from execution equal to the sum of _____
 _____ DOLLARS.

Subscribed and sworn to by _____, before me, this
 _____ day of _____, A. D., 19____.

The above bond and sureties approved this _____ day of _____, A. D., 19____.

_____, Auditor
 By _____, Deputy

No. _____	Drainage Petition and Bond	Road _____	Filed this _____ day of _____, 19____	Auditor _____	Deputy _____
<p><small>SECTION 455.7. NUMBER OF PETITIONERS REQUIRED</small> The number of petitioners required in the petition described in Section 455.6 is one. The petition for the establishment of a levee or drainage district, including a district which involves only the straightening of a creek or river, if the owners of the land affected by the proposed improvement may petition for such sub-district.</p>					

REQUEST FOR DRAINAGE REPAIRS

DATE _____ 20__

TO THE BOARD OF SUPERVISORS OF BOONE COUNTY, IOWA:

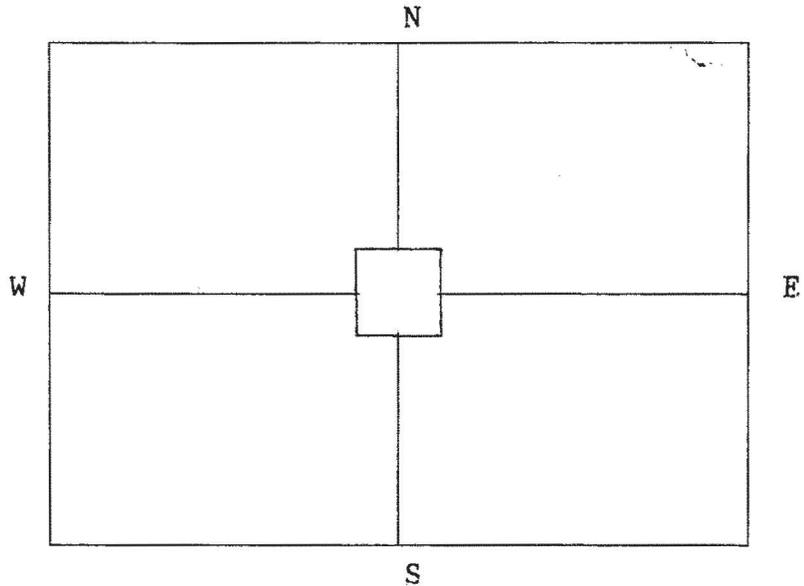
Gentlemen: We (I) hereby request that repairs be made on Drainage District

Number _____, at approximately the following

location: Section _____ Township _____ Range _____

Owner of Property: _____

Problem: _____



Signature

Phone No. _____

Foreman: _____

REQUEST TO DRAINAGE DISTRICT TRUSTEES

I acknowledge that I am requesting that the Drainage District Trustees (_____ Supervisors) investigate and possibly make certain repair work. I have contacted the Supervisors and/or Auditors Office to prepare a written Work Order for said repairs.

I believe that the area in question is in a Drainage District under the supervision of the Drainage District Trustees, and therefore the Drainage District would be responsible for payment of any costs incurred during investigation or repair in that area.

Every effort is made beforehand to determine whether the proposed repairs are, in fact, under the Drainage District's control. If, during the course of investigation or repairs, it is discovered that the tile or related structures needing repair are **NOT** under the Drainage District's control, and are actually privately owned [as determined by the contractor or a qualified engineer], I agree to reimburse the Drainage District or pay directly for any expenses incurred by this Work Order.

Dated this _____ day of _____, 2_____

Petitioner



SAMPLE

COUNTY OF POLK
OFFICE OF POLK COUNTY AUDITOR
DES MOINES, IOWA 50309

MICHAEL A. MAURO
COUNTY AUDITOR
COMMISSIONER OF ELECTIONS

ADMINISTRATION BUILDING
111 COURT AVE.
288-3079

Dear Property Owner:

On May 28, 2002, the Board of Supervisors, for the Trustees of Drainage District 25, determined that an assessment is necessary. Please read the enclosed copy of the resolution for details. At your request, any assessment(s) over \$100 may be paid in ten annual installments. You must make this request before June 28, 2002, to the Polk County Treasurer. You have until June 30, 2002, to pay any or all of your assessment without interest. The first payment is due with property taxes in September, 2002. This assessment was certified May 31, 2002.

Parcel	Certificate Number	Assessed Amount
230/00340-000-000	37075-00	\$5.00

If you have any questions concerning the above, contact the Trustees of Drainage District 25, Harry Kimberly and John Falvey.

Clinton County
Permit No. _____

**APPLICATION FOR APPROVAL OF CONSTRUCTION
WITHIN CLINTON COUNTY RIGHT-OF-WAY**

This is a Permit Application for telecommunications, electric, gas, water, earthwork, drainage and other miscellaneous work within county ROW. The applicant agrees to comply with the following permit requirements. Compliance shall be determined by the sole discretion of the County Engineer as deemed necessary to promote public health, safety and the general welfare. These requirements shall apply unless waived in writing by the County Engineer prior to installation.

Applicant Name: _____

Street Address: _____

City, State & Zip Code: _____

Contact Person: _____

1. **Location Plan.** An applicant shall file a completed location plan as an attachment to this Permit Application. The location plan shall set forth the location of the proposed utility and/or construction on the secondary road system and include a description of the proposed installation.
2. **Written Notice.** At least 10 working days prior to the proposed construction, an applicant shall file with the County Engineer a written notice stating the time, date, location and nature of the proposed construction. Permits will be issued for a maximum period of one year.
3. **Inspection.** The County Engineer may provide a full-time inspector during the installation of utility lines and construction within ROW to insure compliance with this permit. The inspector may have the right, during reasonable hours and after showing proper identification, to enter any installation site in the discharge of the inspector's official duties, and to make any inspection or test that is reasonably necessary to protect the public health, safety and welfare.
4. **Inspection Fees. (Utility Permits Only)** Upon approval of the application by the Board of Supervisors, the permit will be issued by the County Engineer upon payment of the required prepaid \$100.00 permit fee made payable to the County Treasurer's office. Inspection fees may be required by the County Engineer and paid by the applicants. The applicant shall pay actual costs directly attributable to the installation inspection conducted by the County Engineer.
5. **Requirements.** The installation inspector shall assure that the following requirements have been met:
 - A) Construction signing shall comply with the Manual on Uniform Traffic Control Devices.
 - B) Depth – (Add additional depth if ditch has silted to the thickness of the deposited silt.) The minimum depth of cover shall be as follows:

Telecommunications.....	36"	Electric.....	48"
Gas.....	48"	Water.....	60"
Sewer.....	60"		

- C) The applicant shall use reference markers in the right-of-way ("R.O.W.") boundary to locate line and changes in alignment as required by the County Engineer. A permanent warning tape shall be placed one (1) foot above all underground utility lines.
- D) All tile line locations shall be marked with references located in the R.O.W. line.
- E) No underground utility lines shall cross over a crossroad drainage structure without written approval.
- F) Residents along the utility route shall have uninterrupted access to public roads. An all-weather access shall be maintained for residents adjacent to the project.
- G) A joint assessment of the road surfacing shall be made by the applicant and the Road Maintenance Superintendent both before and after construction. After construction, granular surfacing shall be added to the road by the applicant to restore the road to its original condition excluding tile crossings. After surfacing has been applied, the road surface shall be reviewed by the Road Maintenance Superintendent once the road has been saturated, to determine if additional surfacing on the roadway by the applicant is necessary.
- H) All damaged areas within the R.O.W. shall be repaired and restored to at least its former condition by the applicant or the cost of any repair work caused to be performed by the County will be assessed against the applicant.
- I) Areas disturbed during construction which present an erosion problem shall be rectified by the applicant in a manner approved by the County Engineer.
- J) All trenches, excavations, and utilities that are knifed shall be properly tamped.
- K) All utilities shall be located between the bottom of the backslope and the bottom of the foreslope, unless otherwise approved in writing by the County Engineer prior to installation.
- L) Paved road utility crossings shall be bored. The depth below the road surface shall match the minimum depth of cover for the respective utility.

Non-Conforming Work. The County Engineer may suspend the installation at any time if the applicant's work does not meet the requirements set forth in this Permit.

Emergency Work. In emergency situations, work may be initiated by an applicant without first obtaining a permit. However, a permit must be obtained within fourteen (14) days of initiation of the work. All emergency work shall be done in conformity with the provisions of this ordinance and shall be inspected for full compliance.

County Infraction. Violation of this permit is a county infraction under Iowa Code Section 331.307, punishable by a civil penalty of \$100 for each violation. Each day that a violation occurs or is permitted to exist by the applicant constitutes a separate offense.

Hold Harmless. The utility company shall save the County harmless of any damages resulting from the applicant's operations. A copy of a certificate of insurance naming the County as an additional insured for the permit work shall be filed in the County Engineer's office prior to installation. The minimum limits of liability under the insurance policy shall be \$1,000,000.

PERMIT APPLICATION DRAINAGE CONSTRUCTION IN PUBLIC RIGHT-OF-WAY

_____ owner/renter of the _____
of Section _____ Township _____
Range _____ applies for a permit to enter upon, or cross a Boone
County Secondary highway, with an _____ inch diameter drainage tile.

The drainage area served by said drainage tile is _____ acres.

The tile size, drainage area served, gradient, depth of tile, etc., was recommended or designed by
_____.

Depth of the tile from flow line to road ditch elevation is _____ ;
to roadway elevation is _____ .

Intakes to be installed in road ditches -- (yes) (no)

Intakes are requested by

(property owner)

(renter)

(County)

If intakes are to be installed, such installation will be accomplished by Boone County personnel only.

If it is necessary for drainage tile to cross the highway, Boone County will furnish at no charge _____ feet of _____ inch diameter corrugated metal pipe culvert.

The corrugated metal pipe culvert is to be picked up at the nearest Boone County Yard by the property owner or contractor.

All backfilling for full width of the roadbed to be accomplished with suitable material and proper compaction effort. The top one (1) foot of backfill material shall be gravel or crushed stone, unless directed by the County Engineer. Boone County will furnish the gravel or stone, delivered to the site at no charge. Any excess amounts of earth excavation must be removed from the highway right-of-way.

In addition to furnishing the above materials for a tile crossing the highway, Boone County will pay to the property owner, for labor and equipment, the sum of _____ Dollars.

Any necessary road closing signs shall be picked up at the Boone County maintenance yard and returned upon completion of the project by the property owner or contractor.

Boone County will be notified twenty-four (24) hours in advance of starting construction operations in right-of-way.

The (Landowner)(Renter)(Contractor) does hereby agree to hold harmless, indemnify, and defend the County of Boone, its Supervisors, Officers, Employees, and Agents, against any and all claims, losses, damages, or law suits for damages, arising from, allegedly arising from, or related to the provision of services hereunder by the contractor, landowner, or renter under the Permit Application Drainage Construction in Public Right-of Way.

The (Landowner)(Renter)(Contractor) does further agree, that in order to protect itself, as well as Boone County, under the indemnity agreement provision, hereinabove set forth, the (Landowner)(Renter)(Contractor) will at all times, during the term of this agreement have and keep in force, a general liability insurance policy in the amount of not less than _____ Dollars.

The (Landowner)(Renter)(Contractor) agrees that it shall not cancel or materially change said policy without _____ days notice to Boone County. The Certificate Of Insurance will be provided to the County within _____ days of signing of this agreement.

Signed this _____ day of _____

APPROVED BY BOONE COUNTY

(Property Owner)

BY _____
(Renter)

(Boone County) (Contractor)

TILE CROSSING AGREEMENT

In the event the foregoing permit application involves a tile crossing a secondary highway, and said tile will enter upon, or cross property owned by another person, the following agreement must be completed:

_____, owner of the _____
Section _____ Township _____ Range _____
and _____, owner of the _____
Section _____ Township _____ Range _____
jointly agree to the installation of _____ inch tile crossing the County Highway
to drain the above described land.

(Property Owner) (Property Owner)

Signed this _____ day of _____, 20 _____

Subscribed and sworn to, before me,

this _____ day of _____, 20 _____

Notary Public, in and for the State of Iowa

FARM DRAIN TILE
AGREEMENT

County: _____
Parcel No.: _____
Project No.: _____

THIS AGREEMENT, entered into this _____ th day of _____, 20____, by and between _____ Designated as the "Owner" and the Iowa Department of Transportation, hereinafter designated "Department".

The property is situated on the above mentioned project, and described as follows:

The Department agrees to pay Owner a Lump Sum Payment of \$ _____ for replacing or repairing field drainage tile located in the proposed acquisition area shown on the property plat attached hereto as Exhibit A. Such payment will include the cost of locating all existing tile, placing new tile lines, connecting existing tile, outletting tile lines, and associated survey expenses.

The Department agrees to pay the Owner 25% of the agreed Lump Sum Payment upon signature of both parties. The remaining 75% of the agreed Lump Sum Payment will be paid upon completion of tile repair or replacement.

Owner agrees to ensure tile line outlets will be placed at proper elevations and locations as designated by the Department. The owner will also agree to accept full responsibility for said tile repair or replacement and releases the Department from all liability for same.

Owner agrees to have such tile repair or replacement accomplished by a designated date set by the Department. The designated date for this parcel is _____.

In the event the proposed tile work can not be accomplished by the Owner before the above listed date, the Department may have the work completed as part of the grading contract, in which case the owner agrees to grant the Department access to a strip 8 meters (25 feet) wide adjacent to the purchased ROW line to accomplish work with no compensation to the Owner.

It is understood by both parties this agreement shall have no bearing on nor affect any negotiations for the acquisition of land for this highway improvement project, except that the field tile drainage system shall be considered to be in similar condition, before and after the acquisition.

Owner:

Date Telephone

DEPARTMENT:
IOWA DEPT. OF TRANSPORTATION
By: _____

Date Telephone

CLINTON COUNTY
SECONDARY ROAD DEPARTMENT
TILE CROSSING/OUTLET PERMIT

This permit allows the applicant the right to have a drainage tile constructed within the right-of-way of a Clinton County secondary road subject to the following conditions:

1. All work must be performed in accordance with the Clinton County Secondary Road Ditch Cleaning and Tile Crossing Policy.
2. The landowner is responsible for ensuring that all work complies with wetland legislation as determined by the Natural Resources Conservation Service and/or the Corps of Engineers and obtaining all necessary permits. Clinton County will not review or coordinate these activities on the landowner's behalf.
3. Schedule 40 PVC pipe or corrugated metal pipe shall be used for all crossings. Drop inlets or risers are required five feet inside of the ROW line. Any material or labor to be billed to the county must be pre-approved in writing and separate from any billing for other work completed. Private individuals or their contractors installing tile must have an approved permit and notify the county 48 hours in advance of the crossing installation. Finished tile must be inspected prior to placement of backfill.
4. The county will provide any rock necessary to restore the condition of the road surface. The landowner will be responsible for the material and labor cost for repair or replacement of paved surfaces on new tile line installations.
5. No filling will be permitted in the right-of-way other than that necessary to maintain the natural flow of surface water.
6. Stipulations and requirements contained herein are not intended to waive greater requirements of local zoning ordinances.

7. Tile size: _____ Location: _____

Material Type: _____

Signed _____ Date _____
(Applicant)

Address _____

Approval _____ Date _____
(County Engineer)

Note: Construction in ROW Permit Also Required.

Iowa Drainage Law Manual
Appendix A: Sample Documents

Any of the above obstructions constituting an immediate and dangerous hazard shall be removed after 48 hours written notice at the expense of the owner or responsible party.

Upon removal by the Secondary Road Department of any obstacle, encroachment or materials, a statement of cost will be sent to the responsible party. If within 30 days after sending the statement the cost is not paid, Clinton County will institute proceedings in the District Court to collect the cost of removal.

2. Removal of litter, dumping, solid waste and nuisances within Clinton County right-of-way shall be enforced by appropriate civil or criminal proceedings or by both such proceedings. In the case of a public nuisance within the right-of-way, Chapter 657 of the Iowa Code will apply as to the penalty and abatement through court actions. Generally the above items will be reported to the Clinton County Sheriff for investigation and processing. If a health hazard is involved it will also be reported to the Clinton County Health Department for processing. If an environmental hazard is involved it will also be reported to the Clinton County Health Department, and the State Department of Natural Resources as deemed necessary.
3. All excavation or any physical changes as well as certain agricultural operations within Clinton County road right-of-way without a permit from the Secondary Road Department will be considered as an obstruction or encroachment with the normal 30-day notice to cease, remove and correct.

APPROVED BY CLINTON COUNTY BOARD OF SUPERVISORS

CITY STORMWATER UTILITY USER FEES

Sample Calculation of Assessments*

The user fees are applicable to all property owners, regardless of whether they pay taxes. The rates are based on the amount of impervious area on the property.

For residential lots, the rate is calculated by assuming 30 percent of the property square footage as impervious, regardless of lot size. This number is divided by 2,500 = 1 ERU. This new number is multiplied by \$1.50 for each ERU.

This calculated amount is the user fee per month. The cost is billed on the quarterly sanitary sewer bill.

(*Used to partially finance NPDES Phase II operations and improvements.)

RESOLUTION TO ESTABLISH WETLAND

RESOLUTION ON GREENE COUNTY, IOWA DRAINAGE DISTRICTS

WHEREAS, the Drainage District Board of Trustees are responsible for the maintenance and management of Drainage Districts located within Green County established under Chapter 468 of the Iowa Code.

WHEREAS, Greene County Drainage Districts has been established and constructed with the presumption the drainage of surface water from agricultural lands and all other lands, for the protection of such lands from overflow, is conducive to the public health, convenience and welfare.

WHEREAS, certain programs of the State of Iowa and the United States Government have been established to create wetlands within the State of Iowa. The creation of these wetlands is also conducive to the public health, convenience and welfare.

WHEREAS, some wetlands may be located within a Drainage District and the creation of the wetlands may potentially compromise the efficiency of the Drainage District improvements.

WHEREAS, a procedure is required to promote the establishment of the wetlands and yet protect the improvements of a Drainage District.

WHEREAS, the Drainage District Board of Trustees shall be the exclusive governing body to make the decisions affecting the maintenance and management of Drainage Districts within Greene County.

NOW THEREFORE, BE IT RESOLVED, a landowner who proposes to establish a wetland in an area in which the Drainage District improvements are located, shall file with the Greene County Auditor a Statement of Intent containing the following information:

1. The name of the landowner and farm tenant, if any.
2. A plat of the wetland identifying any Drainage District improvement within the proposed wetland.
3. A report from the engineer who designed the wetland setting forth any proposed manipulation or destruction of drainage district improvements and the resulting effects on existing drainage of lands within the Drainage District.

Upon receipt of the Statement of Intent, the District shall schedule a public meeting before the Board of Trustees to be held not less than 20 days after the date of receipt. The Trustees may continue this meeting from time to time.

The Auditor shall provide notice of the public meeting to affected landowners as directed by the Drainage District Board of Trustees.

Prior to the public meeting, the plat of the wetland and engineer's report will be reviewed by the District's Engineer who shall determine the effect to the District if the wetland is created. The Engineer shall consider and address maintenance access, the potential effect upon the ability of the District to make further improvements, the effect upon the ability of the neighboring landowner(s) to connect to the facility, the effect upon drainage capabilities available to all landowners, future ownership and maintenance issues which should be addressed in an agreement, potential benefits to lands in the District, and other related issues the Trustees deem important. This requirement for an engineer's review can be waived by a majority vote of the Board.

The creation of the wetland shall not reduce the coefficient of drainage for any landowner within the Drainage District.

The Drainage District shall incur no costs for the investigation and hearing. The landowner or other entity shall pay the costs of these proceedings, including the costs of engineering, legal costs and providing notice.

The wetland shall retain the classification established by Sections 468.38 through 468.40 (Code of Iowa).

In the event the owners of the property no longer wishes to use the property as a wetland, the owner shall restore the system of drainage that was in place prior to the establishment of the wetland or as otherwise allowed by the District.

Ownership, control and maintenance of facilities constructed to convey waters of the District located upstream and downstream of the pool and outlet structure shall be the District's. The landowner is responsible to maintain the pool area, including the excavation of accumulated sediment, the outlet structure, and all other facilities not assumed by the District. (The District may agree to assume part or all of the maintenance responsibilities of the owner.)

If the landowner fails to perform maintenance activities as required under this agreement, the Drainage District may enter the property and perform maintenance seven or more days after giving notice to the landowner to do the maintenance. If the trustees deem the maintenance to be an emergency, the District may immediately perform the maintenance. The costs thereof shall be assessed to the landowner.

The landowner's request may be approved upon completion of the above conditions, if the Drainage District trustees are convinced the drainage within the Drainage District will not be adversely affected and the Drainage District will not incur any costs. If such approval is given, the Drainage District trustees and the landowners shall enter into an agreement incorporating the conditions within this resolution, and any other issues the trustees deem worthy.

12. Appendix B: Iowa Code
Annotated General Index:
Drainage and Levee Districts,
Drains and Drainage

APPENDIX B: IOWA CODE ANNOTATED GENERAL INDEX

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