VEHICULAR CONNECTIONS BETWEEN NORFOLK AND PORTSMOUTH

REPORT OF THE

VEHICULAR CONNECTIONS COMMISSION

To

THE GOVERNOR

And

THE GENERAL ASSEMBLY OF VIRGINIA

COMMONWEALTH OF VIRGINIA
Department of Purchases and Supply
Richmond
1973

S.D.—9

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Report of the

Vehicular Connections Commission

To

The Governor and The General Assembly of Virginia

Richmond, Virginia
April 9, 1973

To: Honorable Linwood Holton, Governor of Virginia

and

The General Assembly of Virginia

I. INTRODUCTION

This report is a result of the directive contained in Senate Joint Resolution No. 31 passed by the 1971 Special Session of the General Assembly as follows:

SENATE JOINT RESOLUTION NO. 31

Creating a commission to study methods of financing vehicular connections between the cities of Portsmouth and Norfolk, Virginia.

Agreed to by the Senate, February 26, 1971
Agreed to by the House of Delegates, February 26, 1971

Whereas, there are presently two existing vehicular connections between the cities of Norfolk and Portsmouth, Virginia and a feasibility study is proposed for a third such connection; and

Whereas, the presently existing connections are operated as toll facilities; and

Whereas, it is desirable to study the various methods for financing such facilities and any additional facilities that may be constructed; now, therefore, be it

Resolved by the Senate, the House of Delegates concurring, That a commission is hereby created to study the various methods that may be available or made available for financing or refinancing such facilities with a view toward the possible elimination of tolls, for using presently existing facilities or any that may be constructed in the future.

Resolved further, that the Commission hereby created shall consider the relationship of the above-mentioned facilities with the existing and proposed facilities of the State Highway Department in the Hampton Roads area.

The Commission shall be composed of sixteen members, two of whom shall be appointed from the membership of the Senate by the President thereof, three of whom shall be appointed from the House of Delegates by the Speaker thereof, two of whom shall be appointed by the Governor; and the Directors of Planning of the cities of Norfolk, Portsmouth, Newport News, Hampton, and

Chesapeake, the State Highway Commissioner, the Executive Director of the Southeastern Virginia Planning District Commission, the Executive Director of the Peninsula Planning District Commission and the Director of the Division of State Planning and Community Affairs.

Members of the Commission shall receive no compensation for their services, but shall receive the actual and necessary expenses incurred in the performance of their duties, for which, and for such professional and secretarial assistance as may be required by the Commission, there is hereby appropriated from the contingent fund of the General Assembly the sum of five thousand dollars. The offices and facilities of the State Highway Department and other agencies of the Commonwealth shall be made available to such Commission. The Commission shall complete its study and report to the Governor and the General Assembly no later than November one, nineteen hundred seventy-two.

Senate Joint Resolution No. 23 passed by the 1972 Regular Session of the General Assembly continued the original Commission and directed the Commission to carry out its original charges.

SENATE JOINT RESOLUTION NO. 23

Continuing the commission studying methods of financing vehicular connections between the cities of Portsmouth and Norfolk, Virginia, created by Senate Joint Resolution No. 31 of the 1971 Special Session.

Whereas, Senate Joint Resolution No. 31 of the 1971 Special Session of the General Assembly created a commission to study methods of financing vehicular connections between the cities of Portsmouth and Norfolk, Virginia; and

Whereas, it is the wish of the General Assembly that such commission continue its work; now, therefore, be it

Resolved by the Senate of Virginia, the House of Delegates concurring, That the commission created by Senate Joint Resolution No. 31 of the 1971 Special Session of the General Assembly be, and the same is hereby, continued. The present officers and members of the Commission shall continue to serve, and the Commission shall proceed to carry out its original charges. The agencies directed to cooperate with the Commission shall continue to do so.

The members of the Commission shall continue to receive their necessary expenses incurred in performance of their duties, for which, and for the other necessary expenses of the commission, the balance remaining of the five thousand dollars originally appropriated to the Commission from the contingent fund of the General Assembly is hereby reappropriated.

Senate Joint Resolution No. 120 passed by the 1973 General Assembly continued the Commission to initiate actions recommended in the Report of the Commission.

SENATE JOINT RESOLUTION NO. 120

To continue the Commission to study methods of financing vehicular connections between the cities of Portsmouth and Norfolk, Virginia.

Whereas, Senate Joint Resolution No. 31 of the 1971 Special Session of the General Assembly created a Commission to study methods of financing vehicular connections between the cities of Portsmouth and Norfolk; and

Whereas, Senate Joint Resolution No. 23 of the 1972 Session of the General Assembly continued the Commission to complete its work; and

Whereas, the report of the Commission recommends certain actions which can best be initiated by the Commission; now, therefore, be it

Resolved by the Senate, the House of Delegates concurring, That the Vehicular Connections Study Commission created by Senate Joint Resolution No. 31 of the 1971 Special Session of the General Assembly be, and the same is hereby, continued until February one, nineteen hundred seventy-five so that the members of the Commission may observe and seek to implement its recommendations. The present officers and members of the Commission shall continue to serve and the Commission shall proceed to seek to implement its recommendations. The agencies directed to cooperate with the Commission shall continue to do so.

The members of the Commission shall continue to receive their necessary expenses incurred in performance of their duties and may pay the other necessary expenses of the Commission.

The balance of the funds appropriated to the Commission and the balance of the appropriation from the contingent fund of the General Assembly to the Commission are hereby reappropriated to be expended for the purposes of the Commission.

#

Pursuant to the study directive, the Governor appointed Edwin R. MacKethan, Esquire, Norfolk, and L. Shields Parsons, Jr., Esquire, Norfolk. The President of the Senate appointed Senators Peter K. Babalas, Norfolk, and Willard J. Moody, Portsmouth. The Speaker of the House of Delegates appointed J. Warren White, Jr., Norfolk, Stanley G. Bryan, Chesapeake, and Lester E. Schlitz, Portsmouth. Senate Joint Resolution No. 31 named the following officials as members of the Commission: Phillip A. Stedfast, Director of Planning for Norfolk; J. Brewer Moore, Director of Planning for Portsmouth; Milton A. Perry, Director of Planning for Chesapeake; Thomas I. Miller, Director of Planning for Hampton; A. J. Stodghill, Director of Planning for Newport News; Robert F. Foeller, Director, Southeastern Virginia Planning District Commission, Norfolk; Henry M. Cochran, Director, Peninsula Planning District Commission, Hampton; Douglas B. Fugate, Commissioner of Department of Highways, Richmond; and Robert H. Kirby, Director of Division of State Planning and Community Affairs, Richmond. The Commission elected as its Chairman, Senator Willard J. Moody, and as Vice-Chairman Edwin R. MacKethan, Esquire.

Mr. K. M. Wilkinson, Transportation Planning Engineer, Department of Highways, Spencer H. Elmore, Chief, Transportation Planning, Division of State Planning and Community Affairs, and Mr. David Krueger of the Southeastern Virginia Planning District Commission also rendered assistance to the Commission during the course of the study. The Virginia Advisory Legislative Council and the Division of Statutory Research and Drafting made staff and facilities available to carry out the study, Roger

C. Wiley, Jr., succeeded by L. Willis Robertson, Jr. and E. M. Miller being assigned to assist the study group. The members of the Commission wish to express their appreciation to its staff and advisers for the excellent services they rendered.

After its first three meetings which included a public hearing in Portsmouth, it became clear that the services of a professional consultant with expertise in the transportation and financial fields would greatly expedite the tasks assigned the Commission. Senator Willard J. Moody, the Chairman of the Commission, was able to obtain an appropriation from the 1972 Regular Session of the General Assembly for use by the Commission in retaining a consultant. At the first meeting of the Commission after the 1972 Regular Session of the General Assembly adjourned, a Special Subcommittee of the Commission consisting of Robert F. Foeller, Chairman, J. Brewer Moore, A. J. Stodghill and Senator Willard J. Moody, as an ex officio member, was appointed to define a scope of study for the consulting firm selected and interview prospective consultants.

The members of the Special Subcommittee met on a number of occasions and interviewed representatives from several consulting firms. The firm of Alan M. Voorhees & Associates, Inc. was recommended by the Special Subcommittee and selected by the Commission as its consultant after the firm agreed to meet the scope of study prepared by the Commis-

During its existence the Commission has held frequent meetings in the areas likely to be affected by the results of the study, including Norfolk, Portsmouth, and Hampton. After the firm of Alan M. Voorhees & Associates, Inc. began work, the Commission met frequently with the staff of the firm. The Commission members were able in this manner to exchange ideas with the representatives of the firm and, therefore, the report in part reflects the guidance of the members of the Commission.

II. SUMMARY AND RECOMMENDATIONS

The purpose of this study has been to study alternative ways of financing vehicular crossings of the Elizabeth River between Norfolk and Portsmouth, with a view toward reduction or elimination of the tolls charged for use of these facilities. While it has been pointed out that there is a very basic question of whether tolls should be completely removed, the principal assumption of this work has been that such removal is desirable from the standpoint of the cities of Portsmouth and Norfolk, and of the entire Tidewater Area.

Additional traffic capacity crossing the river is desired. The two current tunnels are inadequate to meet current and projected future needs and the river is identified as a barrier to trade and development in the area. It is anticipated that this additional capacity will require between $50 million and $120 million within the next 5 to 15 years. Only part of this capacity could be financed through revenue bonds, as with the current situation, and such financing would require assured perpetuation of tolls.

A range of alternative approaches to financing are investigated, and characterized in terms of the institutions required to implement and control the alternative. Eight specific institutional structures are examined, each formulated to exploit some particular aspect of existing legislation, or to represent a successful example drawn from other areas of the country. It is concluded that under none of these alternatives could immediate toll removal be assured. The emphasis is thus placed upon opportunities for toll reduction or earlier retirement of debt, and upon achieving the greatest possible flexibility in future planning and procurement of funds.

Two particular approaches show promise and have been explored in detail. These alternatives are based, respectively, upon utilization of State special projects financing and upon integration of the crossings operations with the transportation district soon to be formed. These two approaches are not mutually exclusive and could be used together. Their use will depend upon local decisions regarding future elimination of tolls or maintenance of tolls as a traffic control mechanism.

The issue of Interstate program utilization is involved with all alternatives. It is concluded that the greatest hope for such funding lies in the Urban High Density Corridor projects included in the pending Federal Aid Highway Act. Transferral of Interstate mileage designation from other areas in Virginia to the Tidewater area may also be feasible.

The following recommendations for action are made:

Based upon a determination of priorities for increased crossing capacity, a project should be planned to make optimum use of the Urban High Density Corridor Program, if such program is approved by Congress.

If federal funds cannot be obtained for additional Elizabeth River Crossings, then every effort should be made to place the Berkley Bridge and Downtown Tunnel on the Interstate system.

The remaining tunnels should be coordinated with the Transportation District activities, and the costs of additional capacity financed through revenue-type bonding.

To the extent possible, in view of desired local control and projections of traffic and revenue, State special projects financing should be used to reduce interest expenses. This will necessitate the transfer of the present facilities and functions of the Elizabeth River Tunnel Commission to the State Highway Department and the abolition of the

Elizabeth River Tunnel Commission as the legal entity to carry out such financing.*

Special federal legislation should be considered, to bring about federal participation in capacity expansion of one crossing on a linked basis with State bond financing of the remaining investment in all crossings.

*House Bill No. 1548 passed by the 1973 Session of the General Assembly, after the initial draft of this report, transferred the powers and obligations of the Elizabeth River Tunnel District and the Elizabeth River Tunnel Commission to the State Highway Commission and will dissolve the District and the Commission.

III.

BACKGROUND AND BROAD CONSIDERATIONS

The Tidewater Area of Virginia is endowed with one of the world's busiest harbors. Divided by many rivers and bays, the area has had to overcome many barriers to communication and trade. In spite of these barriers, the area is one of Virginia's major metropolitan centers, one with continuing great growth potential.

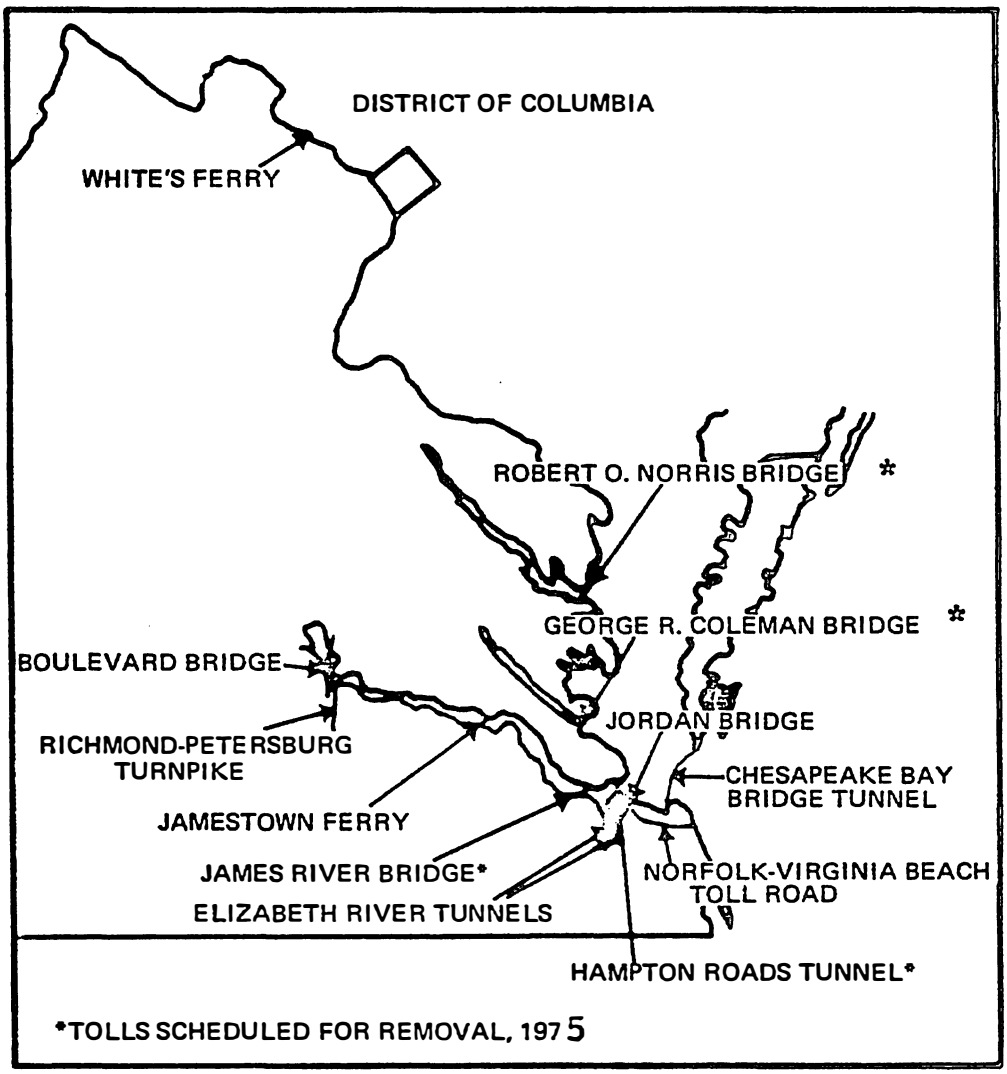


FIGURE 1. HIGHWAY TOLL FACILITIES IN VIRGINIA

One particular aspect of the barriers to communication in Tidewater may be seen in the highways of the area. As Figure 1 shows, toll financing plays a major part in transportation in the area, particularly in and around Hampton Roads. The waters which are one of the area's greatest resources make highway construction difficult and expensive, and toll financing has represented an immediately available solution to these problems. It is increasingly felt, however, that these tolls additionally retard growth by impeding trade, and that it should be an objective of State policy to reduce and to remove such barriers. This objective is especially important in view of the geographic concentration of toll facilities in one small area of the State. The Elizabeth River, separating the cities of Norfolk and Ports-

mouth, is a part of the Hampton Roads Harbor, and is crossed by toll facilities. As stated in the Senate Joint Resolution, the study is concerned specifically with the existing facilities directly connecting the two cities. While it is the purpose of this study to investigate alternative means of financing these river crossings, with a view toward elimination of tolls, the study has not been restricted to this one objective as the Commission was also charged with considering the relationship of the present two vehicular connections between Norfolk and Portsmouth with the existing and proposed facilities of the State Highway Department in the Hampton Roads area. It has fallen within the scope of this work to question what the impact of toll removal might be, and to evaluate financial alternatives in terms of their broader effect upon the cities and the region.

The study has been conducted with active cooperation between the Study Commission and the Consultant. This report presents the findings of the study: The role of the Elizabeth River and of the toll crossings in the area will be discussed, and a review of current conditions effecting and effected by financing will be made. A range of alternatives are examined, and recommendations are made of a set of actions to be taken.

The cities of Norfolk and Portsmouth, and the entire Tidewater Area, have from the time of their original settlement been influenced in both physical structure and economic organization by the waters of the Hampton Roads region. In the past, these waters were viewed exclusively as an asset, providing a basis for development of the local economies. More recently, however, there has been growing recognition of the barrier to travel, communication, and ultimately, growth.

The primary concern of this study is with the particular barrier represented by the Elizabeth River, between the cities of Portsmouth and Norfolk. This problem cannot, however, effectively be viewed out of the context of the entire region. Analysis of localized problems will build upon a brief discussion at this broader scale.

THE HAMPTON ROADS REGION

The immediate Hampton Roads region is composed of the cities of Norfolk, Portsmouth, Chesapeake, Virginia Beach, Suffolk, and Nansemond to the south, and Hampton, Newport News and York County to the north. More broadly, all of the Southeastern Virginia and Peninsula Planning Districts are included, as shown in Figure 2.

The influence of Hampton Roads is observable in the pattern of growth that has occurred in the area. Due in large part to the barriers created by the water, six major cities have developed relatively independently of one another. Duplication of facilities and lack of a defined regional center are observable in the region.

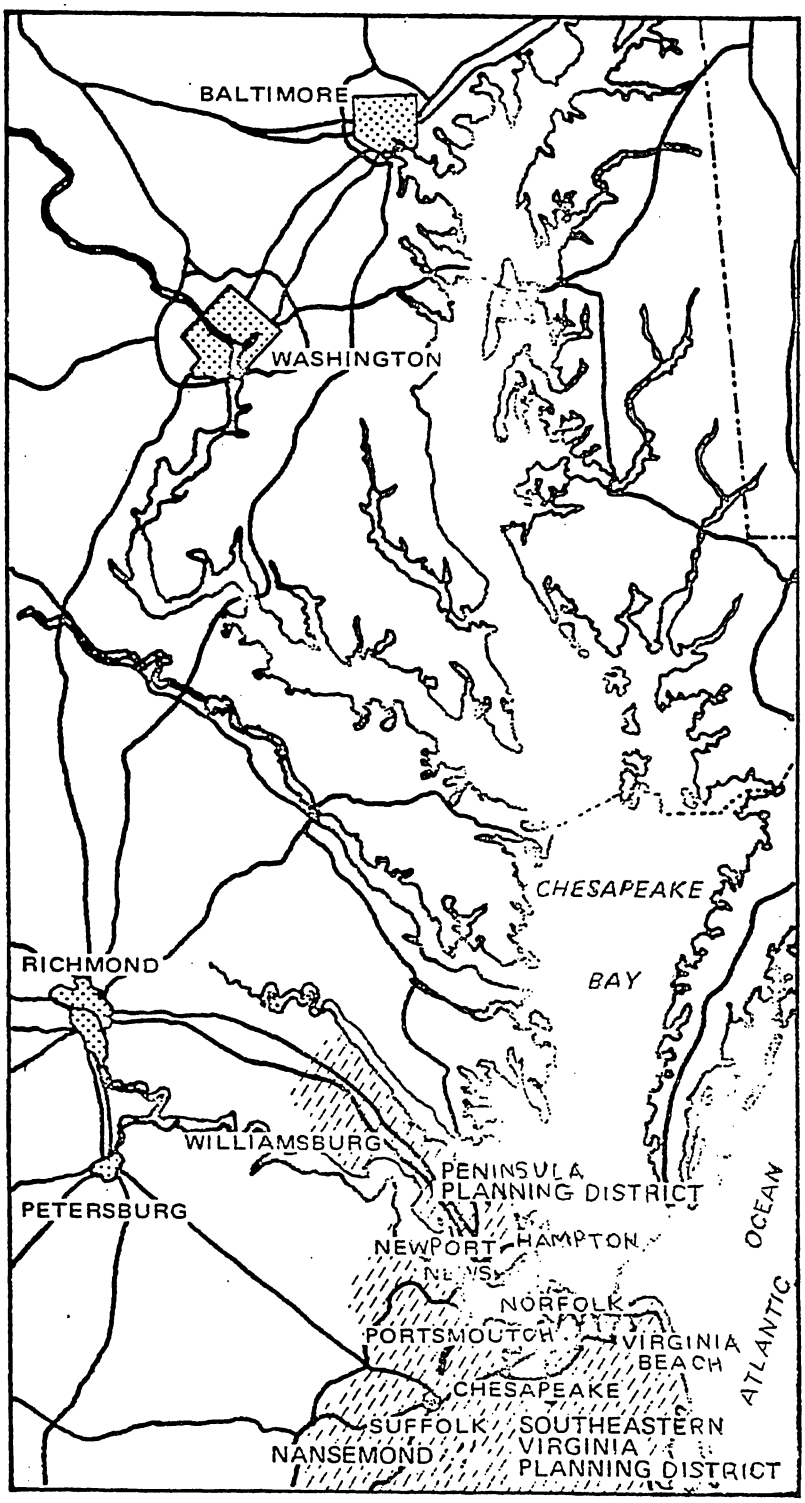


FIGURE 2. THE HAMPTON ROADS REGION

Previous studies have noted these results: In 1970, the Hampton Roads region had a population of approximately 876,000. But the opportunities offered to residents and businessmen in the area were observed to be more like those in metropolitan areas of half this size. In terms of impact upon specific aspects of commerce, it was concluded that:

- Major employers had been unable to penetrate labor markets across Hampton Roads, because of lack of easy access, and existence of tolls;

- Tolls had a definite negative effect upon smaller business concerns which must contend with the travel time and cost of providing goods and services to the public;
- Retailers found that fewer than 1 percent of all customers traveled across Hampton Roads to shop in major department stores.

THE ELIZABETH RIVER BARRIER

The Elizabeth River, as a part of the Hampton Roads barrier, provides observations similar to those presented above.

Historically, the Elizabeth River has provided a basis for the economies of Portsmouth and Norfolk and influenced the physical structure of both cities. The river has provided economic opportunities for both cities, but it has also functioned as an obstacle to effective cooperation between them.

The construction of two tunnels has reduced this obstacle to some extent, and in spite of tolls, steadily growing interchange across the river has led to an impending need for additional crossing capacity. Diversification and coordination of industry, and expansion of labor markets remain as major issues relative to the River.

Both cities have developed major port facilities, moving strongly into containerization, and compete strongly with other East Coast ports.

THE CITIES

From colonial times, the river has been the economic heart of Portsmouth.

The physical development of the city started in the area of the port, with the primary neighborhoods being located close to the waterfront where shipbuilding and other sea-oriented commercial activities took place.

These original neighborhood areas now adjoin the access to the Downtown Tunnel.

Through a series of annexations, the city has in the past decades expanded to the west and north. These annexations developed in response to the stimuli of commercial development and urbanization, fostered in no small part by war-related military activities.

As the new developed areas moved further from the center, the quality of life in the original neighborhoods began to decline. This decline has been exacerbated by periodic recessions in water-related activity.

The neighborhood descriptions compiled by the Portsmouth Planning Commission for the *General Plan Guidelines* of the city of Portsmouth indicate that these older core areas are the worst in the city with respect to quality of environment. It may be noted that all these neighborhoods are intersected or bounded by major roads, railroads or Naval facilities, which frequently contribute to the speed of neighborhood deterioration (see Figure 3). These are the areas which will be the most affected by any increase in vehicular flow through the existing tunnels.

Renewal activities in these areas have concentrated upon attracting commerce and industry, through the availability of adequate transportation. The High Street non-residential corridor and Pinner's Point facilities are major parts of this plan. The Crawford Common Area at the end of High Street, on the River bank, represents a focal point of new office development. Part of the upgrading procedure includes the reconstruction of public housing and revitalization of older residential areas. Care must be taken that decisions directed at reducing the barrier of the River do not subvert these renewal activities.

The historical development of the city of Norfolk has similarly been influenced by the river and the port activity that it permitted. The area chosen for the siting of the city was at the point where the Eastern Branch joined the Elizabeth River, a location which provided convenient water access to a large portion of the surrounding area. The limits of the original town were roughly formed by City Hall Avenue on the north, Lovitt Avenue on the east, and the Elizabeth River on the south and west (see Figure 4).

The growth and structure of the city have been greatly affected by port activity with the port oriented uses concentrated along the deep water of the Elizabeth River. The existing industry in the area has also been primarily port oriented with the land adjacent to the deep water providing space for naval installations and international shipping.

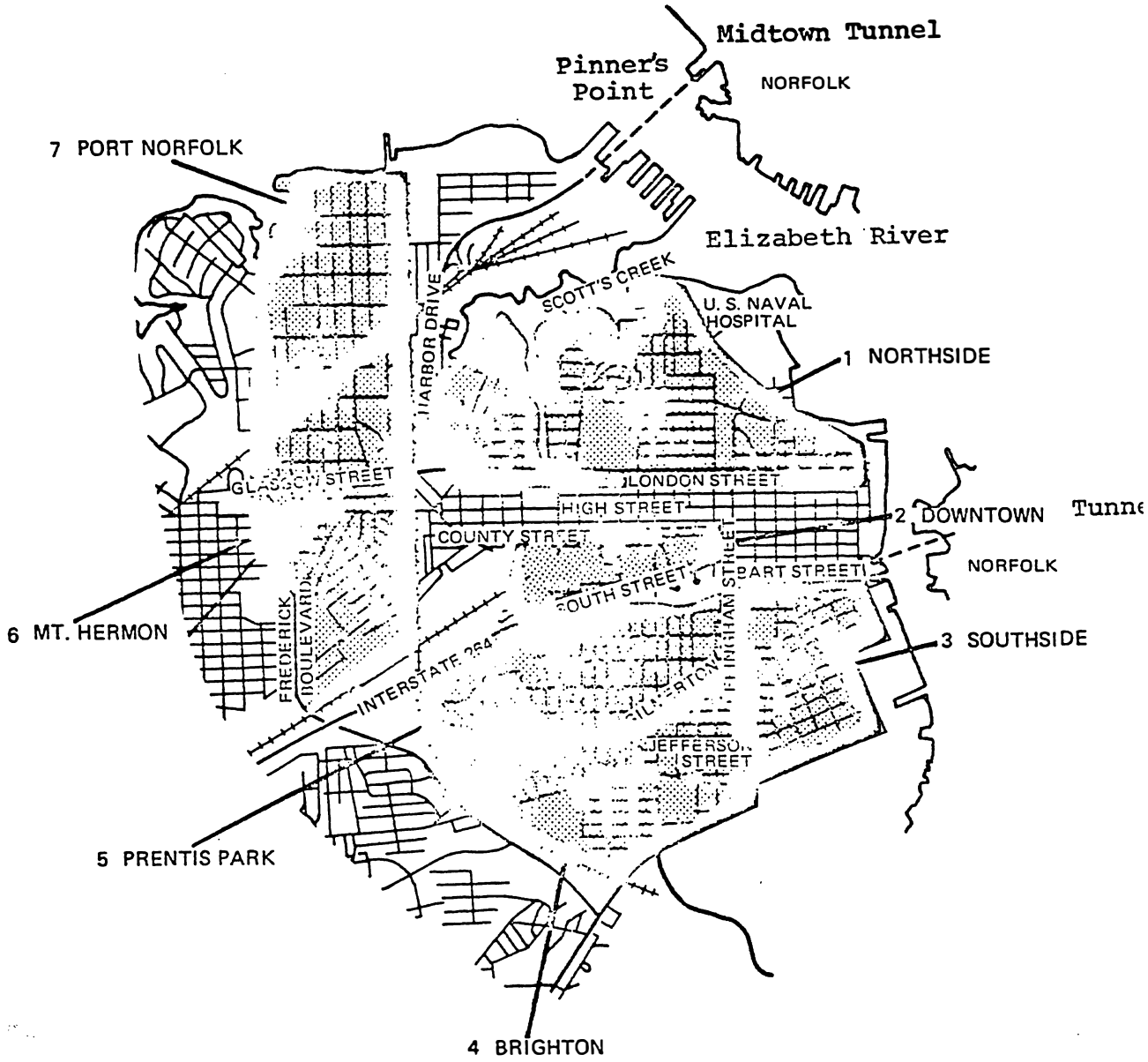


FIGURE 3. PORTSMOUTH TUNNEL IMPACT AREAS

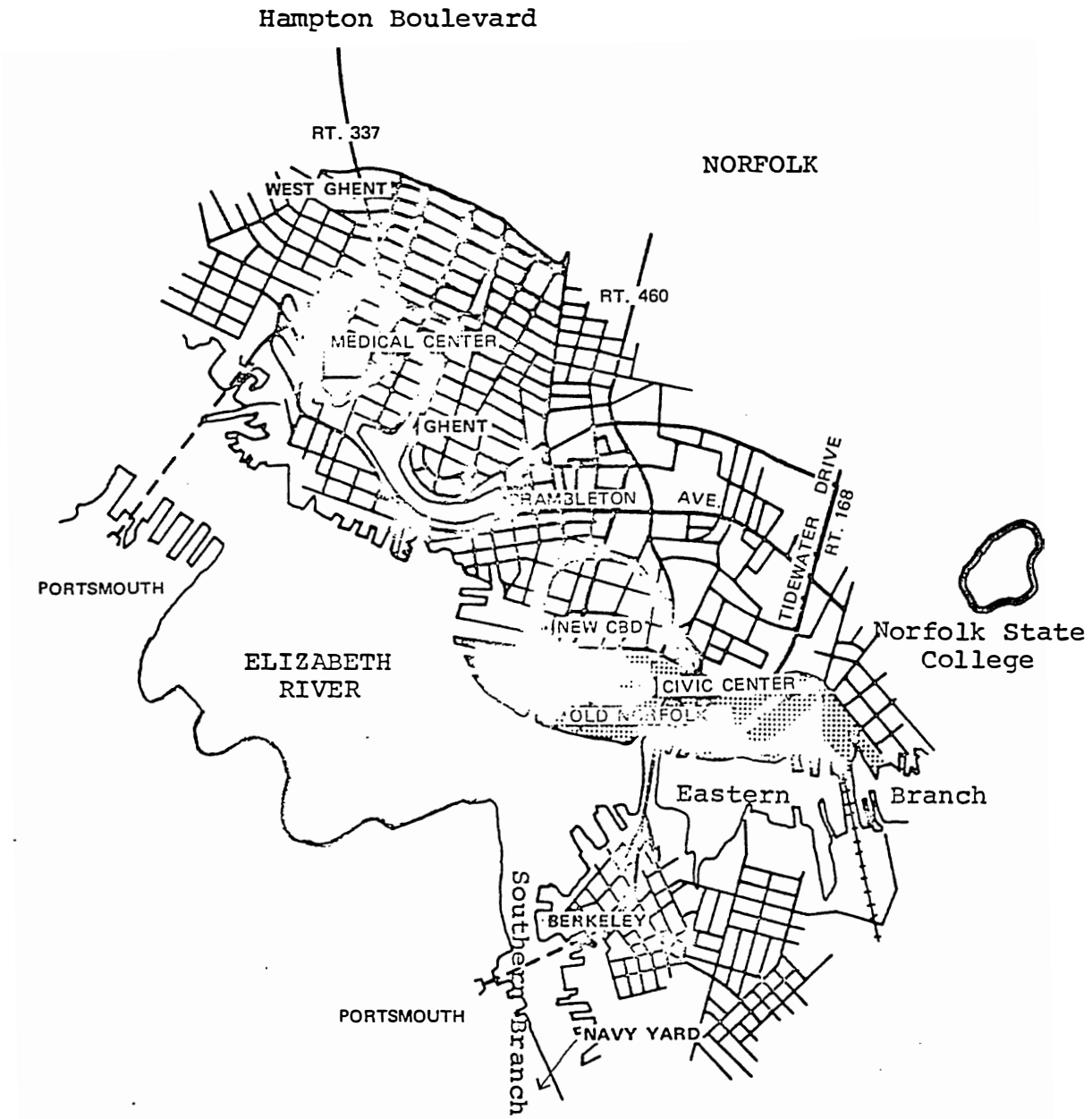


FIGURE 4. NORFOLK TUNNEL IMPACT AREAS

Although the need for diversification is recognized, the future development plans for the city are still oriented to a certain extent toward the River. This orientation was encouraged by the Congressional authorization in 1966 for deepening the River channel to 45 feet for use by the new supercolliers.

The core part of the city of Norfolk and those areas contiguous to the waterfront figure prominently in the development programs outlined in the *General Plan for Norfolk.* They are also adjacent to the tunnel access points and hence must be considered when discussing the impacts of increased interaction between the cities.

The plan envisions increased activity in the designated core areas through the creation of a series of "activity magnets." These will be connected by an improved freeway system which runs parallel to the waterfront. The anticipated result will be the intensification of activity in the downtown and waterfront sections of the city.

The creation of these new centers (such as the Medical Center complex) will be undertaken concurrently with more traditional forms of renewal. While the residential environment of the older areas in Norfolk does not show the same level of deterioration as in many cities, there are still areas that are undergoing, or that require extensive urban renewal. The original urban renewal objective, the replacement of slums with low-rent housing and needed community facilities has, however, been expanded to include a complementary objective—the replacement of slums with important nonresidential uses. The Medical Center, Old Dominion University, and Norfolk State College are examples of this latter objective.

Areas which will feel the greatest influence of decisions regarding the Elizabeth River barrier include the original old city, the present central business district, and various industrial uses linked to the Naval shipyard in Portsmouth. These are part of the new activity magnet program, but they are also included in one or more of the public action programs that are operative in the city, including Model Cities, Southeastern Virginia Area Wide Model Program (SEVAMP), and the Southeastern Tidewater Opportunity Project (STOP). Those areas that are near the waterfront may be rezoned to increase the amount of land that can be used for port-related industries. This action will be pertinent especially in the area adjacent to the Downtown Tunnel entrance, which is considered generally unfit for residential usage.

THE TOLLS—BURDEN AND OPPORTUNITY

In addition to the natural effects of the Elizabeth River and its crossings, as discussed in preceding pages, there is the factor of tolls. Commencing with ferry service and continuing with the current tunnels, there has always been a monetary user charge associated with regular vehicular crossings of the Elizabeth River.

Many studies, both applied and theoretical, have demonstrated the effect of tolls in increasing the socio-economic barriers to travel. In the study yielding the previously cited observations regarding Hampton Roads, it was reported that large industry in Portsmouth could not attract and retain labor from Norfolk, largely because of toll charges. Residential patterns of workers were observed to reflect quite strongly the avoidance of the toll crossings. Based upon earnings of production workers in 1968, it was estimated that the Elizabeth River tolls consumed over 4.2 percent of the average worker's daily take-home pay.

SUMMARY

The Elizabeth River between Norfolk and Portsmouth is one part of a set of water barriers to travel and communication, and thus to growth in the Hampton Roads area. Limitations upon access between the cities, imposed by the River, have had noticeable impact upon employment and industrial development patterns. The barrier is increased by the imposition of tolls.

Plans for the two cities include provision for greater physical connection and social and economic integration. The manner in which these plans are implemented will influence Norfolk and Portsmouth at all levels, from quality of life in local neighborhoods, to the region-wide composition of the industrial base. Decisions on the Elizabeth River crossings must be made with a recognition of the broad range of their influence and of the both positive and negative aspects of tolls, as well as with a view of the financial requirements inherent in providing crossings.

Section IV will examine the specific features of vehicular crossings between Norfolk and Portsmouth, as they now exist and as they may be expanded. The financial needs associated with these facilities and plans will be reviewed as well.

IV.

THE ELIZABETH RIVER CROSSINGS

The role of the Elizabeth River and its crossings, as a general factor in the growth and development of Norfolk, Portsmouth, and the Southeastern area of Hampton Roads has been discussed. In this section, attention will be focused upon the specific details of the crossings between Portmouth and Norfolk, the service they provide, and their costs and financing.

CURRENT FACILITIES AND EXTENSIONS

The two-lane Downtown Tunnel connects Portsmouth with the Berkley area of Norfolk, and thence to downtown Norfolk via the Berkley Bridge. The newer Midtown Tunnel, also two lanes, joins Pinner's Point in Portsmouth with the Norfolk Medical Center area. In addition to these two locations, proposals are now being studied for additional tubes at present or new locations. Studies have concluded that, with tolls continued at a minimum, two additional lanes will be required to meet increasing traffic demands by 1980; and further, it is quite likely that two more will be required by 1990. A somewhat less conservative estimation of growth, or the prospect of removal of tolls, will shorten the timing of these needs substantially and could require two additional lanes. The revenue projections made as part of the engineers' study indicate that current tolls could support construction at the Downtown, or possibly at the Midtown location. The Commission feels that the location of any new crossings should be governed by a determination of which proposed sites would tend to reduce or eliminate tolls to the greatest degree.

The Downtown Tunnel

The Downtown Tunnel was opened to traffic in 1952, as part of a system with the Berkley Bridge. The four-lane bridge serves traffic to and from Chesapeake, and Portsmouth via the Jordan Bridge, which is a toll facility, in addition to that using the Tunnel. The Berkley Bridge is now operated as a toll-free facility, under an agreement with the city of Norfolk.

Traffic through the two-lane Tunnel is now at a capacity level, and substantial congestion is frequently experienced, particularly at the Portsmouth entrance. Average daily traffic in 1971 was 21,386 vehicles.

Peak hour figures during November 1972 were recorded at approximately 2700 vehicles.

Another factor influencing congestion arises at the Berkley end of the Tunnel from the bridge-only traffic. Roughly 18,000 vehicles per day fall into this category, placing a significant additional load upon interchanges and upon the bridge itself.

Future progress of residential development in Chesapeake, and the continued development and redevelopment of the downtown sections of Norfolk and Portsmouth will maintain, and indeed substantially increase pressures at the Downtown Tunnel. The level of this increase is dependent upon toll and access policies.

The traffic situation at the Downtown Tunnel will, in all likelihood, be aggravated by the completion of Interstate 264. The Tunnel is not designated as part of the Interstate System; i. e., the route officially stops at the Portsmouth Tunnel entrance and recommences in Norfolk. The connection

of I-464 from the south (running parallel to the South Branch of the Elizabeth River) will tend to channel additional traffic onto the Berkley Bridge.

The Midtown Tunnel

The Midtown Tunnel was built and opened to traffic in 1962 as a response to the steadily increasing traffic experienced at the Downtown Tunnel, at levels substantially higher than those originally projected. The termination of ferry services in 1955 contributed only in part to the unexpected traffic volumes.

Average daily traffic in the Midtown Tunnel was 13,294 vehicles in 1971. Average volumes have been increasing, and were recorded at 14,832 vehicles per day by mid-1972. Peak hour figures during November 1972 were recorded at approximately 1850 vehicles.

Opening of the Waterfront Drive in Norfolk and the Western Freeway (improved U. S. Route 17 corridor in Portsmouth) are major factors in the traffic outlook for this Tunnel. It may be expected that volumes will continue to increase with growth in the areas surrounding the Tunnel entrances, but this growth will be relatively gradual. Major development of Craney Island and extension of the Medical Center facilities are two occurrences which could speed up the growth.

With seemingly conservative estimates made by engineers for the Elizabeth River Tunnel Commission, it would appear that the Midtown Tunnel will approach its capacity during the five year period between 1978 and 1983. Significant diversions from the Downtown Tunnel or developments such as those mentioned above could reduce this time estimate.

PUBLIC TRANSPORTATION ACROSS THE RIVER

To obtain a complete picture of the needs of transportation across the Elizabeth River, and the financial needs resulting therefrom, some discussion of public transit is necessary. To the extent that trip-makers might be persuaded to forsake their autos, public transit offers possible relief of traffic pressures on the Elizabeth River Tunnels, and would affect the costs and benefits of various financial alternatives.

Currently, the only normal transit service between the cities of Norfolk and Portsmouth is the shuttle-bus operation of the Elizabeth River Tunnel Commission. This service operates only at the Downtown Tunnel, and only between the Downtown areas. Thus, anyone wishing to travel by bus between the two cities must transfer once or twice in his trip. As noted in the 1972 transit study for the Southeastern District, this sort of operation is unusual and highly inefficient.

Further, the tunnel-bus is not a financially rewarding operation. Patronage has been dropping, and a deficit of $88,471 was incurred during the year ending January 31, 1972.

Discussions are currently being conducted regarding the consolidation of all transit operations under the auspices of a regional transportation service district. Such an action would encourage rationalization of transit routes and fare structures, yielding benefits on both local and regional levels.

Decisions regarding transit and tunnel finance will have an impact upon one another. The tunnel toll, as an out-of-pocket expense and as a price paid through congestion, is a factor influencing the choice between private

auto and public bus. Similarly, convenience and transit fare enter the choice. Adjustments in the relative prices paid to travel between the areas on either side of the Elizabeth River can encourage use of one or the other mode of transportation.

The coordination of tunnel tolls, parking fees, and transit fares would provide, at the least, an example of the sort of control which transportation planners and federal programs have long been seeking. At most, such control would give Portsmouth-Norfolk and the Southeast a more effective and beneficial transportation system. This topic will be explored further in conjunction with specific financing alternatives, in Sections V and VI.

CURRENT FUNDING PATTERNS

The Elizabeth River Tunnels are owned and operated by the Elizabeth River Tunnel District, a political subdivision of the State created by the Virginia legislature. The Elizabeth River Tunnel Commission is the governing body of the District, which was created in 1942. Members of the Commission are appointed by the Governor, subject to the restrictions of the State enabling legislation. (See note on page 6 of this report)

The current financing of the Commission is based upon revenue bonds issued in 1960, with a maturity date in the year 2000. These bonds were issued to repay the outstanding indebtedness associated with the Downtown Tunnel and Berkley Bridge, and to finance construction of the Midtown Tunnel. The principal amount of the issue was $41,700,000, payable at a 4½ percent rate of interest.

Revenue currently is received from three sources: the major portion of receipts are from tolls paid by persons using the tunnels and by passengers using tunnel buses. Currently, tunnel tolls are set at 20 cents per axle per trip, with special provisions for tunnel buses and some vehicle and driver categories. Bus fare is currently 10 cents per trip.

The second category of revenue is received from the investment of reserve funds. Reserves are maintained for interest and maintenance expenses.

Direct payments to the District comprise the third source of revenue. The city of Norfolk currently pays to relieve tolls on the Berkley Bridge. This payment, based upon bridge maintenance expenses, will cease in 1980. The State Highway Commission has expressed its intention to allocate funds to absorb a portion of the District's maintenance costs for tunnels. For the current year approximately $300,000 was allocated for this purpose. This payment will presumably continue on a yearly basis.

The current financial picture for the District is quite good, and the bonds are being redeemed at a faster rate than originally planned. Table 1 is a statement of revenues and expenses of the District for 1971, indicating an excess of revenues over expenses of roughly $2.4 million. Bonds may be redeemed, at a premium, or purchased on the open market. The redemption premium decreases with time, and is now at 3½ percent for partial redemption. Open market purchases have been made in recent months.

TABLE 1

ELIZABETH RIVER TUNNEL COMMISSION,
STATEMENT OF REVENUES AND EXPENSES
FOR THE YEAR ENDED JANUARY 31, 1972

		Revenue Fund	Reserve Maintenance Fund	Total
Operating Revenues:				
Tolls:				
Vehicles	$5,100,949			
Bus passengers	193,480	$5,294,429		$5,294,429
Bridge - City of Norfolk contract		444,563		444,563
Miscellaneous income		19,243		19,243
Investment income			$ 54,399	54,399
		$5,758,235	$ 54,399	$5,812,634
Operating Expenses:				
Maintenance of roadway and structures		414,393		414,393
Maintenance and operation of tunnel		418,316		418,316
Maintenance and operation of bridge		77,820		77,820
Toll collection and equipment		347,963		347,963
Bus operation		271,951		271,951
Administration		382,739		382,739
Insurance			93,554	
Cost incurred for major or extraordinary repairs, renewals or replacements			173,118	173,118
		$1,913,182	$ 266,672	$2,179,854
Excess (deficiency) of operating revenues over operating expenses		$3,845,053	$(212,273)	$3,632,780
Non-operating revenue:				
Income from investments:				
Reserve Account			103,303	
Construction Fund			4,640	107,943
				$3,740,723
Non-operating expenses:				
Interest				1,353,634
Excess of revenues over expenses				$2,387,089

Source: Lybrand, Ross Bros. & Montgomery

It was estimated in the 1960 bond prospectus that the net revenues of the Tunnels would be sufficient to retire the bonds by 1985. As of March 31, 1973, the outstanding indebtedness of the Commission was $25,308,000. Hence at current rates of retirement and patterns of growth, it is possible that this retirement date would be advanced.

FUTURE FINANCING NEEDS

The needs for future financing of Elizabeth River crossings are contingent upon the decisions regarding additional capacity, and to a lesser degree, transit operations. The financial requirements fall into the two broad categories of capital costs and operating and maintenance costs. The timing of requirements in these two categories differs, as do their potential sources. These sources will be discussed in Section V.

As may be seen in Table 1, the current annual costs of operating the Elizabeth River Tunnels are approximately $1.91 million, of which $348,000 are associated directly with toll collection. (The bus operation had expenses of $271,951 to give the total expenses of $2,179,854.) This expense is, to an extent, dependent upon traffic volumes in the tunnels, and certainly upon labor usage rates and materials costs. Hence, the figure may be expected to increase with the passage of time. In all following discussions, an approximate figure of $2.0 million will be used to represent the operating and maintenance cost of the current facilities, under the current conditions of financing. That is, the bus operation will be treated separately.

Capital costs associated with the current facilities will consist of retirement of outstanding debt. As the trust indenture is written, it will probably be required that the current bond issue be retired prior to any expansions of capacity or organizational changes. Immediate action would involve on the order of $25 million, allowing for ongoing retirements and purchase against the $25,308,000 mentioned previously.

As it will require roughly seven years to plan and construct additional tunnel facilities, as a minimum, it is appropriate to consider the debt outstanding at that time, which would be $8 million or less, assuming current revenue patterns. Short term borrowing might be used to finance initial costs. Refinancing and retirement of the 1960 bond issue could then be undertaken. Capitalization of interest could add $3 million to $7 million over a full seven-year term.

The effect of new facilities will be to increase operating and maintenance costs as well as to incur construction costs. For the sake of subsequent discussions, it is estimated that two additional lanes at either of the current locations would increase total operating and maintenance costs 20 percent, over what they would be with the current facilities. It will be assumed that construction of two lanes at another location would increase operation and maintenance costs 50 percent over current levels. *These estimates, while based upon preliminary engineering studies, must be recognized as approximate, for discussion only.*

It has been estimated that the minimum cost for any expansion would be roughly $40 million, exclusive of non-construction items such as right-of-way. This figure would seem to be a minimum cost for any expansion of facilities. It might be expected, in view of such items as land costs and varying tunnel lengths, that $100 million is not unreasonable as a high estimate for building in any one location. Of course, it may be that several projects might be combined, giving a total financing requirement greater than the figures described. Table 2 summarizes these possibilities, to estab-

lish a range of financial requirements (Note again that these figures are very rough). The magnitude of these requirements serves to eliminate some of the possible funding sources for particular projects. The next chapter is concerned with proposing alternative ways in which these financial requirements may be met.

TABLE 2

ALTERNATIVE PROJECTS FOR
ELIZABETH RIVER CROSSINGS

Project (ADT Capacity)	Timing	Financing Needs: Capital Cost (Millions $)	Financing Needs: Operations & Maintenance (Million $)
1. Current operations (43,000)	1973	(25)	2
2. Immediate toll removal (43,000+)	1973	25	1.7
3. Add 2 lanes at current locations (87,000)	1980	50-70**	2.4*
4. Add 2 lanes at a new location (63,000)	1980	63-80**	3.0*
5. Add 2 lanes at an existing location and 2 lanes at a new location (107,000)	1980-1990	113-150**	3.4*
6. Add 4 lanes at new location (107,000)	1980	75-108**	3.4*

o All costs and capacity figures are preliminary estimates only.

* Includes toll collection

** Includes retirement of 1960 bond issue.

V.

ALTERNATIVE MEANS OF FINANCING ELIZABETH RIVER CROSSINGS

The previous section reviewed the financing needs for the present and possible future expansions of the Elizabeth River Crossings. This section will focus upon alternative ways in which these needs might be met. While a basic part of the problem of proposing and selecting alternative means of financing is, of course, the sources of funds, the importance of the institutional structure established to deal with these funds must also be recognized. The alternatives to be discussed here will represent a range of feasible institutions—feasible in the sense that there appear to be no insurmountable legal, political, or economic barriers to their implementation. The practicality of implementation, i. e., the likelihood of success, is addressed in choosing most desirable alternatives from among the range of those proposed.

TABLE 3
SOURCES OF FUNDS FOR ELIZABETH RIVER CROSSINGS

- Federal Level
  - Interstate Highway Program
  - Federal Aid Highway Program
  - Transit-Related Highway Funds
  - High Density Urban Corridor Projects*
  - Revenue Sharing*
- State Level
  - Highway Construction Funds
  - Highway Operating and Maintenance Funds
  - Direct Legislative Apportionment
  - State Level Bonding
    - – Toll Bonding (Revenue)
    - – Limited Obligation Bonds
    - – Full Faith and Credit Backing
  - Special Tax Commitment
- Local Level
  - Bonding
    - – Revenue Bonds
    - – General Obligation or Limited Obligation Bonds
  - Tax Support
    - – Sales
    - – Excise
  - Direct Apportionment
  - Multiple Activity Financing—Combining Different Facility Types, e.g., Tunnels with Airports and Real Estate

*Current legislation, details not settled

SOURCES OF FUNDS

There are two basic categories of possible funding: tolls and taxes. The trade-off between these two sources, and where they are applied (that is, who pays) are critical issues in deciding upon a most appropriate mix of financing.

Table 3 shows the principal sources of funds considered for financing the Elizabeth River Tunnels. A range of other sources, such as the State Urban Incentives Program, were examined but ruled out as impractical because of low overall funding levels or very low likelihood of acquiring funding.

It must be stated in general that the immediate outlook for non-toll financing is not especially promising. Referring to each of these sources, the following major reasons for this statement may be given:

- The Interstate Program is unlikely to be expanded, and all mileage available to Virginia has been allocated. Any extra mileage designation would have to be transferred from other areas, in the State, or from other states.
- Neither Interstate or regular Federal Aid Highway money may be used on toll facilities, unless tolls are guaranteed to be re-

moved when the local share of expenses has been paid off. Removal of tolls on one of the Elizabeth River crossings would necessitate complete refinancing of the other crossings.

- The Virginia Highway Commission's ten year plan specifies uses for all presently anticipated Federal and State highway funds. Acquisition and construction of Elizabeth River crossings would require elimination of other projects.
- Transit related highway funds are uncertain, and might require construction of high cost facilities in addition to those discussed in Section IV.
- High density projects are a part of pending Federal Aid Highway legislation, as yet an unsettled issue. There will be only one such project per state.
- Urban Mass Transit Administration grants for bus operations have to date been granted only for rolling stock.
- The Revenue Sharing Program is just beginning, and will be subject to many competing demands upon limited funds.
- Direct legislative apportionment and special tax commitments are difficult to obtain. The recent increase in the State Gasoline Sales Tax makes this otherwise logical candidate for consideration less practical, over the near term.
- The cities do not possess adequate resources to undertake alone the expense of eliminating tolls.

In proposing and selecting alternatives for financing Elizabeth River crossings, the emphasis in this study is thus upon future opportunity.

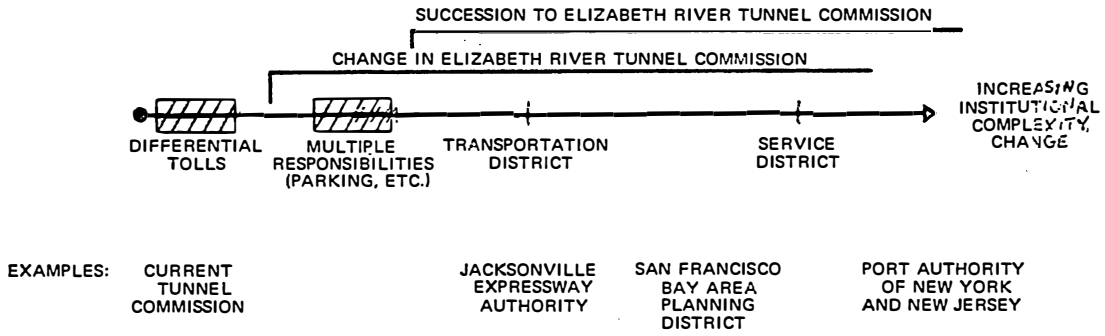
The principal objectives are to establish a situation in which funds which might become available may be used, and to maximize the chances of receiving such funds. Hence, alternative means of financing are presented as institutions.

ALTERNATIVES AS INSTITUTIONS

In presenting alternative means of financing crossings as institutions, one is focusing upon questions of what sort of agency will operate the tunnels, at what level of government control will be exercised, and what sources of funding can and will be utilized.

These alternative institutional structures than represent, in varying degrees, change and increased complexity relative to the existing situation. As Figure 5 illustrates, the range of these alternatives may be presented in these terms, and arrayed along an axis beginning with the Elizabeth River Tunnel Commission. The Commission, as it is now constituted, can undertake new activities and utilize new funding sources only to a limited extent. After a certain point, the basic nature of the Commission must change. The amount of change required may then be sufficiently great that an entirely new structure is created to succeed the Commission. (See note on page 6 of this report)

FIGURE 5. ALTERNATIVE APPROACHES TO FINANCING, VIEWED AS INSTITUTIONS



Examples or analogies observed in other areas of the country serve to illustrate further this range of institutional structure. They stand as models upon which particular alternatives, tailored to the current problem, may be based. The Jacksonville Expressway Authority has successfully utilized varying funding sources to achieve its transportation goals. The Bay Area Planning District has power to disapprove any project proposed by any individual or transportation agency, including (though on a somewhat restricted basis) the State Highway Department. The Port Authority of New York and New Jersey undertakes full development and operating activities, over the entire range of transportation and related activities.

Eight specific alternatives have been proposed to represent the range of possibilities for vehicular crossings of the Elizabeth River. These alternatives are listed in Table 4 (and summarized again in Table 6). Their approximate relative locations on the scale of institutional change and complexity are shown in Figure 6. Each alternative will be discussed in the following paragraphs.

TABLE 4
ALTERNATIVE INSTITUTIONAL STRUCTURES FOR FINANCING ELIZABETH RIVER CROSSINGS

1. Elizabeth River Tunnel Commission, as currently constituted
2. State Toll Facilities Agency
3. State, Executive Branch, Agency Using Tolls and General Obligation Backing
4. Local Tunnel Authority
5. State Assumption of Debt on Limited Tax Basis, with Possible Special Tax
6. Local Development Authority, with Active Port, Industrial, and Commercial Involvement
7. Transportation District.
8. Full Power Service District

1. Elizabeth River Tunnel Commission

This alternative maintains the status quo: The Commission, a State political entity, would proceed as in times past to float a new bond issue and to maintain all crossings as toll facilities. The Commission will have to obtain the approval of the State Legislature to float the new bonds.

If no additional capacity is to be added, tolls may be eliminated by 1985. (See note on page 6 of this report.)

The study being conducted by the Traffic Engineers of the Commission considers the possibility of using differential tolls to encourage traffic to shift to the Midtown Tunnel. All alternative tunnel con-

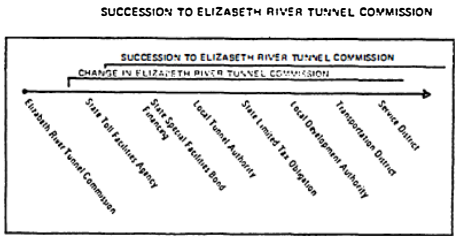


FIGURE 6. SPECIFIC ALTERNATIVES FOR THE ELIZABETH RIVER

figurations (discussed in Section IV) include retention of tolls, at an average rate equal to the current level being charged.

With this alternative, it may be assumed that additional capacity at the Downtown Tunnel may be provided without a great deal of difficulty. Expansion of the Midtown location might also be considered.

The Tunnel Commission has a good record with the financial community (an AAA rating with Moody's) and there appears to be adequate coverage of costs through toll receipt projections. It is likely that tolls would be continued under this alternative to beyond the year 2000.

2. State Toll Facilities Agency

Under this alternative, financing and control of the Tunnels would be handled by a State-level agency having authority over all Virginia toll facilities. Relative to the status quo alternative (No. 1), this alternative might be expected to find somewhat lower interest rates on this bond market, and traffic control would be vested in a nonresident agency. This alternative is otherwise identical to the first one, and is similar to financing under the old State Revenue Bond Act. New State Legislation would be required in order to implement this alternative.

3. State Special Facilities Bond Financing with General Obligation Backing

Under Article X, Section 9c, of the Virginia Constitution, the Commonwealth may issue special purpose bonds backed with the full faith and credit of the State. However, the Virginia Constitution does not provide for the refinancing of special purpose bonds backed by the full faith and credit of the Commonwealth. Control of the facilities must be vested in the Executive Branch of the State government, and financial feasibility must be thoroughly demonstrated.

The State Highway Department would assume control of the tunnels. Tolls would be used as the principal revenue source, although other funds normally available for disbursal through the Highway Department could be employed to speed repayment of debt or reduce tolls. The primary advantage of this alternative lies in the lower interest rate which would be associated with State-backed bonded indebtedness. A possible disadvantage is the shorter time periods for which such bonds are written, which may necessitate a larger annual revenue to cover interest and amortization charges.

Because bonding under this alternative would not be tied explicitly to toll revenues, it would be possible to reduce tolls if debt retirement is proceeding much faster than projected. Of course, it may be expected that the State as a whole would prefer to eliminate debt as quickly as possible, but this matter would be subject to the political process. Further, because control is placed with the Highway Department, the operation of the tunnels could be better integrated with the regional transportation network in the Tidewater Area. (See note on page 6 of this report)

4. Local Tunnel Authority

This alternative would be quite similar to the first proposal—the present Tunnel Commission—except that control would be placed at the local level. The cities of Norfolk, Portsmouth, and other Southeast cities, as might be appropriate, by agreement, form a management structure to operate and construct tunnel crossings. Assumptions of debt would be handled on a basis analogous to current activities for provision of water and sewage services.

The principal advantage of this alternative would be its local control basis. That is, tolls could be reduced, or debt paid off more quickly through contributions from the cities. These contributions would come from general funds and special assessments or taxes. The precedent for such contributions is the current payments made by the city of Norfolk to relieve tolls on the Berkley Bridge. Further, decisions concerning increased capacity of crossings would be made within the local political process.

5. State Assumption of Debt on a Limited Tax Basis

This alternative is proposed as a modification of the second and third institutional structure. Operation and management would be similar, as would the relative advantages.

The major difference would lie in the designation of a special tax to cover a portion or all of the debt service costs of the project. For example, a portion of the gasoline or motor vehicle registration taxes might be used to retire debt.

It would be expected that interest costs of new borrowing would be lowered because of State involvement, but not to the extent possible with the general obligation bonding of Alternative 3. This alternative might still require maintenance of tolls, at some reduced level, on a long-term basis.

6. Local Development Authority

This alternative represents a strengthening and extension of Alternative 4. Under this arrangement, the tunnels would be combined with other activities such as airports and industrial development. Tunnel tolls would be imposed or reduced as necessary and desirable within an overall picture of regional development.

Activities such as air rights, real estate development, utilization of Craney Island, and port-related industrial and commercial activities, might appropriately be pooled with the tunnels. The major problem here lies in finding activities which would generate sufficient revenues to cover tunnel costs, in the face of possible conflict with existing agencies such as the Virginia Ports Authority.

7. Transportation Service District

In this alternative, the tunnels would be included under the control of a Regional Transportation District, formed under the Transportation District Act of 1964. Such a district is now in the final stages of formation and will eventually take over public transit operations in the Southeastern Virginia Planning District cities. A similar institution has been established in the San Francisco Bay Area of California to control transportation planning. The advantages of this alternative stem from the close coordination of tunnel operation with other parts of the transportation system.

The role of the tunnels and tolls as traffic control mechanisms has been discussed.

The ability to control tolls, transit routes and fares, and perhaps parking rates as well, would put the Transportation District in a uniquely strong position to attack the public transportation problems of the metropolitan area. The Urban Mass Transit Administration, for example, explicitly recommends consideration of such non-capital intensive approaches to transit.

The Transportation District Act is written to reflect "the policy of the Commonwealth to make use of private enterprise to the extent reasonably practicable." A transportation district is authorized by law to issue bonds or other interest-bearing obligations for any of its stated purposes. It would probably be desirable to establish a tunnel operating body similar to the current Tunnel Commission staff, and to finance new construction through city-backed revenue or limited obligation bonds.

A transportation district formed under this Act would have the ability to utilize a wide range of funding resources. Although the monies are not currently large, there are indications that Federal programs in such areas as public transit and revenue sharing will grow and continue to be oriented toward local control.

8. Development Service District

At the other end of the institutional scale from the first status quo alternative is the formation of a Service District under the Virginia Area Development Act. Such a district, if exclusively transportation-oriented, would represent simply an extension of powers of the previously discussed alternative: This service district is empowered to assume debt by bonding, to own and operate property, and to assess governmental subdivisions within the district.

The Charter for such a Service District could be extended to cover a range of activities, as proposed in the sixth alternative. The Port Authority of New York and New Jersey is perhaps the most widely known and successful example of this type of institution.

CRITERIA FOR EVALUATION OF ALTERNATIVES

The eight alternatives proposed above illustrate a range of institutions for undertaking the financing of the Elizabeth River crossings. This range is reflected in the amount and coordination of powers given the institution, and the placement of powers at the State or local level. Evaluation of these alternatives relative to one another must consider three principal factors:

- The degree to which the alternative is compatible with the current and future objectives of the various communities involved.

- The difficulties involved in implementation, or rather the likelihood that the alternative can be successfully implemented within a reasonable length of time.

- The current and potential future value of the alternative in reducing and eventually eliminating tolls on the Elizabeth River Crossings, while meeting identified needs for facilities.

TABLE 5
ELEMENTS IN EVALUATION OF ALTERNATIVES RELATIVE TO COMMUNITY OBJECTIVES

Any alternative should be planned to:
1. Contribute to improved and coordinated rates and patterns of growth in Norfolk and Portsmouth;
2. Minimize traffic congestion, and resulting air and noise pollution;
3. Contribute to an integrated transportation network and operating system;
4. Contribute to improvement of urban life on a community-wide basis;
5. Encourage practical and effective institutional arrangements;
6. Achieve an equitable distribution of costs and benefits.

The background against which compatibility with community objectives is considered was discussed in Section III. From such considerations, six specific elements may be identified. These six elements, listed in Table 5, represent the dimensions for evaluation relative to community objectives.

The principal question in implementation is that of political feasibility.

The specific alternatives described have been proposed with attention to their legal and financial possibilities — i. e., nothing has been proposed which is explicitly forbidden by law or for which money would definitely not be available. But political feasibility is not simply a question of what is possible, but rather of what people will agree to.

It may generally be expected that in terms of implementation, institutions which require an ordinance would be preferred to those which require legislation. In turn, legislation would be preferred to public referendum.

The question of whether tolls should be removed has been raised, and is considered in conjunction with community objectives. However, it is a basic premise of this study that there is a desire to reduce and eliminate tolls, and specific attention must be given to how well the alternative will serve this desire.

Evaluation, and subsequent selection of preferred alternatives, is treated at two levels of detail. First, all eight alternatives and variations thereof are considered at a gross level. From this consideration, the more promising alternatives are selected for further study. These alternatives are then described in greater detail, and more closely studied. From these more detailed investigations, a recommended course of action is formulated.

From the standpoint of community objectives, local control may be preferable to State control. The six rather general elements listed in Table 5 are subject to interpretation, and this interpretation is best made where the impacts of implementation are most strongly felt. There is much to be said for making the tunnels a usable planning tool at the local level.

From the same standpoint, strong, comprehensive control is a valuable characteristic. Such control permits active trade-off among several activities in order to achieve such objectives as improved traffic, flow local growth, and inprovement of urban life.

From the standpoint of political feasibility, alternatives for which there is a successful precedent are preferred. A precedent provides a model for action and some promise of increased likelihood of success. And, as was suggested above, an alternative which concentrates implementation decision-making at higher levels has greater appeal on this criterion.

There are two factors to be considered in evaluation from the standpoint of toll reduction or elimination. To the extent that revenue financing is required, low interest alternatives are preferred. This statement implies a preference for bonded indebtedness backed by general obligation commitment of a political body with sufficient financial resources to grant such commitment. This consideration, in turn, implies State Control.

The second factor is the distinct characteristics of the funding sources listed in Table 3, and their likely availability. Federal highway funds are disbursed to the State. Revenue sharing and Urban Mass Transit Administration grants disburse significant monies directly to municipalities. A State agency must be careful with respect to favoring one area within the State. A local agency can employ all mechanisms of the political process to acquire funds. Changes in emphasis upon various funding programs must be considered.

In view of such considerations, two of the alternatives appear preferable to the others:

3. State Special Facilities Bond Financing, and

7. Transportation District

The eighth alternative, a full powers Service District, is quite similar to No. 7, but would be rather difficult to implement, for it involves, among other difficulties, a referendum with a majority of voters in favor of formation of the district. It would be possible, with some legislation, to provide for absorption of a transportation service district into the Service District, should such a district be formed at some later date.

Table 6 reviews the considerations for selecting these two alternatives.

Evaluation judgements are, of course, at a rather gross level, but serve to illustrate differences among alternatives.

It may be noted that the local development authority (Alternative 6) compares favorably with the other alternatives. This alternative was discarded as overly extensive in its range of operations, and potentially in conflict with too many existing State and local agencies.

In the next section the two selected alternatives will be described in further detail. Included in these descriptions will be considerations of available funding sources and implementation strategies.

TABLE 6. SUMMARY AND EVALUATION OF INSTITUTIONAL ALTERNATIVES

ALTERNATIVE	MAJOR ADVANTAGES	MAJOR DISADVANTAGES	EVALUATION**							
			COMMUNITY OBJECTIVES						IMPLEMENTATION POSSIBILITIES	TOLL REDUCTION AND REMOVAL
			Coordinated Growth	Minimized Congestion and Pollution	Integrated Transportation System	Maintained an Improved Quality of Urban Life	Effective Institutional Arrangements	Desirable Distributions of Benefits and Costs		
1. Elizabeth River Tunnel Commission	• Continuity of Financial Record • No New Legislation	• Relative Autonomy • Perpetuation of Tolls								
2. State Toll Facilities Agency	• Possible Reduction in Interest Rates • Closer Coordination with Highway Department	• Long Term Toll Maintenance • Non-Local Control								
*3. State Special Facilities Bond Financing	• Lowest Interest Rates • Coordination with Highway Department • Coordination with State Planning • Better Utilization of State Oriented Funding Programs	• Non-Local Control • Stringency of Financial Requirements								
4. Local Tunnel Authority	• Local Control of Operations	• Potential Difficulty of Integration with State Highways • Lack of Previous Financial Record								
5. State Limited Tax Obligation	• Committment to Reduce Tolls	• Competition of Other Tax Recipient Activities, i.e., New Precedent Set								
6. Local Development Authority	• Coordination of Activities • Local Control	• Management Complexity • Difficulty of Assembling Profitable Project Packages								
*7. Transportation District	• Full Transportation Coordination • Local Control • Coordination with Other Planning • Better Utilization of Locally Oriented Funding Programs	• Lack of Funding Power • Potential Conflict with Existing Agencies								
8. Service District	• Full Transportation Coordination • Local Control • Coordination with Other Planning • Receptivity to Local Directed Funding Programs • Funding Power • Potential for Growth	• Difficulty of Implementation								

*Alternatives Selected for Further Study

 Evaluation LOW Relative to Particular Criterion

 Evaluation MEDIUM or INDIFFERENT to Particular Criterion

 Evaluation HIGH Relative to Particular Criterion

VI.

MAJOR ALTERNATIVES

From among the range of alternative institutional structures proposed for financing of Elizabeth River crossings, two have been selected as most promising:

- State Special Facilities Bonding
- Transportation District

In this section these two alternatives are explored in further detail, and recommendations are made regarding what actions might be most advantageous in relieving Elizabeth River tolls.

THE ISSUE OF INTERSTATE DESIGNATION

A major issue which has been touched upon at several points in previous discussion is the utilization of federal funding within the Interstate program for the Elizabeth River crossing system. In general it may be pointed out that the cities of Norfolk and Portsmouth have a valid basis for requesting preferential federal funding treatment. The cities are sites of major federal investment, primarily military in nature, which as a percentage of the cities' resources approaches that percentage of federal investment as that found in the District of Columbia. As in the District of Columbia the bulk of this federal investment in Norfolk and Portsmouth is nontaxable. Since Congress has made compensatory fiscal allowances in the District of Columbia, it is reasonable to expect that they might also do so in Tidewater Virginia.

As has been shown, the Downtown Tunnel and Berkley Bridge lie on the route of I-264, but are not designated as part of the Interstate system. With the construction of the third Hampton Roads crossing, the Western Freeway in Portsmouth, the extension of I-64/I-664 (Bowers Hill-Bellville portion of the Beltway), the completion of the Waterfront Drive Freeway in Norfolk and an additional tube at Willoughby Spit, the present Midtown Tunnel or a new crossing would also logically be included as part of the major regional arterial system. With the exception of the portion of the third Hampton Roads crossing, from Newport News to a point offshore at Craney's Island, none of these projects are recipients of Interstate money.

Under current legislation, all mileage on the Interstate system has been apportioned to the states. The Ten Year Plan of the Virginia Department of Highways notes that at the end of 1971, 215 miles of Virginia's 1077 miles of Interstate road had yet to be placed under construction. Pending federal legislation will extend the final obligations date for the program to 1980, and all projects in Virginia have been scheduled.

In short, then, any use of regular Interstate funds for Elizabeth River crossings must, under current legislation, be based upon mileage already designated. Such mileage might come from two sources:

- Projects which are not constructed—for example, the future of Interstate 66 in Northern Virginia is somewhat uncertain. Should such a project eventually not be undertaken, the designated mileage and funds might be used elsewhere.
- Projects which have been altered—for example, the shift in Interstate designation on I-95, away from the Richmond-Petersburg Turnpike, offers a possibility of some transfer of mileage.

Pending federal legislation permits substitution of alternate route segments within a state. However, the cost of the substituted segment may not exceed that of the cancelled project, and all future substitutions will be on a dollar-for-dollar basis, rather than mile-for-mile. Also included in the legislation is a provision for transfer of Interstate designation among states, when one state will not complete its system. This provision represents a remote third potential source of funds.

Pending federal legislation will authorize special projects in high density urban corridors, to connect to Interstate routes. One project of up to ten miles in length would be authorized per state, financed under the 90-10 procedures applied to the Interstate system. This program is a reasonably promising fourth source of funds.

Interstate funds could be employed in conjunction with either the State special projects bonding, or the Regional Transportation District.

1. All net revenues must be applied to retirement of the local, bonded, share of the project cost;
2. Tolls must be removed when this debt is paid.

Federal participation for tunnels and bridges is possible upon the finding of the United States Secretary of Transportation that such participation will promote development of an integrated Interstate system.

Under current law, federal funds cannot be used in a case where the State share of the facility's cost is financed on an "interlocking" basis with other facilities. Specifically, Interstate money cannot now be used for expansions of a single current tunnel or possible future crossing while all crossings are financed under a single bond issue. Special legislation would be required for such an arrangement. Separation of bonding would be difficult, because the Interstate (free) facility would be in competition with the remaining toll facilities, if debt is not retired on all at the same time.

The handling of this problem under each of the two alternatives will be considered in the following discussion. However, if it is found that federal funding for additional crossings cannot be obtained, it is recommended that efforts be made to place the Berkley Bridge and Downtown Tunnel within the Interstate system, and further, that Interstate funds be procured for expansion of bridge capacity.

These efforts are justified as a connection for two existing Interstate routes, and will, under either alternative, make a significant contribution to the possibility of early removal of tolls from the Downtown tunnel. It is recommended that prior to any legislative steps that would perpetuate tolls for additional tunnels, the Elizabeth River Tunnel Commission should be abolished and the existing tunnels conveyed to the State Highway Department for future operation and maintenance. (See note on page 6 of this report.) Every effort should be made to obtain the necessary funds from the State to operate and maintain the tunnels and to pay off the present outstanding indebtedness. Any legislative action to advance these goals would amount to a substantial effort toward the reduction or elimination of tolls. Further financing of tunnel construction or operation through the imposition of tolls is discouraged as being an unfair burden on the citizens of Tidewater.

In the event that the combination of Federal-State programs previously discussed prove unfeasible or inadequate to meet the need for future expansion, and additional bond financing becomes inevitable, this Commission recommends that thorough consideration be given to implementing

such expansion and financing pursuant to Article X, Section 9(c) of the Virginia Constitution (which authorizes debt for certain revenue producing capital projects, see discussion on page 32). If the State were to assume control of the crossings, it is not unreasonable to suppose that agreements might more readily be made, whereby all maintenance and non-toll-related operating costs would be paid from general highway funds.

As has been pointed out, these costs may consume 30 percent to 40 percent of the revenues derived from toll collections.

It may also be supposed that State control would facilitate acquisition and utilization of Federal Highway funds as they might become available. In particular, the recommendation for use of High Density Funds or of placing the Downtown Tunnel on the Interstate system should be explored in greater detail.

There is nothing in current legislation to preclude retirement of the bonded indebtedness with other State funds should they become available. Direct apportionment or imposition of some special tax are two possible sources of such funds.

It is therefore recommended that, under this alternative, the possibility of procuring special legislation to permit federal participation in the entire Elizabeth River crossings package, with State financing interlocking the various facilities be investigated.

FINANCING UNDER STATE SPECIAL PROJECTS BONDING

Article X, Section 9(c) of the Constitution of Virginia enables the General Assembly to "authorize the creation of debt secured by a pledge of net revenues derived from rates, fees, or other charges and the full faith and credit of the Commonwealth." Such debt is created "for certain revenue-producing capital projects." Affirmative vote of two-thirds of the members of each House of the General Assembly is required to exercise this authority.

The Governor must

> "certify, in writing, his opinion, based upon responsible engineering and economic estimates, that the anticipated net revenues to be pledged to the payment of principal of and interest on such debt will be sufficient to meet such payments as the same become due and to provide such reserves as the law authorizing such debt may require."

This certification is required twice—before the debt is authorized by the General Assembly, and again before the debt is actually incurred.

The project financed must be distinctly specified in the authorizing legislation, and the institutions and agencies undertaking such projects must be administered "solely by the Executive Department of the Commonwealth."

It is thus proposed that crossings of the Elizabeth River between Norfolk and Portsmouth may be financed through the use of Commonwealth of Virginia Highway Facility Bonds. The crossings facilities will be administered directly by the Virginia Department of Highways, which will be responsible for all aspects of planning, design, operation, and maintenance, including the recommendation of future levels of toll charges.

As may be seen from the above provisions, tolls would not be immediately removed from the tunnels under this alternative. Highway Facility Bonds

would be issued as general obligation instruments of Virginia. Under present market conditions, twenty year term general obligation bonds might be sold with an interest rate of roughly 4½ percent. A rate of 4¾ percent is probably a reasonably conservative estimate. Revenue bonds such as would be sold by the Elizabeth River Tunnel Commission would be written for a 40 year term, and would (assuming current market conditions) carry an interest rate of at least 5¾ percent. All other things being held equal, the annual payment of interest plus principal required under the general obligation bond would be approximately 20 percent greater than that required under the revenue bond, even though the total amount paid is greater with the higher rate of interest of the revenue bond.

Preliminary revenue estimates released by the consultants for the Elizabeth River Tunnel Commission leave some question as to whether any proposed expansion of current facilities could be financed under this increased burden. Further study of the question may be warranted, and would definitely be required before this alternative could be implemented.

General obligation bonds written for a 30 year term would have an interest rate of perhaps 5 percent. Under this situation, the required annual payment would be quite close to that of the 40 year revenue bond.

TRANSPORTATION DISTRICT

Chapter 32 of the Code of Virginia, entitled "The Transportation District Act of 1964," was enacted in recognition of the necessity, for orderly growth and development of urban areas, of the development of transportation systems. The Act provides for regional cooperation in planning and action, but states as a matter of policy that:

> "Such joint action should be conducted in a manner which preserves, to the extent the necessity for joint action permits, local autonomy over patterns of growth and development of each participating political jurisdiction."

It further states that:

> "In the provision of improved or expanded transit facilities, it is the policy of the Commonwealth to make use of private enterprise to the extent reasonably practicable."

Any District and governing commission formed under this Act thus has planning and administrative functions, but is not encouraged on its own power and initiative to acquire or construct transportation facilities.

The principal motivation for this alternative is that the tunnels and their tolls should be an integral, controllable part of the metropolitan area transportation system. The anticipated formation of a transportation district to control public (bus) transit is a major step in the development of this transportation system, and the Elizabeth River crossings could be included.

If the previously suggested alternatives of toll free State-Federal participation in financing tunnels, with operation by the Highway Department proves unfeasible, the inclusion of the tunnels in a Transportation District may prove to be desirable from at least two standpoints: First, it is widely recognized that public transit often fails to meet its costs of operation strictly from revenues. Transit Systems in New York, San Francisco, and Philadelphia have used toll facility revenues to balance budgets. Second, the UMTA Capital Grants Program is likely to play an important part in any new system. Under the current guidelines for the UMTA program, priority consideration (for grants) will be given to projects which are

part of programs involving non-capital intensive means by which to reduce traffic congestion. Such means are suggested to include:

> "Appropriate pricing adjustments to vehicular facilities (e. g., bridges, tunnels) in order to regulate automobile usage and encourage transit riding."

It may be noted that regulation of off-street parking supply and increasing of central business district long term parking rates are also suggested. Having control of such mechanisms may help to attract funds. The consequence of improved public transit may reduce pressures for increased tunnel capacity, which could accelerate the removal of tolls.

It would be necessary to proceed with this Transportation District alternative under the premise that revenue bonds would be used to finance tunnel facilities. It may prove advantageous, in terms of reduced interest rates, for the local municipalities to undertake this financing, although it is unlikely that they would be able or willing to lend general obligation backing to these bonds. The possibility of receiving State assistance (without having to surrender all control over tolls) should be explored.

Because of the Transportation District's lack of operating authority, it is suggested that the tunnels would have to be operated under a separate agency, but subordinated to the District. Such an agency may be created by modification of the enabling legislation for the Elizabeth River Tunnel Commission, or by creation of a new city-level body. In either case, control of tolls will of course be subject to assurances to the bondholders that any action will not affect financial coverage of expenses.

Under this alternative, utilization of federal funds would be advantageous to the extent that it may be adjusted to total system goals. A number of aspects of current and pending legislation suggest the growing federal recognition of the need for coordinated metropolitan area action, and it is suggested that the U. S. Secretary of Transportation be contacted regarding joint use of several programs for funding.

Other locally oriented programs, such as that of the recently enacted Federal Revenue Sharing Act, could be utilized to relieve tolls by paying interest costs or speeding retirement of debt. Such usage of funds would of course be dependent upon local priorities.

COMPOSITE ACTIONS

The actions described under the above two alternatives are of course not mutually exclusive. For example, control of tunnel tolls might be given to the Transportation District while State special projects financing is utilized to increase crossings capacity. This control would be established through an agreement with the Highway Department, and would be subject to the constraint that coverage of expenses must not be jeopardized.

SUMMARY

This section has reviewed in some detail the major programs and funding sources through which tolls on the Elizabeth River might be relieved. These programs and sources were reviewed within a context of the institutional structures through which they might be implemented.

It may be noted that some of these options are tentative, depending upon passage of current federal legislation, drafting and passage of new legislation, or obtaining of agreements at various levels of government. The final section will explicitly state recommendations for action.

VII.

CONCLUSION: COURSES OF ACTION

The previous discussion has been directed toward describing possible actions which might be taken to relieve and perhaps eventually to eliminate tolls on the Elizabeth River crossings between Norfolk and Portsmouth. It has been pointed out that provision of additional crossing capacity is the main problem—current debt for present capacity will be repaid by 1983-85, if present trends are continued.

The issue of the role of tolls within the regional economy and the question of whether tolls should be completely removed has been raised; but this Commission is charged with the responsibility of seeking means of financing or refinancing of crossings of the Elizabeth River with a view toward reducing or eliminating tolls. Any alternative contrary to this responsibility is therefore not recommended.

Therefore, the conclusions to be drawn from this study are concerned with what particular actions might be taken to finance or refinance crossings of the Elizabeth River which will so reduce or eliminate the tolls on these crossings. These actions are presented schematically in Figure 7 on page 37 hereof and are described below. The various steps are, of course, not so independent as Figure 7 might imply, and activities concerned with several might be concurrent. The display and numbering are intended to facilitate discussion.

1. Abolish the Elizabeth River Tunnel Commission and transfer the operation and maintenance of the tunnels to the State Highway Department. (See note on page 6 of this report)

2. Plan Urban High Density Corridor Project
   The high priority project identified above should be thoroughly planned for presentation to federal authorities at the earliest appropriate time.

3. Obtain Interstate Designation for Berkley Bridge and the Downtown Tunnel crossings if other plans for obtaining federal funds become unfeasible. Efforts should be made to obtain this designation and thus remove these facilities from the crossings "package" being assembled. The basis for these efforts should be the possible availability of unutilized mileage in other areas of the State.

4. Determine Planning Priorities for New Capacity
   In determining priorities for additional capacity at current or new locations, particular attention should be given to the integration of new capacity with other major projects in the area. Specifically, a project intended for federal funding under the High Density Corridor Program should make optimum use of this program, in terms of the requirements for qualification the future plans for the area, and the possibilities for obtaining the crossing capacity in any other way.

5. Schedule Other Capacity
   Expansion of tunnel capacity, other than that on the High Density Corridor Program, should be scheduled, with a view for how it will be financed. Recognition of the scheduled completion of the Interstate program and of the pressures of traffic growth (with increasing toll revenues, under present circumstances) will be important in the action.

6. Federal Aid Highway Act Passes
   Specifically, if the Urban High Density Corridor Program proposed in the 1973 Federal Highway Act is not enacted, many of the proposed actions here will not be possible.

7. Procure Commitment

   Activities should begin immediately to procure a commitment of funds under the High Density Corridor Program. Contact with State and federal authorities will encourage timely procurement of funds.

8. Formation of the Transportation District

   The tunnel tolls could play a significant role in financing of the District and in obtaining federal (UMTA) funds for its operations. This role should be explored more fully.

9. Determine Toll Policy

   The policy of the Commission is a reduction and rapid elimination of tolls on the Elizabeth River.

10. Integrate Tunnels with Transportation District

    If an appropriate agreement can be reached, then State special projects financing should be considered for additional capacity, in order to obtain reduced interest rates. If local control cannot be retained, or if projected revenues are inadequate to cover costs under the proposed program, local revenue bonding should be considered.

11. Pursue Further Federal and State Commitments of Funds (Tolls to be Completely Removed as Quickly as Possible)

    Tolls will be removed completely only if a substantial amount of funding can be procured for additional capacity. The possibilities for Interstate designation of the Downtown Tunnel and Berkley Bridge (and possibly the Midtown Tunnel, in conjunction with other plans, and if not scheduled under the Urban High Density Corridor Program) should be explored in detail. Special federal legislation to permit federal participation in expansion of one facility, with State funding interlocking the other crossings, should be explored. Any funds obtainable for the Berkley Bridge may release scheduled State commitments, making these monies available for tunnel expansion. Direct apportionments and tax provisions are other avenues to explore.

It is anticipated that the time scale of the activities proposed will be over the next year. Action should be initiated immediately, as presentations to the State legislature must be made. Positive legislative action should be possible by Fall of 1973. At this time, federal legislation will have been settled and some thought given to policies.

In the interim it is recommended that no additional financial obligations be projected or made that would require toll financing for any additional proposed crossings until all efforts have been exhausted in obtaining the alternative avenues of financing set forth herein.

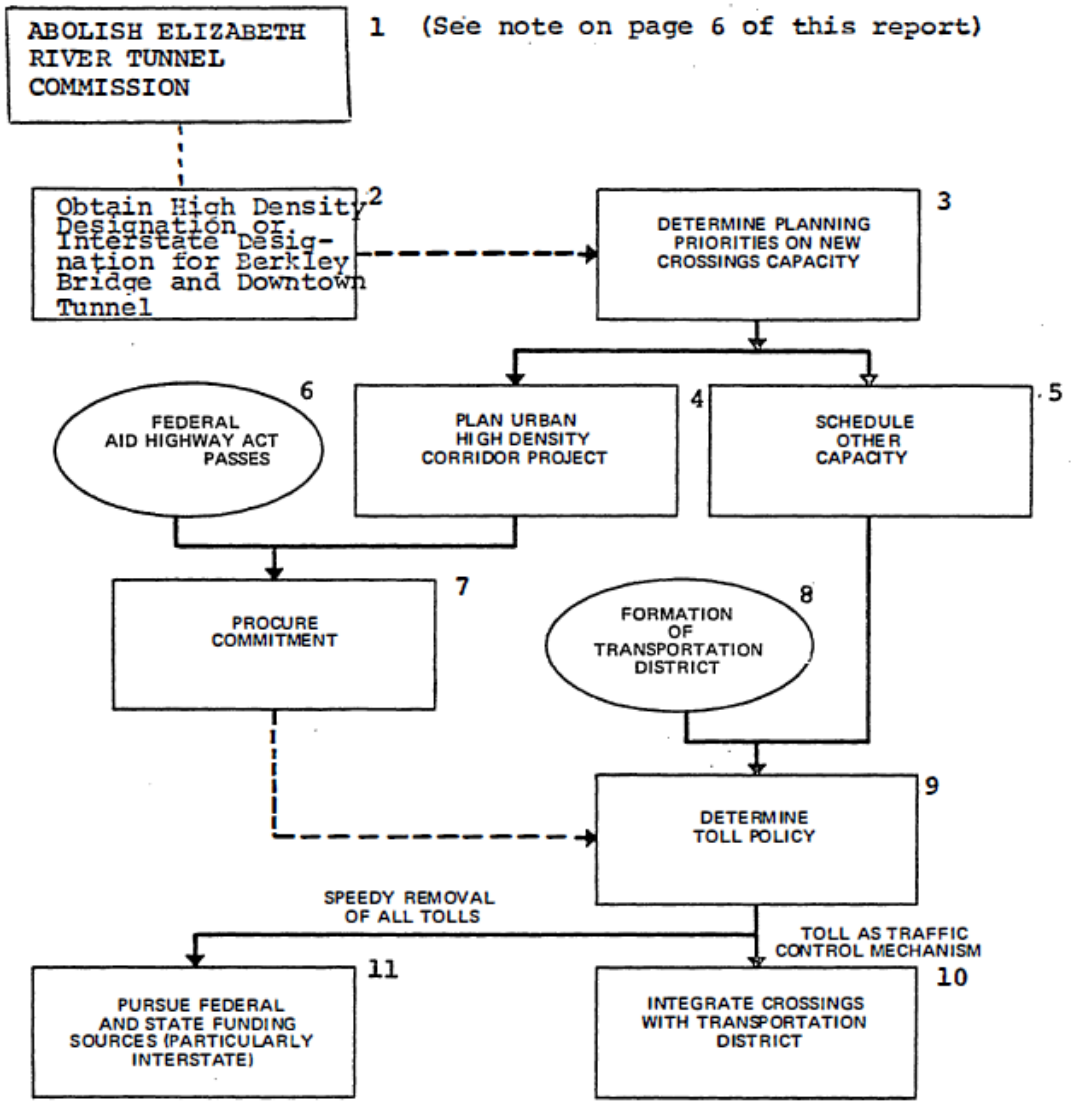


FIGURE 7. ACTION PLAN FOR ELIZABETH RIVER CROSSINGS

Respectfully submitted,

WILLARD J. MOODY, Chairman

EDWIN R. MACKETHAN, Vice-Chairman

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PENINSULA
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March 27, 1973

Mr. L. Willis Robertson, Jr.
Staff Attorney
Division of Statutory Research and Drafting
Post Office Box 3 - AG
Richmond, Virginia 23208

Dear Mr. Robertson:

I have reviewed the copy of the Report of the Vehicular Connections Commission transmitted with your letter of March 8, 1973.

I support the goal of the Commission report and have no objection to its content. However, this endorsement should not be considered as:

1. concurring with the priority of need for additional crossing capacity at the Elizabeth River over the transportation projects already planned within the Peninsula area or

2. concurring with the diversion of potential Interstate funding, Urban High Density Corridor Program, or other state and federal funding programs from facilities already planned within the Peninsula area.

Sincerely,

Henry M. Cochran
Executive Director

HMC/sjh

City of Hampton

OLDEST CONTINUOUS ANGLO-SAXON SETTLEMENT IN AMERICA

THOMAS I. MILLER AIP
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March 28, 1973

Division of Statutory Research & Drafting
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Richmond, Virginia

Attention: L. Willis Robertson, Jr.

Dear Mr. Robertson:

In reply to your request of March 8th, relative to the Vehicular Connection Study I submit herewith the attached form approving the recommendations of the Study Commission.

I reserve however, my comments or position on additional crossings and methods of financing such vehicular connections across the Elizabeth River, to the extent that such crossings or financing would hinder or aid either the southeast or Peninsula region.

With Best Regards, I am

Respectfully,

Thomas I. Miller
Member
Vehicular Connections
Study Commission

TIM:cd
enc

DEPARTMENT OF

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March 30, 1973

Mr. L. Willis Robertson, Jr., Secretary
Virginia Vehicular Connection Commission
Commonwealth of Virginia
Division of Statutory Research and Drafting
Post Office Box 3-AG
Richmond, Virginia 23208

Dear Mr. Robertson:

I am taking this means of submitting my reply and comments on the draft report entitled, Vehicular Connections Between Norfolk and Portsmouth, Report of the Vehicular Connections Commission to the Governor and the General Assembly of Virginia.

I am in accord with Sections I, II, IV, V and VI as drafted. I am also in accord with the principal findings and conclusions which are summarized in Section II and given in detail in Section VII as they relate to the question addressed in the Study, namely vehicular movement between Norfolk and Portsmouth.

My specific concern is in the statements appearing on pages 7 and 64 relative to "transferral of interstate mileage designation from other areas in Virginia to the Tidewater area" which might possibly be construed to mean that this project should be given priority over other planned highway facilities in this area.

Please accept this as my approval of the Committee's Report subject to the above conditions. It has been an honor to have served on this important Committee.

Yours very truly,

A. J. Stodghill, Director

AJS/cpk

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