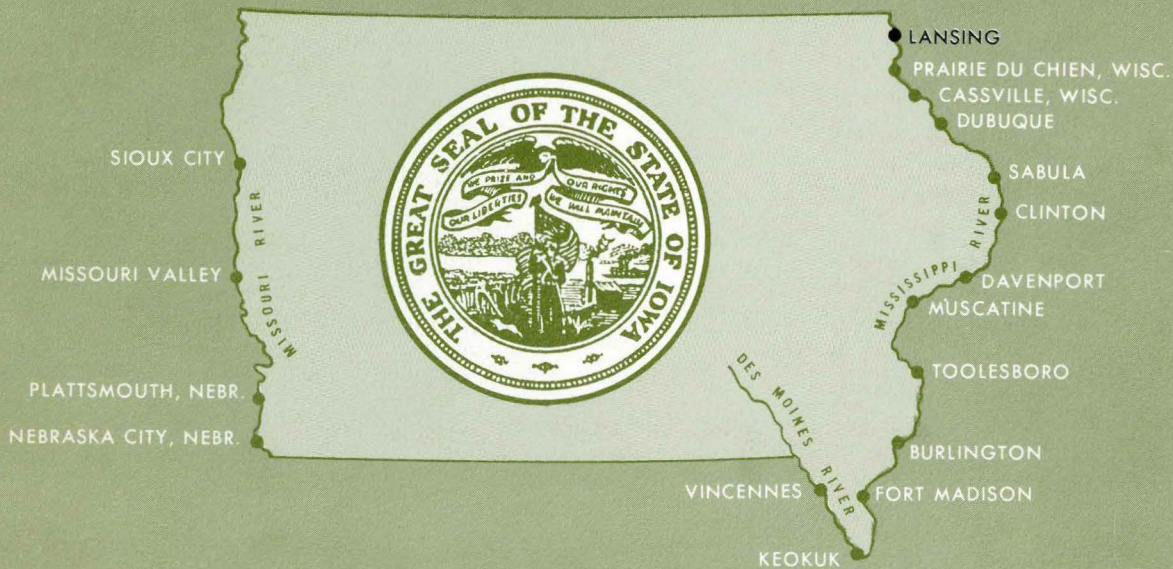


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IOWA STATE HIGHWAY COMMISSION



*Bridge Location,
Revenue and Traffic Studies*

AT
LANSING, IOWA

MISSISSIPPI RIVER TOLL BRIDGE

TGB155
H83L

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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 Lansing.

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 substantial subsidies would be required to construct the proposed bridge as a revenue bond issue. Net revenues for the project are considerably below the annual payments necessary to meet amortization of an appropriate bond issue.

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,

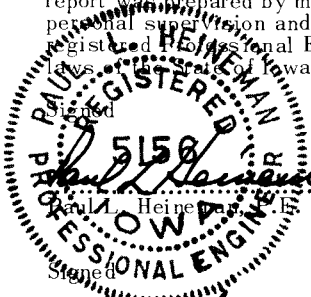
HOWARD, NEEDLES, TAMMEN & BERGENDOFF

Paul L. Heineman
Paul L. Heineman

WILBUR SMITH & ASSOCIATES, INC. N.E.

Wilbur S. Smith
Wilbur S. Smith

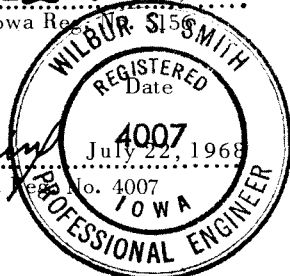
I hereby certify that this plan, specification or report was prepared by me or under my direct personal supervision and that I am a duly registered Professional Engineer under the laws of the State of Iowa.



Date

July 22, 1968

Paul L. Heineman, Iowa Reg.



July 22, 1968

Wilbur S. Smith, P.E. Iowa



VIEW OF BLACK HAWK BRIDGE FROM LANSING, IOWA LOOKING SOUTHEAST

LANSING, IOWA

**MISSISSIPPI
RIVER
TOLL
BRIDGE**

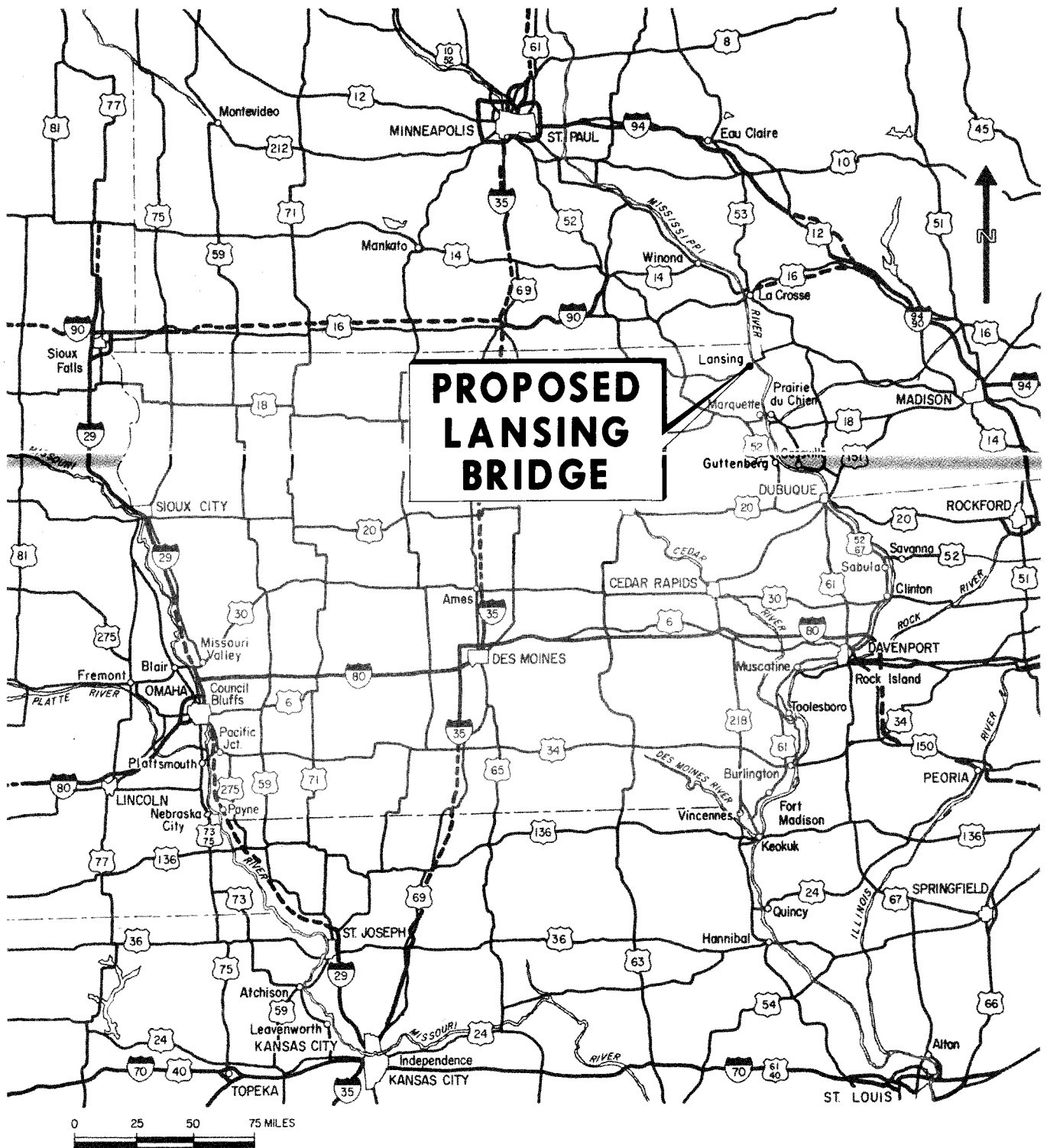
**JULY
1968**

PRELIMINARY ENGINEERING REPORT

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

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
consulting engineers
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NEW HAVEN, CONN.



Wilbur Smith and Associates

Exhibit I
REGIONAL MAP

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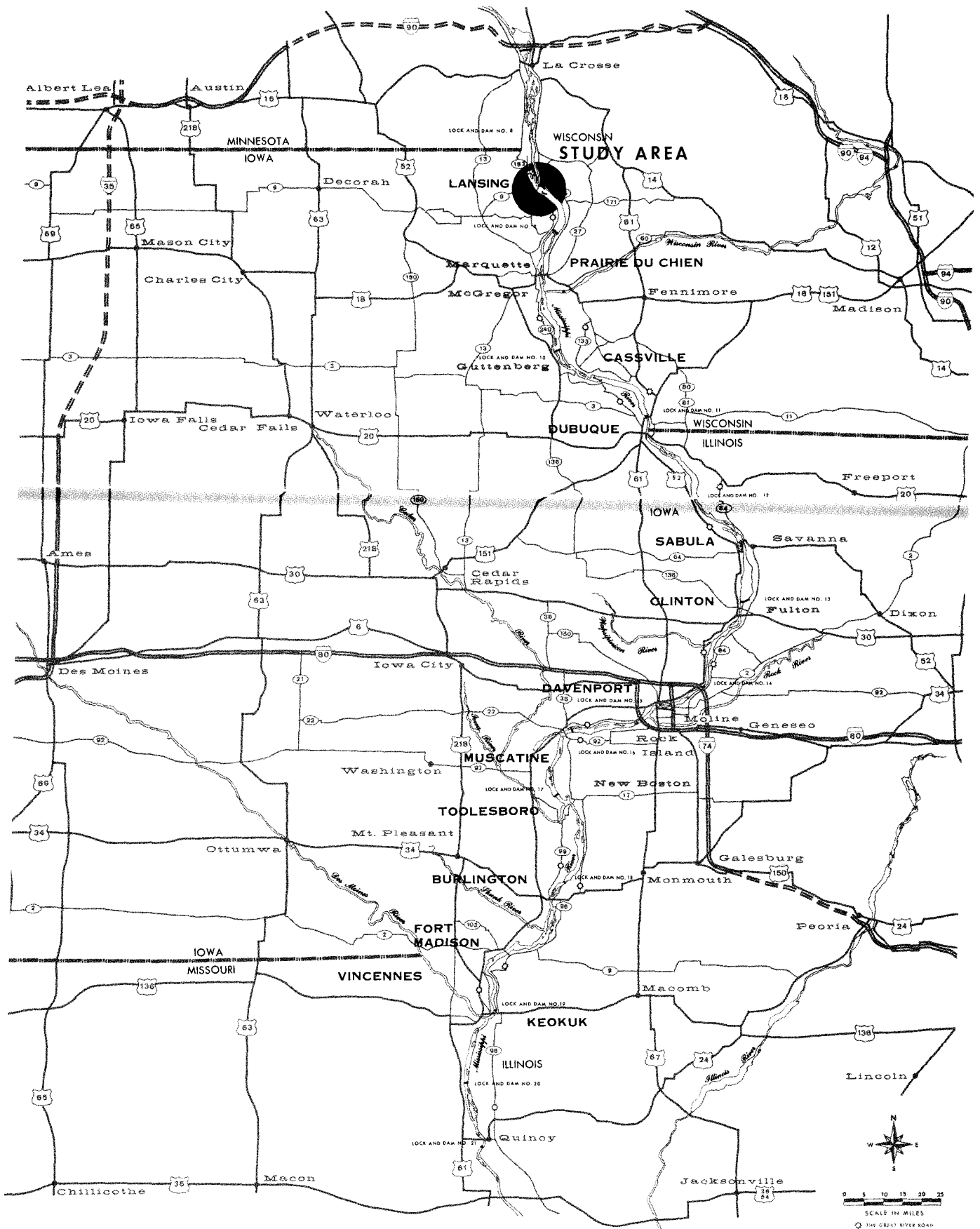


Exhibit 2
VICINITY MAP

SUMMARY OF FINDINGS

The present Black Hawk Bridge at Lansing, while providing a reasonable level of traffic service does not meet modern, two-lane design standards. If a new facility were constructed, at approximately the same location as the present bridge, the development cost would be approximately \$4,400,000.

If tolls were placed on the proposed Lansing Bridge, annual revenues would range from an estimated \$151,000 in 1971, the first full year of operation, to \$258,000 in 1985.

A bond issue, adequate to meet the initial construction costs, of approximately \$5,280,000 would be required. Assuming a 5.5 per cent interest rate and a 30-year bond term, annual payments to service the bond issue would be approximately \$374,000. After deducting annual maintenance and operation expenses, net toll revenues would average \$139,000 over the 28-year earning period. This would provide a 0.37 coverage of level debt service.

This coverage value is considerably below that normally considered indicative of financial feasibility. The subsidy necessary to meet level debt service over the life of the proposed bond issue would be an estimated \$6,574,000.

INTRODUCTION

Lansing, Iowa, as shown in Exhibit 1, is located on the Mississippi River in northeastern Iowa about 36 miles south of the river crossing at La Crosse, Wisconsin, and approximately 29 miles north of the bridge linking Marquette, Iowa, and Prairie du Chien, Wisconsin. The community has a present population of about 1,400 persons. There are several smaller municipalities located in the area across the river from Lansing including De Soto, Ferryville, and Victory.

The crossing at Lansing, known locally as the Black Hawk Bridge, was built in 1931 by the Iowa-Wisconsin Bridge Company and operated as a toll facility until 1945 when floating ice damaged the structure and the bridge was closed. In 1957, the States of Iowa and Wisconsin jointly purchased the bridge, made necessary repairs and returned it to operation as a toll-free crossing. While the bridge presently provides a reasonable level of traffic service, the design criteria used in initial construction and in subsequent re-construction is considerably below modern day standards.

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 Lansing 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 revenue, and feasibility studies of a proposed toll crossing of the Mississippi River at Lansing. These studies include:

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

2. Comparison of alternate river bridges 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 Lansing.

Geology

The study site lies within the driftless section of the central lowland physiographic province, where the Mississippi River currently occupies the western portion of a broad flood plain. The flood plain consists of alluvial silt, sand and gravel.

The Oneota limestone is exposed in the bluffs overlooking Mississippi River at Lansing. Below this limestone, and exposed in some of the high bluffs near Lansing, is a thick deposit of Saint Croix sandstone of the Cambrian system. This sandstone represents an ancient shore deposit which was placed in shallow water in a subsiding sea bottom over 500,000,000 years ago. Old well logs indicate the Saint Croix extends 700 feet below the surface of the river and in some bluffs it extends 300 feet above water surface.

Substructure units for this structure should be founded on bearing piles driven through the alluvium and/or caissons taken to rock or other suitable material. Prior to final design, foundation borings and laboratory soil tests will be required for evaluation of the proper foundation type and to provide information for analysis of embankment-foundation stability and settlement in the flood plain approaches.

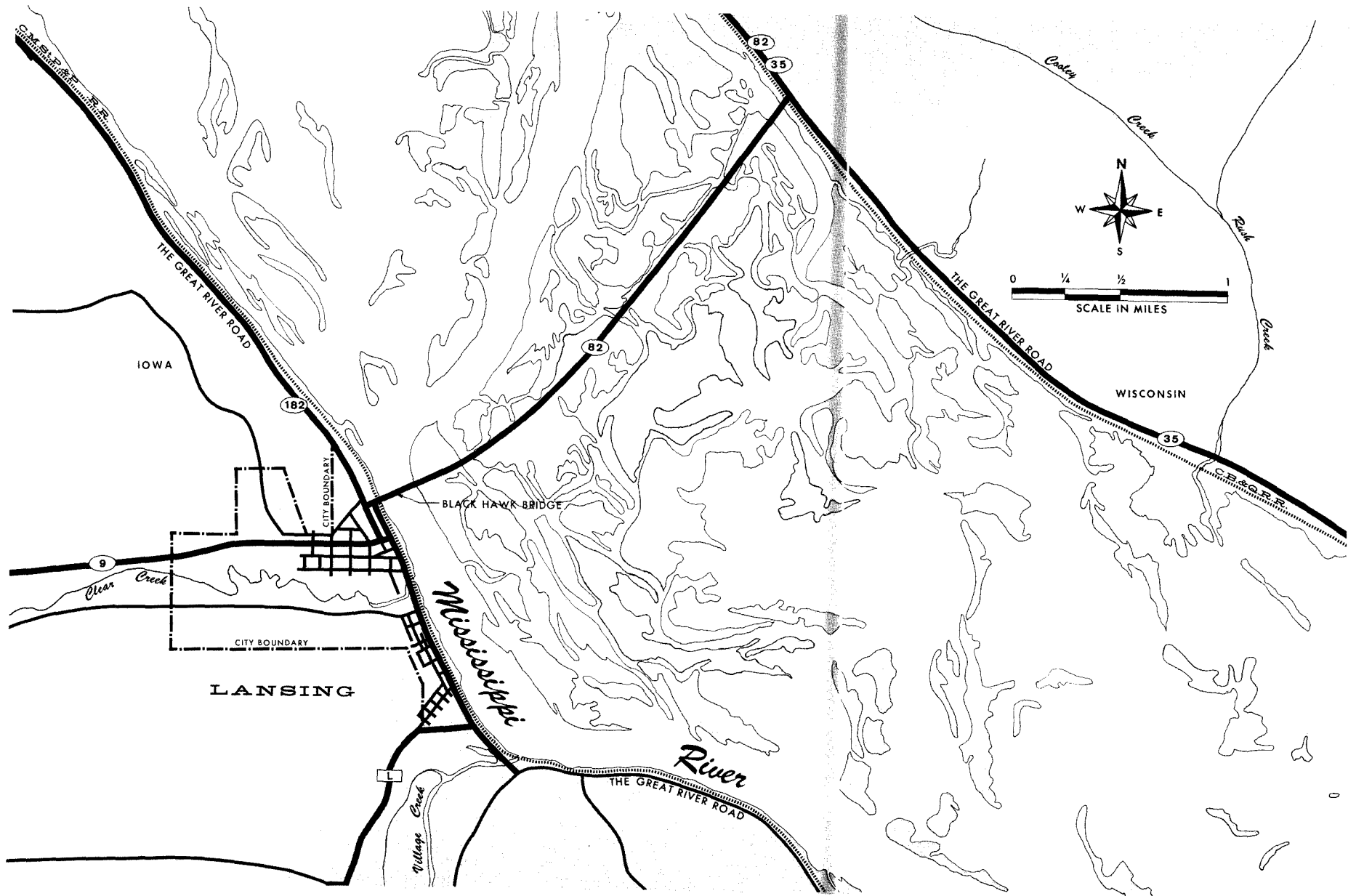


Exhibit I-1

LANSING STUDY AREA

River Conditions

U. S. Lock and Dam No. 8 is located about 16 miles upstream from the Black Hawk Bridge. The flat pool below the dam is at Elevation 620.0 Mean Sea Level.

The record flood of 1965 reached Elevation 634.9 Mean Sea Level at Lansing. This flood caused only marginal damage along the riverfront. The railroads and highways serving Lansing would be flooded only by storms in excess of a 50 year intensity.

The navigation channel of the Mississippi River makes a 90 degree bend immediately upstream from the Black Hawk Bridge. Below the bridge, the channel is essentially straight for about one mile.

Existing Railroads

The Chicago, Milwaukee, St. Paul & Pacific Railroad tracks pass under the bridge adjacent to the Iowa shore. The Wisconsin approach bridges the tracks of the Chicago, Burlington & Quincy Railroad near its connection to Wisconsin Route 35.

The minimum desirable vertical clearance over the railroad tracks up to low structure is 23 feet. The minimum desirable horizontal clearance from the center of railroad tracks to the face of bridge piers is 12 feet. The Black Hawk Bridge provides sufficient vertical and horizontal clearance for the C.M.St. P. & P. R.R.

Existing Highways

Iowa Route 9 is a minor primary east-west route which begins at Lansing, extends across northern Iowa and terminates at the South Dakota border near Sioux Falls. This alignment lies approximately in the center of a 40 mile wide corridor bordered on the north by U. S. Route 16 in Minnesota and U. S. Route 18 in Iowa.

Wisconsin Route 82 extends easterly from Lansing across the Black Hawk Bridge to U. S. Route 14 approximately 30 miles away. U. S. Route 14 provides a connection to Madison and points southeast.

Wisconsin Route 35 parallels the Mississippi River on the eastern shore. This highway provides a secondary connection between La Crosse, Wisconsin and Dubuque, Iowa.

The Black Hawk Bridge, therefore, does not serve any primary routes. Instead, it serves a local corridor midway between La Crosse and Prairie du Chien and extending from U. S. Route 14 in Wisconsin to U. S. Route 52 in Iowa. Traffic originating from, or destined for, a point outside this corridor would probably use the Mississippi River crossings at La Crosse or Prairie du Chien.

The Existing Black Hawk Bridge

A bridge over the Mississippi River at Lansing was a dream of foresighted city fathers as far back as 1898. The history of the Black Hawk Bridge begins with the formation of the Interstate Bridge Company in 1914. This organization turned its charter over to the Iowa-Wisconsin Bridge Company in 1929, which began construction of the Black Hawk Bridge in March, 1929. The Bridge was dedicated and opened to traffic on June 17, 1931. The bridge is illustrated on Exhibit I-2. Financing was accomplished by a stock issue of \$750,000.

After dedication, the financial success of the bridge was poor. In 1945, an ice breaker caused a jam against the wooden relief structures over the sloughs. The resulting damage closed the bridge to traffic. The two states of Iowa and Wisconsin acquired the bridge in 1957. The bridge and approaches were rehabilitated at a construction cost of \$1,300,000 and rededicated in 1957.

The Lansing terminal of the Black Hawk Bridge is at North Second Street, three blocks north of Main Street, as shown on Exhibit I-2. The

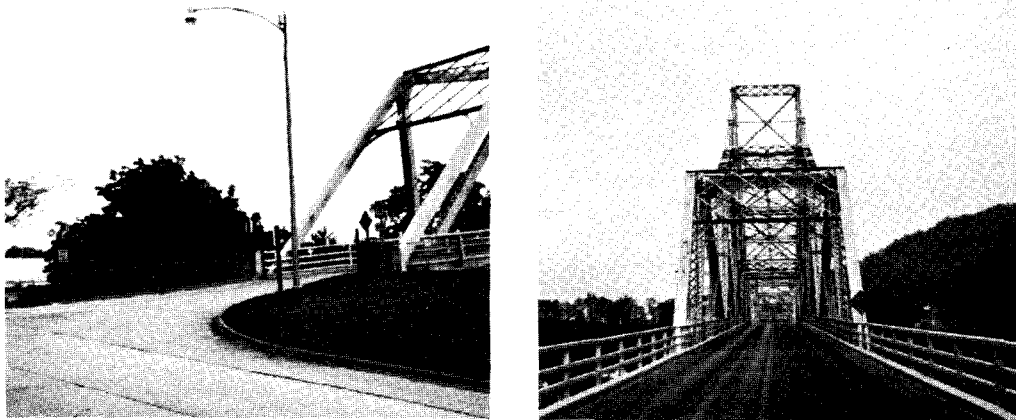


Exhibit I-2

EXISTING BLACK HAWK BRIDGE

Wisconsin approach consists of causeway through the Winneshiek Bottoms and a low level bridge over the Winneshiek Slough and the Chicago, Burlington and Quincy Railroad tracks to the terminal at Wisconsin Route 35.

The alignment of the Black Hawk Bridge is straight and a very slight curve exists on the Wisconsin approach road through the Winneshiek Bottoms. There are tee intersections at both the Iowa and Wisconsin terminals. Maximum gradient is 7.18 per cent at the Iowa terminal. The two lane roadway is 21 feet between curbs. The bridge, according to the Prospectus issued in 1931 to obtain the necessary financing, was designed to accommodate 2300 vehicles per hour and a maximum vehicle load of 30 tons.

There are no approach spans on the Iowa side of the river. On the Wisconsin side, there are five 90 foot deck truss approach spans between the approach road through the bottoms and the main bridge. These spans are carried on concrete piers supported by foundation piles. There is a low level structure, originally timber, now steel, which spans the Winneshiek Slough and the Chicago, Burlington and Quincy Railroad near the east end of the bottoms.

The main portion of the Black Hawk Bridge consists of a three span cantilevered through truss. The main span is 653 feet and the anchor spans are 237 feet. The cantilevered unit is carried by concrete piers supported by foundation piles. The original bridge floor of sheet asphalt plank on treated timber plank supported by steel beams was replaced by an open steel grid floor in 1957.

As a result of a June, 1967 inspection report prepared by the Iowa State Highway Commission, the only repairs to the bridge which are required are of a minor nature and can be accomplished during routine maintenance.

Existing Bridges Near Lansing

The nearest Mississippi River highway bridge downstream from Lansing is 25 miles to the south at Prairie du Chien, Wisconsin. This high level structure, with a suspension main river span, was completed in 1932. The nearest highway bridge upstream from Lansing, Iowa, is 35 miles to the north at La Crosse, Wisconsin. This high level structure, with continuous main river spans, was completed in 1939.

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. The channel is sharply curved just above the Black Hawk Bridge, but the 640 foot clear main span clearance provided would undoubtedly be considered adequate.

Final approval of clearances can be determined only after formal application has been filed 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 Lansing area, low steel elevation required by the normal pool specification is 680.0 Mean Sea Level, which exceeds Elevation 677.2 Mean Sea Level required by the 2 per cent waterline elevation specification. The Black Hawk Bridge provides 62 feet of vertical clearance above the 2 per cent waterline elevation and 67 feet of vertical clearance above the flat pool elevation.

ALTERNATE LOCATIONS

General

Three alternate bridge site locations, as shown on Exhibit I-3, were studied and evaluated for a new Mississippi River crossing at Lansing. The topography of Lansing, the existing railroad, and the existing street pattern limit the possibilities of practical alternate locations.

Alternate A

Alternate A, as shown on Exhibits I-3 and I-4, bridges the tracks of the Chicago, Milwaukee, St. Paul & Pacific Railroad, Front Street, North Second Street (Iowa Route 182) and ties directly into Main Street (Iowa Route 9). A span of 565 feet has been provided so that river traffic may fully utilize the docking facilities at Lansing.

The Lansing approach eliminates the two right angle turns now required to cross the river from Main Street in Lansing by providing a direct connection between Iowa Route 9 and Wisconsin Route 82, both east-west routes on opposite sides of the river.

The approach roadway is located immediately south of the church on North Third Street, and a retaining wall has been provided to protect the church property.

The grade of this alignment, with the toll booth in Iowa, is 4.4 per cent on the west approach as compared to a 7.18 per cent grade on the existing Black Hawk Bridge. The 4.4 per cent could be reduced to 3.9 per cent if the toll booth were located on the Wisconsin causeway. The east approach grade on this alternate bridge location is 3.0 per cent.

An alternate terminal location in Lansing, Alternate A-1, as shown on Exhibits I-3 and I-4, would intersect Main Street approximately 400 feet west of the intersection of Main Street and North Third Street where

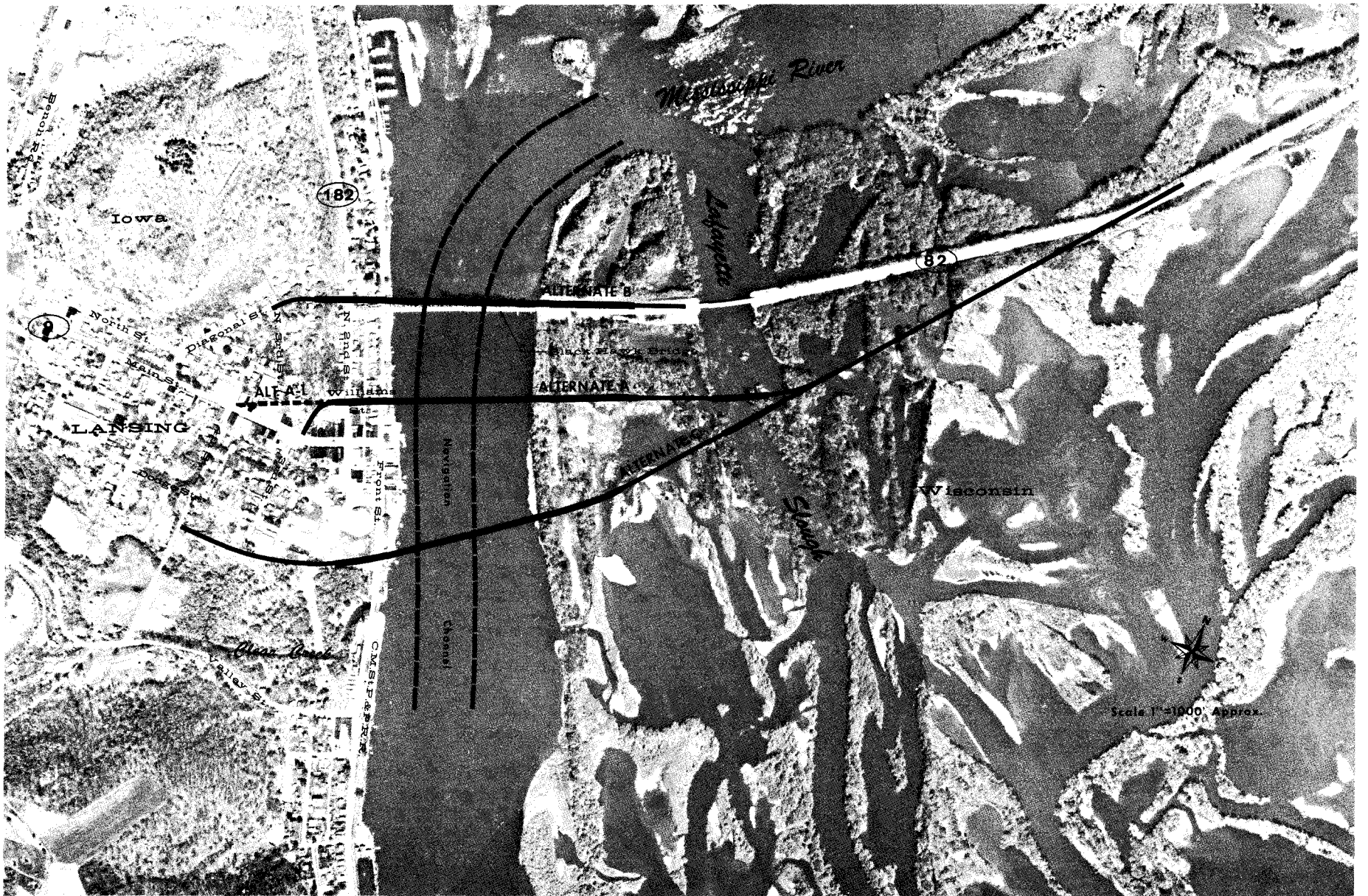


Exhibit I-3

ALTERNATE BRIDGE LOCATIONS

a channelized intersection would be provided to separate the various vehicular movements. While this terminal permits a very desirable approach grade of approximately 1 per cent, right-of-way costs are substantially increased and North Third Street would be closed on either side of the approach.

Alternate B

A location parallel to and 50 feet upstream from the Black Hawk Bridge is shown on Exhibit I-3. The Lansing terminal would be at the intersection of North Third Street and Diagonal Street. This intersection is about 70 feet higher than the intersection of Main Street and North Third Street. To minimize property requirements and to maintain North Third Street from Main to Diagonal, a 3 per cent grade is necessary from the Wisconsin approach over the navigation channel to the Lansing terminal. The resulting roadway would be approximately 90 feet above the river at the Iowa shore, and approximately 55 feet above North Second Street. A 675 foot main span would be required due to the extreme curvature of the navigation channel immediately upstream from the existing bridge.

In order to obtain the 3 per cent grade over the navigation channel, the toll booth for this alternate would be located on the Wisconsin causeway. If the toll booth were located in Iowa, substantial excavation will be required in the vicinity of North Third and Diagonal Streets to permit the grade to be 3 per cent.

Traffic on this alternate would have to travel approximately 0.2 mile on Diagonal Street which has a grade of approximately 6 per cent.

Alternate C

As shown on Exhibit I-3, Alternate C is approximately 1500 feet downstream from the Black Hawk Bridge. This alignment is skewed with the Mississippi River navigation channel; the Lansing terminal is with Fourth



Exhibit I-4
LANSING TERMINAL

Street at a point approximately 250 feet south of Dodge Street. To permit continued use of the docking facilities in Lansing, the main span of the river structure must be 625 feet.

A portion of Fourth Street south of Dodge Street would be reconstructed to provide a desirable street intersection condition.

This alignment would require about 0.37 mile adverse travel distance for traffic proceeding westward on Iowa Route 9, about 0.5 mile adverse travel distance for traffic proceeding northward on Iowa Route 182 in comparison with Alternate A.

Recommended Location

Alternate Location A is the most economical location for a replacement of the Black Hawk Bridge; the project cost for a crossing on this location is utilized in the project feasibility studies developed in Part II of this report.

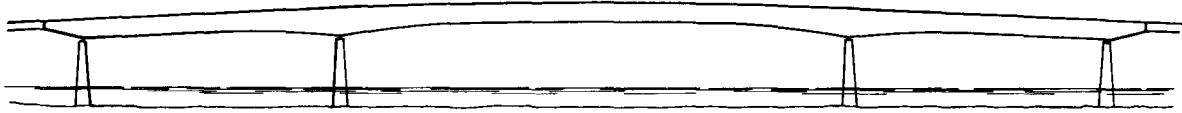
STRUCTURE TYPE STUDIES FOR NAVIGATION SPANS

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-5. 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.

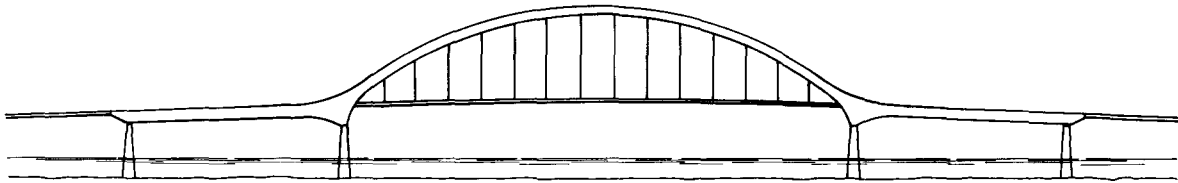
Type II navigation span of Exhibit I-5 is a Continuous Box Girder Tied Arch Span with flexible tie. The tie resists only the thrust of the arch. Without a tie the resistance would have to be provided by river piers. This type of span is considered very practical construction for bridges over the Mississippi 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



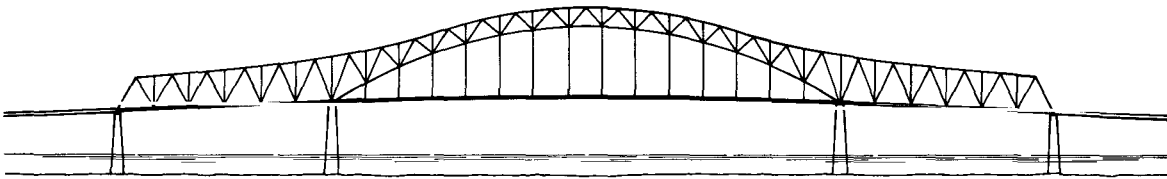
CONTINUOUS GIRDER SPAN

TYPE I



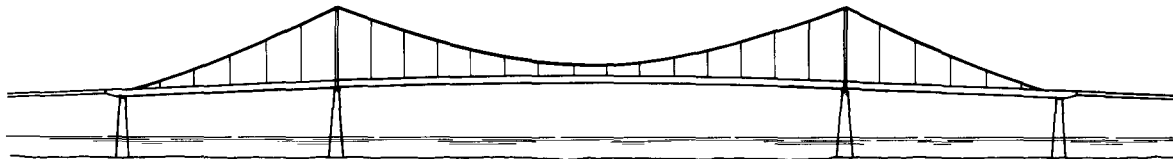
CONTINUOUS BOX GIRDER TIED ARCH SPAN

TYPE II



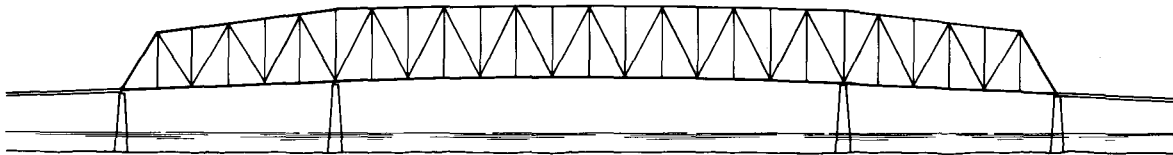
CONTINUOUS TRUSS TIED ARCH SPAN

TYPE III



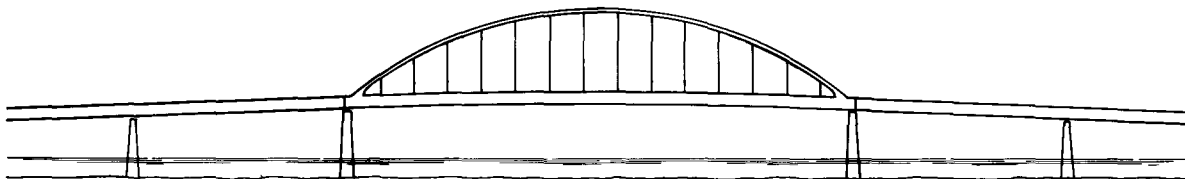
SELF ANCHORED SUSPENSION SPAN

TYPE IV



CONTINUOUS TRUSS SPAN

TYPE V



BOX GIRDER TIED ARCH SPAN

TYPE VI

Exhibit I-5
NAVIGATION SPAN STRUCTURE TYPES

arch. The difference being that a steel truss system is used for the arch 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

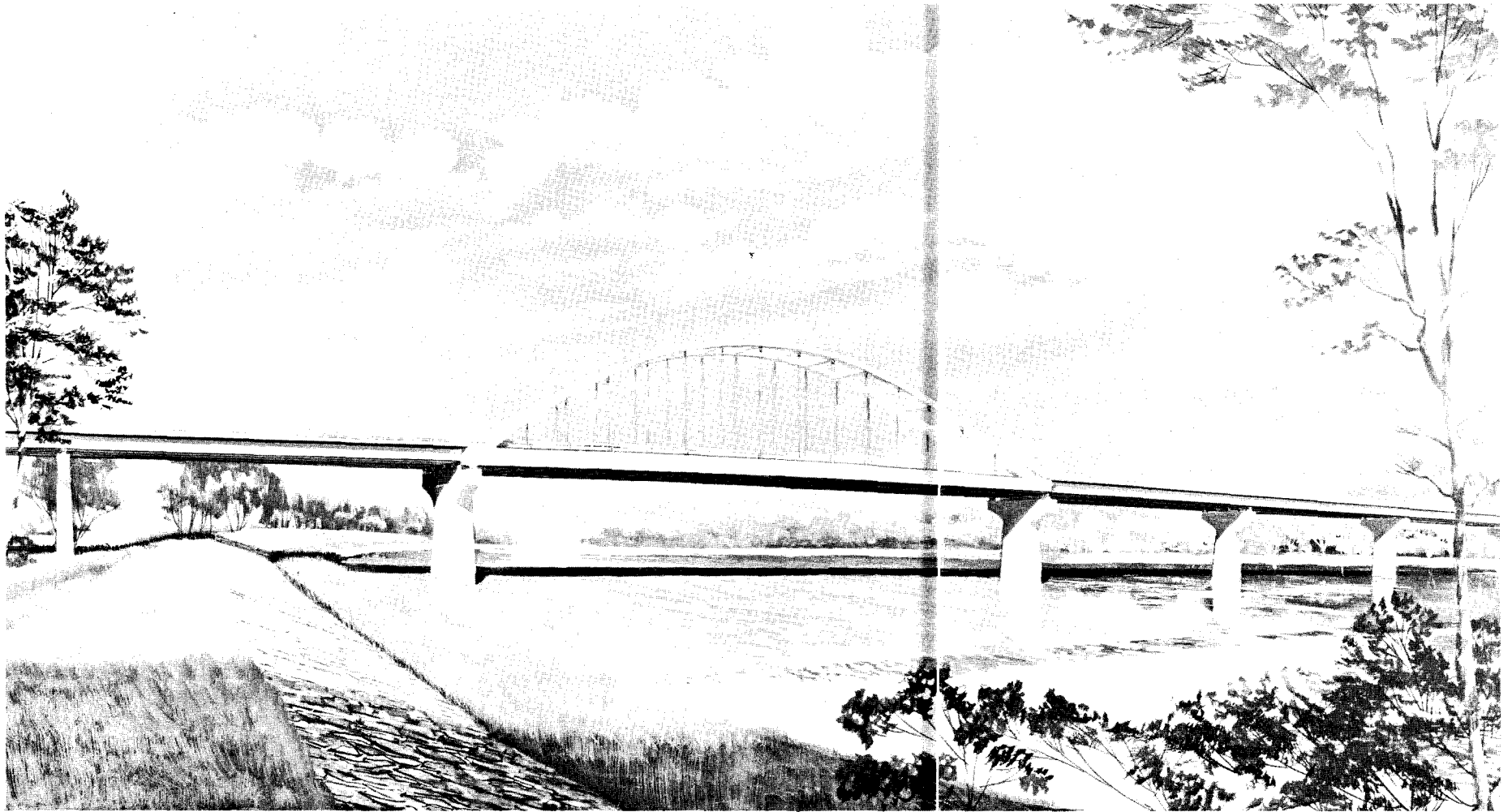


Exhibit I-6

BOX GIRDER TIED ARCH SPAN

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 a bridge 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 being considered 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 upon subsequent refinements in design. 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-6, should be given thorough consideration in future engineering studies for a highway crossing at Lansing, Iowa.

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

A plan, elevation and typical section for a new Black Hawk Bridge at the Alternate A location is shown in Exhibit I-7. 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.

The estimated construction cost of the bridge at this location is \$2,671,000. 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.

Prior to preparation of final design plans, additional engineering studies would be required. A complete subsurface investigation would be necessary to provide a firm basis for the determination of substructure type, substructure design and economical span lengths. Main river unit studies would include economic comparisons of several types of construction. Architectural studies will also be needed to develop pleasing transitions between differing structure types and desirable aesthetic treatments for the entire structure.

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 begins.

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.

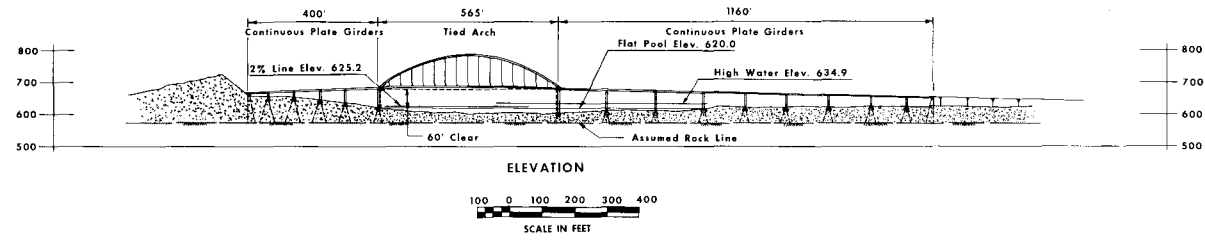
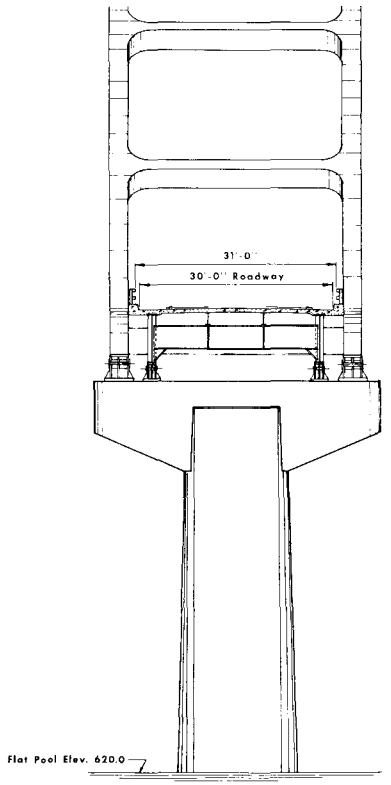
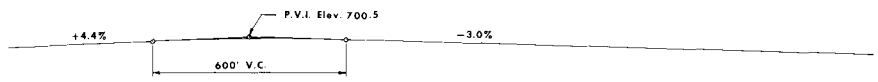
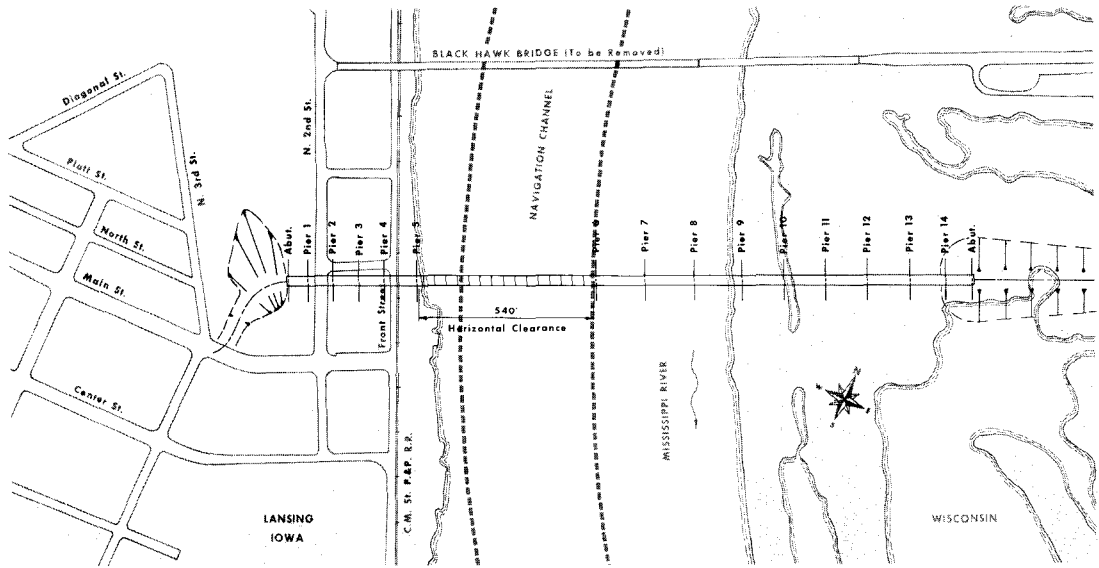


Exhibit I-7
ALTERNATE A LOCATION
GENERAL PLAN AND ELEVATION

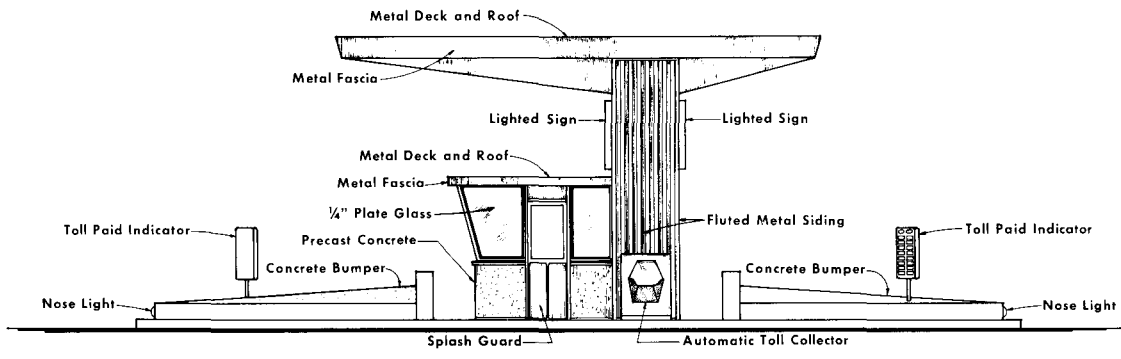
TABLE I-1
ESTIMATE OF BRIDGE CONSTRUCTION COST

ALTERNATE A

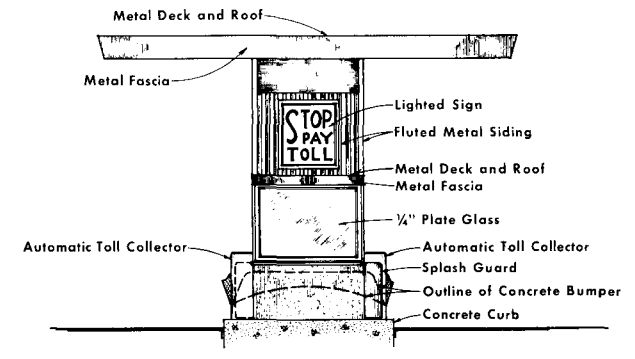
Continuous Girder Spans	400 ft.
Box Girder Tied Arch Span	565 ft.
Continuous Girder Spans	<u>1160 ft.</u>
	2125 ft.

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

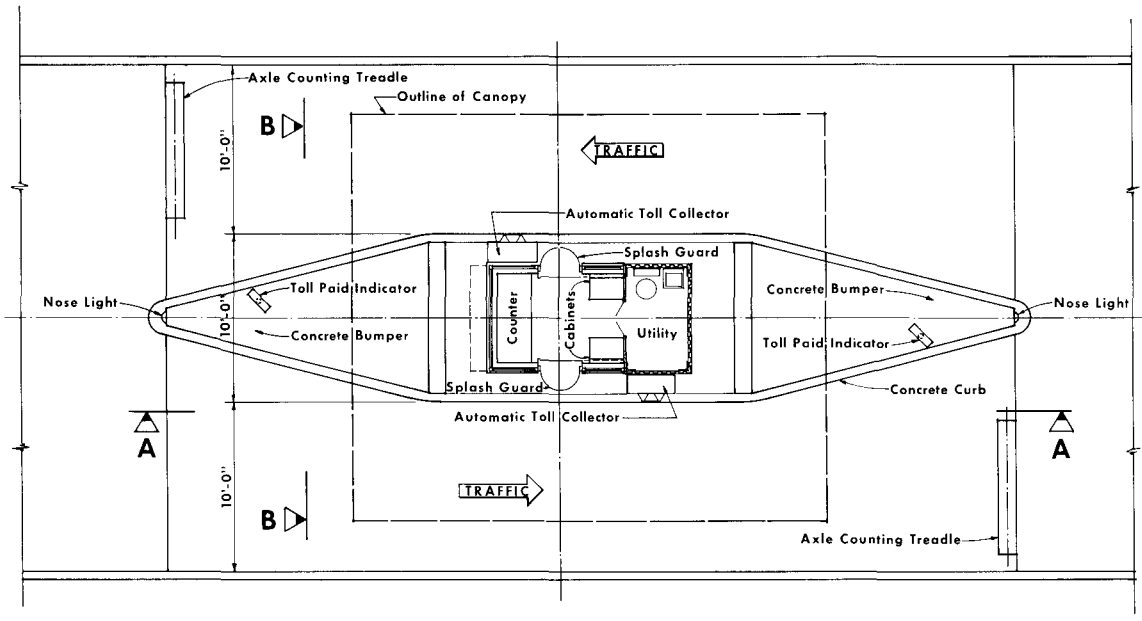
ITEM	QUANTITY	UNIT PRICE	COST
Superstructure:			
Bridge Railing	4,290 L.F.	\$12.00	\$ 51,500
Concrete	1,960 C.Y.	90.00	176,400
Reinforcing Steel	588,000 Lbs.	0.14	82,300
Tied Arch Steel A-36	1,168,000 Lbs.	0.34	397,500
Tied Arch Steel A-441	1,290,000 Lbs.	0.38	490,000
Girder Steel A-36	654,000 Lbs.	0.29	189,600
Girder Steel A-441	1,153,000 Lbs.	0.32	369,000
Cast Steel and Misc. Metal	33,000 Lbs.	0.70	23,100
Navigation Lighting	—	Lump Sum	<u>20,000</u>
	SUBTOTAL		\$1,799,400
Substructure:			
Concrete	5,680 C.Y.	\$65.00	\$ 369,200
Reinforcing Steel	642,000 Lbs.	0.14	89,900
Steel Bearing Piles (12BP53)	12,400 L.F.	8.00	99,200
Steel Pile Cofferdams	51,500 S.F.	5.00	257,500
Excavation	5,580 C.Y.	10.00	<u>55,800</u>
	SUBTOTAL		\$ 871,600
	TOTAL BRIDGE COST		<u><u>\$2,671,000</u></u>



ELEVATION A-A



ELEVATION B-B



PLAN



SCALE IN FEET

**Exhibit I-8
GENERAL PLAN AND ELEVATION
TOLL BOOTH**

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. The cost of the toll booth is included in Table I-2.

Total estimated project costs are shown in Table I-2.

TABLE I-2
SUMMARY OF ESTIMATED PROJECT COSTS
Lansing, Iowa Bridge

	ALTERNATE A LOCATION	
	Iowa	Wisconsin
Roadway	\$ 40,500	\$349,000
Structures	2,671,000	200,000
Retaining Walls	21,000	—
Removal of Existing Bridge	<u>200,000</u>	<u>—</u>
Subtotal	2,932,500	549,000
Toll Booth Complex	85,000	—
Engineering and Contingencies	<u>603,500</u>	<u>109,800</u>
Total Construction	3,621,000	658,800
Right-of-Way	94,100	—
Acquisitions and Contingencies	18,800	—
Administration and Legal	<u>7,300</u>	<u>—</u>
Total	3,741,200	658,800*
Total Project Cost		<u><u>\$4,400,000</u></u>

*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 a new Black Hawk Bridge is shown in Table I-3. Inasmuch as oper-

TABLE I-3

ESTIMATE OF FIRST YEAR EXPENSES
FOR
OPERATIONS AND MAINTENANCE

Lansing, Iowa Bridge

ADMINISTRATION

Toll Sergeant	\$ 6,600	
Travel and Car Expense	1,000	
Consulting Engineers	3,600	
Miscellaneous	<u>800</u>	
Total Administration		\$12,000

OPERATION

Toll Collectors	\$24,000	
Utilities	2,000	
Supplies and Postage	2,000	
Employee Benefits	<u>3,000</u>	
Total Operation		\$31,000

REPAIRS AND MAINTENANCE* 5,000

INSURANCE 6,000

MAINTENANCE RESERVE 6,000

Total Operation and Maintenance \$60,000

*By District maintenance forces on force account cost basis.

ation of the bridge by the Iowa State Highway Commission would 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 administrative 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 bridge would be owned by a public agency, it has been assumed that it will not be subject to property or other local taxes.

PART II

ESTIMATED PRELIMINARY TRAFFIC AND REVENUES AND PROJECT FEASIBILITY

INTRODUCTION

A general economic evaluation was made of the area served by the Black Hawk Bridge at Lansing, 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 patterns and traffic trend data for the Lansing 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 Lansing 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 upon 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 Black Hawk Bridge at Lansing

The present crossing at Lansing consists of a main span over the navigation channel on the Iowa side plus subsidiary spans and connecting roadway sections over lesser channels. Originally constructed in 1931, the main span was refurbished and resurfaced and the subsidiary spans and connecting roadways reconstructed in 1957 after the bridge had been closed for 12 years due to floating ice damage to the Winneshiek Slough Bridge.

The present crossing consists of two travel lanes within a 21-foot roadway section. The bridge and its approaches provide a reasonable level of traffic service although the roadway cross-section does not meet present criteria for a modern two-lane crossing. Several views of the bridge and approaches are depicted in Exhibit II-1.

Alternative River Crossings

The closest crossing north of the Black Hawk Bridge is 36 miles away at La Crosse, Wisconsin. The bridge connects the La Crosse area with La Crescent, Minnesota, and serves as a link in U.S. Route 14-16. It is a modern, two-lane toll-free crossing.

The Prairie du Chien bridge is located about 29 miles down river of Lansing. It also carries a U.S. Highway designation — U.S. Route 18. Additionally, it provides local traffic service between Marquette, Iowa, and Prairie du Chien, Wisconsin. The bridge is a marginal, two-lane structure with a poor approach on the Iowa side. It has a 19-foot curb-to-curb roadway section and truck use is limited due to posted weight restrictions. The facility is a toll-free crossing.

Proposed Lansing Crossing

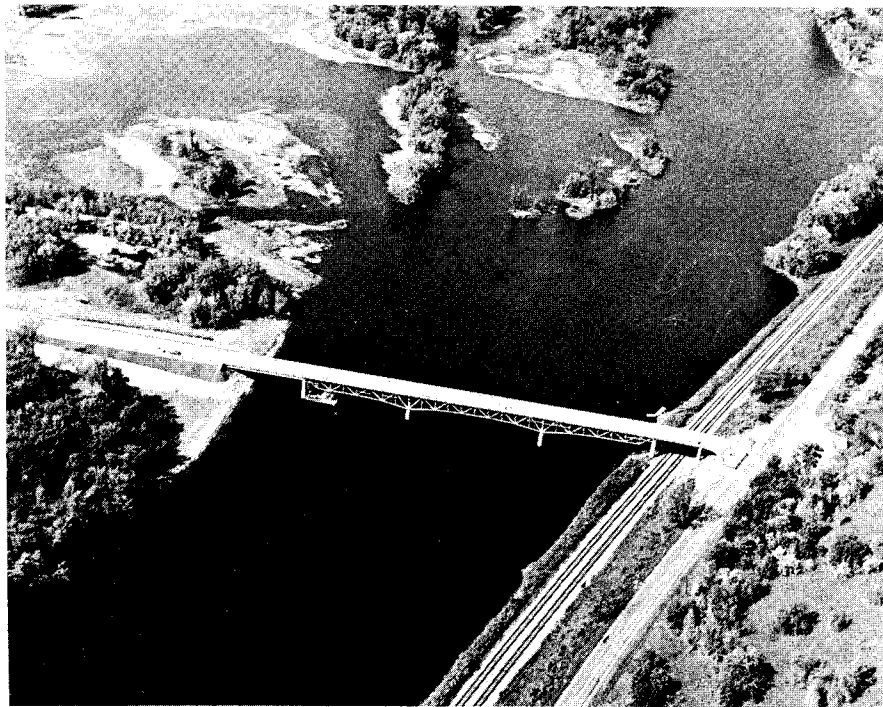
For purposes of this analysis, it has been assumed that the present Black Hawk Bridge would be replaced by a modern new structure on approximately the same alignment, as shown in Exhibit II-2. The proposed two-lane facility would be constructed to high design standards with approach road grades, lane widths and radii designed to provide a high level of traffic service for all vehicle types. The project would operate as a toll crossing.

Previous Studies

All available pertinent data and reports relating to this project were assembled and reviewed. This material included information obtained from the Iowa, Wisconsin and Minnesota Highway Departments, other state agencies and numerous county, municipal and other contacts.



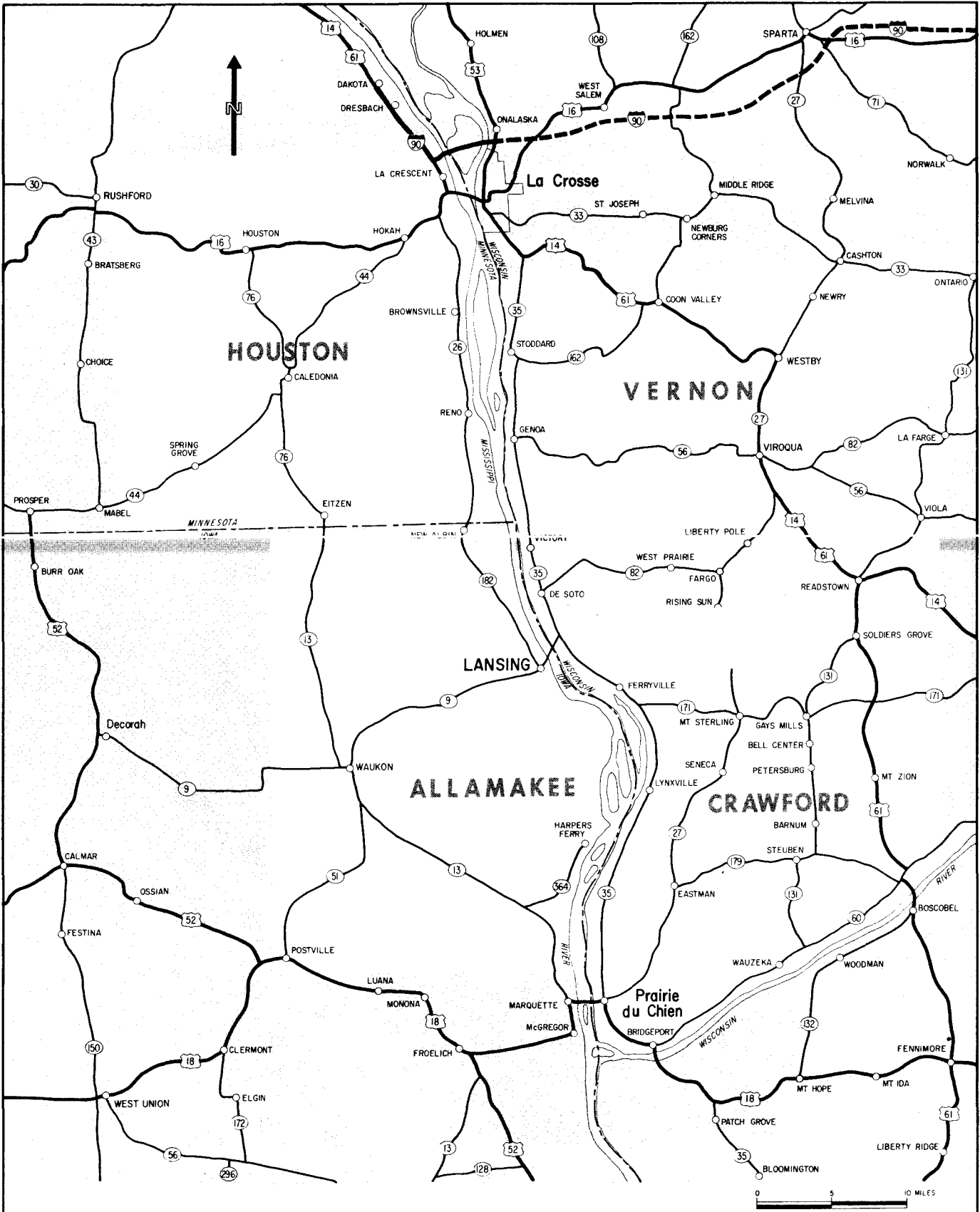
IOWA SIDE OR WEST CHANNEL CROSSING



WISCONSIN SIDE OR EAST CHANNEL CROSSING

PRESENT BLACK HAWK BRIDGE AT LANSING

PHOTOGRAPHS COURTESY OF LA CROSSE TRIBUNE, LA CROSSE, WISCONSIN



LOCATION MAP

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 and motor fuel consumption, both excellent indicators of travel growth, were analyzed.

Study Area Characteristics

Lansing serves as a small retail center for several of the river communities in Iowa and Wisconsin. More extensive consumer and shopping goods facilities are located in Waukon. Area residents making larger purchases often travel to either La Crosse or Prairie du Chien where a greater selection of competitive goods is available.

The area served by the Lansing bridge is primarily agricultural in nature. Presently, there is a button factory in Lansing which employs about 150 persons; there is little other industry in Lansing or the numerous other small communities making up the primary bridge influence area.

Population Trends

In 1960, Lansing had a population of 1,325. While this was considerably higher than several other communities in the immediate vicinity of the Lansing Bridge, it was considerably less than the population centers of La Crosse and Prairie du Chien, north and south of the Lansing bridge corridor, respectively. As shown in Table II-1, La Crosse had a 1960 population of 47,575 compared to 5,649 in Prairie du Chien.

In Iowa, Waukon had a 1960 population of 3,639. The communities of New Albin and Harpers Ferry were much smaller with populations of 643 and 211, respectively. Across the Mississippi River, Viroqua is the largest population

TABLE II-1
POPULATION TRENDS

<u>AREA</u>	<u>1950</u>	<u>AVERAGE ANNUAL PER CENT CHANGE</u>	<u>1960</u>	<u>AVERAGE ANNUAL PER CENT CHANGE</u>	<u>1966</u>
Municipalities:					
De Soto	367	- 0.3	357	---	N.A.
Ferryville	216	- 1.1	194	---	N.A.
Harpers Ferry	252	- 1.8	211	---	N.A.
La Crosse	47,535	---	47,575	1.7	52,800
Lansing	1,536	- 1.5	1,325	---	N.A.
New Albin	568	1.2	643	---	N.A.
Prairie du Chien	5,392	0.5	5,649	---	N.A.
Viroqua	3,795	0.3	3,926	---	N.A.
Waukon	3,158	1.4	3,639	---	N.A.
Counties:					
Allamakee	16,351	- 0.2	15,982	---	16,000
Crawford	17,652	- 0.8	16,351	- 0.7	15,600
Houston	14,435	1.4	16,588	1.6	18,200
Vernon	27,906	- 0.8	25,663	- 0.9	24,200

Four-County Total	76,344	- 0.2	74,584	- 0.1	74,000
States:					
Iowa	2,621,073	0.5	2,757,537	0.3	2,813,600
Minnesota	2,982,483	1.4	3,413,864	1.0	3,615,800
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."*

center in the immediate travel corridor with 3,926 persons recorded in 1960. Several smaller communities such as De Soto and Ferryville are also excellently served by the Lansing bridge but have considerably smaller populations — 357 and 194, respectively, at 1960 levels.

Between 1950 and 1960, Waukon and New Albin recorded population growths while the number of people residing in Lansing, Ferryville and De Soto decreased slightly.

Exhibit II-2 depicts the four-county study area which is most advantageously served by the Lansing bridge. The counties include Allamakee in Iowa, Houston in Minnesota and Crawford and Vernon in Wisconsin. Between 1950 and 1960, the combined population of the four-county study area decreased slightly from 76,344 to 74,584. Over the past six years, from 1960 to 1966, a continued decline in population occurred amounting to approximately 0.1 per cent per year. The 1966 population of the four-county study area was 74,000. Between 1960 and 1966, only Houston County recorded a population growth with Allamakee County remaining stable and slight decreases occurring in Crawford and Vernon Counties.

The population trends in the four-county study area, over the past six years, compare with an average annual growth of 0.3 per cent recorded state-wide in Iowa and average annual increases of 1.0 per cent in Minnesota and 1.2 per cent in Wisconsin. The average annual growth recorded nationwide over the same period was 1.6 per cent.

Trends in Retail Sales

Retail sales in the four-county study area recorded a good increase between 1961 and 1966 after a nominal growth occurred during the previous five years. In 1956, the four-county study area recorded retail sales of \$63,454,000. This increased to \$67,926,000 in 1961 and to \$86,069,000 in 1966. This represented average annual growths of 1.3 and 4.8 per cent during the two, five-year periods, respectively.

While the average annual growth recorded over the past five years of 4.8 per cent represented a good increase, it was somewhat below the statewide average annual growth during this same period of 5.0 per cent and the 6.1 and 5.9 per cent increases realized in Wisconsin and Minnesota, respectively. During the same five-year period, the national growth in retail sales averaged 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 \$3,951. By 1966, this had increased to \$6,011 representing an average annual growth of 2.0 per cent between 1956 and 1961 and 6.6 per cent between 1961 and 1966. The excellent growth recorded over the last five years was somewhat below that realized statewide (7.2 per cent) but above that recorded in Minnesota (6.4 per cent), Wisconsin (5.2 per cent) and for the nation (5.1 per cent). In terms of relative levels, the four-county study area average income in 1966 of \$6,011 was considerably below the \$8,416 representing the statewide average and the averages recorded in the adjacent states and for the nation.

Trends in Motor Vehicle Registrations

Motor vehicle registrations in the four-county study area in 1956 amounted to 32,056. By 1966, this had increased to 39,977. This represented an average annual growth of 2.2 per cent, which was below the increases recorded statewide, in adjacent states and for the nation.

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 1960; 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 Minnesota and Wisconsin and also for the nation.

Future Growth

Although the population of the four-county study area declined over the past 16 years, the rate of decrease has slowed somewhat during the last five years. However, the population projections shown in Table II-2 forecast a continuation of the population decline through 1980 and 1990. Population

TABLE II-2
POPULATION PROJECTIONS

AREA	ACTUAL 1960	AVERAGE ANNUAL PER CENT CHANGE	ESTIMATED	
			1980	1990
Municipalities:				
Harpers Ferry	211	- 3.0	116	
Lansing	1,325	- 1.4	994	
New Albin	643	1.0	779	
Waukon	3,639	1.2	4,610	
Counties:				
Allamakee	15,982	- 0.2	15,210	
Crawford	16,351	- 0.7		13,161
Vernon	25,663	- 1.5		16,304
States:				
Iowa	2,757,537	0.8	3,192,000	
Wisconsin	3,951,777	1.4		5,916,775

Source: Iowa State Highway Commission and Wisconsin Department of Transportation.

losses are also estimated to continue for the municipalities of Harpers Ferry and Lansing. Moderate growths are forecast for New Albin and Waukon. While population in the study area may continue to decline, it is anticipated that the recent growth trends in retail sales, buying income, motor vehicle registrations and motor fuel consumption will continue into the foreseeable future.

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 past 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.

Statewide, recent projections indicate that the population of Iowa will grow from 2,757,537 in 1960 to 3,192,000 in 1980 and to 3,363,000 in 1985. Even higher growths in motor vehicle registrations and vehicle miles of travel is forecast. Motor vehicle registrations are expected to increase from 1,490,000 in 1965 to 1,816,000 in 1975 and to 2,100,000 in 1985. During this same period, vehicle miles of travel are expected to increase over 50 per cent from 12,700,000,000 miles in 1965 to 19,300,000,000 in 1985.

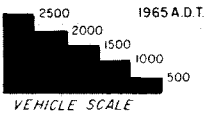
TRAFFIC STUDIES

Preliminary studies were made to evaluate the traffic potential of a proposed toll facility located in the corridor of the present Black Hawk Bridge. 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.

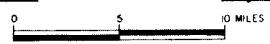
Present Highway System

There are no U. S. Route designated highways in the immediate east-west travel corridor of Lansing. As depicted in Exhibit II-2, Iowa Route 9 follows a generally east-west alignment linking Lansing with Waukon, where it joins Iowa Route 13, a north-south route. Iowa communities, along the river's edge north of Lansing, are served by Iowa Route 182 which connects with Iowa Route 9 at Lansing. In Wisconsin, the bridge connects with Wisconsin Route 35, which follows a north-south orientation generally parallel to and close to the river between Prairie du Chien and La Crosse. There are several secondary east-west state and county highways which serve as "feeder routes" to Wisconsin Route 35. All of these routes are two-lane facilities in generally fair to good condition.

In the Lansing bridge area, Iowa Route 9 carried average daily volumes ranging from less than 1,000 vehicles in rural sections to over 1,500 vehicles per day in developed areas such as Waukon and De Soto. The east-west oriented state and county routes in Wisconsin all carry volumes considerably below 1,000 vehicles per day. As depicted in Exhibit II-3, the major north-south highway in the Lansing area is Wisconsin Route 35 between La Crosse and Prairie du Chien with relatively little traffic using Iowa Route 182. The importance, in terms of traffic volumes, of larger urban areas such as La Crosse and Prairie du Chien, in relation to the smaller communities in the Lansing bridge corridor can readily be seen from Exhibit II-3. Volumes several times those measured in the Lansing bridge corridor are evident to the north in the vicinity of La Crosse and to a lesser extent, to the south near Prairie du Chien; in both instances, the U. S. designated routes serve as primary traffic arterites.



TRAFFIC FLOW MAP
1965 AVERAGE DAILY TRAFFIC



Annual Traffic Trends

Annual traffic trends on the Black Hawk Bridge at Lansing and the nearest competitive crossings to the north and south — the La Crosse Bridge and the Prairie du Chien bridge, were assembled and reviewed. The trends are presented in Table II-3.

TABLE II-3
ANNUAL TRAFFIC TRENDS
Trans-River Crossings

<u>YEAR</u>	<u>LA CROSSE BRIDGE</u>	<u>BLACK HAWK (LANSING) BRIDGE</u>	<u>PRAIRIE DU CHIEN BRIDGE</u>
		(Average Daily Traffic)	
1957	9,320	460	2,370
1958	9,450	460	2,400
1959	11,400	320	2,590
1960	10,510	320	3,210
1961	10,090	400	3,250
1962	9,720	730	2,740
1963	9,890	850	3,130
1964	11,280	680	2,980
1965	11,000	910	2,840
1966	10,910	1,190	3,270
1967	11,200 ⁽¹⁾	1,080	3,390
AVERAGE ANNUAL GROWTHS			
1957-1967	1.9	8.9	3.6
1962-1967	2.9	8.1	4.3

⁽¹⁾ Represents combined traffic on La Crosse (U. S. Route 14) Bridge and the I-90 Bridge which opened to traffic on October, 1967.

Source: Iowa State Highway Commission; Wisconsin Department of Transportation.

Black Hawk Bridge — Use of the Lansing bridge has increased from an average of 460 vehicles per day in 1957 to 1,080 in 1967. This represents an excellent average annual growth of 8.9 per cent. Over the past five years, use of the bridge has increased an average of 8.1 per cent per year.

La Crosse Bridge — The La Crosse Bridge carries substantially higher volumes than the Lansing facility. An average of 9,320 vehicles per day used the La Crosse Bridge in 1957. By 1966, this increased to 10,910 vehicles daily. In October 1967, the Interstate Route 90 crossing, just north of the La Crosse Bridge opened to traffic; combined I-90 and La Crosse Bridge usage in 1967 was 11,200 vehicles per day. Over the past ten years, traffic on the La Crosse Bridge increased an average of 1.9 per cent per year. The average annual growth over the last five years was 2.9 per cent.

Prairie du Chien Bridge — Good traffic growths have been realized on the Prairie du Chien bridge over the past decade. In 1957, an average of 2,370 vehicles per day used the facility. By 1967, this increased to 3,390 vehicles daily, representing an average annual growth of 3.6 per cent. Over the past five years, an average annual increase of 4.3 per cent occurred.

Monthly Traffic Variations

Monthly variations in traffic on U. S. Route 52 in Iowa, and Wisconsin Route 35 in the vicinity of the Lansing bridge indicate that the months of July and August represent peak travel periods with volumes ranging from 18 to 40 per cent above the average month. On both highways, January was the low travel month with usage dropping as low as 38 per cent of the average month of the year.

Origin and Destination Studies

In April, 1968, the Planning Division of the Iowa State Highway Commission conducted field surveys to obtain travel patterns and count data for the Black Hawk Bridge at Lansing. The surveys were conducted during a 15-hour

period from 6:00 a.m. to 9:00 p.m. Motorists in both directions of travel were interviewed with the interview sample representing a 100 per cent of total passing traffic. The interviews were obtained on a typical weekday. Motorists were asked their trip purpose and origin and destination. In addition, vehicle type and hour of interview were recorded. A total of 655 interviews were obtained during the survey period.

Vehicle Classification Counts

A vehicle classification count was conducted during the interview hours and extended to include a continuous 24-hour period. A summary of the classification counts is presented in Table II-4.

TABLE II-4
VEHICLE CLASSIFICATION COUNT
Black Hawk Bridge
April, 1968

<u>VEHICLE DESCRIPTION</u>	<u>NUMBER OF VEHICLES</u>
Passenger Car	586
Passenger Car/Trailer	2
Pick Up or Panel	78
Pick Up or Panel/Trailer	4
Single Unit Truck	38
Single Unit Truck/Trailer	4
Truck Tractor Semi Trailer	21
Bus Local	4
Bus Transit	2
TOTAL	739

Source: Iowa State Highway Commission.

The number of passenger cars using the bridge far overshadowed all other vehicle types accounting for 586 of the 739 vehicles classified. A total of 78 two-axle pickup or panel trucks were recorded along with 38 single unit trucks and 21, semi-trailer vehicles. The remaining vehicle types were considerably smaller in magnitude.

Travel Desires

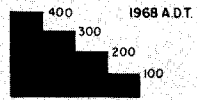
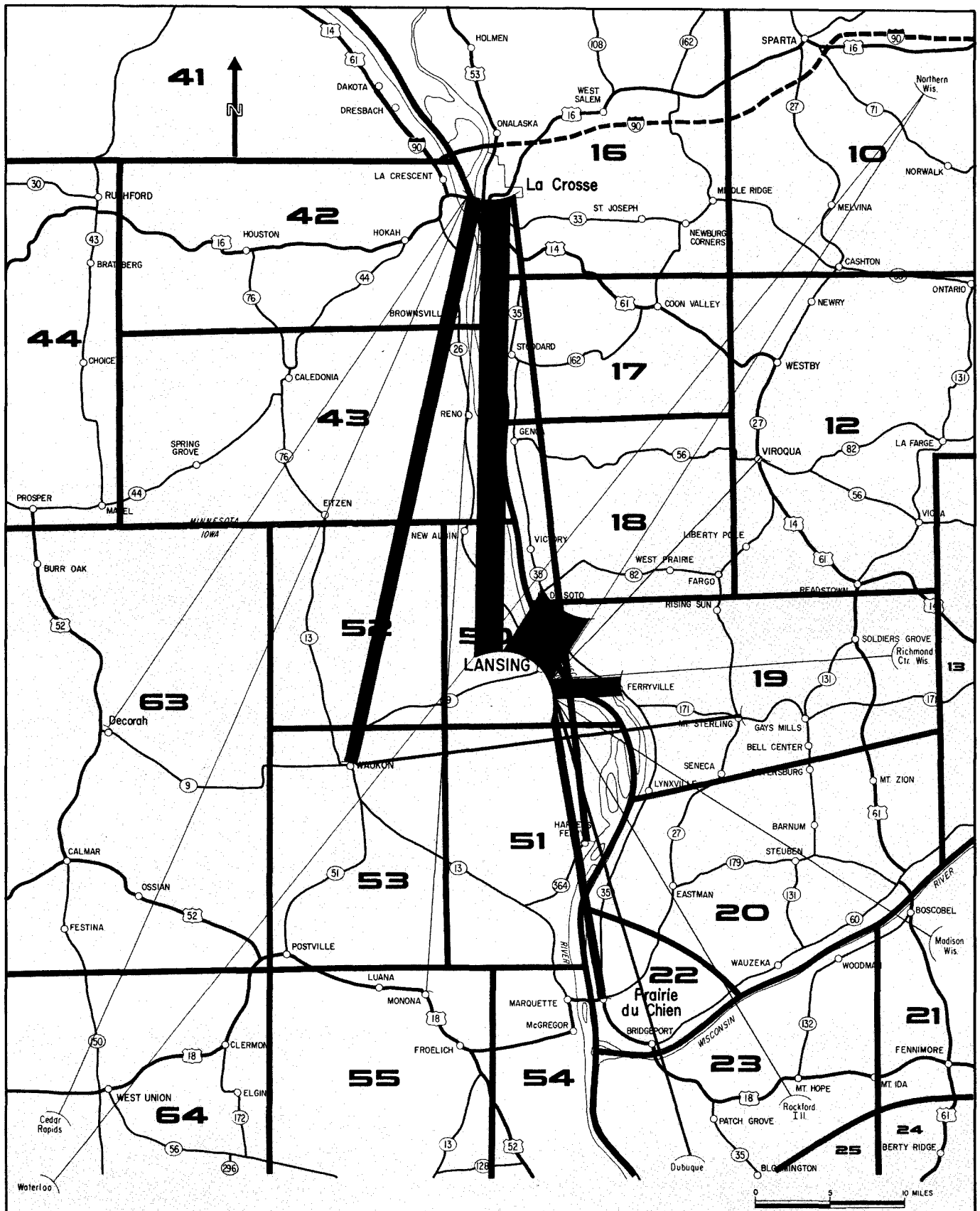
The origin and destination data collected during the field surveys were coded to the geographic traffic zone pattern, partially shown in Exhibit II-4. The resulting zone-to-zone traffic movements were then expanded to represent an average day in 1968 and the travel desire lines, also shown in Exhibit II-4, prepared. The width of the travel bands shown in the illustration are proportional to the number of trips moving between each zone pair.

A high percentage of trips found using the Black Hawk Bridge during the survey period were short distance or local trips. The major movement was 364 daily vehicles traveling between Lansing and the De Soto-Genoa-Victory area. The next most important movements were between Lansing and La Crosse — 201 vehicles per day and between Lansing and the Ferryville-Mount Sterling-Seneca area — 131 daily trips.

Lansing was the major Iowa trip terminus for bridge users followed by Waukon. On the east bank of the Mississippi, the De Soto-Genoa-Victory area, the Ferryville-Mount Sterling-Seneca area and La Crosse were all important trip generators.

Typical Time and Distance Relationships

Representative time and distance relationships for several movements which could use either the proposed Lansing Bridge or the closest crossing to the north or south are shown in Table II-5. The distances indicated were developed from the reconnaissance studies conducted on all pertinent highways serving the alternate crossings. The driving times represent average speeds



VEHICLE SCALE
NOTE: LESS THAN 5 VEHICLES
NOT SHOWN

TRAVEL DESIRES
BLACK HAWK BRIDGE
1968 AVERAGE DAILY TRAFFIC

Wilbur Smith and Associates

Exhibit II-4

Table II-5

TYPICAL TIME AND DISTANCE RELATIONSHIPS

<u>BETWEEN</u>	<u>VIA</u>	<u>DISTANCE</u> <u>(Miles)</u>	<u>TIME</u> <u>(Min.)</u>	<u>AVERAGE</u> <u>M.P.H.</u>	<u>SAVINGS VIA</u> <u>PROPOSED BRIDGE</u>	
					<u>(Miles)</u>	<u>(Min.)</u>
Lansing and Prairie du Chien	Proposed Bridge	32	39	49	- 3	5
	Prairie du Chien Bridge	29	44	40		
Lansing and La Crosse	Proposed Bridge	31	44	42	7	4
	La Crosse Bridge	38	48	48		
De Soto and La Crescent	Proposed Bridge	40	50	48	- 11	- 8
	La Crosse Bridge	29	42	41		
La Crosse and Waukon	Proposed Bridge	48	68	42	1	- 7
	La Crosse Bridge	49	61	48		
La Crosse and McGregor	Proposed Bridge	60	88	41	1	- 7
	Prairie du Chien Bridge	61	81	45		

rather than the fastest driving time that could be achieved between the various trip termini indicated.

Between Lansing and Prairie du Chien use of the proposed bridge would be approximately three miles longer but five minutes shorter than a routing following the Prairie du Chien bridge. On a trip between Lansing and La Crosse, the proposed crossing would be seven miles and four minutes shorter than a trip using the present La Crosse Bridge. Between De Soto and La Crescent, the new bridge would be longer in both miles and minutes, than use of the La Crosse Bridge. Trips between La Crosse and Waukon and between La Crosse and McGregor would find the proposed bridge one mile shorter but seven minutes longer than the best alternate bridge.

Planned Highway Improvements

Wisconsin's current improvement program includes resurfacing of Wisconsin Route 35, for a distance of approximately 21.3 miles, from Lynxville to Stoddard. Additional resurfacing projects include U. S. Route 14 from Readstown to the east county line of Crawford County and U. S. Route 61 from Mount Zion to Soldiers Grove, a distance of 9.3 miles.

Programmed highway improvements in Allamakee County, Iowa, include reconstruction and paving on Iowa Route 9, from the western boundary of Allamakee County to relocated Iowa Route 13; Iowa Route 9, from relocated Iowa Route 9 to Waukon; and Iowa Route 51, from the north city limits of Postville to relocated Iowa Route 9.

ESTIMATED TRAFFIC AND REVENUES

Estimated usage and revenues for the proposed Lansing Bridge are based upon the number of motorists now using the present Black Hawk Bridge who would continue to make trans-river trips via an improved facility under toll conditions. It is not expected that the proposed Lansing Bridge would attract motorists from the nearest river bridges to the north and south i.e., the La Crosse Bridge and the Prairie du Chien bridge since the present Black Hawk Bridge provides a reasonable level of service for motorists now moving in the Lansing travel corridor.

Basic Assumptions

Estimates of traffic and revenues for the proposed Lansing 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 La Crosse and Prairie du Chien.
4. The present Black Hawk Bridge 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 would 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. Initially, only one attendant would be necessary to collect tolls from both travel directions. However, provision should be made in the initial design and construction of the booth to ultimately provide for two toll attendants, one collecting from each direction of travel.

Recommended Toll Schedule

Several toll rates were analyzed to determine the best toll structure for the proposed Lansing Bridge. These studies indicated that the preliminary toll schedule, shown in Table II-6, 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.

TABLE II-6
RECOMMENDED TOLL SCHEDULE

<u>VEHICLE TOLL CLASS</u>	<u>DESCRIPTION</u>	<u>TOLL</u>
1	Two-Axle vehicles	\$0.60
2	Two-Axle vehicles (ticket)	0.30
3	Three-Axle vehicles and vehicle combinations	0.90
4	Four-Axle vehicles and vehicle combinations	1.20
5	Five-Axle vehicles and vehicle combinations	1.50
	Each additional axle	0.30

Under the recommended toll schedule, a motorist driving a two-axle vehicle would pay a \$0.60 cash toll for each crossing of the bridge. In addition, a commuter or ticket toll would be available for two-axle vehicle patrons who use the bridge frequently. The commuter toll could take the form of a ten-trip ticket book which would cost \$3.00 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 attendant. More detailed studies might show that a larger ticket book would be more practical, say a book containing 20 tickets for \$6.00 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 \$.90, a four-axle vehicle — \$1.20, and a five-axle vehicle — \$1.50.

The recommended toll schedule is based upon a per axle cash toll of \$0.30 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, 1968, Traffic Assignments

The number of motorists that would use the proposed Lansing Bridge at 1968, base year, traffic levels was estimated based upon relative trip costs 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 costs for use of the new facility 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 costs 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 bridge crossings. In addition to mileage and time costs, tolls were also added, to arrive at total trip cost.

The travel patterns determined from the origin and destination studies conducted by the Iowa State Highway Commission were used to determine a trans-river crossing redistribution assuming the proposed Lansing Bridge were constructed. In addition to some diversion of motorists from the present free Black Hawk Bridge to the La Crosse and Prairie du Chien alternate crossings, it is also anticipated that imposition of a toll at Lansing 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 recreational, etc.

The estimated redistribution of present Black Hawk Bridge trips to the closest alternate river crossings to the north and south and the magnitude of the toll imposition travel impact is shown in Table II-7. Of the 1,116 vehicles using

TABLE II-7
ASSIGNMENT DISTRIBUTION OF BASE YEAR TRAFFIC — 1968

	<u>AVERAGE DAILY TRAFFIC</u>
1. Present traffic — Black Hawk Bridge	1,116
2. Diverted to La Crosse Bridge	198
3. Diverted to Prairie du Chien bridge	62
4. Traffic loss due to toll impact	152
5. Total assignment to proposed Lansing Bridge	704

the present Black Hawk Bridge on an average day in 1968, it is estimated that 198 vehicles would divert to the present La Crosse Bridge and 62 motorists to the Prairie du Chien bridge. In addition, an estimated 152 fewer trans-river trips would occur due to reduced trip production or car-pooling upon opening of the new toll facility. The total assigned traffic for the proposed Lansing Bridge, at 1968 levels, is 704 vehicles per day.

As shown in Table II-8, an estimated 352 two-axle vehicles would pay the two-axle cash toll rate and 299, two-axle vehicles the proposed ticket or commutation rate. An additional 31, three-axle vehicles or vehicle combinations would use the facility along with 17, four-axle vehicles and 5, five-axle vehicles.

TABLE II-8
BASE YEAR (1968) TRAFFIC ASSIGNMENT

<u>VEHICLE TOLL CLASS</u>	DESCRIPTION	<u>AVERAGE DAILY TRAFFIC</u>
1	Two-Axle vehicles	352
2	Two-Axle vehicles (Ticket)	299
3	Three-Axle vehicles and vehicle combinations	31
4	Four-Axle vehicles and vehicle combinations	17
5	Five-Axle vehicles and vehicle combinations	5
TOTAL		<u>704</u>

Estimated Annual Traffic and Toll Revenues

Annual growth in usage of the proposed Lansing Bridge was estimated based upon normal increases in trans-river traffic which might be anticipated over the next several years in the bridge travel corridor. While the new facility would be constructed to a modern, two-lane standard, it is not anticipated that it would create any significant induced usage to the facility. Induced or

generated and development traffic would be additional trips made by motorists now moving in the bridge travel corridor due solely to the convenience and attractiveness of the facility while development growth would be growth in residential, commercial and industrial activity resulting from the location and access advantages afforded by and directly attributed to the proposed bridge. The present Black Hawk Bridge at Lansing, while having considerably narrower lane widths than the proposed bridge, does provide a reasonable level of traffic service. Truck movements are not restricted by any weight limitations. Since the new facility would be constructed in the same approximate location as the existing bridge, it is not anticipated that any significant generated or development traffic would accrue to the new crossing.

Normal corridor growth for the proposed Lansing Bridge was based upon trends in use of the present Black Hawk Bridge, and the competitive river crossings immediately to the north and south. In addition, trends and projected increases 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 Lansing Bridge will increase an average of five per cent per year between 1968 and 1975, decreasing to four per cent annually between 1975 and 1980. An annual growth of three 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.

During the first full year of operation, 1971, it is anticipated that an estimated 820 vehicles per day will use the proposed Lansing Bridge. As shown in Table II-9, this will produce an estimated \$151,000 in gross toll revenues. By 1985, the fifteenth full year of operation, an estimated 1,400 vehicles per day are projected on the Lansing Bridge, producing estimated revenues of \$258,000. Average annual revenues over the first five years of operation are estimated at \$167,000 increasing to an average of \$230,000 over the 28-year earning period of an assumed 30-year bond issue.

TABLE II-9
ESTIMATED ANNUAL TRAFFIC AND REVENUES

<u>YEAR</u>	<u>AVERAGE DAILY TRAFFIC</u>	<u>GROSS REVENUES</u>
1971	820	\$151,000
1972	860	158,000
1973	900	166,000
1974	940	175,000
1975	990	183,000
1976	1,030	191,000
1977	1,070	198,000
1978	1,120	206,000
1979	1,160	214,000
1980	1,210	223,000
1981	1,240	230,000
1982	1,280	237,000
1983	1,320	244,000
1984	1,360	251,000
1985	1,400	258,000
Next 13 Years Annually	1,400	\$258,000
 <u>AVERAGE ANNUAL REVENUES</u>		
First Five Years		\$167,000
First Ten Years		\$187,000
Twenty-eight Years		\$230,000

The estimates indicated are preliminary and are intended to show the trend over a period of years rather than the exact earnings for 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 effecting bridge usage at that time.

PRELIMINARY PROJECT FEASIBILITY

Net toll revenues derived from the proposed Lansing 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 made by relating estimated net revenues to the maximum interest and level debt service requirements of a bond issue sufficient to meet the estimated capital costs of the proposed bridge.

Estimated Annual Net Revenues

Estimated annual net revenues for the proposed Lansing Bridge are presented in Table II-10. In 1971, the first year of operation, net revenues of \$91,000 are estimated, increasing to \$156,000 in 1985, the fifteenth year of operation.

Average annual net revenues over the first five years of operation are estimated at \$101,000, increasing to \$113,000 over the first ten years. During the 28-year earning period, net revenues would average \$139,000 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-10
ESTIMATED ANNUAL NET REVENUES

<u>YEAR</u>	<u>GROSS TOLL REVENUES</u>	<u>MAINTENANCE AND OPERATION COSTS⁽¹⁾</u>	<u>NET REVENUES</u>
1971	\$151,000	\$ 60,000	\$ 91,000
1972	158,000	63,000	95,000
1973	166,000	66,000	100,000
1974	175,000	69,000	106,000
1975	183,000	72,000	111,000
1976	191,000	75,000	116,000
1977	198,000	78,000	120,000
1978	206,000	81,000	125,000
1979	214,000	84,000	130,000
1980	223,000	87,000	136,000
1981	230,000	90,000	140,000
1982	237,000	93,000	144,000
1983	244,000	96,000	148,000
1984	251,000	99,000	152,000
1985	258,000	102,000	156,000
Next 13 Years Annually	\$258,000	\$102,000	\$156,000

AVERAGE ANNUAL REVENUES

First Five Years	\$101,000
First Ten Years	\$113,000
Twenty-Eight Years	\$139,000

⁽¹⁾ Estimated by Howard, Needles, Tammen & Bergendoff.

The feasibility computations shown in Table II-11 were developed assuming a bond interest rate of 5.5 percent and a bond term of 30 years. Based on projects costs developed by Howard, Needles, Tammen & Bergendoff, it is estimated that a bond issue of \$5,280,000 would be required for the proposed Lansing Bridge project. The escalation from project costs to bond issue include such financing items as bond discount, legal and financial fees, capitalized

**TABLE II-11
PRELIMINARY PROJECT FEASIBILITY**

<u>ITEM</u>	
Bond Term	30 Years
Bond Earning Period	28 Years
Bond Interest Rate	5.5 Per Cent
Preliminary Project Costs ⁽¹⁾	\$4,400,000
Estimated Bond Issue ⁽²⁾	5,280,000
First Year Interest	290,000
Level Debt Service:	
28 Years	374,000
Estimated First Year Net Revenues	91,000
Estimated Average Annual Net Revenues:	
28 Years	139,000

COVERAGES

First Year Interest by:	
First Year Net Revenues	0.31
Level Debt Service By:	
Average Annual Net Revenues	0.37

⁽¹⁾ Estimated by Howard, Needles, Tammen & Bergendoff.

⁽²⁾ Assumes ratio of project cost to bond issue of 1.0 to 1.2.

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 costs to determine a preliminary bond issue.

As shown in Table II-11, first year net revenues for the proposed Lansing Bridge would cover first year or maximum interest 0.31 times. Average annual net revenues would cover 28-year level debt service 0.37 times. Both coverage values are considerably below the levels normally assumed as indicative of financial feasibility.

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. The coverages indicate that subsidies will be required to finance the proposed facility.

Relationship Between Level Debt Service and Net Revenues

Some indication of the relative amount of subsidy necessary to supplement net revenues, in order to meet level debt service is shown in Table II-12. The computations were developed assuming a 30-year bond term and an earning period of 28 years.

Assuming the bonds carried an interest rate of 5.5 per cent, the proposed Lansing Bridge project would require a total subsidy of \$6,574,000 to meet level debt service requirements over the bond term.

TABLE II-12

RELATIONSHIP BETWEEN LEVEL DEBT SERVICE AND NET REVENUES

Assuming 30-Year Bond Issue

<u>YEAR</u>	<u>NET REVENUES</u>	<u>LEVEL DEBT SERVICE</u>	<u>NET REVENUES TO LEVEL DEBT SERVICE DEFICIT</u>
1971	\$ 91,000	\$374,000	\$238,000
1972	95,000	374,000	279,000
1973	100,000	374,000	274,000
1974	106,000	374,000	268,000
1975	111,000	374,000	263,000
1976	116,000	374,000	258,000
1977	120,000	374,000	254,000
1978	125,000	374,000	249,000
1979	130,000	374,000	244,000
1980	136,000	374,000	238,000
1981	140,000	374,000	234,000
1982	144,000	374,000	230,000
1983	148,000	374,000	226,000
1984	152,000	374,000	222,000
1985	156,000	374,000	218,000
1986	156,000	374,000	218,000
1987	156,000	374,000	218,000
1988	156,000	374,000	218,000
1989	156,000	374,000	218,000
1990	156,000	374,000	218,000
1991	156,000	374,000	218,000
1992	156,000	374,000	218,000
1993	156,000	374,000	218,000
1994	156,000	374,000	218,000
1995	156,000	374,000	218,000
1996	156,000	374,000	218,000
1997	156,000	374,000	218,000
1998	156,000	374,000	218,000
TOTAL			<u>\$6,574,000</u>

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 RE-CONSTRUCT, 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 bridge 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 interstate 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 depositories 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 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 duties 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 indemnity 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, covenants, 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 precincts 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.

GENERAL BRIDGE AUTHORITY

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 subpoena 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.

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