

Issues Relating to Drainage

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Agricultural Matters
Evaluation Committee

Indiana Legislative Services Agency

Legislative Evaluation and Oversight

The Office of Fiscal and Management Analysis is a Division within the Legislative Services Agency that performs fiscal, budgetary and management analysis. Within this office teams of program analysts evaluate state agency programs and activities as set forth in IC 2-5-21.

The goal of Legislative Evaluation and Oversight is to improve the legislative decision-making process and, ultimately, state government operations by providing information about the performance of state agencies and programs through evaluation.

The evaluation teams prepare reports for the Legislative Council in accordance with IC 2-5-21-9. The published reports describe state programs, analyze management problems, evaluate outcomes, and include other items as directed by the Legislative Evaluation and Oversight Policy Subcommittee of the Legislative Council. The report is used by an evaluation committee to determine the need for legislative action.

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Preface

Each year, the Legislative Services Agency prepares reports for the Legislative Council in accordance with IC 2-5-21. In accordance with Legislative Council Resolution 15-96, this report concerns issues relating to drainage. It has been prepared for use by the Agricultural Matters Evaluation Committee.

This report pays particular attention to the issue of county control over dredged ditches until the ditch empties into a stream.

We gratefully acknowledge all those who assisted in the preparation of this report. The staffs of the Indiana Department of Natural Resources, Indiana Department of Environmental Management, and County Surveyors Association of Indiana were helpful in their response to our requests for information.

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Chapter 1: Introduction

In accordance with Legislative Council

Resolution 15-96, this report concerns issues relating to drainage with particular attention to the issue of county control over dredged ditches until the ditch empties into a stream.

Controlling the removal and flow of surface water is vital to environmental and economic development efforts. For owners of rural land there is a need to provide expedient removal of surface water to prevent frequent or periodic flooding of crops and pastures. Excess water can reduce crop production and can impact the quantity of pasture available for grazing livestock. Drainage for rural/agricultural land is done through the use of regulated drains, mutual drains, and private drains. The definition of regulated drain includes man-made open drains, tiled drains, or a combination of the two. Both types of drains were established under or made subject to the Indiana Drainage Code (IC 36-9-27) and are regulated by local, state and federal agencies.

Efforts to provide the proper drainage for rural/agricultural land has an impact to the environment. Drainage improvement projects may sometimes include activities that can

potentially have an unwanted negative impact on the environment. These impacts include disturbing trees that stabilize streambanks, disturbing pools and riffles used by fish for spawning, and the disturbance of other types of habitat and vegetation established in the channels, on the banks, or on the overbanks along a ditch.

Occasionally, drainage projects may impact wetlands or other aquatic resources adjacent to the project site. Incorrect drainage of rural/agricultural land can also impact water quality.

Purpose and Scope of the Report

The purpose of this report is to examine the existing statutes, regulations, and practices regarding the maintenance and /or reconstruction of open regulated drains in terms of management efficiency, cost effectiveness, and the potential trade-offs between competing objectives.

The scope of the report is limited to issues related to open regulated drains in rural/agricultural areas before those drains empty into natural streams and rivers. For the purposes of this report, an open regulated drain is defined as an open drainage way in or into which excess surface water or groundwater drained from land or floodwaters flows either continuously or intermittently. In many cases, these drains are dry or have no flow of water during times of low rainfall.

The classification of “regulated drain” places open regulated drains under the regulation of the Indiana Drainage Code. Figure 1 lists by county the miles of regulated drains reported by the county surveyor. The Indiana Drainage Code allows for maintenance and reconstruction projects to be done by the county surveyor through the approval of the county drainage board, and subject to the approval of other state and federal regulatory programs. Drain regulation under the Indiana Drainage Code also allows for an annual assessment of landowners to pay for maintenance and reconstruction of an open regulated drain.

The definition of “regulated drain” does not include mutual and private drains. A mutual drain is defined as a drain that is located on two or more tracts of land that are under different ownership, was established by the mutual consent of all the owners, and was not established under or made subject to any drainage statute. A private drain is defined as a drain that is located on land owned by one person or by two or more persons jointly and was not established under or made subject to any drainage statute. The county surveyor is not responsible for the maintenance and reconstruction of mutual and private drains. Any work conducted on these drains is the responsibility of the landowner(s).¹

History of Drainage Regulation

Indiana Drainage Code

The Indiana Drainage Code was enacted by the state legislature in 1965 and became

Figure 1. Miles of Regulated Drains in Indiana.

County	Miles of Regulated Drain*	County	Miles of Regulated Drain*	County	Miles of Regulated Drain*
Adams	1,385 - 4,580	Hendricks	1,455 - 1,469	Pike	15

Allen	2,500	Henry	550	Porter	600
Bartholomew	105 - 110	Howard	755 - 900	Posey	0
Benton	338 - 352	Huntington	542	Pulaski	980
Blackford	376	Jackson	190	Putnam	No
Boone	1,000	Jasper	1,200	Randolph	750
Brown	None	Jay	929	Ripley	0
Carroll	676	Jefferson	N/A	Rush	400 - 593
Cass	600	Jennings	0	St. Joseph	880 - 900
Clark	0	Johnson	190	Scott	N/A
Clay	84	Knox	N/A	Shelby	278
Clinton	600 - 800	Kosciusko	1,100 - 1,122	Spencer	309
Crawford	N/A	Lagrange	440	Starke	605 - 700
Daviess	0	Lake	600	Stueben	545 - 553
Dearborn	0	Laporte	439	Sullivan	N/A
Decatur	N/A	Lawrence	N/A	Switzerland	N/A
Dekalb	1,100	Madison	835	Tippecanoe	520
Delaware	649	Marion	0	Tipton	750
Dubois	0	Marshall	650	Union	N/A
Elkhart	N/A	Martin	N/A	Vanderburgh	79
Fayette	20 - 22	Miami	497 - 500	Vermillion	N/A
Floyd	0	Monroe	0	Vigo	41 - 45
Fountain	N/A	Montgomer	354	Wabash	232 - 400
Franklin	28	Morgan	80	Warren	65
Fulton	1,200 - 1,213	Newton	500 - 514	Warrick	400
Gibson	350	Noble	840	Washington	0
Grant	747	Ohio	N/A	Wayne	52
Greene	140 - 150	Orange	N/A	Wells	N/A
Hamilton	741 - 831	Owen	0	White	1,062 - 1,120
Hancock	510 - 600	Parke	5	Whitley	856
Harrison	N/A	Perry	0		

* The miles of drain listed for each county represents the miles reported in the 1995-96 Survey of Indiana County Surveyors and Legislative Services Agency survey (May 6, 1997). A range is provided in those counties in which the reported numbers differ.

effective in 1966. The Drainage Code replaced the former "Legal Drain" program which was under the auspices of a County Circuit Court or the County Commissioners. The Indiana Drainage Code remained relatively unchanged until 1994.

Senate Bill (SB) 321 and Senate Concurrent Resolution (SCR) 38

In response to concerns expressed to the Water Resources Study Committee (WRSC) by drainage proponents, legislation was introduced in the 1994 legislative session. SB 321 was introduced and would have stripped the Indiana Department of Natural Resources (IDNR) and the Indiana Department of Environmental Management (IDEM) of regulatory overview of county regulated drain projects, including the maintenance and reconstruction of open regulated drains. As a compromise, SCR 38 was introduced and passed. SCR 38 urged the WRSC to examine state and local laws regarding drainage and to make recommendations, back to the General Assembly. The WRSC established a Task Force to fulfill the charge of SCR 38.²

Drainage Task Force

The Drainage Task Force was established under the auspices of the WRSC. The task force was comprised of representatives of county surveyors, state and federal regulatory agencies, agricultural interest groups, and environmental interest groups. The task force met from June through September 1994. The task force addressed issues including permit processing time and conditions, wetland definitions, property rights, agency coordination, and consistency between the agencies. A final report was issued to the WRSC on December 15, 1994, and included the following recommendations:³

Recommendations #1 and #2 - Memorandum of Agreement (MOA): The committee recommended the development of an MOA between the county drainage boards/surveyors, IDNR, IDEM, U.S. Fish and Wildlife Service (USFWS), and if possible the U.S. Army Corps of Engineers (COE).

The MOA was to require permitting agencies to formally consider each drainage project on the basis of its own merits, compare any impacts of each project's implementation to the possible negative effects of no project, and to evaluate both

the positive and negative cumulative impacts of several small projects within a proposed project's watershed. The manner in which these actions will be implemented should be described in the proposed MOA.

Recommendation #3 - Procedural and Technical Manual: The WRSC should oversee the creation and activities of a small technical work group which will develop a manual of administrative and technical measures related to drainage projects.

Recommendation #4 - Construction vs. Maintenance Phases: Permitting agencies should work with prospective permittees to establish procedures allowing for two-phase permitting projects. Phase 1 would be subject to formal permitting and would consist of the active construction period plus any time required to complete actions required by permits. During this phase, the permitting regulatory agency(ies) and the county surveyor would jointly evaluate activities during, and for a specified time after, active construction to assure that all permit conditions were satisfied.

Phase 2 would begin after a final inspection allowed for certification of completion of the first phase, at which time the project would be under control of the county surveyor for continuing maintenance. Timing and performance of ongoing simple maintenance, not of sufficient scope to require additional permits, would be left to the professional judgement of the surveyor.

Recommendation #5 - Regulated Drain Classification: State regulatory agencies should work with county drainage boards/surveyors to devise a regulated drain classification system.

Recommendation #6 - Funding for Environmental Enhancement: Drainage projects should be performed in an environmentally sound manner. If it is determined that the environmental impacts result in an environmental "enhancement" beneficial to persons outside the project area, then the environmentally-benefited public at large will be assessed, and not just the landowners traditionally assessed for the project. The recommendation also suggests that an equitable method of funding the additional costs needs to be identified.

Recommendations #7 and #8 - Wetland Delineation and Mitigation: Encourage and support efforts to provide wetland delineator

training and existing efforts should proceed with all possible speed.

Support the development and implementation of a state-sponsored jurisdictional wetland identification training course.

Urge the COE to proceed as quickly as possible to establish a certification program for jurisdictional wetland delineation.

Agencies involved in drainage regulation will develop a consistent policy for wetland mitigation with respect to impacts arising from land improvement, particularly with respect to drainage maintenance and reconstruction activities, in Indiana.

Of the 8 recommendations, only Recommendation #3 (Procedural and Technical Manual) was implemented. The results of implementing this recommendation are discussed later in this report.

Senate Enrolled Act (SEA) 303 and SEA 368

In the 1995 legislative session, two separate measures were introduced and passed: Senate Enrolled Act (SEA) 303 (non-code provision) and SEA 368 (IC 36-9-27-53.5). SEA 303 created a work group authorized to produce a manual of technical and administrative measures related to drainage projects (Recommendation #3). The work group had a membership of 11 individuals representing county surveyors and drainage boards, an environmental organization, an agricultural organization, and representatives from IDNR, IDEM, COE, USFWS, and the Natural Resource Conservation Service (NRCS).⁴

The work group produced the Indiana Drainage Handbook: An Administrative and Technical Guide for Activities within Indiana Streams and Ditches. The handbook contains sections addressing each regulatory agency's permitting program, required permits, and best management practices. The handbook was released in November 1996, and a copy was sent to each county surveyor.

SEA 368 established a formal early coordination process for county drainage board projects and mandated certain responses from the state regulatory agencies. The law also, under certain conditions, prohibits the IDNR from requiring specific conditions on county drainage board project

permits.⁵

The next section describes the agencies involved in the regulation of open regulated drains and the permit process involved in the regulation of these drains.

Current Drainage Statutes, Regulations, and Practices

Whenever a project is to be undertaken within or near a channel, drain, waterway or tile, the applicant should first check the appropriate local agency to seek approval of a project and also with state and federal regulations to see what type of permits are necessary before work begins. The types of approvals and number of agencies involved in a project is dependent on the type of project, the project location, and the general size of the waterbody or channel involved.⁶

The regulating/permitting agencies include the IDNR, IDEM, COE, USFWS, and the NRCS. These entities are responsible for protecting and promoting the responsible use of water resources within their jurisdictions.

Local Government

The county drainage board consists of either the county executive or three or five persons of whom at least one must be a member of the county executive. The county drainage board is responsible for implementing the requirements of an adopted drainage ordinance and for following the provisions of the Indiana Drainage Code.

The county surveyor serves as technical staff to the county drainage board. The county surveyor is the technical authority on the construction, reconstruction, and maintenance of all regulated drains or proposed regulated drains in the county. The county surveyor is required to:

- 1) investigate, evaluate, and survey all regulated drains or proposed regulated drains, and prepare all reports, plans and profiles (based on United States Geological Survey data), and specifications necessary or incident to any proposed construction, reconstruction, or maintenance of regulated drains;
- 2) prepare and make public standards of design, construction, and maintenance that will apply to all regulated drains and their appurtenances, taking into consideration in

preparing these standards the published recommendations made by IDNR, Purdue University, the American Society of Agriculture Engineers, the American Society of Civil Engineers, the U.S. Department of Agriculture, the COE, and other reliable sources of information;

3) supervise all construction, reconstruction, and maintenance work performed under the Indiana Drainage Code;

4) catalog and maintain a record of all surveying notes, plans, profiles, and specifications of all regulated drains in the county, and all mutual drains when available; and

5) perform the classification of drains in need of reconstruction, periodic maintenance, or vacating.⁷

The county surveyor is not required by law to be a licensed engineer or a licensed land surveyor.

Indiana Drainage Code

The Indiana Drainage Code (IC 36-9-27) outlines the duties and responsibilities of the county drainage boards and the county surveyor. Through the Drainage Code, the county drainage boards and the county surveyors are responsible for the maintenance and operating functions of all regulated drains, open and tile, in the county.⁸

IC 36-9-27-33 describes the right-of-entry easement along all regulated drains. Section 33 states that permanent structures may not be placed within the easement without the written consent of the drainage board. Trees, shrubs and woody vegetation may not be planted within the easement area without the written consent of the drainage board and may be removed by the surveyor if necessary for the proper operation of the drain. Crops grown on a right-of-entry are at the risk of the owner, and if necessary in the reconstruction or maintenance of the open regulated drain, may be damaged without liability on the part of the surveyor, the county drainage board, or their representatives.⁹

The Process for Local Governments

Local approval is generally required for most land disturbing activities that will either alter existing land grades or result in increased runoff from a parcel. The county surveyor and/or the county drainage board through a

local drainage ordinance or the Indiana Drainage Code, may review and approve plans for any project that will affect surface water flow. The general rule is that the flow of surface water upon the completion of a project cannot be greater than the flow of surface water prior to the start of the project.

For drainage improvement projects in rural/agricultural areas, the county surveyor's office should contact state and federal regulatory agencies before beginning work to determine if any permits are required. Open regulated drain maintenance and reconstruction projects undertaken by a county drainage board are usually, but not always, exempt from local permit requirements.¹⁰ Any work performed by anyone besides the county surveyor within the right-of-entry easement area should be submitted to the surveyor and/or county drainage board for review and approval before work on a project begins.¹¹

For drains located in rural areas, drain reconstruction and maintenance projects are initiated in two ways: 1) Each year the county surveyor reports on the condition of each open regulated drain and, if necessary, recommends maintenance or reconstruction projects to the drainage board. 2) The county drainage board and the county surveyor must respond to petitions made by the public to reconstruct existing regulated drains and to perform regular maintenance activities.¹²

Under the annual inventory of drains, the county surveyor is responsible for classifying all regulated drains in the county as drains in need of reconstruction, periodic maintenance or in need of being vacated. The classification of drains in need of reconstruction is when a drain: 1) will not perform the function for which it was designed and constructed; 2) no longer conforms to the maps, profiles, and plans prepared at the time when the legal drain was established; or 3) due to topographical or other changes the drain is inadequate to properly drain the lands affected without extensive repairs or changes.¹³

A regulated drain is classified as in need of periodic maintenance when, with or without the use of mechanical equipment, it can be made to perform the function for which it was designed and constructed, and to properly drain all affected land under current conditions, by periodically: 1) cleaning it; 2) spraying it; 3) removing obstructions from it;

and 4) making minor repairs to it.¹⁴

Once the classification is completed, the county surveyor submits a written report to the county drainage board. The written report sets forth the classification of the regulated drains in order of priority for action by the county drainage board. The county drainage board may adopt or modify the classification and order of work priority as recommended by the county surveyor.¹⁵ If the county drainage board adopts the classification of drains, the county surveyor is to prepare a long-range plan for: 1) the reconstruction of regulated drains classified as in need of reconstruction; 2) the establishment of an annual maintenance assessment for regulated drains classified as in need of periodic maintenance; and 3) the vacating of regulated drains classified as drains that should be vacated. The long-range plan is to include an engineer plan/cost estimate of the project and must include the approximate date that work will begin on the drain. The date is based on the work load of the county surveyor and the estimated time it will take to complete the work.¹⁶

In the case of landowner petitions for reconstruction or maintenance, landowners may file a petition with signatures of 10% of the landowners affected by the regulated drain. The petition is presented to the county surveyor. Based upon the estimated engineer plan/cost, the county drainage board determines whether the petition filed for drainage reconstruction or maintenance is practicable and/or beneficial. If the petition is accepted, a cost/benefit assessment is done. If the benefit to the landowners is likely to be greater than the cost of the project then the project is approved by the county drainage board. If a drain is classified as in need of periodic maintenance, the county drainage board determines assessments against affected property owners based on benefits that the property owners realize from a drainage project. Approved projects that do not require state and regulatory permits are put out for bid. Unapproved projects are stopped.

Throughout the local permitting process there is an opportunity for public input through the statutory requirements for public hearings. There is also an opportunity for appeal of a county drainage board decision. Figure 2 diagrams the local drainage process. Appendix 1 provides a listing of various drainage improvement

activities and if those activities require local authorization.

The completion of the engineer plan/cost estimate begins the application process if a project requires state and federal permits. These projects are not to begin until the proper state and federal permits are received. Upon receipt of the permits the county drainage board may put the project out for bid.

The following sections describe the federal and state agencies involved in the regulation and permitting of open regulated drains. These sections also contain a description of the permit process for each federal and state agency. Figure 3 diagrams the state and federal drainage permitting process. Additionally, Appendix 1 provides a listing for each regulatory agency authorization and processing methods for various drainage improvement activities.

368 Early Coordination Procedure (IC 36-9-27-53.5)

The 368 Early Coordination procedure is for those drainage projects which are large, could have an extensive impact on the environment if not done properly, and require permits from: IDNR under the Flood Control Act or the "Ditch Act"; IDEM through the 401 WQC; and the COE under the 404 Clean Water Act (Individual Permits). The 368 Early Coordination effort is a process for pre-application meetings and increased communication between a county surveyor, IDNR, IDEM, and the COE and NRCS when necessary. IDNR acts as the coordinator of this procedure.

Through the 368 Early Coordination procedure, an on-site field meeting is held only for qualifying open regulated drain maintenance or reconstruction projects. Following the meeting, the regulatory agencies provide to the county surveyor or the county drainage board a list of conditions that would appear on a permit or certification for the proposed project.¹⁷

To initiate the 368 Early Coordination meeting, the county surveyor is required to submit a written notification to the IDNR, Division of Water, for an onsite field review meeting of a man-made open drain project. IC 36-9-27-53.5 provides that not more than 14 days after the division receives a written notification, the division is to contact the county surveyor and the IDEM to establish

a date, time, and location for the onsite field review.

The onsite field review is to be conducted by a team consisting of one or more representatives from: 1) the county; 2) the IDNR, including an engineer from the Division of Water; 3) the IDEM; and 4) if applicable, the COE and the NRCS.

Not more than 30 calendar days after the completion of the onsite field review meeting, the IDNR, Division of Water, is required to provide the county surveyor with a written summary of the review. The summary must include the following:

- 1) a narrative and map defining the

project location;

- 2) a description of the proposed work;

- 3) a list of conditions that the IDNR would place on a permit to mitigate any unreasonable or detrimental effects that may occur as a result of the proposed work; and

- 4) a list of conditions the IDEM would place on a certification to comply with Section 401 of the federal Clean Water Act; or conditions that both departments would place on a permit or certification.

Conditions placed on the permit by the IDNR may not require or recommend:

- 1) deed restrictions in connection with the proposed work;

Figure 2. Local Procedures for Drainage Projects

Figure 3. Drainage Permitting Process.

2) conservation easements in connection with the proposed work;

3) tree planting or tree retention within the easement of the regulated drain, if:

A) the project involves construction on only one side of the drain;

B) vegetation on the opposite overbank will not be disturbed; and

C) the county drainage board agrees to establish a suitably sized vegetated filter strip consisting of grasses and legumes along the side of the drain on which the construction will occur.¹⁸

If the permit conditions disclosed by the IDNR as a result of the early coordination onsite field review meeting are acceptable to the county surveyor, the conditions are binding upon IDNR and may not be changed by IDNR as long as the permit application for the project is submitted within 2 years of the onsite field review meeting. However, the conditions placed on a permit by IDEM are not binding. If the county surveyor is aggrieved by the conditions placed on the permit, the county surveyor may enter into negotiations with the IDNR and/or IDEM in order to obtain mutually agreeable permit conditions.

State Regulatory Agencies

Indiana Department of Natural Resources (IDNR)

The IDNR oversees construction activities within, over, and/or under the State's waterways through the creation of a number of regulatory programs. For many of these programs, IDNR has subsequently promulgated administrative rules to further define and clarify its authority.¹⁹

The laws passed by the Indiana General Assembly and subsequent rules promulgated by IDNR have sought to protect the lives and property of individuals and the public while at the same time protecting the existing resources along and within Indiana's waterways. The safety of the public at-large and impacts to adjoining land owners are taken into account during the technical or engineering review of proposed open regulated drain projects. The integrity of fish, wildlife, and botanical resources are also safe-guarded through an environmental review of a proposed project.²⁰

The IDNR reviews and approves plans for

any work within the floodway of a stream or along the shoreline of a public freshwater lake before work on the project may begin. IDNR serves as the coordinating agency for permit applications of regulated drainage projects that require a 368 Early Coordination meeting. This coordinating effort allows the permit applicant to contact only one permitting agency rather than contacting all of the necessary regulatory agencies.

Authorizing Legislation

Many open regulated drain projects are exempt from the IDNR permit requirements through certain sections of the Flood Control Act (IC 14-28-1), the Flood Hazard Areas Rule (310 IAC 6-1), and the Indiana "Lowering of Ten Acre Lakes Act" or "Ditch Act" (IC 14-26-5). Additionally, while more than one regulatory statute may apply to a certain drainage improvement project, only one authorization is usually required by the IDNR.²¹

Flood Control Act (IC 14-28-1)

The Indiana Flood Control Act was passed by the Indiana General Assembly in 1945. Within the Flood Control Act, there is a permitting program to ensure that any structure, obstruction, deposit, or excavation within a floodway must receive written approval from the Director of the IDNR for the work before beginning construction.²²

Flood Hazard Areas Rule (310 IAC 6-1)

The purpose of the Flood Hazard Areas Rule is to provide minimum standards for the delineation and regulation of all flood hazard areas for all rivers or streams in Indiana for the purpose of decreasing existing flood damages, mitigating future flood damages, and promoting the health, safety and general welfare of the people of Indiana.²³

Indiana "Lowering of Ten Acre Lakes Act" (IC 14-26-5)

Indiana "Lowering of Ten Acre Lakes Act" or "Ditch Act" (IC 14-26-5) stipulates that a person may not "locate, make, dig, dredge, construct, reconstruct, repair, or reclean a ditch or drain having a bottom depth lower than the normal water level of a lake within ½ mile of the lake without a permit from the IDNR. The requirements of the "Ditch Act" do not apply to lakes that are less than 10 acres in size. The regulatory program of this

Act was established to provide safeguards against the lowering of a freshwater lake's water level as the result of drainage activity or damage to fish, wildlife, and botanical resources.²⁴

Permitting Process for IDNR

IDNR requires the following primary pieces of information for any permit application submittal:

- 1) completed and signed IDNR application form with the correct application fee (\$50 for construction in a floodway and \$25 for a project under the "Ditch Act");
- 2) verification of public notice; and
- 3) complete project plans.

Upon receipt of the permit application from the county surveyor which includes the engineering plan, the IDNR reviews the application to determine if the proposed application is in accordance with the Flood Control Act and the "Ditch Act."

Using the applicant's submitted information, the IDNR determines a project's approvability by evaluating both its singular and cumulative impacts against the criteria stipulated in the Flood Control Act.

In assessing a project under the "Ditch Act", IDNR uses the following criteria: 1) whether or not the project will endanger the lake level; and 2) whether or not the project will result in unreasonably detrimental effects upon fish, wildlife, and botanical resources.²⁵

For drainage improvement projects reviewed under the auspices of the Flood Control Act and/or the "Ditch Act", a two-part, simultaneous review takes place. One aspect of the review involves the project's impact upon the efficiency of, or the capacity of the floodway. The review also assesses the possible impacts on the floodway with regard to the project's potential to create an unreasonable hazard to the safety of life or property upstream or downstream of the project site. This portion of the project review is performed by the IDNR, Division of Water.

The second aspect of the project review by IDNR involves the proposed project's environmental impacts. To determine a drainage project's environmental impact, IDNR reviews an application to determine if: 1) proper soil conservation practices are being incorporated into the design of a

project to reduce sedimentation of waterways or adjoining properties; 2) recreational sites developed with Land and Water Conservation Fund grants will be impacted by the project; 3) endangered or threatened listed plant or animal species will be impacted by the project; 4) the project impacts Indiana's hardwood resources; and 5) the project will result in unreasonably detrimental effects upon fish, wildlife, or botanical resources. Additionally, if a project is to occur along a Navigable Waterway, IDNR must determine if: 1) the project impacts navigability and boater safety; and 2) any known historical, architectural, or archaeological sites listed in or eligible for inclusion in the National Register of Historic Places will be impacted by the proposed drainage project. This portion of the project review is undertaken by staff of several IDNR Divisions and coordinated by the Division of Fish and Wildlife.²⁶

Once all the reviews are completed, final comments are forwarded to the Division of Water. Final approval documents include specific and general permit conditions and information concerning the appeal procedures.

Regulating agencies frequently require compensatory mitigation when an unreasonably detrimental environmental impact occurs or is likely to occur as a result of project implementation. Some of these agencies, such as the COE, have established detailed procedures for determining the need for mitigation measures and the process involved. Others, such as the IDNR, may require these mitigation measures in the form of "special conditions" when they issue their permits.

Under the 368 Early Coordination procedure, an on-site field meeting is held prior to the implementation of the permitting process.

Exemptions

The primary exemptions for an open regulated drain reconstruction or maintenance project is if the total length of the drain is less than or equal to 10 miles and if the drainage project is more than ½ mile from a lake. Also exempt from IDNR regulation are portions of a project outside of a floodway. **Need Clarification on floodway exemptions.**

Indiana Department of Environmental

Management (IDEM)

The IDEM has the responsibility and authority to prevent any pollution in any stream or any waters of the state that is determined to be unreasonable and against the public interest. For purposes of water pollution control laws and environmental management laws, "waters of the state" are defined by the COE as "the accumulations of water, surface and underground, natural and artificial, public and private, or a part thereof, that are wholly or partially within, flow through, or border upon Indiana." The term does not include a private pond or an off-stream pond, reservoir, or facility built for reduction or control of pollution or cooling of water before discharge unless the discharge from the pond, reservoir, or facility causes or threatens to cause water pollution.

Authorizing Legislation

Indiana's Water Quality Standards (327 IAC 2) are applied through the 401 Water Quality Certification (401 WQC) a section of the Section 404 Clean Water Act (discussed under the subheading of U.S. Army Corps of Engineers).

Section 401 Water Quality Certification

Section 404 of the federal Clean Water Act requires an individual to obtain a permit from the COE for dredging and filling in "Waters of the United States," which includes wetlands. The COE, before granting approval for a Section 404 permit, requires the state to issue a 401 Water Quality Certification (401 WQC). Section 401 WQC certifies to the COE that the actions of the applicant will not violate the water quality standards of the state. The 401 WQC is required when there is placement of dredged or fill material within a waterbody, dredging of silt or sediment from a waterbody, or excavation activities which impact a waterbody, such as the widening of a stream.²⁷

Section 401 WQC also provides that compliance with Indiana's water quality standards may include limitations, conditions or any other provisions on the certification which are deemed necessary by IDEM to assure that Indiana's water quality standards will not be violated.

Indiana's Water Quality Standards (327 IAC 2)

The Indiana Water Quality Standards include

policies of maintenance of existing uses and non-degradation of water quality in waters of the state. IDEM's granting of Section 401 WQC to an applicant indicates to the COE that a proposed project complies with Indiana's Water Quality Standards.

Permitting Process for IDEM

The permitting process for 401 WQC begins with a letter from the county surveyor requesting 401 WQC for an open drain project. A narrative description of the project and project site is also submitted. The narrative description is to include the following:

- 1) reason for the project;
- 2) description of site vegetation;
- 3) description of the waterbody at the site;
- 4) type of wetland (if applicable);
- 5) amount of area to be filled by dredged materials in acres or square feet;
- 6) amount of dredged fill in cubic yards;
- 7) type of fill material, i.e., earthen material, concrete, etc.

The application must also include a project location map, cross-section and plan view drawings, copies of any correspondence from IDNR, COE, or USFWS, and the applicant's address and daytime phone numbers.²⁸

The review of the application for 401 WQC involves the review of the submitted information, a site inspection by a project manager, and possibly consultation with other state and federal regulatory agencies. For those projects that fall under the jurisdiction of the 368 Early Coordination statute, the consultation may be substituted by the 368 Early Coordination meeting

Using the state's Water Quality Standards, IDEM determines whether or not the proposed project will degrade the quality of water at the site. If degradation of the water quality can be eliminated or minimized by mitigation or plan revisions, these items are placed as conditions on the WQC.²⁹

IDEM has 60 calendar days to review a 401 WQC application and render a decision to either grant, deny, or waive WQC. Failure to respond within the 60 day timeframe results in an automatic waiver by IDEM.

Exemptions

If a permit is not required under the Section 404 Clean Water Act then water quality certification is not required under the Section 401 WQC.

Soil and Water Conservation Districts (SWCD)

SWCDs were established under IC 13-3-1 for the purpose of conserving soil and water resources. The purpose of the SWDC is carried out through preventative and control measures within the district, including engineering operations, methods of cultivation, and the growing of vegetation.

SWCDs also act as liaisons between landowners and regulatory agencies and as information sources for best management practices for the conservation of soil and water resources.

Federal Regulatory Agencies

U.S. Army Corps of Engineers (COE)

The COE is responsible for the protection of the nation's aquatic resources, including wetlands. The COE consults with state agencies, local agencies, and the public at large, with regard to regulated drain projects.³⁰

Authorizing Legislation

The COE has regulatory authority for open regulated drainage projects through Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act (33 U.S.C. 403).³¹

Section 404 of the Federal Clean Water Act

Section 404 of the Clean Water Act authorizes the COE to issue permits, after notice and opportunity for public hearing, for the discharge of dredged or fill material into waters of the United States at specified sites. The selection of the disposal sites are to be in accordance with guidelines developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army.³²

Nationwide permits

Under Section 404 of the Clean Water Act, there are two general types of permits, Individual Permits or Nationwide Permits, which may be required for work that impacts water of the United States, including

wetlands. The type of permit needed is dependent on where the work is located, the type of work proposed, and the size of the area affected by the work. Individual Permit projects tend to be larger projects and require public notice by the COE.

Nationwide Permits (NWP) are a type of general permit issued by the Chief of Engineers (of the COE) and are designed to regulate with little, if any, delay or paperwork certain activities having minimal impacts. An activity is authorized under an NWP only if that activity and permittee satisfy all of the NWP terms and conditions.³³

The NWPs are proposed, issued, modified and reissued or extended, and revoked by the COE every five years. Proposed NWPs or modifications to or reissuance of existing NWPs are adopted only after the COE gives notice and allows the public an opportunity to comment on and request a public hearing regarding the proposals.³⁴ NWP has a 30 day comment period in which the public can express any concerns, comments, objections, or approval for the granting of an NWP.

Granting of an NWP by the COE eliminates the requirement that the state issue a 401 WQC. Thus, IDEM would lose oversight of certain types of projects that are granted NWPs.

Currently there are 39 activities that the COE has ruled as having a minimal impact to the environment and thus qualifies under a NWP.

IDEM has reviewed all of the NWPs to determine whether the NWPs should be applicable in Indiana. Based upon this review, the IDEM has rescinded water quality certification waiver on 12 of the NWPs. IDEM rescinded these NWPs with a letter to the COE and without public input.³⁵ Figure 4 provides a brief description of the NWPs and indicates which NWPs have been rescinded by IDEM. A full description of each NWP and the terms and conditions of the permits are provided in Appendix 2.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavating from or depositing of materials in such waters, or the

accomplishment of any other work affecting the course, location condition, or capacity of such waters must receive prior approval of the COE.³⁶

Permitting process for the COE

The COE does not begin decision making on a Section 404 Clean Water permit until after a Section 401 WQC is issued by the IDEM. If the IDEM denies a Section 401 WQC then the COE cannot grant a Section 404 Clean Water permit.

The processing of a permit application may vary depending on whether or not the project requires an Individual Permit or an NWP. The information necessary to review a project and its potential impacts also varies. The COE's general rule is to have COE permits authorized within 30 days of receiving all issued state permits.

The COE is included in the 368 Early Coordination meeting if the project requires and Individual Permit.

U.S. Fish and Wildlife Service (USFWS)

The USFWS is the federal agency which provides expertise regarding a project's potential impact on federally listed threatened or endangered species. The USFWS reviews, investigates, and cooperates fully in providing ecological advice in the form of comments and recommendations on proposals for federal or federally permitted or assisted activities and developments in or affecting the nation's waters and wetlands.³⁷

Authorizing Legislation

Federal Endangered Species Act

Under the Endangered Species Act (16 U.S.C. 1539), USFWS must determine whether or not a project will adversely affect a threatened or endangered species. The act also requires

Figure 4. Description of Nationwide Permits Authorized by the U.S. Army Corps of Engineers

NWP No.	Nationwide Permit Name	Nationwide Permit Description *	Accepted by IDEM
1	Aids to Navigation	Regarding the placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the US Coast Guard.	Yes
2	Structures in Artificial Canals	Structures constructed in artificial canals within principally residential developments where the connection of the canal to a navigable water of the US as been previously authorized.	Yes
3	Maintenance	The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure or fill. Maintenance dredging and beach restoration are not authorized by this NWP.	Yes
4	Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities	Fish and wildlife harvesting devices and activities such as pound nets, crab traps, crab dredging, eel pots, lobster traps, duck blinds, clam and oyster digging; and small fish attraction devices such as open water fish concentrators.	Yes
5	Scientific Measurement Devices	Staff gages, tide gages, water recording devices, water quality testing and improvement devices and similar structures.	Yes
6	Survey Activities	Survey activities including core sampling, seismic exploratory operations, and plugging of seismic shot holes and other exploratory-type bore holes.	Yes
7	Outfall Structures	Activities related to construction of outfall structures and associated intake structures where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted, or are otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System program.	Yes
8	Oil and Gas Structures	Structures for the exploration, production, and transportation of oil, gas, and minerals on the outer continental shelf within areas leased for such purposes by the Dept. Of the Interior.	Yes

NWP No.	Nationwide Permit Name	Nationwide Permit Description *	Accepted by IDEM
9	Structures in Fleeting and Anchorage Areas	Structures, buoys, floats, and other devices placed within anchorage or fleeting areas to facilitate moorage of vessels where such areas have been established for that purpose by the US Coast Guard.	Yes
10	Mooring Buoys	Non-commercial, single-boat, mooring buoys.	Yes
11	Temporary Recreational Structures	Temporary buoys, markers, small floating docks, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use provided that such structures are removed within 30 days after use has been discontinued.	Yes
12	Utility Line Discharges	Discharges of material for backfill or bedding for utility lines, including outfall and intake structures, provided there is no change in preconstruction contours.	Yes**
13	Bank Stabilization	Bank stabilization activities necessary for erosion prevention provided: (a) no material is placed in excess of the minimum needed for erosion protection; (b) the bank stabilization activity is less than 500 feet in length; © the activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line; (d) no material is placed in any special aquatic site, including wetlands; (e) no material is of the type or is placed in any location or in any manner so as to impair surface water flow into or out of any wetland area; (f) no material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and (g) the activity is part of a single and complete project.	Yes ***
14	Road Crossing	Fills for roads crossing waters of the US (including wetlands and other special aquatic sites) provided: (a) the width of the fill is limited to the minimum necessary for the actual crossing; (b) the fill placed in waters of the US is limited to a filled area of no more than 1/3 acre (no more than a total of 200 linear feet of the fill for the roadway can occur in special aquatic sites, including wetlands; © the crossing is culverted, bridged or otherwise designed to prevent the restriction of, and to withstand, expected high flows, and to prevent the restriction of low flows and the movement of aquatic organisms; (d) the crossing is part of a single and complete project.	No
15	US Coast Guard Approved Bridges	Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the US, including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills.	No
16	Return Water From Upland Contained Disposal Areas	Return water from an upland, contained dredged material disposal area.	Yes***
17	Hydropower Projects	Discharges of dredged or fill material associated with small hydropower projects at existing reservoirs where the project which includes the fill, is licensed by the Federal Energy Regulatory Commission; and has a total generating capacity of not more than 5000 KW.	No
18	Minor Discharges	Minor discharges of dredged or fill material into all waters of the US provided: (a) the discharge does not exceed 25 cubic yards; (b) the discharge will not cause the loss of more than 1/10 acre of a special aquatic site, including wetlands; © if the discharge exceeds 10 cubic yards or the discharge is in a special aquatic site, including wetlands, the permittee notifies the district engineer; and (d) the discharge is part of a single and complete project and is not placed for the purpose of stream diversion.	Yes**
19	Minor Dredging	Dredging of no more than 25 cubic yards below the plane of the ordinary high water mark or the mean high water mark from navigable waters of the US as part of a single and complete project. This NWP does not authorize the dredging or degradation through siltation of coral reefs, submerged aquatic vegetation, anadromous fish spawning areas, or wetlands or, the connection of canals or other artificial waterways to navigable waters of the US.	Yes**
20	Oil Spill Cleanup	Activities required for the containment and cleanup of oil and hazardous substances under specified conditions.	No
21	Surface Coal Mining Activities	Activities associated with surface coal mining activities under specified conditions.	Yes
22	Removal of Vessels	Temporary structures or minor discharges of dredged or fill material required for the removal of wrecked, abandoned, or disabled vessels, or the removal of man-made obstructions to navigation.	Yes

NWP No.	Nationwide Permit Name	Nationwide Permit Description *	Accepted by IDEM
23	Approved Categorical Exclusions	Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where that agency or department has determined that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment.	No
24	State Administered Section 404 Programs	Any activity permitted by a state administering its own section 404 permit program under specified conditions.	Yes
25	Structural Discharge	Discharges of material such as concrete, sand, rock, etc. into tightly sealed forms or cells where the material will be used as a structural member for standard pile supported structures, such as piers and docks; and for linear projects, such as bridges, transmission line footings, and walkways.	Yes
26	Headwaters and Isolated Waters Discharges	Discharges of dredged or fill material into headwaters and isolated waters provided: (a) the discharge does not cause the loss of more than 3 acres of waters of the U.S.; (b) the permittee notifies the district engineer if the discharge would cause the loss of waters of the U.S. greater than one acre; (c) the discharge is part of a single and complete project. For the purposes of this NWP, the acreage of loss of waters includes the filled area plus waters of the U.S. that are adversely affected by flooding, excavation or drainage as a result of the project.	No
27	Wetland and Riparian Restoration and Creation Activities	Activities in waters of the U.S. associated with the restoration of altered and degraded non-tidal wetlands and creation of wetlands on private lands in accordance with the terms and conditions of a binding wetland restoration or creation agreement between the landowner and the USFWS or NRCS, etc.	Yes
28	Modifications of Existing Marinas	Reconfigurations of existing docking facilities within an authorized marina area. No dredging, additional slips or dock spaces, or expansion of any kind within waters of the U.S. are authorized by this NWP.	Yes
29	Single-Family Housing	Discharge of dredged or fill material into non-tidal waters of the U.S. including non-tidal wetlands, for the construction or expansion of a single-family home and attendant features (such as a garage, driveway, storage shed, and/or septic field) for an individual permittee. Loss of waters is limited to no more than ½ acre, practicable actions must be taken to avoid or minimize on-site and off-site impacts, the home must be for a personal residence, can only be used once per parcel, and can not be used with NWP 14, NWP 18, or NWP 26.	Yes***
30	Moist Soil Management for Wildlife		Yes
31	Maintenance of Existing Flood Control Projects		No
32	Completed Enforcement Activities	Any structure, work or discharge of dredged or fill material undertaken in accordance with, or remaining in place in compliance with, the terms of a final Federal court decision, consent decree, or settlement agreement in an enforcement action brought by the U.S. under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899.	No
33	Temporary Construction, Access, and Dewatering	Temporary structures and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided the associated permanent activity was previously authorized by the COE or U.S. Coast Guard, or for bridge construction activities not subject to Federal regulation.	Yes**
34	Cranberry Production Activities	Discharges of dredged or fill material for dikes, berms, pumps, water control structures or leveling of cranberry beds associated with expansion, enhancement, or modification activities at existing cranberry production operations under specified conditions.	No
35	Maintenance Dredging of Existing Basins	Excavation and removal of accumulated sediment for maintenance of existing marina basins, canals, and boat slips to previously authorized depths or controlling depths for ingress/egress whichever is less provided the dredged material is disposed of at an upland site and proper siltation controls are used.	Yes
36	Boat Ramps	Activities required for the construction of boat ramps under specified conditions.	Yes**
37	Emergency Watershed Protection and Rehabilitation	Work done by or funded by the NRCS qualifying as an "exigency" situation (requiring immediate action) under its Emergency Watershed Protection Program and work done or funded by the Forest Service under its Burned-Area Emergency Rehabilitation Handbook.	Yes
38	Cleanup of Hazardous and Toxic Waste	Specific activities required to effect the containment, stabilization or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority.	No

NWP No.	Nationwide Permit Name	Nationwide Permit Description *	Accepted by IDEM
39	Reserved		No****
40	Farm Buildings	Discharges of dredged or fill material into jurisdictional wetlands (but not including prairie potholes, playa lakes, or vernal pools) that were in agricultural crop production prior to December 23, 1985 (ie., farmed wetlands) for foundations and building pads for buildings or agricultural related structures necessary for farming activities. The discharge will be limited to the minimum necessary but will in no case exceed 1 acre.	No

* Full descriptions of the permits are contained in Appendix
 ** WQC waiver rescinded for NWP's 12, 18, 19, 33, and 36 if the activity occurs on or in any designated Outstanding State Resource Waters, the Salmonid Streams, the Indiana Trout Streams and Lakes, and the Exceptional Use Streams.
 *** No decision required.
 **** IDEM will grant 401 WQC with conditions.
 Source: Reprint of IDEM's Section WQC Letter Regarding the 1997 Reauthorization of NWPs.

other federal agencies to consult with the USFWS regarding impact to threatened or endangered species when those agencies are involved in a project. With any drainage improvement project that involves wetlands, the USFWS will generally provide comments to the COE.³⁸

Process for the USFWS

The USFWS reviews permit applications submitted to the COE to ensure the continued existence of an endangered or threatened species is not further jeopardized and/or that critical habitat for such species is not destroyed or adversely modified.³⁹ The USFWS provides the COE, with a Biological Opinion detailing the impacts of the project on the affected species. If the USFWS concludes that a project will jeopardize the continued survival of the species, the Biological Opinion may include alternatives, developed with the federal agency and the applicant, that will avoid the impacts to the species. The USFWS does not issue a separate permit.

Natural Resources Conservation Service (NRCS)

The NRCS is the leading agency in developing and providing technical advice to farmers and others involved in activities related to soil and water resources throughout the United States. The NRCS is also involved in the delineation of wetlands for farmers participating in the U.S. Department of Agriculture (USDA) programs Through an agreement with the COE and the U.S. Environmental Protection Agency (USEPA), the agricultural wetland delineations made by NRCS personnel are accepted for determining jurisdictional wetland boundaries.⁴⁰

Authorizing Legislation

Federal Food Security Act of 1985

The Food Security Act of 1985, prohibits farmers who participate in USDA programs from converting wetlands and then producing an agricultural commodity on the converted wetland. The Food, Agriculture, Conservation and Trade Act of 1990 extended this prohibition such that a violation occurs when a wetland is converted even if an agricultural commodity has not actually been produced.⁴¹

Process for NRCS

While the Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990 do not contain specific application forms, approvals, or

the issuance of a permit for drainage improvement projects, consultation with NRCS staff is encouraged from the beginning of a project. Impacting a wetland by a drainage improvement project may impact an individual's receipt of or eligibility for USDA benefits for all of that individual's land.⁴²

Analysis

In order to obtain information from counties, Legislative Services Agency (LSA) sent a questionnaire (Appendix 3) to all county surveyors along with follow-up telephone calls to specific counties to determine how, and to what extent county surveyors believe that county drainage boards, drainage projects, private landowners, the environment, and regulatory agencies are impacted by drainage decisions. Fifty-eight counties completed and returned the questionnaire (a 64% response rate). Eleven of the 58 reporting counties listed no regulated drains in the county. The responses to the questionnaire are summarized in Appendix 4.

Permit Conditions

Based on questionnaire responses, in 1996 county surveyors who responded to the questionnaire completed a total of 312 open regulated drain projects. These projects constituted 41 reconstruction projects and 271 maintenance projects as reported by the county surveyors. Of the 312 projects completed, 44 projects were reported to have required a permit from a regulatory agency(ies) and 34 permits were obtained. Twenty-two of the 34 permits included project specifications reported to be different from the initial specification proposed by the county.

Many times a permit is approved with conditions. These conditions are placed on a permit by IDNR, IDEM and the COE to minimize the environmental impact of a project. However, many times these conditions increase the cost of a project. The USFWS and NRCS do not place conditions on a permit but the agencies may make suggestions for conditions. Permit files on 27 projects completed in 1996 were obtained from IDNR and IDEM and reviewed by LSA. Figure 5 lists 1996 county drainage projects and the conditions that would be placed on a permit. In a majority of the projects the listed conditions were determined as a result of a 368 Early Coordination meeting. The conditions listed were not final and were subject to change if the project plans were significantly altered. Eighty-two percent (82%) of 22 survey respondents indicated that there was at least some disagreement between the county surveyors and the regulatory agency resulting from conditions placed on the project.

A review of permit requests and conditions shows that the permit conditions were consistent among projects and regulatory agencies.

The environmental benefits of conditions placed on permits include the protection of the physical, chemical and biological functions of the state's water bodies. Open regulated drain projects are most likely to negatively impact the physical and biological functions of a water body. IDEM encourages county surveyors to use specific practices and methods when doing a drain project to ensure that any disturbance to the physical and biological functions by the drain project are minimal and temporary. This protection is also to ensure that individuals can safely swim and fish in Indiana's lakes, rivers, and streams as well as ensure safe drinking water.

Concerns were expressed, in the questionnaire and in interviews, by some county surveyors about the reasonableness of conditions placed on permits by IDNR, IDEM and/or the COE. Concerns included increased costs of drainage projects for limited additional benefits. For example, following a 368 Early Coordination meeting, the COE and IDEM placed a condition on a permit requiring the use of solid tiles with anti-seep collars for tile that ran thru a wetland. Implementation of this condition allows for drainage of land around a wetland while not impacting the water level of the wetlands. The county surveyor responded that "the use of solid tile is absurd" and that he is unwilling to proceed with the project if these conditions

were required for permit approval.

Another example is the use of a floating dredge, if financially feasible, through a 1.5 mile wetlands area. The estimated cost of using a floating dredge for that portion of a project is \$150,000. The estimated cost of using a land dredge for the same portion of a project is \$24,800. Both dredges would accomplish the same goal of removing silt from the ditch, but IDNR placed the condition on the permit. The county surveyor stated that if the floating dredge is used the cost of project far outweighs the benefits. As of this time the project is on hold.

IDNR sometimes requires a condition that specifies a minimum buffer strip of grasses and legumes. County surveyors stated that often times agricultural landowners are concerned when minimum buffer strip conditions are placed on a proposed permit. The landowner is concerned about the loss of land to a buffer strip which reduces the amount of land used for crop production potentially resulting in loss of revenue. The potential loss of revenue can sometimes be recovered through the Federal Farm Bill. Under the Federal Farm Bill, filter strip land adjacent to streams is eligible for the Conservation Reserve Program. The qualifiable filter strips are a minimum of 33 feet and a maximum of 99 feet.⁴³

IDEM requires the mitigation of disturbed

Figure 5. Permit Conditions on 1996 Drainage Projects

Project ID #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
368 Early Coordination Meeting	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IDNR Permit Conditions																							
1. Dredge only where it is necessary.	X	X														X							
2. Place all dredged material landward of the floodway.	X	X	X	X																			
3. Work from one side only - either the side with the least amount of woody vegetation or the east or north side.	X				X	X	X	X				X	X			X	X					X	X
4. Spread and cast spoils in designated areas.					X	X	X	X	X	X		X	X		X	X	X					X	X
5. Do not cut or remove trees over 12" diameter-at-breast height unless absolutely necessary.	X																						
6. Do not leave felled trees, brush, or other debris (including construction debris) in the floodway.	X	X	X	X	X	X			X	X	X		X	X	X	X	X						X
7. Minimize and contain within the project limits all tree and brush clearing and provide the opportunity to utilize cleared trees of firewood and timber size.	X		X																				
8. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion. Low endophyte tall fescue may be used in the ditch bottom and side slopes only.	X	X	X	X	X	X	X		X	X			X	X	X	X		X			X	X	X

Project ID #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
9. Excavate, seed, fertilize, and mulch all other disturbed areas. Seed disturbed ditch banks and adjacent spoil areas at the end of each work day.			X	X		X	X				X		X	X	X	X	X					X	X	X
10. Maintain a minimum buffer strip of grasses and legumes along the top of the bank used for construction after project completion.	X																						X	
11. Do not alter the water table of any wetland or lake.	X	X					X				X		X	X	X	X						X	X	X
12. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.	X	X	X	X	X					X	X						X						X	
13. Two weeks prior to the start of construction, contact in writing the Division of Fish and Wildlife.	X	X		X																				
14. Construct and maintain sediment traps throughout the project's length and maintain them on a regular basis including after the project is completed.	X	X		X	X	X			X	X	X		X	X	X	X	X	X						X
15. Utilize hand held tools for the removal of minor log jams or fallen trees.				X						X														
16. Utilize a small floating hydraulic suction dredge in stated designated areas. Utilize hydraulic equipment. Utilize mats for heavy equipment.		X											X	X								X		
17. Minimize the use of heavy equipment in the stream to that absolutely necessary for project construction.				X																				
18. Use appropriately sized and/or anchor the structural armament to resist displacement by current or wave action during the 100 year frequency flood. A minimum average 6 inch graded riprap should extend below the normal water level to provide habitat for aquatic organisms in the voids.				X		X				X	X						X							
19. Riprap should be keyed in at the toe of the slope.				X						X							X							
20. All work must conform with the existing bank at the upstream and downstream limits of the project site.				X						X							X							
21. Avoid excavation of alluvial deposits.					X																			
22. Anchor all trees and brush used as bank stabilization to resist flotation and for dislodging during high water events.					X																			
23. All stream crossings that are to be replaced must be replaced with a crossing of equal or greater cross-sectional flow area and maintain the original top of road profile. The stream crossing is to be used as a crossing for farming equipment and trucks only.																								
IDNR Construction in a Floodway Permit	X	X	X	X	X					X	X							X					X	X
IDNR Ditch Reconstruction Permit						X	X				X		X	X	X	X	X							
No permit required.																						X		
IDEM Permit Conditions																								
1. Revegetate all bare earth as soon as possible.	X																							
2. Work only from one side of the ditch at all times. Where possible, work from the side of the bank which has the least woody vegetation. Clear large trees only when necessary to gain access to the ditch.	X	X				X	X		X				X				X						X	
3. In areas where ditch side slopes have collapsed and back reconstruction is necessary, reshape the new bank slopes at 2:1 ratio.	X				X												X						X	
4. Do not place dredged materials within any wetlands or other bodies of water; spread materials into adjacent agricultural fields or in between construction right-of-way where applicable (seed and stabilize as quickly as possible).	X	X		X												X								X
5. Deposition of dredged or excavated materials and all earthwork operations shall be carried out in such a manner that soil erosion and sediment runoffs to any nearby watercourse are controlled and minimized.			X		X	X	X		X	X	X		X	X	X	X	X	X				X	X	X
6. Reseed all areas impacted by construction traffic.		X				X	X		X				X	X		X								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
7. Avoid all work within specific sections of a ditch that would adversely impact jurisdictional wetlands. All attempts should be made to avoid and minimize impacts to wetlands.		X			X	X					X			X	X			X				X	X				
8. Any wetlands which cannot be avoided and are impacted by construction activities will require mitigation to replace the lost functions of these areas. Mitigation would be required at a 2:1 ratio. Mitigation would need to take place within the watershed of the project, and would require a monitoring plan to track the success of mitigation efforts.		X			X	X							X													X	
9. Physical disturbance of banks, and existing vegetation, especially large trees which provide shade to the waterbody, should be limited to that which is absolutely necessary to the conduct of the project. Specifically, vegetation stabilizing the streambanks, including stumps of removed trees, shall be left undisturbed as much as possible. Where possible, trees along the slope to be stabilized should remain in place, and only removed to provide access to place riprap.				X	X	X	X		X	X	X		X	X	X	X	X	X			X	X	X			X	X
10. The contractor performing the work shall take appropriate measures, such as placement of mats, to protect banks and soils.				X																							
11. Riprap should be placed as close to the existing banks as possible, and keyed into the slope.			X			X				X																	
12. Appropriate erosion control methods should be installed prior to any soil disturbances to prevent soil from entering and traveling down a waterway. All erosion control structures and devices will be monitored and maintained, especially after precipitation events, until all soils disturbed by construction activities have been permanently stabilized.					X	X	X		X		X		X	X	X	X	X	X			X					X	
13. All woody stems that are removed shall be cut flush to the ground, thus leaving intact their root system to help provide stability to the soil and prevent erosion.									X																		
14. The project shall be conducted in compliance with all federal and state solid and hazardous waste laws and regulations.									X								X	X									
15. The contractor performing the actual operations must comply with Section 311 of the Federal Clean Water Act and with 327 IAC 2-6 concerning spills of oil and hazardous materials.				X	X	X	X		X	X	X		X	X	X	X					X	X				X	
16. Construction and maintenance of in stream sediment traps.				X																							X
401 WQC Permit	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X			X	X	X			X	Denied
COE Permit Conditions																											
1. Spread excavated material as lightly as possible where wetlands occur adjacent to ditch.					X											X		X									
2. Seed all disturbed areas.					X												X										
404 WQS Permit	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X				X	X				Denied
USFWS Comments																											
1. In specific areas, excavation should only be done from the north bank.					X																						

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2. Use a hydraulic dredge thru wetlands. Dredged materials should be disposed of within a diked upland disposal site.											X							X									
3. This project is not likely to adversely affect endangered species.																						X					
NRCS Comments																											
No permits required from any agency.								X				X							X	X			X				

wetlands as a permit condition for some projects. A review of Figure 5 shows that four permits contained wetland mitigation condition. Three of the permits had a wetland mitigation of 2:1. One permit contained a wetland mitigation that required acreage ratios of 4:1 for forested areas, 3:1 for scrub shrub areas, and 2:1 for emergent areas. This means that for each acre of wetland disturbed or destroyed due to the work conducted on a project 2, 3, or 4 acres of wetland must be created. Mitigation ratios were established as a way to address the shortcomings in technology to recreate a wetlands when compared to nature. Because of the difficulty in reproducing the original wetlands, replacement ratios are based on the complexity of the impacted wetlands habitat, plant, and hydrology ecosystem. The ratio also takes into account the potential for mitigation failure.

Wetland mitigation requires the creation of a new wetlands. If the wetlands is established on agricultural land, then there is a reduction of tillable land which potentially reduces the amount of revenue generated from crop production. County surveyors expressed concern that in some counties there is no access for land acquisition to construct the wetland mitigation. This can stop a project from being completed.

Currently there is a task force addressing the issue of wetland assessment and mitigation. The task force includes representation from IDNR, IDEM, the Indiana Department of Transportation, county surveyors and environmental organizations. This task force is an attempt of increasing communication relating to wetlands among the individuals and regulatory agencies involved in drainage projects that impact wetlands.

The construction and maintenance of sediment traps throughout a project's length is a common permit condition by IDNR. The purpose of the sediment traps is to reduce the amount of sediment moving downstream by catching the sediment in the traps. The reduction of sediment traveling downstream should reduce the amount of maintenance (i.e., dredging) that normally would have to be done on a drain. County surveyors stated that the cost of constructing sediment traps can increase the initial cost of a project. Construction costs of

sediment traps varies depending on the size and number of traps needed. County surveyors reported that the construction costs for sediment traps range from \$8,000-\$12,000 with a cost of maintenance of \$3,000-\$4,000. According to some county surveyors construction and maintenance of sediment traps is more cost effective then periodically dredging a drain since the sediment trap is a much smaller area to maintain.

Concerns were expressed by some county surveyors regarding the replacement of removed vegetation along an open regulated drain. Regulatory agencies restrict the types of grasses that can be used for the revegetation of disturbed areas. County surveyors are not allowed to use all varieties of tall fescue because it is not liked by wildlife. Instead they are required to use a mixture of grasses and legumes (i.e., Big bluestem, Indiangrass, Switchgrass Annual ryegrass, Timothy, Redtop, Orchardgrass, Partridge Pea, Illinois Bundleflower) which wildlife prefer. Regulatory agencies prefer the use of mixed grasses and legumes because they are more flood tolerant, better for wildlife habitat, and are tolerant to many agricultural chemicals during their establishment period. The use of the required grass mixtures and legumes is more costly than using varieties of tall fescue. The cost of fescue is \$1.50/lb whereas mixed grasses and legumes cost between \$1.50/lb and \$11.50/lb.⁴⁴

County surveyors expressed that environmental benefits are necessary but that the general public is benefitting from environmental benefits without paying for them. The landowners who are paying these benefits are not only paying through an annual assessment fee but also potentially through loss of land, land use, and possible reduction in crop production and revenue.

Assessment of Costs for Conditions

The county drainage board (under IC 36-9-27-39) is responsible for determining the benefits of and assessing landowners for periodic maintenance and reconstruction on an open regulated drain. The county drainage board is responsible for assessing each landowner based upon the following factors:

- 1) the watershed affected by the drain to be reconstructed or maintained;
- 2) the number of acres in each tract;
- 3) the total volume of water draining into or through the drain to be maintained or reconstructed;
- 4) the land use;
- 5) the increased value accruing to each tract of land from the maintenance or reconstruction;
- 6) whether the various tracts are adjacent; upland, upstream, or downstream in relation to the main trunk of the drain;
- 7) the elimination or reduction of damage from floods;
- 8) any other factors affecting the maintenance or reconstruction.

All periodic maintenance and reconstruction assessments are deposited in the county general drain improvement fund for drains. Separate records are kept for the total amount of assessments collected for each periodic maintenance or reconstruction project so that the total cost of the project does not exceed the amount assessed and collected.

In addition, downstream landowners and the general population of a county who may be considered general beneficiaries of the regulatory process are not assessed for the additional costs of the conditions placed on a project.

Time Required for Process

The next greatest source of concern mentioned by the county surveyors responding to the questionnaire was the additional time required to obtain a permit (80% of those responding). IDNR does not have a specified number of days to review a permit application. IDEM has 60 calendar days to review a 401 WQC application and render a decision to either grant, deny, or waive a 401 WQC. The COE has 30 days after receiving all issued state permits to issue a COE permit. County surveyors responding to the questionnaire and in interviews stated that in some cases it has taken one year for a permit to be granted. For example, it took approximately one year for a wetlands to be delineated for a project. Because of the length of time it took to obtain a permit the county could not do the project when originally planned. The project work was done in early spring and required the use of mats to excavate in wetlands and adjoining areas. The mats minimized any negative environmental impact. However, the use of the mats cost the county an additional \$1,100 (a 40% increase to the original project cost). According to the county surveyor, if the delineation of the wetlands had been timely the use of the mats would not have been necessary and the project cost would not have been increased.

Other Concerns

Also mentioned as sources of disagreement between the county surveyors and the regulatory agencies are the definitions of drainage ditch and stream (40% of those responding) and the definition of ditch reconstruction and maintenance (36% of those responding).

Questionnaire and interview comments made by county surveyors indicated that several felt that a drainage ditch (referred to in this report as an open regulated drain) was created for one sole purpose; draining surface water from agricultural land. The drain could be: completely man-made (and thus not subject to regulation) and flow straight; completely natural and flow with the lay of the land; or a combination of the two. Irregardless of how the drain was created, the primary purpose is for the removal of surface water from agricultural land. A stream on the other hand is naturally created and subject to regulation under IDEM and COE. The burden of proof is on the counties. The county surveyors sometimes have to rely on county historical maps and topographical quadrangle maps (published by the U.S. Geological Survey) to prove to regulatory agencies that an open regulated drain is actually a man-made drain and not a stream.

The regulatory agencies define a man-made drain by looking at historical county maps to determine the age of the water body. They also use U.S. Geological Survey topographical quadrangle maps as well as state land use maps to determine whether the water body is man-made or a natural stream. The intended use or purpose of the water body is irrelevant.

In both instances the apparent confusion in the definitions of ditch and stream are due to interpretation. Communication between the county surveyor and the regulatory agencies may help clarify and eliminate the confusion in defining a drain or a stream.

The confusion in defining drain maintenance and drain reconstruction also appears to be a matter of interpretation. IC 36-9-27-34© states that a drain is in need of periodic maintenance when it can be made to perform the function for which it was designed and constructed. This is done by cleaning, spraying, removing obstructions and making minor repairs. Some county surveyors have responded (through the LSA questionnaire and interviews) that periodic drain maintenance means not only cleaning, spraying, and removing obstructions but it also includes the removal of silt to restore the open regulated drain to its original depth. However, the regulatory agencies consider the removal of silt as a reconstruction project. IC 36-9-27-34(b) states that a drain is in need of reconstruction when it will not perform the function for which it was designed and constructed. This is accomplished by deepening or widening an open drain, extending the length of a drain, and changing the course of a drain. The removal of dredge or fill material from a water way is exempt from federal regulation but not from state regulation. Under NWP #26 this activity would be permitted

under federal regulation. However, IDEM has rescinded the NWP #26. IDNR regulates this activity under IC 14-28-1 and IC 14-26-5.

Communication

During the past two years progress has been made in increasing the communication between the county surveyors and the regulatory agencies. The 368 Early Coordination procedure was established to bring specific regulatory agencies and the county surveyor together in the field to review and discuss proposed open regulated drainage project. 73% of the county surveyors responding to the LSA questionnaire stated that the 368 Early Coordination procedure has been useful.

The Indiana Drainage Handbook was also created to increase communication between the individuals and agencies involved in an open regulated drain project. The purpose of the Handbook is to clarify each regulatory agency's permitting program, required permits, and best management practices. The Handbook also provides information regarding the agency contact person(s), telephone numbers and addresses. 85% of the LSA questionnaire respondents found or anticipated the Handbook to be useful.

IDNR and IDEM have expressed that most misunderstandings and problems can be resolved through increased communication. Both of the agencies have expressed the necessity and willingness to provide outreach programs to the county surveyors in the future.

County surveyors have expressed a need and willingness, as well, for increased communication between themselves and the regulatory agencies.

Conclusion

Forty-nine county surveyors reported on the LSA questionnaire a total of 24,852 miles of regulated drains, both open and tile drains. The purpose and scope of this report is the regulation of open regulated drains. Open regulated drains are under the jurisdiction of local, state, and federal agencies. As illustrated in Figure 3, the regulation of these drains can be a complicated and confusing process. There are areas in which confusion continues to impact the permitting process. There is confusion in the definitions of ditch and stream and the definitions of maintenance and reconstruction. Based on questionnaire responses and

interviews, the confusion is a matter of interpretation of the definitions by the county surveyor and the regulatory agencies.

County surveyors expressed concerns regarding the reasonableness and necessity of conditions placed on open regulated drain project permits. The purpose of the conditions is to minimize negative environmental impacts. Concerns were expressed regarding the environmental benefits resulting from the conditions and the cost of paying for the conditions; do the benefits of a project outweigh the cost of the project.

County surveyors also expressed concerns about the assessment process to pay for a periodic maintenance or reconstruction project. Under the current assessment process, a landowner is assessed for the cost of the project based on the number of acres in each tract, the total volume of water draining into or through the drain to be maintained or reconstruction, the land use, location of various tracts in comparison to the drain and other factors. Downstream landowners and the general population of the county maybe the general beneficiaries of the regulatory process but they are not assessed for the additional costs of the conditions placed on a project or the cost of maintaining or reconstructing the open regulated drain.

County surveyors also expressed concerns regarding the length of time required to process a permit. Some county surveyors reported that the length of time required to process a permit can be costly to a project. County surveyors prefer to do open regulated drain projects during certain times of the year (i.e., before the planting and after the harvesting of crops) to reduce the potential impact to crops which can potentially impact the crop production and revenue. If a permit is not processed in a timely manner there could be additional cost added to the original project cost estimate.

Attempts have been made through the 368 Early Coordination procedure and the Indiana Drainage Handbook to reduce the confusion of the open regulated drain permitting process. The purpose of these efforts is to increase communication between the regulatory agencies and the county surveyors and to clarify each regulatory agency's permitting program, required permits, and best management practices. According to the county surveyors these two efforts have improved the permitting process. The state regulatory agencies and the county surveyors have expressed a need and willingness to increase communication among one another.

**APPENDIX 1. Required Authorization and Processing Methods
for Various Drainage Improvement Activities.⁴⁵**

ABBREVIATIONS/ACRONYMS:

IDNR	Indiana Department of Natural Resources
IDEM	Indiana Department of Environmental Management
COE	U.S. Army Corps of Engineers
AUTH.	Authorization
PROC.	Processing Method
N/A	Not Applicable
EC	Early Coordination/Notification Process (COE and IDNR have allowed this process so that the applicant may obtain a "prior finding", request confirmation that an Individual Permit would not be required if certain practice(s) is performed in a manner described in this handbook, or to pre-determine the permit conditions if a permit is determined to be required.)
IP	Individual Permit
GP	General Permit (either Nationwide or Regional)
NSA	No Separate Authorization (Separate application or authorization from IDEM is <u>not</u> required for this activity. The application for IDEM Section 401 Water Quality Certification is made through the COE permit process.)
SA	Separate Authorization (Although some projects in the noted category are covered by a COE Nationwide Permit, blanket IDEM Water Quality Certification has been denied for this particular Nationwide Permit. Therefore, these projects would <u>still need an individual IDEM Water Quality Certification</u> .)

NOTES (superscript numbers):

- 1 In addition to the agencies listed in the table, occasionally it may be required to seek separate authorization from the U.S. Fish and Wildlife Service (USFWS) and/or from the Natural Resources Conservation Service (NRCS). USFWS gets involved when there is a presence of likely of listed endangered species. Separate authorization (take permit) from USFWS is required only when no other federal agencies are involved. Involvement of any federal agency would eliminate the need for an individual take permit from USFWS. NRCS gets involved when a drainage activity results in conversion of a wetland to produce a commodity crop (see Section 2 for more detail.)
- 2 Authorization is required if the tile is designated as a "Regulated Drain" or it outlets to an open or closed regulate drain.
- 3 Authorization is require according to most local ordinances. However, note that local Drainage Boards, County Surveyors, and municipalities are normally exempt from their own local stormwater ordinances and codes (except for floodplain zoning ordinances).
- 4 If this activity involves a "Classified" Filter Strip then applican must contact the County Surveyor and follow procedures outlined in IC 6-1.1-6.7.
- 5 Authorization required only if the IDNR has jurisdiction. IDNR has no jurisdiction if (a) the activity is occurring entirely outside the Floodway (if determined), or by (b) the drainage area is less than one square mile (640 acres) or (c) the activity is occurring under county's direction and is on a stream or an open drain that is less than 10 miles long, and (d) where the work is not within one half (1/2) mile of public freshwater lake.
- 6 No individual IDNR permit may be required if th etile drain meets certain conditions. The activity may also qualify for an expedited permit process. (See Section 2 for more information.)
- 7 The IDEM jurisdiction over drainage improvement activities is tied to the COE jurisdiction. If the project does not require a COE permit, then the Water Quality Certification from IDEM is not needed.
- 8 The activity does not normally require a COE permit. However, if the activity results in the discharge of dredged or fill material into "waters of the United States", including wetlands, an authorization from COE is required.
- 9 Authorization required if COE has jurisdiction. COE jurisdiction is limited to activities within "waters of the United States" and wetlands which primarily include all streams and ditches below their ordinary high water line and all areas judged as jurisdictional wetlands by COE.
- 10 For agricultural purposes, maintenance of man-made drainage ditches are exempt under Section 404(f)(1)(c) when the are excavated back to original constructed contours. Maintenance of a previously modified reach of a natural stream or drainageway is not exempt from Section 404 for agricultural or non-agricultural purposes.

GENERAL NOTES:

- a Anyone applying hebicides for debrising or to kill stumps must emply with pesticide label use and rate directions. Applications may be only by or under the direct supervision of a certified applicator, certified by the office of the Indiana Chemist at Purdue University. d o n e
- b The noted practice(s), when appropriate and if done properly, is considered by most agencies to be preferable of other alternatives.
- c Because of potential adverse environmental impacts associated with the noted practice(s), most agencies exercise a high degree of oversight on the activity and frequently require various mitigation measures, as appropriate.
- d For the purpose of this Handbook, this activity is defined as all potential maintenance/channel reconstruction practices utilized to restore channel cross sections to their as-built or permitted conditions, both in terms of dimensions and material. The evidence for the as-built conditions such as court records, permits, as-built construction plans, etc. would most likely be requested by regulatory agencies.

APPENDIX 2. Federal Register NWP Descriptions.⁴⁶

A. Index of the Nationwide Permits and Conditions

Nationwide Permits

1. Aids to Navigation
2. Structures in Artificial Canals
3. Maintenance
4. Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities
5. Scientific Measurement Devices
6. Survey Activities
7. Outfall Structures
8. Oil and Gas Structures
9. Structures in Fleeting and Anchorage Areas
10. Mooring Buoys
11. Temporary Recreational Structures
12. Utility Line Discharges
13. Bank Stabilization
14. Road Crossings
15. U.S. Coast Guard Approved Bridges
16. Return Water from Upland Contained Disposal Areas
17. Hydropower Projects
18. Minor Discharges
19. Minor Dredging
20. Oil Spill Cleanup
21. Surface Coal Mining Activities
22. Removal of Vessels
23. Approved Categorical Exclusions
24. State Administered Section 404 Programs
25. Structural Discharges
26. Headwaters and Isolated Waters Discharges
27. Wetland and Riparian Restoration and Creation Activities
28. Modifications of Existing Marinas
29. Single-Family Housing
30. Moist Soil Management for Wildlife
31. Maintenance of Existing Flood Control Projects
32. Completed Enforcement Actions
33. Temporary Construction, Access and Dewatering
34. Cranberry Production Activities
35. Maintenance Dredging of Existing Basins
36. Boat Ramps
37. Emergency Watershed Protection and Rehabilitation
38. Cleanup of Hazardous and Toxic Waste
39. Reserved
40. Farm Buildings

B. Nationwide Permits

- 1. Aids to Navigation.** The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR Part 66, Chapter 1, Subchapter C). (Section 10)
- 2. Structures in Artificial Canals.** Structures constructed in artificial canals within principally residential developments where the connection of the canal to a navigable water of the United States has been previously authorized (see 33 CFR 322.5(g)). (Section 10)
- 3. Maintenance.** The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area including those due to changes in materials, construction techniques, or current construction codes or safety standards which are necessary to make repair, rehabilitation, or replacement are permitted, provided the environmental effects resulting from such repair, rehabilitation, or replacement are minimal. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction. This NWP authorizes the repair, rehabilitation, or replacement of those structures destroyed by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced or under contract to commence within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the District Engineer, provided the permittee can demonstrate funding, contract, or other similar delays. Maintenance dredging and beach restoration are not authorized by this NWP. (Sections 10 and 404)
- 4. Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities.** Fish and wildlife harvesting devices and activities such as pound nets, crab traps, crab dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, and small fish attraction devices such as open water fish concentrators (sea kites, etc.). This NWP authorizes shellfish seeding provided this activity does not occur in wetlands or sites that support submerged aquatic vegetation (including sites where submerged aquatic vegetation is documented to exist, but may not be present in a given year). This NWP does not authorize artificial reefs or impoundments and semi-impoundments of waters of the United States for the culture or holding of motile species such as lobster, or the use of covered oyster trays or clam racks. (Sections 10 and 404)
- 5. Scientific Measurement Devices.** Devices whose purpose is to measure and record scientific data such as staff gages, tide gages, water recording devices, water quality testing and improvement devices and similar structures. Small weirs and flumes constructed primarily to record water quantity and velocity are also authorized provided the discharge is limited to 25 cubic yards and further for discharges of 10 to 25 cubic yards provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. (Sections 10 and 404)
- 6. Survey Activities.** Survey activities including core sampling, seismic

exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, soil survey and sampling, and historic resources surveys. Discharges and structures associated with the recovery of historic resources are not authorized by this NWP. Drilling and the discharge of excavated material from test wells for oil and gas exploration is not authorized by this NWP; the plugging of such wells is authorized. Fill placed for roads, pads and other similar activities is not authorized by this NWP. The NWP does not authorize any permanent structures. The discharge of drilling muds and cuttings may require a permit under Section 402 of the Clean Water Act. (Sections 10 and 404)

7. Outfall Structures. Activities related to construction of outfall structures and associated intake structures where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted, or are otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System program (Section 402 of the Clean Water Act), provided that the permittee notifies the District Engineer in accordance with the "Notification" general condition. (Also see 33 CFR 330.1(e)). Intake structures per se are not included--only those directly associated with an outfall structure. (Sections 10 and 404)

8. Oil and Gas Structures. Structures for the exploration, production, and transportation of oil, gas, and minerals on the outer continental shelf within areas leased for such purposes by the Department of the Interior, Minerals Management Service. Such structures shall not be placed within the limits of any designated shipping safety fairway or traffic separation scheme, except temporary anchors that comply with the fairway regulations in 33 CFR 322.5(f). (Where such limits have not been designated, or where changes are anticipated, District Engineers will consider asserting discretionary authority in accordance with 33 CFR 330.4(c) and will also review such proposals to ensure they comply with the provisions of the fairway regulations in 33 CFR 322.5(f)). Any Corps review under this permit will be limited to the effects on navigation and national security in accordance with 33 CFR 322.5(f)). Such structures will not be placed in established danger zones or restricted areas as designated in 33 CFR Part 334; nor will such structures be permitted in EPA or Corps designated dredged material disposal areas. (Section 10)

9. Structures in Fleeting and Anchorage Areas. Structures, buoys, floats and other devices placed within anchorage or fleeting areas to facilitate moorage of vessels where such areas have been established for that purpose by the U.S. Coast Guard. (Section 10)

10. Mooring Buoys. Non-commercial, single-boat, mooring buoys. (Section 10)

11. Temporary Recreational Structures. Temporary buoys, markers, small floating docks, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use provided that such structures are removed within 30 days after use has been discontinued. At Corps of Engineers reservoirs, the reservoir manager must approve each buoy or marker individually. (Section 10)

12. Utility Line Discharges. Discharges of dredged or fill material associated with excavation, backfill or bedding for utility lines, including outfall and intake structures, provided there is no change in preconstruction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquefiable, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone and telegraph messages, and radio and television communication. The term "utility line" does not include activities which drain a water of the United States, such as drainage tile; however, it does apply to pipes conveying drainage from another area. This NWP authorizes mechanized landclearing necessary for the installation of utility lines, including overhead utility lines, provided the cleared area is kept to the minimum necessary and preconstruction contours are maintained. However, access roads, temporary or permanent, or foundations associated with overhead utility lines are not authorized by this NWP. Material resulting from trench excavation may be temporarily sidcast (up to three months) into waters of the United States, provided that the material is not placed in such a manner that it is dispersed by currents or other forces. The DE may extend the period of temporary side-casting not to exceed a total of 180 days, where appropriate. The area of waters of the United States that is disturbed must be limited to the minimum necessary to construct the utility line. In wetlands, the top 6" to 12" of the trench should generally be backfilled with topsoil from the trench. Excess material must be removed to upland areas immediately upon completion of construction. Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line. (See 33 CFR Part 322).

Notification: The permittee must notify the district engineer in accordance with the "Notification" general condition, if any of the following criteria are met:

a. Mechanized landclearing in a forested wetland;	b. A Section
10 permit is required for the utility line;	exceeds 500
c. The utility line in waters of the United States	feet; or,
d. The utility line is placed within a jurisdictional area (i.e., a water of the United States), and it runs parallel to a streambed that is within that jurisdictional area. (Sections 10 and 404)	

13. Bank Stabilization. Bank stabilization activities necessary for erosion prevention provided the activity meets all of the following criteria:

a. No material is placed in excess of the minimum	needed for
erosion protection;	
b. The bank stabilization activity is less than 500	feet in
length;	
c. The activity will not exceed an average of one	cubic yard
per running foot placed along the bank	below the plane of the ordinary
high water mark or the high tide line;	
d. No material is placed in any special aquatic site,	including
wetlands;	
e. No material is of the type, or is placed in any	location, or
in any manner, so as to impair surface	water flow into or out of any

wetland area;

f. No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,

g. The activity is part of a single and complete project. Bank stabilization activities in excess of 500 feet in length or greater than an average of one cubic yard per running foot may be authorized if the permittee notifies the District Engineer in accordance with the "Notification" general condition and the District Engineer determines the activity complies with the other terms and conditions of the NWP and the adverse environmental effects are minimal both individually and cumulatively. This NWP may not be used for the channelization of a water of the United States. (Sections 10 and 404)

14. Road Crossings. Fills for roads crossing waters of the United States (including wetlands and other special aquatic sites) provided the activity meets all of the following criteria:

a. The width of the fill is limited to the minimum necessary for the actual crossing;

b. The fill placed in waters of the United States is limited to a filled area of no more than 1/3 acre. Furthermore, no more than a total of 200 linear feet of the fill for the roadway can occur in special aquatic sites, including wetlands;

c. The crossing is culverted, bridged or otherwise designed to prevent the restriction of, and to withstand, expected high flows and tidal flows, and to prevent the restriction of low flows and the movement of aquatic organisms;

d. The crossing, including all attendant features, both temporary and permanent, is part of a single and complete project for crossing of a water of the United States; and,

e. For fills in special aquatic sites, including wetlands, the permittee notifies the District Engineer in accordance with the "Notification" general condition. The notification must also include a delineation of affected special aquatic sites, including wetlands.

This NWP may not be combined with NWP 18 or NWP 26 for the purpose of increasing the footprint of the road crossing. Some road fills may be eligible for an exemption from the need for a Section 404 permit altogether (see 33 CFR 323.4). Also, where local circumstances indicate the need, District Engineers will define the term "expected high flows" for the purpose of establishing applicability of this NWP. (Sections 10 and 404)

15. U.S. Coast Guard Approved Bridges. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the United States, including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided such discharges have been authorized by the U.S. Coast Guard as part of the bridge permit. Causeways and approach fills are not included in this NWP and will require an individual or regional Section 404 permit. (Section 404)

16. Return Water From Upland Contained Disposal Areas. Return water from an upland, contained dredged material disposal area. The dredging itself may require a Section 404 permit (33 CFR 323.2(d)), but will require a Section 10 permit if located in navigable waters of the United States. The return water from a contained disposal area is administratively defined as a discharge of dredged material by 33 CFR 323.2(d) even though the disposal itself occurs on the upland and thus does not require a Section 404 permit. This NWP satisfies the technical requirement for a Section 404 permit for the return water where the quality of the return water is controlled by the state through the Section 401 certification procedures. (Section 404)

17. Hydropower Projects. Discharges of dredged or fill material associated with (a) small hydropower projects at existing reservoirs where the project, which includes the fill, are licensed by the Federal Energy Regulatory Commission (FERC) under the Federal Power Act of 1920, as amended; and has a total generating capacity of not more than 5000 KW; and the permittee notifies the District Engineer in accordance with the "Notification" general condition; or (b) hydropower projects for which the FERC has granted an exemption from licensing pursuant to Section 408 of the Energy Security Act of 1980 (16 U.S.C. 2705 and 2708) and Section 30 of the Federal Power Act, as amended; provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. (Section 404)

18. Minor Discharges. Minor discharges of dredged or fill material into all waters of the United States provided that the activity meets all of the following criteria:

a. The quantity of discharged material and the volume of excavated area does not exceed 25 cubic yards below the plane of the ordinary high water mark or the high tide line;

b. The discharge, including any excavated area, will not cause the loss of more than 1/10 acre of a special aquatic site, including wetlands. For the purposes of this NWP, the acreage limitation includes the filled area and excavated area plus special aquatic sites that are adversely affected by flooding and special aquatic sites that are drained so that they would no longer be a water of the United States as a result of the project;

c. If the discharge, including any excavated area, exceeds 10 cubic yards below the plane of the ordinary high water mark or the high tide line or if the discharge is in a special aquatic site, including wetlands, the permittee notifies the District Engineer in accordance with the "Notification" general condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands (Also see 33 CFR 330.1(e)); and

d. The discharge, including all attendant features, both temporary and permanent, is part of a single and complete project and is not placed for the purpose of a stream diversion.

e. This NWP can not be used in conjunction with NWP 26 for any single and complete project. (Sections 10 and 404)

19. Minor Dredging. Dredging of no more than 25 cubic yards below the plane of the ordinary high water mark or the mean high water mark from navigable waters of the United States (i.e., Section 10 waters) as part of a single and complete project. This NWP does not authorize the dredging or degradation through siltation of coral reefs, sites that support submerged aquatic vegetation (including sites where submerged aquatic

vegetation is documented to exist, but may not be present in a given year), anadromous fish spawning areas, or wetlands, or the connection of canals or other artificial waterways to navigable waters of the United States (see Section 33 CFR 322.5(g)). (Sections 10 and 404)

20. Oil Spill Cleanup. Activities required for the containment and cleanup of oil and hazardous substances which are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR Part 112.3 and any existing State contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. (Sections 10 and 404)

21. Surface Coal Mining Activities. Activities associated with surface coal mining activities provided they are authorized by the Department of the Interior, Office of Surface Mining (OSM), or by states with approved programs under Title V of the Surface Mining Control and Reclamation Act of 1977 and provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. The notification must include an OSM or state approved mitigation plan. The Corps, at the discretion of the District Engineer, may require a bond to ensure success of the mitigation, if no other Federal or state agency has required one. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands. (Also see 33 CFR 330.1(e)) (Sections 10 and 404)

22. Removal of Vessels. Temporary structures or minor discharges of dredged or fill material required for the removal of wrecked, abandoned, or disabled vessels, or the removal of man-made obstructions to navigation. This NWP does not authorize the removal of vessels listed or determined eligible for listing on the National Register of Historic Places unless the District Engineer is notified and indicates that there is compliance with the "Historic Properties" general condition. This NWP does not authorize maintenance dredging, shoal removal, or river bank snagging. Vessel disposal in waters of the United States may need a permit from EPA (see 40 CFR 229.3). (Sections 10 and 404)

23. Approved Categorical Exclusions. Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality Regulation for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Part 1500 et seq.), that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and the Office of the Chief of Engineers (ATTN: ACECW-OR) has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination. Prior to approval for purposes of this NWP of any agency's categorical exclusions, the Chief of Engineers will solicit public comment. In addressing these comments, the Chief of Engineers may require certain conditions for authorization of an agency's categorical exclusions under this NWP. (Sections 10 and 404)

24. State Administered Section 404 Program. Any activity permitted by a state administering its own Section 404 permit program pursuant to 33 U.S.C. 1344(g)-(l) is permitted pursuant to Section 10 of the Rivers and Harbors Act of 1899. Those activities which do not involve a Section 404 state permit are not included in this NWP, but certain structures will be exempted by Section 154 of Public Law 94-587, 90 Stat. 2917 (33 U.S.C. 59l) (see 33 CFR 322.3(a)(2)). (Section 10)

25. Structural Discharges. Discharges of material such as concrete, sand, rock, etc. into tightly sealed forms or cells where the material will be used as a structural member for standard pile supported structures, such as bridges, transmission line footings, and walkways or for general navigation, such as mooring cells, including the excavation of bottom material from within the form prior to the discharge of concrete, sand, rock, etc. This NWP does not authorize filled structural members that would support buildings, homes, parking areas, storage areas and other such structures. Housepads or other building pads are also not included in this NWP. The structure itself may require a Section 10 permit if located in navigable waters of the United States. (Section 404)

26. Headwaters and Isolated Waters Discharges. Discharges of dredged or fill material into headwaters and isolated waters provided that the activity meets all of the following criteria:

a. The discharge does not cause the loss of more than 3 acres of waters of the United States nor cause the loss of waters of the United States for a distance greater than 500 linear feet of the stream bed;

b. For discharges causing the loss of greater than 1/3 acre of waters of the United States, the permittee notifies the District Engineer in accordance with the "Notification" general condition;

c. For discharges causing a loss of 1/3 acre or less of waters of the United States the permittee must submit a report within 30 days of completion of the work, containing the information listed below;

d. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands (Also see 33 CFR 330.1(e)); and

e. The discharge, including all attendant features, both temporary and permanent, is part of a single and complete project. Note, this NWP will expire on February 11, 1999.

For the purposes of this NWP, the acreage of loss of waters of the United States includes the filled area plus waters of the United States that are adversely affected by flooding, excavation or drainage as a result of the project. The 3 acre and 1/3 acre limits of NWP 26 are absolute, and cannot be increased by any mitigation plan offered by the applicant or required by the District Engineer. Whenever any other NWP is used in conjunction with this NWP, the total acreage of impacts to waters of the United States of all NWPs combined, can not exceed 3 acres.

Subdivisions: For any real estate subdivision created or subdivided after October 5, 1984, a notification pursuant to subsection (b) of this NWP is required for any discharge which would cause the aggregate total loss of waters of the United States for the entire subdivision to exceed 1/3

acre. Any discharge in any real estate subdivision which would cause the aggregate total loss of waters of the United States in the subdivision to exceed 3 acres is not authorized by this NWP; unless the District Engineer exempts a particular subdivision or parcel by making a written determination that: (1) the individual and cumulative adverse environmental effects would be minimal and the property owner had, after October 5, 1984, but prior to February 11, 1997, committed substantial resources in reliance on NWP 26 with regard to a subdivision, in circumstances where it would be inequitable to frustrate the property owner's investment-backed expectations, or (2) that the individual and cumulative adverse environmental effects would be minimal, high quality wetlands would not be adversely affected, and there would be an overall benefit to the aquatic environment. Once the exemption is established for a subdivision, subsequent lot development by individual property owners may proceed using NWP 26. For purposes of NWP 26, the term "real estate subdivision" shall be interpreted to include circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or developing said parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof.

Report: For discharges causing the loss of 1/3 acre or less of waters of the United States the permittee must submit a report within 30 days of completion of the work, containing the following information:

- a. Name, address, and telephone number of the permittee;
- b. Location of the work;
- c. Description of the work; and,
- d. Type and acreage (or square feet) of the loss of waters of the

United States (e.g., 1/10 acre of marsh and 50 Square feet of a stream.)
(Section 404)

27. Wetland and Riparian Restoration and Creation Activities. Activities in waters of the United States associated with the restoration of former non-tidal wetlands and riparian areas, the enhancement of degraded wetlands and riparian areas, and creation of wetlands and riparian areas; (i) on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding wetland restoration or creation agreement between the landowner and the U.S. Fish and Wildlife Service or the Natural Resources Conservation Service (NRCS) or voluntary wetland restoration, enhancement, and creation actions documented by the NRCS pursuant to NRCS regulations; or (ii) on any Federal land; or (iii) on reclaimed surface coal mined lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining or the applicable state agency. (The future reversion does not apply to wetlands created, restored or enhanced as mitigation for the mining impacts, nor naturally due to hydrologic or topographic features, nor for a mitigation bank); or (iv) on any public or private land, provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. Such activities include, but are not limited to: installation and maintenance of small water control structures, dikes, and berms; backfilling of existing drainage ditches; removal of existing drainage structures; construction of small nesting islands; plowing or discing for seed bed preparation; and other related activities. This NWP applies to restoration projects that serve the purpose of restoring "natural" wetland hydrology, vegetation, and function to altered and degraded non-tidal wetlands and "natural" functions of riparian areas. This NWP does not authorize the conversion of natural wetlands to another aquatic use, such as creation of waterfowl impoundments where a forested wetland previously existed.

Reversion. For restoration, enhancement and creation projects conducted under paragraphs (ii) and (iv), this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit at that time would be required for any reversion. For restoration, enhancement and creation projects conducted under paragraphs (i) and (iii), this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or creation activities) within five years after expiration of a limited term wetland restoration or creation agreement or permit, even if the discharge occurs after this NWP expires. The five year reversion limit does not apply to agreements without time limits reached under paragraph (i). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Prior to any reversion activity the permittee or the appropriate Federal or state agency must notify the District Engineer and include the documentation of the prior condition. Once an area has reverted back to its prior physical condition, it will be subject to whatever the Corps regulatory requirements will be at that future date. (Sections 10 and 404)

28. Modifications of Existing Marinas. Reconfiguration of existing docking facilities within an authorized marina area. No dredging, additional slips or dock spaces, or expansion of any kind within waters of the United States is authorized by this NWP. (Section 10)

29. Single-Family Housing. Discharges of dredged or fill material into non-tidal waters of the United States, including non-tidal wetlands for the construction or expansion of a single-family home and attendant features (such as a garage, driveway, storage shed, and/or septic field) for an individual permittee provided that the activity meets all of the following criteria:

- a. The discharge does not cause the loss of more than 1/2 acre of non-tidal waters of the United States, including non-tidal wetlands;
- b. The permittee notifies the District Engineer in accordance with the "Notification" general condition;
- c. The permittee has taken all practicable actions to minimize the on-site and off-site impacts of the discharge. For example, the location of the home may need to be adjusted on-site to avoid flooding of adjacent property owners;
- d. The discharge is part of a single and complete project; furthermore, that for any subdivision created on or after November 22, 1991, the discharges authorized under this NWP may not

exceed an aggregate total loss of waters of the United States of 1/2 acre for the entire subdivision;

e. An individual may use this NWP only for a single-family home for a personal residence;

f. This NWP may be used only once per parcel;

g. This NWP may not be used in conjunction with NWP 14, NWP 18, or NWP 26, for any parcel; and,

h. Sufficient vegetated buffers must be maintained adjacent to all open water bodies, streams, etc., to preclude water quality degradation due to erosion and sedimentation.

For the purposes of this NWP, the acreage of loss of waters of the United States includes the filled area previously permitted, the proposed filled area, and any other waters of the United States that are adversely affected by flooding, excavation, or drainage as a result of the project. Whenever any other NWP is used in conjunction with this NWP, the total acreage of impacts to waters of the United States of all NWPs combined, can not exceed 1/2 acres. This NWP authorizes activities only by individuals; for this purpose, the term "individual" refers to a natural person and/or a married couple, but does not include a corporation, partnership, or similar entity. For the purposes of this NWP, a parcel of land is defined as "the entire contiguous quantity of land in possession of, recorded as property of, or owned (in any form of ownership, including land owned as a partner, corporation, joint tenant, etc.) by the same individual (and/or that individual's spouse), and comprises not only the area of wetlands sought to be filled, but also all land contiguous to those wetlands, owned by the individual (and/or that individual's spouse) in any form of ownership". (Sections 10 and 404)

30. Moist Soil Management for Wildlife. Discharges of dredged or fill material and maintenance activities that are associated with moist soil management for wildlife performed on non-tidal Federally-owned or managed and State-owned or managed property, for the purpose of continuing ongoing, site-specific, wildlife management activities where soil manipulation is used to manage habitat and feeding areas for wildlife. Such activities include, but are not limited to: the repair, maintenance or replacement of existing water control structures; the repair or maintenance of dikes; and plowing or discing to impede succession, prepare seed beds, or establish fire breaks. Sufficient vegetated buffers must be maintained adjacent to all open water bodies, streams, etc., to preclude water quality degradation due to erosion and sedimentation. This NWP does not authorize the construction of new dikes, roads, water control structures, etc. associated with the management areas. This NWP does not authorize converting wetlands to uplands, impoundments or other open water bodies. (Section 404)

31. Maintenance of Existing Flood Control Facilities. Discharges of dredged or fill material for the maintenance of existing flood control facilities, including debris basins, retention/detention basins, and channels that were (i) previously authorized by the Corps by individual permit, general permit, or by 33 CFR 330.3 and constructed or (ii) constructed by the Corps and transferred to a local sponsor for operation and maintenance. The maintenance is limited to that approved in a maintenance baseline determination made by the district engineer (DE). The prospective permittee will provide the DE with sufficient evidence for the DE to determine the approved and constructed baseline. Subsequent to the determination of the maintenance baseline and prior to any maintenance work, the permittee must notify the DE in accordance with the Notification general condition.

All dredged material must be placed in an upland site or a currently authorized disposal site in waters of the United States, and proper siltation controls must be used. This NWP does not authorize the removal of sediment and associated vegetation from natural water courses. (Activities that involve only the cutting and removing of vegetation above the ground, e.g., mowing, rotary cutting, and chainsawing, where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material, does not require a Section 404 permit in accordance with 33 CFR 323.2(d)(2)(ii). Only constructed channels within stretches of natural rivers that have been previously authorized as part of a flood control facility could be authorized for maintenance under this NWP.

Maintenance Baseline. Upon receipt of sufficient evidence, the DE will determine the maintenance baseline. The maintenance baseline is the existing flood control project that the DE has determined can be maintained under this NWP, subject to any case-specific conditions required by the DE. In determining the maintenance baseline, the DE will consider the following factors: the approved facility, the actual constructed facility, the Corps constructed project that was transferred, the maintenance history, if the facility has been functioning at a reduced capacity and for how long, present vs. original flood control needs, and if sensitive/unique functions and values may be adversely affected. Revocation or modification of the final determination of the maintenance baseline can only be done in accordance with 33 CFR Part 330.5. This NWP can not be used until the DE determines the maintenance baseline and the need for mitigation and any regional or activity-specific conditions. The maintenance baseline will only be determined once and will remain valid for any subsequent reissuance of this NWP. However, if the project is effectively abandoned or reduced due to lack of proper maintenance, a new determination of a maintenance baseline would be required before this NWP could be used for subsequent maintenance.

Mitigation. In determining the need for mitigation, the DE will consider the following factors: any original mitigation required, the current environmental setting, and any adverse effects of the maintenance project that were not mitigated in the original construction. The DE will not delay needed maintenance for completion of any required mitigation, provided that the DE and the applicant establish a schedule for the identification, approval, development, construction and completion of such required mitigation. (Sections 10 and 404)

32. Completed Enforcement Actions. Any structure, work or discharge of dredged or fill material, remaining in place, or undertaken for mitigation, restoration, or environmental benefit in compliance with either: i. the terms of a final written Corps non-judicial settlement agreement resolving a violation of Section 404 of the Clean Water Act (CWA)

and/or Section 10 of the Rivers and Harbors Act of 1899; or the terms of an EPA 309(a) order on consent resolving a violation of Section 404 of the CWA, provided that:

a. The unauthorized activity affected no more than 5 acres of nontidal wetlands or 1 acre of tidal wetlands;

b. The settlement agreement provides for environmental benefits, to an equal or greater degree, than the environmental detriments caused by the unauthorized activity that is authorized by this nationwide permit; and

c. The District Engineer issues a verification letter authorizing the activity subject to the terms and conditions of this nationwide permit and the settlement agreement, including a specified completion date; or ii. the terms of a final Federal court decision, consent decree, or settlement agreement resulting from an enforcement action brought by the United States under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act of 1899.

For both (j) or (ii) above, compliance is a condition of the NWP itself. Any authorization under this NWP is automatically revoked if the permittee does not comply with the terms of this NWP or the terms of the court decision, consent decree, or judicial/non-judicial settlement agreement or fails to complete the work by the specified completion date. This NWP does not apply to any activities occurring after the date of the decision, decree, or agreement that are not for the purpose of mitigation, restoration, or environmental benefit. Prior to reaching any settlement agreement the Corps will ensure compliance with the provisions of 33 CFR Part 326 and 33 CFR 330.6(d)(2) and (e). (Sections 10 and 404)

33. Temporary Construction, Access and Dewatering. Temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard, or for other construction activities not subject to the Corps or U.S. Coast Guard regulations. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials, and placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if it is determined by the District Engineer that it will not cause more than minimal adverse effects on aquatic resources. Temporary fill must be entirely removed to upland areas, or dredged material returned to its original location, following completion of the construction activity, and the affected areas must be restored to the pre-project conditions. Cofferdams cannot be used to dewater wetlands or other aquatic areas so as to change their use. Structures left in place after cofferdams are removed require a Section 10 permit if located in navigable waters of the United States. (See 33 CFR Part 322). The permittee must notify the District Engineer in accordance with the "Notification" general condition. The notification must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources. The District Engineer will add special conditions, where necessary, to ensure that adverse environmental effects are minimal. Such conditions may include: limiting the temporary work to the minimum necessary; requiring seasonal restrictions; modifying the restoration plan; and requiring alternative construction methods (e.g., construction mats in wetlands where practicable). (Sections 10 and 404)

34. Cranberry Production Activities. Discharges of dredged or fill material for dikes, berms, pumps, water control structures or leveling of cranberry beds associated with expansion, enhancement, or modification activities at existing cranberry production operations provided that the activity meets all of the following criteria:

a. The cumulative total acreage of disturbance per cranberry production operation, including but not limited to, filling, flooding, ditching, or clearing, does not exceed 10 acres of waters of the United States, including wetlands;

b. The permittee notifies the District Engineer in accordance

with the "Notification" general condition. The notification must include a delineation of affected special aquatic sites, including wetlands; and,

c. The activity does not result in a net loss of wetland acreage. This NWP does not authorize any discharge of dredged or fill material related to other cranberry production activities such as warehouses, processing facilities, or parking areas. For the purposes of this NWP, the cumulative total of 10 acres will be measured over the period that this NWP is valid. (Section 404)

35. Maintenance Dredging of Existing Basins. Excavation and removal of accumulated sediment for maintenance of existing marina basins, access channels to marina basins or boat slips, and boat slips to previously authorized depths or controlling depths for ingress/egress, whichever is less, provided the dredged material is disposed of at an upland site and proper siltation controls are used. (Section 10)

36. Boat Ramps. Activities required for the construction of boat ramps provided:

a. The discharge into waters of the United States does not exceed 50 cubic yards of concrete, rock, crushed stone or gravel into forms, or placement of pre-cast concrete planks or slabs. (Unsuitable material that causes unacceptable chemical

pollution or is structurally unstable is not authorized);

b. The boat ramp does not exceed 20 feet in width;

c. The base material is crushed stone, gravel or other suitable material;

d. The excavation is limited to the area necessary for site preparation and all excavated material is removed to the upland; and,

e. No material is placed in special aquatic sites, including wetlands.

Dredging to provide access to the boat ramp may be authorized by another NWP, regional general permit, or individual permit pursuant to Section 10 if located in navigable waters of the United States. (Sections 10 and 404)

37. Emergency Watershed Protection and Rehabilitation. Work done by or funded by the Natural Resources Conservation Service qualifying as an "exigency" situation (requiring immediate action) under its Emergency Watershed Protection Program (7 CFR Part 624) and work done or funded by the Forest Service under its Burned-Area Emergency Rehabilitation Handbook (FSH 509.13) provided the District Engineer is notified in accordance with the "Notification" general condition. (Also see 33 CFR 330.1(c)). (Sections 10 and 404)

38. Cleanup of Hazardous and Toxic Waste. Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority provided the permittee notifies the District Engineer in accordance with the "Notification" general condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste. Activities undertaken entirely on a CERCLA site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. (Sections 10 and 404)

39. Reserved

40. Farm Buildings. Discharges of dredged or fill material into jurisdictional wetlands (but not including prairie potholes, playa lakes, or vernal pools) that were in agricultural crop production prior to December 23, 1985, i.e., farmed wetlands, for foundations and building pads for farm buildings. The discharge will be limited to the minimum necessary but will in no case exceed 1 acre (see the "Mitigation" Section 404 only condition). The permittee must notify the District Engineer in accordance with the "Notification" general condition for any farm building within 500 linear feet of any flowing water. (Section 404)

APPENDIX 3. Legislative Services Agency Questionnaire.

1997 Survey of County Surveyors

County _____

1. How many miles of regulated drain are in your County? _____
2. How many miles of regulated drain reported in Question #1 are open drains? _____
3. How many miles of regulated drain reported in Question #1 are tiled drains? _____
4. How many **open** regulated drain projects were completed in your County during 1996? _____
5. How many total miles did these **open** regulated drain projects represent? _____
6. How many of those projects were considered:
 - (A) Reconstruction? _____
 - (B) Maintenance? _____
7. How many miles of regulated drains were abandoned in 1996? _____
8. Of the **open** regulated drain projects completed in 1996 (projects reported in Question #4), how many required a permit from a regulatory agency? _____
9. Of the projects reported in Question #8, how many permits were actually obtained? _____
10. Of the projects reported in Question #9, how many resulted in project specifications different then the initial specifications proposed by the county (i.e., the way the County planned the project versus what the regulatory agency(ies) required)? _____
11. Generally, of the projects where there was a disagreement on project specifaicon, what reasons contributed toward the differences or disagreements?

	Much Disagreement				No Disagreement
(A) Definition of reconstruction/maintenance	1	2	3	4	5
(B) Definition of drainage ditch/stream	1	2	3	4	5
(C) Conditions placed on project	1	2	3	4	5
(D) Time required to obtain permit	1	2	3	4	5
(E) Other (please be specific)	1	2	3	4	5

Comment:

12. Have you used the 368 Early Coordination process for any projects? Y _____ N _____
13. (A) If you have used the 368 Early Coordination process, do you think the process was helpful? Y _____ N _____
(B) Describe your experience.

Comment:

14. (A) Have you examined the Indiana Drainage Handbook? Y _____ N _____
(B) Have you used the Indiana Drainage Handbook? Y _____ N _____
(C) If you have examined or used the Indiana Drainage Handbook, did you find or do you anticipate the Indiana Drainage Handbook to be useful? Y _____ N _____

Comment:

15. Which of the following represent problems for you in the reconstruction and maintenance of **open** regulated drains?

	No Problem				Big Problem
(A) the Indiana Drainage Code?	1	2	3	4	5

Comment:

(B) the regulatory agencies?	No Problem				Big Problem
(1) Department of Natural Resources					
(A) Division of Water	1	2	3	4	5
(B) Office of Fish and Wildlife	1	2	3	4	5
(2) Department of Environmental Management	1	2	3	4	5
(3) U.S. Army Corps of Engineers	1	2	3	4	5
(4) U.S. Fish and Wildlife Service	1	2	3	4	5
(5) Natural Resources Conservation Service	1	2	3	4	5

Comment:

(C) the permit process in general?	No Problem				Big Problem
	1	2	3	4	5

Comment:

16. What do you believe the usefulness of the permit process in achieving the goals of:

(A) Flood Control?	Not Useful				Useful
5		1	2	3	4
(B) Preserving or improving water quality?	1	2	3	4	5
(C) Preservation of existing wetlands?	1	2	3	4	5
(D) Preserving or improving fish, wildlife, and botanical resources?	1	2	3	4	5

Comment:

APPENDIX 4. Responses to the Legislative Services Agency Questionnaire.

Question #1. How many miles of regulated drain are in your County?

49 counties reported a total of 24,852 miles of regulated drains.

Question #2. How many miles of regulated drain reported in Question #1 are open drains?

12,197.5 miles of regulated open drains (40 counties reported).

Question #3. How many miles of regulated drain reported in Question #1 are tiled drains?

11,461.5 miles of regulated tiled drains (40 counties reported).

Question #4. How many **open** regulated drain projects were completed in your County during 1996?

There were 313 open regulated drain projects reported as completed in 1996.

Question #5. How many total miles did these **open** regulated drain projects represent?

The 313 projects totaled 624 miles.

Question #6. How many of those projects were considered:

(A) Reconstruction?	42	13%
(B) Maintenance?	271	87%

Question #7. How many miles of regulated drains were abandoned in 1996?

There were 3.1 miles of regulated drains reported as abandoned.

Question #8. Of the **open** regulated drain projects completed in 1996 (projects reported in Question #4), how many required a permit from a regulatory agency ?

Of the 313 projects reported in Question #4, 44 projects were reported as requiring a permit from a regulatory agency.

Question #9. Of the projects reported in Question #8, how many permits were actually obtained?

Of the 44 projects reported in Question #8, 34 permits were obtained.

Question #10. Of the projects reported in Question #9, how many resulted in project specifications different then the initial specifications proposed by the county (i.e., the way the County planned the project versus what the regulatory agency(ies) required)?

Of the 34 permits obtained in Question #9, 22 had project specifications different then the initial specifications proposed by the county.

Question #11. Generally, of the projects where there was a disagreement on project specificaiton, what reasons contributed toward the differences or disagreements?

(A) Definition of reconstruction/maintenance

1 - Much Disagreement	2	9%
2	1	5%
3	4	18%
4	1	5%
5 - No Disagreement	14	63%

(B) Definition of drainage ditch/stream

1 - Much Disagreement	4	17%
2	1	5%
3	2	9%
4	2	9%
5 - No Disagreement	14	60%

(C) Conditions placed on project

1 - Much Disagreement	5	23%
2	4	18%
3	6	27%
4	3	14%
5 - No Disagreement	4	18%

(D) Time required to obtain permit

1 - Much Disagreement	6	30%
2	2	10%
3	5	25%
4	3	15%

5 - No Disagreement	4	20%
(E) Other (please be specific)		
1 - Much Disagreement	3	100%

Question #12. Have you used the 368 Early Coordination process for any projects?

Yes	14	29%
No	34	71%

Question #13. (A) If you have used the 368 Early Coordination process, do you think the process was helpful?

Yes	11	73%
No	3	20%
Undecided	1	7%

Question #14. (A) Have you examined the Indiana Drainage Handbook?

Yes	46	92%
No	4	8%

(B) Have you used the Indiana Drainage Handbook?

Yes	31	92%
No	19	8%

(C) If you have examined or used the Indiana Drainage Handbook, did you find or do you anticipate the Indiana Drainage Handbook to be useful?

Yes	41	85%
No	6	13%
Undecided	1	2%

Question #15. Which of the following represent problems for you in the reconstruction and maintenance of **open** regulated drains?

(A) the Indiana Drainage Code?

1 - No Problem	22	52%
2	8	19%
3	5	12%
4	3	7%
5 - Big Problem	4	10%

(B) the regulatory agencies?

(1) Department of Natural Resources

(A) Division of Water

1 - No Problem	16	40%
2	7	18%
3	10	25%
4	6	15%
5 - Big Problem	1	2%

(B) Office of Fish and Wildlife

1 - No Problem	11	31%
2	5	14%
3	7	19%
4	8	22%
5 - Big Problem	5	14%

(2) Department of Environmental Management

1 - No Problem	12	29%
2	5	12%
3	9	22%
4	8	20%
5 - Big Problem	7	17%

(3) U.S. Army Corps of Engineers

1 - No Problem	15	37%
2	7	18%
3	6	15%
4	7	18%
5 - Big Problem	5	12%

(4) U.S. Fish and Wildlife Service

1 - No Problem	16	40%
2	7	18%
3	6	15%
4	8	20%
5 - Big Problem	3	7%

(5) Natural Resources Conservation Service

1 - No Problem	21	53%
2	4	10%

3	8	20%
4	5	12%
5 - Big Problem	2	5%
(C) the permit process in general?		
1 - No Problem	7	19%
2	6	17%
3	10	28%
4	6	17%
5 - Big Problem	7	19%

Question #16. What do you believe the usefulness of the permit process in achieving the goals of:

(A) Flood Control?		
1 - Not Useful	16	40%
2	6	15%
3	8	20%
4	3	7%
5 - Useful	7	18%

(B) Preserving or improving water quality?		
1 - Not Useful	9	26%
2	6	17%
3	9	26%
4	7	20%
5 - Useful	4	11%

(C) Preservation of existing wetlands?		
1 - Not Useful	9	22%
2	6	15%
3	13	32%
4	5	13%
5 - Useful	7	18%

(D) Preserving or improving fish, wildlife, and botanical resources?		
1 - Not Useful	12	30%
2	11	27%
3	9	23%
4	4	10%
5 - Useful	4	10%

ENDNOTES

1. IC 36-9-27-2.
2. Indiana Drainage Handbook: An Administrative and Technical Guide for Activities within Indiana's Streams and Ditches, p. 1.3-1.
3. Indiana Drainage Handbook, p. 1.3-1.
4. SEA 303-95.
5. Indiana Drainage Handbook, p.1.3-2.
6. Indiana Drainage Handbook, p. 2.1-2.
7. IC 36-9-27-29.
8. Indiana Drainage Handbook, p. 2.2-1.
9. IC 36-9-27-33.
10. Indiana Drainage Handbook, pp. 2.1-1, 2.2-1.
11. Indiana Drainage Handbook, p. 2.2-2.
12. Indiana Drainage Handbook, p. 2.2-1.

13. IC 36-9-27-34(b).
14. IC 36-9-27-34(c).
15. IC 36-9-27-34; IC 36-9-27-35.
16. IC 36-9-27-36.
17. Indiana Drainage Handbook, p. 2.2-2.
18. IC 36-9-27-53.5(e).
19. Indiana Drainage Handbook, p. 2.3-1.
20. Indiana Drainage Handbook, p. 2.3-1.
21. Indiana Drainage Handbook, p. 2.3-1.
22. IC 14-28-1.
23. 310 IAC 6-1-2.
24. Indiana Drainage Handbook, p. 2.3-5.
25. IC 14-26-5-5.
26. Indiana Drainage Handbook, p. 2.3-11.
27. Indiana Drainage Handbook, p. 2.4-1.
28. Indiana Drainage Handbook, p. 2.4-3.
29. Indiana Drainage Handbook, p. 2.4-3.
30. Indiana Drainage Handbook, p. 2.1-1.
31. Indiana Drainage Handbook, p. 2.4-2.
32. Indiana Drainage Handbook, p. 2.5-3.
33. Federal Register, Vol. 56, No. 226, Friday, November 22, 1991, p. 59134.
34. Federal Register, Vol. 56, No. 226, Friday, November 22, 1991, p. 59134.
35. Indiana Drainage Handbook, p. 2.4-2.
36. Indiana Drainage Handbook, p. 2-5.3.
37. Indiana Drainage Handbook, p. 2.6-1.
38. Indiana Drainage Handbook, p. 2.6-1.
39. Indiana Drainage Handbook, p. 2.6-1.

40. Indiana Drainage Handbook, p. 2.7-1.
41. Indiana Drainage Handbook, p. 2.7-1.
42. Indiana Drainage Handbook, p. 2.7-1.
43. Speaker at the conference “Understanding the Log Jam of Drainage and Stream Habitat,” Waterfront Plaza Hotel, Indianapolis, IN, November 20-21, 1996.
44. Handout received at the conference “Understanding the Log Jam of Drainage and Stream Habitat,” Waterfront Plaza Hotel, Indianapolis, IN, November 20-21, 1996.
45. Indiana Drainage Handbook, pp. 3.2-2 and 3.2-3.
46. New Nationwide Permits, HTML document containing the text of the new Nationwide Permits and Conditions, December 13, 1996.