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DETAILED PROJECT REPORT AND ENVIRONMENTAL ASSESSMENT

AD-A252 240



SECTION 14 EMERGENCY STREAMBANK PROTECTION

TURKEY RIVER
CLAYTON COUNTY ROAD C1X
ELKADER, IOWA

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NOVEMBER 1991

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Rock Island District

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DETAILED PROJECT REPORT
AND ENVIRONMENTAL ASSESSMENT
FOR
SECTION 14 EMERGENCY STREAMBANK PROTECTION



TURKEY RIVER
CLAYTON COUNTY ROAD 61X
ELKADER, IOWA

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NOVEMBER 1991

ACKNOWLEDGEMENT

Many members of the Rock Island District assisted in the preparation of this report. Primary study team personnel who are familiar with the technical aspects of the study are listed below:

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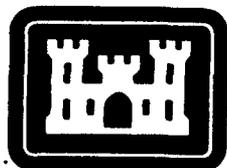

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**US Army Corps
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Rock Island District

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SYLLABUS

This report addresses the problem of streambank erosion of the right descending bank of the Turkey River paralleling County Road ClX, located at the northwest edge of the city limits of Elkader, sec. 22, T. 93 N., R. 5 W., Boardman Township, Clayton County, Iowa. The study area involves approximately 250 linear feet of the Turkey River bankline which has severely eroded and is presently threatening the integrity of the roadway.

Under the authority of Section 14 of the 1946 Flood Control Act, as amended, Rock Island District, U.S. Army Corps of Engineers, representatives made a site visit to investigate the severity of erosion along County Road ClX. The road is a major access route to the city from the west. The road also provides access to the hospital, which is located on Elkader's western edge, so that residents do not have to drive around and through the city.

This Detailed Project Report recommends clearing the bankline and placing approximately 3,000 tons of Iowa Class "D" riprap to provide a 2:H on 1:V slope from the top of the bank to the toe, with a 10-foot toe extension to protect against further scouring at the toe. The estimated cost for project construction is \$88,500, with a benefit-to-cost ratio of 6.6, and therefore satisfies the requirements for Federal participation.

**DETAILED PROJECT REPORT
AND ENVIRONMENTAL ASSESSMENT
FOR
SECTION 14 EMERGENCY STREAMBANK PROTECTION**

**TURKEY RIVER
CLAYTON COUNTY ROAD 61X
ELKADER, IOWA**

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**TURKEY RIVER
CLAYTON COUNTY ROAD CLX
ELKADER, IOWA**

SECTION 1 - INTRODUCTION

STUDY REQUEST

In a letter dated December 27, 1990, the Clayton County, Iowa, Board of Supervisors, represented by the County Engineer, requested assistance from the Rock Island District, U.S. Army Corps of Engineers, under the authority provided by Section 14 of the 1946 Flood Control Act, as amended. The request was in regard to erosion along the right descending bankline of the Turkey River which parallels County Road CLX, just northwest of Elkader, Iowa.

The Rock Island District requested funds to initiate a study and received a work allowance in June 1991. A site visit was made by Rock Island District representatives in July 1991.

STUDY AUTHORITY

The authority for this study and report is Section 14 of the 1946 Flood Control Act, as amended by the Water Resources Development Act of 1986. The authority, as amended, states:

That the Secretary of the Army is authorized to allot from any appropriations heretofore and hereinafter made for flood control, not to exceed \$12,500,000 per year, for the construction, repair, restoration, and modification of emergency streambank and shoreline protection work to prevent damages to highways, bridge approaches, public works, churches, hospitals, schools, and other nonprofit public services, when in the opinion of the Chief of Engineers such work is advisable: Provided, that no more than \$500,000 shall be allotted for this purpose at any single locality from the appropriations for any one fiscal year.

STUDY SCOPE

STUDY AREA

The study area, as shown on plate 1, is located along the right descending bankline of the Turkey River, just northwest of Elkader, Iowa, in sec. 22, T. 93 N., R. 5 W., Boardman Township, Clayton County, Iowa.

The Turkey River, a tributary to the Mississippi River, parallels County Road ClX for approximately 250 linear feet at the study site and flows southeasterly through Elkader.

The height of the bankline is between 25 to 30 feet, with the top 17 feet of the bank being vertical and the remainder presenting a 2.5:H on 1:V slope (see plate 2). The soil is a sandy, silty type with intermittent areas of sandstone. The area is generally agricultural, with some rural residences at the study site.

DETAIL OF INVESTIGATION

This Emergency Detailed Project Report and Environmental Assessment is intended to serve as the decision document, with sufficient detail to allow approval of the project and initiation of the preparation of plans and specifications.

RELATED STUDIES, REPORTS, AND EXISTING WATER PROJECTS

A Section 205 Flood Damage Reduction Reconnaissance study has been initiated for the city of Elkader, and no previous study has been made by the Rock Island District, U.S. Army Corps of Engineers, of this immediate area. The county requested Section 14 Emergency Streambank Protection assistance for several areas along the Turkey River within Clayton County in a letter dated December 27, 1990. Each of the requests is being studied individually to determine the feasibility, economically and environmentally, of providing Federal assistance.

SECTION 2 - PLAN FORMULATION

PUBLIC CONCERNS

The Clayton County Engineer has been concerned about continued erosion along the Turkey River bankline that parallels County Road CLX, which is a farm-to-market road. The county also has had continuous erosion problems with other roads along the Turkey River. The county experienced two disastrous flooding events in August 1990 and again in June 1991. Although the county has made every effort to protect its roads, those two flooding events have financially burdened the county, and they are unable to adequately protect all the damaged areas.

The public is concerned because this road gives them access to the city of Elkader from the northwest and to the hospital which is located just downstream of the study area.

EXISTING CONDITIONS

Approximately 250 linear feet of roadway is being threatened by bankline erosion. In some areas, the top of bank is within 2 feet of the road's edge. The past 2 years have been declared flood disaster years in Clayton County. Present conditions are such that the water is flowing at a higher elevation with higher velocities, thereby contributing to continuous erosive action at the study site.

FUTURE CONDITIONS WITHOUT PROJECT

The historical erosion rate is calculated at 1.0 foot per year. If immediate action is not taken to curtail further erosion, it is very probable the integrity of the county road will be jeopardized by toe scouring along the bank, causing the top of the bank to slide into the river by 1993. With the loss of the road, the public will be forced to use an alternative route to market and town.

PLANNING OBJECTIVES

NATIONAL OBJECTIVES

The plan formulation process to accomplish flood damage reduction is formulated and directed by a national planning objective, consistent with

protecting the Nation's environment, pursuant to national environmental statutes, applicable Executive Orders, and other Federal planning requirements.

Water and land related resources project plans should be formulated to alleviate problems and to take advantage of opportunities in ways that contribute to that objective.

Contributions to the National Economic Development (NED) are increases in the net value of the national output of goods and services, expressed in monetary units. Contributions to NED are the direct benefits that accrue in the planning area and the rest of the nation, and include increases in the net value of those goods and services that are marketed and those that may not be marketed.

SPECIFIC OBJECTIVES

Specific objectives include preventing economic losses due to failure and loss of the county road and minimizing adverse impacts of flood damage reduction measures on the resources.

PLANNING CONSTRAINTS

This study is constrained by all laws of the United States and the State of Iowa, all Executive Orders of the President, and all engineering regulations of the Corps of Engineers. This study also is constrained by the study authority as stated in Section 1 of this report.

ALTERNATIVE SOLUTIONS

The alternative considered in detail to curtail the erosion in the study area is to riprap existing bankline and toe. Road relocation was considered, but because there is no room available for such a plan at the study site, that alternative was not studied in detail.

SELECTED PLAN

Analysis revealed that the riprap protection along approximately 250 linear feet of the bankline, with a toe extension the entire length of the project, would be the least costly and would maximize net benefits. This alternative would effectively curtail the severe erosion which is now threatening the integrity of the county road.

The proposed work consists of bank clearing, placing Iowa Class "D" riprap on rock fill along the entire 250-foot reach, and shaping to provide a 2:H on 1:V slope. An extension at the toe of the protection will curtail further scouring (see plate 3).

The total estimated amount of material to be placed beneath the calculated ordinary high water (OHW) elevation of 718.3 feet National Geodetic Vertical Datum (NGVD) is 0.7 cubic yard per linear foot of river bank.

The local sponsor, Clayton County, acting through the Board of Supervisors, will be responsible for cost-sharing construction of the project and 100 percent of the operation and maintenance of the completed project, as prescribed by the Corps of Engineers.

HYDRAULIC ANALYSIS AND BANK PROTECTION DESIGN

Flow Analysis

The drainage area for this site is approximately 889 square miles. The landscape of the basin is largely rural, with rolling topography and moderately wooded vegetation. Ten years of daily stream flow data (1933 to 1942) from USGS stream gage number 05412000 which is located at Elkader, Iowa, were used for the flow analysis. A 2-year flow was assumed to be a bankfull flow of the Turkey River, north of Elkader. The flood discharge for the 2-year flow was computed to be 12,000 cubic feet per second (cfs). Using the HEC-2 water surface profile model, the velocity of this design flood at this site was computed to be 6.8 feet per second (fps).

Bank Protection

Based on past studies and alternative methods, it was found that riprap is a preferred method of protection against bank erosion. The riprap design is based on slope grading to provide maximum slope of 2:H on 1:V. The required riprap design gradation was determined in accordance with procedures in EM 1110-2-1601 and ETL 1110-2-120. Using the 6.8 fps velocity and the flow depth of 12.6 feet, a 12-inch riprap layer should provide adequate protection from bank erosion. The following is the required minimum riprap gradation:

<u>Percent Lighter by Weight</u>	<u>Limits of Stone wt., lbs.</u>	<u>Class D Stone Wt., Lbs.</u>
100	90-35	250
50	25-15	90
15	15-5	-

Any riprap placed under water should be at a thickness of 18 inches. The riprap blanket should extend beyond the toe of the bank. The ends of the blanket should extend beyond the limits of existing erosion. A 6-inch-thick bedding layer should be provided under the riprap. Toe protection according to guidance shown in plate 37 of EM 1110-2-1601 (July 1970) should be provided. Based on experience, Iowa Class "D" riprap at a thickness of 18 inches may be used without bedding in place of the graded riprap.

Ordinary High Water (OHW) Elevation

The OHW elevation corresponds to the 25-percent duration flow. The 25-percent duration flow was determined to be 575 cfs from the flow duration analysis of mean daily flow records at Garber, Iowa (USGS gage 05412500, 1922 to present) which was adjusted proportionally according to drainage area. Using the HEC-2 model, an OHW elevation of 718.3 feet NGVD was determined.

Maximum Flood Levels

Flood elevations were estimated using the discharge-frequency analysis of gaged flow data from Garber, Iowa, adjusting the flow proportionally based on drainage area and the HEC-2 model. Approximate elevations are shown in table 1.

TABLE 1

Flood Frequency and Elevations

<u>Frequency</u>	<u>Flow (cfs)</u>	<u>Elevation (ft., NGVD)</u>
2-year	12,000	728.6
5-year	17,600	731.1
10-year	21,300	732.9
50-year	28,900	735.1
100-year	31,900	736.0

ENVIRONMENTAL ASSESSMENT

Purpose and Alternatives

The purpose of this Environmental Assessment (EA) is to evaluate the impacts of various measures proposed to prevent the failure, due to erosion, along a section of County Road ClX (plate 1) along the Turkey River. The alternatives considered included clearing and riprapping of the river bank, and road relocation. The selected plan, minimal bank clearing and riprapping, is described in detail in Section 2 of this report.

An environmental review of the selected alternative indicates that there would be no significant effects on the environment, with any effects being short-term and minor. Thus, an Environmental Impact Statement (EIS) will not be prepared. Because the proposed action meets the criteria for a Nationwide Permit at 33 CFR 330.5 (a)(13), Clean Water Act, Section 404 of the Clean Water Act is satisfied. Therefore, an individual 404(b)(1) Evaluation is not required, nor is an individual 401 Water Quality certification. These requirements have already been fulfilled for a Nationwide Permit.

Relationship to Environmental Requirements

The proposed action would comply with Federal environmental laws, executive orders and policies, and State and local laws and policies, including the Clean Air Act, as amended; the Clean Water Act, as amended; the Endangered Species Act of 1973, as amended; the Fish and Wildlife Coordination Act of 1958, as amended; the Land and Water Conservation Fund Act of 1966, as amended; the National Historic Preservation Act of 1966, as amended; Executive Order 11988. Protection of Floodplain Management; and Executive Order 11990. Protection of Wetlands.

The proposed action would not result in the conversion of farmland to nonagricultural uses; therefore, the Farmland Protection Policy Act of 1981 does not apply to this project. Because the Turkey River is not a federally recognized wild or scenic river, the project will not conflict with the provisions of the Wild and Scenic Rivers Act of 1968.

Environmental Setting

The Turkey River, a tributary of the Mississippi River System, flows in a generally easterly direction through the northeastern portion of Iowa. The project is located on the left descending bank of the river, and the surrounding landscape is composed of high wooded bluffs and agricultural

fields. Vegetation at this site includes opportunistic species and the following species:

Silver maple (*Acer saccharinum*)
Northern pin oak (*Quercus ellipoidalis*)
Elm sp. (*Ulmus* sp.)
Box elder (*Acer negundo*)
Smooth brome (*Bromus enermus*)

Natural Resources

The project site is located on the right descending bank of the river channel. Substrate at this point is primarily sand. A detailed description of existing conditions at the project site is given earlier in this section.

Vegetation along the streambank consists of a mixture of tree species and grass. Although this habitat provides food and cover for wildlife species which utilize riparian and open-field edge areas, portions of the vegetation have been lost to past flood events. The availability of surrounding habitat lessens the impact of this portion being lost. Bank stabilization will protect adjacent trees and grass from future flood events as well.

Federally listed endangered or threatened species which are recorded for this region include the bald eagle (*Haliaeetus leucocephalus*), the peregrine falcon (*Falco peregrinus*), the Indiana bat (*Myotis sodalis*), the Higgins' eye pearly mussel (*Lampsilis higginsii*), the prairie bush clover (*Lespedeza leptostachya*), the northern wild monkshood (*Aconitum noveboracense*), and the Iowa Pleistocene snail (*Discus macclintocki*). Suitable habitat for these species is not found at the project site. For this reason, no impacts to this species is expected to result from the proposed action.

Environmental Effects

No significant adverse impacts to natural resources would result from construction of the proposed project. Temporary disturbances to local wildlife may occur during the construction, and riprap placement will cause the permanent loss of some herbaceous vegetation. The small size of the project site limits the scope and severity of potential impact.

Some minor loss of benthic organisms may result from construction of the proposed project. However, after placement of riprap is completed, the affected area should quickly re-colonize. Additionally, placement of riprap should provide some long-term benefits to aquatic habitat by adding diversity to the existing substrate. Temporary increases in turbidity may

occur during project construction, but turbidity levels are expected to return to preconstruction levels or lower since sediments will no longer be eroding into the river at the immediate project site. For these reasons, no long-term impacts to water quality will be anticipated. Any impacts to the river ecosystem during project construction will be offset by the ultimate preservation of the river bank.

In addition, there will be an increase in noise levels and a decrease in air quality during the construction phase. However, these are minor impacts and will not permanently affect the area. Disturbances to nearby residents and businesses would be minimal, and no air quality standards should be violated. No mining activity is present at the project site, and no mineral resources will be affected by the proposed project.

Suitable habitat for any of the endangered species listed for Clayton County is not found in the project area. The Iowa Department of Natural Resources reported in a letter dated July 23, 1991, that there are no records of State-listed endangered species at the project site. While the lack of records does not preclude the potential presence of rare species or significant natural communities, the small size and disturbed nature of the project site severely reduces the likelihood of their occurrence. For these reasons, no impacts to Federal or State-listed species are anticipated.

Economic and Social Effects

The socioeconomic impacts associated with providing streambank erosion protection for the county bridge would be positive. The project would provide for continued use of the road, eliminating detours and the need to rebuild the road. Community cohesion would be enhanced, as the project would prevent loss of the county's road and would be less expensive than other alternatives (e.g., relocation). In addition, the project would require no residential relocations and would result in no significant impacts to community or regional growth.

Public facilities and services would benefit from reduced damages from flood-related erosion. The road would not erode into the Turkey River, and relocation of the facility would be avoided. The project would eliminate potential life, health, and safety threats associated with the loss of the affected county road.

The project would result in no significant impacts to property values or tax revenues. Project construction would result in no noticeable impacts to employment or the labor force in Clayton County, Iowa. No changes in business or industrial activity would be noticed during or after construction, and no business or farm relocations would be required.

Heavy machinery would generate temporary increases in noise levels during construction; however, disturbance to nearby residents and businesses would

be minimal. No significant long-term noise impacts would result. The aesthetics of the affected waterway property would not be adversely impacted.

Cultural Resources

The State Historic Society of Iowa, Historical Division of the Department of Cultural Affairs, found that there are no historic properties which might be affected by the proposed undertaking. However, if an item or items which might be of archeological, historical, or architectural data come to light in the project area, reasonable efforts should be made to avoid or minimize harm to the property until the significance of the discovery can be determined.

Coordination

Coordination with governmental agencies and the public has been maintained during the planning process. In accordance with the provisions of the Endangered Species Act and the Fish and Wildlife Coordination Act, the Iowa Department of Natural Resources and the U.S. Fish and Wildlife Service were contacted by telephone. The U.S. Environmental Protection Agency also was contacted by telephone under the provisions of the National Environmental Policy Act, Section 404 of the Clean Water Act, and the Clean Air Act. The State Historical Society concurred with the District's determination that no significant cultural resources would be affected by the project in a letter dated September 18, 1991. The National Park Service was contacted as required by the Wild and Scenic River Act. Individual agency concerns were addressed earlier in this report. Conversation records and letters of coordination are found in appendix A.

REAL ESTATE REQUIREMENTS

The county owns the right-of-way to maintain the road, and there is enough sponsor-owned real estate for the project to be completed without additional real estate. Therefore, no real estate assessment is involved in this study. No credit can be given for real estate already owned by the sponsor.

ECONOMIC ASSESSMENT

Methodology

This study assesses the feasibility of providing protective action necessary to prevent further bank erosion of County Road ClX along the Turkey River in Clayton County, Iowa. The project site is located near Elkader, Iowa. June 1991 flooding caused extensive damage to the bankline, and the road is being endangered by undercutting. The bankline is completely eroded in some areas, and the next high water will wash out part of the road. The road provides residents living on County Road ClX access to the city hospital, as well as to the business district and schools in Elkader. If the road is closed to traffic, residents will have to travel an additional 6 miles to the hospital, which can be critical in an emergency.

This study recommends placing Iowa Class "D" riprap along approximately 250 linear feet of the bankline. The annual benefits and costs of the action were computed using September 1991 price levels and an 8-3/4 percent discount rate. The period of analysis is 50 years.

Benefits of Protective Action

The benefits of protective action are derived from a consideration of what would occur if no action were taken. Four potential categories of benefits were examined: (1) detour; (2) road maintenance costs; (3) land loss; and (4) redevelopment.

(1) Detour Costs - Without protective action, the erosion will cause failure of the county road during the project base year (1991), closing it to traffic. Without replacement of the road, motorists will be forced to use a longer, alternate access route throughout the 50-year period of analysis. Motorists using the detour route will incur additional expenses related to costs for operating vehicles and opportunity of time costs. Benefits derived from avoided detour costs were computed based on the following:

(a) In 1990, the average daily traffic count on the county road was 50 vehicles, as reported by the Clayton County Engineer. This average daily traffic was broken down by vehicle type, detour days per year, and average number of trips per detour day (see table 2).

TABLE 2

Analysis of Average Annual Traffic

<u>Vehicle Type</u>	<u>Detour Days Per Year</u>	<u>Average Daily Number of Trips</u>	<u>Total Annual Number of Trips</u>
Passenger Cars	365	42.5	15,513
Heavy Trucks	302	3.2	966
School Bus	180	5.0	900
Emergency Vehicle	365	2.0	730
Mail Vehicle	302	.5	<u>151</u>

Total Annual Number of Trips of All Vehicles - 18,260

18,260 - 50 vehicles/day
365 days

(b) The most direct detour route would necessitate that an additional 6 miles be driven, or 12 miles round trip. Other detour routes would further increase detour mileage. At an average of 30 mph, detour time is 0.2 hour.

(c) Heavy trucks and mail vehicles would have no passengers other than the driver. Passenger cars would have an average of 2 persons; emergency vehicles would have 2 occupants. School buses would have a driver and an average busload of 16 passengers.

(d) The 1991 average variable cost for operating passenger cars and mail vehicles is approximately \$0.29/mile; buses, emergency vehicles, and heavy trucks \$0.61/mile. These figures are based on average maintenance, repair, accessory, tire, fuel, and oil costs, including taxes on gasoline, oil, and tires (see table 3).

TABLE 3

Summary of Vehicle Operating Costs
Resulting From a 1-Year Road Detour

Vehicle Type	Extra Mileage Per Day (A) (1)	Total Annual Number of Trips (B)	Operating Cost Per Mile (\$) (C)	Total Additional Operating Cost Per Year (\$) (AxBxC)
Passenger Car	6	15,513	0.29	\$26,993
Heavy Truck	6	966	0.61	3,536
School Bus	6	900	0.61	3,294
Emergency Vehicle	6	730	0.61	2,672
Mail Vehicle	6	151	0.29	263

Total Cost (\$) = \$36,758
(rounded) = \$36,800

(1) one-way detour mileage is 6 miles.

(e) The opportunity cost of time is the value of work or leisure activities foregone for travel purposes. For passenger cars, the value of time for adults and children was assumed to equal 1/3 and 1/12 of the average hourly general wage rate, respectively. The Clayton County, Iowa, 1991 average hourly wage rate is \$7.30, with 40 percent of the area residents being under the age of 18. Therefore, the opportunity cost of time for passenger cars was assumed to be \$1.70/hour/occupant ($\$7.30 \times 0.6 \times 1/3$) + ($\$7.30 \times 0.4 \times 1/12$) = \$1.70).

(f) Approximate hourly wage rates were used as values of time for heavy truck operators (\$6.50), school bus drivers (\$5.32), mail carriers (\$12.00), and emergency vehicle drivers (\$8.34). School buses require an opportunity cost of time amounting to \$15.05 per hour for 1 driver and 16 children.

($\$5.32 + 7.30 \times 1/12 \times 16 = \15.05) (See table 4.)

TABLE 4

Summary of Opportunity of Time Costs
Resulting From a 1-Year Road Detour

Vehicle Type	Traveler Time Per Trip in Hours (A)	Total Annual Number of Trips B)	Opportunity Time Cost Per Hour (C)	Total Opportunity Time Cost Per Year (AxBxC)
Passenger Car	0.2	15,513	\$3.40	\$10,549
Heavy Truck	0.2	966	6.50	1,256
School Bus	0.2	900	15.05	2,709
Emergency Vehicle	0.2	730	16.68	2,435
Mail Vehicle	0.2	151	12.00	362
			Total Cost (rounded)	\$17,311 17,300

(g) As shown in tables 3 and 4, detour costs resulting from increased vehicle operating costs and opportunity of time costs are \$36,800 and \$17,300, respectively.

(2) Road Maintenance - Closure of County Road C1X along Turkey River would result in no change in road maintenance cost. The annual maintenance cost for the detour route would increase by a dollar amount equal to the decrease in maintenance costs for the closed roadway, as explained by the Clayton County Engineer.

(3) Land Loss - Benefits derived from avoided land loss are not applicable in this instance.

(4) Redevelopment Benefits - Clayton County, Iowa, does not qualify for redevelopment benefits.

(5) Total Benefits - Total annual benefits from providing streambank erosion protection are \$54,100.

Cost of Recommended Action

The Rock Island District identified the least-cost alternative for protecting the county road along the Turkey River from failure caused by bank erosion. The preventative action involves riprapping the bank, along with end protection to prevent undercutting of the project. The estimated total first cost is \$88,500. Detailed project first costs and average annual costs, computed at an 8-3/4 percent discount rate over a 50-year period of analysis, are shown in tables 5 and 6, respectively. Annual maintenance

was calculated assuming that 50 percent of the riprap would be replaced in 25 years (in year 25 following the base year of the project). Because of the short construction period, no interest during construction was calculated. A summary of benefits and costs for the recommended action is presented in table 7. As shown, the project is economically justified and is the NED plan.

TABLE 5

*Detailed Estimate of Construction Costs
(September 1991 Price Levels)*

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total Unit Cost (\$)</u>
Riprap	3,000	ton	20	60,000
Bank Preparation (include tree removal)	250'	job	--	2,000
			Subtotal	62,000
			Contingencies	15,500
			Subtotal	77,500
			Engineering and Design	6,000
			Supervision and Administration	<u>5,000</u>
			Total Project Cost	88,500

Note: The administrative cost for real estate requirements is estimated at \$1,300 (Federal - processing LCA, \$1,000; and non-Federal - \$300).

TABLE 6

Annual Cost of Recommended Action

<u>Description</u>	<u>First Cost (\$)</u>	<u>Annual Cost(\$)</u>
Project Cost	88,500	7,900
Operation & Maintenance [(pw25 x .5 x 60,000)CRF]		<u>300</u>
	Total Annual Cost	8,200

TABLE 7

Summary of Benefits and Costs

<u>Description</u>	<u>Amount (\$)</u>
Project First Cost	88,500
Annualized First Cost	7,900
Annual Maintenance Cost	300
Total Annual Cost	8,200
Average Annual Benefits	54,100
Net Benefits	45,900
Benefit-to-Cost Ratio	6.6

Sensitivity Analysis

A sensitivity analysis was done to determine the effect of less than normal precipitation or drought conditions reducing and/or delaying further erosion. Delaying project construction for 2 years would result in a benefit-to-cost ratio of 5.6:1, and for 10 years would result in a 2.9:1 benefit-to-cost ratio.

COST APPORTIONMENT

Project cost-sharing is in accordance with Public Law 99-662 of the Water Resources Development Act of 1986 and applicable regulations. Total cost apportionment for this project is shown in table 8.

TABLE 8

Cost Apportionment

<u>Non-Federal</u>	Estimated Total Project Cost	\$88,500
	25 percent cost-share	<u>x 0.25</u>
	Total Non-Federal Cash Contribution	\$22,100
<u>Federal</u>	Estimated Total Project Cost	\$88,500
	Less Non-Federal Share	<u>22,100</u>
	Total Federal Cost	\$66,400

Ability to Pay Analysis

Section 103 of Public Law 99-662 requires the Corps of Engineers to evaluate a local sponsor's ability to pay the required non-Federal costs of a project. The county does not qualify for a reduced cost-sharing formula. The analysis is based on the project benefit-to-cost ratio and the project area per capita income, as shown in table 9.

TABLE 9

Ability to Pay Analysis

Annual Cost	\$ 8,200	Cost and benefits
Annual Benefits	54,100	for flood control
Total Cost	88,500	
Local Share	22,100	
Benefit-to-Cost Ratio	6.6	Sum of State and
State Factor	91.22	County must be
County Factor	75.47	less than 163.2
		Sum is 166.69

Not Qualified

Base Benefits Floor	165%	1/4 Benefit-to-Cost
% Local Share	25%	Ratio
EF	-0.46	Eligibility Factor

Financial Analysis

Clayton County, Iowa, is the local sponsor and is willing and able to pay its share of the project cost. Funding for the county's share will be obtained from their county roads fund and is available or can be readily obtained when needed.

SECTION 3 - PLAN IMPLEMENTATION

CORPS OF ENGINEERS

This report will be processed for approval of the selected plan of action and the authorization of funding for construction. Upon approval and appropriation of funding by the Office of the Chief of Engineers, the Rock Island District will be responsible for preparation of plans and specifications and the construction of the project.

COORDINATION

Details of the proposed project have been coordinated with the following Federal, State, and local agencies:

Clayton County, Iowa
Clayton County Conservation Board
Iowa Department of Natural Resources
Iowa State Historical Department, Office of Historic Preservation
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
National Park Service

Records of correspondence with members of these agencies can be found in Appendix A - Pertinent Correspondence.

CLAYTON COUNTY

In compliance with Section 221 of Public Law 91-611, the county will, prior to the advertisement of any construction contract for the project, enter into an agreement (Local Cooperation Agreement) with the Government, whereby the county pledges to act as local sponsor for the proposed project and carry out the following responsibilities:

- a. Provide during the period of construction a cash contribution of 5 percent of total project costs.
- b. Provide all lands, easements, and rights-of-way, and dredged material disposal areas, and perform all relocations of utilities and facilities (excluding railroad bridges and approaches thereto) determined by the Government to be necessary for construction of the project.
- c. If the value of the contributions provided under paragraphs a. and b. above represents less than 25 percent of total project costs, the county

shall provide, during the period of construction, an additional cash contribution in the amount necessary to make its total contribution equal to 25 percent of total project costs.

d. Hold and save the Government free from all damages arising from the construction, operation, and maintenance of the project, except for damages due to the fault or negligence of the Government or its contractors.

e. Operate, maintain, repair, replace, and rehabilitate the completed project, or functional portion of the project, in accordance with regulations or directions prescribed by the Government.

f. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Public Law 100-17, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

g. Comply with all applicable Federal and State laws and regulations, including Section 601 of Title VI of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army."

h. Contribute all project costs in excess of the Federal statutory limitation of \$500,000.

In addition, the county must grant the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the project for the purpose of inspection and for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project if such inspection shows that the county for any reason is failing to fulfill its obligations under the Agreement and has persisted in such failure after a reasonable notice in writing by the Government, delivered to the county. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government in such event shall operate to relieve the county of responsibility to meet its obligations as set forth in the Agreement or to preclude the Government from pursuing any other remedy at law or equity.

The county has stated in a letter of assurance, dated November 15, 1991, that they have reviewed the form Local Cost Sharing Agreement and are willing and able to pay its share of the total project costs. Sufficient funds are available through the county's road use budget, and the cash payment can be deposited directly with the Government or in an escrow account, upon demand by the Government.

The estimated total non-Federal share of the total project costs is estimated to be \$22,125. It is anticipated that the county will need to invest \$300 annually to replace lost riprap during the 50-year project life.

SECTION 4 - RECOMMENDATION

I recommend that the plan selected herein, to provide riprap slope protection along the Clayton County road which parallels the Turkey River near Elkader, Iowa, be implemented as a Federal project, with cost to the United States for construction presently estimated at \$66,375. The plan involves placing about 3,000 tons of riprap along approximately 250 linear feet of the right descending bankline of Turkey River paralleling County Road ClX. The road will be protected from damages which would cause its failure, keeping the families living along County Road ClX from entering the city of Elkader from the northwest to reach the hospital, schools, and businesses.



John R. Brown
Colonel, U.S. Army
District Engineer

FINDING OF NO SIGNIFICANT IMPACT

**SECTION 14 EMERGENCY STREAMBANK PROTECTION
TURKEY RIVER, COUNTY ROAD C1X
CLAYTON COUNTY, IOWA**

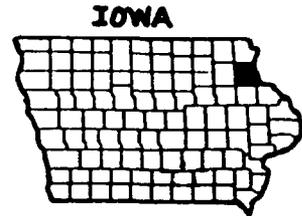
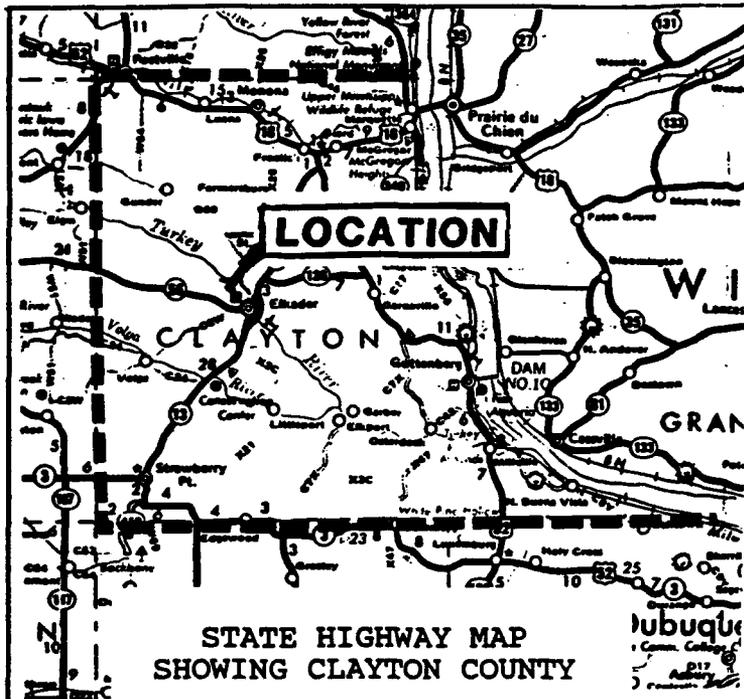
In accordance with the National Environmental Policy Act, the Rock Island District, Corps of Engineers, has assessed the environmental impacts of the above project. The intent of this project is to provide emergency bank protection along the right descending bank of the Turkey River which parallels a county road near Elkader, Clayton County, Iowa. The project involves placing about 3,000 tons of riprap along approximately 250 linear feet of the Turkey River bankline to protect and preserve the existing county road.

This finding of no significant impact is based on the following factors: the proposed project would have only minor and short-term impacts on fish and wildlife resources and on water quality; the proposed project would prevent further deterioration of the existing bank and protect the county road from damages caused by toe scour and upper bank failure; and no significant social, economic, environmental or cultural impacts are anticipated as a result of the proposed action.

The environmental review process indicates that the proposed action does not constitute a major Federal action significantly affecting the environment. Therefore, preparation of an Environmental Impact Statement (EIS) is not required. This determination may be reevaluated if warranted by later developments.

Date

John R. Brown
Colonel, U.S. Army
District Engineer



VICINITY MAP

IOWA KEY MAP
SHOWING
COUNTY LOCATION

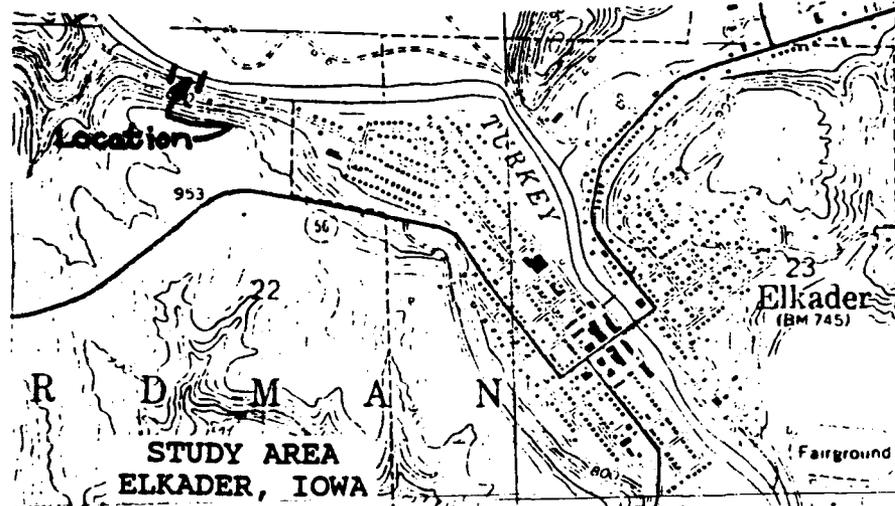
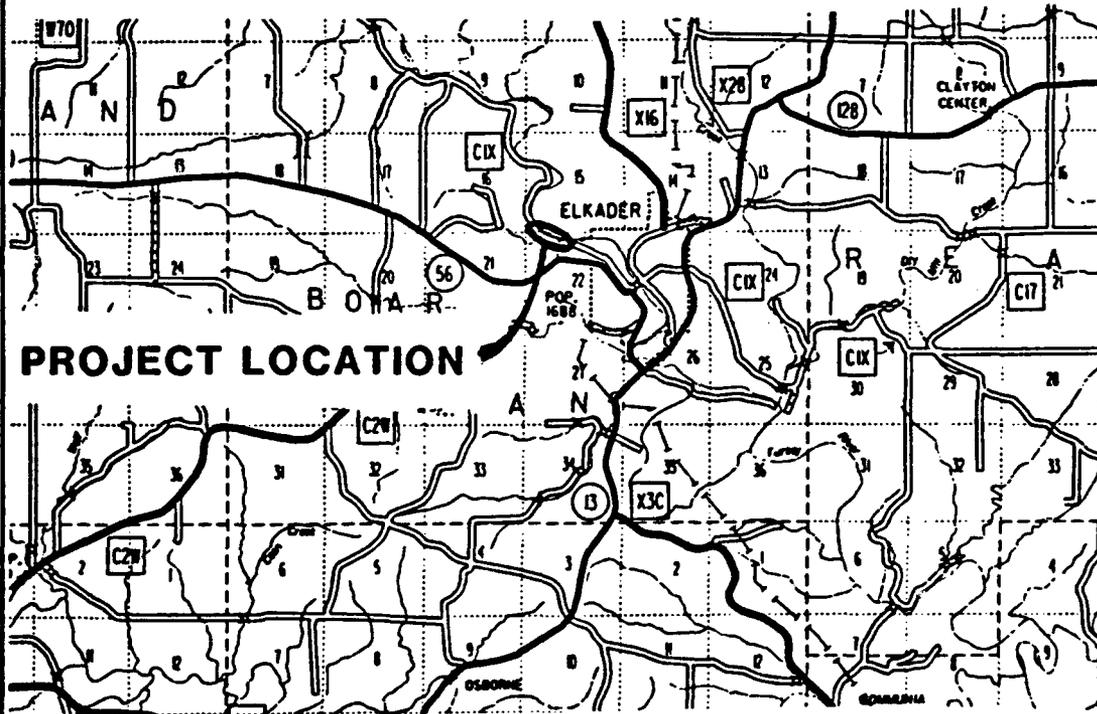
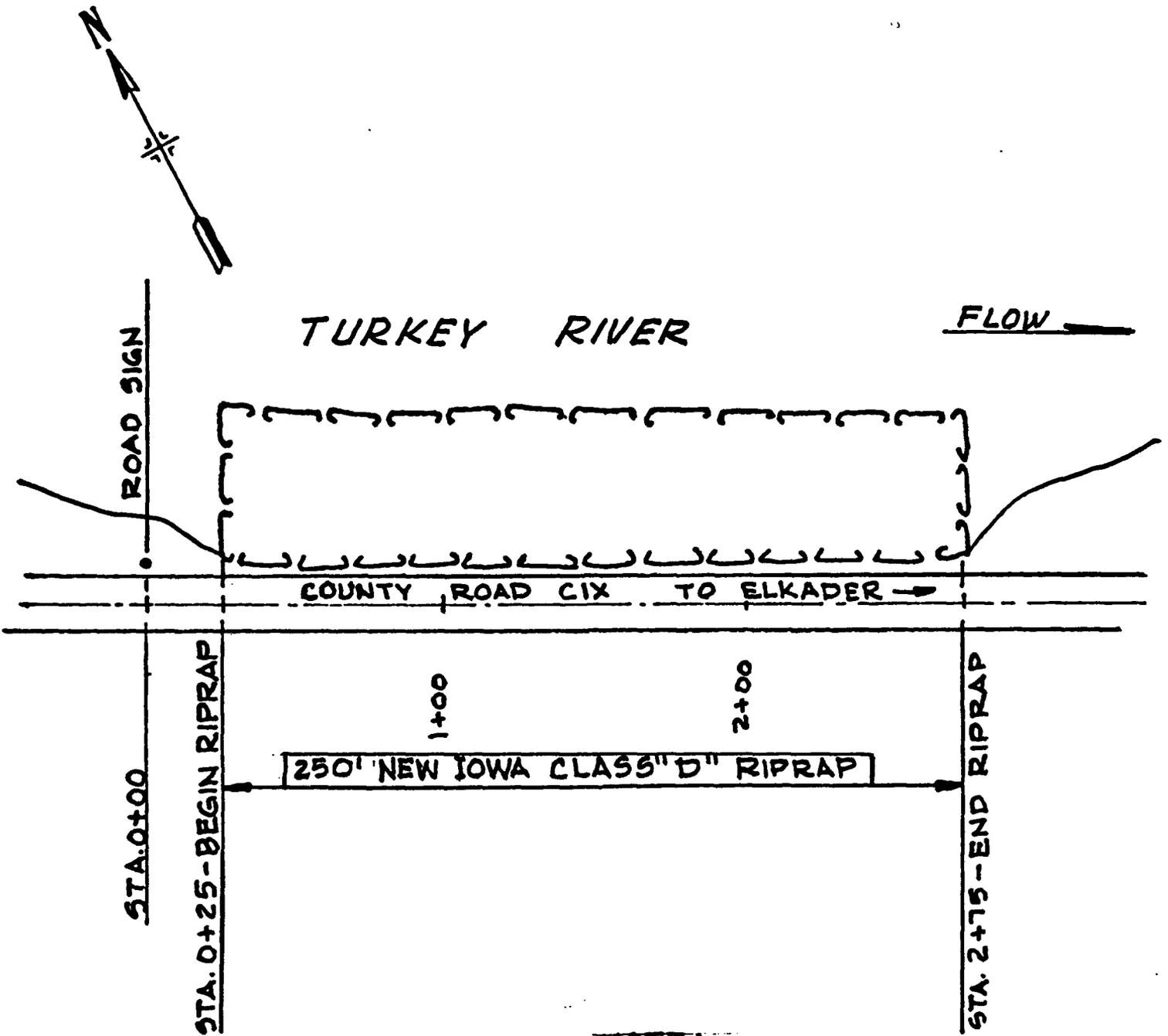


PLATE 1

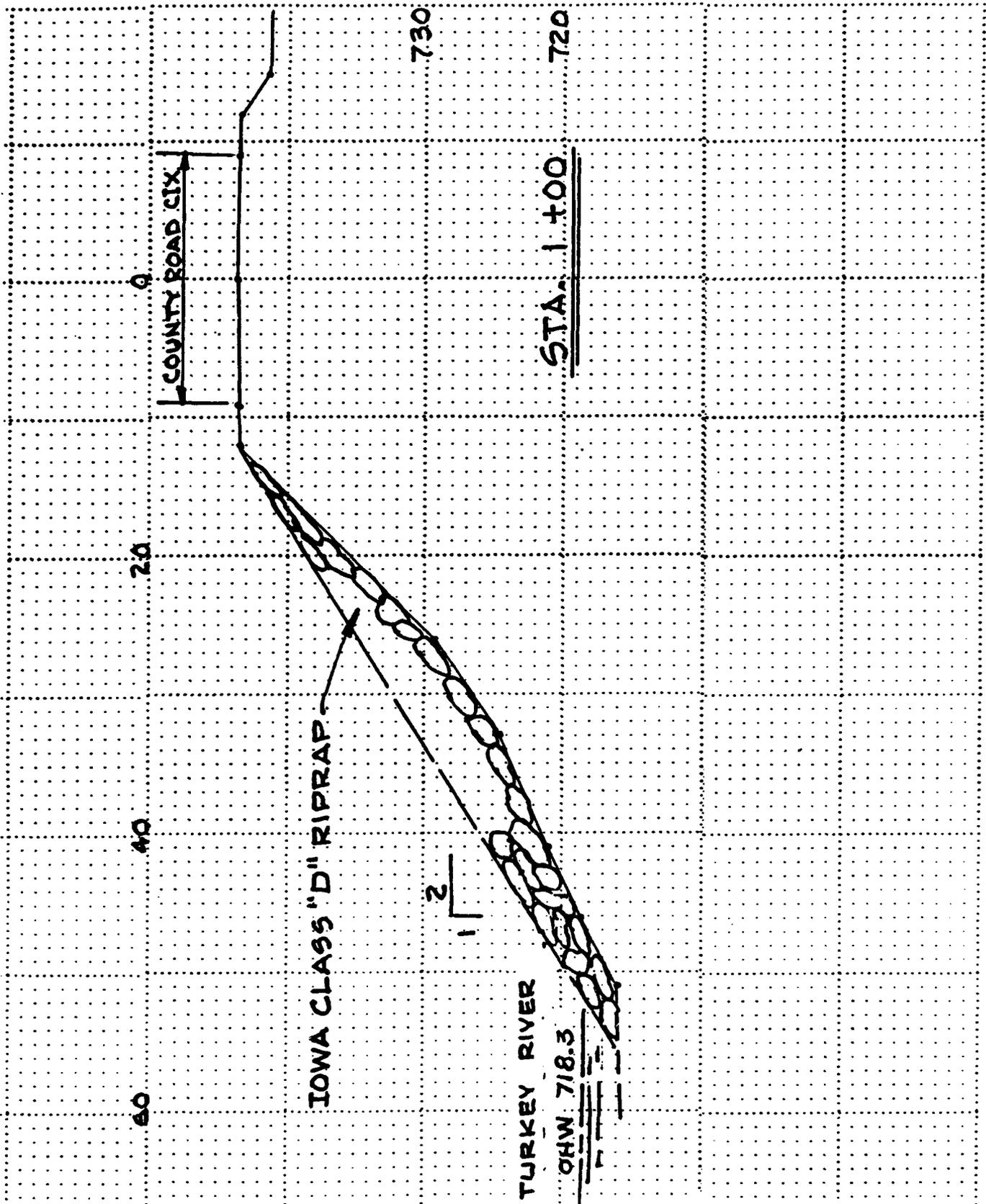
**TURKEY RIVER
CLAYTON COUNTY, IOWA
SITE 4 - COUNTY ROAD CIX
ELKADER, IOWA**

AREA AND LOCATION MAPS



NOTE:
 REMOVE ALL TREES AND BRUSH
 WITHIN RIPRAP AREA.

TURKEY RIVER
 CLAYTON COUNTY, IOWA
 SITE 4 - COUNTY ROAD C1X
 ELKADER, IOWA
 PLAN PLATE 2



TURKEY RIVER
CLAYTON COUNTY, IOWA
SITE 4 - COUNTY ROAD C1X
ELKADER, IOWA PLATE 3
TYPICAL CROSS-SECTION

PERTINENT CORRESPONDENCE

A

P

P

E

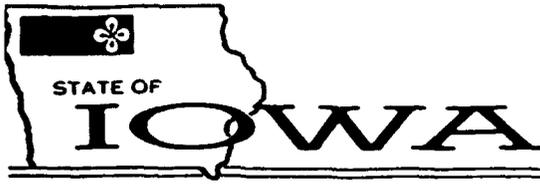
N

D

I

X

A



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

District Engineer
U.S. Army Engineer District, Rock Island
ATTN. Planning Division
Clock Tower Building - P.O. Box 2004
Rock Island, Illinois 61204-2004

24 July 1991

Dear Mr. Hanson:

Thank you for inviting our comments on the environmental impact of five Section 14 Emergency Streambank Protection projects on the Turkey River in Clayton County.

I have searched maps and computer records of the project areas and consulted with other Bureau staff members. At this time, the Preserves and Ecological Services data base contains no records of rare species or significant natural communities in the project areas.

Please note that the lack of records in specific areas does not necessarily mean that rare species or significant natural communities are absent. Our data are not the result of thorough field surveys and should not be considered a substitute for on-site inspection.

This letter does not constitute a Department permit. Before this project may proceed, you may need to obtain permits from various Bureaus of this and other state and federal departments.

If you have any questions about this letter or if you require further information, please contact me.

Sincerely,

John Fleckenstein
Bureau of Preserves and
Ecological Services



State Historical Society of Iowa

The Historical Division of the Department of Cultural Affairs

September 18, 1991

In reply refer to:
R&C#: 910922045

Dudley M. Hanson, P. E.
Chief, Planning Division
Rock Island District Corps of Engineers
Clock Tower Building
P. O. Box 2004
Rock Island, IL 61204-2004

RE: EMERGENCY STREAMBANK STABILIZATION - FOUR LOCATIONS ALONG TURKEY RIVER

Dear Mr. Hanson:

Based on the information you provided, we find that there are no historic properties which might be affected by the proposed undertaking. Therefore, we recommend project approval.

However, if the proposed project work uncovers an item or items which might be of archeological, historical or architectural interest, or if important data come to light in the project area, you should make reasonable efforts to avoid or minimize harm to the property until the significance of the discovery can be determined.

Should you have any questions or if the office can be of further assistance to you, please contact the Review & Compliance program at 515-281-8743.

Sincerely,

Kathy Gourley
Archeologist, Review and Compliance Program
Historic Preservation Bureau

/st

cc: Ron Pulcher
Adrian Anderson

402 Iowa Avenue
Iowa City, Iowa 52240
(319) 335-3916

Capitol Complex
Des Moines, Iowa 50319
(515) 281-5111

Montauk
Box 372
Clermont, Iowa 52135
(319) 423-7173

CONVERSATION RECORD

TIME
1100

DATE
9/19/91

TYPE
 VISIT CONFERENCE TELEPHONE
 INCOMING OUTGOING

ROUTING	
NAME/SYMBOL	INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Mike Bronoski
 ORGANIZATION (Office, dept., bureau, etc.): USEPA - Kansas City
 TELEPHONE NO.: 324/FTS 8-276-7291

SUBJECT
 4 Section 14 Projects in Clayton County, Iowa -
 Coordination with USEPA, Region 7

SUMMARY
 I called Mike to obtain his agency's comments regarding the subject. I had faxed him an informational sheet and maps of the project sites at 0930 this morning. (Attached.)

Mike said that his agency has two primary focuses of concern: toxic and hazardous wastes (if any) and impacts to wetlands. He indicated that he was aware that we normally address such concerns in the project EA, but he wanted to remind us that EPA will be reviewing the EAs with these issues in mind. Mike also mentioned that the Region 7 office now has a Wetlands Protection Section which will be part of EPA's review team for all NEPA and 404 documents.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION: Charlene Carmack
 SIGNATURE: Charlene Carmack
 DATE: 9/19/91

ACTION TAKEN

SIGNATURE: TITLE: DATE:

CONVERSATION RECORD

TIME
1330

DATE
2 Oct 91

TYPE

VISIT

CONFERENCE

TELEPHONE

INCOMING

OUTGOING

ROUTING

NAME/SYMBOL	INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Don Menken

ORGANIZATION (Office, dept., bureau, etc.)

Clayton County Conservation BOARD

TELEPHONE NO.

319
245 1516

SUBJECT

4 Section 14 - Emergency Streambank Protection from Turkey River erosion

SUMMARY

- Informed Mr. Menken of emergency nature of these projects
- ② Legal description of (location) of all projects
 - ③ Corrective action: clear, shape, riprapping
 - ④ Lengths of streambanks to be riprapped
 - ⑤ Vegetation impacted at each location.

Mr. Menken said he would review the Project Report when it comes out for public review, but as of now he had no comments or objections.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

Donn McSquire

SIGNATURE

Donn Ivan McSquire

DATE

2 OCT 91

ACTION TAKEN

SIGNATURE

TITLE

DATE

CONVERSATION RECORD

TIME 10:00 AM

DATE 2 Oct 91

TYPE

VISIT

CONFERENCE

TELEPHONE

INCOMING

OUTGOING

ROUTING

NAME/SYMBOL	INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

DARRYL HAYES

ORGANIZATION (Office, dept., bureau, etc.)

IDNR

TELEPHONE NO.

515-2818675

SUBJECT

4 Sec. 14's in Clayton County, Iowa (Turkey River erosion)

SUMMARY

Informed Mr. Hayes of 1) Legal descriptions (location); 2) lengths to be riprapped; 3) Vegetation to be disturbed by projects; 4) emergency nature of projects.

Informed Mr. Hayes early coordination w/ IDNR on the absence of any known threatened, endangered, or special concern species at any of project locations.

Mr. Hayes responded that he would consult with IDNR floodplain management people and get back with me.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

Lonn McGuire

SIGNATURE

Lonn McGuire

DATE

2 Oct. 91

ACTION TAKEN

SIGNATURE

TITLE

DATE

	:TIME	:DATE
CONVERSATION RECORD	:1115	:10 October 1991
	:	:
TYPE	() VISIT () CONFERENCE (x) TELEPHONE	: ROUTING
	(x) INCOMING	:-----
	() OUTGOING	:NAME :INT
	:	:-----
NAME CONTACTED	:ORGANIZATION :TELEPHONE	:PD :
	:National Park:	PD-E :
Jill Medland	:Service : (402)221-3481	✓ PD-F <i>J/10/91</i> :
	:	:
SUBJECT: Emergency Streambank Protection	:	:
Section 14, Turkey River, Clayton County, Iowa	:	:
	:	:
	:	:

SUMMARY:

- Ms. Medland was returning her response to a coordination/information package I sent her concerning the above subject. I was coordinating this project for potential impacts as described in the National Wild and Scenic Rivers Act, as amended.
- She stated that she will formally comment on the proposed projects during the 30-day public comment period.

ACTION REQUIRED

NAME OF PERSON	:SIGNATURE	:DATE
DOCUMENTING CONVERSATION:		:
Joseph W. Jordan	<i>Joseph W. Jordan</i>	:10 October 1991

=====

ACTION TAKEN

SIGNATURE	:TITLE	:DATE
	:	:
	:	:

50271-101 CONVERSATION RECORD (12-76)

CONVERSATION RECORD

TIME
0830DATE
21 Oct 91

TYPE

 VISIT CONFERENCE TELEPHONE INCOMING OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Darryl Hayes

ORGANIZATION (Office, dept., bureau, etc.)

IOWA DNR

TELEPHONE NO.:

515 281 8675

ROUTING

NAME/SYMBOL

INT

SUBJECT

Clayton County / Turkey River Section 14's (4)

SUMMARY

Mr. Hayes said that Iowa had no problems/objections to these projects as long as clean riprap was used. I relayed to him that clean class "D" riprap would ~~be~~ be used.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

Lonn J. McGuire

SIGNATURE

Lonn J. McGuire

DATE

21 Oct 91

ACTION TAKEN

SIGNATURE

TITLE

DATE

CONVERSATION RECORD	TIME 10:20 a.m.	DATE November 12, 1991
---------------------	--------------------	---------------------------

TYPE	() VISIT	() CONFERENCE	(x) TELEPHONE	CF:
			() INCOMING	-----
			(x) OUTGOING	PD Distfile
				PD-E
				PD-F

NAME CONTACTED Chuck Davis	ORGANIZATION U.S. FWS, RIFO	TELEPHONE 309/793-5800	PD-F
-------------------------------	--------------------------------	---------------------------	-----------------

SUBJECT: Section 14 Streambank Protection along the Turkey River, Clayton County, IA - NW of Elkader Site

SUMMARY:

1. I called Mr. Davis to obtain his comments concerning the above project.
2. Mr. Davis stated he had no objection with the project as explained to him. He said there are no endangered species concerns as well.

ACTION REQUIRED:

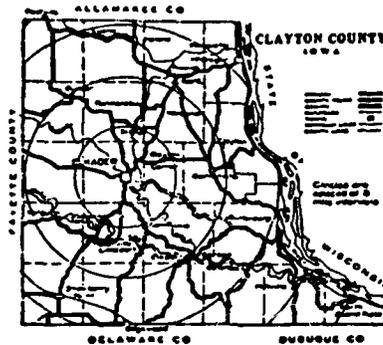
NAME OF PERSON DOCUMENTING CONVERSATION Joseph W. Jordan	SIGNATURE 	DATE Nov. 12, 1991
--	---	-----------------------

ACTION TAKEN

SIGNATURE	TITLE	DATE
50271-101	CONVERSATION RECORD	(12-76)



HARLAN THURN, Asst. to the County Engineer
PEG CONNOR, Office Manager
CORINNE BRASE, Bookkeeper



JERRY J. WEBER, P.E.
COUNTY ENGINEER
CLAYTON COUNTY
LETTER OF ASSURANCE



Office Phone 319-245-1782
P.O. Box 456
ELKADER, IOWA 52043

November 13, 1991

Colonel John R. Brown
District Engineer
U.S. Army Engineer District,
Rock Island
Clock Tower Building, P. O. Box 2004
Rock Island, IL 61204-2004

Dear Colonel Brown:

Clayton County has reviewed the draft of the proposed Local Cooperation Agreement covering streambank erosion control on the Turkey River northwest of Elkader, Iowa Section 22, T93N, R5W, Boardman Township. The Agreement includes the following obligations to be carried out by Clayton County.

a. Provide, without cost to the Government, during the period of construction, all lands, easements, rights-of-way and dredged material disposal areas, and perform all relocations and alteration of buildings, utilities, highways, railroads, bridges (except railroad bridges), sewers, and related and special facilities determined by the Government to be necessary for construction of the project.

b. Make a cash payment of not less than 5 percent of total project costs during the period of construction, regardless of the value of the items in a. above. If the value of the items in a. above is less than 20 percent of total project costs, Clayton County shall, during the period of construction, make such additional cash payments as are necessary to bring its total contribution in cash and value of lands, easements, rights-of-way, and utility and facility alterations and relocations, to an amount equal to 25 percent of total project costs.

c. Pay all project costs in excess of the Federal statutory limitation of \$500,000.

d. Hold and save the Government free from all damages arising from the construction, operation, and maintenance of the project, except for damages due to the fault or negligence of the Government or its contractors.

e. Operate, maintain, replace, and rehabilitate the project or functional element thereof upon completion in accordance with regulations or directions prescribed by the Government.

f. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies and procedures in connection with said Act.

g. Comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7, entitled "Non-Discrimination on Basis of Handicap and Programs and Activities Assisted or Conducted by the Department of the Army".

h. Participate in and comply with applicable Federal flood plain management and flood insurance programs.

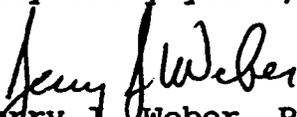
i. Prior to construction, and in accordance with the provisions of Section 221 of Public Law 91-611, Clayton County will enter into a contract with the Government whereby Clayton County will grant the Government a right to enter, at reasonable times and in a reasonable manner, upon land which Clayton County owns or controls for access to the project for the purpose of inspection, and, if necessary for the purpose of completing, operations, repairing, maintaining, replacing or rehabilitating the project. If an inspection shows that Clayton County for any reason of failing to fulfill its obligations under the Agreement without receiving prior written approval from the Government, the Government will send written notice to Clayton County. If Clayton County persists in such failure for 30 calendar days after receipt of notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands Clayton County owns or controls for access to the project for the purpose of completing, operating, repairing, maintaining, replacing or rehabilitating the project. No completion, operation, repair, maintenance, replacement, or rehabilitation by the Government shall operate to relieve Clayton County of responsibility to meet its obligations as set forth in the Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to the Agreement.

Clayton County is willing and able to pay its share of the

total project costs. Sufficient funds are available within Clayton County Secondary Road Fund and the cash payment can be deposited directly with the Government upon demand by the Government.

This is to advise that if the Definite Project Report for this project is approved substantially in its present form as reviewed by Clayton County and as submitted for approval by the Corps of Engineers' higher authority, Clayton County is willing, and legally and financially able, to sign the referenced Local Cooperation Agreement which includes the obligations set forth above.

Very truly yours,


Jerry J. Weber, P.E.
Clayton County Engineer

DISTRIBUTION LIST

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DETAILED PROJECT REPORT & ENVIRONMENTAL ASSESSMENT
SECTION 14 EMERGENCY STREAMBANK PROTECTION
TURKEY RIVER, CLAYTON COUNTY ROAD CLX, ELKADER, IA

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351 HART SENATE OFFICE BLDG, WASHINGTON DC 20510-1502

HONORABLE CHARLES E. GRASSLEY, UNITED STATES SENATOR
206 FEDERAL BUILDING, 101 FIRST STREET, SE
CEDAR RAPIDS, IA 52401

HONORABLE CHARLES E. GRASSLEY, UNITED STATES SENATOR
721 FEDERAL BUILDING, 210 WALNUT STREET
DES MOINES, IA 50309

HONORABLE TOM HARKIN, UNITED STATES SENATOR
733 FEDERAL BUILDING, 210 WALNUT STREET
DES MOINES IA 50309

HONORABLE TOM HARKIN, UNITED STATES SENATOR
SUITE 101 LINDALE MALL, 4444 1ST AVENUE NE
CEDAR RAPIDS IA 52402

HONORABLE JIM NUSSLE, HOUSE OF REPRESENTATIVES
507 CANNON HOUSE OFFICE BLDG, WASHINGTON DC 20515-1502

HONORABLE JIM NUSSLE, REPRESENTATIVE IN CONGRESS
P. O. BOX 478, DUBUQUE IA 52001-0478

DIRECTOR, ADVISORY COUNCIL ON HISTORIC PRESERV
OLD PO BLDG #809, 1100 PENNSYLVANIA AVENUE NW
WASHINGTON DC 20004

DAVID COTTINGHAM-DIRECTOR, ECOLOGY & ENV CONNS OFFICE
DOC/NOAA/CS/EC - ROOM 6222, 14TH & CONSTITUTION AVENUE NW
WASHINGTON DC 20230

DIRECTOR, OFFICE OF ENVIRONMENTAL COMPLIANCE
DEPT OF ENERGY - ROOM 4G064, 1000 INDEPENDENCE AVE SW
WASHINGTON DC 20585

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US ENVIRONMENTAL PROTECTION AGENCY, 401 M STREET SW
WASHINGTON DC 20460

OFFICE OF ENVIRONMENTAL PROJ REVIEW, DEPARTMENT OF INTERIOR
MS 4239-MIB, 18TH & C STREETS NW
WASHINGTON DC 20240

18

DR DAVID CLAPP, OFFICE OF THE DIRECTOR
CNTR FOR ENV HEALTH&INJ CONTROL/F 2, CENTERS FOR DISEASE CONTROL
ATLANTA GA 30333

MR RICHARD NELSON - FIELD SUPRVR, U.S.FISH & WILDLIFE SERVICE
1830 SECOND AVE. - 2ND FLOOR, ROCK ISLAND,IL 61201

DIVISION ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION
PO BOX 627, 6TH AND KELLOGG STREET
AMES IA 50010

MR JOHN LYONS, U S FISH AND WILDLIFE SERVICE
P O BOX 460, MC GREGOR IA 52157

STATE CONSERVATIONIST, SOIL CONSERVATION SERVICE USDA
693 FEDERAL BLDG, 210 WALNUT STREET
DES MOINES IA 50309

2

GEOLOGICAL SURVEY BUREAU, ENERGY AND GEOLOGICAL RESOURCES DIVN
IOWA DEPT OF NATURAL RESOURCES, 123 NORTH CAPITOL STREET
IOWA CITY IA 52240

WATER RES. RESEARCH CENTER, ATTN DR AL AUSTIN
355 TOWN ENGINEERING BUILDING, IOWA STATE UNIVERSITY
AMES IA 50010

MR MORRIS KAY, ADMINISTRATOR
US ENVIRON PROT AGENCY-REG VII, 726 MINNESOTA AVE
KANSAS CITY KS 66101

3

MR JAMES C GRITMAN-REGIONAL DIRECTO, US FISH & WILDLIFE SERVICE
FEDERAL BUILDING, FORT SNELLING
TWIN CITIES MN 55111

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FEDERAL RAILROAD ADMINISTRATION, 2903 FEDERAL OFFICE BLDG
KANSAS CITY MO 64108

COMMANDER, DEPARTMENT OF TRANSPORTATION
SECOND COAST GUARD DISTRICT, 1430 OLIVE STREET
ST LOUIS MO 63101

REGIONAL FORESTER, FOREST SERVICE
US DEPT OF AGRICULTURE, 310 W WISCONSIN AVE-SUITE 500
MILWAUKEE WI 53203

2

HONORABLE TERRY BRANSTAD, GOVERNOR OF IOWA
STATE CAPITOL, DES MOINES, IA 50319

MR STEVEN R MC CANN - DIRECTOR, IOWA DEPT OF ECONOMIC DEVELOPMENT
DIVN OF COMMUNITY PROGRESS, 200 EAST GRAND
DES MOINES IA 50319

4

MR LARRY WILSON - DIRECTOR, DEPT OF NATURAL RESOURCES
WALLACE STATE OFFICE BLDG, 900 EAST GRAND AVENUE
DES MOINES IA 50319

3

MR JAMES COBB, IOWA DEPT OF TRANSPORTATION
826 LINCOLN WAY, AMES IA 50010

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