STATE REVENUE BOND ACT

REPORT OF THE
COMMISSION TO STUDY TOLL PROJECTS FINANCED
UNDER THE STATE REVENUE BOND ACT
to
THE GOVERNOR
and
THE GENERAL ASSEMBLY OF VIRGINIA

COMMONWEALTH OF VIRGINIA
Department of Purchases and Supply
RICHMOND
1965

MEMBERS OF COMMISSION

HUNTER B. ANDREWS, *Chairman*

WELDON COOPER, *Vice Chairman*

J. TRAVERS EDWARDS

J. CLIFFORD HUTT

EDWIN R. MacKETHAN

GENE PAULETTE

WALTER E. ROGERS

ROBERT B. SMITH

S. COLSTON SNEAD, JR.

STAFF

JOHN. B. BOATWRIGHT, JR.

G. M. LAPSLEY—WILDMAN S. KINCHELOE—ROBERT L. MASDEN

FRANK R. DUNHAM—MARY R. SPAIN

STATE REVENUE BOND ACT

REPORT OF THE COMMISSION TO STUDY TOLL PROJECTS FINANCED UNDER THE STATE REVENUE BOND ACT

Richmond, Virginia, December 3, 1965

To:

HONORABLE A. S. HARRISON, JR., *Governor of Virginia*

and

THE GENERAL ASSEMBLY OF VIRGINIA

Tidewater Virginia, because of its unique geographical setting, has more bridges and tunnel facilities constructed from the proceeds of revenue bonds than any other part of the State. These bonds are paid entirely from tolls levied upon the users of the facilities. Realizing that these tolls place a substantial burden primarily upon the residents of the Tidewater area, the General Assembly of Virginia at its 1964 Regular Session saw the need for a review of the philosophy underlying revenue bond projects to determine whether the users, who also pay all other highway taxes, should be relieved, in whole or in part, of the burden of paying tolls on these facilities. Accordingly, the General Assembly adopted Senate Joint Resolution No. 50, which is as follows:

SENATE JOINT RESOLUTION NO. 50

Creating a Commission to study and report upon the toll projects financed under the State Revenue Bond Act.

Whereas, the State Highway Department has acquired or constructed many of the projects enumerated in § 33-228 of the Code of Virginia under the State Revenue Bond Act; and

Whereas, the toll revenue collected on certain of these projects since acquisition or construction under the State Revenue Bond Act has exceeded the cost of such acquisition or construction, including the cost of financing; and

Whereas, it appears that the toll charges on these projects might possibly be reduced and the cost of maintenance or a portion thereof might possibly be borne by the State Highway Department; now, therefore, be it

Resolved by the Senate of Virginia, the House of Delegates concurring, That the General Assembly is of the opinion that all matters relating to the toll charges on projects financed under the State Revenue Bond Act should be thoroughly studied, and for that purpose a Commission is hereby created to be composed of nine members from the State at large, all to be appointed by the Governor, who shall designate the Chairman.

The Commission shall study and make recommendations upon the following matters:

1. The rates and toll charges on the several toll projects financed under the State Revenue Bond Act and the possibility of reducing these toll charges.

2. Whether the cost of maintenance of these projects or a portion thereof might possibly be borne by the State Highway Department from allocations appropriated to it for the construction and maintenance of State Highways.

3. Such other matters as are deemed appropriate in relation to the foregoing.

The members of the Commission shall receive no compensation for their services but shall be paid their necessary expenses, for which, and for such secretarial and other assistance as the Commission may require, there is hereby appropriated from the contingent fund of the General Assembly the sum of $1,000.

All agencies of the State shall assist the Commission in its study, upon request. The Commission shall complete its study and submit its recommendations to the Governor and General Assembly not later than December 1, 1965.

Pursuant to this resolution, Your Excellency appointed the following individuals as members of the Commission: Hunter B. Andrews, Attorney at Law and member of the Senate of Virginia, Hampton; Dr. Weldon Cooper, Director, Institute of Government, University of Virginia, Charlottesville; J. Travers Edwards, Insurance and Real Estate Broker, Smithfield; J. Clifford Hutt, Attorney at Law, Montross; Edwin R. MacKethan, Senior Vice-President and Senior Trust Officer, Virginia National Bank, Norfolk; Gene Paulette, Executive Vice-President, Bank of Middlesex, Urbanna; Walter E. Rogers, Attorney at Law, Richmond; Robert B. Smith, General Manager, Daily Press-Times Herald, Newport News; and S. Colston Snead, Jr., President, The Farmers National Bank, Salem. Senator Andrews was appointed Chairman of the Commission and Dr. Weldon Cooper was elected Vice-Chairman. John B. Boatwright, Jr. and Robert L. Masden were appointed Secretary and Recording Secretary, respectively, to the Commission.

Under the auspices of the State Highway Commission and the Toll Facilities Management, the members of the Commission were escorted on a tour of all toll facilities operated under the authority of the State Revenue Bond Act. In order to achieve a full appreciation of the construction, operation and maintenance costs and related problems on toll facilities throughout the State, the Commission also toured the Elizabeth River Tunnels, the Chesapeake Bay Bridge-Tunnel and the Richmond-Petersburg Turnpike. See appendix for other facilities considered by the Commission.

The Commission sought the views and suggestions of all interested individuals, groups and organizations concerning the matters under study. After appropriate publicity, the Commission held two public hearings in the Tidewater area which were well attended. The Commission and its subcommittees also held several executive sessions.

With the assistance of Douglas B. Fugate, Commissioner, A. B. Eure, Director of Administration, and E. H. Orange, Toll Facilities Manager, Department of Highways, the Commission compiled a great deal of valuable information and material concerning the construction, operation and maintenance of the toll facilities presently operated under the State Revenue Bond Act, as well as other similar projects throughout the Commonwealth. The Commission also compiled information on the construction, operation and maintenance of toll facilities in contiguous states.

The Commission gave careful consideration to the information and material compiled, and the views expressed at the public hearings, and

after thorough discussion and careful consideration, now makes its report to the Governor and the General Assembly.

THE STATE REVENUE BOND ACT

By virtue of Chapter 399 of the Acts of Assembly, 1940, the State Highway Commission was authorized and empowered to acquire by purchase or by condemnation and to construct, improve, operate, and maintain any one or more of several bridges and ferry facilities.

In accordance with this Act, the Commission purchased and improved the Newport News Ferry and the Old Point Ferry, collectively called the Chesapeake Ferries, for approximately $3,874,000. The Newport News Ferry operated across Hampton Roads from the city of Newport News to Pine Beach in the city of Norfolk, and the Old Point Ferry operated from Old Point in Elizabeth City County (city of Hampton) across Hampton Roads to Willoughby in the city of Norfolk. The Commission also acquired the James River Bridges from the James River Bridge System, a Virginia corporation, consisting of the James River Bridge, the Nansemond River Bridge, and the Crittenden Bridge across Chuckatuck Creek, and their connecting roads. The James River Bridges constitute a 16.5 mile link in U. S. Route 17, located in the city of Warwick (city of Newport News) and counties of Isle of Wight and Nansemond, Virginia, and include three long highway bridges, each with a movable span, crossing the James River and tributaries, Chuckatuck Creek and Nansemond River. The Commission purchased the system for $5,600,000, and began operation of the system on September 30, 1949.

The Commission also constructed the George P. Coleman Bridge across the York River for approximately $9,326,000. This toll facility, opened to traffic on May 7, 1952, carries U. S. Route 17 across the York River between Yorktown and Gloucester Point. In addition to serving the north-south through traffic on U. S. Route 17, it has many users destined to or originating at historic points of interest at Yorktown and Williamsburg. The bridge also serves a number of naval, military and industrial establishments.

To finance the purchase of the ferries and bridges and the construction of the George P. Coleman Bridge, the Commission combined these facilities for revenue purposes and issued the State of Virginia Toll Revenue Bonds (Series 1949) in the aggregate amount of $19,000,000. By virtue of the State Revenue Bond Act, as amended by Chapter 319 of the Acts of Assembly, 1954, the Commission issued the State of Virginia Toll Revenue Bonds (Series 1954) in the aggregate amount of $95,000,000 to provide funds to retire the Series 1949 Bonds and to pay the costs of constructing the Rappahannock River Bridge, which has since been renamed the Robert O. Norris, Jr. Bridge, and the Hampton Roads Bridge-Tunnel.

The Hampton Roads Crossing consists of limited access highways, bridges and tunnel across Hampton Roads. This facility provides an all-weather, 24 hour-a-day service across Hampton Roads, with approach highways that have almost throughout their entire length four lanes of traffic; thus, eliminating the costly and inadequate ferry service.

The Rappahannock River Bridge in addition to linking the Northern Neck more closely to the second peninsula, known as the Middle Peninsula, provides a portion of the Northern Neck with more rapid access to the Hampton Roads area and points further south via a free bridge, constructed by the Department of Highways across the Piankatank River, and the York River Bridge. It also facilitates travel between the southeastern

portion of the Northern Neck and the city of Richmond. The Commission was also authorized to include bus facilities for the transportation of passengers as part of the Hampton Roads Crossing.

The Robert O. Norris, Jr. Bridge which cost approximately $14,205,000, was opened to traffic on August 31, 1957, and the Hampton Roads Tunnel which cost approximately $62,100,000, was opened to traffic on November 1, 1957. The last section of the part of the approach highways to the Hampton Roads Tunnel which bond proceeds were used in the amount of 10% of the cost, was opened to traffic on June 21, 1960. In 1963, tolls were eliminated on the Nansemond River and the Crittenden Bridges, and maintenance and operation of the two bridges were transferred to the Suffolk District of the State Highway Department.

The Toll Revenue Bonds (Series 1954) were issued under and secured by a trust indenture between the State Highway Commission, an agency of the State of Virginia, and the National Bank of Commerce of Norfolk, (now, Virginia National Bank) as Trustee. The Indenture provides for the issuance of the bonds under the limitations therein and sets forth and fully defines the duties and reponsibilities of all parties with respect to the custody and application of the proceeds of the bonds, the construction, operation and maintenance of the projects, the conservation and application of all funds, the safeguarding of moneys on hand or on deposit, and the rights and remedies of the Trustee and the holders of the bonds.

The State of Virginia is not obligated to pay the bonds or the interest thereon except from tolls and revenues of the projects and the faith and credit of the State are not pledged. However, the State Highway Commission may contribute funds toward the payment of principal and interest on the bonds and, in addition, may contribute funds toward the operation, maintenance and construction of the projects for which the bonds were sold, but may not obligate itself to do so (See § 33-248 of the Code of Virginia).

PRESENT OPERATIONS

In compliance with Section 505 of the Trust Indenture the Chief Engineer of the Department of Highways, after discussion with consulting engineers, submits to the Highway Commission his recommendations with regard to the proper maintenance, repair, and operation of each facility during the ensuing fiscal year; insurance to be carried under the provisions of Sections 707 and 708 of the Trust Indenture; and the amount that should be transferred during the current fiscal year to the credit of the Reserve Maintenance Fund for the account of each project.

The recommendations of the Chief Engineer and the proposed budget expenditures are reviewed and if found to be reasonable and necessary for the proper operation and maintenance of the facilities during the ensuing fiscal year are formally adopted by the Commission.

CURRENT ANNUAL BUDGET

In accordance with Section 505 of the Trust Indenture, the Virginia State Highway Commission has prepared and formally adopted an operating budget for each facility for the fiscal year beginning September 1, 1965. This budget was estimated on the basis of monthly requirements and the individual items of expense are classified in a manner acceptable to the consulting engineers, as required by the Trust Indenture.

A tabulation of the current (1965-66) budget with the 1963-64, and 1964-65 budgets follows:

	Annual Budget		
	1963-64	1964-65	1965-66
1. General Administration (including Matching Social Security and Retirement)	$ 198,000	$ 203,000	$ 205,000
2. Hampton Roads Crossing	938,000	945,000	947,000
3. James River Bridge	335,000	260,000	266,000
4. George P. Coleman Bridge	156,000	161,000	165,000
5. Robert O. Norris, Jr. Bridge	74,000	79,000	79,000
	$1,701,000	$1,648,000	$1,662,000

The 1964-65 budget represented a decrease of $53,000, or 3.1 per cent, from the budget for the 1963-64 fiscal year. This decrease is due mainly to the elimination of toll collection on the Nansemond and Crittenden Bridges, and transferral of maintenance and operation of these bridges to the State Highway Department. A partial curtailment of bus service at the Hampton Roads Crossing accounts for an additional reduction in expenses at that facility of $20,000. Offsetting these reductions are increases in various items, including salary raises approved by the Highway Department.

It was recommended that deposits to the credit of the Reserve Maintenance Fund during fiscal years 1963-64 and 1964-65 be increased because of anticipated withdrawals. However, for the last few years, actual maintenance and operation expenses have been below budget estimates. Under the provisions of the Trust Indenture, consulting engineers make an annual analysis of the Reserve Maintenance Fund and recommend the amounts of deposits which should be made to that Fund during the ensuing fiscal year. During the 1963-64 fiscal year, however, consulting engineers made a new study of the Reserve Maintenance Fund, taking into account that corrective work on the James River Bridge and the Hampton River Bridges would cost approximately $775,000. At that time it was estimated that the balance in the Fund, as of August 31, 1964 would be about $1,125,000. Since it was the opinion of the consulting engineers that the minimum level of the Fund should be $1,750,000 an accelerated program of deposits to the Fund was established. Under this program, an additional $200,000 was deposited to the Fund during the fiscal year 1963-64. At present there is a balance of $1,585,000 in the Reserve Maintenance Fund.

INSURANCE

The Commission carries insurance coverage on all facilities in accordance with Section 707 of the Trust Indenture and the recommendations of consulting engineers. Transfer of the Nansemond and Crittenden Bridges to the State Highway Department has relieved the Commission of the necessity for carrying insurance on these facilities.

The coverage for bridge and tunnel property damage is for direct physical loss or damage, however caused, except by hostile act, but including strikes, riots and malicious mischief endorsements. The policies on the four bridges and the tunnel have an 80 per cent coinsurance clause. Fire and extended coverage protection, including vandalism and malicious mischief endorsement, has been secured on all buildings and their contents by endorsements to the respective policy insuring the deductible on property damage for each facility.

Use and occupancy insurance provides for the reimbursement of any loss of revenue because of total or partial suspension of operations due to physical loss or damage to the facilities, for causes defined under the property damage policies. The bridge policies cover revenue losses due to partial or total suspension of operation up to 12 months, while the tunnel policy covers revenue losses up to 24 months. All policies have a 7-day deductible period, and provide for a maximum liability of 125 per cent of the provisional face amounts.

The following table illustrates the premiums paid to the various types of insurance coverages carried by the Commission.

INSURANCE PREMIUMS
(1963-1964)

Type	Total Premium
Bridge and Tunnel Property Damage	
James River Bridge	$22,950
George P. Coleman Bridge	13,340
Robert O. Norris, Jr. Bridge	34,473
Hampton Roads Bridge-Tunnel	84,529
ampton River Bridges	4,600
Deductible on Bridge and Tunnel Property Damage	
James River Bridge	1,022
George P. Coleman Bridge	904
Robert O. Norris, Jr. Bridge	1,625
Hampton Roads Crossing	2,168
Buildings and Contents Property Damage	
James River Bridge	1,711
George P. Coleman Bridge	995
Robert O. Norris, Jr. Bridge	935
Hampton Roads Crossing	6,251
Bartlett Shops	913
Use and Occupancy	
James River Bridge and George P. Coleman Bridge	7,360
Robert O. Norris, Jr., Bridge	815
Hampton Roads Crossing	42,091
Blanket Public Liability	6,023*
Workmen's Compensation	4,042
Money and Securities	1,455
Automobile Liability—Hampton Roads	1,846
Care and Custody Liability	875
Annual Cost of Insurance	$84,233

* Provisional premium, subject to revision based on actual traffic volumes.

PROJECT REVENUES

The combined gross revenues, maintenance and operation expense, and the net revenue before meeting interest payments and reserve maintenance requirements of all the Revenue Bond Projects facilities for each year since 1954 are shown in the following tabulation:

Fiscal Year Ending August 31	Gross Revenue	Maint. and Opr. Expense	Net Revenue
1954	4,397,927	1,876,782	2,521,145
1955	4,365,249	1,912,459	2,452,790
1956	4,685,204	2,004,992	2,680,212
1957	5,208,738	2,076,601	3,132,137
1958	5,672,898	1,627,046	4,045,852
1959	5,833,256	1,379,102	4,454,154
1960	6,071,888	1,375,233	4,696,655
1961	6,469,896	1,438,967	5,030,929
1962	7,328,150	1,475,126	5,853,024
1963	7,676,096	1,516,219	6,159,877
1964	8,104,627	1,495,659	6,608,968
1965	8,654,250	1,513,632	7,140,618

Source: Audited reports prepared by Andrews, Burkett & Company, Certified Public Accountants.

REVENUE TRENDS

Almost 11 years have passed since DeLeuw, Cather and Company and Wilbur Smith and Associates cooperated to develop the traffic and revenue estimates contained in the official statement accompanying the 1954 Series, Virginia Toll Revenue Bonds. The following table examines these estimates and makes comparisons with the actual gross revenues derived from the operation of the facilities made possible by the $95,000,000 bond issue of 1954. The gross revenues grew in this period from about 4.5 million dollars per annum in 1955 to about 8.5 million dollars per annum in 1965. The growths were due to a combination of increased vehicular usage of the facilities crossing the James and York Rivers and the additional facilities provided by the Rappahannock River Bridge and Hampton Roads Bridge-Tunnel which replaced the ferries formerly operated between Newport News and Norfolk, and Hampton and Norfolk. The table also shows the differences between actual and estimated gross revenues.

ESTIMATED AND ACTUAL GROSS REVENUES

Virginia Toll Revenue Projects

Financed from 1954 Bond Issue

Fiscal Year Ending Aug. 31	Estimated Revenues	Actual Revenues	Difference	Per Cent of Estimate
1955	$ 4,593,000	$ 4,365,000	$—228,000	95.0
1956	4,769,000	4,685,000	— 84,000	98.2
1957	4,946,000	5,209,000	263,000	105.3
1958	5,656,000	5,673,000	17,000	100.3
1959	6,403,000	5,833,000	—570,00	91.1
1960	6,617,000	6,072,000	—545,000	91.8
1961	6,830,000	6,470,000	—360,000	94.7
1962	7,044,000	7,328,000	284,000	104.0
1963	7,257,000	7,676,000	419,000	105.8
1964	7,470,000	8,105,000	635,000	108.5
1965	7,880,000	8,453,000	573,000	107.2
TOTAL	$69,465,000	$69,869,000	$404,000	100.6

The following table gives the estimated and actual gross revenues by projects for the fiscal year ending August 31, 1963. Subsequent figures were not used for comparison purposes since available estimates on the James River Bridge System do not reflect the discontinuance of toll collections on the Nansemond and Crittenden Bridges. The actual revenues of the James River Bridge System were $89,000 or 5.3 per cent higher than estimated revenues. The George P. Coleman Bridge revenues were $162,000, 15.5 per cent higher than the estimates. The Robert O. Norris, Jr. Bridge revenues were $61,000 less than the $231,000 estimate; and the Hampton Roads Bridge-Tunnel actual revenues of $4.5 million were $229,000, 5.3 per cent higher than the estimated revenues. On a gross revenue basis, therefore, all but the Robert O. Norris, Jr. Bridge over the Rappahannock River exceeded their revenue estimates by significant amounts.

Facilities	Estimated Revenues	Actual Revenues	Difference	Per Cent of Estimate
James River Bridge System	$1,686,000	$1,774,826	$ 88,826	105.3
George P. Coleman Bridge	1,049,000	1,211,444	162,444	115.5
Robert O. Norris, Jr. Bridge	231,000	170,002	—60,998	73.6
Hampton Roads Bridge-Tunnel	4,291,000	4,519,823	228,823	105.3
TOTAL	$7,257,000	$7,676,095	$ 419,095	105.8

FACILITY REVENUES AND COSTS

In order to determine the earnings of the individual facilities in recent years, the following table has been developed. Gross and net revenues for the fiscal years ending in August 1961 through 1965 are shown. For fiscal year ending August 31, 1965, net revenues of $6,940,000 were secured from the four projects.

The James River Bridge System earned $1,485,000; the George P. Coleman Bridge, $1,035,000; the Robert O. Norris, Jr. Bridge, $126,000; and Hampton Roads Bridge-Tunnel, $4,467,000. About 63 per cent of the revenues were earned by the Hampton Roads Bridge-Tunnel facility. Less than 3 per cent of the revenues were earned by the Robert O. Norris, Jr. Bridge, while the James River Bridge System earned approximately 22

per cent and the George P. Coleman Bridge, approximately 12 per cent of the net revenues.

PROJECT COSTS, REVENUES, OPERATING COSTS AND INTEREST COVERAGE

Virginia Toll Revenue Projects

Financed from 1954 Bond Issue

(All Amounts in Thousands of Dollars)

Facility	Project Cost	Gross Revenue	Maint. Cost	Net Revenue*	Annual Interest	Interest Coverage
Year Ending August 31, 1961						
James System	$ 5,600	$1,528	$ 285	$1,243	$ 168	7.40
Coleman Br.	9,300	1,005	123	882	279	3.16
Norris Br.	14,200	144	59	85	426	0.20
Hampton R. T.	65,900	3,793	818	2,975	1,977	1.50
Admin.			154	—154		
All Projects	$95,000	$6,470	$1,439	$5,031	$2,850	1.77
Year Ending August 31, 1962						
James System		$1,716	$ 297	$1,419	$ 168	8.44
Coleman Br.		1,144	130	1,014	279	3.63
Norris. Br.		153	58	95	426	0.22
Hampton R. T.		4,315	829	3,486	1,977	1.76
Admin.			161	—161		
All Projects		$7,328	$1,475	$5,853	$2,850	2.05
Year Ending August 31, 1963						
James System		$1,775	$ 298	$1,477	$ 168	8.79
Coleman Br.		1,211	137	1,074	279	3.85
Norris Br.		170	65	105	426	0.25
Hampton R. T.		4,520	855	3,665	1,977	1.85
Admin.			173	—173		
All Projects		$7,676	$1,528	$6,148	$2,850	2.16
Year Ending August 31, 1964						
James System		$1,721	$ 258	$1,463	$ 168	8.71
Coleman Br.		1,292	142	1,150	279	4.13
Norris Br.		174	61	113	426	0.26
Hampton R. T.		4,918	861	4,057	1,977	2.05
Admin.			177	—177		
All Projects		$8,105	$1,500	$6,605	$2,850	2.32
Year Ending August 31, 1965						
James System		$1,718	$ 233	$1,485	$ 168	8.84
Coleman Br.		1,182	146	1,035	279	3.71
Norris Br.		183	61	126	426	0.29
Hampton Roads Tunnel		5,362	900	4,467	1,977	2.26
Admin.			173	—173		
All Projects		8,444	1,513	6,940	2,850	2.43

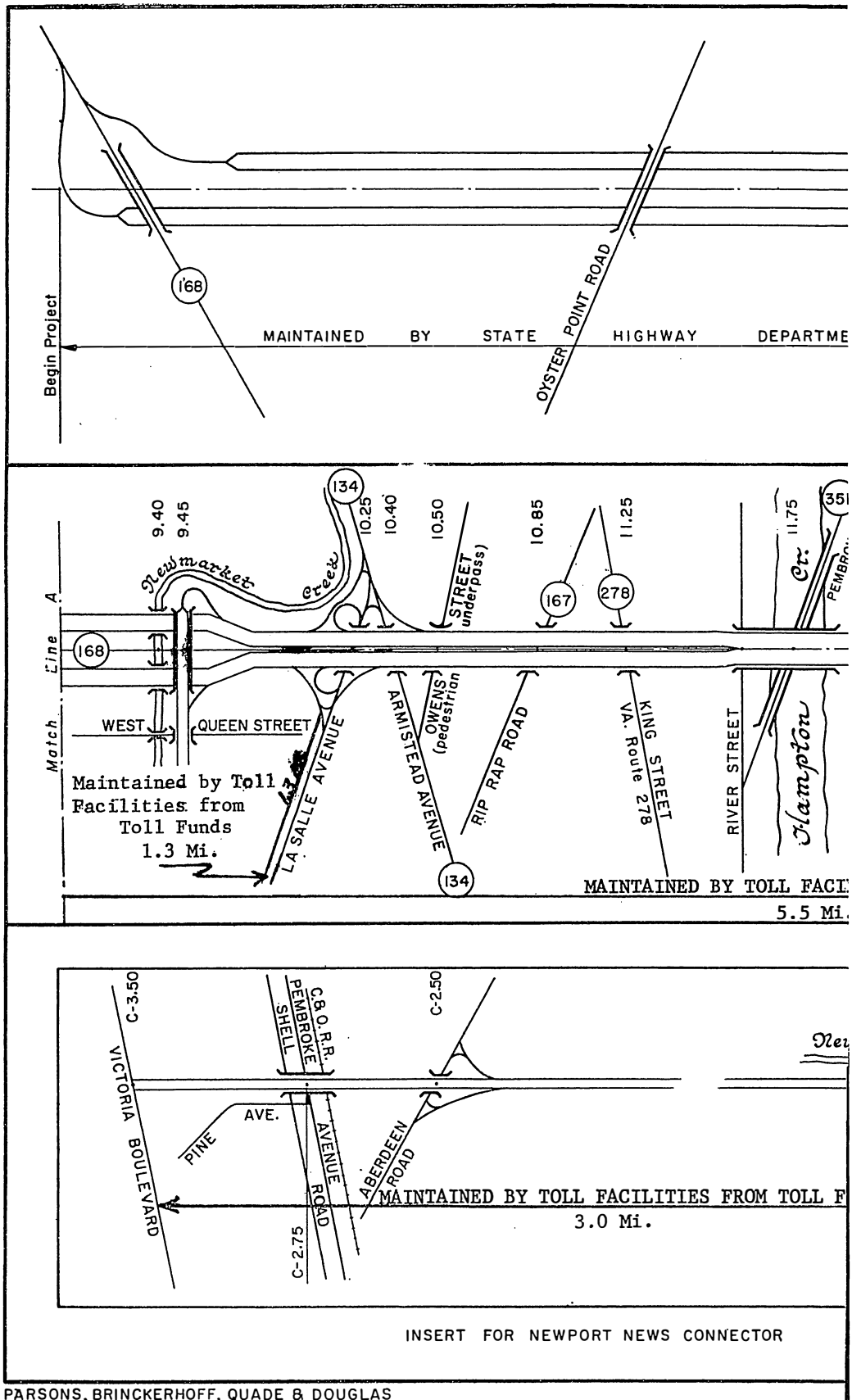
PRESENT TOLL SCHEDULES

Generally, toll schedules established for the various facilities of the Virginia Toll Revenue System are adaptations of former toll schedules. On the James River Bridge System, the present toll schedule, as to classification, is an adaptation of that which was originally established in 1928 when the James River Bridge System was first operated by its private owners. The Hampton Roads Bridge-Tunnel toll schedule, in classification and tolls, is an adaptation of the ferry toll rates. The toll schedules for the George P. Coleman Bridge over the York River and the Robert O. Norris, Jr. Bridge over the Rappahannock River consider only the equity of user charges among vehicle classes and the level of tolls necessary for the financing of the facility.

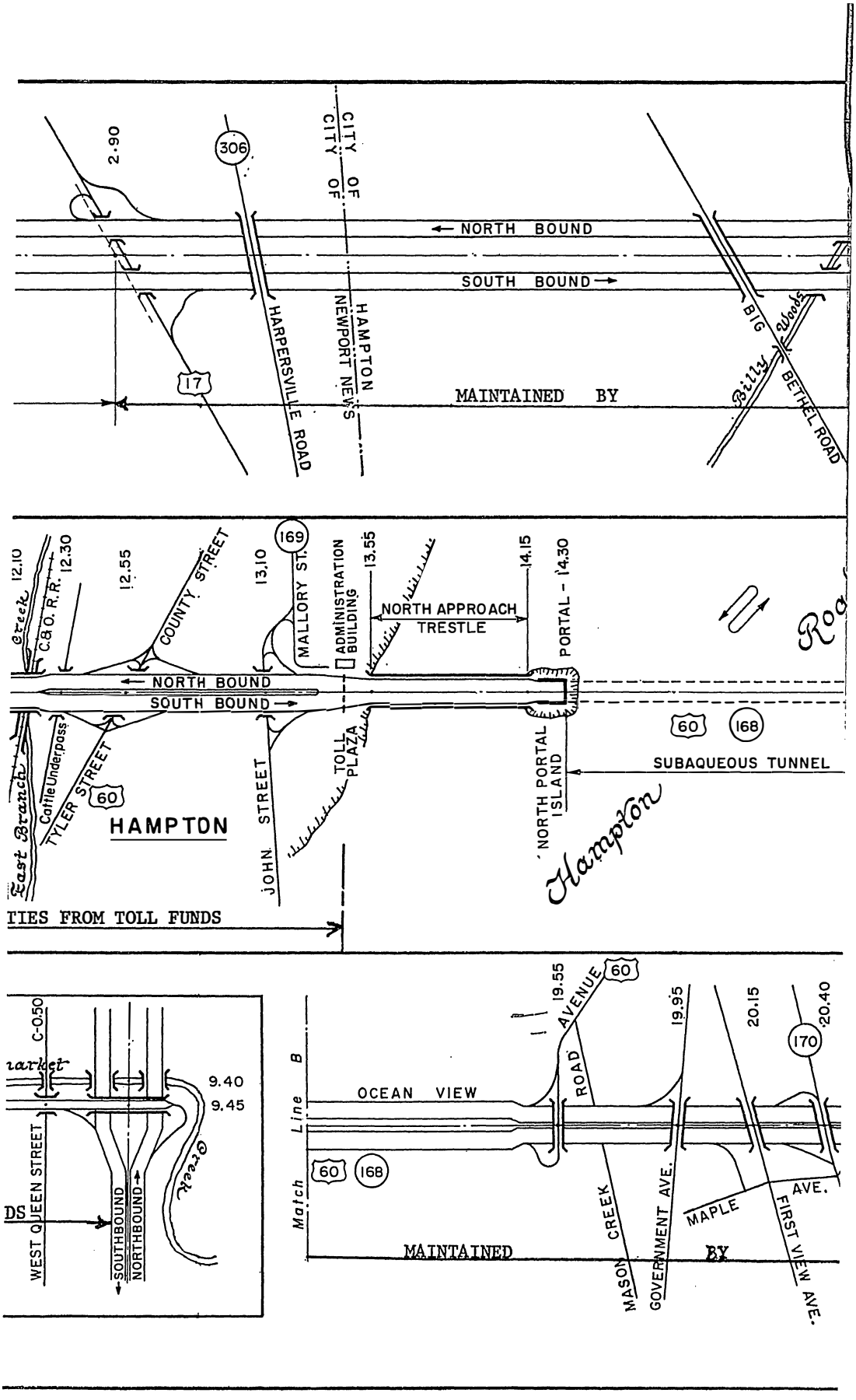
The following table shows the official toll schedules now in use at each of the facilities. Not listed are the fares and tolls at reduced rates available to students.

OFFICIAL TOLL SCHEDULES

Vehicle Classification	Hampton Roads Bridge-Tunnel Rev. 4-1-64	James River Bridge Rev. 4-1-64	York River Bridge Rev. 4-1-64	Rappahannock River Bridge
Passenger Vehicles				
One-Way	$1.25	$0.90	$0.75	$0.75
Commutation	0.75	0.40	0.40	0.50
Number of Tickets in Book	(12)	(15)	(15)	(10)
Passengers:				
One-Way	$0.20	Free	Free	Free
No Commuter Ticket				
Single Unit Commercial Vehicles:				
One-Half Ton and Under Rated Capacity	$1.25	$0.90	$0.75	$0.75
Over One-Half but Under Two Ton Rated Capacity:				
Two Axles	1.50	1.20 (Incl. 2 T)	1.00	1.00
Three Axles	1.75	1.40	1.25	1.25
Two Tons and Over Rated Capacity:				
Two Axles	1.75	1.50	1.50	1.50
Three Axles	2.25	1.75	1.75	1.75
Tractor Trailers and Tractor Trucks:				
Three Axles	2.50	2.00	2.00	2.00
Four Axles	3.00	2.25	2.50	2.50
Five Axles	3.50	2.50	3.00	3.00
Buses:				
2 Axle-15 Passenger Capacity or Less	2.50	1.25	1.00	1.00
2 Axle-Over 15 Passenger Capacity	5.00	4.00	2.50	2.50
3 Axle	5.50	4.50	3.00	3.00
Motorcycles:				
Single	0.50	0.20	0.20	0.20
House and Boat Trailers Per Axle	0.75	0.40	0.40	0.40
Bus Fare (Tunnel Buses) No Commuter Tickets	0.25			



PARSONS, BRINCKERHOFF, QUADE & DOUGLAS


2.90
306
CITY OF
HAMPTON
NEWPORT NEWS
NORTH BOUND
SOUTH BOUND
HARPERSVILLE ROAD
17
MAINTAINED BY
BIG Woods
Billy
BETHEL ROAD
12.10
12.30
12.55
COUNTY STREET
13.10
169
MALLORY ST.
ADMINISTRATION BUILDING
13.55
NORTH APPROACH
TRESTLE
14.15
PORTAL - 14.30
NORTH BOUND
SOUTH BOUND
60
168
SUBAQUEOUS TUNNEL
East Branch
C.&O. R.R.
Cattle Underpass
TYLER STREET
60
HAMPTON
JOHN STREET
TOLL PLAZA
NORTH PORTAL ISLAND
Hampton
TIES FROM TOLL FUNDS
C-0.50
9.40
9.45
WEST QUEEN STREET
SOUTHBOUND
NORTHBOUND
Creek
19.55
AVENUE
60
ROAD
19.95
20.15
170
20.40
OCEAN VIEW
Line B
Match
60
168
MASON CREEK
GOVERNMENT AVE.
MAPLE AVE.
FIRST VIEW AVE.
MAINTAINED BY

STATE HIGHWAY COMMISSION OF VIRGINIA

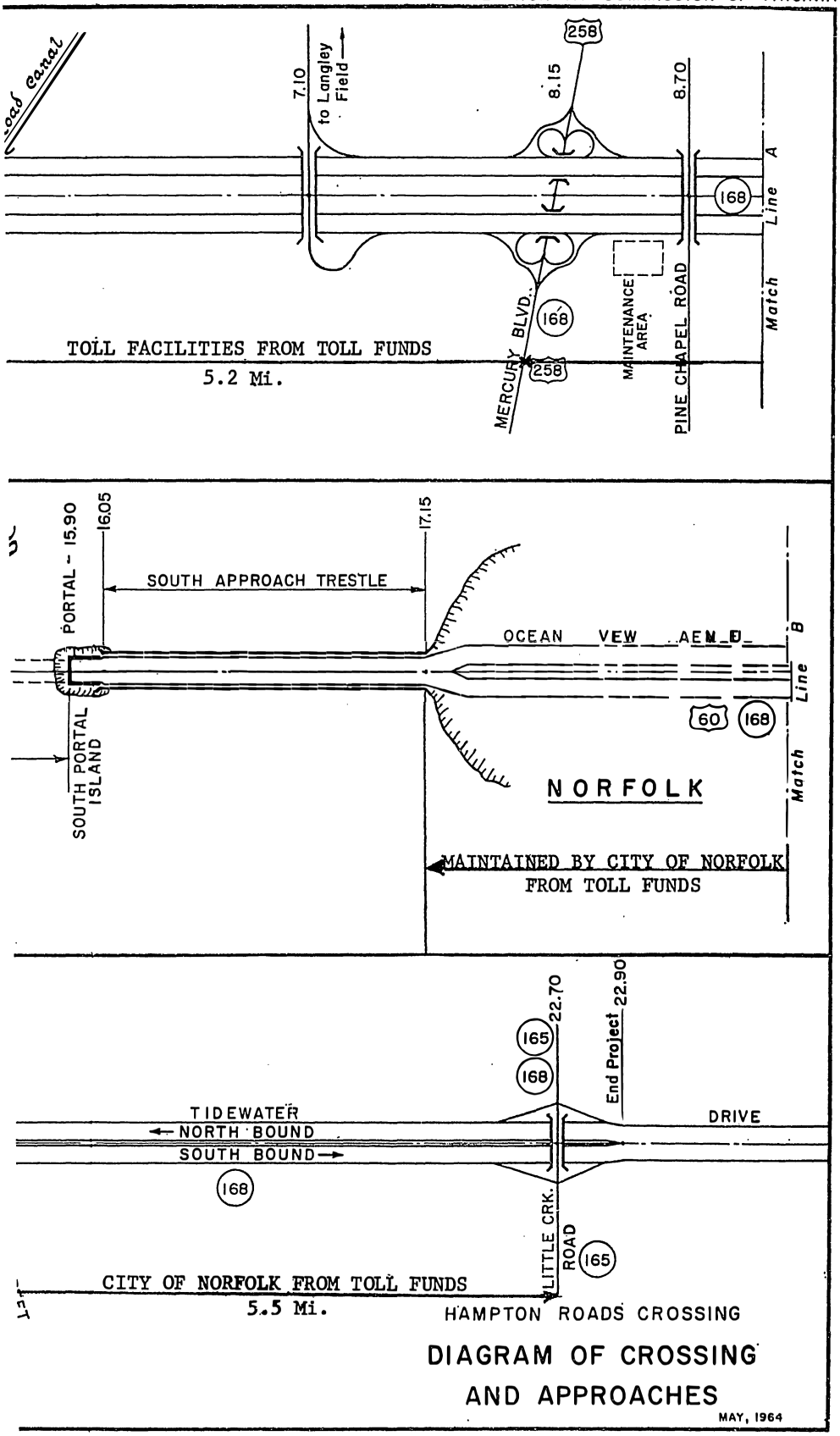


DIAGRAM OF CROSSING AND APPROACHES

MAY, 1964

FUTURE REVENUES

There has been annual growth in the net revenues for the last five years. The growth of revenues in future years is likely to continue the trends exhibited in the past. A Report submitted to the Department of Highways under date of January 24, 1964, prepared by DeLeuw, Cather and Company and Wilbur Smith and Associates, Traffic Engineers, made the following estimates of gross and net revenues:

(All amounts in thousands of dollars)

Fiscal Year Ending August 31	Estimated Gross Revenues	Estimated Operating Costs (1)	Estimated Net Revenues
1964	7,750	1,936	5,814
1965	7,880	1,940	5,940
1966	8,150	1,990	6,160
1967	8,400	2,040	6,360
1968	8,650	2,090	6,560

(1) Includes deposits to Reserve Maintenance Fund

Since that Report we have had the benefit of two more years actual experience which is as follows:

Fiscal Year Ending August 31	Gross Revenues	Operating Costs (1)	Net Revenues
1964	8,104	1,695	6,409
1965	8,453	1,895	6,557

(1) Includes deposits to Reserve Maintenance Fund

RECOMMENDATIONS

I. That the State Highway Department should, as authorized by § 33-248 of the Code of Virginia, assume the cost of maintaining and policing roads, bridges and tunnel purchased and constructed under the State Revenue Bond Act as follows:

(a) Beginning July 1, 1966:

1. Assume the cost of maintaining all approach roads.
2. Assume the cost of policing all facilities.

(b) Beginning July 1, 1967:

1. Assume the cost of operating and maintaining all bridges, exclusive of toll collections.

(c) Beginning July 1, 1968:

1. Assume the cost of operating and maintaining all tunnel facilities, exclusive of toll collections.

II. That the State Highway Commission should, as soon as practicable, conduct a supplemental study of traffic and revenues on all projects

to determine if tolls can be reduced and any inequities therein removed, with specific regard to toll reductions hereinafter set forth.

III. That the reserve maintenance fund be retained as required by the trust indenture, and at the appropriate time, such fund be used to amortize outstanding indebtedness.

REASONS FOR RECOMMENDATIONS

For more than a quarter of a century now, the Tidewater Area of Virginia has been recognized as an area which has great potential for industrial development. It possesses unusually fine natural resources and has an ample supply of trained labor. Even though local and State authorities have consistently promoted the vast potential of the area, the rate of new industrial development has been somewhat retarded.

What then are the reasons for this retardation? One factor which should not be minimized is the high toll charges on bridges and bridge-tunnel facilities. One of the first management considerations in the process of evaluating a new plant location is the cost of moving raw materials into their plants and finished goods from their plants. Good management requires this evaluation; competition demands it. The tendency today is more and more towards the use of trucks for movement of goods, and the cost of moving such vehicles either north or south from Tidewater Virginia cannot be overlooked. It should be an objective of State policy to reduce and remove barriers that impede the flow of trade.

Recent reports have shown that tourism ranks high as a revenue producer within the State of Virginia, and is continually improving. Many people now depend upon this relatively new but important industry. Here again, we believe, toll rates are a big factor in the decision of many tourists to visit or bypass a given area. Since the Tidewater Area has so much to offer as a tourist attraction, the potential of this traffic should not be overlooked. Everything within reason should be done to encourage its growth.

The identical waters which make necessary the very expensive toll bridges and tunnels at the same time produce for the State of Virginia tax revenues almost beyond calculation. In other words, the harbor of Hampton Roads with its tributary rivers, including specifically the James, York and Rappahannock make possible for the State and its political subdivisions enormous tax revenues of all kinds.

Without cost to anyone except those paying tolls on the bridges and tunnel (financed by the $95,000,000 State of Virginia Toll Revenue Bonds) over and under the navigable deep waters of Eastern Virginia, there have been built and opened to free traffic, many miles of toll free highways.

In addition to these approximately 21 miles of toll free access highways costing in excess of $32,000,000, which were constructed and are maintained from toll funds, within approximately ten years there will be presented to the State, bridges and a tunnel costing over $60,000,000 without the State having expended any tax money therefor under present arrangements. Many of the access roads are presently used by local traffic toll free.

To illustrate the extensive use of certain toll free access roads the Highway Department made, at our request, several origin-destination studies on sections of the Hampton Roads Toll Facility. The following is the result of such studies:

1. *Ocean View Avenue (Routes 60 & 168 between 10th and 11th View)*

During November, 1964, the average 24-hour traffic on this section of highway was 15,486. Of these, 10,030 were using the Hampton Roads Bridge-Tunnel. Therefore, we can say that approximately 65 per cent of the traffic at this point use the Hampton Roads Bridge-Tunnel.

2. *West Ocean View Avenue (Routes 60 & 168 between 3rd and 4th View)*

The average 24-hour traffic in November, 1964, was 16,633. Therefore, we can safely say that 60 per cent of traffic passing this point also use the Hampton Roads Bridge-Tunnel.

3. *Route 168 Between Westmont and Dune Streets*

The traffic volume observed to be 16,469 vehicles per day. Although an origin-destination study was not made at this location based on knowledge of the area and traffic characteristics, it is estimated that 30 per cent of this traffic uses the Hampton Roads Bridge-Tunnel.

4. *Interstate Route 64 Between Newport News Connector and LaSalle Avenue*

The average daily traffic at this point in November, 1964, was 24,625. 32.9 per cent of this traffic uses the Hampton Roads Bridge-Tunnel.

5. *Interstate 64 Between Magruder Boulevard and Route 258*

The average daily traffic in November, 1964, was 20,051. Studies showed that 22.9 per cent of this traffic used the Hampton Roads Bridge-Tunnel.

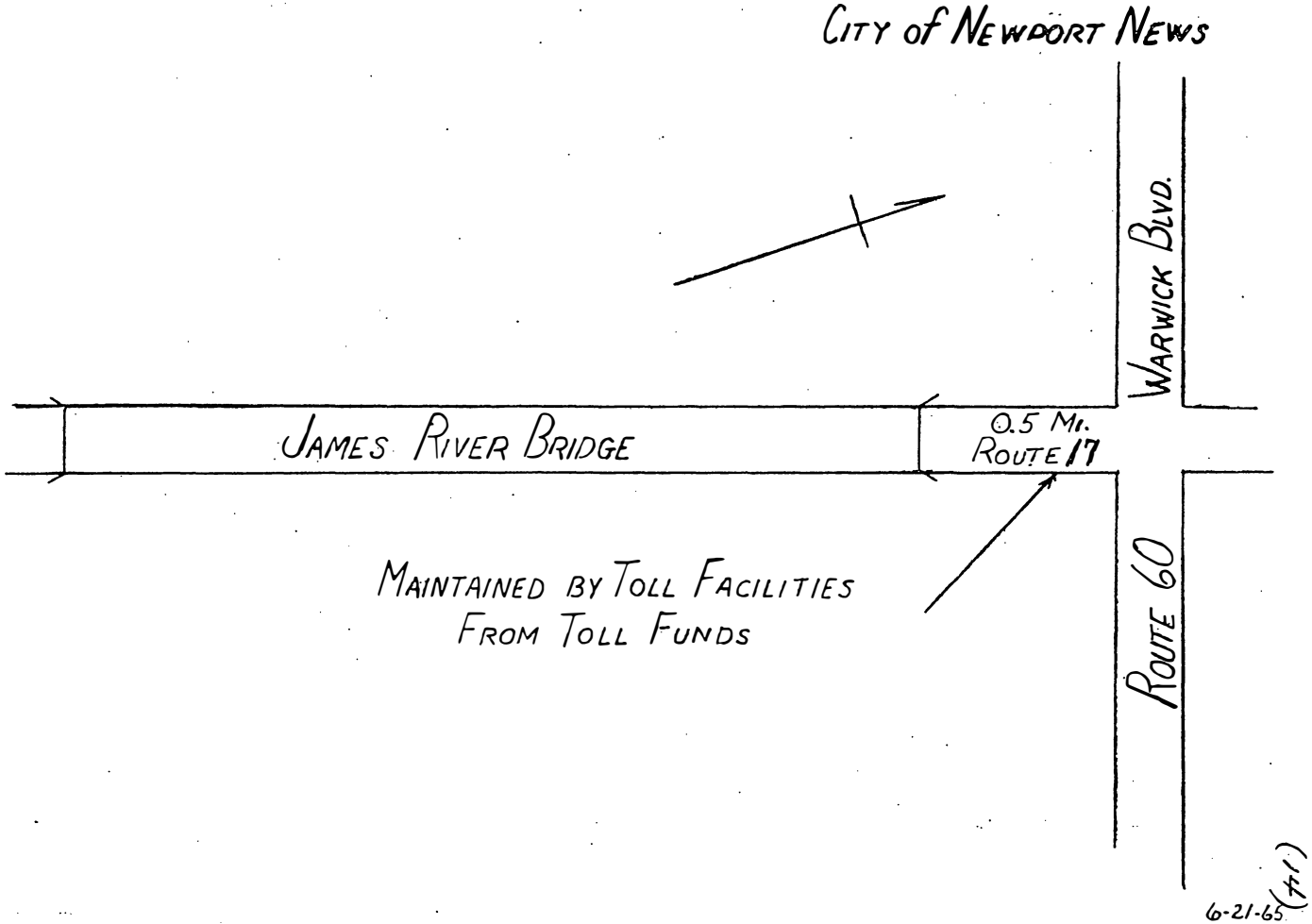
6. *Newport News Connector just South of Interstate 64*

The average 24-hour traffic was 9,138. Of these 9,138 vehicles, 25.2 per cent also used the Hampton Roads Bridge-Tunnel.

The following is a tabulation of highway mileage exclusive of bridges and tunnel constructed and maintained from toll funds:

	Mileage	Maint. Cost
Interstate Route 64—From Route 17 to Route 258	5.2	
Average Daily Traffic—11,775 Virginia Vehicles—86%—Out-of-State—14%		
5.2 Miles @ $7,000 per mile		$ 36,400
Interstate Route 64—From Route 258 to Toll Plaza	5.5	
Average Daily Traffic—22,000—Out-of-State Traffic—10%		
Less than 50% of this traffic actually use the tunnel, the remainder is purely local traffic.		
5.5 Miles @ $7,000 per mile		38,500
Route 168 from Willoughby to Little Creek Road in City of Norfolk (Maintained by City) Paid from Toll Funds	5.5	
Section from Ocean View to Little Creek Road less than 50% of traffic actually use the tunnel		
5.5 Miles @ $8,550 per mile		47,025

	Mileage	Maint. Cost
Newport News Connector	3.0	
Average Daily Traffic—8,200 Tunnel users 1,800—22% Local Traffic 6,400—78%		
3.0 Miles @ $3,500 per mile		10,500
LaSalle Avenue	1.3	
Per cent of local traffic same as Newport News Connector		
1.3 miles @ $3,500 per mile		4,550
Route 17—North Approach to James River Bridge	0.5	
Average Daily Traffic—4,900 90% Bridge Traffic—10% Local Traffic		
0.5 Miles @ $3,500		1,750
TOTAL	21.0	
TOTAL ANNUAL MAINTENANCE COSTS		$138,725
Paid to State Police for services at Hampton Roads Bridge-Tunnel Project. No charge is made for this service at the three bridges		$ 33,000


CITY of NEWPORT NEWS
WARWICK BLVD.
JAMES RIVER BRIDGE
0.5 Mi.
ROUTE 17
MAINTAINED BY TOLL FACILITIES
FROM TOLL FUNDS
ROUTE 60
6-21-65 (41)

At our public hearings it was suggested that the State should pay the toll facilities the full amount of the gas tax revenues generated from the use of these facilities. Using the average daily traffic on each of the toll facilities, multiplied by the length thereof, we have a total of approximately 140,000,000 miles travelled annually over the entire system maintained from toll funds. Applying a gas tax of seven cents per gallon, based upon an average of 15 miles per gallon, we arrive at a total of approximately $650,000 in motor fuel taxes generated annually. In ten years, in excess of $6,500,000 in motor fuel taxes will have been generated by vehicles using the toll facilities.

These revenues would go far to relieve the toll burdens presently carried by the residents of the Tidewater Area. However, since the State has never allocated gas tax revenues according to the source from which they were derived, such a precedent should not be set on behalf of the residents of a particular area. Such policy, if adopted and applied generally, would create chaos in the State highway program.

Another alternative presented to the Commission would be to treat toll facilities as we do cities and pay to the facilities the same amount per mile as we pay cities for maintaining similar facilities which serve as connecting links in the State's Primary Highway System.

We recognize the merits of these arguments which are directed at relieving the burden of the citizens of the Tidewater Area, and to removing the inequities inherent in the present method of financing such projects. However, such recommendations may not, in our opinion, be the best answer to our present problems or to related problems which may be anticipated in the future.

This Commission believes that these bridges and tunnels in Virginia are as much a part of the highway system as are other roads and streets, and for that reason should be the direct obligation of the State and the Highway Department. The cost of road building in mountainous sections of Virginia, is equal in cost per mile to some bridges and approach roads financed under the State Revenue Bond Act, and such roads are built and maintained on a toll free basis, with tax dollars.

There are at present millions of dollars of major bridge and tunnel construction under way or planned in Virginia, all of which will be toll free. The toll free bridge crossing the Rappahannock between Tappahannock and Warsaw is only thirty miles from the Norris Bridge. The original bridge was built by highway funds out of the Fredericksburg District. It was replaced in 1964 by a new bridge, with highway funds, still toll free. Another bridge costing $5,500,000 is now under construction between Hopewell and Charles City County over the James River, built with highway funds of the Richmond District. This bridge which will be toll free replaces toll ferries which are now traversing the James River.

Aside from the economic desirability of the elimination of tolls resulting in further development of the area, it is just good business practice. It is therefore recommended that the State of Virginia assume the entire cost of maintenance and operation (exclusive of toll collections), and policing, not merely of the free highways, but of both free highways and bridges and tunnel soon to be presented to it. We believe these costs should be assumed on the basis set forth in Recommendation I. The total cost to the State of such maintenance and operation is estimated as follows:

COST ESTIMATES OF THREE PHASES OF MAINTENANCE ASSUMPTION BY THE STATE:

PHASE I—APPROACH ROADS

State Police Service		$ 33,000
Hampton Roads Bridge—Tunnel System—		
Rural Mileage—		
Rt. I—64 North of Tunnel, 10.7 Mi. @ $8,000		85,600
Mileage in Cities—		
Willoughby to Little Creek Road in Norfolk	5.5 mi.	
Newport News Connector in Hampton	3.0 mi.	
LaSalle Ave. in Hampton	1.3 mi.	
Total Urban miles @ $10,000	9.8 mi.	98,000
Total Hampton Roads Project		$183,600
James River Bridge System—		
Rt. 17—North Approach in Newport News, 0.5 mi. @ $10,000		5,000
Total Estimated Annual Cost of PHASE I		$221,600

PHASE II—BRIDGES

James River Bridge—4.6 miles	
(Includes draw tenders' salaries, maintenance, roadway lighting, major repairs, and one paint job prorated over 10 year period)	$ 87,000
George P. Coleman Memorial Bridge—0.7 miles	
(Includes same items as under James River Bridge)	51,000
Robert O. Norris, Jr. Bridge—1.9 miles	
(Includes maintenance, major repairs, and one paint job prorated over 10 year period)	24,000
Total Estimated Annual Cost of PHASE II	$162,000

PHASE III—HAMPTON ROADS BRIDGE-TUNNEL

Length 3.5 miles—Includes maintenance, roadway lighting and major repairs prorated over 10 year period, and operations, exclusive of toll collections	$574,000
Total Estimated Annual Cost of PHASE III	$574,000
TOTAL ESTIMATED ANNUAL COST OF 3 PHASES	$957,600

II. The Resolution which directed this study, charged this Commission with the duty to study "the rates and toll charges on the several toll projects financed under the State Revenue Bond Act and the possibility of reducing these toll charges." Of course, any such reduction in tolls must be strictly in accord with the terms of the trust indenture under which the bonds were issued. The indenture requires that any reduction in tolls be preceded by a traffic study by consulting traffic engineers. Such a study must indicate that a reduction in tolls will not impair the security of the bonds.

If, as we have recommended, the State Highway Department assumes certain maintenance and operating costs of the toll facilities constructed under the State Revenue Bond Act, a substantial sum of money will be available either for amortization of outstanding indebtedness or for toll reductions. After considering our mandate, we believe it is the sense of the General Assembly of Virginia that, if possible, and if consistent with the overall needs of the State—and in particular—the Tidewater area—that our citizens in the Tidewater area be relieved as far as possible of the burdensome tolls on these facilities.

We have therefore carefully studied the toll structures presently in effect on the toll facilities on the assumption that revenues released from maintenance and operating costs through the assumption of such services by the State Highway Department will be available for toll reduction. We believe that inequities in the present toll structures should be eliminated where feasible and practicable.

We have proposed that the State Highway Department assume maintenance and operating costs under a "three-phase program." The first phase will become operative July 1, 1966, the first year of the next biennium. The amount to be assumed by the Highway Department under Phase I is estimated to be $221,600. In applying the funds available under Phase I we strongly believe prime consideration should be given to cutting the commuter's rate on the James River Bridge from 40 cents to 25 cents per passenger car through issuance of books of 20 coupons for $5.00 and through elimination of the inequities now existing on the Coleman Bridge with respect to station wagons, company-owned or fleet passenger cars and special licenses for certain passenger cars. The tolls for such vehicles are higher on the Coleman Bridge than on the James River Bridge. It has been estimated by the Director of Toll Facilities that the elimination of such inequities on the Coleman Bridge would reduce revenues on that span by only $20,000 to $30,000 per year.

On the basis of traffic figures for the year ending August 31, 1965, a total of 985,122 passenger cars used the James River Bridge. A cut of 15 cents (from 40 to 25 cents) in commuter's rate would amount to approximately $147,768. We believe that there is a real possibility that such a reduction might actually increase the revenue through greater use of the facility by commuters. If so, the cut in revenue may actually prove less than the estimated $147,768.

Therefore, on the basis of these two recommendations, Phase I of the program would seem to represent a drop of approximately $177,768 in revenues per year. The assumption of Phase I of our program by the State Highway Department will release $221,600 from application to maintenance and operation costs which when applied to toll reductions aggregating approximately $177,768, will leave $43,832 available for possible application at a later date to other toll adjustments.

We prefer to defer any possible adjustments in tolls during Phase II (second year of the biennium), and recommend that available funds from Phase I and Phase II be accumulated for application to toll reductions in Pahse III. We believe that equity calls for a cut of 15 cents per passenger car, one-time straight fare (90 cents to 75 cents), on the James River Bridge, but believe it prudent to forego such a reduction in Phase II in order that the effect of toll adjustments in Phase I may be ascertained through analysis of actual performance as to the effect on total revenues.

For the year ending August 1965 a total of 993,887 cars paid the straight 90 cent fare for crossing the James River Bridge. A 15 cent reduction from 90 to 75 cents would reduce gross revenues an estimated $149,083. Phase III of our program which involves assumption of certain maintenance and operating costs of the Hampton Roads Tunnel, begins July 1, 1968, in the second biennium. This Phase will free an estimated $574,000 in revenues annually from operation and maintenance costs which might be translated into adjustments in tolls.

In formulating our recommendation for Phase III, we have assumed the accumulation into one fund the estimated approximately $44,000 remaining in Phase I, $44,000 again in Phase II which should be available in

Phase III (totaling $132,000). The $162,000 freed in Phase II through the assumption of more maintenance and operating costs by the State Highway Department and $162,000 again available in Phase III. All of these sums aggregate $456,000, which should be added to the $574,000 estimated as Phase III portion of the maintenance and operating costs assumed by the Highway Department. Thus, more than one million dollars would be available for possible translation into toll adjustments in the first year of Phase III.

We further recommend that in Phase III earnest consideration be given to the elimination of the per-passenger fee of 20 cents now charged for use of the Hampton Roads Tunnel. It is believed that removal of the 20 cent fare for passengers probably would result in greater use of the tunnel and consequently some revenue to offset any loss through outright elimination of this fee. We agree with traffic experts that traffic through the tunnel would be speeded materially if the necessity for counting passengers at the toll plaza were removed.

For the year ending August 1965 the passenger fare of 20 cents each produced $757,588 in dollar revenue. The aggregate of the funds released through assumption of maintenance and operating costs by the State Highway Department would seem to be sufficient to offset the loss in revenue by elimination of the 20 cent fee for passengers using the tunnel.

Another important factor which must be considered and which could be translated into reductions in tolls, is the value of certain shops, lots, buildings and equipment used for the maintenance of the toll facilities that probably would be taken over by the State Highway Department when it assumed maintenance responsibilities. The present depreciated value of such property and equipment is estimated to be $357,173. However, we make no recommendation regarding this matter.

There should be a continuous review of the changes in the population, traffic flow, and other relevant factors to insure that the large bodies of water in the Tidewater area do not become impassable barriers to economic growth. Progress demands that additional crossings be planned and executed as required; but, we believe, these same crossing facilities should not be obstacles in themselves. They should serve to encourage traffic and improve communications among the various communities which make up the Tidewater Virginia area.

In considering the reduction in tolls which we have recommended the State Highway Commission will, of necessity, consider all relevant factors.

For example, with the opening of Interstate Route 495 around Washington and a section of Interstate Route 95 south of Fredericksburg in the latter part of 1964, the George P. Coleman Bridge on Route 17 at Yorktown experienced about an eight per cent decrease in straight fare traffic. This would indicate that traffic which formerly used Routes 301 and 17 are now using the Baltimore-Washington Expressway, Interstate 495 and Interstate 95.

With the recent completion of Interstate Route 95 from Richmond to Washington and the anticipated completion of Interstate Route 64 between Norfolk and Richmond, which is now scheduled for 1966, it is anticipated that an even greater decrease in traffic on Route 17 will result from a shift to these time-saving modern highways due to the limited access features, no stop lights, 65 mile per hour speed limits and other safety features which give the motorists greater ease of travel and at the same time avoid the 75¢ toll charge on the Coleman Bridge.

During 1957, the first year following opening of the Hampton Roads Crossing, peak load traffic was 6,000 vehicles per day. The all-time high was a recent peak load of 16,500 vehicles per day. By the time the bonds are paid off, traffic at the Hampton Roads Crossing, which is officially a part of the Interstate System, will have increased to the extent that another two-lane tube will be necessary. The traffic and Planning Division of the Department of Highways estimates that if tolls are removed in 1972, for example, a total of 28,500 vehicles per day can be expected. The additional tube at a cost of approximately $50,000,000 can be built with 90% federal funds and 10% State funds if the project is free of tolls.

Also, the James River Bridge may prove to be an obsolete structure under anticipated traffic conditions. It is only two lanes wide and subject to heavy depreciation. On the James River Bridge System in 1957, 4,000 vehicles per day was the highest count. So far in 1965 this figure has reached 10,000 vehicles per day (7,500 average). Our forecast for 1972, if tolls are removed, is 14,000 vehicles per day, well beyond the capacity of the present James River Bridge. Since this route is not in the Interstate System, State funds or some other source would be required for a parallel structure. Such a bridge can be built with 50% federal funds and 50% State funds if the project is free of tolls. The Department of Highways estimated that a two-lane bridge parallel to the present James River Bridge would cost $22,000,000. A four-lane structure to replace the present bridge would cost $40,000,000 to $44,000,000.

To provide for the construction of a new James River Bridge on a toll-free basis, the State Highway Commission should begin immediately allocating funds to that construction district to help defray construction costs when the projects are toll-free and federal funds are available. This procedure was followed in the case of the Hopewell Bridge presently under construction.

Under the terms of the present bond issue, no facility can be built parallel to any of the projects constructed under the State Revenue Bond Act while bonds remain outstanding. This is in keeping with the trust indenture and the State Revenue Bond Act. Also, under our present arrangement of a single issue of revenue bonds for the combined purpose of financing four toll facilities, it would not be possible under federal regulations to secure federal funds for construction of a second tube at Hampton Roads or a new James River Bridge until all facilities in the package are toll free.

The State Highway Department has secured tentative approval from the Federal Bureau of Public Roads to commence planning for and designing of a parallel tube at the Hampton Roads crossing. Under the terms of the Interstate Highway Program, construction must begin early enough so that it will be completed by the end of 1972, the present termination date of the program. In order to receive 90% federal Interstate funds, the federal government must be assured that the present facilities will be toll free by that time.

As to the plans of Congress after 1972, we have no information other than the fact that the Bureau of Public Roads is requesting the States to submit a Needs Study of all road systems. This report is due in Washington by January 1, 1966. We believe the Interstate Program will be extended at least to 1975.

III. The Trust Indenture under which the revenue bonds (1954 series) were issued, created, in addition to other special accounts, a Reserve Maintenance Fund. The moneys in the Reserve Maintenance Fund are to

be disbursed only for paying the cost of unusual or extraordinary maintenance or repairs, renewals and replacements, premiums on insurance and the cost of replacing equipment. Such disbursal must be occasioned upon some extraordinary occurrence, so characterized in a certificate signed by the Consulting Engineers and filed with the Trustee. There must also be an insufficiency of moneys in the Revenue Fund-Trustee Account to meet such emergency.

Since this fund serves such an important purpose we do not propose that the assumption by the State of maintenance and operation should reflect in the reduction or discontinuance of this fund. We, therefore, recommend that the reserve maintenance fund be continued for the purposes specified in the trust indenture and that, at the appropriate time, the moneys in such fund be used to amortize outstanding indebtedness.

A SUMMARY

The residents of the Tidewater Area long ago recognized the need for more modern and rapid communication between all segments of the area and between all elements of its population, both civilian and military. Since needed funds were not forthcoming from the State and because of Constitutional limitations, it was necessary to resort to the present method of financing the urgently needed facilities in order to replace the inadequate and expensive ferry service.

Since colonial times ferries have traversed Hampton Roads, Chesapeake Bay and the various rivers in the Tidewater Area. The ferries, of course a necessity, particularly on the longer courses, were most expensive to operate. With respect to the Hampton Roads Ferries, roughly 90% of the revenues had to go into maintenance and operation and only 10% was available for debt service and for depreciation reserves. However, under the State Revenue Bond Act, Hampton Roads Tunnel in particular, roughly 10% has been needed for operation and debt service and depreciation, and 90% has been available for debt service.

While the present system of financing urgently needed facilities has certain advantages, as illustrated above, there are two principal inequities which results from the fact that it is necessary to maintain some twenty-one miles of toll free access highways from toll revenue funds, and that Virginia's present system of highways is financed out of highway user taxes. When such highways are financed by toll revenue bonds, they are constructed, maintained and policed at the cost of the tollpayer. At the same time the tollpayer pays the tax on the fuel consumed in driving over the toll highways. This tax is in no way used to pay the cost of the toll projects. It goes to pay for other free highways. Here again, we have the tollpayer paying for toll free highways.

There are other pitfalls which may be encountered when various projects are coupled together for financing purposes. We have a clear example of such pitfalls in the case of the projects we are studying. Here, three well paying projects have been coupled with a losing project—moreover, it is a project that does not serve the same area and is one which is not used by those who are paying for the profitable projects.

Another example of the disproportionate burden occasioned by multiple facility financing is the James River Bridge System. The James River Bridge Corporation was chartered as a public service corporation. Its rates and charges came under the jurisdiction of the State Corporation Commission. The original total cost of this system was $7,500,000.

In the twenty years prior to its acquisition by the Virginia Department of Highways, tide, time, wind, weather, snow and ice exerted their influences on the structure. Lack of funds discouraged any idea of preventive maintenance and no attempt at corrective repairs were made. Upon acquisition of the system in 1949 the State repaired the most critical defects, in addition to instituting a preventive maintenance program. As a result of appropriate surveys a reconstruction program was initiated in 1954 and completed in 1956 costing in the neighborhood of $2,000,000, all moneys coming from earnings of the Bridge System.

In 1963-64 further reserve maintenance was undertaken by the Highway Commission on the James River Bridge. The work was completed in late 1964 at a cost of approximately $550,000 which was financed from the reserve maintenance fund. It is anticipated that with the completion of this maintenance the James River Bridge will require only intermittent preventive maintenance in the future. Therefore, thus far they have spent nearly $3,000,000 for maintenance on the bridge.

While the Bridge System originally was a financial failure, it is necessary when we consider the maintenance and repairs needed on the bridge, to consider the revenue received from the James River Bridge System which, during State ownership, has amounted to approximately $21,000,000. It cost the State $5,600,000, plus its repair costs, from revenues, which in terms of the above figures is in the neighborhood of $3,000,000. The original investment is less than any other facility in the package. In 1963 for example, one facility returned a net of $1,338,339 while one of the facilities had a net loss of $341,609 on an investment of $15,500,000, and another facility had a net return of $2,254,078, on an investment of $65,000,000. It seems grossly unfair that the users of the James River Bridge should be required to subsidize the operations of certain other facilities in the package.

This Commission calls special attention to the importance of the Norris Bridge in this overall study. The lack of patronage of this facility has made it necessary for the other bridges and tunnel financed under the State Revenue Bond Act to make up for the deficit in the Norris operation.

Cost of the Norris Bridge was approximately $15,000,000 which is roughly one-sixth of the total $95,000,000 bond issue. Therefore, it may well be said that the Norris span should be responsible for one-sixth of the bond interest and maturity load. However, it has failed to carry its proportionate share of this burden.

Prior to construction of the Norris Bridge a ferry served that crossing of the Rappahannock River, operating at a loss of more than $100,000 annually. The State Highway Commission through its Fredericksburg District was relieved of responsibility for this deficit when the Norris Bridge was built. The prospects for future revenues on the Norris Bridge was diminished by the construction of a new span, free of tolls, at Tappahannock along with other highway improvements. The outlook is further complicated when we consider the lack of substantial road improvements and modern sign techniques on the approach roads to the toll-laden Norris Bridge.

For the year ending May 1965 the bond interest charges amounted to $2,377,607 of which one-sixth (Norris share) would be $396,268. The Norris Bridge's net revenue was $123,836 for the same year. Applying that net against the Norris share of bond interest alone would leave a deficit of $272,432. Other toll facilities have been given the responsibility of making up that deficit; a deficit which was formerly assumed by the Highway

Commission during ferry service years. Not considered at this moment is the basic Norris Bridge responsibility for meeting one-sixth of the bonds retired each year. As of May 31, 1965 the total bonds outstanding amounted to $77,467,000. One-sixth of that total debt would be $12,911,200, the share allocated to the Norris Bridge.

The $95 million bond issue was sold for a retirement date of 1994, or 29 years hence. If not retired sooner, the Norris Bridge share would be about $445,000 annually. However, the bonds are being retired sooner due to the financial assistance of other toll facilities. At any rate, on a normal bond maturity date the Norris Bridge would be responsible for an annual deficit of $717,672. Through the accelerated bond retirement plan that has been in effect, the share rightly allotted as the Norris Bridge would be in the neighborhood of a million dollars a year. This is the result of the forecast of a full retirement of the $95 million bond issue within the next seven or eight years.

We strongly urge the State Highway Department to give every consideration to improving the approach roads to the Norris Bridge and the erection of modern signs for the convenience of local and through traffic in using the Bridge. We believe the return will be well worth the investment.

In another respect we believe that bridges and tunnels constructed under the State Revenue Bond Act differ from express highways charging tolls, since the latter is usually a parallel road to a free, tax supported highway, offering motorists the alternative of the free road or a toll road for his convenience. This is not the case in many sections of the Tidewater Area.

Obviously the present method of private financing involves some additional costs not involved in the traditional method of public financing supported by general tax revenues. Lenders will lend money at lower interest rates if the payment is guaranteed by general tax revenues than if there is the risk that the revenues from the particular project may prove insufficient to make repayment. In revenue bond financing additional administrative expenses are sometimes involved. Engineering costs to determine that the project is feasible are expensive.

There are, however, certain basic policy considerations which are inescapable, affecting both the basic principle of revenue bond financing, and public financing of needed facilities. We therefore believe that no additional projects authorized under the State Revenue Bond Act be constructed as revenue bond projects unless self-liquidating and self-sustaining.

Respectfully submitted,

HUNTER B. ANDREWS, *Chairman*
WELDON COOPER, *Vice-Chairman*
J. TRAVERS EDWARDS
J. CLIFFORD HUTT
EDWIN R. MacKETHAN
GENE PAULETTE
WALTER E. ROGERS
ROBERT B. SMITH
S. COLSTON SNEAD, JR.

APPENDIX I

Chesapeake Bay Bridge and Tunnel District

The Chesapeake Bay Bridge-Tunnel Project was financed by a $200,000,000 revenue bond issue in April, 1960. The bonds are payable solely from the tolls collected from users of the project and are not in any way dependent upon or guaranteed by the Commonwealth of Virginia. The bonds were sold in three series: $70,000,000, 4⅞% Series A, first pledge bonds; $30,000,000, 5½% Series B, second pledge bonds; and $100,000,000, 5¾% Series C, third pledge bonds.

In addition to the construction of 17.6 miles of over-water crossing, consisting of two bridges, two tunnels, 12-plus miles of concrete trestle and some causeway, it was necessary for the District to construct over five miles of approach highways. The south approach is approximately 0.90 miles in length between the Chesapeake Beach and Shore Drive (Route 60), whereas the north approach from Wise Point to the then existing Route 13 on the Eastern Shore is 4.25 miles in length. These approach highways were constructed to meet interstate standards on 200 foot wide right-of-ways, all of which were paid for by the District as a part of the over-all project cost. The total cost for the construction of the approach roads, including right-of-ways, amounted to $2,286,203.

The Chesapeake Bay Bridge and Tunnel District added 23 miles of highways similar to arterial highways (built to Interstate standards as conditions would permit) of the Virginia State Highway System at no cost to the State. The construction of this vital North-South link thus effected a savings to the State Highway Department of $139,787,000, the cost of the project.

The District has maintained, operated and policed the Facility for the period April 15, 1964 to the present at an average operating cost of $3,340.72 per day for a total expenditure through October 31, 1965 of $1,884,165. This is in addition to bond interest expenses of $29,623.28 per diem or $16,707,530. All of these expenses have been paid solely from toll revenues and reserve funds remaining from a $200,000,000 bond issue, with no assistance whatever from State Highway funds or any other source of federal, State or local tax revenue.

In the 18½ month period under discussion, 1,884,287 paid vehicles have traveled 43,338,601 miles over District constructed, maintained and operated roads. Assuming 15 miles to the gallon of fuel, the fuel tax which should have accrued to the State would amount to $202,247. This does not take into account local traffic using the approach roads on either shore, but not crossing the project. None of this gas revenue accumulation has been returned to the District.

In the same operating period, 7,631 vehicles of the State Highway Department, State Police and Department of Motor Vehicles were provided passage without charge, representing a savings of approximately $42,200 to the Commonwealth for vehicles and passengers. At the same time, Chesapeake Bay Bridge and Tunnel District vehicles and personnel paid full fare when pursuit of duty required crossing other toll facilities.

For the operating period covered, average daily toll revenues have amounted to $21,781.97 per day, whereas average daily expenses to cover operations and bond interest requirements amounted to $32,964, leaving a daily balance of $11,182.03 and an 18½ months' accumulated deficiency of $6,306,665 which has been paid from reserve fund balances. Traffic is improving, but presently is not more than two-thirds of the volume contemplated by the Traffic Consultants.

The following tables provide additional information on the Operation of the Chesapeake Bay Bridge and Tunnel District:

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT **Appendix I**

Traffic Statistics, For The Year Ended June 30, 1965

	Number Of Units	Amount
Vehicle Tolls:		
Automobiles	907,708	$3,573,142
Trucks	180,906	1,843,704
Buses	24,849	224,085
Sub-Total	1,113,463	$5,640,931
Passes	4,639	
Total—Vehicles	1,118,102	$5,640,931
Passenger Tolls:		
Vehicle Passengers	1,523,852	$1,295,274
Bus Passengers	499,061	357,064
Total—Passengers	2,022,913	$1,652,338

APPENDIX II

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT **Appendix I**
(Revenue Fund)

Comparison Of Actual And Budgeted Expenditures
For The Year Ended June 30, 1965

	Actual Expenditures	Budgeted Amount	Over (Under) Expended
Administration:			
Salaries, Officers and Staff	$ 108,713	$ 111,600	$ (2,887)
Payroll Taxes, Group Insurance and Retirement Fund	68,390	55,000	13,390
Consulting Engineers	25,000	25,000	.....
Traffic Engineers	8,339	12,000	(3,661)
Auditors	12,000	12,000	
Counsel, Legal Expenses	6,706	6,300	406
Trust Agreement Expenses	17,060	17,000	60
Supplies	11,202	10,000	1,202
Travel, Commission Meetings	11,412	17,000	(5,588)
Publicity Advertising	177,785	175,300	2,485
Closing Out, Liquidation—Ferry Operations..	8,862		8,862
Miscellaneous	2,210	5,900	(3,690)
Total	$ 457,679	$ 447,100	$ 10,579
Operation:			
Wages, Operating Personnel	$ 289,595	$ 338,600	$ (49,005)
Vehicle Fuel and Oil	9,089	33,000	(23,911)
Electric Power, Heat and Water	62,205	79,200	(16,995)
Communications	14,048	15,600	(1,552)
Supplies, Miscellaneous	6,769	11,200	(4,431)
Total	$ 381,706	$ 477,600	$ (95,894)
Maintenance:			
Wages, Maintenance Personnel	$ 225,557	$ 262,400	$ (36,843)
Replacement Supplies, Miscellaneous	39,440	27,800	11,640
Total	$ 264,997	$ 290,200	$ (25,203)
Insurance:			
Property Damage (All Risk)	$ 113,564	$ 126,000	$ (12,436)
Comprehensive General Liability	3,785	3,000	785
Fire and Extended Coverage	11,179	17,500	(6,321)
Use and Occupancy	13,003	15,000	(1,997)
Bonding, Burglary, Robbery	674	4,500	(3,826)
Automobile Fleet	3,096	6,000	(2,904)
Boiler and Machinery	127	5,000	(4,873)
Workmen's Compensation	6,168	5,400	768
Miscellaneous	1,533	1,500	33
Total	$ 153,129	$ 183,900	$ (30,771)
Total Operating Expenses	$1,257,511	$1,398,800	($141,289)

Comparison Of Expenditures With Cost Estimates (Construction Fund)
For The Period From September 7, 1960 To June 30, 1965

	Estimated Cost September 7, 1960	Expenditures To Date	
Project Cost—Schedule #1	$139,200,000	$134,676,912	
Capitalized Interest On Bonds For Four and One-Half (4½) Years	48,405,600	40,256,748	"A"
Financing Expenses—Underwriters' Discount	6,700,000	6,700,000	
Total	$194,305,600	$181,633,660	
"A"—Composed As Follows:			
Provision For Interest To June 30, 1965			
From Construction Fund Interest Account		$ 33,569,815	
From Revenue Bonds Interest and Sinking Fund—General Reserve Account		8,527,580	
Excess Funds From 1956 Redemption Account		10,238	
Total		$ 42,107,633	
Add:			
Commitment Fees On Deferred Delivery Contracts		35,125	
		$42,142,758	
Deduct:			
Interest Received On Delivery of Bonds		1,886,010	
Total—As Above		$ 40,256,748	

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT

COMPARISON OF EXPENDITURES WITH COST ESTIMATES, BY GENERAL CLASSIFICATIONS, (CONSTRUCTION FUND) FOR PERIOD SEPTEMBER 7, 1960 TO JUNE 30, 1965

	Estimated Cost September 7, 1960	Supplemental Agreements, Revisions, Extra Work, Etc. (Note 1)	Present Estimated Cost	Expenditures To Date
Main Crossing:				
1. Low Level Trestle	$ 28,089,657	$ 277,854	$ 28,367,511	$ 28,367,511
2. Thimble Shoal Tunnel	39,635,366	1,211,857	40,847,223	40,847,223
3. Baltimore Channel Tunnel	37,428,186	855,597	38,283,783	38,283,783
4. North Channel Bridge Substructure, Roadway Slab and Handrail	4,448,927	721,695	5,170,622	5,170,622
5. Fisherman Inlet Bridge Substructure, Roadway Slab and Handrail	208,326	17,553	225,879	225,879
6. North Channel Bridge Fender System	75,000	2,400	77,400	77,400
7. Fisherman Island Causeway	2,400,000	40,918	2,440,918	2,440,918
8. Electrical	4,250,000	(1,215,747)	3,034,253	3,034,253
Total	$116,535,462	$1,912,127	$118,447,589	
9. North Channel Bridge Superstructure	$ 1,901,195	$ 53,386	$ 1,954,581	1,954,581
10. Fisherman Inlet Bridge Superstructure	132,143	19,710	151,853	151,853
	$ 2,033,338	2 73,096	$ 2,106,434	
Total Main Crossing	$118,568,800	$1,985,223	$120,554,023	
South Approach:				
11. Toll Plaza	$ 200,000	$ 133,780	$ 333,780	333,780
12. Approach Roads	234,000	496,346	730,346	730,346
Total	$ 434,000	$ 630,126	$ 1,064,126	
North Approach:				
13. Toll Plaza and Administration Building	$ 750,000	$ 308,135	$ 1,058,135	1,058,135
14. Approach Roads	1,831,000	(285,634)	1,545,366	1,545,366
Total	$ 2,581,000	$ 22,501	$ 2,603,501	
15. Restaurant and Fishing Piers (Including Engineering)	$ 750,000		$ 750,000	317,341
Right Of Way:				
16. South Approach	$ 650,000	$ (240,000)	$ 410,000	409,526
17. North Approach	350,000	(261,361)	88,639	88,639
Total	$ 1,000,000	$ (501,361)	$ 498,639	
Engineering	$ 7,625,000	$ (200,000)	$ 7,425,000	7,421,188
Administration, Legal and Insurance	2,120,000	25,000	2,145,000	1,506,625
Preliminary Borings		130,339	130,339	130,339
Rock Backfill North Channel Bridge Piers		80,408	80,408	80,408
Power Utilities and Tests		3,138	3,138	3,138
Test Water Well (Tunnel)		16,665	16,665	16,665
Extra Trestle Components		118,553	118,553	118,553
Trestle Backfill		250,182	250,182	250,182
Waterproof Tunnel Ceilings		13,907	13,907	13,907
Remaining Project Construction Items		1,206,300	1,206,300	98,751
Estimated Total Cost Less Contingencies	$133,078,800	$3,780,981	$136,859,781	
Reserve For Contingencies:				
1. Main Crossing (Items 1-5)	$ 5,300,000	($3,084,556)	$ 2,215,444	
2. Main Crossing (Items 6-8)		1,172,429	1,172,429	
3. All Other Items	821,200	(1,868,854)	(1,047,654)	
Total	$ 6,121,200	($3,780,981)	$ 2,340,219	
Total Project Cost	$139,200,000	$	$139,200,000	$134,676,912

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT Appendix I

Schedule of Insurance In Force As Of June 30, 1965

Type	Amount of Coverage
Property Damage (All Risk):	
Co-Insurance 80% Insurable Value	$ 75,917,400
Comprehensive General Liability:	
Personal Liability	$ 1,000,000
Property Damage	1,000,000
Fire and Extended Coverage:	
Buildings and Contents	$ 5,095,600
Boiler and Machinery	100,000
Contractors' Equipment	28,528
Diesel Workboat	20,000
Model	3,000
Use and Occupancy:	
100% Premium Adjustment Form	$ 9,500,000
Protection and Indemnity—Liability:	
Diesel Workboat	$ 100,000
Comprehensive Bond:	
Employee Dishonesty	$ 200,000
Loss Inside Premises	100,000
Loss Outside Premises	100,000
Public Official Bonds—Commissioners, Etc.	55,000
Automobile Policies:	
Comprehensive Liability	$100M/300M
Property Damage	100,000
Workmen's Compensation	Statutory
Employees' Group Life, Accident and Health	Various

APPENDIX II

Downing Bridge

The first Downing Bridge at Tappahannock, which replaced a privately owned ferry service, was opened to traffic in 1927. The bridge and approaches cost $562,225.77. The funds for the construction of the first bridge were raised by the five surrounding counties putting up, under the Robinson Act, $40,000 each, or a total of $200,000; and the city of Richmond putting up $200,000. These funds, however, were not sufficient to complete the bridge, so request was made for federal aid against the Robinson Act funds advanced. Consequently, the Government advanced $232,935.96 toward the construction of the bridge approaches. The remainder of the funds were used on the roads leading to the approaches to the bridge. The Robinson Act money advanced by the federal government was repaid by the State.

The new $2,300,000 bridge over the Rappahannock River at Tappahannock was opened to traffic on December 28, 1963. The new bridge replaced the 37 year old first Downing Bridge. With the opening of the new bridge, travelers to and from the Northern Neck are no longer subject to delays because of a draw span opening and closing for traffic. The new structure which is 5,605 feet long, is a fixed span that rises 100 feet above the channel of the river. Eight feet wider than the old bridge, it has a greater carrying capacity and more safety features. Recent traffic counts at the bridge indicate that the average daily usage is 3,700 vehicles per day.

To expedite construction of the bridge and to defray the costs thereof, the State Highway Commission allocated annually funds to the Fredericksburg Construction District as follows:

1958-59	Fredericksburg District Construction Fund	500,000.00
1959-60	" " " "	500,000.00
1960-61	" " " "	500,000.00
1961-62	" " " "	450,000.00
1962-63	" " " "	300,000.00
1963-64	" " " "	280,000.00
	Total Allocation	$2,530,000.00
	Less Contracts Let	2,530,000.00
	Balance	- 0 -

Expenditures for maintenance on the Downing Bridge at Tappahannock during the past fiscal year have been inconsequential. Ordinary maintenance cost, such as centerline painting and snow removal, are not kept separate for the bridge. These routine costs are kept on the bridge and its northern approach road. There were no expenditures directly related to the bridge during the past year. For the current year, 1964-65, the Resident Engineer has estimated that the ordinary maintenance expenditures on Route 360 from the south corporate limits of Warsaw to the south end of the Downing Bridge (5.47 miles) will be $9,590. He does not anticipate any expenditures on the bridge other than snow removal and centerline painting. Prorating the estimated expenditure on the approach road and the bridge indicates maintenance cost for the bridge during the current year will be under a thousand dollars.

APPENDIX III

Elizabeth River Tunnel District

On February 25, 1960, the Elizabeth River Tunnel District (a political subdivision of the State of Virginia) sold $41,700,000, 4½% revenue bonds dated February 1, 1960, due February 1, 2000.

The purpose of this bond issue was: (a) To redeem $15,727,000 outstanding revenue bonds dated February 1, 1950, which was the balance of an original $23,000,000 issued for the purpose of building the first Elizabeth River Tunnel (now known as the Downtown Tunnel) and connecting Berkley Bridge, between downtown Norfolk and downtown Portsmouth; (b) To pay the cost of a second Elizabeth River Tunnel (now known as the Midtown Tunnel) and connecting roads from the Norfolk General Hospital area of Norfolk at the south end of Hampton Boulevard to Pinners Point in Portsmouth and thence by new road to High Street.

The bonds are not a general obligation of the District, the State, or any political subdivision thereof and are payable solely from the tolls and other revenues of the tunnel projects including an agreed annual payment from the City of Norfolk to cover the City's share of the cost of the Berkley Bridge.

While the maturity of the $41,700,000 bonds is February 1, 2000, it was estimated at the time the bonds were sold in February 1960, that the toll revenues would be sufficient to retire all of the bonds by February 1, 1985. Revenues today are approximately equal to the engineers' estimates but because the revenues immediately after the opening of the second tunnel did not come up to the engineers' estimates bond redemptions are behind estimated redemptions. As of August 1, 1965, the $41,700,000 will have been reduced to $40,962,000. With the increasing traffic now being experienced it is believed that full retirement by February 1, 1985, is still a realistic estimate.

The following tables provide additional information on the operation of the Elizabeth River Tunnel District:

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

STATEMENT OF OPERATING REVENUE AND EXPENSES
REVENUE FUND

Fiscal Year Ended January 31, 1965

	Downtown Tunnel	Midtown Tunnel	Total
Revenue:			
Vehicles	$1,707,553.80	$1,448,911.00	$3,156,464.80
Bus Passengers	305,554.30	.....	305,554.30
Total Toll Revenue	$2,013,108.10	$1,448,911.00	$3,462,019.10
Other:			
Bridge—City of Norfolk Contract			308,937.40
Cash Overage			55.22
Transit Ads (Bus)			608.20
Reduction of Reserve for Unredeemed Tickets			322.20
Miscellaneous			1,023.24
Bus—Sundry			72.06
Total Revenue			$3,773,037.42
Operating Expenses:			
Maintenance of Roadway and Structures	$ 123,999.21	$ 147,945.28	$ 271,944.49
Maintenance and Operation of Tunnel	133,971.96	130,326.56	264,298.52
Maintenance and Operation of Bridge	50,451.82	.....	50,451.82
Maintenance and Operation of Toll Equipment	110,767.42	93,140.91	203,908.33
Bus Operation	216,050.91	.....	216,050.91
Total Operating Expenses	$ 635,241.32	$ 371,412.75	$1,006,654.07
Operating Income	$1,377,866.78	$1,077,498.25	$2,766,383.35
General And Administrative Expenses:			
Expenditures			190,135.99
Net Income For the Year Ended Jan. 31, 1965			$2,576,247.36

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

DETAILS OF OPERATING REVENUE
REVENUE FUND

Fiscal Year Ended January 31, 1965

		Toll	Number	Amount
Revenue:				
Downtown Tunnel:				
Vehicles:				
Passenger Cars	2 axles	$ .40	3,508,223	$1,403,289.20
Trucks	2 axles	.40	472,053	188,821.20
Trucks	3 axles	.60	18,091	10,854.60
Trucks	4 axles	.80	18,426	14,740.80
Trucks	5 axles	1.00	2,658	2,658.00
Trailers	1 axle	.20	5,048	1,009.60
Commercial Buses	2-3 axles	1.00	84,380	84,380.00
Motorcycles	2 axles	.40	4,501	1,800.40
Non-Revenue	.. ..		50,800	.....
E.R.T.C. Buses	2 axles		138,635	.....
			4,302,815	$1,707,553.80
Midtown Tunnel:				
Vehicles:				
Passenger Cars	2 axles	.40	3,166,516	$1,266,606.40
Trucks	2 axles	.40	346,813	138,725.20
Trucks	3 axles	.60	12,692	7,615.20
Trucks	4 axles	.80	21,135	16,908.00
Trucks	5 axles	1.00	4,621	4,621.00
Trailers	1 axle	.20	6,351	1,270.20
Commercial Buses	2-3 axles	1.00	12,115	12,115.00
Motorcycles	2 axles	.40	2,625	1,050.00
Non-Revenue	.. ..		32,088	.....
			3,604,956	$1,448,911.00
Total:				
Vehicles:				
Passenger Cars	2 axles	.40	6,674,739	$2,669,895.60
Trucks	2 axles	.40	818,866	327,546.40
Trucks	3 axles	.60	30,783	18,469.80
Trucks	4 axles	.80	39,561	31,648.80
Trucks	5 axles	1.00	7,279	7,279.00
Trailers	1 axle	.20	11,399	2,279.80
Commercial Buses	2-3 axles	1.00	96,495	96,495.00
Motorcycles	2 axles	.40	7,126	2,850.40
Non-Revenue			82,888	.....
E.R.T.C. Buses	2 axles		138,635	.....
			7,907,771	$3,156,464.80
Downtown Tunnel:				
Passengers:				
E.R.T.C. Buses		.10	3,055,543	$ 305,554.30

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

DETAILS OF OPERATING EXPENSES

Fiscal Year Ended January 31, 1965

REVENUE FUND

	Expenses	Budget	Expenses Under (Over) Budget
General And Administration:			
Salaries and Wages	$ 79,365.44	$ 87,840.00	$ 8,474.56
Fees—Consulting Engineers	11,004.00	11,004.00	.....
Fees—Counsel	6,000.00	6,000.00	.....
Fees—Auditor	1,750.00	2,400.00	650.00
Fees—Commissioners	2,400.00	2,400.00	.....
Fees—Trustee	2,399.78	3,600.00	1,200.22
Employer Retirement Expense	19,704.46	22,812.00	3,107.54
Group Insurance	19,026.46	20,400.00	1,373.54
Social Security Taxes	27,167.87	25,200.00	1,967.87)
Service Equipment and Garage—Administration Building	243.02	168.00	(75.02)
Service Equipment and Garage—Off-Project Signs	380.91	312.00	(68.91)
Window Cleaning	180.00	180.00	.....
Supplies and Contract Maintenance—Administration Building	491.32	1,032.00	540.68
Supplies and Contract Maintenance—Off-Project Signs	884.18	720.00	(164.18)
Electric Power	1,446.40	1,452.00	5.60
Water	233.10	360.00	126.90
Telephone and Telegraph	1,470.93	1,620.00	149.07
Fuel for Heating	902.53	1,200.00	297.47
Sewage	68.84	108.00	39.16
Postage	398.58	420.00	21.42
Maintenance of Office Machines	1,126.21	1,200.00	73.79
Office Supplies	1,487.01	1,380.00	(107.01)
Banking Room Supplies	822.38	720.00	(102.38)
Janitor Supplies	801.86	480.00	(321.86)
General Supplies	226.59	360.00	133.41
Uniform Supplies	315.81	480.00	164.19
Uniform Replacement	593.83	900.00	306.17
General Printing	510.87	720.00	209.13
Advertising	3,521.63	4,800.00	1,278.37
Personnel Selection	419.10	360.00	(59.10)
Management—Automobile Expenses	1,982.43	1,980.00	(2.43)
Conference Expenses	123.80	300.00	176.20
Travel Expenses	714.96	1,200.00	485.04
Dues to Associations	1,033.00	2,160.00	1,127.00
Miscellaneous	938.69	600.00	338.69)
Total General and Administration	$190,135.99	$206,868.00	$ 16,732.01

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

DETAILS OF OPERATING EXPENSES (CONTINUED)

Fiscal Year Ended January 31, 1965

REVENUE FUND (CONTINUED)

DOWNTOWN TUNNEL AND BRIDGE

	Expenses	Budget	Expenses Under (Over) Budget
Maintenance of Roadway Structures:			
Norfolk Plaza:			
Salaries and Wages	$ 27,566.71	$ 29,064.00	$ 1,497.29
Service Equipment and Garage	2,916.16	1,872.00	(1,044.16)
Supplies and Contract Maintenance	790.03	2,280.00	1,489.97
Electric Power	552.62	636.00	83.38
Telephone	282.60	288.00	5.40
Gordon Warehouse	28.60	60.00	31.40
	$ 32,136.72	$ 34,200.00	$ 2,063.28
Berkeley Plaza:			
Salaries and Wages	$ 46,260.28	$ 45,732.00	($ 528.28)
Service Equipment and Garage	3,645.22	2,352.00	(1,293.22)
Supplies and Contract Maintenance	1,284.22	2,280.00	995.78
Electric Power	513.96	720.00	206.04
	$ 51,703.68	$ 51,084.00	($ 619.68)
Portsmouth Plaza:			
Salaries and Wages	$ 34,851.42	$ 36,456.00	$ 1,604.58
Service Equipment and Garage	2,916.15	1,872.00	(1,044.15)
Supplies and Contract Maintenance	1,194.72	1,800.00	605.28
Electric Power	970.02	1,212.00	241.98
Water	25.50	120.00	94.50
Telephone	201.00	204.00	3.00
	$ 40,158.81	$ 41,664.00	$ 1,505.19
Total Maintenance of Roadway and Structures	$123,999.21	$126,948.00	$ 2,948.79
Maintenance and Operation of Tunnel and Ventilation Building:			
Salaries and Wages	$ 99,475.91	$108,240.00	$ 8,764.09
Service Equipment and Garage	10,692.60	6,864.00	(3,828.60)
Supplies and Contract Maintenance—Tunnel	3,623.78	5,400.00	1,776.22
Electric Power	16,341.44	16,800.00	458.56
Water—Tunnel	1,493.25	1,440.00	(53.25)
Ventilation Building:			
Supplies and Contract Maintenance	(199.27)	840.00	1,039.27
Electric Power	158.70	360.00	201.30
Water and Sewage	49.21	180.00	130.79
Telephone	210.29	216.00	5.71
Fuel for Heating	294.90	300.00	5.10
Supplies and Contract Maintenance—Equipment	555.95	1,200.00	644.05
U. S. Coast Guard Easement	1,275.20	1,272.00	(3.20)
Miscellaneous	.....	60.00	60.00
	$133,971.96	$143,172.00	$ 9,200.04

ELIZABETH RIVER TUNNEL COMMISSION—(Continued)

DETAILS OF OPERATING EXPENSES (CONTINUED)

Fiscal Year Ended January 31, 1965

REVENUE FUND—(Continued)

DOWNTOWN TUNNEL AND BRIDGE

	Expenses	Budget	Expenses Under (Over) Budget
Maintenance and Operation of Bridge:			
Salaries and Wages	$ 46,008.54	$ 48,384.00	$ 2,375.46
Auxiliary Power Plant	.....	60.00	60.00
Service Equipment and Garage	2,430.12	1,572.00	(858.12)
Supplies and Contract Maintenance	1,449.46	1,800.00	350.54
Electric Power	563.70	840.00	276.30
Miscellaneous	.....	60.00	60.00
	$ 50,451.82	$ 52,716.00	$ 2,264.18
Toll Collection and Equipment:			
Salaries and Wages	$105,314.02	$111,912.00	$ 6,597.98
Toll Collectors' Supplies	125.23	420.00	294.77
Printing Tickets and Forms	2,581.73	1,800.00	(781.73)
Service Equipment and Garage	243.02	168.00	(75.02)
Window Cleaning	90.00	84.00	(6.00)
Supplies and Contract Maintenance—Toll Equipment	143.27	900.00	756.73
Supplies and Contract Maintenance—Toll Plaza	459.35	600.00	140.65
Electric Power	1,810.80	1,680.00	(130.80)
	$110,767.42	$117,564.00	$ 6,796.58
Bus Operation:			
Salaries and Wages	$108,926.17	$108,636.00	($ 290.17)
Labor—Maintenance	59,863.74	61,092.00	1,228.26
Fuel	8,316.77	9,648.00	1,331.23
Lubricants	585.30	780.00	194.70
Repair and Replacement of Parts	8,612.18	9,240.00	627.82
Tires and Tubes	3,644.84	4,200.00	555.16
Service Equipment and Garage—Maintenance of Terminals and Signs	972.66	648.00	(324.66)
Supplies and Contract Maintenance	22.30	300.00	277.70
Electric Power—Portsmouth Terminal	47.30	84.00	36.70
Water and Sewage	19.65	48.00	28.35
Management	25,000.00	24,996.00	(4.00)
Advertising	.....	96.00	96.00
Stationery and Printing	.....	36.00	36.00
Miscellaneous	40.00	60.00	30.00
	$216,050.91	$219,864.00	$ 3,813.09
Total Downtown Tunnel and Bridge	$635,241.32	$660,264.00	$ 25,022.68

ELIZABETH RIVER TUNNEL COMMISSION—(Continued)

DETAILS OF OPERATING EXPENSES (CONTINUED)

Fiscal Year Ended January 31, 1965

REVENUE FUND—(Continued)

MIDTOWN TUNNEL

	Expenses	Budget	Expenses Under (Over) Budget
Maintenance of Roadway and Structures:			
Atlantic City Plaza:			
Salaries and Wages	$ 46,514.90	$ 40,488.00	($ 6,026.90)
Service Equipment and Garage	2,635.18	3,552.00	916.82
Supplies and Contract Maintenance	2,560.96	3,996.00	1,435.04
Electric Power	5,838.90	3,948.00	(1,890.90)
Telephone	234.00	204.00	(30.00)
Buildings	47.58	240.00	192.42
	$ 57,831.52	$ 52,428.00	($ 5,403.52)
Pinners Point Plaza:			
Salaries and Wages	$ 74,025.02	$ 49,452.00	($ 24,573.02)
Service Equipment and Garage	3,446.95	3,864.00	417.05
Supplies and Contract Maintenance	2,743.54	3,996.00	1,252.46
Electric Power	5,810.82	7,152.00	1,341.18
Water	311.21	480.00	168.79
Telephone	1,227.43	1,140.00	(87.43)
Buildings	2,534.79	2,220.00	(314.79)
Miscellaneous	14.00	204.00	190.00
	$ 90,113.76	$ 68,508.00	($ 21,605.76)
Total Maintenance of Roadway and Structures	$147,945.28	$120,936.00	($ 27,009.28)
Maintenance and Operation of Tunnel and Ventilation Buildings:			
Salaries and Wages	$102,609.05	$ 93,744.00	($ 8,865.05)
Service Equipment and Garage	6,893.91	7,740.00	846.09
Supplies and Contract Maintenance—Tunnel	1,836.76	4,800.00	2,963.24
Electric Power	15,633.15	18,000.00	2,366.85
Water	966.18	1,440.00	473.82
Ventilation Building:			
Supplies and Contract Maintenance	59.95	720.00	660.05
Electric Power	340.65	360.00	19.35
Water and Sewage	20.89	180.00	159.11
Telephone	201.00	216.00	15.00
Fuel for Heating	754.53	840.00	85.47
Supplies and Contract Maintenance—Equipment	1,010.49	1,200.00	189.51
Miscellaneous	.....	60.00	60.00
	$130,326.56	$129,300.00	($ 1,026.56)

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

TRAFFIC STATISTICS

Fiscal Year Ended January 31, 1965

			Vehicles
Downtown Tunnel and Bridge:			
Bridge Traffic:			
(Traffic between Norfolk and Berkeley)			
Northbound		3,460,097	
Southbound		3,426,916	6,887,012
Tunnel Traffic:			
(Traffic between Berkeley and Portsmouth)			
Northbound—Tunnel Only	172,886		
Southbound—Tunnel Only	173,403	346,289	
Bridge and Tunnel Traffic:			
(Traffic between Norfolk and Portsmouth)			
Northbound—Tunnel and Bridge	1,995,175		
Southbound—Tunnel and Bridge	1,961,351	3,956,526	4,302,815
Midtown Tunnel:			
(Traffic between Norfolk and Portsmouth)			
Northbound		1,798,291	
Southbound		1,806,665	3,604,956
			14,794,783

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

Insurance Schedule

January 31, 1965

In accordance with Section 707 and 708 of the Trust Indenture, dated February 1, 1960, the Commission has maintained insurance coverage on the tunnel and bridge facilities as outlined below:

Coverage	Policy Numbers
1. *Physical Loss and Damage:* Bridge and Downtown Tunnel Midtown Tunnel	E.R.T.C. P.D. No. 10
2. *Use and Occupancy*	E.R.T.C. U & O No. 9
3. *Business Insurance Comprehensive Policy:*	
(A) *Public Liability:* Bodily Injury Property Damage	
(B) *Umbrella Excess Liability*	
(C) *Fire and Extended Coverage:* Buildings and Contests	
(D) *Differences in Conditions Contract*	
(E) *Comprehensive Crime:*	
Money and Securities: Inside Premises Outside Premises	
Fidelity Bond—Employees: All Employees Manager, Etc.	
Mercantile Open Stock	
(F) *Cargo Liability*	
(G) *All-Risk Equipment Floater*	
(H) *Boiler and Machinery*	
Comprehensive Automobile Liability Bodily Injury Property Damage Fire and Theft	CA 2-00-04
Workmen's Compensation and Employer's Liability	C 78-94-89
Care and Custody Liability	A 70-63-96

APPENDIX III

Co-Insurance	*Deductible*	*Amount*	*Term Years*	*Expiration Date*	*Total Premium*
80%	1%	$ 13,450,000	3	5-23-67	
80%	1%	13,110,875	3	5-23-67	$ 73,536.43
		8,050,000	3	5-23-67	16,848.33
			3	10-14-67	12,500.00
		250M/1000M			
		250,000			
		1,000,000	3	10-15-67	2,625.00
90%		2,783,910	3	10-15-67	15,553.19
			3	10-15-67	4,800.00
			3	10-15-67	1,695.93
		25,000			
		12,000			
		5,000			
		10,000			
		2,000			
		10,000			212.50
		18,799	3	10-15-67	199.75
		150,000	3	10-15-67	16,804.00
			1	5-12-65	18,406.34
		250M/1000M			
		250,000			
		250,000			
			1	1-17-66	3,829.34
		10,000	1	5-12-65	400.00
					$167,410.81

APPENDIX III

ELIZABETH RIVER TUNNEL COMMISSION

Insurance Schedule (Continued)

January 31, 1965

1. *Property Damage on Bridge and Tunnel System:*

Any direct physical loss or damage excluding acts by hostiles or nuclear damage, on the bridge from abutment to abutment, including abutments, and on the tunnels and approaches is covered under this policy. There is a deductible in the policy of one per cent for partial losses and it also includes an 80 per cent co-insurance clause. The following tabulation presents the face values and the amounts deductible as shown on the policy.

	Face Value	Deductible (1%)
Bridge	$ 3,450,000.00	$ 34,500.00
Downtown Tunnel	10,000,000.00	100,000.00
	$13,450,000.00	$134,500.00
Midtown Tunnel	13,110,875.00	131,108.75
	$26,560,875.00	$265,608.75

2. *Use and Occupancy:*

This policy, which covers the bridge and both tunnel systems, including all approaches and the ventilation buildings, is designed to reimburse for the loss of revenue due to physical loss or damage. The face value of this policy is $6,440,000.00 for losses up to 24 months interruption of service with a deductible period of seven days. It has been broadened by an attachment of the adjusted values endorsement, which provides maximum liability of an additional 25 per cent, protecting against a possible loss up to $8,050,000.00. The premiums are adjusted in accordance with actual traffic volumes. The policy has been amended by a Joint Facility Endorsement, whereby the liability for loss of revenue at one crossing is reduced by any resultant increase at the other crossing.

APPENDIX IV

Hopewell Bridge

The Hopewell Bridge which is presently under construction crosses the James River between Harrison's Point and Jordan's Point just east of Hopewell, Virginia. The approximate length of the structure is 4,350 feet. The main channel will be a 300 foot vertical-lift span.

The Virginia Department of Highways estimates that the construction costs for the structure itself will approximate $6,000,000. Approaches to connect with the two major highways in the area, and right of way acquisition, are estimated to cost an additional $590,000. It is anticipated that the bridge will be completed and opened to traffic early in 1967. Presently, trans-river traffic service in the vicinity of the Hopewell Bridge is provided by the Hopewell-Charles City Ferry and the Jamestown-Scotland Ferry.

To help defray construction costs and to expedite construction of the Bridge, the Highway Commission has allocated funds annually to the Richmond Construction District as follows:

Fiscal Year	Source	Amount
1954-55	Richmond District Construction Fund	$250,000.00
1955-56	" " " "	250,000.00
1956-57	" " " "	250,000.00
1957-58	" " " "	250,000.00
1958-59	" " " "	250,000.00
1959-60	" " " "	250,000.00
1960-61	" " " "	400,000.00
1961-62	" " " "	750,000.00
1962-63	" " " "	450,000.00
1963-64	" " " "	500,000.00
1964-65	" " " "	550,000.00
1965-66	" " " "	550,000.00
	Total Allocation	$4,700,000.00
	Less Contracts Let	5,518,000.00
	Balance	(818,000.00)

Several feasibility studies for the Hopewell Bridge have been made. These reports indicated that without substantial subsidies, construction on the Bridge would not be financially feasible. That is, that substantial subsidies from the State would be required if the facility were to be financed with revenue bonds. Therefore, under present plans the Bridge will be completely toll free. It is estimated that operation and maintenance of the Bridge due to the lift-span will be approximately $70,000 per year.

With the opening of the proposed bridge, traffic service over the James River in the Hopewell Area will be greatly improved. River crossings will be considerably faster, more dependable and more comfortable. Motorists will be provided with an all-weather facility available twenty-four hours per day. The present ferries operate only between the hours of 6:20 A.M. and 9:40 P.M.

The following tables indicate traffic usage of the ferries during the periods indicated and toll schedules presently obtaining. Vehicular usage of the Jamestown Ferry and the Hopewell-Charles City Ferry has increased at approximately the same rate. It should also be noted that the traffic volume in 1957 was unusually high due to the Jamestown Festival which served to attract many visitors from all areas in this nation to Williamsburg and the Jamestown area. Consequently, there was a substantial decrease in usage between 1957 and 1958.

It is believed that the improvement in the trans-river traffic service provided by the proposed bridge will generate additional trans-river travel and accelerate residential and industrial development in the area. It has been conservatively estimated that first year generated and development traffic will be equal to twenty per cent of the present traffic on the Hopewell-Charles City Ferry and ten per cent of the trans-river traffic volumes diverted from the Jamestown-Scotland Ferry, James River Bridge and other inland highways. During the second year of operation, generated and developed traffic is estimated at five per cent of the first year traffic usage.

TRAFFIC TRENDS

Hopewell - Charles City Ferry

1947 - 1960

Annual Average Daily Traffic

Calendar Year	Passenger Cars[1]	Commercial Vehicles	Total Vehicles	Annual Change Per Cent[2]
1947	37	28	65	
1948	42	20	62	—4.6
1949	48	24	73	16.1
1950	49	21	70	—2.8
1951	60	18	78	11.4
1952	69	14	83	6.4
1953	79	25	104	25.3
1954	98	26	124	19.2
1955	107	23	130	4.8
1956	119	16	135	3.8
1957	141	19	160	18.5
1958	122	31	153	—4.4
1959	140	32	172	12.4
1960	150	21	171	—0.6

Source: Virginia Department of Highways

[1] Includes Panel and Pickup Trucks
[2] Total Vehicles

TRAFFIC TRENDS

Jamestown - Scotland Ferry

1947 - 1960

Annual Average Daily Traffic

Calendar Year	Passenger Cars[1]	Commercial Vehicles	Total Vehicles	Annual Change Per Cent[2]
1946	100	4	104	
1947	125	6	131	26.0
1948	124	6	130	—0.8
1949	140	5	145	11.5
1950	150	5	155	6.9
1951	187	4	191	23.2
1952	225	6	231	20.9
1953	245	8	253	9.5
1954	245	6	251	—0.8
1955	287	8	295	17.5
1956	341	13	354	20.0
1957	496	12	508	43.5
1958	326	11	337	—33.7
1959	336	7	343	1.8
1960	327	6	333	—2.9

Source: Virginia Department of Highways

[1] Includes Panel and Pickup Trucks
[2] Total Vehicles

HOPEWELL FERRY

	Income	Expenses	TRAFFIC Passengers	Vehicles	Passes
July 1964	$ 8,450.05	$ 16,478.14	10,741	9,985	388
Aug. 1964	6,500.65	16,430.45	10,369	9,267	198
Sept. 1964	6,390.95	15,261.52	7,309	7,744	115
Oct. 1964	6,114.60	14,559.26	6,471	7,490	149
Nov. 1964	5,903.90	14,268.61	6,600	7,171	137
Dec. 1964	3,694.50	15,910.62	5,275	6,009	125
Jan. 1965	4,293.75	14,257.38	4,317	4,999	124
Feb. 1965	4,232.10	18,750.99	3,979	4,886	118
Mar. 1965	5,169.25	16,979.08	6,974	7,868	173
Apr. 1965	6,861.10	23,507.46	8,248	7,887	188
May 1965	6,049.25	20,574.78	8,497	9,118	275
June 1965	8,571.10	15,507.75	10,990	10,248	290
	$72,231.20	$202,486.04	89,770	92,672	2,280

JAMESTOWN FERRY

	Income	Expenses	TRAFFIC Passengers	Vehicles	Passes
July 1964	$ 21,652.50	$ 25,665.71	30,296	20,630	774
Aug. 1964	19,227.35	26,764.04	32,567	22,182	358
Sept. 1964	13,703.90	26,761.06	15,819	12,388	102
Oct. 1964	9,675.95	19,028.79	14,266	11,603	119
Nov. 1964	8,234.05	17,972.45	12,263	10,214	122
Dec. 1964	7,040.80	18,167.64	8,648	7,704	241
Jan. 1965	4,858.80	17,229.84	6,891	6,064	235
Feb. 1965	4,656.20	20,850.68	7,471	6,522	184
Mar. 1965	8,762.40	18,089.94	11,280	9,330	280
Apr. 1965	11,159.60	21,715.29	16,539	12,684	228
May 1965	10,149.40	21,030.11	17,075	13,228	257
June 1965	17,664.75	27,633.49	24,102	17,562	433
	136,785.70	260,909.04	197,217	150,111	3,333

TOLL SCHEDULE

Hopewell - Charles City Ferry

Car and Driver—One Way	$ .65
Round Trip	1.00
Car, Driver and Trailer	1.00
Car, House Trailer and Driver	1.50
1½ Ton Truck and Driver	.65
Single-Unit Truck over 1½ Tons and Driver	1.00
Large Truck, Trailer and Driver	1.50
Small Bus and Driver (not incl. pass.)	1.00
Large Bus and Driver (not incl. pass.)	1.50
Motorcycle and Driver or Bicycle and Driver	.20
Extra Passengers—One Way	.20
Round Trip	.30

Note—Round-trip ticket for car, driver and extra passengers may also be used on Jamestown-Scotland Ferry.

TOLL SCHEDULE

Jamestown - Scotland Ferry

Car and Driver—One Way	$ .80
Round Trip	1.00
Car, Driver and Trailer—One Way	1.20
Round Trip	1.80
Car, House Trailer and Driver—One Way	1.60
Round Trip	2.00
Single-Unit Truck ¾ Ton or over, and Driver, One Way	1.00
Round Trip	1.50
Truck, Trailer and Driver—One Way	1.80
Round Trip	2.75
Tractor, Trailer and Driver—One Way	1.50
Round Trip	2.50
Bus and Driver—One Way	1.00
Round Trip (not incl. pass.)	1.50
Motorcycle and Rider—One Way	.50
Bicycle and Rider—One Way	.20
Round Trip	.30
Extra Passengers or Pedestrian—One Way	.20
Round Trip	.30

Note—Round-trip ticket may also be used on Hopewell-Charles City Ferry if vehicle not over 12 tons gross.

APPENDIX V

Proposed Bridge at Jamestown

The question of providing a bridge from Jamestown to Scotland Wharf in Surry County is one of long standing. These projects were authorized for study under the State Revenue Bond Act. Project No. 5 was to study the feasibility of constructing a toll bridge to replace an existing privately owned toll ferry operating between Jamestown Island and Scotland Wharf in Surry County. Accordingly, the Department authorized appropriate studies.

During the year 1940, traffic surveys were conducted on all major highways and river crossings in the area encompassed by Fredericksburg on the north, Richmond to the west, North Carolina to the south and the Atlantic Ocean on the east. Based on the study of ferry traffic and information obtained from origin and destination surveys it was predicted that if a bridge were constructed and opened in 1942, it would be used by 129 vehicles per day. Gross revenue for the first years' operation was estimated at $43,293.

The cost of a two-lane, low-level bridge including draw span and approaches from Jamestown Island and Scotland Wharf was estimated at two million dollars. The annual cost of operation and maintenance including interest at three per cent and insurance coverage was estimated at $73,720. Traffic revenues for the first year of $43,293 amounted to only sixty per cent of the estimated annual cost of $73,720.

Furthermore, it was estimated that gross revenues would not equal annual costs until the sixteenth year of operation. At the end of the first twenty years the bridge would have had an accumulated deficit of $227,490. Thus, it was determined that the project was not self-liquidating and, therefore, not practical as a toll facility.

Subsequently, in 1956 a most exhaustive study was made based on the assumption that the bridge could be in operation in 1959. The yearly traffic volume was estimated at 278,500 vehicles or 763 vehicles per day. Gross revenues for the first year (1959) was estimated to be $179,900. The total cost of the proposed bridge, including approaches, was estimated to be $11,500,000. Estimated annual cost (first year) including maintenance and operation and interest at three per cent was estimated to be $435,000.

Estimated traffic earnings for the first year would only produce forty five per cent of the estimated annual cost and nothing towards retirement of the bond issue. Furthermore, over a thirty year period, bonds in the amount of $3,875,000 would be retired; or expressing it in another way, the proposed facility would only support thirty three per cent of the total bond issue to construct the bridge. Thus, it was again determined that a toll bridge would not be self-liquidating and as a result, not feasible as a toll project.

Again in 1964 a study of the proposed bridge was conducted. Conditions had changed considerably since 1956. At that time a toll ferry was in operation at Hopewell; now a free bridge is being constructed. Interstate Route 64 is under construction and soon will be completed from Rich-

mond to Virginia Beach, Norfolk, Newport News and Williamsburg. The Chesapeake Bay Bridge-Tunnel spanning the Chesapeake Bay is now in operation. All previous studies were pointed toward a toll bridge, while this study considered both a toll bridge and a toll-free bridge. There is, of course, a tremendous difference insofar as traffic is concerned between the two.

It is estimated that if a toll bridge is constructed to replace the toll ferry the average daily traffic will be 807 vehicles. If, however, a free bridge is constructed to replace the toll ferry, average daily traffic is estimated to be 1,994 vehicles. As a toll bridge, gross revenue for the first year is estimated at approximately $200,000. At present, engineers have estimated the total cost of a low-level bridge and approaches at just under $9,000,000. First year maintenance and operation costs, with interest at four and one-half per cent, is estimated to be $480,000.

Traffic earnings for the first year of operation ($200,000) would be approximately forty two per cent of estimated operation costs plus interest charges. This compares favorably with the rather comprehensive report prepared in 1956. However, it would appear that as a toll project it would only support a bond issue of approximately $4,000,000. Construction costs of a toll free bridge would be approximately the same as that for a toll bridge. Since funds are not presently available, the State Highway Commission has not indicated that any further action on the construction of a toll-free project will soon be forthcoming.

APPENDIX VI

Norfolk-Virginia Beach Toll Road

In 1962, the General Assembly of Virginia, by an act amending § 33-234 of the Code of Virginia, authorized the construction of the Norfolk-Virginia Beach Toll Road. By virtue of Article 8, Chapter 3, Title 33 of the Code of Virginia, 1950, as amended ("State Revenue Bond Act"), the Highway Commission authorized the issuance of $34,000,000 in State of Virginia Toll Revenue Bonds (Series 1965) dated July 1, 1965 to pay the cost of the Norfolk-Virginia Beach Toll Road.

The toll road will be a 12.1 mile completely modern limited access transportation facility, designed according to interstate standards, with a design speed of 70 miles per hour. The basic roadway to be constructed initially in each direction will consist of two 12 foot lanes with fully paved shoulders. Provision has been made for the addition of one additional 12-foot lane on the left hand side of each of the two roadways. The toll road's western terminus is at a point at the city of Norfolk at Interstate Route 64-264 interchange. It follows the route easterly through a rapidly growing commercial and residential section of Virginia Beach roughly paralleling U. S. Route 58 to its eastern terminus in downtown Virginia Beach.

The construction schedule has been set to conform with the completion of the principal connecting Interstate highways at the western terminus of the toll road. Opening of the toll road to traffic is scheduled for December 1, 1967, with the entire project scheduled for completion on June 1, 1968.

The State Highway Commission has engaged consulting engineers to design and supervise the construction of the toll road and to prepare an estimate of construction costs. The following is cost estimate contained in the Commission's official statement:

Following is the estimated cost of the Toll Road contained in the Engineering Report:

General Construction	$19,563,333
Signing and Pavement Striping	260,000
Toll Facilities, Communication and Service Buildings..	500,000
Utility Adjustments	485,000
Total Construction Cost	$20,808,333
Engineering, Legal and Administration	2,200,000
Right of Way	5,350,000
Contingencies	1,441,667
Total Estimated Project Cost	$29,800,000

§ 33-248 of the Code of Virginia authorizes the Commission to use any part of funds available for the construction of State highways to aid any construction district in which project is wholly or partly located; to aid in the payment of the cost of such projects; and for the payment, purchase or redemption of revenue bonds issued in connection with any such project, or in connection with any such project or any other projects. The Commission is also authorized to use any part of funds available for the maintenance of State highways in any construction district in which any project is wholly or partly located in providing for the operation, mainte-

nance and repair to any such projects and for the payment of interest on revenue bonds issued in connection with any such project, or in connection with any such project in one or more projects.

At its meeting on August 19, 1965, the State Highway Commission, pursuant to the above legislation, adopted the following resolution expressing its desire to assist in the financing of the Norfolk-Virginia Beach Toll Road and its intention to make annual allocation to cover the maintenance of the toll road when it is opened to traffic:

"WHEREAS, by virtue of Chapter 399 of the Acts of Assembly 1940, known and cited as the 'State Revenue Bond Act' and now codified as Article 8 of Chapter 3 of Title 33 of the Code of Virginia (1950), as amended, the State Highway Commission is authorized to construct certain projects as toll revenue projects; and

"WHEREAS, by resolution adopted February 21, 1963, this Commission authorized the Highway Department to proceed with the construction of the Norfolk-Virginia Beach Highway; and

"WHEREAS, the Highway Department is now ready to proceed with the advertisement for bids for the construction of this project and the sale of the necessary bonds; and

"WHEREAS, it is the desire of this Commission to assist in the financing of the project by assuming the maintenance cost from highway funds.

"NOW ,THEREFORE, BE IT RESOLVED: That the State Highway Commission hereby expresses its intent to make annual allocations from highway funds for the maintenance of the Norfolk-Virginia Beach Highway pursuant to § 33-248 of the Code of Virginia (1950), as amended, after the completion of the project."

It is the intention of the Commission to pay for the maintenance of the toll road from State highway funds as it would if the project were operated free of tolls. This maintenance includes such items as ordinary maintenance, policing and certain administrative expenses. Reference is made to the Engineering Report of Howard, Needles, Tammen & Bergendoff, Consulting Engineers, included herein, as to their estimate of the amount of such expenses.

While the Commission under the present legislation may pay for the maintenance of the toll road from State highway funds, it cannot contract or obligate itself to do so.

The Consulting Engineers have estimated that the operation expenses chargeable against the project revenues for the first full year of operation are as follows:

Administrative:	
Headquarters Staff	$ 12,000
Buildings	5,000
Accounting:	
General	7,000
Toll Audit	10,000
Toll Collection	120,000
Communications	6,000
Professional Services	12,000
Total for the First Year	$172,000

A table of estimated operation and maintenance expenses has been prepared which projects these expenses and reflecting deposits to the reserve maintenance funds under these circumstances.

Estimated Operation and Maintenance Expenses
With State Maintenance

Year	Operation Expenses	Year	Operation Expenses
1968	$172,000	1976	$230,000
1969	175,000	1977	230,000
1970	180,000	1978	240,000
1971	200,000	1979	240,000
1972	210,000	1980	250,000
1973	210,000	1981	250,000
1974	220,000	1982	260,000
1975	220,000	and thereafter	260,000

In order to show what the situation would have been in the event that the Highway Commission had not acted to assist in the financing of this project by assuming certain maintenance costs, the following is an estimate for the first full year of operation wherein all expenses of ordinary maintenance are included, with the following result:

Administrative:	
Department of Highways	$ 3,000
Headquarters' Staff	12,000
Legal	6,000
Buildings	5,000
Maintenance	78,000
Accounting:	
General	7,000
Toll Audit	10,000
Toll Collection	120,000
Communications	6,000
Policing	50,000
Professional Services	12,000
Total for the First Year	$309,000

The following table presents a projection of these ordinary operation and maintenance expenses, with estimates of requirements for the reserve maintenance fund:

Estimated Operation and Maintenance Expenses
Without State Maintenance

Year	Operation and Maintenance	Reserve Maintenance Fund	Total
1968	$309,000	$ 10,000	$319,000
1969	315,000	20,000	335,000
1970	320,000	30,000	350,000
1971	345,000	40,000	385,000
1972	355,000	50,000	405,000
1973	365,000	60,000	425,000
1974	375,000	75,000	450,000
1975	375,000	75,000	450,000
1976	375,000	75,000	450,000
1977	375,000	75,000	450,000
1978	400,000	100,000	500,000
1979	400,000	110,000	510,000
1980	400,000	120,000	520,000
1981	400,000	130,000	530,000
1982 and thereafter	450,000	150,000	600,000

Estimated traffic and toll revenues for the proposed Norfolk-Virginia Beach Toll Road are dependent upon the amount of traffic which will be diverted from U. S. Routes 58 and 60, normal traffic growth during construction of the facility and in later years a magnitude of generated and development traffic. The following tables provide additional information on the operation of the proposed toll road:

RECOMMENDED TOLL SCHEDULE

Vehicle Toll Class	Description	Mainline Barrier	Ramp Barriers
1	Two-Axle Vehicle:	$0.25	$0.10
	Passenger Car Pickup and Panel Truck Two-Axle, 6-Tire Truck Motorcycle		
2	Three-Axle Vehicle:	$0.30	$0.15
	Three-Axle Truck Three-Axle Vehicle Pulling Single-Axle Trailer		
3	Four-Axle Vehicle:	$0.40	$0.20
	Two-Axle Vehicle Pulling Two-Axle Trailer Three-Axle Vehicle Pulling Single-Axle Trailer		
4	Five-Axle Vehicle:	$0.50	$0.25
	Three-Axle Vehicle Pulling Two-Axle Trailer Two-Axle Vehicle Pulling Three-Axle Trailer		
	Special and Oversize Vehicles:		
	Per Axle	$0.10	$0.05

ESTIMATED ANNUAL PER CENT TRAFFIC GROWTH

Year	Normal Growth	Generated and Development Growth
1962	Base Year	
1963	6	
1964	6	
1965	6	
1966	6	
1967	6	
1968[1]	6	10
1969	6	5
1970	6	
1971	6	
1972	5	
1973	5	
1974	5	
1975	5	
1976	5	
1977	4	
1978	4	
1979	4	
1980	4	
1981	4	
1982	4	

[1] Assumed first full year of operation

ESTIMATED ANNUAL AVERAGE DAILY TRAFFIC

Year	Mainline Barrier	Ramp Barriers: Secondary Route 647	Ramp Barriers: Independence Boulevard	Ramp Barriers: Secondary Route 644
1968	18,100	2,110	3,430	1,670
1969	20,100	2,350	3,820	1,860
1970	21,400	2,490	4,050	1,970
1971	22,600	2,640	4,290	2,090
1972	23,800	2,770	4,510	2,200
1973	25,000	2,910	4,733	2,310
1974	26,200	3,060	4,970	2,420
1975	27,500	3,210	5,220	2,540
1976	28,900	3,370	5,480	2,670
1977	30,000	3,500	5,700	2,780
1978	31,200	3,640	5,930	2,890
1979	32,500	3,790	6,160	3,000
1980	33,800	3,940	6,410	3,120
1981	35,200	4,100	6,670	3,250
1982	36,600	4,260	6,930	3,380

ESTIMATED ANNUAL REVENUES

Year	Toll Barriers: Mainline	Toll Barriers: Ramps	Total
1968	$1,655,000	$212,000	$1,867,000
1969	1,843,000	236,000	2,079,000
1970	1,953,000	250,000	2,203,000
1971	2,070,000	265,000	2,335,000
1972	2,174,000	278,000	2,452,000
1973	2,283,000	292,000	2,575,000
1974	2,397,000	306,000	2,703,000
1975	2,517,000	322,000	2,839,000
1976	2,642,000	338,000	2,980,000
1977	2,748,000	351,000	3,099,000
1978	2,858,000	365,000	3,223,000
1979	2,972,000	380,000	3,352,000
1980	3,091,000	395,000	3,486,000
1981	3,215,000	411,000	3,626,000
1982	3,343,000	427,000	3,770,000
Next 22 years annually			3,770,000

AVERAGE ANNUAL REVENUES:

First Five Years	$2,187,000
First Ten Years	2,513,000
Thirty-Seven Years	3,393,000

The accompanying table has been compiled by the State Highway Commission in its Official Statement relating to the State of Virginia Toll Revenue Bonds (Series 1965), to show the coverage provided by the estimated net revenues each fiscal year of interest on the bonds and principal and interest requirements of the bonds.

ESTIMATED ANNUAL AVERAGE DAILY TRAFFIC

Year[1]	Mainline	Ramp Barriers		
		Secondary Route 647	Secondary Route 646	Secondary Route 644
1967	16,580	1,990	3,240	1,420
1968	18,460	2,220	3,600	1,580
1969	19,560	2,350	3,820	1,680
1970	20,740	2,490	4,050	1,780
1971	21,980	2,640	4,290	1,890
1972	23,080	2,770	4,510	1,980
1973	24,230	2,910	4,730	2,080
1974	25,450	3,060	4,970	2,180
1975	26,720	3,210	5,220	2,290
1976	28,050	3,370	5,480	2,410
1977	29,180	3,510	5,700	2,500
1978	30,340	3,650	5,930	2,600
1979	31,560	3,790	6,160	2,710
1980	32,820	3,940	6,410	2,820
1981	34,130	4,100	6,660	2,930

[1] Twelve month period beginning July 1.

ESTIMATED ANNUAL REVENUES

Year[1]	Toll Barriers		
	Mainline	Ramps	Total
1967	$1,516,000	$195,000	$1,711,000
1968	1,688,000	217,000	1,905,000
1969	1,789,000	230,000	2,019,000
1970	1,896,000	244,000	2,140,000
1971	2,010,000	259,000	2,269,000
1972	2,111,000	272,000	2,383,000
1973	2,216,000	285,000	2,501,000
1974	2,327,000	299,000	2,626,000
1975	2,443,000	314,000	2,757,000
1976	2,565,000	330,000	2,895,000
1977	2,668,000	343,000	3,011,000
1978	2,775,000	357,000	3,132,000
1979	2,886,000	371,000	3,257,000
1980	3,001,000	386,000	3,387,000
1981	3,121,000	402,000	3,523,000
Next 22 years annually			$3,523,000

AVERAGE ANNUAL REVENUES:

First Five Years	$2,009,000
First Ten Years	$2,321,000
Thirty-Seven Years	$3,163,000

[1] Twelve-month period beginning July 1.

ESTIMATED NET REVENUES AND DEBT SERVICE COVERAGE
NORFOLK-VIRGINIA BEACH TOLL ROAD

Year	Gross Revenue(1)	Operation and Maintenance Expenses(1)		Net Revenue (1)		Interest @ 4%	Times Covered		Amortization Requirements(3)	Principal and Interest Requirements	Times Covered	
		With State Maintenance	Without State Maintenance	With State Maintenance	Without State Maintenance		With State Maintenance	Without State Maintenance			With State Maintenance	Without State Maintenance
1966			—			(2)						
1967						(2)						
1968(4)	$1,867,000	$172,000	$319,000	$1,695,000	$1,548,000	(2)						
1969	2,079,000	175,000	335,000	1,904,000	1,744,000	$1,360,000	1.40	1.28		$1,360,000	1.40	1.28
1970	2,203,000	180,000	350,000	2,023,000	1,853,000	1,360,000	1.49	1.36	$120,000	1,480,000	1.37	1.25
1971	2,335,000	200,000	385,000	2,135,000	1,950,000	1,355,200	1.58	1.44	205,000	1,560,200	1.37	1.25
1972	2,452,000	210,000	405,000	2,242,000	2,047,000	1,347,000	1.66	1.52	290,000	1,637,000	1.37	1.25
1973	2,575,000	210,000	425,000	2,365,000	2,150,000	1,335,400	1.77	1.61	385,000	1,720,400	1.37	1.25
1974	2,703,000	220,000	450,000	2,483,000	2,253,000	1,320,000	1.88	1.71	480,000	1,800,000	1.38	1.25
1975	2,839,000	220,000	450,000	2,619,000	2,389,000	1,300,800	2.01	1.84	580,000	1,880,800	1.39	1.27
1976	2,980,000	230,000	450,000	2,750,000	2,530,000	1,277,600	2.15	1.98	605,000	1,882,600	1.46	1.34
1977	3,099,000	230,000	450,000	2,869,000	2,649,000	1,253,400	2.29	2.11	625,000	1,878,400	1.53	1.41
1978	3,223,000	240,000	500,000	2,983,000	2,723,000	1,228,400	2.43	2.22	650,000	1,878,400	1.59	1.45
1979	3,352,000	240,000	510,000	3,112,000	2,842,000	1,202,400	2.59	2.36	680,000	1,882,400	1.65	1.51
1980	3,486,000	250,000	520,000	3,236,000	2,966,000	1,175,200	2.75	2.52	705,000	1,880,200	1.72	1.58
1981	3,626,000	250,000	530,000	3,376,000	3,096,000	1,147,000	2.94	2.70	735,000	1,882,000	1.79	1.65
1982	3,770,000	260,000	600,000	3,510,000	3,170,000	1,117,600	3.14	2.84	765,000	1,882,600	1.86	1.68
1983	3,770,000	260,000	600,000	3,510,000	3,170,000	1,087,000	3.23	2.92	795,000	1,882,000	1.87	1.68
1984	3,770,000	260,000	600,000	3,510,000	3,170,000	1,055,200	3.33	3.00	825,000	1,880,200	1.87	1.69
1985	3,770,000	260,000	600,000	3,510,000	3,170,000	1,022,200	3.43	3.10	860,000	1,882,200	1.86	1.68
1986	3,770,000	260,000	600,000	3,510,000	3,170,000	987,800	3.55	3.21	890,000	1,877,800	1.87	1.69
1987	3,770,000	260,000	600,000	3,510,000	3,170,000	952,200	3.69	3.33	930,000	1,882,200	1.86	1.68
1988	3,770,000	260,000	600,000	3,510,000	3,170,000	915,000	3.84	3.46	965,000	1,880,000	1.87	1.69
1989	3,770,000	260,000	600,000	3,510,000	3,170,000	876,400	4.01	3.62	1,005,000	1,881,400	1.87	1.68
1990	3,770,000	260,000	600,000	3,510,000	3,170,000	836,200	4.20	3.79	1,045,000	1,881,200	1.87	1.69
1991	3,770,000	260,000	600,000	3,510,000	3,170,000	794,400	4.42	3.99	1,085,000	1,879,400	1.87	1.69
1992	3,770,000	260,000	600,000	3,510,000	3,170,000	751,000	4.67	4.22	1,130,000	1,881,000	1.87	1.69
1993	3,770,000	260,000	600,000	3,510,000	3,170,000	705,800	4.97	4.49	1.175,000	1,880,800	1.87	1.69
1994	3,770,000	260,000	600,000	3,510,000	3,170,000	658,800	5.33	4.81	1,220,000	1,878,800	1.87	1.69
1995	3,770,000	260,000	600,000	3,510,000	3,170,000	610,000	5.75	5.20	1,270,000	1,880,000	1.87	1.69
1996	3,770,000	260,000	600,000	3,510,000	3,170,000	559,200	6.28	5.67	1,320,000	1,879,200	1.87	1.69
1997	3,770,000	260,000	600,000	3,510,000	3,170,000	506,400	6.93	6.26	1,375,000	1,881,400	1.87	1.68
1998	3,770,000	260,000	600,000	3,510,000	3,170,000	451,400	7.78	7.02	1.430,000	1,881,400	1.87	1.68
1999	3,770,000	260,000	600,000	3,510,000	3,170,000	394,200	8.90	8.04	1.485,000	1,879,200	1.87	1.69
2000	3,770,000	260,000	600,000	3,510,000	3,170,000	334,800	10.48	9.47	1,545,000	1,879,800	1.87	1.69
2001	3,770,000	260,000	600,000	3,510,000	3,170,000	273,000	12.86	11.61	1,605,000	1,878,000	1.87	1.69
2002	3,770,000	260,000	600,000	3,510,000	3,170,000	208,800	16.81	15.18	1,670,000	1,878,800	1.87	1.69
2003	3,770,000	260,000	600,000	3,510,000	3,170,000	142,000	24.72	22.32	1,740,000	1,882,000	1,87	1.68
2004	3,770,000	260,000	600,000	3,510,000	3,170,000	72,400	48.48	43.78	1,810,000	1,882,400	1.86	1.68

(1) Gross Revenues as estimated by Wilbur Smith and Associates, the Traffic Engineers, and Operation and Maintenance Expenses, including deposits to the Reserve Maintenance Fund in the event maintenance expenses are not paid from State highway funds, as estimated by Howard, Needles, Tammen & Bergendoff, the Consulting Engineers. Does not include estimated investment earnings.

(2) Interest to and including January 1, 1969 is capitalized.

(3) Fixed by resolution of the Commission. Does not include redemption premiums.

(4) Estimated to be the first full year of operation of the Toll Road. Estimated that the Toll Road will be opened for traffic on December 1, 1967.

APPENDIX VII

Richmond-Petersburg Turnpike

The Richmond-Petersburg Turnpike Authority was created under Chapter 705 of the Acts of Assembly, 1954. The Authority sold its first issue of toll revenue bonds in the principal amount of $9,000,000 on September 28, 1955. Additional bonds in the amount of $6,150,000 were sold in May, 1958. The Authority began to acquire right-of-way in November, 1955 and began first construction in June, 1956. Construction was completed on June 30, 1958, except for some work on specialty contracts. The total cost of the project was $76,168,425.

The Richmond-Petersburg Turnpike was open to traffic on June 30, 1958 and became the first section of approximately 180 miles of Interstate 95 through the Commonwealth of Virginia between Washington, D. C. and the North Carolina line.

The Turnpike serves the areas of Richmond, Colonial Heights and Petersburg, Virginia, and surrounding counties. There are 15 interchanges connecting with all major highways in the area and with a number of arterial city streets.

The following tables provide additional information on the operation of the Richmond-Petersburg Turnpike Authority:

RICHMOND-PETERSBURG TURNPIKE

PRELIMINARY BUDGET OF CURRENT EXPENSES

	1964-1965	1965-1966
Administration	$ 133,000	$ 136,000
Operation:		
Accounting and Toll Audit	62,000	64,000
Toll Supervision and Collection	559,500	595,000
State Police Patrol	201,000	200,000
Highway Lighting	27,500	27,000
	$ 850,000	$ 886,000
Maintenance	267,500	277,000
Service by Others	27,000	27,000
Social Security and State Retirement	47,500	54,000
Total Budget	$1,325,000	$1,380,000

The preliminary budget for the ensuing fiscal year in the amount of $1,380,000 represents an increase of $55,000, or about 4.15 per cent, over the current budget. The increases in the various items in the budget.

RICHMOND-PETERSBURG TURNPIKE

A tabular summary of pertinent information on insurance coverage is presented below.

INSURANCE IN FORCE

	Term (Years)	Expiration Date	Total Premium	Annual Cost
1. Bridge Property Damage:				
Appomattox River	3	1/ 1/67	$ 3,198	$ 1,066
James River	3	6/30/67	15,875	5,292
Lombardy Street	3	6/30/67	1,615	538
2. Buildings and Contents	3	1/20/68	5,984	1,995
3. Radio Tower	3	3/ 1/68	298	99
4. Use and Occupancy	3	6/30/67	6,600	2,200*
5. Comprehensive General Liability	3	1/20/68	4,038	1,346
6. Automobile Comprehensive Liability	1	7/ 1/65	3,419	3,419
7. Workmen's Compensation and Employer's Liability	1	7/ 1/65	4,637	4,637
8. Comprehensive Blanket Bond	3	1/20/68	4,939	1,646
9. Boiler and Machinery	3	1/20/68	2,245	748
Total			$52,848	$22,986

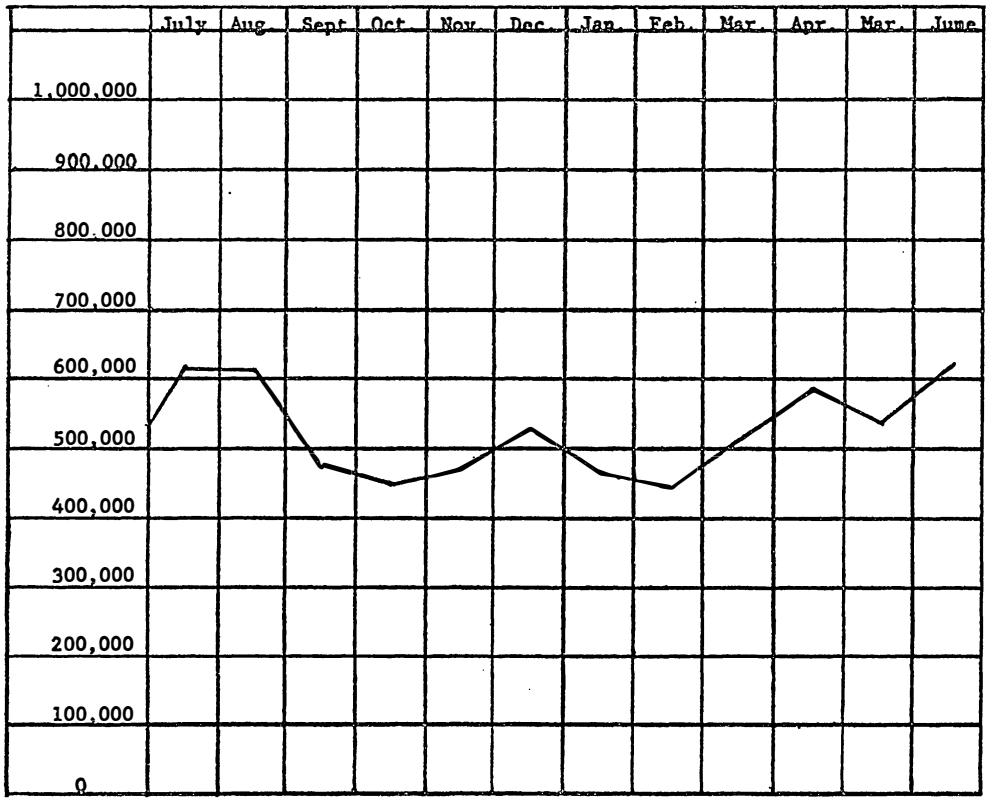
* Provisional annual premium. Premium adjusted at end of fiscal year to cover audited gross revenues.

RICHMOND-PETERSBURG TURNPIKE
TRAFFIC OPERATIONS

	1964	1965	Per Cent Increase
Passenger			
Class 1 (Passenger)	21,247,725	24,326,456	14.5
Class 6 (Commuter)	830,090	976,814	17.7
Total	22,077,815	25,303,270	14.6
Commercial			
Class 2—2 axles	700,889	797,944	13.8
Class 3—3 axles	681,306	758,370	11.3
Class 4—4 axles	1,762,032	1,693,124	—3.9
Class 5—5 or more axles	420,475	892,769	112.3
Total	3,564,702	4,142,207	16.2
Grand Total	25,642,517	29,445,477	14.8

RICHMOND-PETERSBURG TURNPIKE
TOLL REVENUE BY MONTH
FISCAL YEAR 1964-65

	Passenger	Commercial	Commuter	Total
July	$ 492,634.15	$ 104,850.90	$ 9,042.94	$ 606,527.99
August	498,287.80	99,340.75	8,787.33	606,415.88
September	383,368.10	93,810.90	9,204.81	486,383.81
October	351,687.00	98,455.65	10,108.91	460,251.56
November	364,060.91	98,454.90	9,438.20	471,954.01
December	422,599.60	99,292.95	9,865.79	531,758.34
January	355,681.80	102,438.60	9,709.36	467,829.76
February	354,008.75	93,341.85	9,940.72	457,291.32
March	396,453.65	110,793.85	11,882.08	519,129.58
April	464,635.90	113,679.45	11,524.87	589,840.22
May	412,391.90	118,587.45	11,383.25	542,362.60
June	465,426.90	133,617.95	11,243.64	610,288.49
Total	$4,961,236.46	$1,266,665.20	$122,131.90	$6,350,033.56


July
Aug.
Sept
Oct
Nov
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0

RICHMOND-PETERSBURG TURNPIKE
TOLL REVENUE BY MONTH, BY YEAR
FIVE YEAR PERIOD 1960-1965

	Fiscal Year 1960-61		Fiscal Year 1961-62		Fiscal Year 1962-63		Fiscal Year 1963-64		Fiscal Year 1964-65	
	Revenue	% of Inc.	Revenue	% of Inc.	Revenue	% of Inc.	Revenue	% of Inc.	Revenue	% of Inc.
July	$ 356,841.40	9.2	$ 448,647.23	25.7	$ 483,756.27	7.8	$ 525,190.10	8.6	$ 606,527.99	15.5
August	326,783.00	2.6	424,489.82	29.9	493,478.02	16.2	548,136.56	11.1	606,415.88	11.1
September	281,040.70	7.4	351,277.88	25.0	381,698.04	8.7	419,212.12	9.8	486,383.81	16.0
October	261,186.70	3.7	333,707.13	27.7	360,166.53	7.9	401,434.70	11.5	460,251.56	14.7
November	265,320.50	7.1	350,477.27	32.1	366,440.44	4.6	406,862.61	11.0	471,954.01	16.0
December	284,267.25	1.4	391,906.62	37.9	410,836.29	4.8	472,382.83	15.0	531,758.34	12.6
January	248,313.80	(1.6)	324,358.88	30.6	355,732.75	9.7	405,481.24	14.0	467,829.76	14.4
February	228,191.00	(5.2)	319,985.95	40.2	353,341.69	10.4	410,009.55	16.0	457,291.32	11.5
March	295,414.35	21.4	381,147.04	29.0	417,864.59	9.6	498,264.25	19.2	519,129.58	4.2
April	297,878.75	2.0	414,479.04	39.1	458,265.33	10.5	455,783.87	(.54)	589,840.22	29.4
May	287,971.40	4.6	369,805.17	28.4	410,834.06	11.1	471,476.68	14.8	542,362.60	15.0
June	398,576.43	32.4(1)	446,827.05	12.1	492,172.91	10.2	531,969.55	8.1	610,288.49	14.7
Total	$3,531,785.28	7.3	$4,557,109.08	29.0	$4,984,586.92	9.5	$5,546,204.06	11.3	$6,350,033.56	14.5

[1] Toll Schedule Revised Upward Effective June 1, 1961.

RICHMOND-PETERSBURG TURNPIKE

BUDGETED MAINTENANCE AND OPERATION EXPENSE

1964-65 FISCAL YEAR

	Budgeted	Total	Expended	Total
Administration				
Authority	$ 6,000.00		$ 5,064.15	
General	127,000.00	$ 133,000.00	124,668.06	$ 129,732.21
Operation				
Accounting & Toll Audit	$ 62,000.00		$ 60,340.49	
Toll Supv. & Collection	559,500.00		566,134.59	
Traffic Control & Safety	201,000.00		190,362.36	
Highway Lighting	27,500.00	$ 850,000.00	24,919.87	$ 841,757.31
Maintenance				
Turnpike Maintenance	$192,500.00		$180,307.08	
Equipment	35,500.00		34,169.82	
Toll Equipment	14,500.00		15,139.81	
Grounds & Buildings	23,500.00		23,454.20	
Radio System	1,500.00	$ 267,500.00	1,266.92	$ 254,337.83
Other Costs				
Consulting Engineers	$ 15,000.00		$ 15,000.00	
Traffic Engineers	2,500.00		.....	
General Counsel	5,000.00		4,800.00	
Auditor	4,200.00		3,920.00	
Trustee and Paying Agents	300.00		.....	
Social Security	26,500.00		26,496.74	
Retirement Contribution	12,000.00		10,299.20	
Insurance Contribution	1,500.00		1,188.36	
Contingencies	7,500.00	$ 74,500.00	.....	$ 61,704.30
Total		$1,325,000.00		$1,287,531.65

RICHMOND-PETERSBURG TURNPIKE

STATEMENT OF REVENUE AND MAINTENANCE AND OPERATION EXPENSE

FISCAL YEAR 1964-65

	Transactions		Amount	
Revenue				
Passenger Vehicles	24,326,456		$4,961,236.46	
Commercial Vehicles	4,142,207		1,266,665.20	
Commuter Vehicles	976,814	29,445,477	122,131.90	$6,350,033.56
Miscellaneous Revenue				1,734.62
Revenue Adjustments				(8,521.70)
Total Toll Transactions & Revenue		29,445,477		$6,343,246.48
Interest Earned and Net Gain on Invested Funds				251,828.92
Total Earned Revenue				$6,595,075.40
Maintenance and Operation Expense				
Administration				
Authority	$ 5,064.15			
General	124,668.06		129,732.21	
Operation				
Accounting & Toll Audit	$ 60,340.49			
Toll Supervision & Collection	566,134.59			
Traffic Control & Safety	190,362.36			
Highway Lighting	24,919.87		$ 841,757.31	
Maintenance				
Turnpike Maintenance	$180,307.08			
Equipment Maintenance	34,169.82			
Toll Equipment Maintenance	15,139.81			
Grounds & Buildings Maintenance	23,454.20			
Radio System Maintenance	1,266.92		$ 254,337.83	
Other Costs				
Consulting Engineers	$ 15,000.00			
Traffic Engineers				
General Counsel	4,800.00			
Auditor	3,920.00			
Social Security	26,496.74			
Retirement	10,299.20			
Insurance	1,188.36		$ 61,704.30	$ 1,287,531.65
NET EARNED REVENUE				$5,307,543.75

RICHMOND-PETERSBURG TURNPIKE
PROJECT CONSTRUCTION COSTS
JUNE 30, 1965

Construction		
Borings	$ 98,801.84	
Relocation of Utilities	1,154,417.75	
Grading, Drainage, Roadway and Structures	45,248,989.39	
Fencing, Guard Rail and Appurtenances	652,682.73	
Detours, Lighting, Striping and Signs	556,744.48	
Buildings	644,515.37	
Toll Facilities	909,430.57	
Communications	29,489.50	
Erosion Control and Reconstruction	312,294.52	$49,607,366.15
Engineering and Architectural Services		3,661,147.70
Administration and Legal Services		467,965.43
Maintenance and Operating Equipment		219,278.84
Non-Recurring Costs to Establish Administration		201,938.65
Right-of-Way, Including Acquisitions and Demolition	$11,904,084.28	
Less Sale of Residue	346,740.56	11,557,343.72
Interest During Construction		9,111,968.75
Financing Expense Including Underwriter's Discount		1,742,122.77
TOTAL		$76,569,132.01

ESTIMATED COST OF MAINTENANCE AND OPERATION 1959-1983

Year	Operation and Ordinary Maintenance	Insurance	Replacement Reserves	Total
1959	$1,007,000	$48,000	$ 95,000	$1,150,000
60	1,025,000	48,000	112,000	1,185,000
61	1,040,000	49,000	131,000	1,220,000
62	1,070,000	49,000	141,000	1,260,000
1963	1,100,000	50,000	150,000	1,300,000
64	1,120,000	51,000	169,000	1,340,000
65	1,140,000	52,000	188,000	1,380,000
66	1,160,000	53,000	207,000	1,420,000
67	1,180,000	54,000	226,000	1,460,000
1968	1,200,000	55,000	245,000	1,500,000
69	1,220,000	56,000	254,000	1,530,000
70	1,240,000	57,000	263,000	1,560,000
71	1,260,000	58,000	272,000	1,590,000
72	1,280,000	59,000	281,000	1,620,000
1973	1,300,000	60,000	290,000	1,650,000
74	1,320,000	61,000	294,000	1,675,000
75	1,340,000	62,000	298,000	1,700,000
76	1,360,000	63,000	302,000	1,725,000
77	1,380,000	64,000	306,000	1,750,000
1978	1,400,000	65,000	310,000	1,775,000
79	1,400,000	65,000	310,000	1,775,000
80	1,400,000	65,000	310,000	1,775,000
81	1,400,000	65,000	310,000	1,775,000
82	1,400,000	65,000	310,000	1,775,000
1983	1,400,000	65,000	310,000	1,775,000

The following tables indicate the possible loss of revenues resulting from a revision in present policy to provide for uniform regulations pertaining to sale of commuter tickets at all projects in the bond package.

APPENDIX VIII

SURVEY
HAMPTON ROADS TUNNEL
YEAR ENDING AUGUST 31, 1965

Number Half Ton Pickups & Panel Trucks per Year	130,600
Loss in Revenue if eligible for Commuter Rate	$65,300.00
Number Station Wagons with CONV Tags per Year	25,200
Loss in Revenue if eligible for Commuter Rate	$12,600.00
TOTAL	$77,900.00

JAMES RIVER BRIDGE
SURVEY OF SMALL BUSES OR STATION WAGONS CARRYING 6 PASSENGERS AND OVER NOW PAYING $1.25

1964	September	1,908
	October	2,065
	November	1,899
	December	1,813
1965	January	1,763
	February	1,707
	March	2,028
	April	1,947
	May	1,912
	June	1,932
	July	1,920
	August	1,997
	TOTAL	22,891

Difference between $1.25 (small bus rate) and commuter rate 40c—Loss in revenue per year $19,457.00.

SURVEY OF VEHICLES NOT ELIGIBLE FOR COMMUTER RATES

COLEMAN BRIDGE

	Trucks ½ T. Pickup	Vehicles with Dealers Lic.	Vehicles with Conv. Lic.	Gov't owned Vehicles	Fleet owned Vehicles
Feb. 2	100	20	30	8	12
Feb. 3	124	15	27	12	32
Feb. 4	108	19	22	17	18
Feb. 5	74	21	32	19	8
Feb. 6	73	24	19	2	1
Feb. 7	38	18	10	2	5
Feb. 8	152	15	29	15	11—
	669	132	169	75	87

Straight Fare —0.75 Grand Total 1,132 Per Week
Commuter Rate—0.40 58,864 Per Year
Difference —0.35 $20,602.00 loss in revenue per year

SURVEY OF VEHICLES NOT ELIGIBLE FOR COMMUTER RATES

ROBERT O. NORRIS BRIDGE

	Trucks ¾ T. Pickup	Vehicles with Dealers Lic.	Vehicles with Conv. Lic.	Gov't owned Vehicles	Fleet owned Vehicles
Feb. 2	22	0	4	1	7
Feb. 3	21	5	8	2	3
Feb. 4	20	11	4	3	8
Feb. 5	25	2	11	5	5
Feb. 6	18	2	6	2	
Feb. 7	17	2	3		3
Feb. 8	20	6	3	3	
	143	28	39	16	26

Straight Fare —0.75 Grand Total 252 Per Week
Commuter Rate—0.50 13,104 Per Year
Difference —0.25 $3,276.00 loss in revenue per year

Number commuters for year ending August 31, 1965 51,174

If commuter rate was reduced to 40¢ to conform with Coleman Bridge & James River Bridge—loss in revenue per year $5,117.00

Loss in revenue on vehicles listed in survey above based on 40¢ commuter rate 4,586.00

TOTAL $9,703.00

SUMMARY

Estimate of loss in revenue to revise present policy to provide for uniform regulations pertaining to sale of commuter tickets at all 1954 Revenue Bond Projects

Hampton Roads Tunnel	$ 77,900.00
James River Bridge	19,457.00
Coleman Bridge	20,602.00
Norris Bridge	9,703.00
	$127,662.00

Source: Va. Dept. of Highways.
Nov. 24, 1965