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Collaborative Funding to Facilitate Airport Ground Access

CASE STUDY REPORT: RICHMOND AIRPORT CONNECTOR

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ABSTRACT

This case study report documents the experience with collaborative funding of airport ground access involved in the development of a toll road extension to improve access to the Richmond International Airport in Virginia. The Richmond Airport Connector (RAC) is a four-lane expressway spur off the Pocahontas Parkway, a toll road located about two miles to the south of the airport. Since 2006, the Pocahontas Parkway has been operated by Transurban (USA) Development, Inc. (Transurban) under a public-private partnership (PPP) with the Virginia Department of Transportation. Under the terms of the PPP agreement, Transurban constructed the RAC, which opened in January 2011. As of 2011 the toll to use the Pocahontas Parkway was $1.25, which included use of the RAC.

The cost of developing the RAC was estimated by Transurban in 2010 at about $50 million, with construction costs of $39.5 million and land acquisition and right-of-way costs of $10.25 million. The development of the RAC was financed by Transurban using a $150 million loan from the U.S. Department of Transportation under the federal Transportation Infrastructure Finance and Innovation Act (TIFIA), which also provided a line of credit to upgrade the electronic toll collection system on the Parkway and refinance some of the debt that had been incurred in assuming responsibility for operating the Parkway. The TIFIA loan would be paid off from the toll revenues from the Parkway.

The RAC represents one of the first highway projects in the U.S. to be constructed and operated through a PPP and probably the first airport access highway funded in this way. The private sector partner that took over operation of the Pocahontas Parkway from the previous public toll authority and undertook to construct and operate the RAC as an extension of the Parkway had some experience with privately funded highway projects in Australia, but this was its first such venture in the U.S. The project is also one of the first examples of the provision of a TIFIA loan to supplement private capital in financing a PPP highway project, with the interest payments and eventual repayment of the loan to be covered from toll revenues from the Parkway and RAC.

It remains to be seen whether future toll revenues will prove sufficient to provide an adequate return to Transurban on its investment in the overall project or whether the toll revenue generated by traffic using the RAC will be sufficient to cover the costs of constructing and operating the Connector. Since the capital costs of developing the RAC were financed entirely through the TIFIA loan, the Connector was effectively constructed entirely with public funds, although including the development and operation of the RAC under the PPP makes Transurban responsible for maintaining the Connector and repaying the TIFIA loan from toll revenues.

RICHMOND AIRPORT CONNECTOR

INTRODUCTION

The Richmond Airport Connector (RAC) is a divided four-lane highway that connects the existing Pocahontas Parkway Route 895 toll road in Henrico County, Virginia, to Richmond International Airport. The RAC has been developed to improve airport access and reduce congestion on access roadways serving the airport and provides one of the first examples of a public-private partnership in the development of an airport access highway.

Richmond International Airport (RIC) is located southeast of the downtown area of Richmond, Virginia, as shown in Figure 1, and in 2010 was served by eight air carriers with flights to both domestic and international destinations. By 2010, RIC was handling over 3.5 million passengers and 115 million pounds of cargo annually. The number of annual passengers is projected to increase to 5.2 million by 2015.[1]

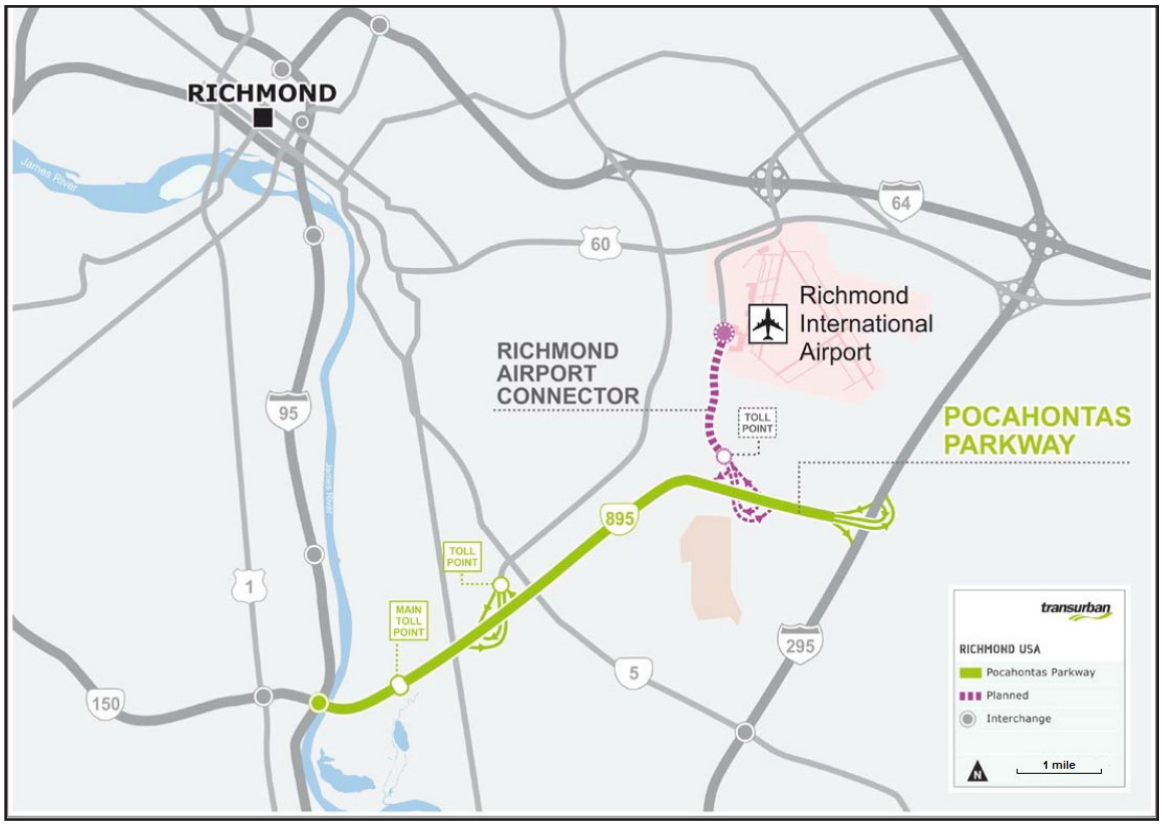

Figure 1. General Location of the Richmond Airport Connector

Source: Rich Prezioso, Richmond Airport Connector Project, June 2009 (scale corrected).

In an effort to decrease congestion and automobile travel times in the region, the 8.8-mile Pocahontas Parkway and 1.6-mile RAC have been included in state and regional transportation plans since 1989, although funding constraints prevented any action on either facility for several years. In 1997, the Pocahontas Parkway Association (PPA) was established as a non-profit organization to finance and operate the Parkway

under a public-private partnership (PPP) with the Virginia Department of Transportation (VDOT). The PPA could issue tax-exempt bonds to fund the construction of the Parkway, which it would operate as a toll road to meet the debt service on the bonds and operate the facility. The Pocahontas Parkway opened in 2002. After the Parkway opened, the Richmond Regional Planning District continued to include the RAC in their regional plans, including the 2026 Constrained Long-Range Transportation Plan and the Richmond Area Metropolitan Planning Organization Transportation Improvement Program and Congestion Management System road network.[2] The RAC was expected to decrease travel times to the airport by ten minutes and reduce traffic congestion on local roads. However, toll revenues were below the levels expected, and the PPA began to face difficulties meeting its financial obligations.

In June 2006, the PPA and VDOT entered into an agreement with Transurban (USA) Development, Inc. (Transurban), part of the Transurban Group, a $7.3 billion Australian toll road developer and operator, to buy the rights to operate and maintain the Parkway and develop the RAC under a new PPP with VDOT.[3] The PPP agreement states that Transurban would develop and maintain the Parkway and RAC for 99 years after purchasing the toll road from the state. The initial toll rate for the Connector was set at $1.25 for vehicles with two axles traveling from or to the east.[4] Vehicles using the Connector and traveling from and to the west pay a higher toll at the main toll plaza, located near the western end of the Parkway. Toll rates would remain constant for two years then could be increased annually at rates specified in the agreement between Transurban and VDOT.

Project Description

The RAC has been developed as a four-lane divided highway and extends from the Pocahontas Parkway to an intersection with Charles City Road and Airport Drive, at the southwest boundary if RIC, as shown in Figure 2. The road was constructed on mostly undeveloped land. Because it provides an extension of Airport Drive south to the Parkway, it is sometimes referred to as Airport Drive. The Connector required the construction of three new bridges and the widening of an existing bridge over Monahan Road to accommodate a ramp between the Parkway and the RAC.[5] The new bridges, shown in orange in Figure 2, carry the RAC over the Parkway, Sprouse Road, and the CSX railroad. The bridge over the Pocahontas Parkway is 60 meters long, with two spans and integral abutments. The bridge over Sprouse Road is 34 meters long, with a single span and integral abutments. The bridge over the CSX railroad is 49 meters long, with a single span and integral abutments. There is an at-grade intersection at Seven Hills Blvd. and at the location of a new road between the Parkway and Seven Hills Blvd., shown as Site Road in Figure 2.[6]

Toll Collecting System

One important part of Transurban's agreement with VDOT was to upgrade the toll collecting system on the Parkway to state-of-the-art electronic toll technology and extend this to the RAC when it was constructed. This would not only reduce delays to users, but also reduce the cost of toll collection.

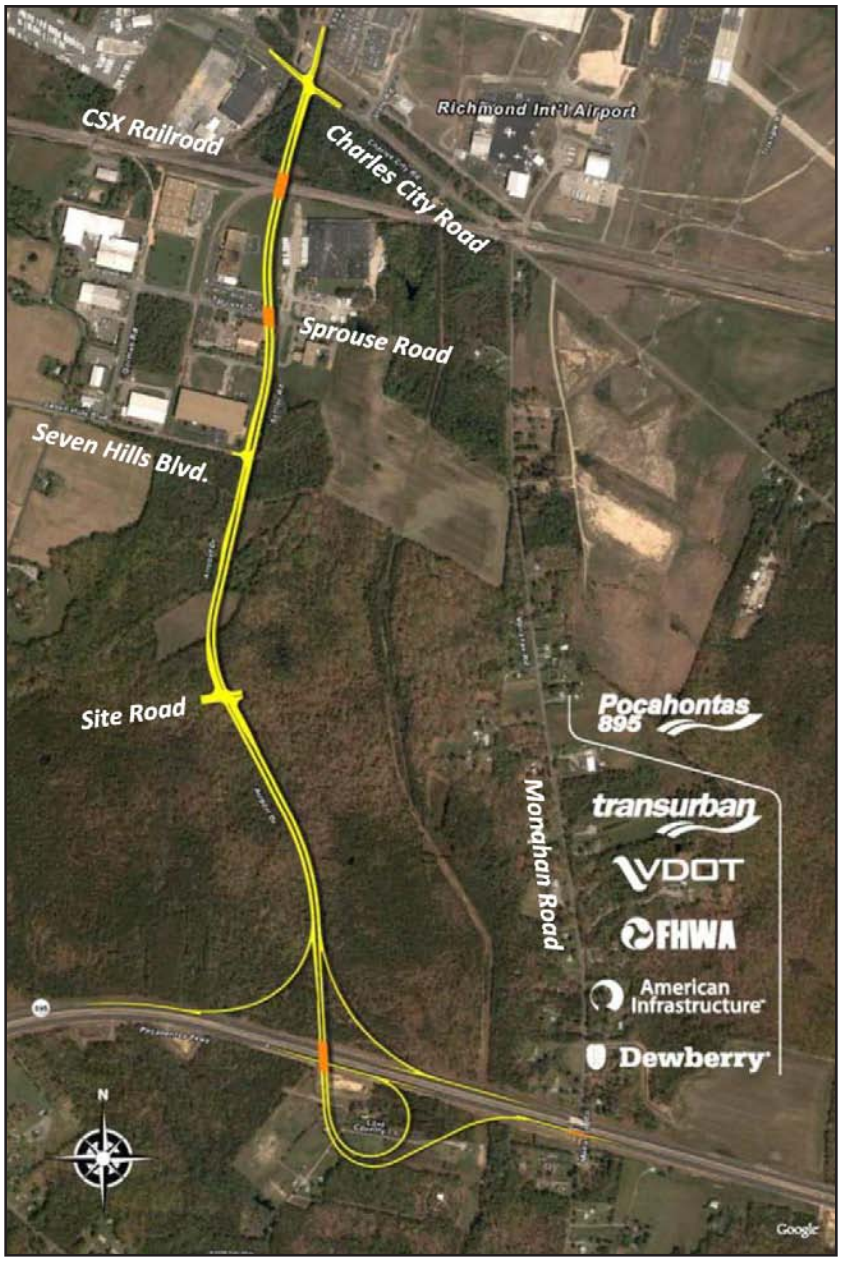

Figure 2. Richmond Airport Connector

Source: Rich Prezioso, Richmond Airport Connector Project, June 2009 (labels added).

In November 2009 the Spanish company Telvent was awarded a $7 million contract by Transurban to upgrade the toll system at the Parkway and develop the toll system for the RAC.[7] The new toll system replaced the initial toll system on the Parkway installed by the InTranS Group. The upgrades to the toll system for the Parkway included replacement of roadside equipment, upgrade of office equipment, and installation of a video tolling system and violations processing center.

The main toll plaza is located at the west end of the Parkway and accepts cash along with credit or debit cards and payment by EZ Pass transponders that allow drivers to pay the toll without stopping. There are electronic tollbooths on the two Laburnum Avenue and two RAC ramps that serve traffic to and from the east on the Parkway that does not pass

through the main toll plaza. The Laburnum Avenue ramps on the Parkway went cashless in July 2010 to provide an easier experience for drivers.[8,9] The RAC had cashless tollbooths when it opened.[10]

HISTORY OF THE PROJECT

Originally, the Pocahontas Parkway and the RAC were planned to be developed as one project. However, sufficient funding was not available at the time and the project was subsequently split into two, and priority was given to the Parkway. In 1995, Virginia's General Assembly passed the Public-Private Transportation Act, which allows private companies to generate funds to develop transportation projects in the state. The Pocahontas Parkway, Route 895, became the first project developed under the Act. In 1997, the Pocahontas Parkway Association was created as a non-profit, non-stock company without members, referred to as a 63-20 non-profit, to develop the Parkway. To fund the Parkway, the PPA issued tax-exempt bonds that generated $354 million, received an $18 million Virginia State Infrastructure Bank loan, and was the recipient of a $9 million federal grant for roadway design, as shown in Table 1.[11] The original construction costs for the Pocahontas Parkway were $314 million.[12] The Pocahontas Parkway opened to the public in October 2002.

Table 1. Original Pocahontas Parkway Funding

Source	Amount
State Infrastructure Bank Loan	$18,000,000
Federal Roadway Design Funds	$9,000,000
Pocahontas Parkway Association Bonds	$354,000,000
Total	**$381,000,000**

Source: Table adapted from FHWA, "Case Studies – Pocahontas Parkway/Richmond Airport Connector," (undated).

Over the next few years, traffic on the toll road did not match earlier projections and by 2005 the PPA was in danger of defaulting on its loan payments.[13] In 2003, according to a 2006 article in the Infrastructure Journal, the Pocahontas Parkway only generated 42 percent of the original revenue estimates.[14] In response to the shortfall in revenue generation, the PPA and VDOT sought to enter into a financial agreement with Transurban (USA) Development, Inc. to take over the operation of the Parkway. Although Transurban had experience with privately funded highway projects in Australia, this was its first such venture in the U.S.

In June 2006, Transurban, the PPA, and VDOT entered into an Amended and Restated Comprehensive Agreement (ARCA) under which Transurban purchased the right to lease the Parkway and agreed to provide the PPA with sufficient funds to repay the outstanding bonds.[15] Under the purchase agreement, Transurban had the right to maintain, operate, manage, enhance, and collect tolls from the Parkway for 99 years.[16] The agreement stated that VDOT would enter into a development contract with Transurban covering the development of the RAC, would process and approve design-build contracts for the RAC,

and would assume responsibility for treating or removing any pre-existing hazardous waste encountered in developing the RAC.[17]

Transurban agreed to develop, maintain, and operate the RAC in conjunction with the Pocahontas Parkway, provided the U.S. Department of Transportation awarded a loan under the Transportation Infrastructure Finance and Innovation Act (TIFIA) for a $150 million line of credit to cover development costs for the RAC as well as other costs involved in taking over the operation of the Parkway. The TIFIA loan was approved on June 19, 2006.[18] The ARCA stated that VDOT and Transurban would share future net revenues if they exceed a level that provides Transurban with a return on investment of 6.5 percent.[19] It has been claimed that the PPP agreement will save Virginia taxpayers $240 million in road maintenance over the life of the agreement and will encourage more PPP joint development projects.[20]

The RAC project involved a large number of agencies in addition to Transurban and VDOT, including the design-builder for the RAC (American Infrastructure), the Federal Highway Administration (FHWA), an Independent Engineer, CSX Railroad, the toll system vendor, Henrico County Public Works, Henrico County Public Utilities, the City of Richmond, the Capital Region Airport Commission, Sauer Estate, and a Quality Control Manager.[21] The Independent Engineer, CSXT Railroad, toll system vendor, Henrico County Public Works, and Henrico County Public Utilities were all involved with the construction of the RAC in various ways. The City of Richmond, the Capital Region Airport Commission, Sauer Estate, and the Quality Control Manager assisted with the real estate acquisition and planning stages of the project. The FHWA managed the TIFIA loan to Transurban.[22]

PROJECT COSTS

In 2010, Transurban projected that development of the RAC would have a total cost of $49.75 million, with construction costs of $39,500,000 and land acquisition and right-of-way costs of $10,250,000.[23]

FUNDING SOURCES

In June 2006, Transurban entered into a $611 million agreement with VDOT to lease the Pocahontas Parkway for 99 years. A large portion of the costs identified in the agreement was dedicated to repaying the bond debt from the PPA and VDOT, as shown in Table 2.[24]

Transurban financed the lease agreement with two loan packages from a consortium of banks, the $150 million TIFIA loan, and $141 million in equity. The consortium of banks loaned to Transurban. The banks were DEPFA Bank in Ireland, BancoEspirito Santo de Investimento in Spain, and the Bayerische Hypo- und Vereinsbank in Germany provided $420 million in senior bank debt and $55 million in subordinate bank loans.[25] Senior bank debt means that the borrower (Transurban) must repay its loans to the bank before repaying any other loans. The assets of the borrower are usually used as collateral to protect the lender against an inability or failure of the borrower to repay the loan.[26] Subordinate banks loans are ranked lower in the repayment priority compared to senior bank debt in the event of bankruptcy.[27]

Table 2. Transurban's Purchase Cost for the Pocahontas Parkway

Cost Element	Amount
PPA and VDOT debt	$487,000,000
Reserves and contingency	$90,000,000
Operational improvements	$8,000,000
Development costs and fees	$13,000,000
Finance and arranging fees	$11,000,000
Maintenance reserves	$2,000,000
Total	**$611,000,000**

Source: Table adapted from Samuel, 2006.

TIFIA Loan

The TIFIA loan was used to update the electronic toll collection system, refinance part of the long term senior debt, and develop the RAC. From the total $150 million line of credit, $95 million was designated to refinance the long-term senior debt, $7 million to upgrade the electronic tolling system, and $48 million to develop the RAC, as shown in Table 3.[28]

Table 3. Transurban TIFIA Loan Components

Cost Element	Amount
Refinance senior bank debt	$95,000,000
Upgrade electronic toll collection system	$7,000,000
Construct the Richmond Airport Connector	$48,000,000
Total	**$150,000,000**

Source: Table adapted from FHWA, "Case Studies – Pocahontas Parkway/ Richmond Airport Connector," (undated).

The amount of the TIFIA loan was determined through a cost benefit analysis which established that $150 million was the minimum loan amount required to persuade Transurban and its senior lenders to assume the risk of developing and maintaining the RAC and to secure an investment grade rating for the remaining senior debt.[29] Fitch Rating Services validated the analysis by assigning a rating of BBB-, the lowest investment grading rating, to the senior bank debt under the proposed financing structure with the TIFIA loan. The analysis found that in the absence of the TIFIA loan, the RAC would not be economically viable, with the net present value of the toll revenues from incremental traffic generated by the RAC over the 99-year lease amounting to only a fraction of the RAC construction cost. However, by using part of the TIFIA loan to refinance part of the senior bank debt incurred in purchasing and upgrading the Parkway, the combined project of the Parkway and RAC could support the additional financial burden of constructing the RAC.[30]

In July 1996, VDOT applied to the FHWA for a deviation from the normal definition of ”eligible project costs” for the TIFIA loan.[31] The regulations for the TIFIA program limited TIFIA credit assistance to 33 percent of the “eligible project costs,” defined as development activities, construction expenses, and related financing costs. It was noted that these costs are usually restricted to investments in new infrastructure, which would not allow a large enough TIFIA loan to make construction of the RAC economically viable for Transurban. However, changes to the TIFIA program authorized by Congress in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) had given the U.S. Secretary of Transportation authority to grant TIFIA loans to assist with refinancing long-term debt, but did not specify the maximum amount the Secretary could allow to refinance a project. Therefore VDOT requested that the definition of “eligible project costs” be expanded to include the $548 million acquisition price that Transurban had paid for the Parkway, to which the FHWA subsequently agreed.

TIFIA loan repayments will begin in 2029 and finish in 2043.[32] The interest rate for the TIFIA loan was equal to local and state government average interest rate of 5.16 percent plus one basis point, with interest capitalized for five years on a 35-year term.[33] Transurban will repay the TIFIA loan through toll revenues.

SUMMARY AND CONCLUSIONS

The Richmond Airport Connector demonstrates the potential for public-private partnerships in funding improvements to airport access highways. The RAC represents one of the first highway projects in the U.S. to be constructed and operated through a PPP and probably the first airport access highway funded in this way. The private-sector partner that took over operation of the Pocahontas Parkway from the previous public toll authority and undertook to construct and operate the RAC as an extension of the Parkway had some experience with privately funded highway projects in Australia, but this was its first such venture in the U.S.

In addition to the use of private sector financing for the construction of the RAC, a major feature of the project is the use of a Transportation Iinfrastructure Finance and Innovation Act loan to supplement the investment of private capital, with the interest payments and eventual repayment of the loan to be covered from toll revenues on the Parkway and RAC. Since the TIFIA loan provided most of the funding to construct the RAC, the motivation for constructing the project under the PPP with Transurban arose more from it being developed as an integrated component of the larger Pocahontas Parkway project than because private-sector investment was used to fund part of its development. Because the capital costs of developing the RAC were financed almost entirely through the TIFIA loan, the Connector was effectively constructed entirely with public funds, although including the development and operation of the RAC under the PPP makes Transurban responsible for maintaining the Connector and repaying the TIFIA loan from toll revenues.

It remains to be seen whether future toll revenues will prove sufficient to provide an adequate return to Transurban on its investment in the overall project or whether the incremental toll revenue generated by traffic using the RAC that would not otherwise use the Parkway will be sufficient to cover the costs of constructing and operating the

Connector. The analysis performed at the time VDOT applied for the TIFIA loan suggests that there is a high likelihood that the incremental toll revenues from RAC traffic will not be sufficient to cover the operating and loan repayment costs for the Connector, and thus the project would in effect be subsidized by toll revenues from other Parkway traffic.

ABBREVIATIONS AND ACRONYMS

ARCA	Amended and Restated Comprehensive Agreement
FHWA	Federal Highway Administration
MTI	Mineta Transportation Institute
PPA	Pocahontas Parkway Association
PPP	Public-private partnership
RAC	Richmond Airport Connector
RIC	Richmond International Airport (airport code)
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
TIFIA	Transportation Infrastructure Finance and Innovation Act
Transurban	Transurban (USA) Development, Inc.
VDOT	Virginia Department of Transportation

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