REPORT OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND THE CTB IN COOPERATION WITH THE CITY OF CHESAPEAKE ON THE

PROPOSED FINANCING PLAN FOR THE ROUTE 168 SOUTH/SOUTH BATTLEFIELD BOULEVARD BYPASS

TO THE GOVERNOR AND THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 12

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Proposed Financing Plan
for the
Route 168 South/South Battlefield Boulevard Bypass

Virginia Department of Transportation
and
Commonwealth Transportation Board

in cooperation with
the City of Chesapeake

December 1, 1995

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PREFACE

This study was conducted by the Virginia Department of Transportation (VDOT), on behalf of the Commonwealth Transportation Board (CTB), and in cooperation with the City of Chesapeake pursuant to Senate Joint Resolution Number 355 of the 1995 Session of the General Assembly and Item 604 of Chapter 853 of the 1995 Acts of Assembly. The study group comprised James W. Atwell, Peter R. Kolakowski, M. Scott Hollis, Leo H. Rutledge, and Deborah E. Brown from the Virginia Department of Transportation; and James Rein, Mary Ann Saunders, Ray Stout, John O'Conner, and Bernard Whitlock from the City of Chesapeake.

The purpose of this study is to ascertain what mix of financing would be required to make the proposed improvement of the Battlefield Boulevard South (Virginia State Route 168) corridor financially feasible. In developing a plan of finance for this facility, VDOT considered the use of public-private partnerships, state funds, local funds, federal funds, local and state bonded indebtedness, tolls and congestion pricing techniques.

A draft of this study was presented to the Chesapeake City Council for comment. Deputy Secretary of Transportation, Shirley J. Ybarra and VDOT officials provided the City Council an overview of the study's findings, conclusions and recommendations during City Council's November 14, 1995 work session. The study and its conclusions were well received by the City Council and Council members stated their appreciation for the effort. As the selection of the project alignment is finalized, the City will further consider the recommendations contained herein and a final financing plan will be identified.

The Commonwealth Transportation Board reviewed a draft of the study at its November 15, 1995 workshop and stated the need to continue to work with the City on providing continued financing as well as addressing other necessary requirements to advance the Route 168 improvement project. The CTB and City Council noted that this financing study is based upon current assumptions and will evolve into a final plan once decisions are made concerning the project's alignment, design and ownership.

VDOT wishes to acknowledge Jack Bagby and Karl Peterson of Kimley-Horn Associates; Jake Keller and Chuck Cayton of Parsons Brinckerhoff Quade & Douglas, Inc.; and J. David Rush, Steve Peyser, and Janet Lee of Public Resources Advisory Group for their analyses and contributions to this financing study.

EXECUTIVE SUMMARY

Battlefield Boulevard, South (Route 168), is the major north/south corridor connecting the Hampton Roads urban area of Southeast Virginia and points north to North Carolina's resort area known as the Outer Banks. The existing Battlefield Boulevard South corridor extends from the south end of the Great Bridge Bypass at Hanbury Road in the City of Chesapeake (the City), south to the North Carolina State Line, a distance of approximately 10.2 miles. Route 168 is a city street maintained and operated by the City as a part of the urban system of highways in Virginia.

Traffic on Route 168 has tripled since 1970. The two-lane rural road's capacity is strained to the extent that the safe and efficient movement of people and goods through the corridor is often jeopardized. A *Level of Service* study conducted by the Hampton Roads Planning District Commission indicates that in 1994 most of the existing facility operated at an unacceptable level of service and that by the year 2000, the entire facility will operate at an unacceptable level of service if left unattended.

While there are many different strategies for easing congestion, they are not all appropriate for Route 168, given the large proportion of through traffic. Some alternatives, such as ridesharing, will ease congestion slightly; however, additional highway capacity is clearly warranted.

The planning and approval process for improvements to Route 168 has been underway for many years and in 1988 an alignment was approved by the City and the Commonwealth Transportation Board (CTB). However, due to the need for a permit from the U. S. Army Corps of Engineers (the Corps) and new environmental regulations, the Corps required an environmental document be prepared and the alignment reassessed. The draft environmental document addressed nine alternatives. Based on information gathered throughout the public information process, the proposed improvement was narrowed to three alternative alignments for the location public hearing.

The three alternative alignments are designated Alternative 1, Alternative 5, and Alternative 6. Alternative 1 is an entirely new alignment which runs parallel to existing Route 168. Alternative 5 proposes widening of the existing two Route 168 to four, six and eight lanes. Alternative 6 follows Alternative 1 to Indian Creek Road, then follows Alternative 5 to the North Carolina border.

Escalated at a rate of 4% to the projected date of construction, cost estimates for the three alternatives are $110,017,000 for Alternative 1, $99,299,000 for Alternative 5, and $94,419,000 for Alternative 6.

Currently identified funding for the three alternatives is as follows:

Alternatives 1 & 6	
State Urban Allocations	$ 16,504,000
Toll Facilities Revolving Account	$ 18,107,000
Regional Surface Transportation Program	$ 1,000,000
City of Chesapeake	
1994 General Obligation Bonds	$ 8,100,000
TOTAL	$ 43,711,000
Alternative 5	
State Urban Allocations	$ 16,504,000
Regional Surface Transportation Program	$ 1,000,000
City of Chesapeake	
1994 Bond Referendum Funds	$ 8,100,000
TOTAL	$ 25,604,000

Alternative 5 is designed as a non limited access facility, which does not lend itself to tolling. Therefore, Toll Facilities Revolving Account funds are ineligible as a funding source for this alignment. Application of identified funding versus the inflation-adjusted project cost estimates reveals funding gaps of $66,306,000 for Alternative 1, $73,695,000 for Alternative 5, and $50,708,000 for Alternative 6.

This study considered the following as sources of funding to bridge the gap between available funding and project costs: privatized delivery and operation of the facility; public-private partnerships and risk-sharing; Intermodal Surface Transportation Efficiency Act funds; institutional delivery options such as an authority or a multi-jurisdictional or state commission; state and/or local bonded indebtedness; state funds; local funds; value capture financing; and toll revenue bond financing.

Because Alternative 1 is designed as a limited access facility and Alternative 6 is designed with approximately 5 miles of limited access, tolling all, or at least a portion, of the facility under either of these two alignments provides a means of bridging the funding gap through toll revenue bond financing. Based on analysis provided by Virginia Department of

Transportation's (VDOT) financial advisor, Public Resources Advisory Group, approximately $56.5 million could be raised through a toll revenue bond issue for Alternative 1. The remainder of the financing needs, totaling $9.8 million, could be generated as investment earnings on all project funds including bond proceeds and currently identified funding. The use of interest income for the Route 168 project would be dependent on meeting a two-year construction schedule and the establishment of a nonreverting fund authorized to retain interest earnings on allocations from currently identified funding sources.

Due to the break in the limited access for Alternative 6, traffic and revenue projections, as well as other relevant data, were either not available or not feasible for preparing this study. Therefore, a similar analysis could not be completed for Alternative 6.

Based on the assumptions made in this analysis and the results, it appears that the facility can be financed through application of currently identified funding and accrued interest thereon in conjunction with issuance of toll revenue bonds. The bonds can be structured as senior lien debt without the need for subordinate debt and maintain an adequate coverage over 30 years.

Prior to finalizing a financing plan for the facility, ultimate ownership of the improved facility will need to be resolved. An outstanding issue remains as to whether Route 168 will be a city street in the City of Chesapeake or become incorporated into the State's Arterial Network. Settlement of this issue will determine which entity, the State or the City of Chesapeake, will issue debt to finance the facility.

Regardless of which entity moves forward to finance the Route 168 project, traffic growth, toll rates and expense projections should be thoroughly reviewed before a financing is undertaken. It is necessary that a traffic and financial consultant provide a feasibility report on project costs, operational costs and project revenues as well as recommend an appropriate toll rate structure.

The study recommendations are as follows:

- The City of Chesapeake should proceed with a solicitation for proposals pursuant to the Public-Private Transportation Act of 1995 for a private entity to construct improvements to Route 168 to settle the issue of whether there is private sector interest in this project.

- Determine whether the improved facility will be a part of the Urban System owned and operated by the City of Chesapeake or become part of the State Arterial Network owned and operated by VDOT as part of the State Highway System.

- Contract with a traffic and financial consultant to provide a detailed analysis of traffic growth projections, verify project costs, recommend a toll rate structure and project revenues.

- Evaluate the impact on the State's Debt Capacity of issuing either Section 9(c) or 9(d) toll revenue bonds to finance the Route 168 improvement program if this is proposed to be a state facility.

- Pending the result of prior recommendations, and if necessary, submit legislation to the 1999 General Assembly authorizing issuance of debt in an amount not to exceed $70 million plus an amount to fund issuance costs and other financing expenses to provide funds for the Route 168 improvement program.

INTRODUCTION

Battlefield Boulevard, South (Route 168), is the major north/south corridor connecting the Hampton Roads urban area of Southeast Virginia and points north to North Carolina's resort area known as the Outer Banks. The existing Battlefield Boulevard South corridor extends from the south end of the Great Bridge Bypass at Hanbury Road in the City of Chesapeake, south to the North Carolina State Line, a distance of approximately 10.2 miles. Route 168 is a city street maintained and operated by the City as a part of the urban system of highways in Virginia.

Traffic on Route 168 has tripled since 1970. The two-lane rural road's capacity is strained to the extent that the safe and efficient movement of people and goods through the corridor is often jeopardized. In addition to sometimes adding over an hour to the travel times of the motorists on the roadway, the weekend level of congestion during five months of the year blocks the movement of local traffic, strongly discouraging residents along Route 168 from leaving or trying to reach their homes during reasonable hours, and impedes local police, fire and rescue teams responding to emergencies. Even if these weekend periods are ignored, the level of service is unstable throughout the year with almost 75 percent of the motorists being delayed. A *Level of Service* study conducted by the Hampton Roads Planning District Commission indicates that in 1994 most of the existing facility operated at an unacceptable level of service and that by the year 2000, the entire facility will operate at an unacceptable level of service if left unimproved.

In 1965, the *1980 Southeastern Regional Transportation Study* was prepared to identify highway transportation needs for southeastern Virginia through the year 1980. Proposed improvements to Route 168 were initiated in the study, and have been included in all subsequent regional transportation studies. These additional studies include the *1985 Highway Needs Study*; the *2000 Highway Needs Study*; and the *Southeastern Regional 2010 and 2015 Needs Studies.*

The Virginia Department of Transportation (VDOT) is aware that this corridor improvement is a critical project for the City of Chesapeake because of the heavy congestion in the summer months created primarily by motorists destined for the Outer Banks region. The City of Chesapeake has also included improvements to Route 168 in the local *Comprehensive Development Plan.*

In the late 1970's, VDOT initiated preliminary engineering surveys along the Route 168 Corridor from the south end of the Great Bridge Bypass to the North Carolina State Line. This work was based on the proposal to upgrade the facility along the existing alignment. Because of the substandard geometric configuration of the existing roadway, an alignment on a new location was considered just north of the State Line.

In addition to funding constraints, one of the major issues that has hindered progress on the project development has been the environmental review process. Due to stricter environmental laws enacted in 1989, the U. S. Army Corps of Engineers (the Corps) notified VDOT that a comprehensive environmental study would be required before a permit could be issued for construction of this project.

In order to move the project forward, VDOT agreed to conduct an environmental study and prepare a report to be provided to the Corps. The study will be used as an environmental document by the Corps of Engineers in order to comply with the National Environmental Policy Act (NEPA) requirements. The VDOT Suffolk District Environmental Staff completed the *Environmental Report* for the U. S. Army Corps of Engineers and submitted it on May 10, 1995. The *Purpose and Needs Study* was approved on May 9, 1994 and formal concurrence by the various federal review agencies is anticipated in the near future.

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 required a Major Investment Study (MIS) for this project which verified the need for additional highway capacity in the corridor. The MIS analyzed the effectiveness of a wide variety of alternatives for reducing congestion on Route 168. Many of these alternatives, such as encouraging ridesharing or providing alternative route information, involve using the existing highways more efficiently, instead of constructing additional lanes or new roadways.

While there are many different strategies for easing congestion, they are not all appropriate for Route 168, given the large proportion of through traffic. Some alternatives, such as ridesharing, will ease congestion slightly; however, additional highway capacity is clearly warranted for the future.

PROJECT ALTERNATIVES

The planning and approval processes for improvements to Route 168 have been underway for many years and in 1988 an alignment was approved by the City and the CTB. Due to changes in environmental laws, the project had to undergo further evaluation. The draft environmental document initiated pursuant to the new regulations addressed nine alternatives. Subsequently, the nine alternatives were reduced to three alternative alignments for the Location Public Hearing. The three alignments are referred to as Alternatives 1, 5, and 6. A map depicting the location of the three alignments is included in Appendix B.

Alternative 1 is a four-lane limited access alignment parallel to existing Route 168. The alignment starts at the southern end of the Great Bridge Bypass, and runs west of existing Route

168. Just north of Indian Creek Road, Alternative 1 crosses to the east side of Route 168. For the most part, Alternative 1 continues east of Route 168 until it rejoins the existing roadway north of the North Carolina state line.

Alternative 5 is a multi-lane, non-limited access arterial, along existing Route 168. Alternative 5 remains the same as the existing alignment from the southern end of the Great Bridge Bypass to the North Carolina state line. Essentially, the proposed improvement would widen the existing roadway to a multi lane facility.

Alternative 6 is a combination of Alternatives 1 and 5 and follows Alternative 1 to just north of Indian Creek Road, where the alignment follows the existing roadway. Alternative 6 then remains common with the existing roadway to the Northwest River. It then moves east before meeting the existing Route 168 north of the North Carolina/Virginia border.

CURRENT PROJECT STATUS

VDOT held a Location Public Hearing in October 1995. A Design Public Hearing will be held in early 1998. Plans for right of way acquisition may be available by mid-year 1998. The time required to complete right of way acquisition will depend on the alignment selected and the final design features involved.

This proposed schedule is based on the use of non-federal funds for right of way acquisition and construction. However, the Department does not anticipate any significant change in the project development time frame if federal funds are utilized. Based on current projections and project scheduling, the construction start date is anticipated in the year 2000.

ESTIMATED PROJECT COSTS

Cost estimates had been developed for each of the three alternative alignments for use in the environmental documents and throughout the location public hearing process. Subsequent to the development of these figures, several informal "value engineering" meetings were held wherein different approaches to the improvements on Route 168 were explored for potential cost savings and reduction of environmental impacts. Based on the options available to each of the three alignments, and assuming an inflation rate of 4%, revised inflation-adjusted cost estimates are as follows:

Alternative 1	
Preliminary Engineering	$ 3,916,000
Right of Way	9,132,600
Construction	96,968,400
Total	$110,017,000
Alternative 5	
Preliminary Engineering	$ 3,494,400
Right of Way	23,282,700
Construction	72,521,500
Total	$ 99,298,600
Alternative 6	
Preliminary Engineering	$ 3,665,900
Right of Way	10,463,900
Construction	80,289,400
Total	$ 94,419,200

As Alternative 5 is primarily the widening of the existing roadway, rather than construction of a new road on a new location, it did not lend itself to cost cutting options. Further, because of the displacement of homes, businesses and utilities in order to widen the road along Alternative 5, right of way estimates are significantly higher for this alignment than for the other two.

AVAILABLE PROJECT FUNDING

The Fiscal Year 1996 CTB Six Year Improvement Program provides $35.6 million in funding for the Route 168 Corridor. These allocations consist of prior and projected Urban allocations from the State to the City of Chesapeake totaling $16.5 million, $1 million in Regional Surface Transportation Program funds and $18.1 million from the Toll Facilities Revolving Account if the project is constructed as a toll facility.

In addition, the City plans to supplement this funding for the project with $8.1 million in proceeds from a 1994 General Obligation Bond Referendum which committed these funds for the improvement of the Route 168 and Hanbury Road intersection. To date, available funding for the project ranges from $25.6 - $43.7 million depending on whether the project is constructed as a toll facility.

Currently identified funding for the three alternatives is as follows:

Alternatives 1 & 6	
State Urban Allocations	$ 16,504,000
Toll Facilities Revolving Account	$ 18,107,000
Regional Surface Transportation Program	$ 1,000,000
City of Chesapeake	
1994 Bond Referendum Funds	$ 8,100,000
TOTAL	$ 43,711,000
Alternative 5	
State Urban Allocations	$ 16,504,000
Regional Surface Transportation Program	$ 1,000,000
City of Chesapeake	
1994 Bond Referendum Funds	$ 8,100,000
TOTAL	$ 25,704,000

Application of identified funding versus the inflation-adjusted project cost estimates reveals funding gaps of $66,306,000 for Alternative 1, $73,695,000 for Alternative 5, and $50,708,000 for Alternative 6.

ADDITIONAL FUNDING OPTIONS

As indicated by the gap between available funding and the projected cost estimate of even the least costly alternative, funding a project of this magnitude will require investigation of other funding options. The nature of public sector resources is such that there can rarely be enough funds to meet all needs, creating tremendous competition between projects for limited public funds. Those projects that come to realization are typically those which have a well-developed financial strategy. Therefore, the purpose of this section is to examine additional funding sources from which to develop a feasible financing strategy for this project.

Funding options which will be considered in this study include the following:

- Privatized delivery and operation of the facility;
- Public-private partnerships and risk-sharing;

- Intermodal Surface Transportation Efficiency Act funds;
- Institutional delivery options such as an authority or a multi-jurisdictional or state commission;
- State and/or local bonded indebtedness;
- State funds;
- Local funds;
- Value capture financing;
- Toll revenue bond financing; and
- Congestion Pricing

Each of these possible sources of funding is discussed below.

Privatization/Public-Private Partnerships

Privatization arrangements can be created within a wide spectrum of possible combinations. At one end of the spectrum, there is a pure privatization arrangement with almost no public participation. A franchise would be an example of a 100% privately-held privatization transaction.

At the other end of the spectrum, there is the public-private partnership involving significant risk-taking and ownership on the public side. In such an extreme, the private entity would serve as a contractor or general manager through a "contract services" arrangement. In between these two extremes, there are an infinite variety of contract forms that would vary the level of risk-sharing and ownership between the public and private sectors.

The enactment of the new Public-Private Transportation Act of 1995 (PPTA), allows private entities, interested in undertaking a project such as the improvement of Route 168 as a risk sharing venture, to submit proposals to the City of Chesapeake for consideration. Although there have been some expressions of interest in this project from the private sector, no proposals have been submitted to the City to date.

The PPTA authorizes responsible public entities, such as the City of Chesapeake, to accept unsolicited as well as to solicit proposals from private entities. As a means of ascertaining

whether this project would be a candidate for some level of private participation, the City could issue a solicitation for proposals for the Route 168 improvement project. Once this solicitation has been completed, the viability of this option can better be gauged based on whether any response is received.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) provides a number of broad new policy and funding initiatives, including an emphasis on toll facility loans or grants. Such facilities may be publicly or privately owned or a combination. Projects eligible for these loans or grants include:

- Construction of toll highways, bridges, or tunnels (except on the Interstate System)
- Reconstruction, resurfacing, restoring, and rehabilitation of toll highways, bridges, or tunnels.
- Reconstruction or replacement of toll-free bridges or tunnels and converting them to a toll facility.
- Preliminary feasibility studies for constructing or reconstructing toll facilities.

The federal funding share for the construction of new tollroads is 50%. The construction of Battlefield Boulevard South would qualify for an ISTEA loan or grant, per the first item stated above, if constructed as a toll road. However, exercising the loan provisions of ISTEA would result in a reduction in ISTEA funding available for all highway systems construction.

Separate Authority

Establishment of a separate entity results in duplication of administrative costs and adds to the cost of operating the facility. There is really no financial benefit to establishment of a separate authority.

Generally speaking, the advantage to establishing a separate authority lies in the potential for the authority to issue debt to bridge the funding gap. This would shield the city and the state from having to issue debt. However, because in this instance, such an authority would have no prior track record in the capital markets, any debt issuance would likely require a costly negotiated bond sale which would obfuscate the advantage.

State/local Bonded Indebtedness

Presently Route 168 is designated as a part of the urban system of city streets. Consequently, state bonded indebtedness could not be considered an appropriate funding mechanism for the Route 168 improvement project. Enabling legislation currently exists for the City to establish a toll facility for Route 168. However, consideration could be given to add Route 168 to the State Highway System by designating it as part of the State's Arterial Network. If this occurred, the project could be a candidate for debt financing pursuant to either Article X Section 9(c) or 9(d) of the Constitution of Virginia.

Article X Section 9(c) of the Constitution of Virginia authorizes the creation of debt for specific self-liquidating revenue-producing capital projects secured by a pledge of the full faith and credit of the Commonwealth. Issuance of this type of debt requires the Governor to certify in writing, his opinion, based upon responsible engineering and economic estimates, that the anticipated net revenues to be pledged to the payment of principal and interest on such debt will be sufficient to meet such payments as the same become due.

Section 9(d) authorized debt under the Constitution of Virginia is not subject to the same restrictions as in subdivision (c); however, 9(d) debt does not carry the security of the pledge of the full faith and credit of the Commonwealth. Rather, transportation 9(d) debt issues are ultimately backed by Transportation Trust Fund revenues. The difference in the level of security pledge results in a higher cost of financing for Section 9(d) debt.

As noted earlier, the City of Chesapeake passed a general obligation bond referendum in 1994. Of the proceeds from the sale of these bonds, $8.1 million is pledged as funding for the Route 168 improvement project. Additional debt issuance at this juncture by the City, particularly of an amount necessary to bridge the funding gap for the Route 168 project, would strain the limits of the City's debt capacity based on analysis by Municipal Advisors Incorporated, the City's financial advisor.

State Funds

Prior and projected allocations of State funding include $16.5 million in Urban allocations and $18.1 million from the Toll Facilities Revolving Account (TFRA). Use of funds from TFRA, according to state law, requires repayment from some source which means if these funds are used, the Route 168 improvement will have to be a toll facility.

Local Funds

While no directly appropriated City of Chesapeake general funds are planned to be utilized for the project, the City will be using local bond issue proceeds and dedicating $16.5

million in urban allocations. The City feels its current capital budget commitments preclude further local funding for the project.

Value Capture Financing

Value capture financing is a source of funding for projects which spur significant economic development in a specified area. This area is then designated as a special taxing district and the debt service is paid from incremental tax collections in the special district.

It is not anticipated that there will be a substantial increase in development along this corridor especially in view of the City's Comprehensive Land Use Plan, the rural character of the area, its environmentally sensitive nature and lack of City services--especially sewers. The proposed alternatives do not lend themselves to establishment of a local improvement taxing district. Therefore, the tax collections required to secure such debt would be prohibitive for the local businesses along the existing roadway.

Toll Revenue Bond Financing

Tolls on highways fall under the category of user fee financing. User fees, such as tolls, are generally found to be acceptable because users pay, non-users do not. While the placement of tolls on existing facilities can be met with stiff opposition, tolls on newly constructed or proposed facilities are typically much more palatable, especially when a toll-free alternative is readily available as is the case with Route 168.

Strong traffic demand for a toll facility is vital to its successful operation and maintenance. Most toll roads are developed in heavily traveled corridors with a demonstrated need for relief of traffic congestion and reduced travel time for motorists, as is the case along Route 168. However, in many cases, the demand for improved service is not strong enough to generate revenues sufficient to cover the operation and maintenance expenditures of the facility as well as debt service.

Economic strength and diversity of the toll road's region, or service area are also important indicators. While a sound and growing economic base usually ensures a high level of commercial and business related travel, the level of disposable personal income has a direct bearing on the volume of discretionary and recreational trips. Commuter or short-haul traffic largely depend on local economic conditions. A preliminary traffic study conducted by Kimley-Horn Associates estimates the percentage of commuter/local traffic along Route 168 at 87%.

Another important consideration is the nature and composition of the vehicles which travel the road, as well as its vulnerability to business cycles, motor fuel shortages and price

escalations. While commercial traffic serves as a stabilizing force, most successful toll roads or bridges have a good balance between commercial and private-vehicle trips. Commercial traffic is less sensitive to toll increases than private sector traffic since, for all but the marginal carriers, additional costs can be readily passed on to customers. Also, as part of operating costs, tolls are tax-deductible for private business. During fuel shortages, commercial carriers have been more successful than other motorists at procuring fuel. As a result, their travel curtailment during such periods was not as drastic. Kimley-Horn Associates estimate the percentage of 3 or more axle trucks, which make up the bulk of commercial traffic along Route 168, at only 3%.

As Route 168 provides a vital link between Hampton Roads and points north with the Outer Banks resort area of North Carolina, a toll facility along this corridor could prove to be particularly vulnerable to business cycles. Within the private travel sector, a breakdown of nondiscretionary (business) and discretionary (recreational) trips would be useful. Business-related trips, while obviously sensitive to levels of economic activity, tend to be less sensitive than recreational travel. A toll facility serving a tourist-oriented economy can be severely affected by an economic recession. As a general rule, a diverse traffic mix cushions the impact of a decline in any one segment.

This study contemplates utilizing toll revenue bond financing. However because of all the factors mentioned, the level of debt which could be supported by this project can only be determined with any degree of validity by undertaking a detailed feasibility study. Prior to any legislation authorizing issuance of toll revenue bonds to finance this project, a detailed traffic and financial feasibility should be undertaken. Based on the current project scheduling which anticipates a construction start date in the year 2000, bond legislation could be introduced in the 1999 session of the General Assembly.

Lien Structure

Lien structure refers to the claim on revenues of various classes of bondholders. Bonds having a senior lien are the most desirable from a bondholder point of view and therefore result in lower (or at least no higher) interest rates than junior or subordinate liens. Based on preliminary revenue and cost numbers, an all senior lien structure could work. In some cases, however, the revenue stream is not sufficient to produce debt service coverage levels necessary for desired bond rating categories. When this occurs, it may be desirable to issue junior lien bonds in addition to the senior lien bonds. In that way, the senior lien bonds could achieve the desired rating levels and the junior lien bonds, with lower debt service coverage ratios, could appeal to those investors looking for higher yields.

Current and Deferred Interest Bonds

Current interest bonds pay interest semiannually through the life of the bonds. It is sometimes desirable to issue bonds that defer interest. For example, start-up toll roads often have a ramp-up period in which its revenues increase significantly as people gradually change their travel habits. Due to the ramp-up, in early years the revenues may not be sufficient to support interest payments on the bonds. In that case, deferred interest bonds can be used: either capital appreciation bonds that pay interest at maturity, or convertible capital appreciation bonds whose interest accrues to a specified date, and then the bonds convert to current interest bonds. The preliminary revenue and cost estimates suggest that a portion of the debt should be issued as deferred interest bonds.

Congestion Pricing

Finally, congestion pricing, which has been gaining attention, was considered as an innovative source of toll revenue enhancement. Congestion pricing provides a means of controlling traffic congestion by charging higher toll rates during peak hours or seasons and lower tolls during off-peak periods.

Certainly due to the seasonality of traffic congestion along Route 168, congestion pricing would not be utilized year round, but the issue of congestion pricing could be further evaluated in connection with determining a toll rate schedule for a potential toll revenue bond.

FINANCIAL PLAN

In order to determine whether it will be feasible to finance the Route 168 facility, VDOT consulted its financial advisor, Public Resources Advisory Group (PRAG). PRAG based its analysis on assumptions made by Kimley-Horn Associates in their Preliminary Financial Feasibility Analysis, and on toll rate schedules and information as to available funding provided by VDOT. A table of assumptions is included as Appendix C. Additionally, it was assumed that an operating fund balance would be maintained at $5 million and that any additional funds would be available for capital projects.

The Financial Plan focuses on Alternative 1, as this is the alignment for which preliminary traffic projections were available. The cost of Alternative 1 is approximately $110 million, adjusted from 1995 dollars. Approximately $43.7 million from various funding sources has been identified and the remainder would be provided from bond proceeds.

PRAG structured the debt over 30 years with level debt service coverage of 1.44 times annual debt service requirements over the life of the bonds. The debt was structured with both current interest bonds and capital appreciation (zero coupon) bonds. The issuance of current interest bonds is constrained by revenues in the first few years of operation, and capital appreciation bonds can be utilized to complete the financing. The assumptions produced an average annual revenue growth of approximately 6.5 percent. The interest rates assumed for structuring the bonds range from 5.10 percent in year 3 to 6.75 percent in year 30.

Analysis reveals that over 30 years, debt service coverage can be maintained at approximately 1.44 times, which, if the Commonwealth Transportation Board were to issue bonds for the project, should be sufficient to earn a AA/Aa securities rating. However, if the City were to issue bonds for this facility, it is difficult to ascertain whether this level of coverage will be sufficient to earn an acceptable rating, given the City's current debt capacity issues.

Based on revenue and expense projections and the results of PRAG's analysis, the debt could be issued as senior lien debt and subordinate bonds are not needed. Presented below is a summary of the results. Detailed schedules are included as Appendix D.

Term of Bonds	30 years
Debt Service Coverage	1.44X
True Interest Cost	6.921%
Bond Size	
Current Interest Bonds	$38,210,000
Capital Appreciation Bonds	$31,108,545
Total	$69,318,545
Debt Service	
Year 2	$ 2,575,123
Year 5	$ 3,030,123
Year 10	$ 5,030,123
Year 15	$ 7,650,123
Year 20	$11,225,123
Year 25	$14,305,123
Year 30	$17,955,350

This debt structure generates $56.5 million for the construction fund and anticipates the construction will be completed within 2 years of the sale of the debt so that interest income on the construction fund may be applied toward project expenses. The remaining funding for the project costs results from investment of the $43.7 million currently identified funding from the staggered allocation dates until such time as the funds are expended. A schedule of funds availability appears in Appendix E. This approach requires establishment of a Route 168 fund into which cash transfers of projected allocations would be made. Additionally, it is essential to this financial plan that such a fund be established as part of the Transportation Trust Fund so that the fund will retain interest earnings.

CONCLUSION

Based on the assumptions made in this analysis and the results, it appears that the facility can be financed through application of currently identified funding and accrued interest thereon in conjunction with issuance of toll revenue bonds. The bonds can be structured as senior lien debt without the need for subordinate debt and maintain an adequate coverage over 30 years.

Prior to finalizing a financing plan for the facility, ultimate ownership of the improved facility will need to be resolved. An outstanding issue remains as to whether Route 168 will be a city street in the City of Chesapeake or become incorporated into the State's Arterial Network. Settlement of this issue will determine which entity, the State or the City of Chesapeake, will issue debt to finance the facility.

Regardless of which entity moves forward to finance the Route 168 project, traffic growth, toll rates and expense projections should be thoroughly reviewed before a financing is undertaken. It is necessary that a traffic and financial consultant provide a feasibility report on project costs, operational costs and project revenues as well as recommend an appropriate toll rate structure.

RECOMMENDATIONS

- The City of Chesapeake should proceed with a solicitation for proposals pursuant to the Public-Private Transportation Act of 1995 for a private entity to construct improvements to Route 168 to settle the issue of whether there is private sector interest in this project.

- Determine whether the improved facility will be a part of the Urban System owned and operated by the City of Chesapeake or become part of the State Arterial Network owned and operated by VDOT as part of the State Highway System.

- Contract with a traffic and financial consultant to provide a detailed analysis of traffic growth projections, verify project costs, recommend a toll rate structure and project revenues.
- Evaluate the impact on the State's Debt Capacity of issuing either Section 9(c) or 9(d) toll revenue bonds to finance the Route 168 improvement program if this is proposed to be a state facility.

- Pending the result of prior recommendations, and if necessary, submit legislation to the 1999 General Assembly authorizing issuance of debt in an amount not to exceed $70 million plus an amount to fund issuance costs and other financing expenses to provide funds for the Route 168 improvement program.

APPENDIX A

Senate Joint Resolution No. 355
1995 Acts of Assembly - Chapter 853, Item 604

SENATE JOINT RESOLUTION NO. 355

Requesting the Departments of Transportation and Rail and Public Transportation, and the Commonwealth Transportation Board, in cooperation with the City of Chesapeake, to study certain transportation issues as respectively assigned.

Agreed to by the Senate, February 23, 1995
Agreed to by the House of Delegates, February 22, 1995

WHEREAS, Interstate Route 66 provides a critical transportation link for both intraregional and interregional traffic in Virginia; and

WHEREAS, economic and population growth have contributed to increases in commuter and general traffic during the past ten years along the Interstate Route 66 corridor in Fairfax, Prince William, and Fauquier Counties; and

WHEREAS, the metropolitan planning regulations promulgated under the federal Intermodal Surface Transportation Efficiency Act (ISTEA) require a major investment study before any new transportation facility can be built in an air quality nonattainment area; and

WHEREAS, Senate Joint Resolution No. 104 of the 1994 Regular Session requested the Departments of Transportation and Rails and Public Transportation to perform an alternative analysis study of new bus, rail, and highway facilities along the Interstate Route 66 corridor; and

WHEREAS, although major investment studies are more comprehensive than alternatives analyses and take longer to complete, it is desirable to perform the more rigorously analytical study; and

WHEREAS, the Department of Rail and Public Transportation is performing a major investment study of new bus, rail, and highway facilities along the Interstate Route 66 corridor; and

WHEREAS, South Battlefield Boulevard is the principal link between the I-95/64 corridor and the resort beaches of North Carolina's Outer Banks; and

WHEREAS, improvement of the Boulevard is among the most critically needed, yet unfunded, projects in Hampton Roads and the Commonwealth and is part of the proposed National Highway System; and

WHEREAS, the present 10-mile length of the two-lane highway carries three times its design capacity, and 80 percent of the traffic is generated from outside of the corridor, creating severe traffic congestion for local citizens and emergency response teams, including police, fire and emergency medical services; and

WHEREAS, Battlefield Boulevard also serves as the emergency evacuation route of the Outer Banks and becomes almost impassable by motorists during hurricane emergencies; and

WHEREAS, the high cost of the improvement project, estimated to be $140 million, far exceeds the region's ability to pay for and finance the needed improvements; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Departments of Transportation and Rail and Public Transportation, and the Commonwealth Transportation Board, in cooperation with the City of Chesapeake, be requested to study certain transportation issues as respectively assigned; and, be it

RESOLVED FURTHER, That the Departments of Transportation and Rail and Public Transportation are requested to submit an interim report of their findings on the major investment study of new bus, rail, and highway facilities along the Interstate Route 66 corridor to the Governor and the 1996 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents; and, be it

RESOLVED FURTHER, That the Department of Transportation and the Department of Rail and Public Transportation be requested to complete their work in time to submit their final findings and recommendations to the Governor and the 1997 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents; and, be it

RESOLVED FURTHER, That the Commonwealth Transportation Board and the Department of Transportation, in cooperation with the City of Chesapeake, are requested to develop a proposed financing plan for the State Route 168/South Battlefield Boulevard Bypass in the City of Chesapeake. The Commonwealth Transportation Board shall develop this financial plan with the mutual consent and assistance of the City of Chesapeake. This report shall consider, but not be limited to, an analysis

of the following financing sources, business options and sources of revenue:

1. Public-private partnerships and risk-sharing;
2. Local funds;
3. Toll revenue bond financing;
4. Value capture financing;
5. ISTEA funds;
6. State funds;
7. State and/or local bonded indebtedness;
8. Privatized delivery and operation of the facility, in combination with public ownership and financing; and
9. Institutional delivery options such as an authority or a multi-jurisdictional or state commission; and, be it

RESOLVED FINALLY, That the Commonwealth Transportation Board and the Department of Transportation be requested to complete their work in time to submit their findings and recommendations to the Governor and the 1996 General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

1995 Acts of Assembly - Chapter 853, Item 604

Item		Item Details($) First Year	Item Details($) Second Year	Appropriations($) First Year	Appropriations($) Second Year
604.	Ground Transportation System Planning and Research (6020000)			$3,013,000	~~$3,014,600~~ *$2,594,600*
	Ground Transportation System Planning (6020100)	$3,013,000	~~$3,014,600~~ *$2,594,600*		
	Fund Sources: Commonwealth Transportation	$3,013,000	~~$3,014,600~~ *$2,594,600*		

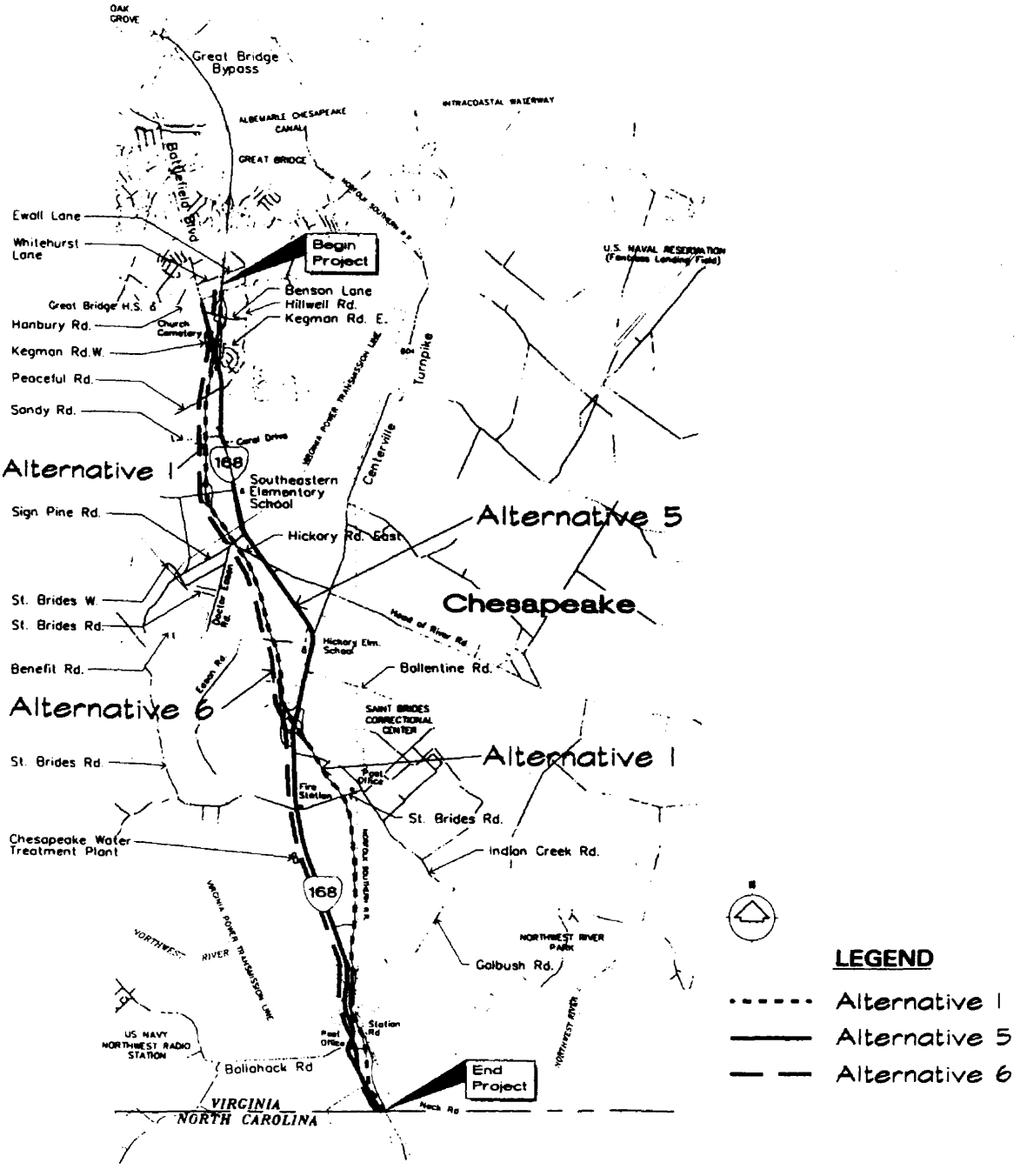
Authority: Title 33.1, Code of Virginia.

The Commonwealth Transportation Board and the Virginia Department of Transportation, in cooperation with the City of Chesapeake, shall develop a proposed financing plan for the Route 168 South/South Battlefield Boulevard Bypass in the City of Chesapeake. The Commonwealth Transportation Board and the Virginia Department of Transportation shall develop this plan with the mutual consent and assistance of the City of Chesapeake. The Commonwealth Transportation Board and the Virginia Department of Transportation shall present a report on their findings to the Chairmen of the Senate Committees on Finance and Transportation and the House Committees on Appropriations and Roads and Internal Navigation on or before December 1, 1995. The report shall consider the use of public-private partnerships, state funds, local funds, federal funds, local and state bonded indebtedness, tolls, and other innovative financing techniques as may be appropriate.

APPENDIX B

Map of Route 168 - Alternatives 1, 5, and 6

Map of Route 168 - Alternatives 1, 5, and 6



APPENDIX C

Table of Assumptions

Table of Assumptions

PRAG used information provided by VDOT and assumptions made by Kimley-Horn in their preliminary study to structure the debt and to project cash flows. The following table summarizes the assumptions used.

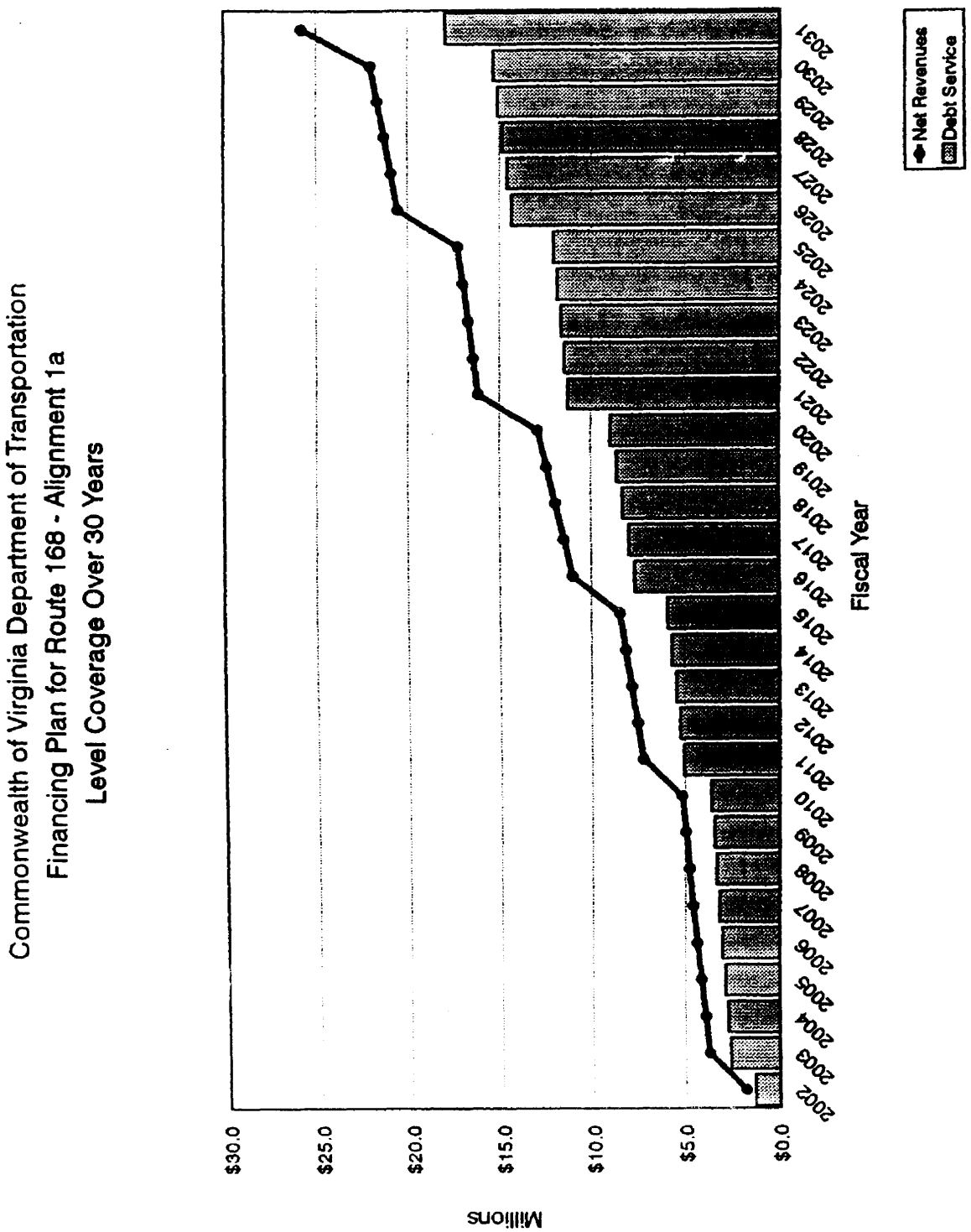
Average Daily Traffic	22,222
Diverted Traffic	45.00%
Traffic Mix:	
Commuter/Local	87.00%
Tourists*	10.00%
Trucks	3.00%
Traffic Growth	
Year 1 - 20	4.00%
Year 21 - 30	2.00%
Toll Rate Schedule (Commuter/Tourist/Truck)	
Years 1 - 9	$1.00/$2.00/$3.00
Years 10 - 14	$1.25/$2.50/$4.00
Years 15 - 19	$1.50/$3.00/$4.50
Years 20 - 24	$1.75/$3.50/$5.25
Years 25 - 29	$2.00/$4.00/$6.00
Years 30 - 34	$2.25/$4.50/$7.00
O&M Expense Per Mile	$200,000
No. of Miles of Project	10.3 Miles
O & M Expense Growth Rate	3.00%
Interest Earnings	5.67%
Interest Earnings on DSRF	6.00%
Construction Period	2 Years
Capitalized Interest	2 Years
Cost of Issuance	$250,000
Underwriter's Spread	$10.00/$1000
Debt Service Reserve Fund	10%
Other Funds Available	
Prior to Bond Issuance	$31,150,000
During Construction	$12,561,000

* *Represents average daily traffic over an entire year. During the peak summer months, this percentage increases to 34% with commuter/local traffic accounting for 62% and truck traffic comprising the remaining 4%.*

APPENDIX D

Financing Plan - Supporting Schedules

Financing Plan - Supporting Schedules



Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Projected Cash Flows

Fiscal Year (Begin: June 30)	1 2002 *	2 2003	3 2004	4 2005	5 2006	6 2007	7 2008	8 2009	9 2010	10 2011	11 2012
Traffic	2,230,533	4,639,509	4,825,090	5,018,093	5,218,817	5,427,570	5,644,672	5,870,459	6,105,278	6,349,489	6,603,468
Growth Rate		108.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Traffic Mix											
Commuter (87%)	1,940,564	4,036,373	4,197,828	4,365,741	4,540,371	4,721,985	4,910,865	5,107,299	5,311,591	5,524,055	5,745,017
Tourists (10%)	223,053	463,951	482,509	501,809	521,882	542,757	564,467	587,046	610,528	634,949	660,347
Trucks (3%)	66,916	139,185	144,753	150,543	156,565	162,827	169,340	176,114	183,158	190,485	198,104
Toll Rate Schedule											
Commuter	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.25
Tourists	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.50	2.50
Trucks	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00
Revenue											
Commuter	1,940,564	4,036,373	4,197,828	4,365,741	4,540,371	4,721,985	4,910,865	5,107,299	5,311,591	6,905,069	7,181,272
Tourists	446,107	927,902	965,018	1,003,619	1,043,763	1,085,514	1,128,934	1,174,092	1,221,056	1,587,372	1,650,867
Trucks	200,748	417,556	434,258	451,628	469,694	488,481	508,021	528,341	549,475	781,939	792,416
Total Toll Revenue	2,587,419	5,381,831	5,597,104	5,820,988	6,053,828	6,295,981	6,547,820	6,809,733	7,082,122	9,254,380	9,624,555
Toll Revenue Growth	–	108.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	30.67%	4.00%
Revenue											
Toll Revenue	2,587,419	5,381,831	5,597,104	5,820,988	6,053,828	6,295,981	6,547,820	6,809,733	7,082,122	9,254,380	9,624,555
Interest Income (DSRF)	207,956	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911
Interest Income (Operating Fund)	0	23,891	80,128	139,754	202,530	250,000	250,000	250,000	250,000	250,000	250,000
	2,795,374	5,821,633	6,093,141	6,376,654	6,672,269	6,961,892	7,213,731	7,475,644	7,748,033	9,920,291	10,290,466
		108.26%	4.66%	4.65%	4.64%	4.34%	3.62%	3.63%	3.64%	28.04%	3.73%
Expenses											
O&M Expenses	1,030,000	2,121,800	2,185,454	2,251,018	2,318,548	2,388,105	2,459,748	2,533,540	2,609,546	2,687,833	2,768,468
Net Revenue	1,765,374	3,699,833	3,907,687	4,125,636	4,353,721	4,573,787	4,753,983	4,942,104	5,138,487	7,232,458	7,521,998
Total Debt Service	1,287,561	2,575,123	2,715,123	2,870,123	3,030,123	3,180,123	3,305,123	3,435,123	3,575,123	5,030,123	5,235,123
Net Income After Debt Service	477,813	1,124,710	1,192,565	1,255,514	1,323,598	1,393,665	1,448,861	1,506,981	1,563,364	2,202,336	2,286,876
Debt Service Coverage	1.37	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Operating Fund											
Beginning Balance	0	477,813	1,602,523	2,795,088	4,050,601	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Plus: Net Income After D/S	477,813	1,124,710	1,192,565	1,255,514	1,323,598	1,393,665	1,448,861	1,506,981	1,563,364	2,202,336	2,286,876
Funds Available for Capital Projects		0	0	0	(374,200)	(1,393,665)	(1,448,861)	(1,506,981)	(1,563,364)	(2,202,336)	(2,286,876)
Ending Balance	477,813	1,602,523	2,795,088	4,050,601	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000

* Assume start of operations on January 1, 2002.

Assumptions (Kimley-Horn Study)

Avg daily unrestrained traffic	22,222	O&M Cost per Mile	200,000
Diverted Traffic	45.00%	No. of Miles of Project	10.3
Traffic Mix		O&M Cost Growth Rate	3.00%
Automobile	87.00%	Interest Earnings Rate	5.00%
Tourists	10.00%	Interest Earnings Rate (DSRF)	6.00%
Trucks	3.00%	Operating Fund Balance Max.	5,000,000
Traffic Growth			
Year 1 - 20	4.00%		
Year 21-30	2.00%		
Year 31-40	1.00%		

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Projected Cash Flows

Fiscal Year (Ending June 30)	12 2013	13 2014	14 2015	15 2016	16 2017	17 2018	18 2019	19 2020	20 2021	21 2022	22 2023
Traffic	6,867,607	7,142,311	7,428,004	7,725,124	8,034,129	8,355,494	8,689,714	9,037,302	9,398,794	9,586,770	9,778,506
Growth Rate	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	2.00%	2.00%
Traffic Mix											
Commuter (87%)	5,974,818	6,213,811	6,462,363	6,720,858	6,989,692	7,269,280	7,560,051	7,862,453	8,176,951	8,340,490	8,507,300
Tourists (10%)	686,761	714,231	742,800	772,512	803,413	835,549	868,971	903,730	939,879	958,677	977,851
Trucks (3%)	206,028	214,269	222,840	231,754	241,024	250,665	260,691	271,119	281,964	287,603	293,355
Toll Rate Schedule											
Commuter	1.25	1.25	1.25	1.50	1.50	1.50	1.50	1.50	1.75	1.75	1.75
Tourists	2.50	2.50	2.50	3.00	3.00	3.00	3.00	3.00	3.50	3.50	3.50
Trucks	4.00	4.00	4.00	4.50	4.50	4.50	4.50	4.50	5.25	5.25	5.25
Revenue											
Commuter	7,468,523	7,767,263	8,077,954	10,081,287	10,484,538	10,903,920	11,340,076	11,793,679	14,309,664	14,595,858	14,887,775
Tourists	1,718,902	1,785,578	1,857,001	2,317,537	2,410,239	2,506,648	2,606,914	2,711,191	3,289,578	3,355,370	3,422,477
Trucks	824,113	857,077	891,360	1,042,892	1,084,607	1,127,992	1,173,111	1,220,036	1,480,310	1,509,916	1,540,115
Total Toll Revenue	10,009,537	10,409,919	10,826,315	13,441,715	13,979,384	14,538,559	15,120,102	15,724,906	19,079,552	19,461,143	19,850,366
Toll Revenue Growth	4.00%	4.00%	4.00%	24.16%	4.00%	4.00%	4.00%	4.00%	21.33%	2.00%	2.00%
Revenue											
Toll Revenue	10,009,537	10,409,919	10,826,315	13,441,715	13,979,384	14,538,559	15,120,102	15,724,906	19,079,552	19,461,143	19,850,366
Interest Income (DSRF)	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911
Interest Income (Operating Fund)	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
	10,675,448	11,075,830	11,492,227	14,107,627	14,645,295	15,204,471	15,786,013	16,390,817	19,745,464	20,127,055	20,516,278
	3.74%	3.75%	3.76%	22.76%	3.81%	3.82%	3.82%	3.83%	20.47%	1.93%	1.93%
Expenses											
O&M Expenses	2,851,522	2,937,067	3,025,179	3,115,935	3,209,413	3,305,695	3,404,866	3,507,012	3,612,222	3,720,589	3,832,207
Net Revenue	7,823,927	8,138,762	8,467,047	10,991,692	11,435,882	11,898,775	12,381,147	12,883,805	16,133,241	16,406,466	16,684,071
Total Debt Service	5,445,123	5,665,123	5,890,123	7,650,123	7,960,123	8,280,123	8,615,123	8,965,123	11,225,123	11,420,123	11,610,123
Net Income After Debt Service	2,378,804	2,473,640	2,576,925	3,341,569	3,475,760	3,618,653	3,766,024	3,918,682	4,908,119	4,986,343	5,073,948
Debt Service Coverage	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Operating Fund											
Beginning Balance	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Plus: Net Income After D/S	2,378,804	2,473,640	2,576,925	3,341,569	3,475,760	3,618,653	3,766,024	3,918,682	4,908,119	4,986,343	5,073,948
Funds Available for Capital Projects	(2,378,804)	(2,473,640)	(2,576,925)	(3,341,569)	(3,475,760)	(3,618,653)	(3,766,024)	(3,918,682)	(4,908,119)	(4,986,343)	(5,073,948)
Ending Balance	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Projected Cash Flows

Fiscal Year (Ending June 30)	23 2024	24 2025	25 2026	26 2027	27 2028	28 2029	29 2030	30 2031
Traffic	9,974,076	10,173,557	10,377,028	10,584,569	10,796,260	11,012,185	11,232,429	11,457,078
Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Traffic Mix								
Commuter (87%)	8,677,446	8,850,995	9,028,015	9,208,575	9,392,746	9,580,601	9,772,213	9,967,658
Tourists (10%)	997,408	1,017,356	1,037,703	1,058,457	1,079,626	1,101,219	1,123,243	1,145,708
Trucks (3%)	299,222	305,207	311,311	317,537	323,888	330,366	336,973	343,712
Toll Rate Schedule								
Commuter	1.75	1.75	2.00	2.00	2.00	2.00	2.00	2.25
Tourists	3.50	3.50	4.00	4.00	4.00	4.00	4.00	4.50
Trucks	5.25	5.25	6.00	6.00	6.00	6.00	6.00	7.00
Toll Revenue								
Commuter	15,185,530	15,489,241	18,056,029	18,417,150	18,785,493	19,161,203	19,544,427	22,427,230
Tourists	3,490,926	3,560,745	4,150,811	4,233,828	4,318,504	4,404,874	4,492,972	5,155,685
Trucks	1,570,917	1,602,336	1,867,865	1,905,222	1,943,327	1,982,193	2,021,837	2,405,986
Total Toll Revenue	20,247,374	20,652,321	24,074,706	24,556,200	25,047,324	25,548,270	26,059,236	29,988,901
Toll Revenue Growth	2.00%	2.00%	16.57%	2.00%	2.00%	2.00%	2.00%	15.06%
Revenue								
Toll Revenue	20,247,374	20,652,321	24,074,706	24,556,200	25,047,324	25,548,270	26,059,236	29,988,901
Interest Income (DSRF)	415,911	415,911	415,911	415,911	415,911	415,911	415,911	415,911
Interest Income (Operating Fund)	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
	20,913,285	21,318,232	24,740,617	25,222,111	25,713,235	26,214,182	26,725,147	30,654,812
	1.94%	1.94%	16.05%	1.95%	1.95%	1.95%	1.95%	14.70%
Expenses								
O&M Expenses	3,947,173	4,065,588	4,187,556	4,313,183	4,442,578	4,575,855	4,713,131	4,854,525
Net Revenue	16,966,112	17,252,644	20,553,061	20,908,929	21,270,657	21,638,326	22,012,016	25,800,287
Total Debt Service	11,805,123	12,005,123	14,305,123	14,550,123	14,805,123	15,060,123	15,317,088	17,955,350
Net Income After Debt Service	5,160,989	5,247,522	6,247,939	6,358,806	6,465,536	6,578,204	6,694,928	7,844,937
Debt Service Coverage	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Operating Fund								
Beginning Balance	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Plus: Net Income After D/S	5,160,989	5,247,522	6,247,939	6,358,806	6,465,536	6,578,204	6,694,928	7,844,937
Funds Available for Capital Projects	(5,160,989)	(5,247,522)	(6,247,939)	(6,358,806)	(6,465,536)	(6,578,204)	(6,694,928)	(7,844,937)
Ending Balance	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000

LEVEL COVERAGE OVER 30 YEARS

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Sources and Uses of Funds/Summary of Assumptions

Sources and Uses of Funds		
Sources		
Par (Current Interest)	38,210,000	
Par (CABS)	31,108,545	
Other Funds	0	
Accrued Interest	0	
Total Sources	69,318,545	
Uses		
Construction Costs	56,494,905	
Capitalized Interest Fund	4,944,566	
Debt Service Reserve Fund	6,931,854	10.00%
Cost of Issuance	250,000	
Underwriter's Discount	693,185	$10.00
Accrued Interest	0	
Rounding	4,034	
	69,318,545	

LEVEL COVERAGE OVER 30 YEARS

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Construction Fund

Date	Beginning Balance	Available Funds	Bond Proceeds	Construction Draws	Interest Earnings 5.67% 0.0566967	Ending Balance
7/1/95		6,337,000				6,337,000
7/1/96	6,337,000	9,200,000			359,287	15,896,287
7/1/97	15,896,287	200,000			901,267	16,997,554
7/1/98	16,997,554	6,147,000			963,705	24,108,260
7/1/99	24,108,260	9,266,000			1,366,859	34,741,119
12/15/99	34,741,119		56,494,905		902,783	92,138,806
1/1/00	92,138,806			4,584,042	228,996	87,783,760
2/1/00	87,783,760			4,584,042	414,754	83,614,473
3/1/00	83,614,473			4,584,042	395,055	79,425,486
4/1/00	79,425,486			4,584,042	375,264	75,216,708
5/1/00	75,216,708			4,584,042	355,378	70,988,044
6/1/00	70,988,044			4,584,042	335,399	66,739,401
7/1/00	66,739,401	1,046,750		4,584,042	315,325	63,517,435
8/1/00	63,517,435	1,046,750		4,584,042	300,102	60,280,245
9/1/00	60,280,245	1,046,750		4,584,042	284,808	57,027,761
10/1/00	57,027,761	1,046,750		4,584,042	269,441	53,759,909
11/1/00	53,759,909	1,046,750		4,584,042	254,001	50,476,618
12/1/00	50,476,618	1,046,750		4,584,042	238,488	47,177,814
1/1/01	47,177,814	1,046,750		4,584,042	222,902	43,863,425
2/1/01	43,863,425	1,046,750		4,584,042	207,243	40,533,375
3/1/01	40,533,375	1,046,750		4,584,042	191,509	37,187,592
4/1/01	37,187,592	1,046,750		4,584,042	175,701	33,826,002
5/1/01	33,826,002	1,046,750		4,584,042	159,819	30,448,528
6/1/01	30,448,528	1,046,750		4,584,042	143,861	27,055,097
7/1/01	27,055,097			4,584,042	127,828	22,598,883
8/1/01	22,598,883			4,584,042	106,774	18,121,615
9/1/01	18,121,615			4,584,042	85,620	13,623,192
10/1/01	13,623,192			4,584,042	64,366	9,103,516
11/1/01	9,103,516			4,584,042	43,012	4,562,486
12/1/01	4,562,486			4,584,042	21,556	0
		43,711,000	56,494,905	110,017,008	9,811,103	

LEVEL COVERAGE OVER 30 YEARS

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Debt Service

Assumptions

Par Amount of Bonds	69,318,545
True Interest Cost	6.921%

Date	Coupon	Principal	Interest	CAB Rate	CAB Price	CAB FV	Cab PV	Debt Service	Annual Debt Service
12/15/99									
07/01/2000			1,402,011					1,402,011	1,402,011
01/01/2001			1,287,561					1,287,561	
07/01/2001			1,287,561					1,287,561	2,575,123
01/01/2002			1,287,561					1,287,561	
07/01/2002	5.100%	0	1,287,561	5.081%	88.013	0	0	1,287,561	2,575,123
01/01/2003			1,287,561					1,287,561	
07/01/2003	5.250%	0	1,287,561	5.246%	83.230	0	0	1,287,561	2,575,123
01/01/2004			1,287,561					1,287,561	
07/01/2004	5.350%	0	1,287,561	5.357%	78.642	140,000	110,099	1,427,561	2,715,123
01/01/2005			1,287,561					1,287,561	
07/01/2005	5.450%	0	1,287,561	5.470%	74.140	295,000	218,713	1,582,561	2,870,123
01/01/2006			1,287,561					1,287,561	
07/01/2006	5.600%	0	1,287,561	5.644%	69.472	455,000	316,098	1,742,561	3,030,123
01/01/2007			1,287,561					1,287,561	
07/01/2007	5.700%	0	1,287,561	5.761%	65.150	605,000	394,158	1,892,561	3,180,123
01/01/2008			1,287,561					1,287,561	
07/01/2008	5.800%	0	1,287,561	5.881%	60.941	730,000	444,869	2,017,561	3,305,123
01/01/2009			1,287,561					1,287,561	
07/01/2009	5.900%	0	1,287,561	6.005%	56.851	660,000	488,919	2,147,561	3,435,123
01/01/2010			1,287,561					1,287,561	
07/01/2010	6.000%	0	1,287,561	6.134%	52.685	1,000,000	526,850	2,287,561	3,575,123
01/01/2011			1,287,561					1,287,561	
07/01/2011	6.100%	0	1,287,561	6.267%	49.046	2,455,000	1,204,079	3,742,561	5,030,123
01/01/2012			1,287,561					1,287,561	
07/01/2012	6.200%	0	1,287,561	6.406%	45.339	2,660,000	1,206,017	3,947,561	5,235,123
01/01/2013			1,287,561					1,287,561	
07/01/2013	6.300%	0	1,287,561	6.551%	41.788	2,870,000	1,199,884	4,157,561	5,445,123
01/01/2014			1,287,561					1,287,561	
07/01/2014	6.400%	0	1,287,561	6.703%	38.329	3,090,000	1,184,366	4,377,561	5,665,123
01/01/2015			1,287,561					1,287,561	
07/01/2015	6.450%	0	1,287,561	6.773%	35.508	3,315,000	1,177,090	4,602,561	5,890,123
01/01/2016			1,287,561					1,287,561	
07/01/2016	6.500%	0	1,287,561	6.847%	32.827	5,075,000	1,665,970	6,362,561	7,650,123
01/01/2017			1,287,561					1,287,561	
07/01/2017	6.550%	0	1,287,561	6.926%	30.282	5,385,000	1,630,686	6,672,561	7,960,123
01/01/2018			1,287,561					1,287,561	
07/01/2018	6.600%	0	1,287,561	7.010%	27.867	5,705,000	1,589,812	6,992,561	8,280,123
01/01/2019			1,287,561					1,287,561	
07/01/2019	6.600%	0	1,287,561	6.990%	26.113	6,040,000	1,577,225	7,327,561	8,615,123
01/01/2020			1,287,561					1,287,561	
07/01/2020	6.650%	0	1,287,561	7.085%	23.922	6,390,000	1,528,616	7,677,561	8,965,123
01/01/2021			1,287,561					1,287,561	
07/01/2021	6.650%	0	1,287,561	7.065%	22.405	8,650,000	1,938,033	9,937,561	11,225,123
01/01/2022			1,287,561					1,287,561	
07/01/2022	6.650%	0	1,287,561	7.047%	20.985	8,845,000	1,856,123	10,132,561	11,420,123
01/01/2023			1,287,561					1,287,561	
07/01/2023	6.650%	0	1,287,561	7.030%	19.654	9,035,000	1,775,739	10,322,561	11,610,123
01/01/2024			1,287,561					1,287,561	
07/01/2024	6.650%	0	1,287,561	7.015%	18.409	9,230,000	1,699,151	10,517,561	11,805,123
01/01/2025			1,287,561					1,287,561	
07/01/2025	6.700%	0	1,287,561	7.143%	16.647	9,430,000	1,569,812	10,717,561	12,005,123
01/01/2026			1,287,561					1,287,561	
07/01/2026	6.700%	0	1,287,561	7.127%	15.584	11,730,000	1,828,003	13,017,561	14,305,123
01/01/2027			1,287,561					1,287,561	
07/01/2027	6.700%	0	1,287,561	7.112%	14.589	11,975,000	1,747,033	13,262,561	14,550,123
01/01/2028			1,287,561					1,287,561	
07/01/2028	6.700%	0	1,287,561	7.097%	13.658	12,230,000	1,670,373	13,517,561	14,805,123
01/01/2029			1,287,561					1,287,561	
07/01/2029	6.700%	8,105,000	1,287,561	7.084%	12.786	4,380,000	560,027	13,772,561	15,060,123
01/01/2030			1,016,044					1,016,044	
07/01/2030	6.750%	13,285,000	1,016,044	7.255%	11.342	0	0	14,301,044	15,317,088
01/01/2031			567,675					567,675	
07/01/2031	6.750%	16,820,000	567,675	7.239%	10.613	0	0	17,387,675	17,955,350
01/01/2032			0						
		38,210,000	79,248,001			132,575,000	31,108,545	250,033,001	250,033,001

LEVEL COVERAGE OVER 30 YEARS

Commonwealth of Virginia
Department of Transportation
Financing Plan for Route 168
Capitalized Interest Fund

Capitalized Interest Period:	2 Years
Capitalized Interest Payments:	Semi-Annual
Earnings Rate:	5.00%

Date	Beginning Balance	Interest Earnings	Interest Payments	PV Interest Payments	Ending Balance
12/15/99	4,944,566				4,944,566
07/01/2000	4,944,566	134,751	1,402,011	1,364,817	3,677,305
01/01/2001	3,677,305	91,933	1,287,561	1,222,832	2,481,677
07/01/2001	2,481,677	62,042	1,287,561	1,193,007	1,256,157
01/01/2002	1,256,157	31,404	1,287,561	1,163,909	0
07/01/2002	0	0	0	0	0
01/01/2003	0	0	0	0	0
07/01/2003	0	0	0	0	0
01/01/2004	0	0	0	0	0
07/01/2004	0	0	0	0	0
01/01/2005	0	0	0	0	0
07/01/2005	0	0	0	0	0
01/01/2006	0	0	0	0	0
07/01/2006	0	0	0	0	0
01/01/2007	0	0	0	0	0
07/01/2007	0	0	0	0	0
01/01/2008	0	0	0	0	0
07/01/2008	0	0	0	0	0
01/01/2009	0	0	0	0	0
07/01/2009	0	0	0	0	0
01/01/2010	0	0	0	0	0
07/01/2010	0	0	0	0	0
01/01/2011	0	0	0	0	0
07/01/2011	0	0	0	0	0
01/01/2012	0	0	0	0	0
07/01/2012	0	0	0	0	0
01/01/2013	0	0	0	0	0
07/01/2013	0	0	0	0	0
01/01/2014	0	0	0	0	0
07/01/2014	0	0	0	0	0
01/01/2015	0	0	0	0	0
07/01/2015	0	0	0	0	0
01/01/2016	0	0	0	0	0
07/01/2016	0	0	0	0	0
01/01/2017	0	0	0	0	0
07/01/2017	0	0	0	0	0
01/01/2018	0	0	0	0	0
07/01/2018	0	0	0	0	0
01/01/2019	0	0	0	0	0
07/01/2019	0	0	0	0	0
01/01/2020	0	0	0	0	0
07/01/2020	0	0	0	0	0
01/01/2021	0	0	0	0	0
07/01/2021	0	0	0	0	0
01/01/2022	0	0	0	0	0
07/01/2022	0	0	0	0	0
01/01/2023	0	0	0	0	0
07/01/2023	0	0	0	0	0
01/01/2024	0	0	0	0	0
07/01/2024	0	0	0	0	0
01/01/2025	0	0	0	0	0
07/01/2025	0	0	0	0	0
01/01/2026	0	0	0	0	0
07/01/2026	0	0	0	0	0
01/01/2027	0	0	0	0	0
07/01/2027	0	0	0	0	0
01/01/2028	0	0	0	0	0
07/01/2028	0	0	0	0	0
01/01/2029	0	0	0	0	0
07/01/2029	0	0	0	0	0
01/01/2030	0	0	0	0	0
07/01/2030	0	0	0	0	0
01/01/2031	0	0	0	0	0
07/01/2031	0	0	0	0	0
01/01/2032	0	0	0	0	0
		320,129	5,264,695	4,944,566	

APPENDIX E

Currently Identified Funding - Availability Schedule

Currently Identified Funding - Availability Schedule
(Amounts in thousands)

Funding Source	Previous Funding thru FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	Total
Toll Facilities Revolving Account				4,751	6,678	6,678	18,107
Urban	6,337	100	200	1,396	2,588	5,883	16,504
STP		1,000					1,000
City GO Bond Proceeds		8,100					8,100
Total	6,337	9,200	200	6,147	9,266	12,561	43,711