ANALYSES OF ALTERNATE

PUGET SOUND CROSSINGS

Prepared For
The Washington State Highway Commission
Department of Highways

By
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INTRODUCTION

The transportation plan designed to accommodate 1990 traffic volumes for the Puget Sound area envisions improvements to facilitate cross-Sound movements. The Tacoma Narrows Bridge and the extensive ferry system have provided service between Seattle-Tacoma and the Kitsap Peninsula, including Bainbridge and Vashon Islands.

Travel in the Seattle metropolitan area will double between 1961 and 1990. To accommodate this increase, an extensive freeway system, totaling about 500 miles, has been planned and will include the Interstate System.

With the anticipated population growth, more people will gravitate to the Kitsap area because of the attractiveness and residential appeal. The major land use of the islands in the area will change from recreation to residential. It will become important to link all parts of the area with highway facilities, with sufficient capacity to meet the travel demands. The provision of cross-Sound bridges will also alter the development pattern.

Purpose and Scope

The primary purpose of the study is to analyze several alternate bridge and ferry systems to ascertain the traffic volumes, services, and population dispersion. Several toll schedules have been studied for each of nine proposed systems providing the necessary capacity across Puget Sound. This is a portion of the initial study being undertaken by the Washington State Highway Commission to ascertain the cost, benefits, usage and revenues of cross-Sound improvements. Based on these and other factors, a route will be chosen for detailed study.

In the calculations, it was assumed that the Tacoma Narrows Bridge would be toll free and the total regional values--1990 population and employment--would not change with the various bridge and ferry cross-Sound improvements.

The Plan A land-use plan (as prepared by the Puget Sound Regional Transportation Study - PSRTS) was used for the analysis. Finally, it was assumed that the cross-Sound bridges would be in operation by 1977.

Alternates Studied

The alternates include four locations for the primary bridges across the Sound which generally parallel the existing ferry operations. In addition, two other plans were studied assuming that construction of secondary bridges between Bainbridge Island and Kitsap Peninsula is completed by 1972. Finally, continuation of the existing ferry system was assumed. The proposed bridge locations are presented in Figure 1.

The alternates are as follows:

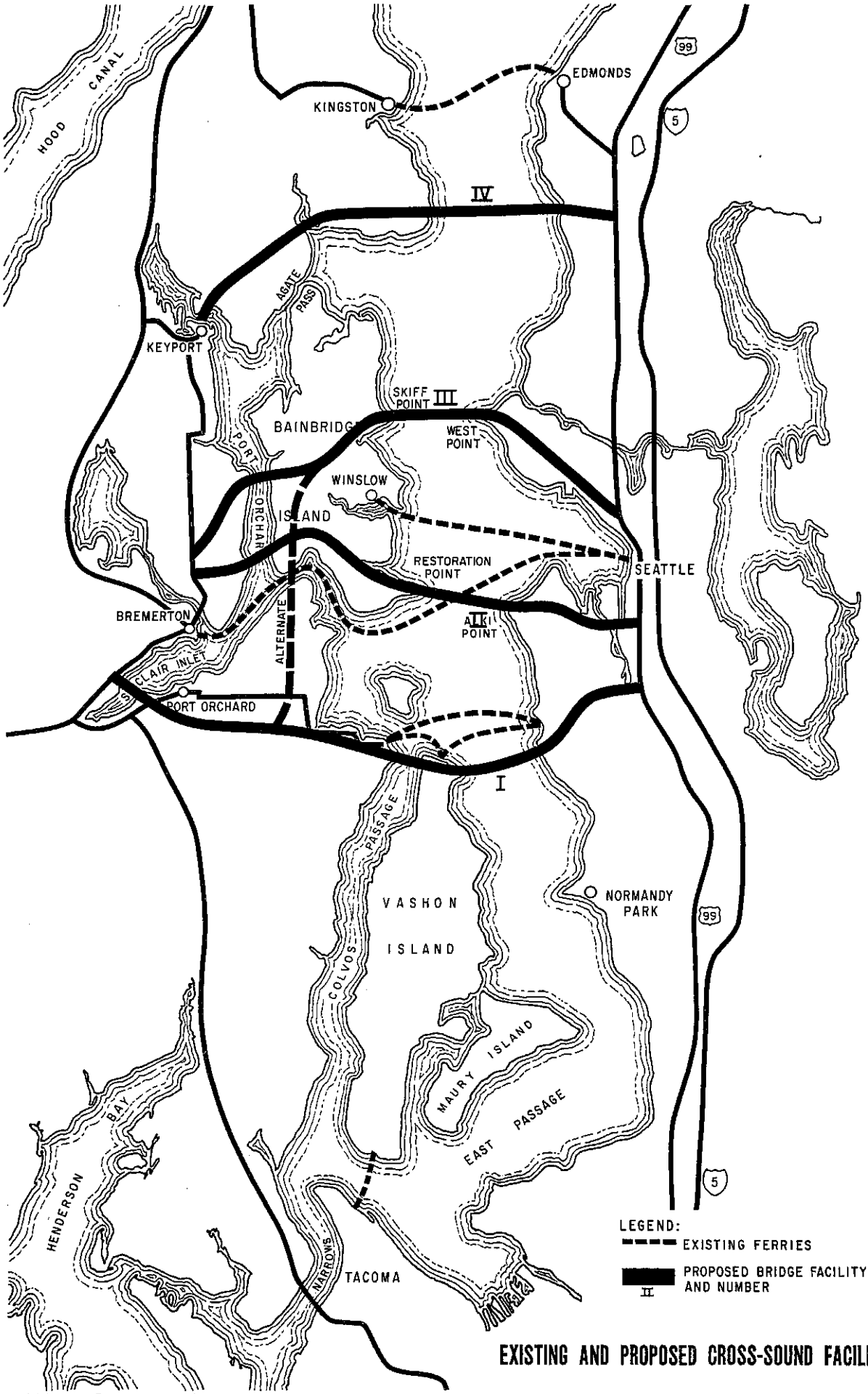
(I) A cross-Sound bridge from Brace Point in Seattle to Vashon Island, with a secondary bridge across Colvos Passage, and a complementary bridge across Rich Passage.

(II-R) A cross-Sound bridge from Alki Point in Seattle to Restoration Point on Bainbridge Island, with a secondary bridge across Rich Passage.

(II-IL) A cross-Sound bridge from Alki Point in Seattle to Restoration Point on Bainbridge Island, with a secondary bridge at Illahee.

(III-IL) A cross-Sound bridge from West Point in Seattle to Skiff Point on Bainbridge Island, with a secondary bridge at Illahee.

(III-F) A cross-Sound bridge from West Point in Seattle to Skiff Point on Bainbridge Island, with a secondary bridge at Fletcher Bay.



EXISTING AND PROPOSED CROSS-SOUND FACILITIES

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FIGURE 1

(IV) A cross-Sound bridge from the vicinity of Richmond Beach north of Seattle to Point Jefferson on the Kitsap Peninsula.

(V) Stage construction of a Rich Passage Bridge with consolidation of the Bremerton and Winslow ferry routes.

(VI) Stage construction of a bridge at Illahee with consolidation of the Bremerton and Winslow ferry routes.

(VII) An all-ferry system.

Several rate schedules were assumed for each plan. However, for the various bridge plans, the existing rates would be maintained for ferries which would be retained. The assumed operation of ferries is presented in Table 1.

Utilizing basic data from the PSRTS study, a population distribution model was developed, and population shifts were correlated with anticipated improvements. A region-wide gravity model based on 95 zones was calibrated. Traffic assignments were made according to the various rate schedules for the alternate plans. Volumes, zone-to-zone movements, vehicle-miles and vehicle-hours of travel were ascertained for each proposed bridge, and for the basic freeway and arterial street network. Separate analyses were prepared for the foot-passenger traffic remaining on ferries.