JULY 1968

IOWA STATE HIGHWAY COMMISSION

Bridge Location, Revenue and Traffic Studies

AT

PRAIRIE DU CHIEN, WISC.

TAMMEN & BERGENDOFF
engineers
NEW YORK, N.Y.

WILBUR SMITH & ASSOCIATES
traffic consultants
NEW HAVEN, CONN.

MISSISSIPPI RIVER TOLL BRIDGE

HOWARD, NEEDLES, TAMMEN & BERGENDOFF | HNTB
CONSULTING ENGINEERS

1805 GRAND AVENUE, KANSAS CITY, MISSOURI 64108

Wilbur Smith & Associates, Inc.

Cable: WILSMITH
(203) 865-2191

TRANSPORTATION CONSULTANTS
155 WHITNEY AVENUE • P. O. BOX 993
New Haven, Conn. 06510

July 22, 1968

Mr. J. R. Coupal, Jr.
Director of Highways
Iowa State Highway Commission
Ames, Iowa 50010

Dear Mr. Coupal:

We are pleased to submit this preliminary feasibility report for a new Mississippi River bridge at Prairie du Chien.

The report includes an analysis of alternate bridge locations, preliminary engineering studies, traffic and toll revenue estimates, preliminary project costs and an indication of project feasibility.

The feasibility calculations indicate that the relationship of project costs to anticipated revenues is close enough to desired levels to warrant further consideration of possible construction of the proposed bridge as a revenue bond project.

We gratefully acknowledge the assistance and cooperation given to us by members of your staff and the numerous other public and private agencies and individuals contacted in the course of our studies.

Respectfully submitted,

HOWARD, NEEDLES, TAMMEN & BERGENDOFF

Paul L. Heineman

Paul L. Heineman

WILBUR SMITH & ASSOCIATES, INC. N.E.

Wilbur S. Smith

Wilbur S. Smith

I hereby certify that this plan, specification or report was prepared by me or under my direct personal supervision and that I am a duly registered Professional Engineer under the laws of the State of Iowa.

Signed ..... Date .....

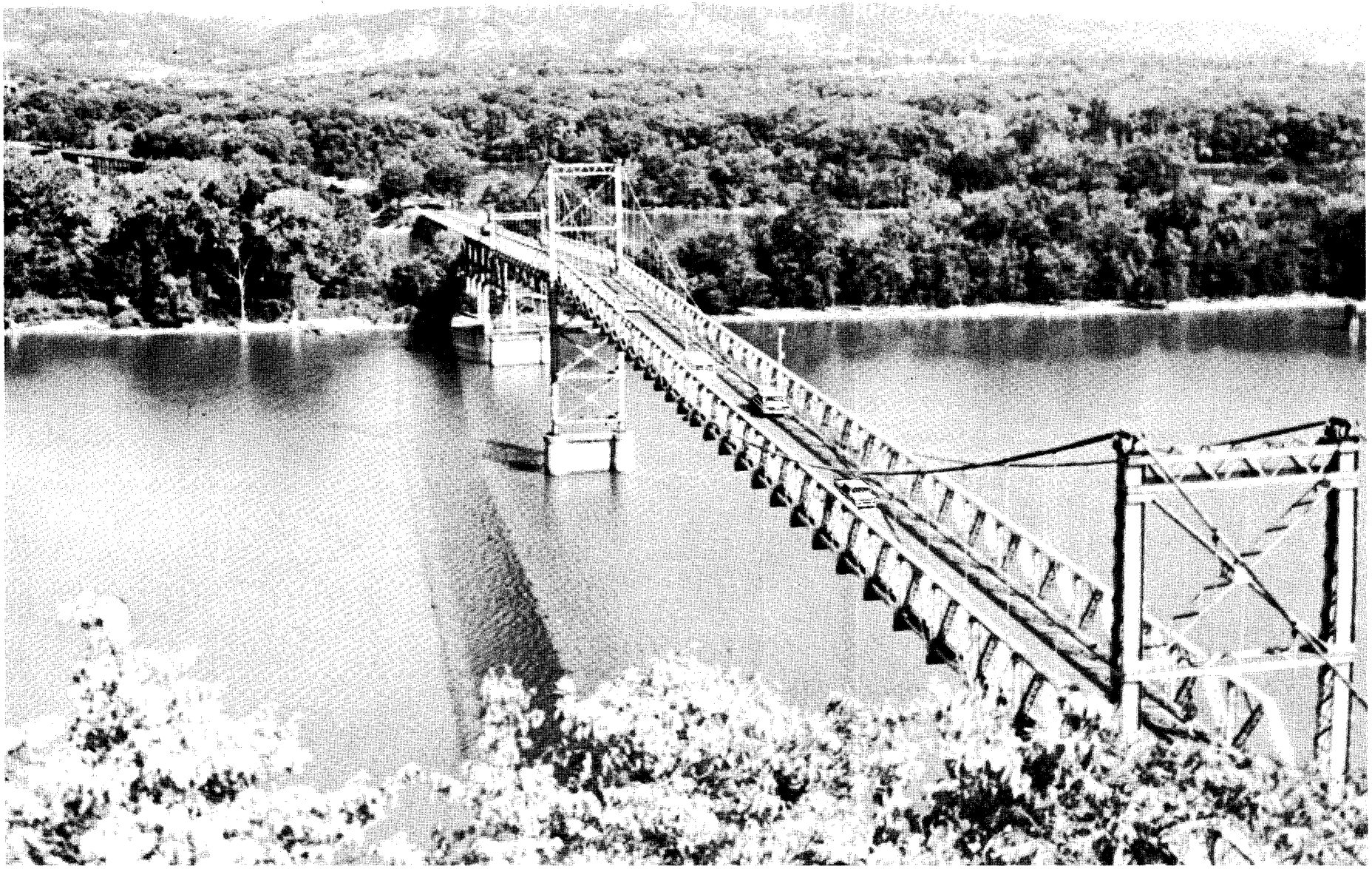
Paul L. Heineman, P.E. Iowa Reg. No. 5156 July 22, 1968

Signed .....

Wilbur S. Smith, P.E. Iowa Reg. No. 4007 July 22, 1968

PAUL L. HEINEMAN REGISTERED 5156 IOWA PROFESSIONAL ENGINEER

WILBUR SMITH REGISTERED 4007 IOWA PROFESSIONAL ENGINEER



VIEW OF MAIN CHANNEL SPAN FROM MARQUETTE, IOWA LOOKING SOUTHEAST

PRAIRIE DU CHIEN, WISCONSIN

MISSISSIPPI RIVER TOLL BRIDGE

JULY

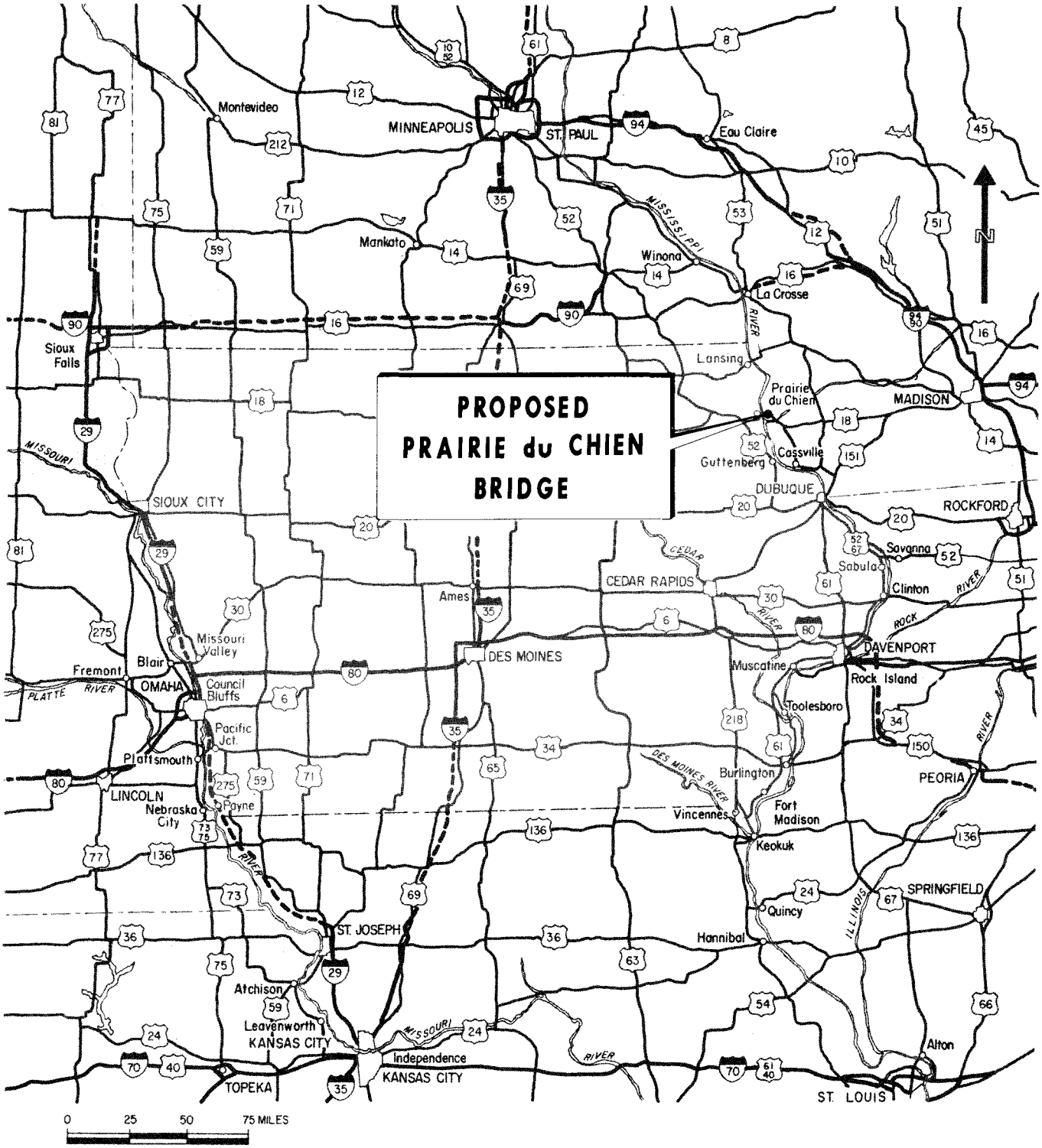
1968

PRELIMINARY ENGINEERING REPORT

- LOCATION STUDIES
- PRELIMINARY DESIGN
- COST ESTIMATES
- TRAFFIC AND REVENUE STUDIES

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
KANSAS CITY, MO. NEW YORK, N.Y.

WILBUR SMITH & ASSOCIATES
traffic consultants
NEW HAVEN, CONN.



Wilbur Smith and Associates

Exhibit 1

REGIONAL MAP

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LIST OF ILLUSTRATIONS

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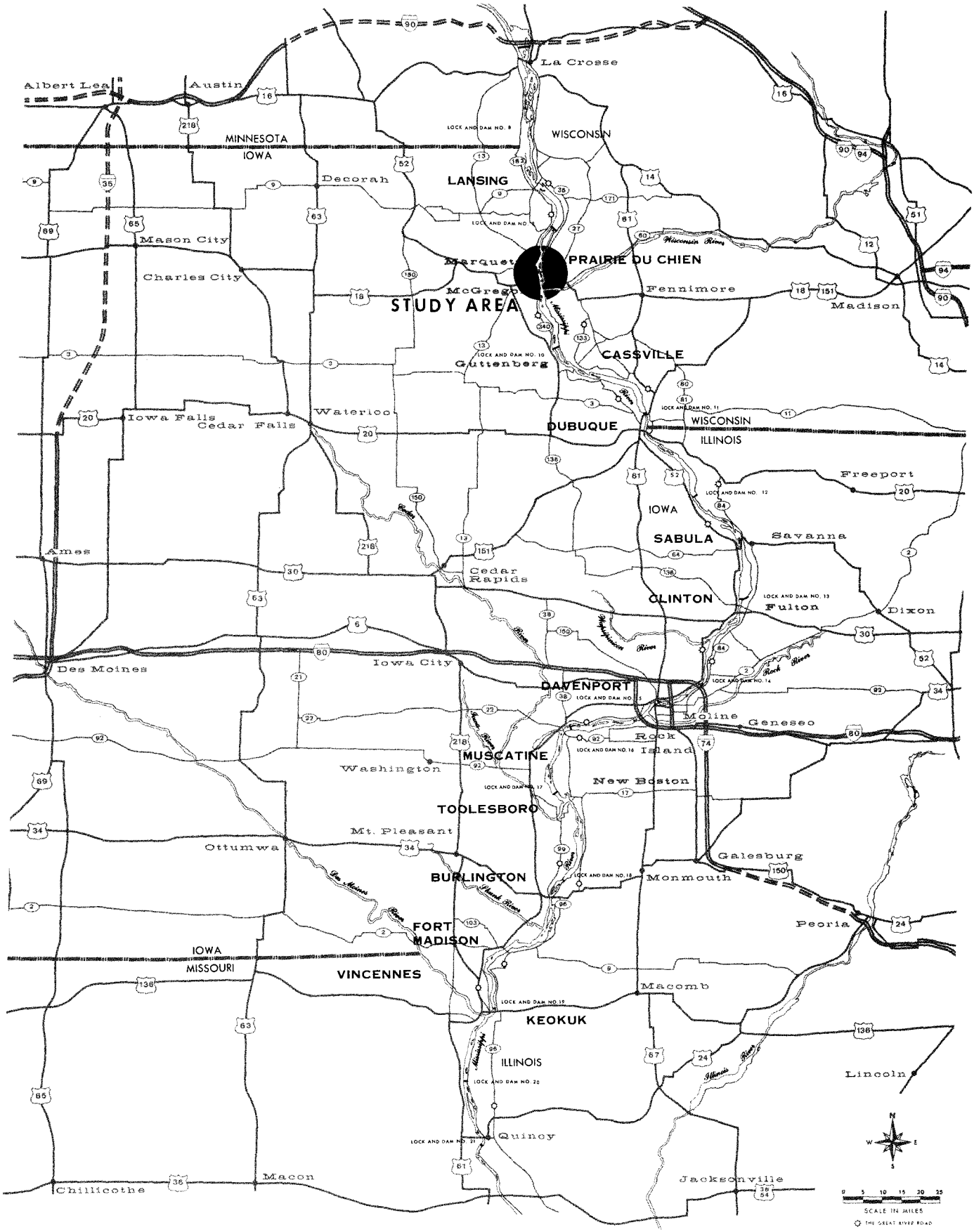


Exhibit 2

VICINITY MAP

SUMMARY OF FINDINGS

The present U.S. Route 18 bridge at Prairie du Chien does not provide adequate traffic service in the bridge travel corridor. The bridge is built to a design standard which is not commensurate with modern, two-lane bridge design, the approaches in Iowa are poor and load limitations are in effect which prohibit use of the bridge by a high percentage of the heavy trucks moving in the travel corridor.

Construction of a new bridge to replace the present U.S. Route 18 facility would cost approximately $7,830,000. A bond issue, adequate to meet initial construction costs of approximately $9,396,000 would be required. After deducting annual maintenance and operation expenses, net revenues would average $831,000 over the assumed 28-year earning period of a thirty-year bond issue. Assuming a 5.5 per cent interest rate, annual payments to meet both interest and amortization of the bond issue would be approximately $665,000. Average annual net revenues over the earning period would provide a coverage of level debt service of 1.25.

This coverage value is close enough to the 1.50 level normally considered indicative of financial feasibility to warrant further more detailed studies which could lead to revenue bond financing of this project. The net revenues generated by the facility would meet level debt service requirements and provide a 25 per cent margin over the earning period of the bond issue.

INTRODUCTION

U.S. Route 18 follows an east-west orientation across Wisconsin and the northern portion of Iowa. As shown in Exhibit 1, it crosses the Mississippi River in the vicinity of Prairie du Chien, Wisconsin, and Marquette, Iowa. The location of the present U.S. Route 18 bridge at Prairie du Chien is approximately midway between the large urban areas of La Crosse, Wisconsin, to the north, and Dubuque, Iowa, to the south.

In the immediate vicinity of the present U.S. Route 18 crossing, Prairie du Chien is the largest population center with an estimated 1966 population of 6,000. Across the Mississippi River, Marquette, Iowa, had a population in 1960 of 572; McGregor and Monona had populations of 1,040 and 1,346, respectively. There are several other smaller communities in the immediate area of the bridge which include Froelich and Harpers Ferry in Iowa, and Bridgeport, Eastman and Mount Hope in Wisconsin.

The present U.S. Route 18 bridge at Prairie du Chien was constructed in 1932. It is a two-lane facility and weight restrictions are in effect which prohibit use of the structure by most large trucks. The bridge was initially operated as a toll facility. In 1954, bridge tolls were removed and the crossing has since operated as a free facility.

Authority and Purpose of Report

In December, 1967, the Iowa State Highway Commission authorized the preparation of a preliminary feasibility report for a possible toll crossing in the Marquette-Prairie du Chien area. This report is one of several comparable bridge studies to be conducted as part of the Iowa Toll Bridge Program, in accordance with legislation enacted by the Iowa General Assembly. The various locations, along the Mississippi River, to be studied under this program are shown in Exhibit 2.

Scope of Services

This report summarizes preliminary engineering, traffic and revenues and feasibility studies of a proposed toll crossing of the Mississippi River in the Marquette-Prairie du Chien area. The major areas of study are:

1. Analysis of the physical limitations imposed by navigational requirements, terrain, existing levees, railroads, real property values, and existing city street pattern.

2. Comparison of alternate river bridge and approach locations, estimates of project costs, estimates of annual maintenance and operation costs and selection of the most economical location.

3. Analyses were made of the adequacy of present trans-river traffic service in the vicinity of the proposed bridge, measured against present travel demands and anticipated future growths.

4. Traffic estimates were made for the proposed bridge assuming operation as a toll facility and annual estimates of toll revenues were determined over the earning period of an assumed bond issue.

5. A determination of the preliminary feasibility of the project was made based on the relationship of anticipated project cost and estimated toll revenues.

The engineering, location and cost studies relating to the proposed bridge were prepared by Howard, Needles, Tammen & Bergendoff and are discussed in Part I of this report.

Part II, prepared by Wilbur Smith and Associates, discusses the preliminary traffic and revenue potential of the crossing and project feasibility calculations.

PART I

LOCATION AND COST STUDIES

BASIC DATA

Considerable information regarding existing conditions and proposed improvements must be procured and analyzed in conjunction with the preparation of bridge studies for a project of this magnitude. General features of the study area are shown on Exhibit I-1. The following are items of data pertinent to a Mississippi River crossing at Prairie du Chien.

Geology

The study site is in the driftless section of the Central Lowland physiographic province and traverses a broad flood plain of the Mississippi River.

Alluvial silt, sand and gravel, to depths of 147 feet in places, cover the entire valley and are underlain by limestone and shale of the Galena-Platteville formation.

Substructures for the proposed bridge should be founded on bearing piles driven to rock or other acceptable founding material deep in the alluvium. Approach embankments in the flood plain should present no special problems. Prior to final design, foundation borings and laboratory soil tests will be required in determining the need for and extent of any special embankment treatment which might be required for stability and settlement purposes, and to establish the top of suitable founding material.

River Conditions

The main navigation channel alignment of the Mississippi River follows the state boundary throughout the Prairie du Chien area although a second channel exists east of the main channel at Prairie du Chien. The normal pool elevation is 611.0 Mean Sea Level.

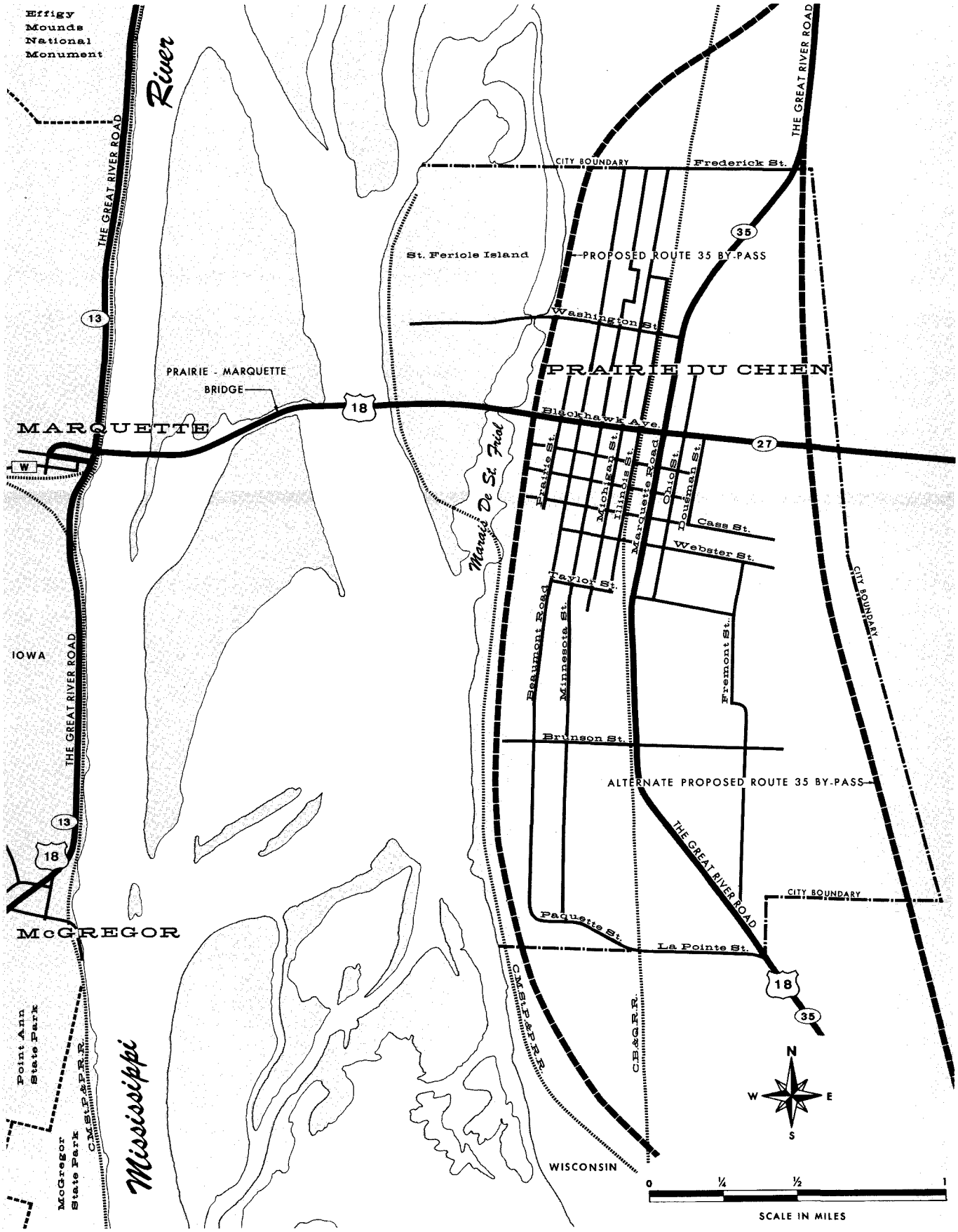


Exhibit I-1

PRAIRIE DU CHIEN STUDY AREA

High water conditions are normally expressed in terms of that elevation which will be exceeded only 2 per cent of the time. This elevation, called the 2 per cent line in the Prairie du Chien area, is 619.6. Flooding in the Prairie du Chien area is minimal due to a general elevation above 620. Any flooding that does occur would be confined to the riverfront and low lying swamp land south of the Chicago, Milwaukee, St. Paul and Pacific Railroad. Similar conditions prevail in the Marquette and McGregor areas on the Iowa shore.

Existing Railroads

The mainline track of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company is parallel and adjacent to the Iowa shore through the Marquette and McGregor area; switching yards and a branch track running to the west exist in Marquette. Formerly, the Milwaukee Road crossed the Mississippi River just south of the present highway crossing; this crossing has been abandoned and the tracks now terminate in Prairie du Chien. Mainline tracks of the Chicago, Burlington and Quincy Railroad pass through Prairie du Chien in a north-south direction along the east bank of the river.

Existing Highways

U. S. Route 18 crosses the Mississippi River on the existing Prairie-Marquette Bridge. In Wisconsin, U. S. Route 18 is classified as a "primary arterial"; the function of a primary arterial is "serving long trips with mobility (65 mph)". The U. S. Route 18 corridor in Iowa is programmed for expressway construction across the entire state. Iowa State Route 13 serves the Effigy Mounds National Monument from the north to Marquette and McGregor. Iowa State Route 340 provides highway access to the state parks south of McGregor. Wisconsin Route 35 (Great River Road) is the north-south route in Wisconsin along the Mississippi River. Wisconsin State Route 27 enters the Prairie du Chien area from the northeast.

The Existing Prairie-Marquette Bridge

The existing Prairie-Marquette Bridge, Frontispiece and Exhibit I-2, has a suspension navigation channel span for both the west (main channel) and the east channel. This project was opened to traffic in March, 1932. The original cables and suspenders on the east bridge were replaced in 1948. Necessary modifications were made to the east bridge towers and anchorages in order to replace the main cables.

The bridge over the east channel has a 20 foot wide roadway and a 6.5 per cent grade. The approach includes 90 foot earthfilled retaining walls, 17 rolled beam approach spans with a total length of 608 feet and a 215 foot side span. The 473 foot main span has a flat grade and nominal 2 foot 6 inch camber. The west approach consists of a 230 foot side span with a 6.5 per cent roadway grade, 3 one hundred foot deck truss spans and 10 rolled beam spans with a total length of 352 feet.

The bridge over the main channel with the west terminal in Marquette, Iowa has a 20 foot wide roadway and a 6.5 per cent grade. The approach includes 16 rolled beam approach spans with a total length of 568 feet and a 6.5 per cent roadway grade, a one hundred foot deck truss span and 230 foot side span with 6.5 per cent roadway grade. The 473 foot main span has a flat grade and nominal 2 foot 6 inch camber, a 154 foot side span with a 2.5 per cent roadway grade and a 20 foot rolled beam approach span.

Recommended repairs and adjustments in a 1965 Inspection Report, prepared by Howard, Needles, Tammen & Bergendoff, were completed in 1966 at a construction cost of $76,100.

The crossing is rated for an AASHO H7.5-44 loading; the capacity of the west channel bridge controlling the rating.

The annual inspection of the existing Prairie du Chien bridge was performed in June by representatives of the Iowa and Wisconsin Highway Commissions. The inspection team reported serious rusting and some

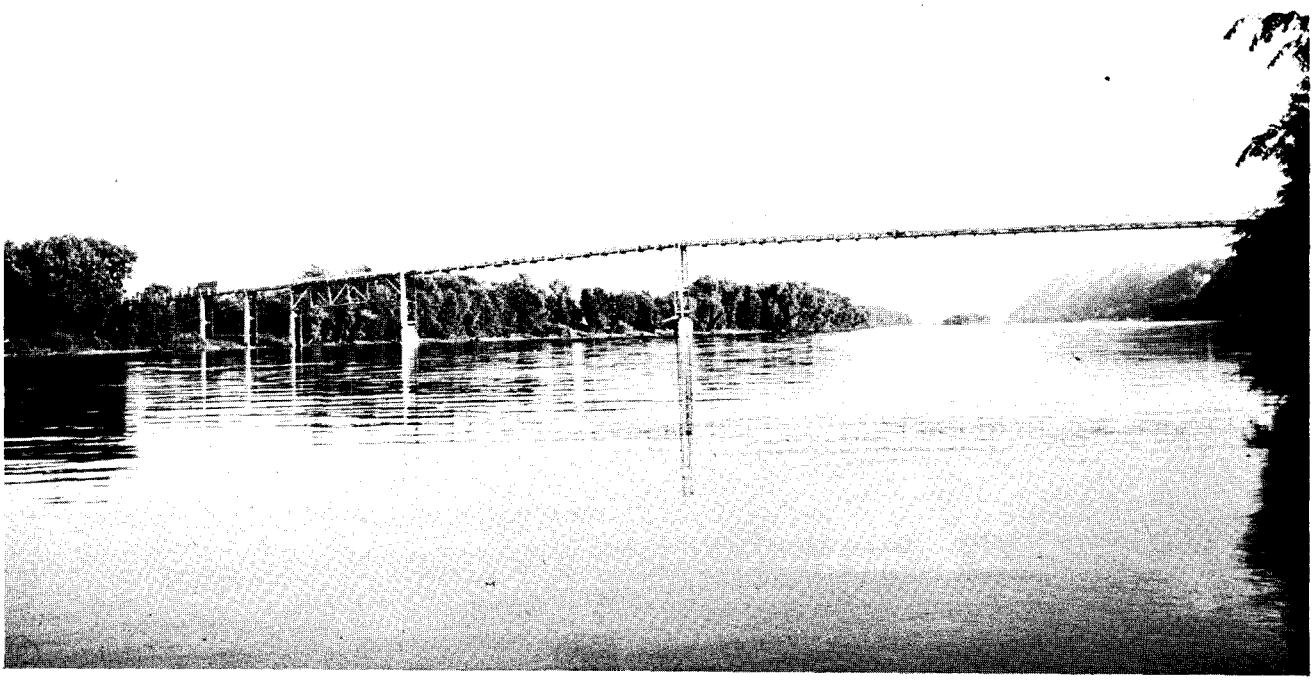


Exhibit I-2

EXISTING MAIN CHANNEL SPAN PRAIRIE DU CHIEN BRIDGE

loss of section at many points on the structures; these conditions indicate the necessity to thoroughly clean and repaint all portions of both suspension bridges below the hand rail. The team further reported that unless this deterioration and loss of section can be haulted within a year, the load carrying capacity should be reevaluated. Their preliminary estimate of the painting indicates an expenditure of approximately $300,000.

Traffic restrictions are currently in effect; a speed restriction of 20 miles per hour and a weight limitation of 15 tons for 2 axle single vehicles, 18 tons for 3 axle single vehicles, and 23 tons for combination vehicle 2 or more axles. Trucks of over 5 tons must maintain a 500 foot interval at all times. The foregoing weight restrictions are based on the floor system design, not the suspension system. The traffic-carrying capacity of these bridges is greatly reduced due to the extreme 6.5 per cent approach grades in combination with the speed and weight restrictions.

Existing Bridges near Prairie du Chien

The nearest Mississippi River Bridge downstream from Prairie du Chien is the Eagle Point Bridge, 52 miles to the south at Dubuque. The nearest highway bridge upstream is the Black Hawk Bridge at Lansing, Iowa, 30 miles to the north.

The distant location of these two highway bridges emphasizes the importance of a modern highway bridge at Prairie du Chien. If an adequate highway bridge were not available at Prairie du Chien, motorists would be forced out of their way either the 52 river miles downstream or 30 river miles upstream to cross the Mississippi River.

Proposed Highway Improvements

U. S. Route 18 through Prairie du Chien is designated as an expressway in the 1990 functional system for the Wisconsin State Highway Plan. The Wisconsin definition of an expressway is "full control of private access, but with some public roads and intersections at grade".

In addition, the upgrading of Wisconsin State Route 35 through Prairie du Chien is included in the Wisconsin long range "corridor studies".

U. S. Route 18 is an expressway corridor across the entire state of Iowa. The corridor terminates at the Mississippi River in the Marquette-McGregor area.

These long range plans by both states emphasize the need for a modern bridge crossing at Prairie du Chien.

Navigation Clearances

Criteria for navigation clearances have been tentatively established by the St. Paul District of the U. S. Army Corps of Engineers.

Upon establishment of the Department of Transportation under the Act of 15 October 1966, PL 89-670, the Secretary of Transportation was given responsibility for certain functions, powers, and duties previously vested in the Secretary of the Army and other offices of the Department of the Army, including those with respect to drawbridge operating regulations (Section 5 of the Act of 18 August 1894 as amended), obstructive bridges (the Act of 21 June 1940 as amended), and location and clearances of bridges and causeways in navigable waters (Section 9 of the Act of 3 March 1879, the Act of 23 March 1906 as amended, and the General Bridge Act of 1946 as amended, except Section 503).

The criteria cited herein is in conformance with the requirements and past practices of the U. S. Army Corps of Engineers. The assumption has been made, for this exploratory report, that the criteria to be established by the U. S. Coast Guard, the agency delegated by the Secretary of Transportation to assume the responsibility for the functions listed above, will be similar to those of the Corps of Engineers.

Contact with the Coast Guard has confirmed the validity of this assumption for an exploratory study of alternative locations. It should be noted, however, that the particular river conditions existing at each

site should be reviewed with the Coast Guard prior to the preparation of a definite project report to establish the navigation requirements.

The minimum permissible navigation channel on the Mississippi River is 400 feet. This clearance is permitted only when the alignment of the river channel is straight. The opening must be greater where the alignment of the channel is curved under or upstream from the bridge.

Final approval of clearances can be determined only after formal application has been file and public hearings conducted.

The minimum vertical clearance for a bridge structure is 52 feet above the 2 per cent waterline elevation, or 60 feet above flat pool, whichever is higher. The 2 per cent waterline is that elevation of the river which will be exceeded only 2 per cent of the time. In the Prairie du Chien area, low steel elevation required by the 2 per cent waterline elevation specification is 671.6 Mean Sea Level, which exceeds elevation 671.0 Mean Sea Level required by the flat pool specification.

Vertical clearances provided by the existing Prairie-Marquette Main Channel and East Channel Bridges are 62.3 feet above the 2 per cent waterline elevation. The proposed Prairie-Marquette Bridges provide 52 feet of vertical clearance.

ALTERNATE LOCATIONS

General

Two general locations were studies, as shown on Exhibit I-3; one between Prairie du Chien and Marquette, and one between McGregor and the southern part of Prairie du Chien.

Since Iowa is planning reconstruction of U. S. Route 18 west of the Mississippi River, to expressway standards, the McGregor route was investigated because the U. S. Route 18 through traffic approaches McGregor from the southwest and leaves Prairie du Chien to the southeast. A trip on U. S. Route 18 west of McGregor destined to U. S. Route 18 east of Prairie du Chien would, therefore, save 2.2 miles of travel if the new river crossing was located at McGregor.

The approaches shown on Exhibit I-3 indicate the extension of the approaches, described in this report, along alignments consistent with the expressway planning.

The Wisconsin Department of Transportation has been studying the need for a new bridge at Prairie du Chien. A final decision on location and method of financing of such a bridge has not been made.

Marquette Alternate

The general location of this route is approximately 0.2 miles south of the existing Prairie-Marquette Bridge, crossing and then paralleling an abandoned Chicago, Milwaukee, St. Paul and Pacific Railroad river crossing. Two new river structures are required for this location; one for the main channel and one for the east channel. This location is within the corridor of study being conducted by the Wisconsin Department of Transportation.

The Prairie du Chien terminal for this location is a pair of one-way streets, Wisconsin and Iowa Streets, as shown on Exhibit I-4. This

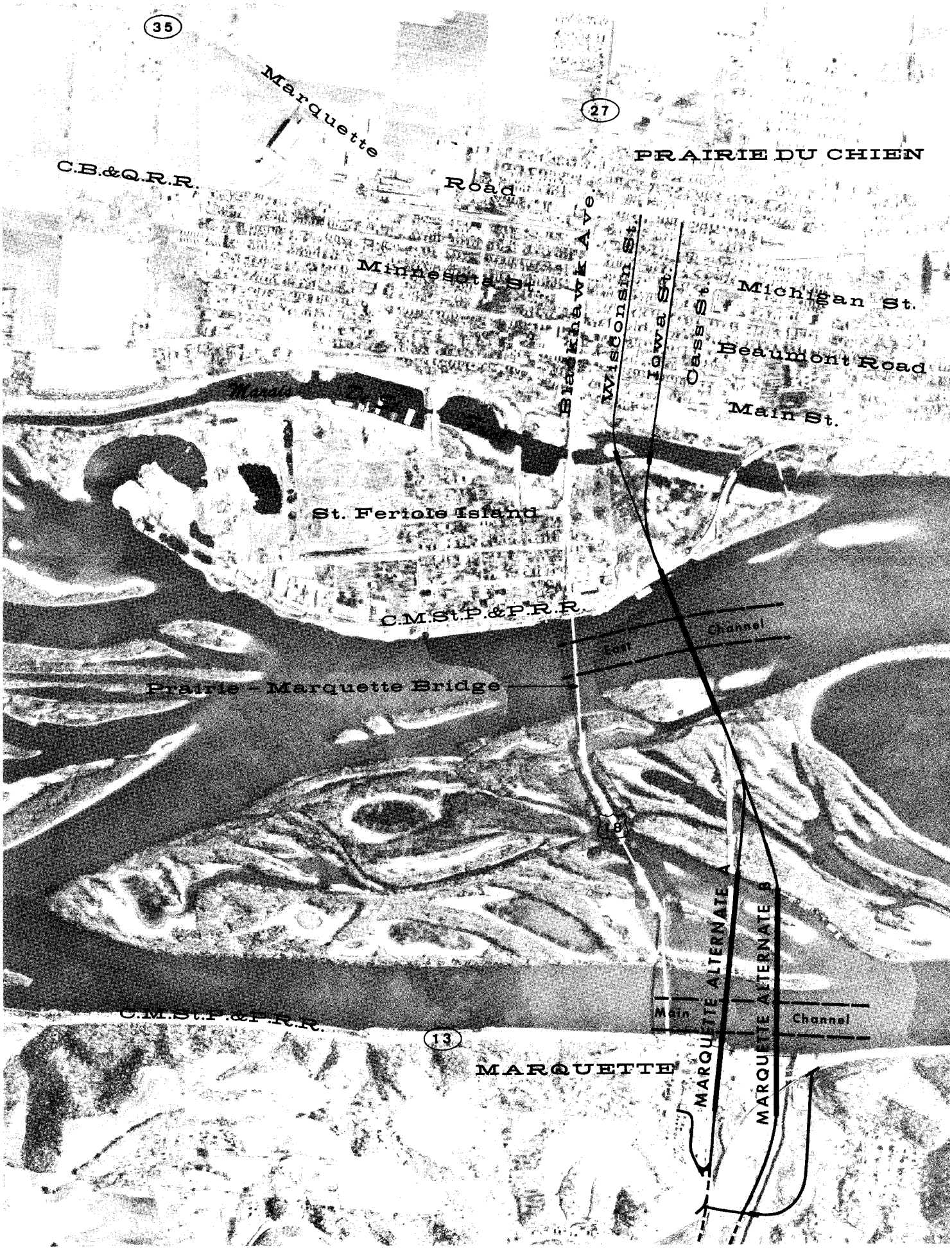

35
Marquette Road
27
PRAIRIE DU CHIEN
C.B.&Q.R.R.
Minnesota St.
Blackhawk Ave
Wisconsin St.
Iowa St.
Cass St.
Michigan St.
Beaumont Road
Main St.
Mississippi River
St. Feriole Island
C.M.St.P.&P.R.R.
Channel
Prairie - Marquette Bridge
18
MARQUETTE ALTERNATE A
MARQUETTE ALTERNATE B
Main
Channel
C.M.St.P.&P.R.R.
13
MARQUETTE

Exhibit I-3

ALTERNATE BRIDGE LOCATIONS

location is one block south of the downtown area, which is the origin or destination of the majority of traffic using the existing bridge.

Two approach alignments in Marquette were studied, as shown on Exhibit I-5. Marquette Alternate A is located between relocated tracks of the Chicago, Milwaukee, St. Paul and Pacific Railroad and the Marquette business district. This location, which traverses railroad property exclusively, is practical if arrangements may be made with the railroad for the relocation of its tracks in the vicinity of this alignment.

The advantages of this location include:

1. Continued excellent traffic service between Marquette and Prairie du Chien.
2. Avoidance of areas of recent property development.

Disadvantages of the location include:

1. Disruption of railroad facilities.
2. Narrow corridor between railroad facilities and steep hill at west edge of Marquette to locate approach road and the terminal connection with County Route W.

Three alternate terminals are shown on Exhibit I-5 for Marquette Alternate A. The most economical construction is Alternate A which consists of a 75 foot radius direct connection with County Route W. The preferred relocation of the railroad tracks is shown in this exhibit.

Alternate A-1 provides a 150 foot radius terminal with County Route W. A-1 requires 1,100 feet of additional roadway construction and two separate drainage structures over a small stream parallel to County Route W.

Alternate A-2 is a direct connection to North Street in Marquette. This alternate is the most expensive, requiring a bridge over County Route W, and retaining walls along North Street to protect the abutting property.

Exhibit I-4

PRAIRIE DU CHIEN TERMINAL

Marquette Alternate B terminal shown on Exhibit I-5, passes between a motel and a restaurant on the west side of U. S. Route 18 which parallels the Mississippi River at Marquette. This alignment, providing a connection to existing U. S. Route 18 without an at-grade railroad crossing, is south of Bloody Run and would require a structure over this stream. Also included is a connection to County Route W west of Marquette. This approach includes an at-grade crossing of the C.M.St.P.&P. R.R.

Advantages of this location include:

1. Continued excellent traffic service between Marquette and Prairie du Chien.
2. Elimination of grade crossing on approach road to State Route 13.
3. Avoidance of railroad facilities north of Bloody Run Creek.

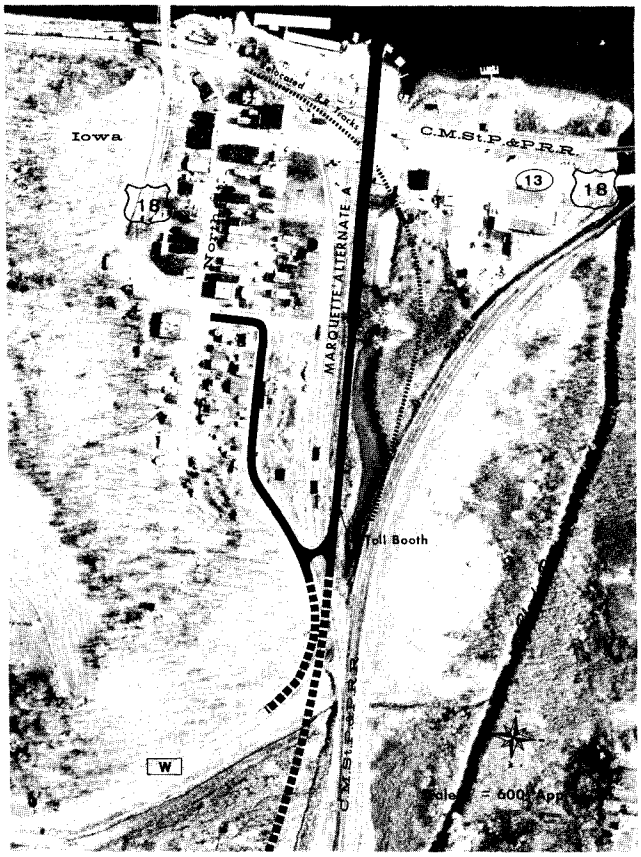
Disadvantages of this location include:

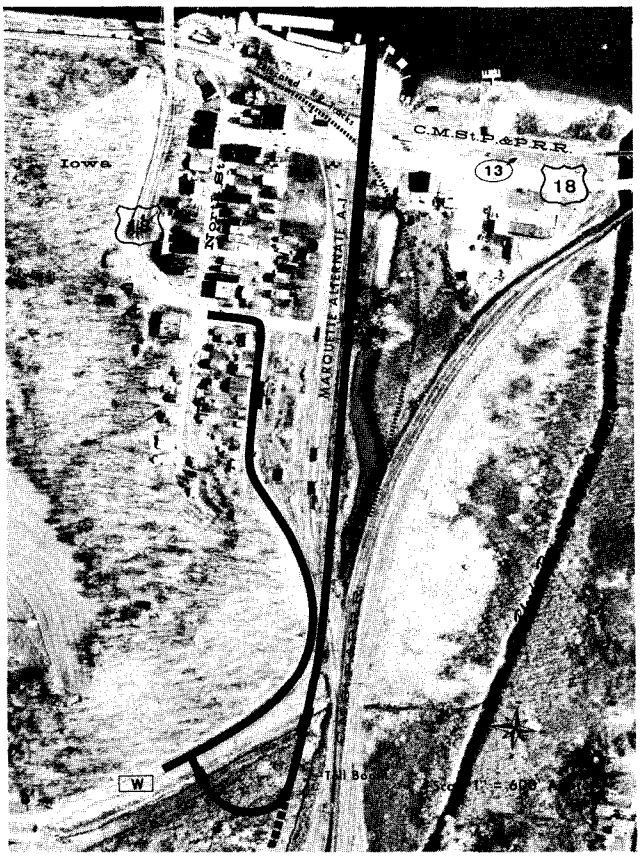
1. Necessity of an at-grade railroad crossing on the terminal road connection to County Route W.
2. Narrow corridor for the State Route 13 connection between the restaurant and the steep hill south of the restaurant.

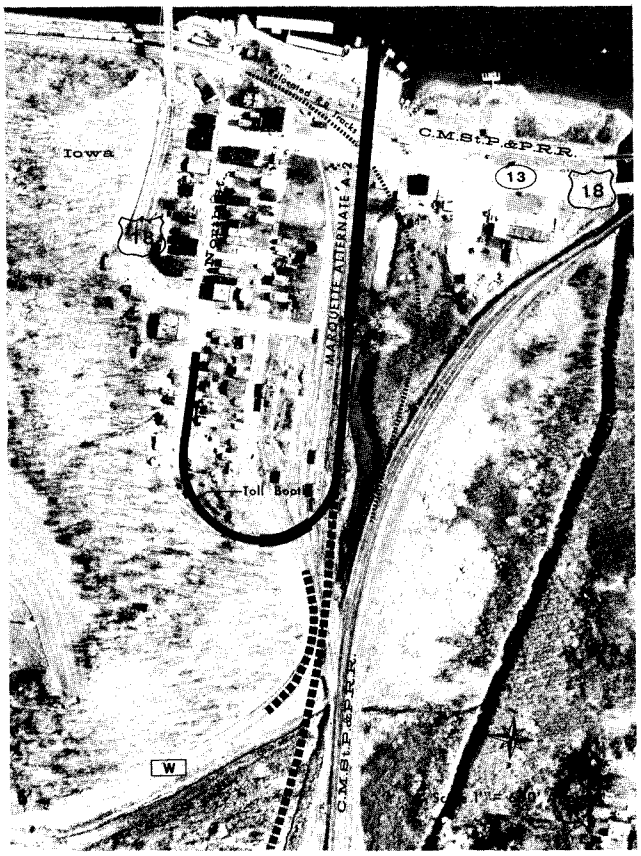
McGregor Alternate

The crossing from McGregor to south Prairie du Chien requires two navigation channel spans, but in a single bridge inasmuch as this alignment crosses the Mississippi River at a point north of the junction of the west and east navigation channels. Some disadvantages to this McGregor Alternate are as follows:

1. Prairie du Chien and Marquette are bypassed.
2. Expressway construction west of McGregor will involve rugged terrain.
3. Portions of Point Ann and McGregor State Parks will be required for right-of-way.
4. Extensive right-of-way will be required in the town of McGregor.
5. Approaches in Prairie du Chien would require extension of the existing street system.
6. Most expensive of the alternatives herein presented.







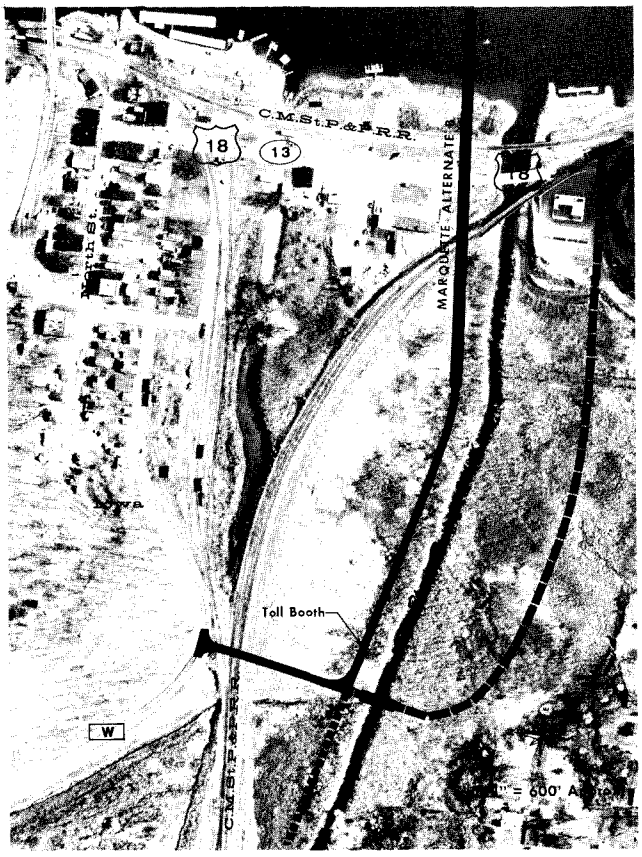


Exhibit I-5

MARQUETTE TERMINAL

Some advantages of the McGregor Alternate are:

1. Most direct alignment for U. S. Route 18 from Iowa to Wisconsin, saving 2.2 miles.
2. Through traffic would not be required to traverse downtown Prairie du Chien streets.
3. Opportunity for minimum cost interchanging with the future expressway defined in the Prairie du Chien Master Transportation Plan.

Recommended Location

The Marquette location with terminal alternate A, is the recommended alignment; the project cost for a crossing on this location is utilized in the project feasibility studies developed in Part II of this report.

This Marquette alignment is compatible with the preferred location of the U. S. 18 expressway under consideration by the Iowa State Highway Commission.

STRUCTURE TYPE STUDIES FOR NAVIGATION SPANS

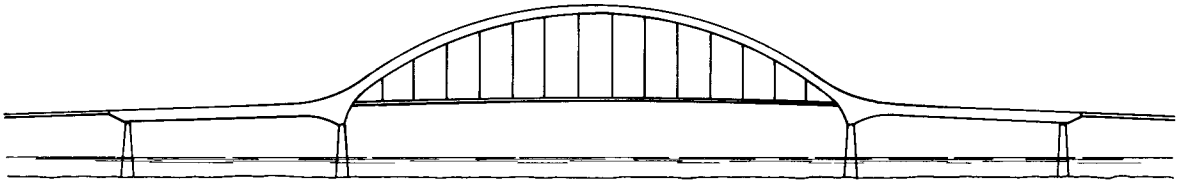
The primary intent of structure type studies as a part of this exploration study is to determine the approximate cost of a river crossing. A final recommendation for a specific type of structure cannot be made at this stage of investigations and design. The final selection of a structure type will be contingent upon economics, aesthetic factors, structural considerations, navigational clearance requirements, foundation conditions, highway alignment and vertical controls. All of these control factors would be studied in detail after a preliminary selection of bridge location has been made, based on the general considerations outlined and discussed in this report.

Six types of navigation spans are shown on Exhibit I-6. Type I is a Continuous Girder Span. These contemporary structures are popular because of economics, pleasing appearance and the elimination of obstructions above the roadway. Economic considerations usually limit spans to less than 450 feet, but with increased usage of newer high-strength steels current maximum span lengths may be economically increased. The principal disadvantage of the girder span is the relatively greater structure depth, which raises the roadway surface higher in the air above clearance requirements. Therefore, approach grades from the shores will be steeper than with other types of structures.

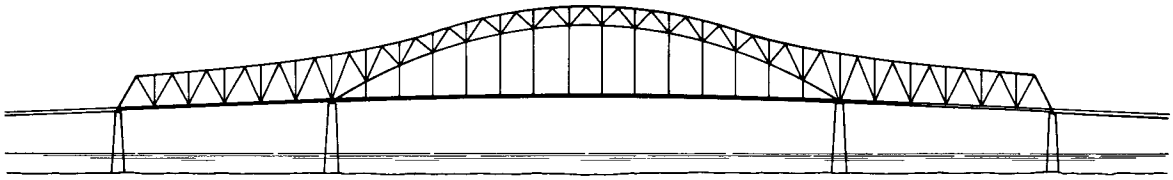
Type II navigation span of Exhibit I-6 is a Continuous Box Girder Tied Arch Span with flexible tie. The tie resists only the thrust of the arch. Without a tie the resistance would have to be provided by river piers. This type of span is considered very practical construction for bridges over the Mississippi River if navigation clearance requirements are limited to a single opening. This type of structure has a very limited depth between the low steel and roadway deck and will, therefore, permit flatter approach grades than a continuous girder design.

Type III navigation span is the Continuous Truss Tied Arch Span. This type of bridge is similar in structural function to Type II, the box girder arch. The difference being that a steel truss system is used for the arch

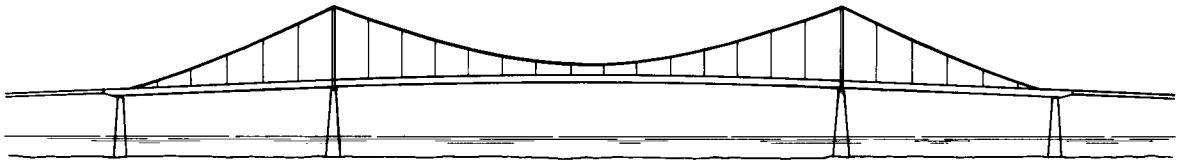
CONTINUOUS GIRDER SPAN — TYPE I



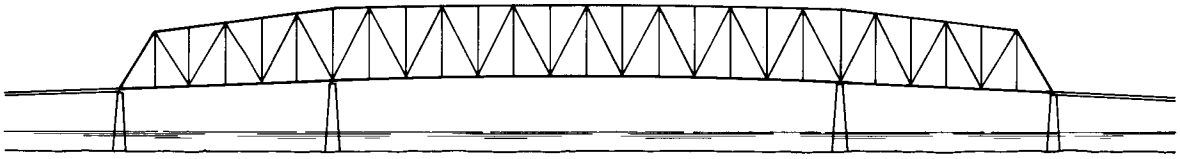
CONTINUOUS BOX GIRDER TIED ARCH SPAN — TYPE II



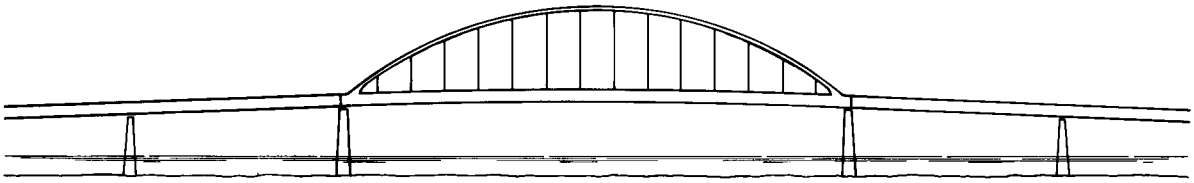
CONTINUOUS TRUSS TIED ARCH SPAN — TYPE III



SELF ANCHORED SUSPENSION SPAN — TYPE IV



CONTINUOUS TRUSS SPAN — TYPE V



BOX GIRDER TIED ARCH SPAN — TYPE VI

Exhibit I-6

NAVIGATION SPAN STRUCTURE TYPES

rib and approach spans instead of box girder sections. This type of structure will be economical for longer spans than the box girder and, with proper proportions, can be aesthetically pleasing.

The suspension bridge is considered one of the most graceful of all bridge structures. The Self Anchored Suspension Span is shown as Type IV. This type of structure generally costs more, up to 20 per cent, than other considered types when the maximum span required is in the 500 to 600 foot range. It offers advantages of pleasing appearance, flatter approach grades and nearly equal vertical clearance in the side spans.

A Continuous Truss Span is shown as Type V. This is a common and economical type of structure. In the past it was particularly popular because of economy in total metal required, its truss members being fabricated from many small pieces of structural steel with rivets. Modern steel technology, by providing larger sizes of structural steel plates, has permitted the designer to develop other types of structures that are aesthetically pleasing and yet are competitive in cost with the continuous truss.

The navigation span identified as Type VI is the Box Girder Tied Arch Span. Side spans will be of continuous girder construction but will function independently of the center span. The tie in the center span is more rigid in comparison with the arch than the flexible tie of Type II. The depth of the tie girder is shallower than the depth of the Continuous Girder Span, Type I. Thus, if vertical clearance requirements cause excessive approach grades, the Box Girder Tied Arch Span offers an advantage. This type of structure is aesthetically pleasing and economical for two-lane roadways of the spans required for the Mississippi River.

It appears that there would be little, if any, significant difference between the combined costs of fabrication and erection of a tied arch span and a continuous truss span. Decreased erection costs favor the truss span; however, this advantage is offset by lower fabrication costs for the arch. The latter has fewer members since the bridge steel is concentrated in the arch rib and tie. In summary, the continuous girder bridge is suitable when length of approaches allow desirable grades to be used; its

cost is comparable with several other bridge designs. The continuous girder bridge with tied arch main span and box girder bridge with tied arch main span combine a pleasing appearance with economy of construction for the length of span required for the bridges at this site. The continuous truss bridge and continuous truss bridge with tied arch main span, while competitive in construction cost with the girder bridges, are not as attractive. The self anchored suspension span is uneconomical for the span lengths required for this project.

Inasmuch as more detailed estimates of construction cost would be developed in subsequent phases of design, a structure type other than the type recommended herein may prove to be more economical in the next phase of design, the definite project report. The probable variation in costs among the various structure types considered herein is within the accuracy of estimating at this stage of design.

The Box Girder Tied Arch Span Type VI, also shown in a general setting on Exhibit I-7, should be given thorough consideration in future engineering studies for a highway crossing at Prairie du Chien, Wisconsin.

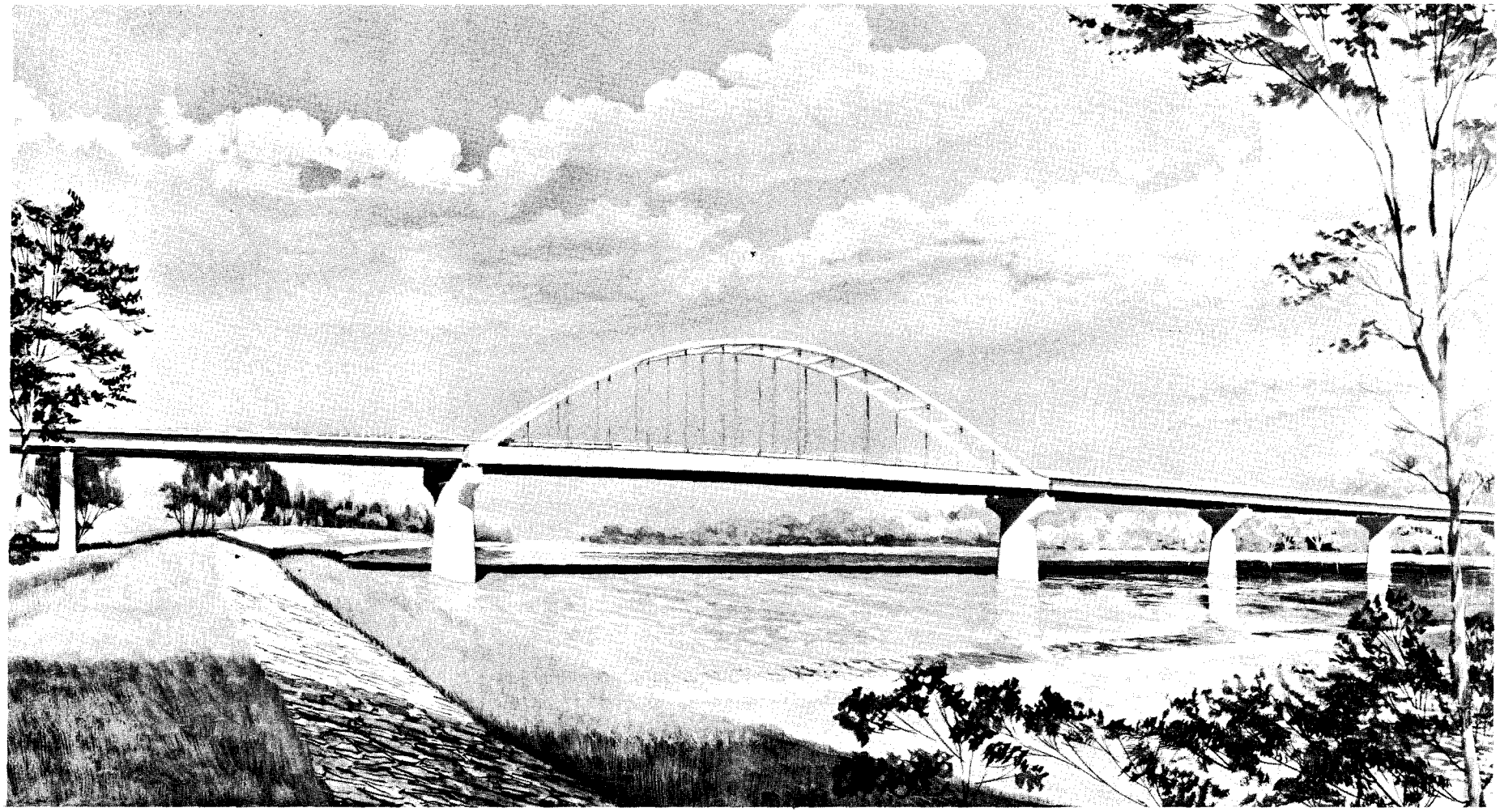


Exhibit I-7

BOX GIRDER TIED ARCH SPAN

STRUCTURE TYPE STUDIES FOR APPROACH SPANS

Economy is a primary consideration for the approach spans which extend from the bridge abutments to the main river unit. Many types of approach span construction can be blended with the main span design to achieve a pleasing appearance. However, a final layout of the most economical span lengths cannot be determined until subsurface investigations have been completed. Based on available geologic data, it appears that prestressed concrete beam spans utilizing Iowa standard design beams would offer economical construction in the river bottoms where pier foundations would not be subject to scour action of the river. These beams are usually limited in length to 80 feet. As the bridge extends into the river, the cost of piers becomes greater. To offset the increased pier cost, longer spans would be used. Steel girders with floorbeams and intermediate stringers offer the greatest economy of construction for spans greater than 80 feet.

COST ESTIMATES

General

The preliminary roadway costs were determined by applying current unit prices to preliminary quantity estimates of the principal roadway construction items. Allowances have been included for modest escalations of unit costs during the one year that will elapse before construction could begin.

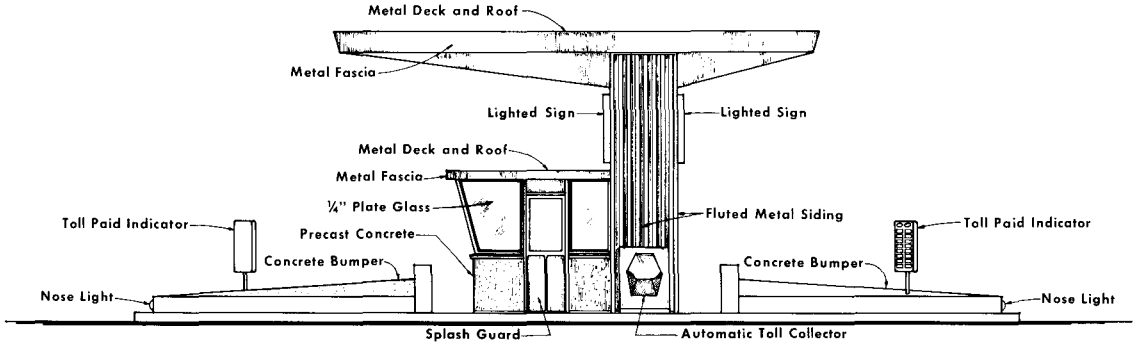
Right-of-way cost estimates were based upon fair market valuations of all real property involved. Allowances have been included for damages, severance losses and acquisition expenses.

A typical toll booth installation is shown on Exhibit I-8. The exact location of this facility on the bridge approach will be established during subsequent study phases.

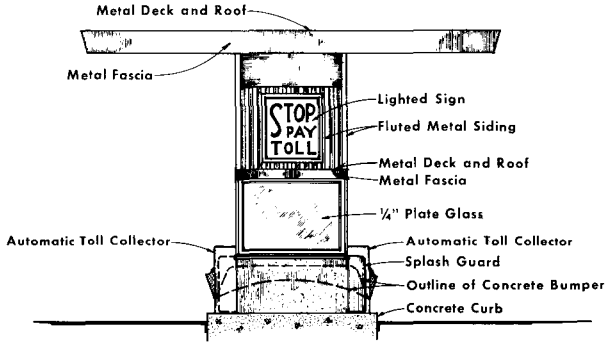
Prior to preparation of final design plans, additional engineering studies will be required. A complete subsurface investigation will be necessary to provide a firm basis for the determination of substructure type, substructure design and economical span lengths. Main river unit studies will include economic comparisons of several types of construction.

Marquette Alternate

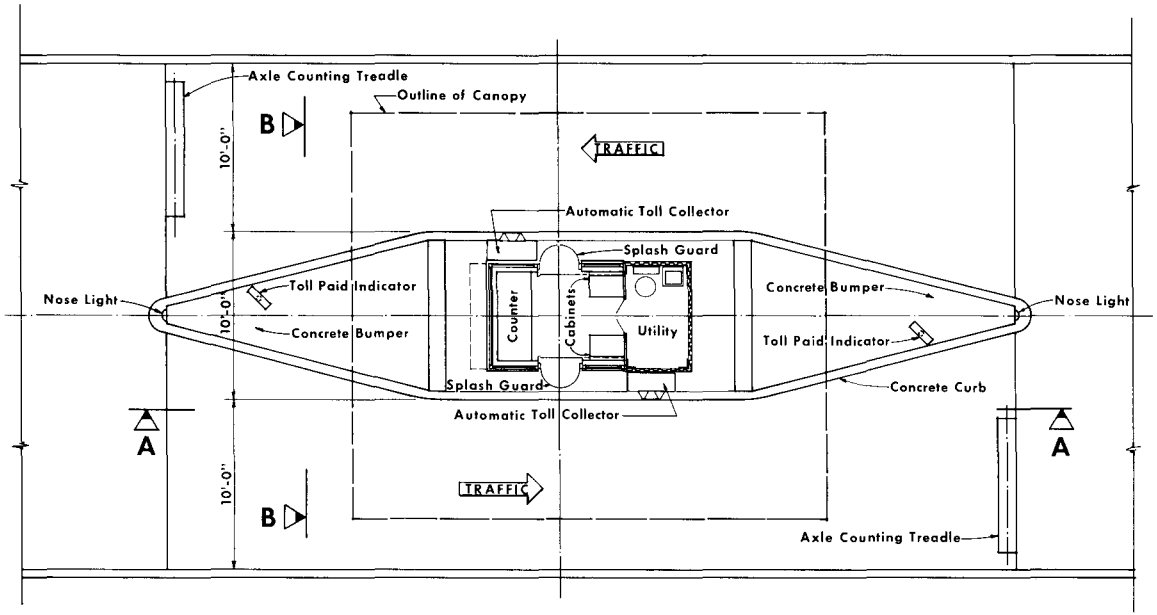
A plan, elevation and typical section for the main channel span of the Marquette Alternate A Mississippi River crossing is shown on Exhibit I-9. The 30 foot roadway width provides 3 feet 6 inches of lateral clearance between the right hand edge of a typical 12 foot traffic lane and the barrier rail. This clearance from the normal edge of the lane conforms to the modern safety requirements of the American Association of State Highway Officials and the Bureau of Public Roads. There are few pedestrians crossing the river; therefore, sidewalks will not be necessary and have not been provided.



ELEVATION A-A



ELEVATION B-B



PLAN

5 0 5 10 15

SCALE IN FEET

Exhibit I-8

GENERAL PLAN AND ELEVATION
TOLL BOOTH

A navigation span of 400 feet measured face to face between piers on a line normal to the channel was used over the main channel and 400 feet over the east navigational channel for estimating purposes. A Box Girder Tied Arch Span structure was estimated for both main and east navigation channels. The cost of this aesthetically pleasing structure should compare favorably with other types of spans.

The estimated construction cost of the river bridges at either of the Marquette locations is $4,550,000. A detailed breakdown of this cost is shown in Table I-1. Quantities shown are based on a preliminary design of all structural components. Unit prices are based on a review of current construction prices of similar items with modest escalation to reflect the elapse of at least one year before bids could be received for construction contracts.

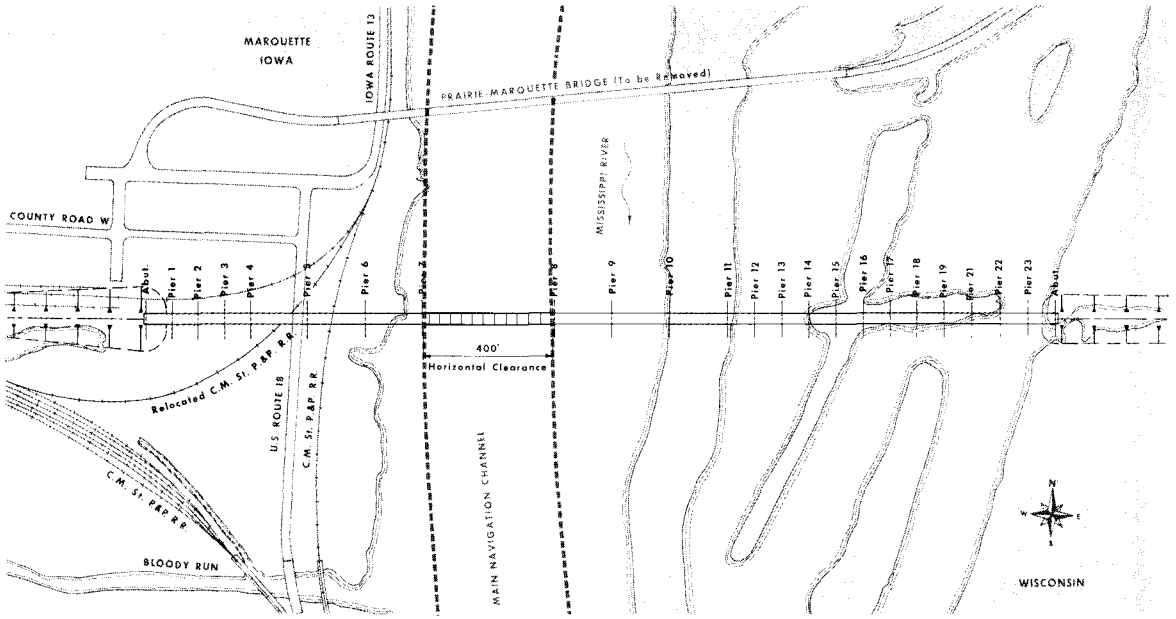
Total estimated project cost for the Marquette Alternate is shown in Table I-3.

McGregor Alternate

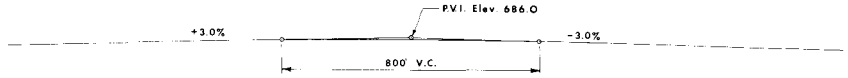
While a plan and elevation drawing is not included in this report, the criteria for design and roadway cross section of a bridge at McGregor will be similar to one at Marquette.

The estimated construction cost of the bridge at the McGregor or southern location is $3,300,000. A detailed breakdown of this cost is shown in Table I-2.

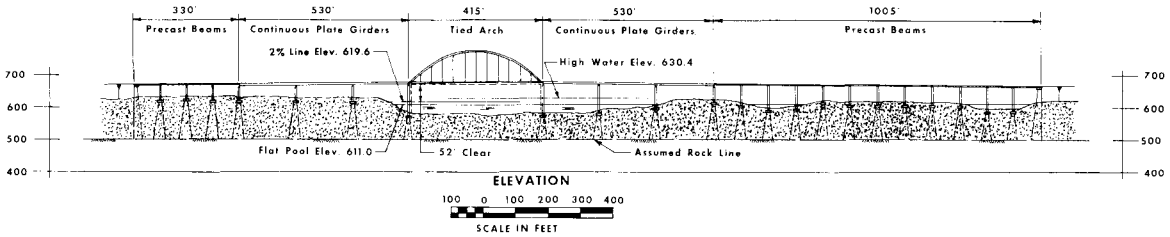
Total estimated project cost for the McGregor Alternate is shown in Table I-3.



PLAN



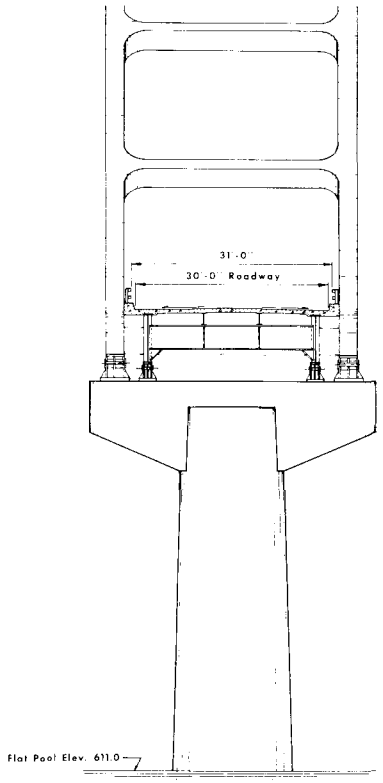
PROFILE GRADE



ELEVATION

100 0 100 200 300 400

SCALE IN FEET



SECTION THRU PLATE GIRDER SPAN
NEAR CHANNEL PIER

10 5 0 10 20

SCALE IN FEET

Exhibit I-9

MAIN CHANNEL SPAN
MARQUETTE ALTERNATE A LOCATION
GENERAL PLAN AND ELEVATION

TABLE I-1

ESTIMATE OF BRIDGE CONSTRUCTION COST

MARQUETTE ALTERNATE A

	Main Channel	East Channel
Prestressed Beam Spans	330 ft.	330 ft.
Continuous Girder Spans	530 ft.	530 ft.
Box Girder Tied Arch Span	415 ft.	415 ft.
Continuous Girder Spans	530 ft.	530 ft.
Prestressed Beam Spans	1,005 ft.	330 ft.
	2,810 ft.	2,135 ft.

Roadway Width - 30'-0" Curb - to - Curb

ITEM	QUANTITY	UNIT PRICE	COST
Superstructure:			
Bridge Railing	9,970 L.F.	$ 12.00	$ 119,600
Concrete	4,720 C.Y.	90.00	424,800
Reinforcing Steel	1,416,000 Lbs.	0.14	198,200
Tied Arch Steel A-36	1,691,000 Lbs.	0.34	574,900
Tied Arch Steel A-441	1,870,000 Lbs.	0.38	710,600
Girder Steel A-36	932,000 Lbs.	0.29	270,300
Girder Steel A-441	1,824,000 Lbs.	0.32	583,700
Prestressed Concrete Beam C-7	120 Ea.	1,630.00	195,600
Cast Steel and Misc. Metal	47,000 Lbs.	0.70	32,900
Navigation Lighting		Lump Sum	40,000
	SUBTOTAL		$3,150,600
Substructure:			
Concrete	9,170 C.Y.	$ 65.00	$ 596,100
Reinforcing Steel	1,127,000 Lbs.	0.14	157,800
Steel Bearing Piles (12BP53)	37,740 L.F.	8.00	301,900
Steel Pile Cofferdams	50,400 S.F.	5.00	252,000
Excavation	9,160 C.Y.	10.00	91,600
	SUBTOTAL		$1,399,400
	TOTAL BRIDGE COST		$4,550,000

TABLE I-2

ESTIMATE OF BRIDGE CONSTRUCTION COST

McGREGOR ALTERNATE

Continuous Girder Spans	1200 ft.
Continuous Girder Spans	1280 ft.
Continuous Girder Spans	720 ft.
	3200 ft.

Roadway Width - 30'-0" Curb - to - Curb

ITEM	QUANTITY	UNIT PRICE	COST
Superstructure:			
Bridge Railing	6,440 L.F.	$12.00	$ 77,300
Concrete	3,010 C.Y.	90.00	270,900
Reinforcing Steel	752,000 Lbs.	0.14	150,200
Girder Steel A-36	1,848,000 Lbs.	0.29	535,900
Girder Steel A-441	3,860,000 Lbs.	0.32	1,235,200
Cast Steel and Misc. Metal	100,000 Lbs.	0.70	70,000
Navigation Lighting		Lump Sum	20,000
	SUBTOTAL		$2,314,500
Substructure:			
Concrete	6,520 C.Y.	$65.00	$ 432,800
Reinforcing Steel	885,000 Lbs.	0.14	119,700
Steel Bearing Piles (12BP53)	19,520 L.F.	8.00	156,200
Steel Bearing Piles (14BP73)	3,740 L.F.	10.00	37,400
Steel Pile Cofferdams	35,200 S.F.	5.00	176,000
Excavation	7,240 C.Y.	10.00	72,400
	SUBTOTAL		$ 985,500
	TOTAL BRIDGE COST		$3,300,000

TABLE I - 3

SUMMARY OF ESTIMATED PROJECT COSTS

Prairie du Chien, Wisconsin Bridges

	MARQUETTE ALTERNATE A		McGREGOR ALTERNATE	
	Iowa	Wisconsin	Iowa	Wisconsin
Roadway	$ 327,400	$ 823,440	$ 891,000	$ 977,570
Structures	2,550,000	2,110,000	3,940,000	720,000
Removal of Existing Bridge	200,000	200,000	200,000	200,000
Subtotal	$3,077,400	$3,133,440	$5,031,000	$1,897,570
Toll Booth Complex	85,000	—	85,000	—
Engineering and Contingencies	632,600	626,560	1,023,000	379,430
Total Construction	$3,795,000	$3,760,000	$6,139,000	$2,277,000
Right-of-Way	13,750	194,000	166,900	17,000
Acquisitions and Contingencies	4,000	40,000	33,100	3,400
Administration and Legal	2,250	21,000	16,000	2,600
	$3,815,000	$4,015,000 *	$6,355,000	$2,300,000 *
Total Project Cost	$7,830,000		$8,655,000	

* Iowa costs include all costs of the main river structure up to and including the east abutment.

Operation and Maintenance

The estimate of first year expenses for operation and maintenance for the Marquette location is shown in Table I-4. Inasmuch as operation of the bridge by the Iowa State Highway Commission will be somewhat different than that of a private operator, several cost assumptions have been made: (1) No per diem for commissioners or pro-rata cost for central administration by the Iowa State Highway Commission; (2) The nominal administration duties performed by the toll sergeant will require no separate administration facilities; and (3) Employee fringe benefits will be similar to existing private operation. Since the proposed bridges will not be subject to property or other local taxes.

TABLE I-4

ESTIMATE OF FIRST YEAR EXPENSES
FOR
OPERATIONS AND MAINTENANCE

Prairie du Chien, Wisconsin Bridges

ADMINISTRATION		
Toll Sergeant	$ 6,600	
Travel and Car Expense	1,000	
Consulting Engineers	3,600	
Miscellaneous	800	
Total Administration		$ 12,000
OPERATION		
Toll Collectors	$ 34,000	
Utilities	2,000	
Supplies and Postage	2,000	
Employee Benefits	3,000	
Total Operation		$ 41,000
REPAIRS AND MAINTENANCE*		$ 9,000
INSURANCE		$ 9,000
MAINTENANCE RESERVE		$ 9,000
Total Operation and Maintenance		$ 80,000

*By District Maintenance Forces on Force Account Cost Basis

PART II

ESTIMATED PRELIMINARY TRAFFIC AND REVENUES AND PROJECT FEASIBILITY

INTRODUCTION

A general economic evaluation was made of the area served by the present U.S. Route 18 bridge at Marquette-Prairie du Chien, as a guide in projecting future traffic growth. Route reconnaissance investigations were conducted to inventory present traffic facilities and to determine average operating speeds and other traffic service characteristics. All available trans-river travel pattern and traffic trend data for the Marquette-Prairie du Chien travel corridor were assembled.

Using the travel pattern information, travel speed and route inventory data and empirical diversion curves developed from studies of similar facilities, traffic assignments were made to a modern, toll crossing in the Marquette-Prairie du Chien corridor. Preliminary assignments were made for several toll rates to determine the rate structure which would optimize toll revenues while still providing a high level of traffic service.

Annual estimates of preliminary toll revenues were then developed, based on the economic and traffic trend studies and estimates of future growth in the area. Using the project costs and annual maintenance and operating expense estimates developed by Howard, Needles, Tammen & Bergendoff, the estimated preliminary project feasibility of such a crossing was determined.

Present U. S. Route 18 Bridge at Prairie du Chien

The present bridge at Marquette-Prairie du Chien was constructed in 1932 and consists of two spans over two separate navigable channels. The curb-to-curb roadway width of both spans is 19 feet, providing two travel lanes. Posted

weight restrictions on the bridge limit commercial traffic as follows: two-axle single units cannot exceed 15 tons, three-axle single units cannot exceed 18 tons, and all other combination units cannot exceed 23 tons.

The bridgehead in Prairie du Chien is located on U. S. Route 18, Black Hawk Street, the main east-west artery through the central business district of Prairie du Chien. The approach road on the Wisconsin side of the bridge is generally adequate, however, a poor turning radii in combination with a grade required to meet vertical clearance requirements result in a poor approach on the Iowa side of the structure. Several views of the present bridge and approaches are depicted in Exhibit II-1.

From 1932 to 1949, the present bridge was operated by a private company as a toll facility. The bridge was purchased in 1949 jointly by the State of Wisconsin and the City of Prairie du Chien. The facility then remained a toll facility until Prairie du Chien recovered its share of the 1949 purchase price. On July 19, 1954, the bridge was made free. The original passenger car toll on the bridge was $1.25 for a one-way trip and $1.50 for a roundtrip. In 1937, the passenger car toll was revised to $0.90 one-way and $1.25 round-trip. In 1949, the toll was further reduced to $0.75 one-way and $0.90 round-trip with a 10-ticket book available for $2.50.

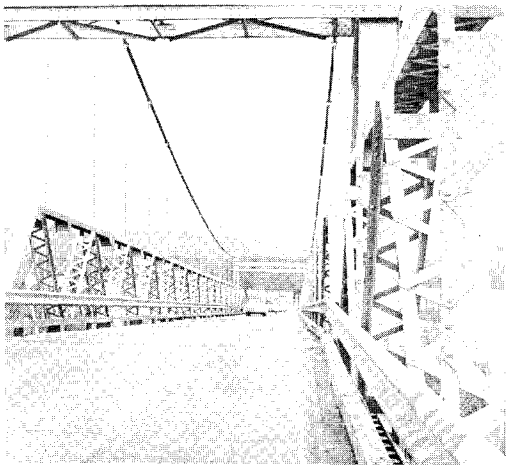
Alternate River Crossings

The nearest alternate river crossing to the north is the present Black Hawk Bridge at Lansing, Iowa. This facility was constructed in 1931 by the Iowa-Wisconsin Bridge Company. In 1945, floating ice damaged the approach span from the Wisconsin side, resulting in closure of the facility. The bridge remained closed until 1957 when it was purchased jointly by the States of Iowa and Wisconsin. Considerable reconstruction was then undertaken and the bridge reopened to traffic as a free facility.

The closest river crossing to the south is the Eagle Point Bridge in Dubuque, Iowa. It is a privately owned facility operated by the Dubuque and Wisconsin Bridge Company. The crossing was opened to traffic in 1902 and is a

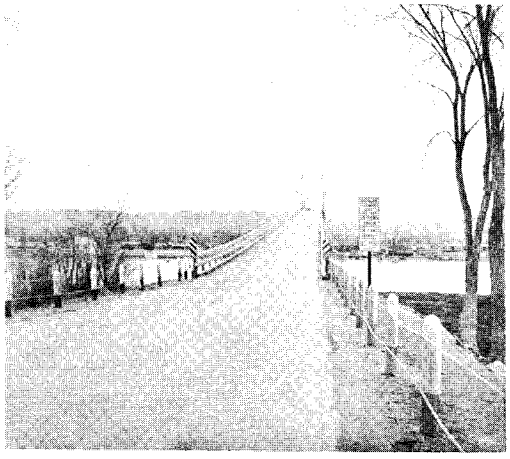
INTERSECTION OF APPROACH ROAD IN IOWA

APPROACH TO BRIDGE IN IOWA

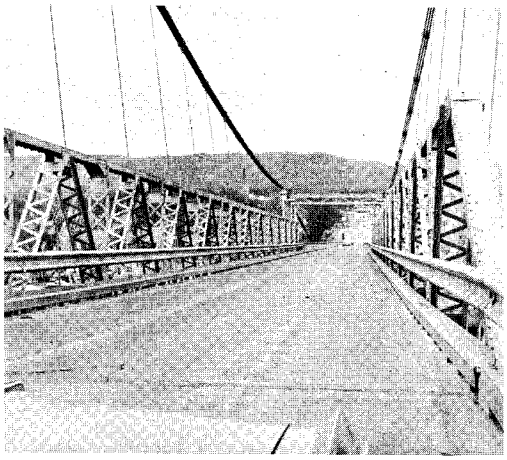


WEST CHANNEL BRIDGE

CONNECTING ROADWAY BETWEEN BRIDGES



WEST APPROACH TO EAST CHANNEL BRIDGE



EAST CHANNEL BRIDGE

PRESENT PRAIRIE DU CHIEN BRIDGE

PHOTOGRAPHS COURTESY OF THE
COURIER PRESS, PRAIRIE DU CHIEN

narrow, two-lane structure with a sharp change in alignment about midway along the bridge. The western approach road to the structure in Iowa also presents a poor horizontal alignment necessitating very slow approach speeds. There is a weight restriction on the bridge which prohibits all semi-trailer traffic. The present toll schedule, shown in Table II-1 is based on a passenger car rate of $0.15 with higher rates assessed larger vehicles.

There is a second river crossing in the Dubuque area, the Julien Dubuque Bridge. This is a toll-free facility which carries the U.S. Route 20 designation. The Julien Dubuque Bridge was constructed in 1943 and has two, 12-foot travel lanes.

TABLE II-1

PRESENT TOLL SCHEDULE
Eagle Point Bridge

VEHICLE TOLL CLASS	TOLL
Passenger Car	
Driver only	$ 0.15
2 or more occupants	0.25
hauling 1-axle trailer	0.35
hauling 2-axle trailer	0.35
hauling cabin trailer	0.50
hauling house trailer	1.00
Bus	$ 1.00
Two-Axle Truck	
1-2 Ton	$ 0.50
Over 2 Tons	0.75
Semis (Prohibited)	$ 5.00

Source: The Dubuque and Wisconsin Bridge Company.

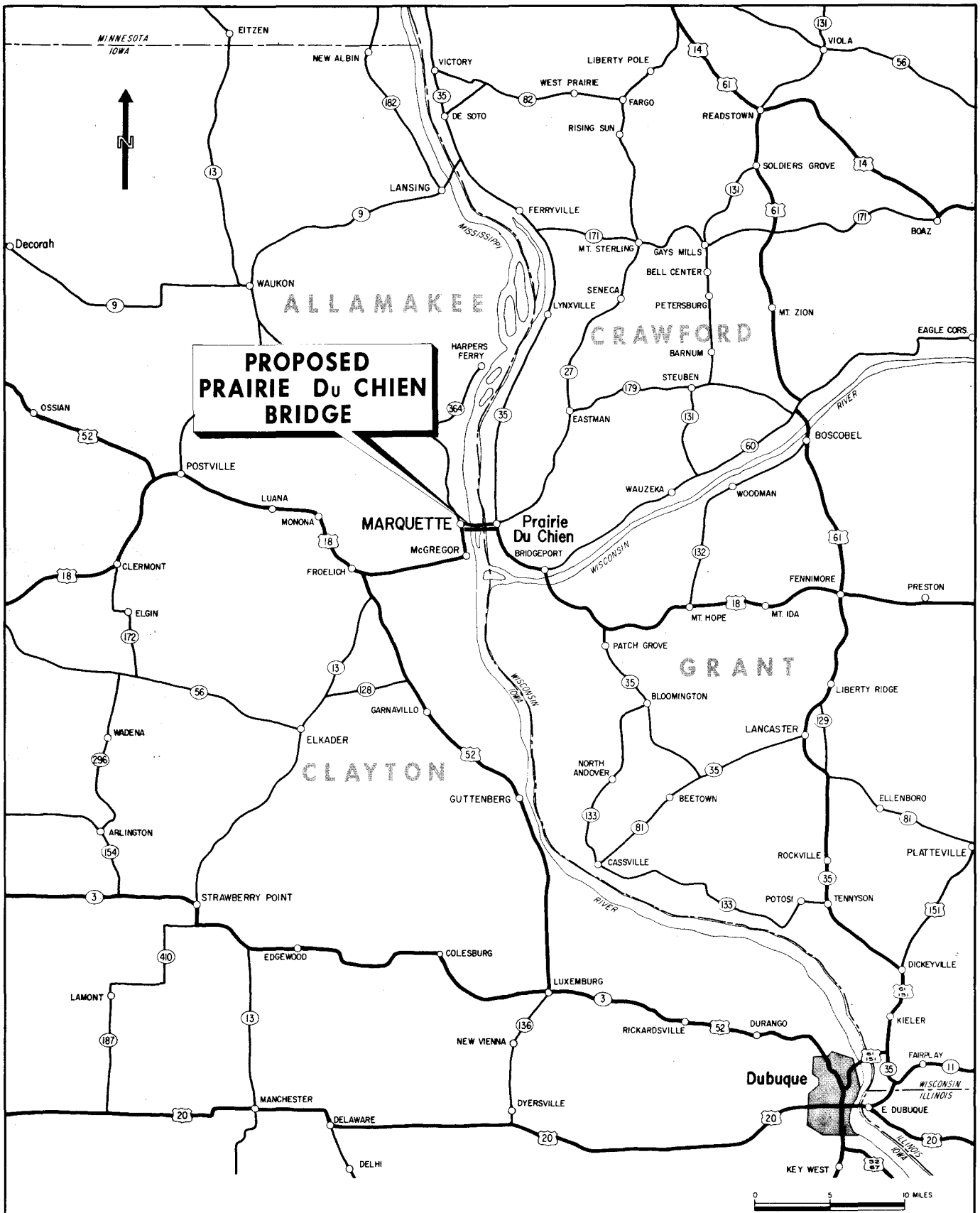
Proposed Prairie du Chien Bridge

For purposes of this analysis, it was assumed that the present U.S. Route 18 bridge would be replaced by a modern, two-lane structure on an alignment just south of the existing bridge. The proposed facility would be constructed to high-design standards with approach road grades, lane widths, and radii designed to provide a high level of traffic service for all vehicle types. The project would operate as a toll crossing.

Several alignments for the proposed bridge were studied during the course of this analysis. All of these alignments were confined to the immediate area between Marquette and Prairie du Chien. The bridge alignment, which was selected for more detailed studies, is depicted in Exhibit II-2.

Previous Studies

All available pertinent data and reports relating to this project were assembled and reviewed. This material included information obtained from the Iowa and Wisconsin Highway Departments, other state agencies and numerous county, municipal and other contacts. Valuable information relating to economic and travel growth trends in the Prairie du Chien area was obtained from the comprehensive planning studies now underway for that city.



LOCATION MAP

Wilbur Smith and Associates

Exhibit II-2

AREA GROWTH ANALYSES

Several economic parameters were evaluated to determine levels and recent growth trends in the area which would be directly served by the proposed bridge. These indices included population, retail sales and average effective buying income per family. In addition, trends in motor vehicle registrations, motor fuel consumption, both excellent indicators of travel growth, were analyzed.

Study Area Characteristics

Prairie du Chien is the largest municipality in the immediate area of the proposed bridge. It is the second oldest settlement in Wisconsin and the county seat of Crawford County. Prairie du Chien serves a market area which today encompasses approximately 20,000 persons from nine Wisconsin and eight Iowa communities.

There are 11 major industries located in the Prairie du Chien area totaling about 700 industrial employees of which, the 3M Company employs approximately 350. It is estimated that about 35 per cent of the labor force employed in the Prairie du Chien area lives in Iowa.

As a transportation hub, the city is served by U.S. Route 18, an important east-west route across southern Wisconsin and northern Iowa. It also is served by two railroads, 11 truck lines and dock facilities for a significant amount of bulk goods shipped via river barges.

Marquette, a considerably smaller community, relies heavily on Prairie du Chien for employment opportunities and retail and wholesale activities. It has a shopping district which serves primarily as a retail center for local residents. For larger purchases, where the consumer desires a greater selection, residents normally go to either Prairie du Chien, La Crosse or Dubuque.

Beyond Marquette in Iowa, and Prairie du Chien in Wisconsin, and within the bridge influence area, the economy is generally agriculturally oriented. Little significant industry exists beyond that in Prairie du Chien.

Population Trends

In 1960, Prairie du Chien had a population of 5,649. By 1966, this is estimated to have increased to 6,000 persons, an average annual growth of 1.0 per cent per year. As shown in Table II-2, a nominal population growth of 0.5 per cent occurred in Prairie du Chien between 1950 and 1960.

In 1960, Marquette had a population of 572. This represented a slight decrease from the 641 persons residing in Marquette in 1950. Located just south of Marquette, McGregor had a 1960 population of 1,040. As in the case of Marquette, the population of McGregor also declined in the decade 1950 to 1960. Further to the south, Guttenberg recorded a 1960 population of 2,087. In contrast to the other communities in Iowa, Guttenberg experienced a growth in population between 1950 and 1960 representing an increase of 0.9 per cent per year.

In Wisconsin, Mount Hope had a 1960 population of 218. Boscobel, located some distance east of Prairie du Chien, recorded a population of 2,608 in 1960. The remaining communities in the bridge influence area in Wisconsin had considerably smaller populations.

Exhibit II-2 depicts the four-county study area which is most advantageously served by the Prairie du Chien bridge. The counties include Allamakee and Clayton Counties in Iowa and Crawford and Grant Counties in Wisconsin.

Between 1950 and 1960, the combined population of the four-county study area decreased slightly from 97,985 to 97,714. Over the past six years, from 1960 to 1966, a slight increase in population occurred — 0.3 per cent per year to a population of 99,600 in 1966. Between 1960 and 1966, the population of Allamakee County remained stable, nominal population growths were recorded in Clayton and Grant Counties and a slight population decrease occurred in Crawford County.

The population trend in the four-county study area over the past six years equaled the 0.3 per cent average annual growth recorded statewide in Iowa

TABLE II-2

POPULATION TRENDS

AREA	1950	AVERAGE ANNUAL PER CENT CHANGE	1960	AVERAGE ANNUAL PER CENT CHANGE	1966
Municipalities:					
Boscobel	2,347	1.1	2,608		N.A.
Guttenberg	1,912	0.9	2,087	—	N.A.
Harpers Ferry	252	— 1.8	211	—	N.A.
Marquette	641	— 1.1	572	—	N.A.
Monona	1,346	—	1,346	—	N.A.
McGregor	1,138	— 0.9	1,040	—	N.A.
Mt. Hope	232	— 0.6	218	—	N.A.
Prairie du Chien	5,392	0.5	5,649	1.0	6,000
Waukon	3,158	1.4	3,639	—	N.A.
Counties:					
Allamakee	16,351	— 0.2	15,982	—	16,000
Clayton	22,522	— 0.3	21,962	0.3	22,400
Crawford	17,652	— 0.8	16,351	— 0.8	15,600
Grant	41,460	0.7	44,419	0.4	45,600
Four-Country Total	97,985	— 0.1	97,714	0.3	99,600
States:					
Iowa	2,621,073	0.5	2,757,537	0.3	2,813,600
Wisconsin	3,434,575	1.4	3,951,777	1.2	4,247,100
United States[1]	150,697,361	1.7	178,464,236	1.6	196,208,200

[1] Does not include Alaska and Hawaii.

N.A. = Not Available.

Source: U. S. Department of Commerce, Bureau of the Census; *Sales Management*, "Survey of Buying Power."

but was considerably below the 1.2 per cent average annual increase realized in Wisconsin. The average annual growth recorded nationwide for the same period was 1.6 per cent.

Trends in Retail Sales

Good growths in retail sales have occurred in the four-county study area over the past decade. In 1956, the four-county study area recorded total retail sales of $95,025,000. By 1961, this had increased to $117,839,000, representing an average annual growth since 1956 of 4.4 per cent. Over the next five years, the growth rate decreased slightly to an average of 2.8 per cent per year. Total sales in the four-county study area in 1966 amounted to $135,294,000.

The average annual growths recorded in the four-county study area between 1956 and 1961 were substantially higher than those realized statewide in Iowa and Wisconsin and also for the nation. However, for the next five years the average annual increase of 2.8 per cent per year was considerably below the 5.0 per cent recorded statewide in Iowa and the 5.9 per cent in Wisconsin. The national growth during this same period was even higher — 6.5 per cent per year.

Average Effective Buying Income Per Family Trends

In 1956, the average effective buying income per family in the four-county study area was $4,373. By 1966, this had increased to $6,379 representing an average annual growth of 1.2 per cent between 1956 and 1961 and 6.6 per cent between 1961 and 1966. The excellent growth recorded over the past five years was slightly below the statewide increase realized in Iowa but considerably above the Wisconsin and national growth trend.

The 1966 average effective buying income per family in the four-county study area of $6,379 compared with a statewide average in Iowa of $8,416, the $8,418 recorded in Wisconsin and the national average income of $8,522.

Trends in Motor Vehicle Registrations

Motor vehicle registrations in the four-county study area in 1956 amounted to 41,544. By 1966, this had increased to 51,844 representing average annual growths of 1.7 per cent between 1956 and 1961 and 2.7 per cent between 1961 and 1966. The growths recorded in the four-county study area during this period were somewhat below those recorded statewide in Iowa and Wisconsin and also below the national average.

Motor Fuel Consumption Trends

Reflecting the growths in personal income and motor vehicle registrations in the last decade, personal travel, as measured by motor fuel consumption, has also increased substantially. Motor fuel consumption in Iowa increased an average of 2.0 per cent per year between 1956 and 1961; this accelerated to an average annual growth of 2.5 per cent between 1961 and 1966. Motor fuel consumption growths in Iowa during the past ten years were somewhat below those recorded in Wisconsin and also for the nation.

Future Growth

Although the population of the four-county study area experienced a slight growth over the past five years, it is anticipated that aside from Grant County, the remaining three counties in the study area will continue to experience population decreases through 1980 and 1990. As shown in Table II-3, available projections indicate that population decreases ranging from 0.1 to 0.7 per cent per year are anticipated in Allamakee, Clayton and Crawford Counties between 1960 and 1980-1990. Grant County is expected to experience a population growth of approximately 0.8 per cent per year. Among the several communities in the bridge influence area, Guttenberg and Waukon are projected to experience modest population growths over the next few decades while Harpers Ferry, Monona, Marquette and McGregor are expected to record population decreases.

TABLE II-3

POPULATION PROJECTIONS

AREA	ACTUAL 1960	AVERAGE ANNUAL PER CENT CHANGE	ESTIMATED 1980	ESTIMATED 1990
Municipalities:				
Guttenberg	2,087	0.8	2,421	
Harpers Ferry	211	— 3.0	116	
Monona	1,346	— 0.1	1,317	
Marquette	572	— 1.4	434	
McGregor	1,040	— 1.1	839	
Waukon	3,639	1.2	4,610	
Counties:				
Allamakee	15,982	— 0.2	15,210	
Clayton	21,962	— 0.1	20,470	
Crawford	16,351	— 0.7		13,161
Grant	44,419	0.8		56,209
States:				
Iowa	2,757,537	0.8	3,192,000	
Wisconsin	3,951,777	1.4		5,916,755

Source: Iowa State Highway Commission; Wisconsin Department of Resource Development.

A comprehensive planning study is presently underway in the Prairie du Chien area. The study indicates that the local economy will continue to experience a modest rate of growth into the foreseeable future. Population growths for Prairie du Chien of 0.7 per cent per year are anticipated between 1960 and 1970. As shown in Table II-4, an average annual increase of 0.8 per cent is projected between 1970 and 1980. For the SW Wisconsin Planning Area, which includes La Crosse, Monroe, Vernon, Crawford, Richland, Sauk, Grant, Iowa, Lafayette and Green Counties, a slight population decrease is projected between 1960 and 1970 with the trend reversing during the next decade to reflect a nominal growth in population.

TABLE II-4

POPULATION AND EMPLOYMENT PROJECTIONS

ITEM	1960	AVERAGE ANNUAL PER CENT CHANGE	1970	AVERAGE ANNUAL PER CENT CHANGE	1980
Population					
Prairie du Chien	5,649	0.7	6,020	0.8	6,500
SW Wisconsin Planning Area IV[1]	307,600	— 0.1	305,663	0.2	313,018
Employment					
SW Wisconsin Planning Area Total	78,344	— 0.4	74,665	—	74,614
Agriculture	31,368	— 2.2	23,743	— 1.9	18,930
Retail Trade	16,369	—	16,369	—	16,369
Prof'l. & Educ.	12,684	2.0	15,466	2.0	18,864
Industrial	17,923	0.6	19,087	0.7	20,451

[1] Established for analysis and planning purposes by the Wisconsin Department of Resource Development and comprised of La Crosse, Monroe, Vernon, Crawford, Richland, Sauk, Grant, Iowa, Lafayette and Green Counties.

Source: Prairie du Chien *General Plan,* 1967 and Wisconsin Department of Resource Development.

Employment projections for the SW Wisconsin Planning Area envision a generally stable outlook for the next two decades. It is anticipated that agricultural employment will continue to steadily decline with compensating growths occurring in professional-educational and industrial employment.

Future travel in the study area will also be greatly influenced by increased recreational movements as leisure time and general prosperity increases. For example, over the last two years, statewide use of Iowa State Parks has increased from a total attendance in 1965 of 9,039,199 to 9,851,074 in 1967. Comparable growths have also occurred in usage of State Parks located in Wisconsin and Illinois. There are numerous State Parks in Iowa and Wisconsin within easy driving range of the bridge influence area and this, in itself, will serve to generate additional travel in the bridge corridor.

The Wisconsin Outdoor Recreation Plan has forecast substantial increases in all types of recreational activity. Between 1960 and 1980, it is estimated that recreational activity will expand at an average annual rate slightly less than 3.0 per cent per year. It is expected that this rate of growth will accelerate to almost 4.0 per cent per year during the period beyond 1980. One important recreational activity — pleasure driving — is expected to record excellent growths into the foreseeable future. For example, in Crawford and Grant Counties it is estimated that pleasure driving activity, on an average summer Sunday, will increase at an average annual rate of approximately 3.5 per cent between 1960 and 1980 and that participation by out-of-state drivers, notably Iowa, will exceed the growth rate of participation by local residents. It is expected that participation by out-of-state drivers will increase at an average annual rate of 4.2 per cent with approximately 5,170 pleasure driving trips made in the two-county study area by out-of-state residents in 1960. By 1980, it is expected that this figure will have increased to more than 10,000 trips.

Many of these out-of-state pleasure driving trips will originate in Iowa. Most of these motorists entering the two-county study area will be potential to the proposed Prairie du Chien Bridge.

TRAFFIC STUDIES

Preliminary studies were made to evaluate the traffic potential of a proposed toll crossing located in the corridor of the present U.S. Route 18 bridge at Prairie du Chien. These studies included analysis of the magnitude and composition of traffic and travel patterns as well as the quality of traffic service provided by the existing bridge and closest crossings to the north and south.

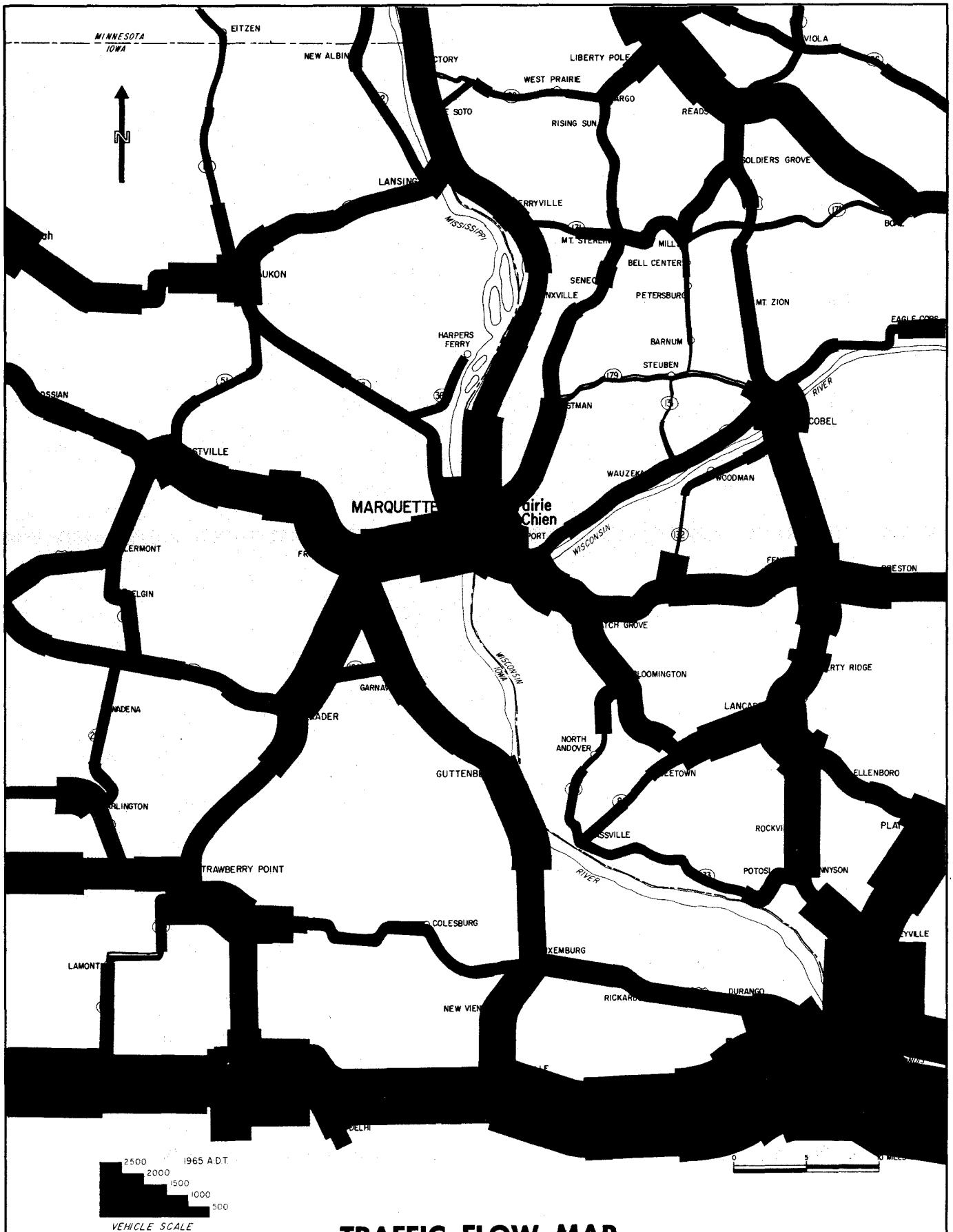
Present Highway System

U.S. Route 18, which follows an east-west orientation through southern Wisconsin and northern Iowa, is a two-lane facility in the bridge study area. As depicted in Exhibit II-2, there are numerous lesser highways in both Iowa and Wisconsin which serve as "feeder routes" to this through facility.

Some of these highways include Wisconsin Route 35, which generally parallels the Mississippi River between La Crosse and Dubuque and Iowa Route 13 and U.S. Route 52 which also generally serve a north-south travel orientation. Some of the east-west highways paralleling U.S. Route 18 in Iowa include State Routes 56, 9, and 3. In Wisconsin, State Routes 81, 179, and 60 all provide east-west traffic service to the more important traffic arteries. All of these routes are two-lane facilities in poor to good condition.

The importance of U.S. Route 18 as a traffic artery in the bridge corridor is depicted in Exhibit II-3. Considerably higher traffic volumes are shown for this facility than for Wisconsin Route 35 and the numerous less important highways serving the travel corridor. U.S. Route 52, which generally follows a north-south orientation between Marquette and Dubuque, also is a significant traffic carrying facility. The importance of U.S. Route 20 to the south is clearly indicated by the heavy volumes shown passing through to the west of the Dubuque area.

The importance, in terms of traffic volumes, of larger urban areas such as Prairie du Chien and Dubuque, in relation to the smaller communities in the



TRAFFIC FLOW MAP

1965 AVERAGE DAILY TRAFFIC

Wilbur Smith and Associates

Exhibit II-3

bridge corridor can also be seen from the illustration. Significant traffic volume build-ups occur on the routes approaching the Marquette-Prairie du Chien area and of course, the major highways entering the Dubuque urban area.

Annual Traffic Trends

Annual traffic trends on the U.S. Route 18 bridge at Prairie du Chien and the nearest competitive crossings to the north and south are shown in Table II-5. In addition to annual traffic on the Prairie du Chien bridge, traffic volumes at the Lansing crossing and at the Eagle Point and Julien Dubuque Bridges in Dubuque are indicated.

U.S. Route 18 Bridge at Prairie du Chien — Use of the Prairie du Chien bridge has increased from an average daily traffic level of 2,370 vehicles in 1957 to 3,390 in 1967. This represents an average annual growth of 3.6 per cent. During the last five years, 1962 to 1967, an average annual increase of 4.3 per cent was realized.

Eagle Point Bridge — In 1958, the Eagle Point Bridge carried an average of 1,690 vehicles per day. In 1967, an average of 2,670 vehicles were accommodated on an average day representing an average annual growth of 5.2 per cent since 1958. During the last five years, 1962-1967, the average annual increase in use of the bridge was 5.9 per cent.

Julien Dubuque Bridge — This facility, located in the Dubuque area and serving downtown Dubuque, carries substantially higher volumes than the other three river crossings. In 1957, an average of 8,600 vehicles per day used the Julien Dubuque Bridge. By 1967, this increased to an estimated 13,200 vehicles per day representing an average annual growth over the ten year period of 4.4 per cent. The increase over the last five years averaged 3.9 per cent per year.

TABLE II-5

ANNUAL TRAFFIC TRENDS

Trans-River Crossings

YEAR	LANSING BRIDGE	PRAIRIE du CHIEN BRIDGE	EAGLE POINT BRIDGE	JULIEN DUBUQUE BRIDGE
		(Average Daily Traffic)		
1957	460	2,370	N.A.	8,600
1958	460	2,400	1,690	8,600
1959	320	2,590	1,780	8,600
1960	320	3,210	1,860	9,370
1961	400	3,250	2,020	10,130
1962	730	2,740	2,000	10,900
1963	850	3,130	2,080	11,270
1964	680	2,980	2,210	11,630
1965	910	2,840	2,250	12,000
1966	1,190	3,270	2,580	12,700
1967	1,080	3,390	2,670	13,200[1]
AVERAGE ANNUAL GROWTHS				
1957 — 1967	8.9	3.6	5.2[2]	4.4
1962 — 1967	8.1	4.3	5.9	3.9

[1] Estimated AADT.

[2] Nine Year Average.

N.A. = Not Available.

Source: Wisconsin Department of Transportation; Illinois State Highway Department; The Dubuque and Wisconsin Bridge Company.

Monthly Traffic Variations

Monthly variations in traffic on U.S. Route 18 and State Route 35 in Wisconsin and U.S. Route 52 in Iowa, in the vicinity of the Prairie du Chien bridge indicate that the months of July and August represent peak travel periods with volumes ranging from 18 to 45 per cent above the average month. On all three highways, the period January through March recorded the lowest traffic volumes — dropping as low as 38 per cent of the average month of the year.

Origin and Destination Studies

In the summer of 1961, the Iowa State Highway Commission participated with adjoining states in conducting roadside origin and destination interview surveys at a series of locations adjacent to the Mississippi River as part of a regional Multiple Screenline Study. One of the study locations was the U.S. Route 18 bridge at Prairie du Chien. The travel patterns developed from the interview survey at the bridge were used as the basis for determining a redistribution of trans-river trips in the Marquette-Prairie du Chien travel corridor assuming a new toll facility was constructed to replace the present crossing.

In addition to the interview survey conducted on the Prairie du Chien bridge, use was made of a comprehensive origin and destination survey conducted by the Iowa State Highway Commission in Dubuque in 1965. Travel pattern data developed from a roadside interview survey made by the Iowa State Highway Commission on the Black Hawk Bridge in 1968 were also used.

Vehicle Classification Counts

Vehicle classification counts were made by the Wisconsin Department of Transportation on the Prairie du Chien bridge in 1967. A summary of these counts is presented in Table II-6.

TABLE II-6

VEHICLE CLASSIFICATION COUNT

Prairie Du Chien bridge

VEHICLE CLASS	AVERAGE WEEKDAY TRAFFIC	AVERAGE ANNUAL DAILY TRAFFIC
Passenger Cars	2,512	2,816
Single-Unit Trucks		
2-axle, four-tired	266	298
2-axle, six-tired	154	173
Three-axle	35	39
Truck Tractor and Semi-Trailers		
Three-Axle	12	13
Four-Axle	21	24
Five-Axle	18	20
Buses		
School	4	5
Two-axle	2	2
TOTAL	3,024	3,390

Source: Wisconsin Department of Transportation.

The number of passenger cars using the bridge far overshadowed all other vehicle types accounting for 2,512 of the total of 3,024 vehicles recorded on an average weekday and 2,816 of a total 3,390 vehicles representing an average annual daily traffic level. Single-unit trucks of the two-axle, four-tire category were next in importance followed by two-axle, six-tire vehicles. Due to the weight restrictions in effect on the bridge, relatively few larger vehicles were recorded.

Travel Desires

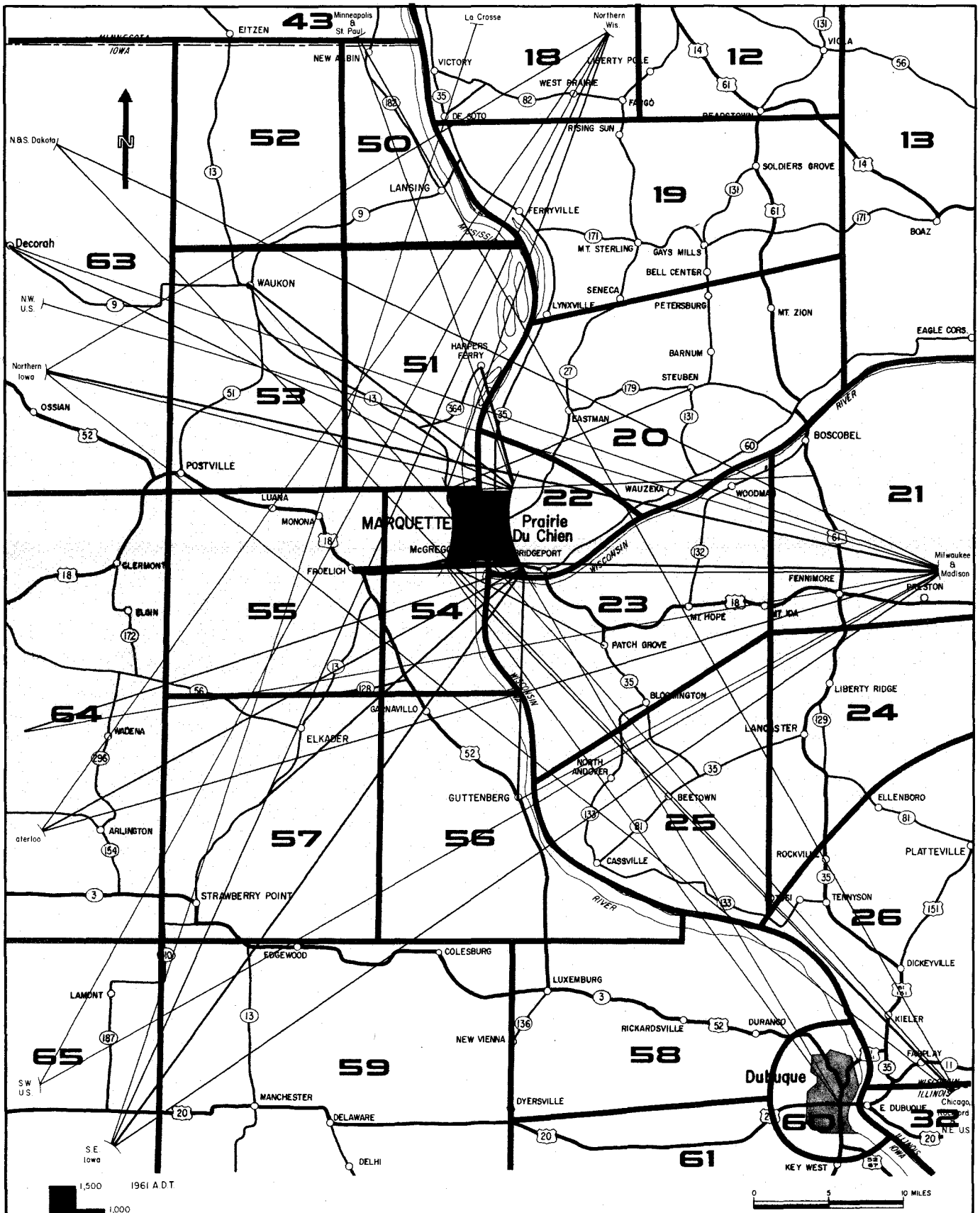
The origin and destination data collected during the 1961 interview survey were coded to the geographic traffic zone pattern partially shown in Exhibit II-4. The resulting zone-to-zone traffic movements were then adjusted to represent an average day and the travel desire lines, depicted in Exhibit II-4, prepared. The width of the flow bands shown in the illustration are proportional to the number of trips moving between each zone pair.

A very high percentage of the total traffic using the Prairie du Chien bridge is local in nature and moving between the Marquette-McGregor area and Prairie du Chien. This movement represented over half of the total bridge volume or approximately 1,520 vehicles per day. The next most significant movement was considerably smaller in magnitude — a total of 157 trips per day moving between Prairie du Chien and the Monona-Froelich-Luana area. The movement between Prairie du Chien and the Harpers Ferry area was next most important — representing 84 trips per day. The remaining trip movements using the bridge were considerably lower in magnitude. They included numerous movements with origins and/or destinations outside of the immediate bridge study area using U.S. Route 18 as their primary travel route.

Typical Time and Distance Relationships

Representative time and distance relationships for several movements which could use either the proposed Prairie du Chien Bridge or the closest crossings to the north or south are shown in Table II-7. The distances indicated were developed from the route reconnaissance studies conducted on all pertinent highways serving the alternate river crossings. The driving times represent average speeds rather than the fastest driving time that could be achieved between the various trip termini indicated.

Between Prairie du Chien and Waukon, the proposed bridge would save approximately 23 miles and 21 minutes over the best alternate route which would follow the Black Hawk Bridge at Lansing. On a trip between Prairie du Chien and Dubuque, the proposed bridge would be 12 miles and 18 minutes



TRAVEL DESIRES

PRESENT PRAIRIE DU CHIEN BRIDGE

1961 AVERAGE DAILY TRAFFIC

Wilbur Smith and Associates

Exhibit II-4

TABLE II-7

TYPICAL TIME-DISTANCE RELATIONSHIPS

BETWEEN	VIA	DISTANCE (miles)	TIME (min.)	AVERAGE MPH	SAVINGS VIA PROPOSED BRIDGE (miles)	SAVINGS VIA PROPOSED BRIDGE (min.)
Prairie Du Chien and Waukon	Proposed Bridge	26	40	39	23	21
	Black Hawk Bridge	49	61	48		
Prairie Du Chien and Dubuque	Proposed Bridge	59	85	42	12	18
	Eagle Point Bridge	71	103	42		
Prairie Du Chien and Guttenberg	Proposed Bridge	21	34	37	88	120
	Eagle Point Bridge	109	154	59		
Decorah and Boscobel	Proposed Bridge	74	106	37	23	23
	Black Hawk Bridge	97	129	45		
Elkader and Lancaster	Proposed Bridge	57	85	41	29	31
	Eagle Point Bridge	86	116	45		

shorter than use of the Eagle Point Bridge. Even greater savings would accrue to the proposed bridge on a trip between Prairie du Chien and Guttenberg. The trip via the new facility would be 88 miles and 120 minutes shorter than following a routing including the Eagle Point Bridge in Dubuque. Considerable savings would also accrue to the proposed bridge over the nearest alternate crossings on trips between Decorah and Boscobel and between Elkader and Lancaster.

Planned Highway Improvements

In Iowa, the current highway improvement program for Allamakee County includes reconstruction of Iowa Routes 9 and 13, west and south of Waukon, and Iowa Route 51 from Postville to Iowa Route 9. Programmed improvements in Clayton County include reconstruction of U.S. Route 52 from the Dubuque County line to Iowa Route 13 and on U.S. Route 18 from the Fayette County line east to U.S. Route 52 and from the east junction of U.S. Route 52, 4.4 miles east.

Wisconsin has programmed highway improvements to Wisconsin Route 27 from the east corporate limits of Prairie du Chien to about 0.5 miles south of Eastman; Wisconsin Route 60 from Wauzeka to U.S. Route 61; U.S. Route 61 from Wisconsin Route 60 to Soldier's Grove; and Wisconsin Route 35 from Lynxville to De Soto. Highway improvements planned in Grant County include the upgrading of U.S. Routes 61-151 from Dubuque to Dickeyville to freeway standards and a resurfacing and widening of U.S. Route 61 from Dickeyville to Lancaster.

Of particular significance to this project is the plan of the Wisconsin Department of Transportation to construct a new facility to carry U.S. Route 18 between Marquette and Prairie du Chien. The proposed crossing would include demolition of the current U.S. Route 18 bridge across the Mississippi River. Since no final decisions have been made concerning the location or method of financing the bridge, it was not recognized in developing traffic assignments to the proposed Prairie du Chien Bridge.

ESTIMATED TRAFFIC AND REVENUES

Estimated usage and revenues for the proposed Prairie du Chien Bridge are based upon the number of motorists now using the present U.S. Route 18 bridge at Prairie du Chien who would continue to make trans-river trips via an improved facility under toll conditions. In addition, since weight restrictions are now in effect limiting use of the existing facility by heavy trucks, it is expected that some truck traffic would be diverted from the closest alternate bridges to the proposed facility.

As a result of the current weight restrictions on the bridge, it is expected that the new crossing would also provide a level of induced or generated and development traffic as trucking concerns return to the U.S. Route 18 crossing and generate additional trips due to the time and distance savings involved and also expand existing and construct new plant and service facilities in the Marquette-Prairie du Chien travel corridor.

Basic Assumptions

Estimates of traffic and revenues for the proposed Prairie du Chien Bridge are predicated on the following assumptions:

1. The facility will be open to traffic on January 1, 1971.
2. The bridge will be constructed on the alignment and with the approaches discussed in this report.
3. No new river crossings will be constructed in the reach of the Mississippi River between Lansing and Dubuque.
4. The present U.S. Route 18 bridge at Prairie du Chien will be demolished upon opening of the new facility.
5. The toll schedule recommended in this report will be implemented.
6. The bridge will be adequately maintained, efficiently operated and effectively signed to encourage maximum usage.

7. The present general trend in economic activity in the bridge study area will continue and no national emergency will arise which will abnormally restrict the use of motor vehicles.

Any departure from the above conditions could materially affect estimated traffic and revenues for the proposed bridge.

Recommended Method of Toll Collection

It is recommended that tolls be collected from all motorists using the proposed bridge at a toll booth located between the two travel lanes on the western approach span of the facility. The toll booth should be designed and constructed to provide for two toll attendants, one collecting from each direction of travel. It is anticipated that initially two attendants will be required during daylight hours of operation while one attendant could readily collect tolls from both directions of travel during night hours.

Recommended Toll Schedule

Several toll rates were analyzed to determine the best toll structure for the proposed Prairie du Chien Bridge. These studies indicated that the preliminary toll schedule, shown in Table II-8, would produce optimum revenues for the proposed facility while maintaining a high level of traffic service. A higher toll would discourage usage to the point where total revenues would be less than those estimated under the recommended schedule. Conversely, a lower toll would increase usage but not sufficiently to produce higher revenues than those projected.

Under the recommended toll schedule, a motorist driving a two-axle vehicle would pay an $0.80 cash toll for each crossing of the bridge. In addition, a commuter or ticket toll would be available for two-axle patrons who use the bridge frequently. The commuter toll could take the form of a ten-trip ticket book which would cost $4.00 and have a time limit of one week. Upon surrendering a ticket, the motorist would also have to show the toll ticket book to the

TABLE II-8

RECOMMENDED TOLL SCHEDULE

VEHICLE TOLL CLASS	DESCRIPTION	TOLL
1	Two-axle vehicles	$ 0.80
2	Two-axle vehicles (ticket)	0.40
3	Three-axle vehicles and vehicle combinations	1.20
4	Four-axle vehicles and vehicle combinations	1.60
5	Five-axle vehicles and vehicle combinations	2.00

attendant. More detailed studies might show that a larger ticket book would be more practical, say a book containing 20 tickets for $8.00 and good for a two-week period.

Larger vehicles would pay a cash toll only. For example, a three-axle vehicle or vehicle combination would be assessed $1.20, a four-axle vehicle — $1.60, and a five-axle vehicle — $2.00.

The recommended toll schedule is based upon a per-axle cash toll of $0.40 which will provide maximum control and auditing benefits as well as being easily understood by bridge users. In addition, local bridge users, those making frequent trips across the facility would be given the economic benefit of a lower toll through use of the ticket book.

Estimated Base-Year, 1967, Traffic Assignments

The number of motorists that would use the proposed Prairie du Chien Bridge at 1967, base year, traffic levels was estimated based upon relative trip cost via the closest fixed crossings to the north and south versus the new facility, assuming imposition of tolls.

Previous studies indicate a good correlation between the ratio of road-user costs and the proportion of vehicles that will use the alternate routes available. In general, an equal cost indicates an equal division of the traffic movement between the proposed facility and present crossings. A higher ratio of road-user cost for use of the new bridge to cost via the best competitive routing indicates a low percentage of traffic assignable to the proposed facility. Conversely, a low ratio of road-user cost using the new facility to cost via the most competitive alternate routing indicates that a high percentage of traffic is divertible.

The travel time and distance studies made during the field phases of this project were used as the basis for assigning times and distances via the alternate crossings.

The travel patterns determined from the 1961 origin and destination survey conducted as part of the Multiple Screenline Study for the present U.S. Route 18 bridge were used as the basis for determining a trans-river crossing redistribution assuming the proposed Prairie du Chien Bridge were constructed. In addition, some diversion of motorists is anticipated from the present Lansing bridge to the north and the Eagle Point and Julien Dubuque Bridges to the south, particularly in heavy truck usage which is now largely prohibited by the existing crossing at Prairie du Chien. Studies were also made to estimate the impact on trip production of introducing a toll to the present free crossing condition in the Prairie du Chien corridor. It is anticipated that imposition of a toll at Prairie du Chien would decrease the number of trips now made by some motorists. A determination of the magnitude of this toll impact, or travel decrease, was based largely upon experience on comparable facilities. Different toll impact values were assigned for work trips and for motorists making trips for other purposes such as shopping, social and recreation, etc.

The estimated redistribution of present U.S. Route 18 bridge trips to the closest alternate river crossings to the north and south, the magnitude of the toll imposition trip production impact and the amount of truck traffic which would be attracted to the new Prairie du Chien Bridge is shown in Table II-9. Of the 3,390 vehicles using the present U.S. Route 18 bridge on an average

day in 1967, it is estimated that 94 vehicles would divert to the Black Hawk Bridge at Lansing and 135 vehicles to the Dubuque crossings. In addition, an estimated 788 fewer trans-river trips would occur due to reduced trip production or car pooling upon opening of the new facility. It is anticipated that four heavy-truck trips would be attracted to the proposed bridge from the present Lansing crossing and 13 trips from the Dubuque crossings, at 1967 levels. The total assigned traffic to the proposed Prairie du Chien Bridge, at 1967 levels, as a toll facility is 2,390 vehicles per day.

TABLE II-9

ASSIGNMENT DISTRIBUTION OF BASE YEAR TRAFFIC — 1967

		AVERAGE DAILY TRAFFIC	
1.	Present traffic-Prairie du Chien bridge	3,390	
2.	Diverted to Black Hawk Bridge	94	
3.	Diverted to Dubuque bridges	135	
4.	Traffic loss due to toll impact	788	
	Subtotal		2,373
5.	Truck traffic diverted from Black Hawk Bridge	4	
6.	Truck traffic diverted from Dubuque bridges	13	
	Subtotal		17
	TOTAL		2,390

As shown in Table II-10, an estimated 1,147 two-axle vehicles would pay the two-axle cash toll rate and 1,151 two-axle vehicles the proposed ticket or commutation rate. An additional 46 three-axle vehicles or vehicle combinations would use the facility along with an estimated 26 — four-axle vehicles and 20 — five-axle vehicles.

While several bridge alignment alternates in the immediate vicinity of Marquette-Prairie du Chien were considered during the course of these preliminary studies, the relative traffic assignable to a given alignment, in this relatively narrow corridor, would be about equal for any of the various alternates. The important factor in this is, of course, the considerable distance to the nearest bridges to the north and south of the Marquette-Prairie du Chien area.

TABLE II-10

ESTIMATED BASE YEAR (1967) DIVERTED TRAFFIC

VEHICLE TOLL CLASS	DESCRIPTION	AVERAGE DAILY TRAFFIC
1	Two-axle vehicles	1,147
2	Two-axle vehicles (ticket)	1,151
3	Three-axle vehicles and vehicle combinations	46
4	Four-axle vehicles and vehicle combinations	26
5	Five-axle vehicles and vehicle combinations	20
	TOTAL	2,390

Estimated Annual Traffic and Toll Revenues

Annual growth in usage of the proposed Prairie du Chien Bridge was estimated based on normal increases in trans-river usage which might be anticipated over the next several years and on generated and development traffic. Generated traffic consists of additional trips made by motorists now traveling in the bridge corridor, solely due to the convenience and attractiveness of the facility. Development traffic is growth in residential, commercial and industrial activity, resulting from the location and access advantages afforded and directly attributed to the proposed bridge.

Normal corridor growth was based upon trends in use of the U.S. Route 18 bridge at Prairie du Chien and the competitive river crossings immediately to the north and south. In addition, trends and projected changes in population and other economic parameters in the bridge study area were considered in developing the normal growth estimates.

It is estimated that traffic on the proposed Prairie du Chien Bridge will increase an average of four per cent per year between 1967 and 1975, decreasing to three per cent per year annually between 1975 and 1980. An annual growth of two per cent is estimated between 1980 and 1985. For purposes of conservatism, no normal growth has been projected beyond 1985, although some increase in traffic is anticipated.

Induced or generated and development growth was estimated based on experience during the early years of operation of similar facilities. The development potential of the bridge study area was also evaluated as was the affect of removing present weight limitations on truck travel in the study corridor. An induced growth of five per cent is estimated during the first full year of operation, decreasing to two per cent during the second full year of operation.

During the first full year of operation, 1971, it is anticipated that an estimated 2,940 vehicles per day will use the proposed Prairie du Chien Bridge. As shown in Table II-11, this will produce an estimated $680,000 in gross toll revenues. By 1985, the fifteenth full year of operation, an estimated 4,490 vehicles per day are projected on the Prairie du Chien Bridge, producing estimated revenues of $1,038,000. Average annual revenues over the first five years of operation are estimated at $748,000 increasing to an average of $952,000 over the 28-year earning period of an assumed 30-year bond issue.

The estimates indicated are preliminary and are intended to show the trend over a period of years rather than the exact earnings of any particular year. There could, of course, be years in which growth in traffic and revenues might be higher or lower than that indicated depending upon economic conditions and other local factors affecting bridge usage at that time.

TABLE II-11

ESTIMATED ANNUAL TRAFFIC AND REVENUES

YEAR	AVERAGE DAILY TRAFFIC	GROSS REVENUES
1971	2,940	$ 680,000
1972	3,120	721,000
1973	3,240	750,000
1974	3,370	780,000
1975	3,510	811,000
1976	3,610	835,000
1977	3,720	860,000
1978	3,830	886,000
1979	3,950	913,000
1980	4,060	940,000
1981	4,150	959,000
1982	4,230	978,000
1983	4,310	998,000
1984	4,400	1,018,000
1985	4,490	1,038,000
Next 13 Years Annually	4,490	$ 1,038,000

AVERAGE ANNUAL REVENUES	
First Five Years	$ 748,000
First Ten Years	$ 818,000
Twenty-Eight Years	$ 952,000

PELIMINARY PROJECT FEASIBILITY

Net revenues derived from the proposed Prairie du Chien Bridge were determined by deducting the estimated annual maintenance and operating costs developed by Howard, Needles, Tammen & Bergendoff from gross revenues anticipated from the project. Preliminary project feasibility computations were then calculated by relating estimated net revenues to the maximum interest and level debt service requirements of a bond issue sufficient to meet the estimated capital cost of the proposed bridge.

Estimated Annual Net Revenues

Estimated annual net revenues for the proposed Prairie du Chien Bridge are presented in Table II-12. In 1971, the first year of operation, net revenues of $600,000 are estimated, increasing to $902,000 in 1985, the fifteenth year of operation.

Average annual net revenues over the first five years of operation are estimated at $660,000, increasing to $720,000 over the first ten years. During the 28-year earning period, net revenues would average $831,000 annually.

Preliminary Project Feasibility

There are two "tests" which financial advisors normally employ to determine a relative range of feasibility of a toll project. The first test is the coverage of maximum or first year interest by first year net revenues; the second test is the coverage of level debt service by average annual net revenues over the earning period of an assumed bond issue.

As a measure of feasibility, financial interests normally assume a first year net revenue coverage of maximum interest of 1.20 to be satisfactory. An average annual net revenue coverage of level debt service greater than 1.50 is normally considered indicative of financial feasibility.

TABLE II-12

ESTIMATED ANNUAL NET REVENUES

YEAR	GROSS TOLL REVENUES	MAINTENANCE AND OPERATION COSTS[1]	NET REVENUES
1971	$ 680,000	$ 80,000	$600,000
1972	721,000	84,000	637,000
1973	750,000	88,000	662,000
1974	780,000	92,000	688,000
1975	811,000	96,000	715,000
1976	835,000	100,000	735,000
1977	860,000	104,000	756,000
1978	886,000	108,000	778,000
1979	913,000	112,000	801,000
1980	940,000	116,000	824,000
1981	959,000	120,000	839,000
1982	978,000	124,000	854,000
1983	998,000	128,000	870,000
1984	1,018,000	132,000	886,000
1985	1,038,000	136,000	902,000
Next 13 years Annually	$1,038,000	$136,000	$902,000

AVERAGE ANNUAL REVENUES	
First Five Years	$660,000
First Ten Years	$720,000
Twenty-Eight Years	$831,000

[1] Estimated by Howard, Needles, Tammen & Bergendoff.

The feasibility computations shown in Table II-13 were developed assuming a bond interest rate of 5.5 per cent and a bond term of 30 years. Based on project costs developed by Howard, Needles, Tammen & Bergendoff, it is estimated that a bond issue of $9,396,000 will be required for the proposed Prairie du Chien Bridge project. The escalation from project cost to bond issue includes such financing items as bond discount, legal and financial fees, capitalized interest during construction, etc. Based on the relationship of project costs to bond issue size of several comparable projects which have been financed, a factor of 1.2 was applied to project cost to determine the bond issue.

TABLE II-13

PRELIMINARY PROJECT FEASIBILITY

ITEM	
Bond Term	30 Years
Bond Earning Period	28 Years
Bond Interest Rate	5.5 Per Cent
Preliminary Project Cost[1]	$7,830,000
Estimated Bond Issue[2]	9,396,000
First Year Interest	517,000
Level Debt Service: 28 Years	665,000
Estimated First Year Net Revenues	600,000
Estimated Average Annual Net Revenues 28 Years	831,000
COVERAGES	
First Year Interest by: First Year Net Revenues	1.16
Level Debt Service by: Average Annual Net Revenues 28 Years	1.25

[1] Estimated by Howard, Needles, Tammen & Bergendoff.

[2] Assumes ratio of project cost to bond issue of 1.0 to 1.2.

As shown in Table II-13, first year net revenues for the proposed Prairie du Chien Bridge would cover first year or maximum interest 1.16 times. Average annual net revenues would cover 28-year level debt service 1.25 times. The first year coverage value almost meets the first financing test of a 1.20 coverage of maximum interest by first year net revenues. The level debt service coverage is somewhat below that normally required but close enough to warrant more detailed revenue and engineering studies.

It should be emphasized, however, that the above computations were developed only as a guide and that a final determination of project feasibility should be made by financial advisors selected for this purpose.

Relationship Between Level Debt Service and Net Revenues

The relationship of average annual net revenues and annual level debt service, over the earning period of the bond term, is shown in Table II-14. The computations were developed assuming a 30-year bond term and an earning period of 28 years.

Assuming the bonds carry an interest rate of 5.5 per cent, the proposed Prairie du Chien Bridge project would generate a total revenue surplus of $4,749,000 between 1973 and 1998 after incurring a total deficit of $96,000 during the first three years of operation. The net effect would be a surplus, over level debt service, of $4,653,000 over the earning period.

TABLE II-14

RELATIONSHIP BETWEEN LEVEL DEBT SERVICE AND NET REVENUES

Assuming 30-Year Bond Issue

YEAR	NET REVENUES	LEVEL DEBT SERVICE	NET REVENUES TO LEVEL DEBT SERVICE	
			Surplus	Deficit
1971	$600,000	$665,000		$ 65,000
1972	637,000	665,000		28,000
1973	662,000	665,000		3,000
1974	688,000	665,000	$ 23,000	
1975	715,000	665,000	50,000	
1976	735,000	665,000	70,000	
1977	756,000	665,000	91,000	
1978	778,000	665,000	113,000	
1979	801,000	665,000	136,000	
1980	824,000	665,000	159,000	
1981	839,000	665,000	174,000	
1982	854,000	665,000	189,000	
1983	870,000	665,000	205,000	
1984	886,000	665,000	221,000	
1985	902,000	665,000	237,000	
1986	902,000	665,000	237,000	
1987	902,000	665,000	237,000	
1988	902,000	665,000	237,000	
1989	902,000	665,000	237,000	
1990	902,000	665,000	237,000	
1991	902,000	665,000	237,000	
1992	902,000	665,000	237,000	
1993	902,000	665,000	237,000	
1994	902,000	665,000	237,000	
1995	902,000	665,000	237,000	
1996	902,000	665,000	237,000	
1997	902,000	665,000	237,000	
1998	902,000	665,000	237,000	
	TOTAL		$4,749,000	$ 96,000

APPENDIX

Iowa Senate File 131

The General Bridge Act

STATE HIGHWAY COMMISSION – INTERSTATE BRIDGES
SENATE FILE 131

AN ACT AUTHORIZING THE STATE HIGHWAY COMMISSION TO ACQUIRE, PURCHASE AND CONSTRUCT INTERSTATE BRIDGES, APPROACHES THERETO AND SITES THEREFOR, TO RECONSTRUCT, COMPLETE, IMPROVE, REPAIR, REMODEL, CONTROL, MAINTAIN, AND OPERATE INTERSTATE BRIDGES, TO ESTABLISH TOLLS AND CHARGES FOR THE USE OF INTERSTATE BRIDGES, TO BORROW MONEY AND ISSUE BONDS PAYABLE SOLELY FROM THE REVENUES DERIVED FROM THE OPERATION OF INTERSTATE BRIDGES, AND TO REFUND BONDS PAYABLE FROM SUCH REVENUES.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF IOWA:

Section 1. The following words or terms, as used in this Act, shall have the respective meanings as stated:

"Toll bridge" shall mean an interstate bridge constructed, purchased or acquired under the provisions of this Act, upon which tolls are charged, together with all appurtenances, additions, alterations, improvements, and replacements thereof, and the approaches thereto, and all lands and interests therein used therefor, and buildings and improvements thereon.

"Commission" shall mean the state highway commission, the agency of the state of Iowa created and provided for under the provisions of chapter three hundred seven (307) of the Code.

"Construct, constructing, construction or constructed" shall include the reconstruction, remodeling, repair, or improvement of any existing toll bridge as well as the construction of any new toll bridge.

"Acquisition by purchase, gift, or condemnation" as used in this Act shall mean acquisition by the state highway commission, whether such terms "purchase, gift, or condemnation" are used singularly or in sequence.

Section 2. The state highway commission shall have full charge of the construction and acquisition of all toll bridges constructed or acquired under the provisions of this Act, the operation and maintenance thereof and the imposition and collection of tolls and charges for the use thereof. The commission shall have full charge of the design of all toll bridges constructed under the provisions of this Act. The commission shall proceed with the construction of such toll bridges and other facilities and the approaches thereto by contract immediately upon there being made available funds for such work and shall prosecute such work to completion as rapidly as practicable. The commission shall advertise for bids for the construction, reconstruction, improvement, repair or remodeling of any toll bridge by publication of a notice once each week for at least two (2) consecutive weeks in a newspaper published and having a general circulation throughout the state of Iowa, the first publication to appear at least fifteen (15) days prior to the date set for receiving bids. The commission shall have the power to accept such offer or offers, propositions or bids, and enter into such contract or contracts as it shall deem to be to the best interest of the state.

Section 3. The commission is hereby authorized to establish and construct toll bridges upon any public highway, together with approaches thereto, wherever it is considered necessary or advantageous and practical for crossing any navigable river between this state and an adjoining state. The necessity or advantage and practicality of any toll bridge shall be determined by the commission. To obtain information for the consideration of the commission upon the construction of any toll bridge or any other matter pertaining thereto, any officer or employee of the state, upon the request of the commission, shall make reasonable examination, investigation, survey, or reconnaissance to determine material facts pertaining thereto and shall report such findings to the commission. The cost thereof shall be borne by the department or office conducting it from funds provided for its functions.

Section 4. The commission is hereby authorized to enter into agreements with any federal bridge commission or any county, city, or town of this state, and with an adjoining state or county, city, or town thereof, for the purpose of implementing an investigation of the feasibility of any toll bridge project for the bridging of a navigable river forming a portion of the boundary of this state and such adjoining state. The commission may use any funds available for the purposes of this section. Such agreements may provide that in the event any such project is determined to be feasible and adopted, any advancement of funds by any state, county, city, or town may be reimbursed out of any proceeds derived from the sale of bonds or out of tolls and revenues to be derived from such project.

Section 5. Whenever the commission deems it necessary or advantageous and practical, it may acquire by gift, purchase, or condemnation any interstate bridge which connects with or may be connected with the public highways and the approaches thereto, except that the commission may not condemn an existing interstate bridge used for interstate highway traffic and combined highway and railway traffic and presently owned by a municipality, or a person, firm, or corporation engaged in interstate commerce. In connection with the acquisition of any such bridge, the commission and any federal bridge commission or any city, town, county, or other political subdivision of the state are authorized to do all acts and things as in this Act are provided for the establishing and constructing of toll bridges and operating, financing, and maintaining such bridges insofar as such powers and requirements are applicable to the acquisition of any toll bridge and its operation, financing, and maintenance. In so doing, they shall act in the same manner and under the same procedures as provided for establishing, constructing, operating, financing, and maintaining toll bridges insofar as such manner and procedures are applicable. Without limiting the generality of the above provisions, the commission is hereby authorized to cause surveys to be made to determine the propriety of acquiring any such bridge and the rights-of-way necessary therefor, and other facilities necessary to carry out the provisions hereof; to issue, sell, redeem bonds or issue and exchange bonds with present holders of outstanding bonds of bridges being acquired under the provisions of this Act and deposit and pay out of the proceeds of the bonds for the financing thereof; to impose, collect, deposit, and expend tolls therefrom; to secure and remit financial and other assistance in connection with the purchase thereof, and to carry insurance thereon.

Section 6. The commission, its officials, and all state officials are hereby authorized to perform such acts and make such agreements consistent with the law which are necessary and desirable in connection with the duties and powers conferred upon them regarding the construction, maintenance, and operation and insurance of toll bridges or the safeguarding of the funds and revenues required for such construction and the payment of the indebtedness incurred therefor. The commission shall adopt such rules and regulations in accordance with the provisions of chapter seventeen A (17A) of the Code as it may deem necessary for the administration and exercise of its powers and duties granted by this Act, and shall prepare annual financial statements regarding the operation of such toll bridges which shall be made available for inspection by the public and by the holders of revenue bonds issued by the commission under the provisions of this Act at all reasonable times.

Section 7. Whenever the commission deems it to be in the best interest of the primary highway system that any new toll bridge be constructed upon any public highway and across any navigable river between this state and an adjoining state, the commission shall adopt a resolution declaring that the public interest and necessity require the construction of such toll bridge and authorizing the issuance of revenue bonds in an amount sufficient for the purpose of obtaining funds for such construction. The issuance of bonds as provided in this Act for the construction, purchase, or acquisition of more than one (1) toll ridge may, at the discretion of the commission, be included in the same authority and issue or issues of bonds, and the commission is hereby authorized to pledge the gross revenues derived from the operation of any such toll bridge under its control and jurisdiction to pay the principal of and interest on bonds issued to pay the cost of purchasing, acquiring, or constructing any such toll bridge financed under the provisions of this Act. The commission is hereby granted wide discretion, in connection with the financing of the cost of any toll bridge, to pledge the gross revenues of a single toll bridge for the payment of bonds and interest thereon issued to pay the cost of such bridge and to pledge the gross revenues of two (2) or more toll bridges to pay bonds issued to pay the cost of one (1) or more toll bridges and interest thereon as long as the several bridges included herein are not more than ten (10) miles apart.

In addition, if the commission in its discretion determines that the construction of a toll bridge cannot be financed entirely through revenue bonds and that the construction of such toll bridge is necessary, the commission may advance funds from the primary highway fund to pay for that part of the construction cost, including the cost of approaches and all incidental costs, which is not paid out of the proceeds of revenue bonds. After all revenue bonds and interest thereon issued and sold pursuant to this Act and payable from the tolls and revenues of said bridge have been fully paid and redeemed or funds sufficient to pay said bonds and interest, including premium, if any, have been set aside and pledged for that purpose, then such amount advanced from the primary road fund shall be repaid to the primary road fund from the tolls and revenues of said bridge before said bridge is made a toll free bridge under the provisions of this Act.

Section 8. Whenever the commission shall authorize the construction of any toll bridge, the commission is empowered to secure rights-of-way therefor and for approaches thereto by gift or purchase or by condemnation in the manner provided by law for the taking of private property for public purposes.

Section 9. The right-of-way is hereby given, dedicated, and set apart upon which to locate, construct, and maintain toll bridges or approaches thereto or other highway crossings, and transportation facilities thereof or thereto, through, over or across any of the lands which are now or may be the property of this state, including highways; and through, over, or across the streets, alleys, lanes, and roads within any city, town, county, or other political subdivision of the state. If any property belonging to any city, town, county or other political subdivision of the state is required to be taken for the construction of any such bridge or approach thereto or should any such property be injured or damaged by such construction, such compensation therefor as may be proper or necessary and as shall be agreed upon may be paid by the commission to the particular county, city, town, or other political subdivision of the state owning such property, or condemnation proceedings may be brought for the determination of such compensation.

Section 10. Before the commission shall proceed with any action to secure right-of-way or with the construction of any toll bridge under the provisions of this Act, it shall first pass a resolution finding that public interest and necessity require the acquisition of right-of-way for and the construction of such toll bridge. Such resolution shall be conclusive evidence of the public necessity of such construction and that such property is necessary therefor. To aid the commission in determining the public interest, a public hearing shall be held in the county or counties of this state in which any portion of a bridge is proposed to be located. Notice of such hearing shall be published at least once in a newspaper published and having a general circulation in the county or counties where such bridge is proposed to be located, not less than twenty (20) days prior to the date of the hearing. When it becomes necessary for the commission to condemn any real estate to be used in connection with any such bridge, or to condemn any existing bridge, such condemnation shall be carried out in a manner consistent with the provisions of chapters four hundred seventy-one (471) and four hundred seventy-two (472) of the Code. In eminent domain proceedings to acquire property for any of the purposes of this Act, any bridge, real property, personal property, franchises, rights, easements, or other property or privileges appurtenant thereto appropriated or dedicated to a public use or purpose by any person, firm, private, public or municipal corporation, county, city or town, district, or any political subdivision of the state, may be condemned and taken, and the acquisition and use thereof as herein provided for the same public use or purpose to which such property has been so appropriated or dedicated, or for any other public use or purpose, shall be deemed a superior and permanent right and necessity, and a more necessary use and purpose than the public use or purpose to which such property has already been appropriated or dedicated, and any condemnation award may be paid from the proceeds of revenue bonds issued under the provisions of this Act.

Section 11. If the commission determines that any toll bridge should be constructed or acquired under its authority, all costs thereof, including land, right-of-way, surveying, engineering, construction, legal and administrative expenses, and fees of any fiscal adviser, shall be paid out of any funds available for payment of the cost of the bridge.

Section 12. The commission is hereby authorized and empowered to issue revenue bonds for the acquisition, purchase or construction of any interstate bridge. Any and all bonds issued by the commission for the acquisition, purchase, or construction of any interstate bridge under the authority of this Act shall be issued in the name of the Iowa highway commission and shall constitute obligations only of the commission, shall be identified by some appropriate name, and shall contain a recital on the face thereof that the payment or redemption of said bonds and the payment of the interest thereon are secured by a direct charge and lien upon the tolls and other revenues of any nature whatever received from the operation of the particular bridge for the acquisition, purchase, or construction of which the bonds are issued and of such other bridge or bridges as may have been pledged therefor, and that neither the payment of the principal or any part thereof nor of the interest thereon or any part thereof constitutes a debt, liability, or obligation of the state of Iowa. When it is determined by the commission to be in the best public interest, any bonds issued under the provisions of this Act may be refunded and refinanced at a lower rate, the same rate or a higher rate or rates of interest and from time to time as often as the commission shall find it to be advisable and necessary so to do. Bonds issued to refund other bonds theretofore issued by the commission under the provisions of this Act may either be sold in the manner hereinafter provided and the proceeds thereof applied to the payment of the bonds being refunded, or the refunding bonds may be exchanged for and in payment and discharge of the bonds being refunded. The refunding bonds may be sold or exchanged in installments at different times or an entire issue or series may be sold or exchanged at one (1) time. Any issue or series or refunding bonds may be exchanged in part or sold in part in installments at different times or at one (1) time. The refunding bonds may be sold at any time on, before, or after the maturity of any of the outstanding bonds to be refinanced thereby and may be issued for the purpose of refunding a like or greater principal amount of bonds, except that the principal amount of the refunding bonds may exceed the principal amount of the bonds to be refunded to the extent necessary to pay any premium due on the call of the bonds to be refunded or to fund interest in arrears or about to become due. The gross revenues of any toll bridge pledged to the payment of the bonds being refunded, together with the unpledged gross revenues of any other toll bridges located within ten (10) miles of said bridge, may be pledged by the commission to pay the principal of and interest on the refunding bonds and to create and maintain reserves therefor.

The commission is empowered to receive and accept funds from the state of Iowa or the federal government or any other state upon a cooperative or other basis for the acquisition, purchase, or construction of any interstate bridge authorized under the provisions of this Act and is empowered to enter into such agreements with the state of Iowa or any other state or the federal government as may be required for the securing of such funds.

The commission is authorized and empowered to spend from annual primary road fund receipts sufficient moneys to pay the cost of operation, maintenance, insurance, collection of tolls and accounting therefor and all other charges incidental to the operation and maintenance of any toll bridge administered under the provisions of this Act.

Section 13. The revenue bonds may be issued and sold or exchanged by the commission from time to time and in such amounts as it deems necessary to provide sufficient funds for the acquisition, purchase, or construction of any such bridge and to pay interest on bonds issued for the construction of any toll bridge during the period of actual construction and for six (6) months after completion thereof. The commission is hereby authorized to adopt all necessary resolutions prescribing the form, conditions, and denominations of the bonds, the maturity dates therefor, and the interest rate or rates which the bonds shall bear. All bonds of the same issue need not bear the same interest rate. Principal and interest of the bonds shall be payable at such place or places within or without the state of Iowa as determined by the commission, and the bonds may contain provisions for registration as to principal or interest, or both. Interest shall be payable at such times as determined by the commission and the bonds shall mature at such times and in such amounts as the commission prescribes. The commission may provide for the retirement of the bonds at any time prior to maturity, and in such manner and upon payment of such premiums as it may determine in the resolution providing for the issuance of the bonds. All such bonds and any coupons attached thereto shall be signed by such officials of the commission as the commission may direct. Successive issues of such bonds within the limits of the original authorization shall have equal preference with respect to the payment of the principal thereof and the payment of interest thereon. The commission may fix different maturity dates, serially or otherwise, for successive issues under any one (1) original authorization. All bonds issued under the provisions of this Act shall have all the qualities of negotiable instruments under the laws of the state of Iowa. All bonds issued and sold hereunder shall be sold to the highest and best bidder on the basis of sealed proposals received pursuant to a notice specifying the time and place of sale and the amount of bonds to be sold which shall be published at least once not less than seven (7) days prior to the sale in a newspaper published in the state of Iowa and having a general circulation in said state. None of the provisions of chapter seventy-five (75) of the Code shall apply to bonds issued under the provisions of this Act but such bonds shall be sold upon terms of not less than par plus accrued interest. The commission may reject any or all bids received at the public sale and may thereafter sell the bonds at private sale on such terms and conditions as it deems most advantageous to its own interests, but not at a price below that of the best bid received at the advertised sale. The commission may enter into contracts and borrow money through the sale of bonds of the same character as those herein authorized, from the United States or any agency thereof, upon such conditions and terms as may be agreed to and the bonds shall be subject to all the provisions of this Act, except that any bonds issued hereunder to the United States or any agency thereof need not first be offered at public sale. The commission may also provide for the private sale of bonds issued under the provisions of this Act to the state treasurer of Iowa upon such terms and conditions as may be agreed upon, and in such event said bonds need not first be offered at public sale. Temporary or interim bonds, certificates, or receipts, of any denomination, and with or without coupons attached, signed by such official as the commission may direct, may be issued and delivered until the definitive bonds are executed and available for delivery.

Section 14. The proceeds from the sale of all bonds authorized and issued under the provisions of this Act shall be deposited by the commission in a fund designated as the construction fund of the particular interestate bridge or bridges for which such bonds were issued and sold, which fund shall not be a state fund and shall at all times be kept segregated and set apart from all other funds and in trust for the purposes herein set out. Such proceeds shall be paid out or disbursed solely for the acquisition, purchase, or construction of such interstate bridge or bridges and expenses incident thereto, the acquisition of the necessary lands and easements there-

for and the payment of interest on such bonds during the period of actual construction and for a period of six (6) months thereafter, only as the need therefor shall arise and the commission may agree with the purchaser of said bonds upon any conditions or limitations restricting the disbursement of such funds that may be deemed advisable, for the purpose of assuring the proper application of such funds. All moneys in such fund and not required to meet current construction costs of the interstate bridge or bridges for which such bonds were issued and sold, and all funds constituting surplus revenues which are not immediately needed for the particular object or purpose to which they must be applied or are pledged may be invested in obligations issued or guaranteed by the United States or by any person controlled by or supervised by and acting as an instrumentality of the United States pursuant to authority granted by the congress of the United States; provided, however, that the commission may provide in the proceedings authorizing the issuance of said bonds that the investment of such moneys shall be made only in particular bonds and obligations within the classifications eligible for such investment and such provisions shall thereupon be binding upon the commission and all officials having anything to do with such investment. Any surplus which may exist in said construction fund shall be applied to the retirement of bonds issued for the acquisition, purchase, or construction of any such interstate bridge by purchase or call and, in the event such bonds cannot be purchased at a price satisfactory to the commission and are not by their terms callable prior to maturity, such surplus shall be paid into the fund applicable to the payment of principal and interest of said bonds and shall be used for that purpose. The proceedings authorizing the issuance of bonds may provide limitations and conditions upon the time and manner of applying such surplus to the purchase and call of outstanding bonds and the terms upon which they shall be purchased or called and such limitations and conditions shall be followed and observed in the application and use of such surplus. All bonds so retired by purchase or call shall be immediately canceled.

Section 15. All tolls or other revenues received from the operation of any toll bridge acquired, purchased, or constructed with the proceeds of bonds issued and sold hereunder shall be deposited by the commission to the credit of a special trust fund to be designated as the toll revenue fund of the particular toll bridge or toll bridges producing such tolls or revenue, which fund shall be a trust fund and shall at all times be kept segregated and set apart from all other funds.

Section 16. From the money so deposited in each separate construction fund as hereinabove provided, at the direction of the commission there shall be transferred to the place or places of payment named in said bonds such sums as may be required to pay the interest as it becomes due on all bonds issued and outstanding for the construction of such particular toll bridge or toll bridges during the period of actual construction and during the period of six (6) months immediately thereafter. The commission shall thereafter transfer from each separate toll revenue fund to the place or places of payment named in the bonds for which said revenues have been pledged such sums as may be required to pay the interest on said bonds and redeem the principal thereof as such interest and principal become due. All funds so transferred for the payment of principal of or interest on bonds issued for any particular toll bridge or toll bridges shall be segregated and applied solely for the payment of said principal or interest. The proceedings authorizing the issuance of the bonds may provide for the setting up of a reserve fund or funds out of the tolls and other revenues not needed for the payment of principal and interest, as the same currently matures and for the preservation and continuance of such fund in a manner to be provided therein, and such proceedings may also require the immediate application of all surplus moneys in such toll revenue fund to the retirement of such bonds prior to maturity, by call or purchase, in such manner and upon such terms and the payment of such premiums as may be deemed advisable in the judgment of the commission. The moneys remaining in each separate toll revenue fund after providing the amount required for the payment of principal of and interest on bonds as hereinabove provided, shall be held and applied as provided in the proceedings authorizing the issuance of said bonds. In the event the proceedings authorizing the issuance of said bonds do not require surplus revenues to be held or applied in any particular manner, they shall be allocated and used for such other purposes incidental to the construction, operation, and maintenance of any toll bridge as the commission may determine and as permitted under sections seven (7) and twelve (12) of this Act.

Section 17. Warrants for payments to be made on account of such bonds shall be drawn by the commission on duly approved vouchers. Moneys required to meet the costs of purchase or construction and all expenses and costs incidental to the acquisition, purchase, or construction of any particular interstate bridge or to meet the costs of operating, maintaining, and repairing the same, shall be paid by the commission from the proper fund therefor upon duly approved vouchers. All interest received or earned on money deposited in each and every fund herein provided for shall be credited to and become a part of the particular fund upon which said interest accrues.

Section 18. The commission may provide in the proceedings authorizing the issuance of bonds or may otherwise agree with the purchasers of bonds regarding the deposit of all moneys constituting the construction fund and the toll revenue fund and provide for the deposit of such money at such times and with such depositaries or paying agents and upon the furnishing of such security as may meet with the approval of the purchasers of such bonds.

Section 19. Notwithstanding any provision contained in this Act, the proceeds received from the sale of bonds and the tolls or other revenues received from the operation of any toll bridge may be used to defray any expenses incurred by the commission in connection with and incidental to the issuance and sale of bonds for the acquisition, purchase, or construction of any such toll bridge including expenses for the preparation of surveys and estimates, legal, fiscal and administrative expenses, and the making of such inspections and examinations as may be required by the the purchasers of such bonds; provided, that the proceedings authorizing the issuance of such bonds may contain appropriate provisions governing the use and application of said bond proceeds and toll or other revenues for the purposes herein specified.

Section 20. While any bonds issued by the commission remain outstanding, the powers, duties or existence of the commission or of any other official or agency of the state shall not be diminished or impaired in any manner that will affect adversely the interests and rights of the holders of such bonds. The holder of any bond may by mandamus or other appropriate proceeding require and compel the performance of any of the duites imposed upon any state department, official, or employee or imposed upon the commission or its officers, agents, and employees in connection with the acquisition, purchase, construction, maintenance, operation, and insurance of any bridge and in connection with the collection, deposit, investment, application, and disbursement of all tolls and other revenues derived from the operation and use of any bridge and in connection with the deposit, investment, and disbursement of the proceeds received from the issuance of bonds; provided, that the enumeration of such rights and remedies herein shall not be deemed to exclude the exercise or prosecution of any other rights or remedies by the holders of such bonds.

Section 21. When any toll bridge authorized hereunder is being built by the commission it may carry or cause to be carried such an amount of insurance or imdemnity bond or bonds as protection against loss or damage as it may deem proper. The commission is hereby further empowered to carry such an amount of insurance to cover any accident or destruction in part or in whole to any toll bridge. All moneys collected on any indemnity bond or insurance policy as the result of any damage or injury to any such toll bridge shall be used for the purpose of repairing or rebuilding of any such toll bridge as long as there are revenue bonds against any such structure outstanding and unredeemed. The commission is also empowered to carry insurance or indemnity bonds insuring against the loss of tolls or other revenues to be derived from any such toll bridge by reason of any interruption in the use of such toll bridge from any cause whatever, and the proceeds of such insurance or indemnity bonds shall be paid into the fund into which the tolls and other revenues of the bridge thus insured are required to be paid and shall be applied to the same purposes and in the same manner as other moneys in the said fund. Such insurance or indemnity bonds may be in an amount equal to the probable tolls and other revenues to be received from the operation of such toll bridge during any period of time that may be determined upon by the commission and fixed in its discretion, and be paid for out of the toll revenue fund as may be specified in said proceedings. The commission may provide in the proceedings authorizing the issuance of bonds for the carrying of insurance as authorized by this Act and the purchase and carrying of insurance as authorized by this Act shall thereupon be obligatory upon the commission and be paid for out of the toll revenue fund as may be specified in said proceedings.

Section 22. The commission is hereby empowered to fix the rates of toll and other charges for all interstate bridges acquired, purchased, or constructed under the terms of this Act. Toll charges so fixed may be changed from time to time as conditions may warrant. The commission in establishing toll charges shall give due consideration to the amount required annually to pay the principal of and interest on bonds payable from the revenues thereof. The tolls and charges shall be at all times fixed at rates sufficient to pay the bonds and interest as they mature, together with the creation and maintenance of bond reserve funds and other funds as established in the proceedings authorizing the issuance of the bonds, for any particular toll bridge. The amounts required to pay the principal of and interest on bonds shall constitute a charge and lien on all such tolls and other revenues and interest thereon and sinking funds created therefrom received from the use and operation of said toll bridge, and the commission is hereby authorized to pledge a sufficient amount of said tolls and revenues for the payment of bonds issued under the provisions of this Act and interest thereon and to create and maintain a reserve therefor. Such tolls and revenues, together with the interest earned thereon, shall constitute a trust fund for the security and payment of such bonds and shall not be used or pledged for any other purpose as long as such bonds or any of them are outstanding and unpaid.

Section 23. Whenever a proposed interstate bridge is to be acquired, purchased or constructed, any city, town, county, or other political subdivision located in relation to such facility so as to benefit directly or indirectly thereby, may, either jointly or separately, at the request of the commission advance or contribute money, rights-of-way, labor, materials, and other property toward the expense of acquiring, purchasing or constructing the bridge, and for preliminary surveys and the preparation of plans and estimates of cost therefor and other preliminary expenses. Any such city, town, county, or other political subdivision may, either jointly or separately, at the request of the commission advance or contribute money for the purpose of guaranteeing the payment of interest or principal on the bonds issued by the commission to finance the bridge. Appropriations for such purposes may be made from any funds available, including county road funds received from or credited by the state, or funds obtained by excess tax levies made pursuant to law or the issuance of general obligation bonds for this purpose. Money or property so advanced or contributed may be immediately transferred or delivered to the commission to be used for the purpose for which contribution was made. The commission may enter into an agreement with a city, town, county, or other political subdivision to repay any money or the value of a right-of-way, labor, materials or other property so advanced or contributed. The commission may make such repayment to a city, town, county, or other political subdivision and reimburse the state for any expenditures made by it in connection with the bridge out of tolls and other revenues for the use of the bridge.

Section 24. If the commission deems that any land, including improvements thereon, is no longer required for toll bridge purposes and that it is in the public interest, it may negotiate for the sale of such land to the state or to any city, town, county, or other political subdivision or municipal corporation of the state. The commission shall certify the agreement for the sale to the state executive council, with a description of the land and the terms of the sale and the state executive council may execute the deed and deliver it to the grantee.

Section 25. If the commission is of the opinion that any land, including improvements thereon, is no longer required for toll bridge purposes, it may be offered for sale upon publication of a notice once each week for two (2) consecutive weeks in a newspaper published and having a general circulation throughout the state of Iowa, specifying the time and place fixed for the receipt of bids.

Section 26. The commission may reject all such bids if the highest bid does not equal the reasonable fair market value of the real property, plus the value of the improvements thereon, computed on the basis of the reproduction value less depreciation. The commission may accept the highest and best bid, and certify the agreement for the sale to the state executive council, with a description of the land and the terms of the sale and the state executive council shall execute the deed and deliver it to the grantee.

Section 27. If the commission deems it consistent with the use and operation of any toll bridge, the commission may grant franchises to persons, firms, associations, private or municipal corporations, the United States government or any agency thereof, to use any portion of the property of any toll bridge, including approaches thereto, for the construction and maintenance of water pipes, flumes, gas pipes, telephone, telegraph and electric light and power lines and conduits, trams or railways, and any other such facilities in the manner of granting franchises on state highways.

Section 28. Any moneys received pursuant to the provisions of sections twenty-four (24) through twenty-seven (27) of this Act shall be deposited by the commission into the separate and proper trust fund established for the bridge.

Section 29. The commission shall have the right to impose and reimpose tolls for pedestrian or vehicular traffic over any interstate bridges under its control and jurisdiction for the purpose of paying the cost of reconstructing and improving existing bridges and their approaches, purchasing existing bridges, and constructing new bridges and approaches, provided that any such existing bridge or new bridge is located within ten miles of the bridge on which tolls are so imposed or reimposed, to pay interest on and create a sinking fund for the retirement of revenue bonds issued for the account of such projects and to pay any and all costs and expenses incurred by the commission in connection with and incidental to the issuance and sale of bonds and for the preparation of surveys and estimates and to establish the required interest reserves for and during the estimated construction period and for six (6) months thereafter.

Section 30. The bridges herein provided for may be incorporated into the primary road system as toll free bridges whenever the costs of the construction of the bridges and the approaches thereto and the reconstruction and improvement of existing bridges and approaches thereto, including all incidental costs, have been paid and when all revenue bonds and interest thereon issued and sold pursuant to this Act and payable from the tolls and revenues thereof shall have been fully paid and redeemed or funds sufficient to pay said bonds and interest, including premium, if any, have been set aside and pledged for that purpose. However, tolls may again be imposed as provided in section twenty-nine (29) of this Act.

Section 31. The commission shall have the power and is hereby authorized by resolution to issue, sell, or pledge its revenue bonds in an amount sufficient to provide funds to pay all or any part of the costs of construction of a new bridge and approaches thereto and the reconstruction, improvement, and maintaining of an existing bridge and approaches thereto, including all costs of survey, acquisition of right-of-way, engineering, legal, fiscal and incidental expenses, to pay the interest due thereon during the period beginning with the date of issue of the bonds and ending at the expiration of six (6) months after the first imposition and collection of tolls from the users of said bridges, and all costs incidental to the issuance and sale of the bonds.

Except as may be otherwise specifically provided by statute, all of the other provisions of this Act shall govern the issuance and sale of revenue bonds issued under this section, the execution thereof, the disbursement of the proceeds of issuance thereof, the interest rate or rates thereon, their form, terms, conditions, convenants, negotiability, denominations, maturity date or dates, the creation of special funds or accounts safeguarding and providing for the payment of the principal thereof and interest thereon, and their manner of redemption and retirement.

Such bonds shall include a covenant that the payment of the principal thereof and the interest thereon are secured by a first and direct charge and lien on all of the tolls and other gross revenues received from the operation of said toll bridges and from any interest which may be earned from the deposit or investment of any such revenues. The tolls and charges shall be at all times fixed at rates sufficient to pay the bonds and interest as they mature, together with the creation and maintenance of bond reserve funds and other funds as established in the proceedings authorizing the issuance of the bonds.

Section 32. The commission is hereby authorized to operate and to assume the full control of said toll bridges and each portion thereof whether within or without the borders of the state of Iowa, with full power to impose and collect tolls from the users of such bridges for the purpose of providing revenues at least sufficient to pay the cost and incidental expenses of construction and acquisition of said bridges and approaches in both states in which located and for the payment of the principal of and interest on its revenue bonds as authorized by this Act.

Section 33. Under no circumstances shall any bonds issued under the terms of this Act be or become or be construed to constitute a debt of or charge against the state of Iowa within the purview of any constitutional or statutory limitation or provision. No taxes, appropriations or other funds of the state of Iowa may be pledged for or used to pay such bonds or the interest thereon, but any such bonds shall be payable solely and only as to both principal and interest from the tolls and revenues derived from the operation of any toll bridge or toll bridges acquired, purchased, or constructed under this Act, and the sole remedy for any breach or default of the terms of any such bonds or proceedings for their issuance shall be a proceeding either in law or in equity by suit, action or mandamus to enforce and compel performance of the duties required by this Act and the terms of the resolution under which such bonds are issued.

Section 34. The commission is authorized to enter into such agreement or agreements with other state highway commissions and the governmental agencies or subdivisions of the state of Iowa or other states and with federal bridge commissions as they shall find necessary or convenient to carry out the purposes of this Act, and is authorized to do any and all acts contained in such agreement or agreements that are necessary or convenient to carry out the purposes of this Act. Such agreements may include, but shall not be restricted to, the following provisions:

1. A provision that the commission shall assume and have complete responsibility for the operation of such bridges and approaches thereto, and with full power to impose and collect all toll charges from the users of such bridges and to disburse the revenue derived therefrom for the payment of principal and interest on any revenue bonds herein provided for and to carry out the purposes of this Act.

2. A provision that the commission shall provide for the issuance, sale, exchange or pledge, and payment of revenue bonds payable solely from the revenues derived from the imposition and collection of tolls upon such toll bridges.

3. A provision that the commission, after consultation with the other governmental agencies or subdivisions who are parties to such agreements, shall fix and revise the classifications and amounts of tolls to be charged and collected from the users of the toll bridges, with the further provision that such toll charges shall be

removed after all costs of planning, designing, and construction of such toll bridges and approaches thereto and all incidental costs shall have been paid, and all of said revenue bonds, and interest thereon, issued pursuant to this Act shall have been fully paid and redeemed or funds sufficient therefor have been set aside and pledged for that purpose.

4. A provision that all acts pertaining to the design and construction of such toll bridges may be done and performed by the commission and that any and all contracts for the construction of such toll bridges shall be awarded in the name of the commission.

5. A provision that the state of Iowa and adjoining state and all governmental agencies or subdivisions party to such agreement shall be reimbursed out of the proceeds of the sale of such bonds or out of tolls and revenues as herein allowed for any advances they may have made or expenses they may have incurred for any of the purposes for which said revenue bonds may be issued, after duly verified itemized statements of such advances and expenses have been approved by all parties to such agreement.

6. A provision that when all outstanding indebtedness or other obligations payable from the revenues of such bridges have been paid the adjoining state agrees to accept ownership of that portion of the bridge within such state and agrees to pay the cost of maintaining such portions of the bridge or proportionate share of the total cost of maintaining the bridge.

Section 35. Counties are hereby authorized to issue general obligation bonds for the purpose of contributing money to the commission to help finance the construction of toll bridges across navigable rivers constituting boundaries between the county and an adjoining state. Prior to the issuance of such bonds the board of supervisors shall call and hold an election in said county at which the proposition shall be submitted to the voters of the county in the following form:

Shall the county of _____ issue its bonds in the amount of $_____ for the purpose of _____?

Notice of such election, stating the date of the election, the hours of opening and closing the polls, the precints and polling places therefor, and the question to be submitted shall be published once each week for three (3) consecutive weeks in at least one (1) newspaper published and having a general circulation in the county. The election shall be held on a day not less than five (5) nor more than twenty (20) days after the last publication of such notice. The proposition shall not be deemed carried or adopted unless the vote in favor thereof is equal to at least sixty (60) per cent of the total vote cast for and against said proposition at said election.

Section 36. The exercise of the powers granted by this Act will be in all respects for the benefit of the people of the state of Iowa, for the increase of their commerce and prosperity and for the improvement of their health and living conditions, and as the acquisition, construction, operation, and maintenance by the commission of the projects herein defined will constitute the performance of essential governmental functions, the commission shall not be required to pay any taxes or assessments upon such projects or upon any property acquired or used by the commission under the provisions of this Act or upon the income from such projects, and the bonds issued under the provisions of this Act, their transfer and the income therefrom including any profit made on the sale thereof shall at all times be free from taxation by or within the state of Iowa.

Section 37. Any person who uses any toll bridge and fails or refuses to pay the toll provided therefor shall be punished by a fine of not more than one hundred (100) dollars or by imprisonment for not more than thirty (30) days, or both.

Section 38. This Act shall be construed as providing an alternative and independent method for the acquisition, purchase, or construction of interstate bridges, for the issuance and sale or exchange of bonds in connection therewith and for refunding bonds pertinent thereto, and for the imposition, collection, and application of the proceeds of tolls and charges for the use of interstate bridges, without reference to any other statute, and shall not be construed as an amendment of or subject to the provisions of any other law, and no publication of any notice, and no other or further proceeding in respect to the issuance or sale or exchange of bonds under this Act shall be required except such as are prescribed by this Act, any provisions of other statutes of the state to the contrary notwithstanding.

Section 39. This Act, being necessary for the public safety and welfare, shall be liberally construed to effectuate the purposes thereof. If any provision of this Act or the application thereof to any person or circumstances is held to be invalid, such invalidity shall not affect other provisions or applications of the Act which can be given effect without the invalid provisions or application, and to this end the provisions of this Act are declared to be severable.

Approved June 22, 1967.

Section 525. Construction and operation of bridges; consent of Congress; approval of plans; private highway toll bridges.

(a) The consent of Congress is granted for the construction, maintenance, and operation of bridges and approaches thereto over the navigable waters of the United States, in accordance with the provisions of sections 525–533 of this title.

(b) The location and plans for such bridges shall be approved by the Chief of Engineers and the Secretary of the Army before construction is commenced, and, in approving the location and plans of any bridge, they may impose any specific conditions relating to the maintenance and operation of the structure which they may deem necessary in the interest of public navigation, and the conditions so imposed shall have the force of law.

(c) Notwithstanding the provisions of subsections (a) and (b) of this section, it shall be unlawful to construct or commence the construction of any privately owned highway toll bridge until the location and plans thereof shall also have been submitted to and approved by the highway department or departments of the State or States in which the bridge and its approaches are situated; and where such bridge shall be between two or more States and the highway departments thereof shall be unable to agree upon the location and plans therefor, or if they, or either of them, shall fail or refuse to act upon the location and plans submitted, such location and plans then shall be submitted to the Bureau of Public Roads and, if approved by the Bureau of Public Roads, approval by the highway departments shall not be required. (Aug. 2, 1946, ch. 753, title V, Section 502, 60 Stat. 847; June 30, 1949, ch. 288, title I, Section 103 (a), 63 Stat. 380; 1949 Reorg. Plan No. 7, Section 1, eff. Aug. 19, 1949, 14 F. R. 5288, 63 Stat. 1070.)

CODIFICATION

The Department of War was designated the Department of the Army and the title of the Secretary of War was changed to Secretary of the Army by section 205 (a) of act July 26, 1947, ch. 343, title II, 61 Stat. 501. Section 205 (a) of act July 26, 1947, was repealed by section 53 of act Aug. 10, 1956, ch. 1041, 70A Stat. 641. Section 1 of act Aug. 10, 1956, enacted "Title 10, Armed Forces", which in sections 3011–3013 continued the military Department of the Army under the administrative supervision of a Secretary of the Army.

SHORT TITLE

Congress in enacting sections 525–533 of this title provided by section 501 of act Aug. 2, 1946 that they should be popularly known as the "General Bridge Act of 1946".

TRANSFER OF FUNCTIONS

The functions of all other officers of the Department of Commerce and the functions of all agencies and employees of such Department were, with a few exceptions, transferred to the Secretary of Commerce, with power vested in him to authorize their performance or the performance of any of his functions by any of such officers, agencies, and employees, by 1950 Reorg. Plan No. 5, Sections 1, 2, eff. May 24, 1950, 15 F.R. 3174, 64 Stat. 1263, set out in note under Section 591 of Title 5, Executive Departments and Government Officers and Employees.

The Public Roads Administration, which was transferred to the Bureau of Public Roads within the General Services Administration, was transferred to the Department of Commerce by 1949 Reorg. Plan No. 7.

All functions of the Public Roads Administration were transferred to the Bureau of Public Roads within the General Services Administration by section 103 (a) of Act June 30, 1949. Section 103 (a) is set out as section 630b (a) of Title 5, Executive Departments and Government Officers and Employees.

RESERVATION OF RIGHT TO ALTER, AMEND, OR REPEAL

Section 511 of act Aug. 2, 1946, provided: "The right to alter, amend, or repeal this title (sections 525–533 of this title) is hereby expressly reserved as to any and all bridges which may be built under authority hereof (said sections)."

Section 526. Amount of tolls.

If tolls shall be charged for the transit over any interstate bridge of engines, cars, street cars, wagons, carriages, vehicles, animals, foot passengers, or other passengers, such tolls shall be reasonable and just, and the Secretary of the Army may, at any time, and from time to time, prescribe the reasonable rates of toll for such transit over such bridge, and the rates so prescribed shall be the legal rates and shall be the rates demanded and received for such transit. (Aug. 2, 1946, ch. 753, title V, Section 503, 60 Stat. 847.)

Section 527. Acquisition of interstate bridges by public agencies; amount of damages.

After the completion of any interstate toll bridge constructed by an individual, firm, or corporation, as determined by the Secretary of the Army, either of the States in which the bridge is located, or any public agency or political subdivision of either of such States, within or adjoining which any part of such bridge is located, or any two or more of them jointly, may at any time acquire and take over all right, title, and interest in such bridge and its approaches, and any interest in real property for public purposes by condemnation or expropriation. If at any time after the expiration of five years after the completion of such bridge the same is acquired by condemnation or expropriation, the amount of damages or compensation to be allowed shall not include good will, going value, or prospective revenues or profits, but shall be limited to the sum of (1) the actual cost of constructing such bridge and its approaches, less a reasonable deduction for actual depreciation in value; (2) the actual costs of acquiring such interests in real property; (3) actual financing and promotion costs, not to exceed 10 per centum of the sum of the cost of constructing the bridge and its approaches and acquiring such interests in real property; and (4) actual expenditures for necessary improvements. (Aug. 2, 1946, ch. 753, title V, Section 504, 60 Stat. 848.)

Section 528. Statement of construction costs of privately owned interstate bridges; investigation of costs; conclusiveness of findings; review.

Within ninety days after the completion of a privately owned interstate toll bridge, the owner shall file with the Secretary of the Army and with the highway departments of the States in which the bridge is located, a sworn itemized statement showing the actual original cost of constructing the bridge and its approaches, the actual cost of acquiring any interest in real property necessary therefor, and the actual financing and promotion costs. The Secretary of the Army may, and upon request of a highway department shall, at any time within three years after the completion of such bridge, investigate such costs and determine the accuracy and the reasonableness of the costs alleged in the statement of costs so filed, and shall make a finding of the actual and reasonable costs of constructing, financing, and promoting such bridge. For the purpose of such investigation the said individual, firm, or corporation, its successors and assigns, shall make available all of its records in connection with the construction, financing, and promotion thereof. The findings of the Secretary of the Army as to the reasonable costs of the construction, financing, and promotion of the bridge shall be conclusive for the purposes mentioned in section 527 of this title subject only to review in a court of equity for fraud or gross mistake. (Aug. 2, 1946, ch. 753, title V, Section 505, 60 Stat. 848.)

Section 529. Sinking funds; rate of tolls, cancellation of tolls.

If tolls are charged for the use of an interstate bridge constructed or taken over or acquired by a State or States or by any municipality or other political subdivision or public agency thereof, under the provisions of sections 525–533 of this title, the rates of toll shall be so adjusted as to provide a fund sufficient to pay for the reasonable cost of maintaining, repairing, and operating the bridge and its approaches under economical management, and to provide a sinking fund sufficient to amortize the amount paid therefor, including reasonable interest and financing cost, as soon as possible under reasonable charges, but within a period of not to exceed thirty years from the date of completing or acquiring the same. After a sinking fund sufficient for such amortization shall have been so provided, such bridge shall thereafter be maintained and operated free of tolls. An accurate record of the amount paid for acquiring the bridge and its approaches, the actual expenditures for maintaining, repairing, and operating the same, and of the daily tolls collected, shall be kept and shall be available for the information of all persons interested. (Aug. 2, 1946, ch. 753, title V, Section 506, 60 Stat. 848; May 25, 1948, ch. 336, 62 Stat. 267.)

AMENDMENTS

1948—Act May 25, 1948, extended the amortization period from 20 to 30 years.

Section 530. Bridges included and excluded.

The provisions of sections 525–533 of this title shall apply only to bridges over navigable waters of the United States, the construction of which is approved after August 2, 1946, under the provisions of said sections; and the provisions of the first proviso of section 401 of this title, and the provisions of sections 491–498 of this title, shall not apply to such bridges. (Aug. 2, 1946, ch. 753, title V, Section 507, 60 Stat. 849.)

Section 531. International bridges.

Sections 525–533 of this title shall not be construed to authorize the construction of any bridge which will connect the United States, or any Territory or possession of the United States, with any foreign country. (Aug. 2, 1946, ch. 753, title V, Section 508, 60 Stat. 849.)

Section 532. Eminent domain.

There are conferred upon any individual, his heirs, legal representatives, or assigns, any firm or corporation, its successors or assigns, or any State, political subdivision, or municipality authorized in accordance with the provisions of sections 525–533 of this title to build a bridge between two or more States, all such rights and powers to enter upon lands and acquire, condemn, occupy, possess, and use real estate and other property in the respective States needed for the location, construction, operation, and maintenance of such bridge and its approaches, as are possessed by railroad corporations for railroad purposes or by bridge corporations for bridge purposes in the State in which such real estate or other property is situated, upon making just compensation therefore to be ascertained and paid according to the laws of such State, and the proceedings therefor shall be the same as in the condemnation or expropriation of property for public purposes in such State. (Aug. 2, 1946, ch. 753, title V, Section 509, 60 Stat. 849.)

Section 533. Penalties.

Any person who fails or refuses to comply with any lawful order of the Secretary of the Army or the Chief of Engineers issued under the provisions of sections 525–533 of this title, or who fails to comply with any specific condition imposed by the Chief of Engineers and the Secretary of the Army relating to the maintenance and operation of bridges, or who refuses to produce books, papers, or documents in obedience to a subpena or other lawful requirement under said sections, or who otherwise violates any provisions of said sections, shall, upon conviction thereof, be punished by a fine of not to exceed $5,000 or by imprisonment for not more than one year, or by both such fine and imprisonment. (Aug. 2, 1946, ch. 753, title V, Section 510, 60 Stat. 849.)

Section 534. Conveyance of right, title, and interest of United States in bridges transferred to States or political subdivisions; terms and conditions.

The Secretary of the Army is authorized to transfer or convey to State authorities or political subdivisions thereof all right, title, and interest of the United States, in and to any and all bridges heretofore or hereafter constructed or acquired in connection with the improvement of canals, rivers and harbors, or works of flood control, together with the necessary lands, easements, or rights-of-way, upon such terms and conditions and with or without consideration, as may be determined to be in the best interest of the United States by the Chief of Engineers: Provided, That such transferred bridges shall be toll-free. (May 17, 1950, ch. 188, title I, Section 109, 64 Stat. 168.)

CODIFICATION

Section was not enacted as a part of the General Bridge Act of 1946 which comprises sections 525–533 of this title.