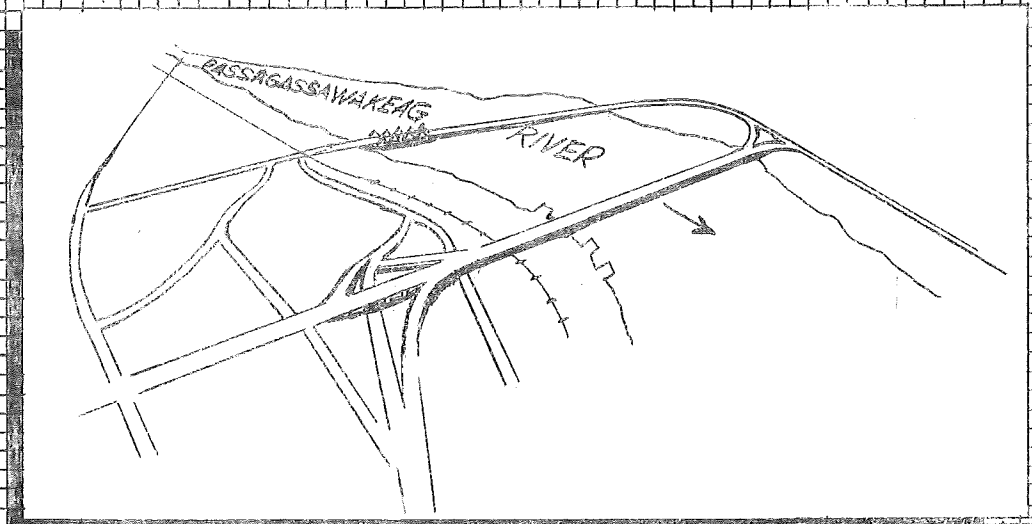


BELFAST
PASSAGASSAWAKEAG BRIDGE
STUDY

Prepared by the
STATE HIGHWAY COMMISSION
In cooperation with the
U.S. DEPARTMENT *of* COMMERCE
BUREAU *of* PUBLIC ROADS

State Highway Commission
State of Maine
Augusta

January 24, 1957

To the Honorable Senate and House of Representatives
of the Ninety-eighth Legislature:

We have the honor to present a report entitled " Belfast Passagassawakeag Bridge Study".

This report has been prepared in cooperation with the United States Bureau of Public Roads as the result of the resolve, Chapter 73, of the Ninety-seventh Legislature. A full copy of the resolve is included as a part of the report.

Respectfully,

David H. Stevens
Chairman

Clarence S. Crosby

Harold B. Emery
State Highway Commission

BELFAST - PASSAGASSAWAKEAG BRIDGE - STUDY

A traffic survey was made in Belfast during the period of June 7 - 22, 1956, by the State Highway Commission in cooperation with the U. S. Bureau of Public Roads in compliance with a resolve passed by the 97th Legislature that a study be made to determine the need and cost of a bridge on U. S. Route 1 across the Passagassawakeag River.

It has been determined that a new bridge is needed and that the estimated cost including approaches and right-of-way would be $3,750,000.

Evaluation of Need

Need for a new bridge is evidenced by the fact that the existing bridge was evaluated in the 50-59 grouping in the Sufficiency Rating Study recently completed. A total of 1,177 bridges was studied and only 25 bridges were rated lower than 50. While bridge adequacy is a real problem, it must be recognized also that usage of a bridge is limited by the capacity of its approaches. In the case of the existing bridge, the approach on the west end is inadequate both as to alignment and grade, particularly on Bridge Street.

A Solution

Determination of the desired line of travel, based upon the origins and destinations of all trips made across the river during an average study period day indicates that use of a location from the approximate junction of Main and Cross Streets to a point on U. S. Route 1 on the east side of the river approximately one-third mile west of Goose River would best serve the most traffic. A bridge on this location would be a high-level structure with 40 feet of under clearance at mean high tide. In order to satisfy the requirement of adequate approaches, construction of a new street would be necessary from a

point on High Street just southerly of the junction of Peach Street to Main Street near Cross Street. For convenience of traffic in the area north of Main Street and easterly of High Street the present bridge will be retained until such time as a major reconstruction project is necessary. At such time as major repairs to the present structure are indicated, the existing bridge will be removed and traffic from this area will be routed over Washington Street or Water, Common and Front Streets and Miller Street. These streets, exclusive of Miller Street, should be reconstructed before they are used by the larger traffic volumes. Miller Street would be reconstructed as a part of the initial project.

Alternate Location Investigated

An investigation was made as to the feasibility of constructing a route from a junction with U. S. Route 1 approximately 0.5 mile south of the entrance to City Park, circumferential to the built-up area, to a bridge a few hundred feet upstream from the location of the existing bridge, as shown on the enclosed map. This location, the most satisfactory circumferential route from the standpoint of traffic service, was found to be impracticable, however, because of the problem of providing adequate interchanges. Any other circumferential route on which suitable interchanges could be provided would have to be located so far from the compact portion of the city that traffic service would not be commensurate with the costs.

Evaluation of Main Street Location

Use of the Main Street location would make necessary the following alterations in the existing street system and restrictions as to directional usage:

Main and Federal Streets would no longer be through connections

between the retail business and waterfront areas.

Left turns would be prohibited at the junction of North Main and Main Streets.

Right turns only would be permitted from Main Street to Cross Street. Cross Street would be one-way in an easterly direction.

Crossing movements and left turns would be prohibited at the intersection of Spring Street and the new approach road.

As a result of these alterations and restrictions, it would be necessary to improve Miller Street to accomodate two lanes of moving traffic and two parking lanes between High and Front Streets.

The overall results, with traffic figures at the study period level, insofar as the traffic pattern is concerned would involve:

1. The diversion of 5,300 vehicles out of a total of 7,100 vehicles on the existing bridge from that structure and Bridge Street to the new bridge. It is anticipated that daily usage of the new bridge in 1977 would approximate 10,000 vehicles. This figure is based on discontinuance of service on the existing bridge prior to 1977.
2. The continued use of the existing bridge by approximately 1,800 vehicles until such time as it is taken out of service.
3. The diversion of approximately 3,000 vehicles to the new approach road from High and Church Streets and their intersections with Main Street.
4. The diversion of approximately 900 vehicles currently using Market Street to that section of Main Street between its junction with Market Street and its junction with Cross Street.
5. The diversion to Miller Street of at least 1,000 vehicles

currently using Main, Federal and Spring Streets between High Street and the waterfront area.

6. The decrease in volume at the junction of High and Main Streets will be 2,960 vehicles daily.

It is the opinion of the State Highway Commission that the above-outlined solution would provide for a more orderly movement of vehicles into and through the compact section of the city.

The estimated cost of the solution is broken down as follows:

Construction of bridge and approaches	$3,250,000
Right-of-way	500,000
	$3,750,000

Chapter 73 of Resolves of Maine

as passed by the 97th Legislature

"Resolve, Authorizing State Highway Commission to study desirability of a bridge across the Passagassawaukeag River. Bridge across Passagassawaukeag River; study authorized. Resolved: That the State Highway Commission be, and hereby is, authorized and directed to make a study of the need and cost of a highway bridge across the Passagassawaukeag River at Belfast on Route No. 1 in the County of Waldo, with necessary highway approaches thereto; and be it further Resolved: That the Commission shall report the results of their study at the next regular session of the Legislature."

Basic Data

The information, upon which the conclusions reached in this report were based, was obtained by State Highway Commission personnel during the study period of June 7 - 22, 1956.

Interviews were obtained from the drivers of 6,471 vehicles traveling outbound from the area out of a total of 18,700 vehicles which passed through eight interviewing stations on an average day during the study period. The traffic figures shown in the report are on an average-study-period-day basis. The annual average daily traffic at these stations is approximately 95 percent of the study period total, or 17,855.

Interviewing stations were located at or near the compact urban boundaries on U. S. Route 1 (Northport and Searsport Avenues), on Route 137 (Lincolnville and Waldo Avenues), on Routes 3 and 141 and on High Street and Robbin Road.

During the study period turning movements of vehicles at the most congested intersections in the area were recorded and traffic was counted on the important streets in the city.

History and Geography

Belfast, the county seat of Waldo County, is located on Penobscot Bay at the mouth of the Passagassawakeag River. Founded in 1770, the growth of the city has been generally steady except for temporary set-backs common to coastal cities brought about by the decline in coastal shipping. The population in 1950 was 5,960 inhabitants. It is the terminus of the municipally-owned Belfast and Moosehead Lake Railroad and the center of the rapidly-growing broiler processing industry. Aside from the broiler industry Belfast has several industrial plants with shoe manufacturing as the most important.

Principal Highways

The principal highways serving Belfast are:

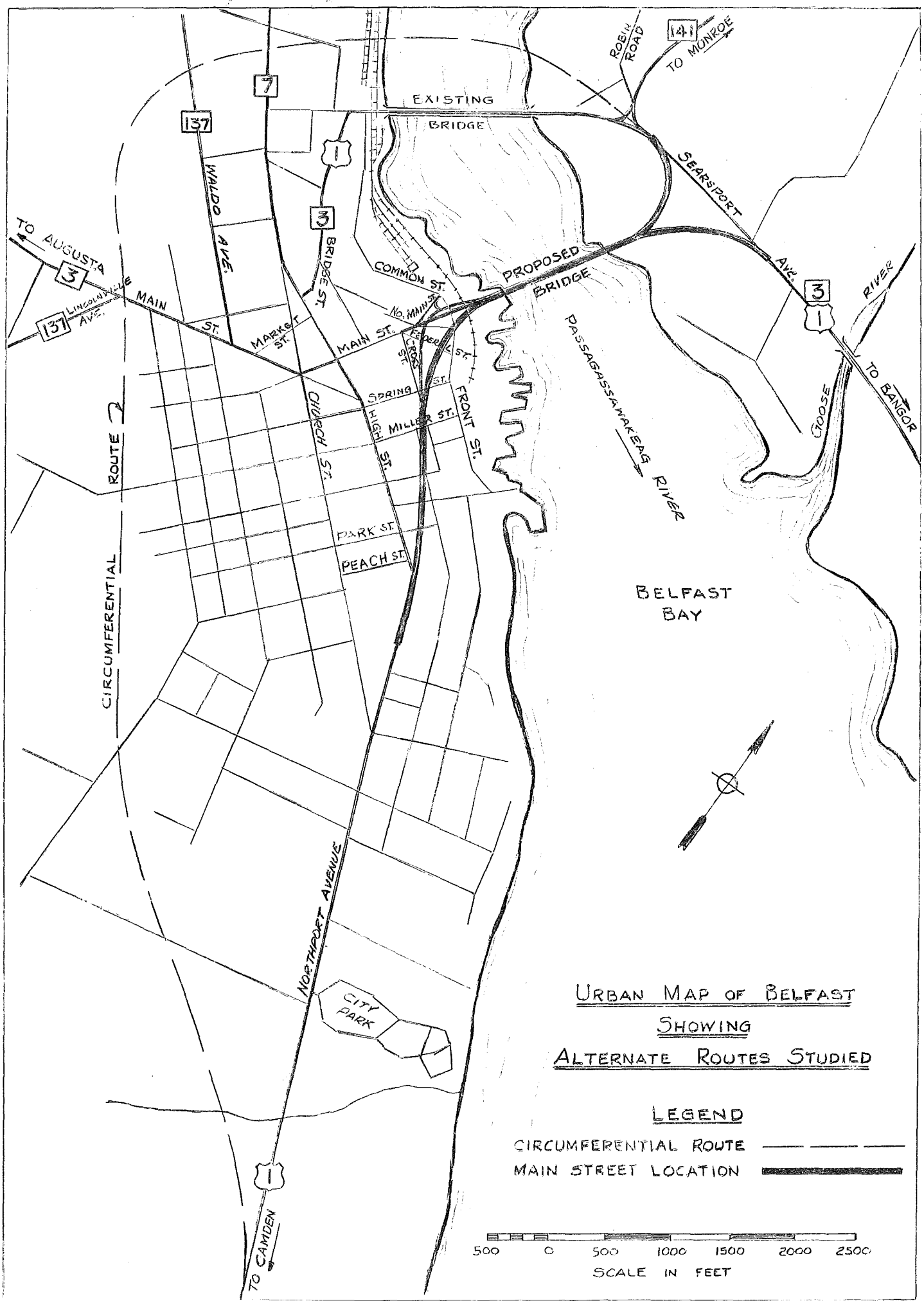
U. S. Route 1 which enters the city from Northport on the southeast, traverses the business section, crosses the Passagassawakeag River and extends easterly to and beyond Searsport.

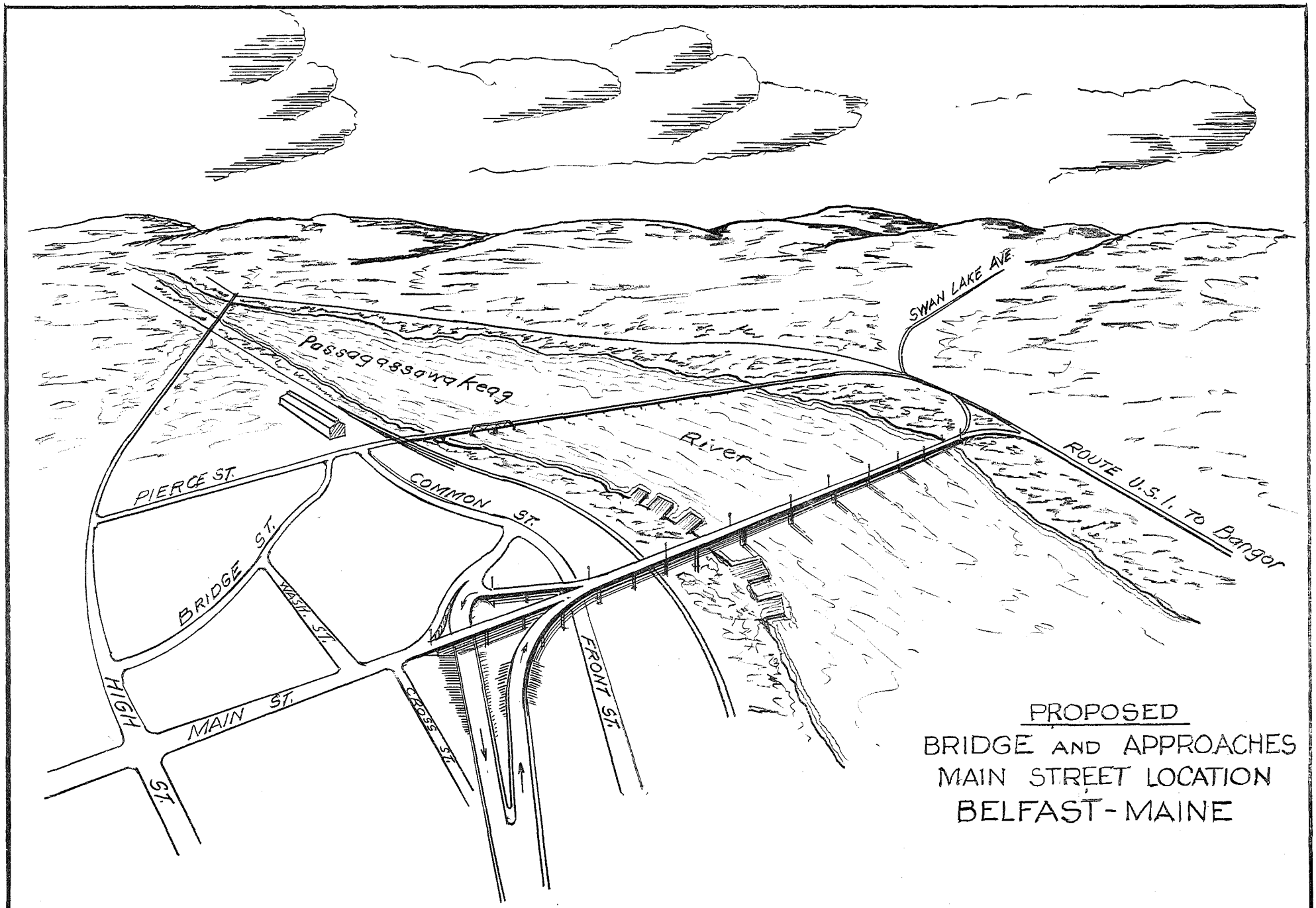
Route 3 which provides a connection with Augusta, 46 miles to the west and extends northeasterly to a terminus in Northeast Harbor, running conjointly with U. S. Route 1 from the center of the Belfast business district to Ellsworth.

Route 137 which enters from Lincolnville on the south and extends northwesterly to and beyond Waterville.

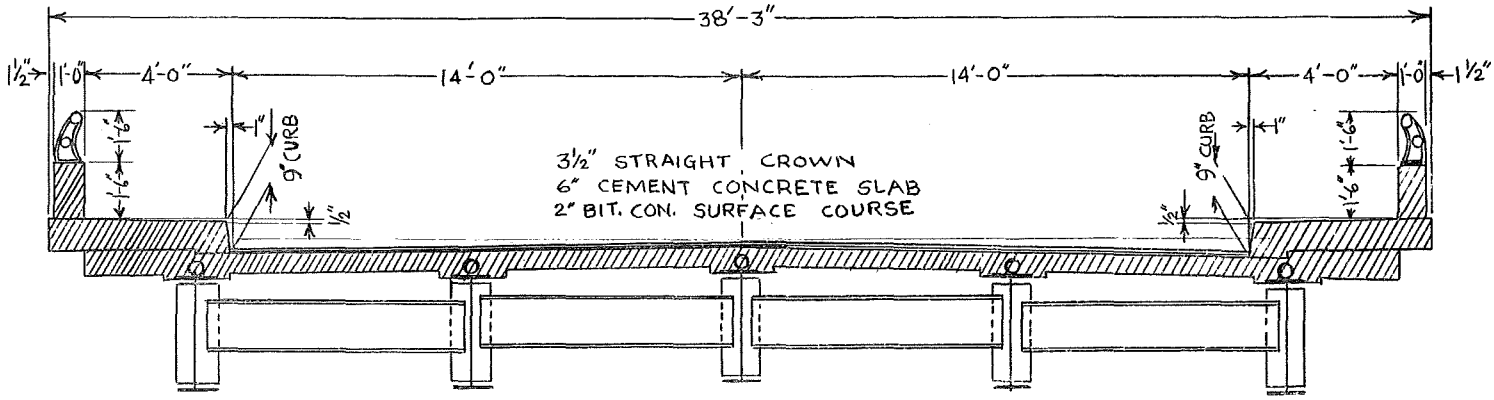
Route 7 which connects Belfast with western Penobscot and Piscataquis Counties.

Route 141 which extends northerly from a junction with U. S. Route 1 on the north side of the Passagassawakeag River to a junction at Monroe with Route 139.

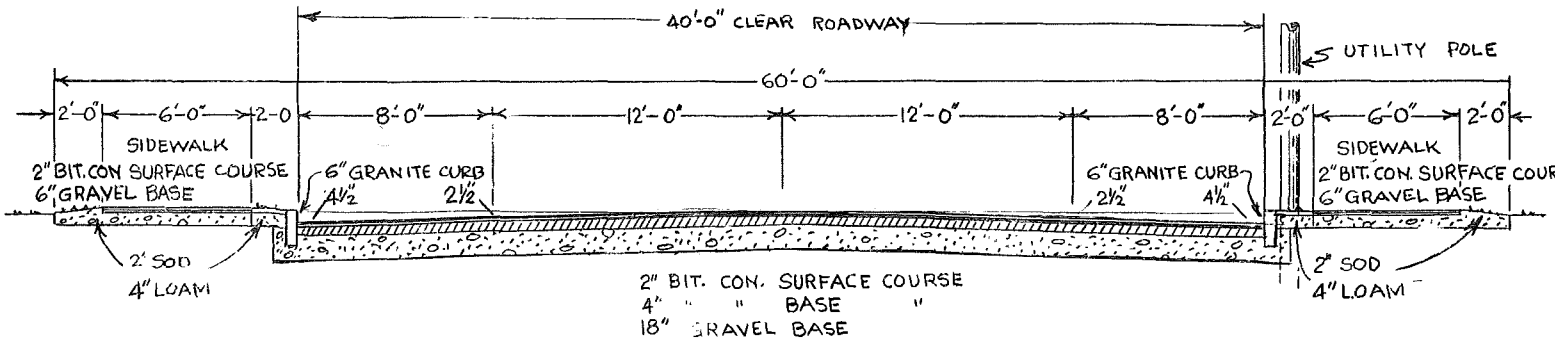

EXISTING
BRIDGE
ROBIN ROAD
141
TO MONROE
SEARSPORT
Ave.
PROPOSED
BRIDGE
COMMON ST.
No. MAIN ST.
BRIDGE ST.
WALDO AVE.
137
7
1
3
TO AUGUSTA
LINCOLNVILLE Ave.
MAIN ST.
MARKET ST.
MAIN ST.
CROSS ST.
FEDERAL ST.
SPRING ST.
MILLER ST.
HIGH ST.
CHURCH ST.
FRONT ST.
PASSAGASSAWAKEAG RIVER
GOOSE
RIVER
TO BANGOR
CIRCUMFERENTIAL ROUTE 2
PARK ST.
PEACH ST.
BELFAST BAY
NORTHPORT AVENUE
CITY PARK
TO CAMDEN
URBAN MAP OF BELFAST
SHOWING
ALTERNATE ROUTES STUDIED
LEGEND
CIRCUMFERENTIAL ROUTE
MAIN STREET LOCATION
500 0 500 1000 1500 2000 2500
SCALE IN FEET



PROPOSED
BRIDGE AND APPROACHES
MAIN STREET LOCATION
BELFAST - MAINE



TYPICAL BRIDGE SECTION
(SUPERSTRUCTURE)



TYPICAL APPROACH SECTION