INVESTISSEMENTS FINANCIERS DANS LE SECTEUR ROUTIER

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RESUMÉ

Le secteur routier des États-Unis (E.-U.) fait de plus en plus fréquemment appel à des investisseurs privés. Cette tendance résulte de besoins croissants d'amélioration du système et de l'augmentation des coûts de construction et d'entretien, par rapport à la disponibilité des fonds routiers traditionnels émanant des gouvernements de l'état, locaux et du gouvernement fédéral. Le Virginia Department of Transportation (VDOT) est responsable du troisième système autoroutier des États-Unis, chargé de plus de 202 000 kilomètres de voie sur les systèmes autoroutiers primaires ou secondaires. Le VDOT estime que les investissements privés et les partenariats entre le secteur public et le secteur privé pourraient satisfaire entre dix et vingt pour cent de ses besoins quant à la capacité supplémentaire d'autoroutes.

Le présent document offre une perspective du système autoroutier américain du point de vue du VDOT, passe en revue les questions actuelles de financement et fournit un exemple de développement, de financement et de refinancement de la Route 895, Pocahontas Parkway, à Richmond, Virginie. Des observations et des recommandations sont également fournis à l'intention de nouvelles entreprises en partenariat entre le secteur public et le secteur privé, notamment des installations de péages prévues pour les autoroutes inter-états dans la région de Washington D.C.

Texte en anglais

1. GENERAL – PUBLIC PRIVATE PARTNERSHIPS IN THE USA ROAD SECTOR

The vast majority of highway construction contracts in the USA are constructed by private contractors. In the broadest context, any successful highway construction contract requires a partnership between the public agency and the private contractor. As presented herein, a public-private partnership (P3) project incorporates the most significant range of private participation in a public highway project, including planning, design, build, finance, operations and maintenance (DBFOM).

The emerging model of P3 projects in the current context is markedly different than the traditional funding and development of public highways in the USA and Virginia. In Virginia, and many states across the USA, traditional funding sources are not adequate to build the additional roadway capacity needed to maintain efficient transportation of people and products. As a result, state highway agencies are turning to private investors to access additional funding sources when appropriate.

The Route 895 P3 Project in Virginia is an example of a privately financed toll road. The new (green-field) roadway was constructed during the period 1998 through 2002, for a contract value of $346 million (USA $1998).[1] Approximately five percent of the contract price was paid by public transportation funds. The majority of funds were provided by the privately operated Pocahontas Parkway Association which issued bonds (debt) in anticipation of toll revenue. The new roadway was opened in 2002, which was approximately fifteen years sooner than if VDOT had waited to accumulate adequate public funds to construct the project.

However, the contract did not include private responsibilities for operation and maintenance of the new facility. VDOT operated and maintained the road after its completion in 2002 until 2006. VDOT leased a concession to Transurban in 2006, to operate and maintain the roadway and collect tolls for 99 years. Transurban refinanced the initial bonds issued for the construction and repaid VDOT its past maintenance expenditures. Its further responsibilities include facility expansion to improve financial performance and network connectivity.

The Route 895 concession transaction, like that of the Chicago Skyway and the Indiana Toll Road, may be an indication of a trend for future P3 projects. Other states, such as Georgia, Florida, Texas, and Oregon, have P3 contracts in place or in development. Virginia has advanced two new P3 toll projects to finance, plan, design, construct, operate and maintain additional lanes on interstates I-495, and I-95/395 near Washington D.C. The two Virginia projects are intended to follow the DBFOM model. There are, however, numerous possibilities for P3 contractual arrangements that include greater private sector participation in project delivery but do not require financing and equity investment by the private sector.

1.1. Background to the development of the USA interstate highway system

The USA is located in the North American continent, bordering both the North Atlantic Ocean and the North Pacific Ocean, between Canada and Mexico. Its land area is approximately 9.2 million square kilometres; its size is approximately equal to fifty percent of Russia, or thirty percent of the size of Africa. In the year 2007 its population grew past 300 million.

> The USA enjoys a large and diverse economy, "with a per capita GDP of $43,500. In this market-oriented economy, private individuals and business firms make most of the decisions, and the federal and state governments buy needed goods and services predominantly in the private marketplace. [However, despite] soaring oil prices in 2005 and 2006 [which] threatened inflation and unemployment, …the economy continued to grow through year-end 2006. Imported oil accounts for about two-thirds of USA consumption. Long-term problems include inadequate investment in economic infrastructure, rapidly rising medical and pension costs of an aging population, sizable trade and budget deficits, and stagnation of family income in the lower economic groups. The merchandise trade deficit reached a record $750 billion in 2006."[2]

The transportation systems are well developed and are multi-modal. People and products are transported by air, water, road and rail. However, its interstate highway system is aging and the state and federal governments face increasing needs and costs to maintain the existing systems.

> There are nearly 15,000 airports nationwide, and more than 33-percent have paved runways. The USA benefits from more than 40,000 km of waterways, nearly half of which are used for commerce. There are large port facilities on the Atlantic and Pacific coasts, as well as on the Saint Lawrence Seaway and the Mississippi River. Pipelines transport petroleum products (+240,000 km), and natural gas (+545,000 km (2003)). Standard gauge railways include more than 225,000 km of track.
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> The roadway system in the USA also is well developed. There are a total of 6,430,366 km roads, with approximately 4,165,000 km paved (including 75,009 km of expressways) and 2,265,256 km (2005), unpaved roads.[3]

The ideas and planning for a national highway system began almost as soon as the country was founded. The first act of the Federal government to commission an interstate road was signed by President Jefferson in 1806. The National Road, nearly 600 miles long (965 km), was completed in 1839. [4]

Shortly after its completion, the Federal government sought to turn over the National Road to the States. However, the owner of the highway would be faced with the costs of regular maintenance work. The Federal government completed road maintenance, built toll houses and then transferred ownership to the states. The states established tolls; the toll revenue was intended to pay for maintenance of the road.[5] Clearly, the need for reliable transportation, the responsibilities of the Federal and State governments to fund and construct highway improvements, the sources and uses of funds, and toll roads have been an integral part of the growth of the nation since its inception.

Transportation in the USA remained a multi-modal competition among waterways, roads and rail through the 19th century. The roads were often poorly maintained and subject to damage from weather and traffic. However, in the late 1800's the advocacy of bicyclists and the later development of the automobile led to a popular demand for a better road and highway system.[6]

The construction of the modern interstate highway system is often traced back to the Federal Aid Road Act of 1916. The act was fundamentally important in several ways. It

established a federal–state partnership, and distinct roles, in the funding, selection, construction and maintenance of a federal road system. Federal funds were provided to State governments, not to local governments; states were required to have a highway agency in order to receive funds, and each state was responsible for road maintenance.[7] It is noteworthy that this early act required that all improved roads be freeways. The act was signed by President Wilson on July 11, 1916.

The continued growth of the USA population, economy and roads, along with the experience of the two world wars, led ultimately to the Federal-Aid Highway Act of 1956. Dwight D. Eisenhower had several early experiences that later influenced his vision and support for the funding and creation of the interstate highway system. He participated in the first Transcontinental Motor Convoy of 1919 that travelled from the east coast to the west coast, and of course later observed the road systems in Europe.

> Eisenhower volunteered as an Army observer for the 1919 convoy. It "…set a world record pace for the time, travelling a total continuous distance of 3,251 miles, from Washington, D.C. to San Francisco, in 62 days, only five days behind schedule. Average speed was 6 mph and average progress per day was a little over 58 miles. … When Eisenhower became President over 30 years after the Transcontinental Motor Convoy, and after seeing the autobahns of Germany during World War II, one of his top priorities was the building of a interstate highway system in the United States. In *At Ease* he wrote, "The old convoy had started me thinking about good, two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land." (*At Ease*, pp. 166-67) [8]

The planning and subsequent funding and development of the interstate highway system has been chronicled from many perspectives. Some reports focus on the evolution of the planning and engineering of the highway system. The framework for our current planning processes was established in the earlier decades of the Bureau of Public Roads. Ultimately however, the policy and funding debate required balance between engineering and planning concerns, as well as federal support for post roads and local interest in "farm-to-market" roads. The focus of the Federal government was pragmatic during the economic depression of the 1930's; "road projects dominated work-relief efforts."[9]

1.1.1 *The Interstate System funding debate*

The Bureau of Public Roads (BPR), the predecessor to the Federal Highway Administration (FHWA), further developed its fundamental approach to highway planning during the 1930's. During this period however, many of the nation's lawmakers focused on the more pressing needs of the USA economy and its underutilized workforce. As noted by Seely, many of the plans suggested a network of toll roads; "The goal was to put people to work, not to meet specific traffic needs."[10]

The BPR continued its collection of traffic data and advanced its arguments for a needs based road network. Its 1939 report "Toll Roads and Free Roads," concluded that the proposed systems of toll roads would not satisfy the nation's transportation needs. Furthermore, the BPR suggested that the toll roads would not be financially successful. During the period of this discussion the federal-state cost sharing was 50:50. Many states had difficulty providing their share of the matching funds, and the available federal funds were not fully utilized. [11]

Several states did not wait for the USA Federal government to develop its policy or legislation for either debt (bond and toll) financing or cash (tax) financing of an improved highway system. Pennsylvania, New York and West Virginia, among others, developed their own toll roads to varying degrees of financial success. The BPR report was both right and wrong. Some toll roads provided new traffic capacity, some were financially successful, and some satisfied both the transportation and fiscal objectives.

The federal policy decisions on road funding and development were interrupted by the Second World War and delayed again by the Korean War.[12] The federal government returned its attention to road construction following the wars, in part due to rapidly increasing traffic and vehicle registrations.[13] President Eisenhower led the debate with several presentations to the United States Congress, his State of the Union addresses in 1954, 1955, and 1956, studies by his staff, and advisory committees.[14] The President signed "a bill authorizing the funding of the National System of Interstate and Defense Highways" on June 29, 1956.[15]

The bill provided $25 billion for interstate highway construction for the period 1956 to 1969. The federal share of project costs was 90 percent. The act required uniform interstate highway design standards. After years of debate about toll roads and free roads, the Congress chose a cash-based system funded by fuel taxes. The tax revenues were secured in a highway trust fund. However, toll facilities could be included in the interstate system if they were part of the integrated plan; this provision avoided the duplicate costs of "constructing toll-free routes in corridors already occupied by turnpikes."[16]

The 50th anniversary of the USA interstate highway system was an important milestone for recognizing the accomplishments of the early planners, engineers, constructors, and politicians who enabled its completion. It is also an important benchmark for evaluating the results. The recent history of federal-aid interstate funding and construction and state or private toll road development are consistent with the USA road development experience that spans the 18th through the 21st centuries: one solution does not fit all needs and constraints. Toll roads and P3 projects are but one important tool among those available to solve current needs, and are only appropriate for specific and unique circumstances.

1.1.2 *The Commonwealth of Virginia and its road development*

The Commonwealth of Virginia is one of the 13 founding states of the USA. Its population is approximately 7.6 million people (2006 estimate), comprising approximately 2.7 million households. Its median household income is approximately $51,103 (USA $2004).

Virginia, similar to many other states on the east coast of the USA, has a higher population density than average for the USA. Its land area is approximately 102,500 square km The number of persons per square km in Virginia (2000), was approximately 70, as compared to a nationwide average of 31 persons per square km. Considering a more global comparison, Virginia is approximately one-sixth of the land area of France, and its population density is slightly lower (70 persons per sq km v 98 persons per sq km in France).

The state role in transportation was formally established in 1906, when the Virginia General Assembly created the first State Highway Commission. The State Highway Commission is now the Virginia Department of Transportation (VDOT), which is responsible for the third-largest state-maintained highway system in the USA. The 93,128 km (57,867-mile) state-maintained system is divided into the following categories[17]:

- Interstate – 1,799 km (1,118 miles) of four-to-ten lane highways that connect states and major cities. The entire USA interstate system totals approximately 75,185 km (46,718 miles in 2006)
- Primary – 13,050 km (8,111 miles) of two-to-six-lane roads that connect cities and towns with each other and with interstates.
- Secondary – 77,740 km (48,305 miles) of local connector or county roads. Two counties maintain their own county roads.
- Frontage – 535 km (333 miles) of frontage roads.
- A separate system includes 16,996 km (10,561 miles) of urban streets, maintained by cities and towns with the help of state funds. Virginia's cities are independent of its counties. Henrico County (2,058 km or 1,279 miles) and Arlington County (578 km or 359 miles) maintain their own roads with VDOT funds. There is an additional 63 km (39 miles) of toll roads maintained by others.

The development of the highway system in Virginia closely parallels the policies that drove the development of the USA interstate system. That is likely a result of the strongly influential Senator Harry F. Byrd of Virginia (1933 – 1965). Byrd was also a former Virginia State Senator (1915 – 1925), and Governor of Virginia (1926 – 1930), who was instrumental in shaping Virginia's road development policies. Byrd's pay-as-you-go philosophy dominated Virginia policy for decades, and is mirrored in the Federal program. Both the state and Federal program continue to rely on dedicated gas tax revenues to fund a majority of the highway construction and maintenance costs.

Byrd was elected to the Virginia State Senate in 1915, and served on the highway committee.[18] In 1916, the Virginia General Assembly set aside income from vehicle registration fees for road maintenance. That same year the USA government passed the first federal-aid highway program. In 1923, Virginia enacted a three-cent-per gallon gasoline tax to produce revenue for road construction. Also in 1923, voters defeated a bond issue referendum for road construction due in large part to Senator Byrd's vigorous campaign against debt financing. The success of the gas tax legislation and the defeat of the bond referendum in the same year established Virginia's approach to highway financing for the next seven decades.

The gas tax was adjusted numerous times throughout Byrd's tenure in State and Federal government, to compensate for inflation and increased road construction and maintenance needs. The gas tax was increased in 1926 and again in 1928. Virginia's last significant adjustment to the gas tax was enacted in 1986, and a mix of cash and debt (bond) financing are now relied on to fund the highway program.

VDOT's annual budget for Fiscal Year 2006-07 is $3.8 billion. About 29 percent of allocations go to highway systems construction, 37 percent to roadway maintenance, and the rest to debt service, operations, payments to other agencies, administration, special financing and earmarks.[19] The breakdown (in USA $2006):

$264 million - debt service
$1.5 billion - road maintenance (includes city and county street payments)
$557 million - operations, payments to other agencies, administration
$341 million - special financing and earmarks
$1.1 billion - system construction
$3.8 billion - total VDOT annual budget

Like many states, Virginia now must address the costs of aging infrastructure as well as the needs for additional road capacity. A significantly greater proportion of its annual budget is spent on maintenance of the existing system. The traditional funding sources (gasoline taxes), have not been adjusted for inflation in the last 20 years, and are not adequate to build the additional roadway capacity needed to maintain efficient transportation of people and products. As a result, state highway agencies are turning to other sources to access additional funds when appropriate. In some cases, those additional sources include private investment in P3 projects. The case for toll roads in limited circumstances has returned to the state and national highway agenda.

1.1.3 *Funding shortages and the PPTA*

Continued growth in the northern Virginia suburbs and increased traffic delays led to unmet needs for highway capacity. In response to a perceived business opportunity and limited State funds to construct new highways, a private consortium provided a plan to design, build, finance, operate and maintain (DBFOM) a new toll road between Leesburg and the Dulles International Airport. The consortium, Toll Road Investment Partnership II, L.P. (TRIP II), was granted a franchise from the State Corporation Commission (SCC), to develop the project.

TRIP II opened the Dulles Greenway in 1995. The 22-km road is regulated by the SCC in a manner similar to a public utility company. VDOT provided design and construction oversight. The facility will revert to the State upon completion of its franchise agreement.

The initial financial performance of the Dulles Greenway did not meet forecasted revenues. The consortium defaulted on its debt in 1996 and refinanced its debt in 1999.[20] However, the public accounting of the financial performance does not consider the tax depreciation benefits afforded a private owner. The Macquarie Infrastructure Group (MIG) acquired the franchise rights in 2005 from the Bryant/Crane family and Kellogg Brown & Root. The current franchise agreement will expire in 2056.[21] Despite its less than desirable initial performance, traffic volumes have grown steadily since its first opening. MIG's acquisition clearly demonstrates the facility to be a valuable asset.

The experience of the Dulles Greenway development, coupled with the increased pressures on VDOT's budget led to consideration of a more practical legislative framework for public-private partnerships for transportation projects. Virginia enacted the Public-Private Transportation Act in 1995 (PPTA). Notably, the PPTA allows for the State to solicit proposals for new projects, and to receive unsolicited proposals from potential private sector investors. Unlike the Dulles Greenway that was developed under the SCC, the PPTA enables any "responsible public entity" that has the authority to develop and/or operate a qualifying transportation facility, to develop P3 partnerships.

The policy objectives of the PPTA are clearly stated and are excerpted below:

> *Code of Virginia § 56-558. Policy.*
>
> *A. The General Assembly finds that:*
>
> *1. There is a public need for timely development and/or operation of transportation facilities within the Commonwealth that address the needs identified by the appropriate state, regional, or local transportation plan by improving safety, reducing congestion, increasing capacity, and/or enhancing economic efficiency and that such public need may not be*

wholly satisfied by existing methods of procurement in which qualifying transportation facilities are developed and/or operated;

2. Such public need may not be wholly satisfied by existing ways in which transportation facilities are developed and/or operated; and

3. Authorizing private entities to develop and/or operate one or more transportation facilities may result in the development and/or operation of such transportation facilities to the public in a more timely, more efficient, or less costly fashion, thereby serving the public safety and welfare.

B. An action, other than the approval of the responsible public entity under § 56-560 of this chapter, shall serve the public purpose of this chapter if such action, including undertaking a concession, facilitates the timely development and/or operation of a qualifying transportation facility.

C. It is the intent of this chapter, among other things, to encourage investment in the Commonwealth by private entities that facilitates the development and/or operation of transportation facilities. Accordingly, public and private entities may have the greatest possible flexibility in contracting with each other for the provision of the public services which are the subject of this chapter.

D. This chapter shall be liberally construed in conformity with the purposes hereof.

(1994, c. 855; 1995, c. 647; 2005, cc. 504, 562; 2006, c. 922.)

2. THE ROUTE 895 POCAHONTAS PARKWAY P3 PROJECT

"I am delighted to be here today to see cars travel on the first open phase of this road," said [Virginia] Governor Warner. "It is my hope that the Pocahontas Parkway will be viewed as a successful model of the Public-Private Transportation Act, getting this road built at least 15 years sooner than it would have been through public funds alone."[22] Governor Mark Warner's speech at the May 2002 ribbon cutting for the opening of the Pocahontas Parkway (Route 895) was prophetic in signaling a phased future for the first P3 construction project (2002) and the first P3 concession agreement (2006) implemented under Virginia's P3 program.

The Pocahontas Parkway was planned as an 8.8 mile four-lane roadway built to interstate standards connecting the Chippenham Parkway at Interstate 95 to Interstate 295 in the southern portion of the Richmond metropolitan area. The facility has three interchanges with the I-95 interchange containing complex elevated ramps and a 4,765' long, high-level bridge spanning 145' over the James River that will allow larger ships to enter the Port of Richmond.

2.1. Phase 1 – Virginia's First P3 Toll Road

The first phase of the Pocahontas Parkway, which was the construction of the toll road, began as an unsolicited proposal submitted under the PPTA by FD/MK (Fluor Daniel & Morrison Knudsen), Limited in November 1995. VDOT had already completed extensive environmental and community planning, which resulted in a record of decision from the FHWA in 1984. At the time FD/MK submitted their unsolicited proposal, VDOT had

completed approximately 60% of the design, but had insufficient funding in their Six-Year Improvement Program to construct the project.

FD/MK, which was a joint venture partnership between two global contractors, proposed to construct and toll the roadway as the design-build contractor and the project developer. As the design build contractor, FD/MK would accept a majority of the risk associated with a lump sum, fixed price and date design-build contract valued at $324 million. As part of the design build contract, FD/MK utilized contractors from all around Virginia in a competitively bid procurement.

As the project developer, FD/MK had the right and obligation to issue bonds to finance the project, collect tolls to reimburse the bond holders and manage the facility. FD/MK would establish the Pocahontas Parkway Association (Association) which is a Virginia non-stock, non-profit corporation pursuant to Internal IRS Revenue Ruling 63-20. VDOT and the Commonwealth Transportation Board, Virginia's transportation oversight board, would retain ownership of the facility.

1.1.4 *Investment in a Partnership*

Besides being Virginia's first P3 construction project completed under the PPTA, the Pocahontas Parkway also initiated a programmatic philosophy of developing true partnerships in financing complex infrastructure projects. Bringing together pooled funding resources from both the public and private sectors meant that both partners had a financial stake in the prosperity, efficiency and success of the project. This same philosophy can be seen in current P3 projects being developed in Virginia and the USA. Equity investment, pooled resources, shared risk are all cornerstones of an investment in a partnership.

In regards to the unique financing partnership for the Pocahontas Parkway, the Association submitted a finance plan which had been utilized by several other USA public private partnership financing groups. The team created a 63-20 corporation that issued tax-exempt debt by leveraging future toll revenues to finance the project's construction. The financing package included $354 million in tax-exempt toll revenue bonds, $9 million in Federal funds and $18 million in State Infrastructure Bank (SIB) loans.

As noted earlier, the Pocahontas Parkway was opened to traffic in 2002, which as Governor Mark Warner noted in his address at the ribbon cutting was "built at least 15 years sooner than it would have been through public funds alone."[23] The innovative procurement, construction and pooling of the financial resources developed a true public-private partnership and there was pavement on the ground and concrete in the air to prove it.

2.2. Phase 2 – Virginia's First P3 Concession

The second phase of the Pocahontas Parkway began four years after the 2002 opening of the toll road. Traffic and growth projections along the facility had not been realized over the short life off the Parkway. VDOT and the Association were searching for innovative methods to enhance the financial picture of the toll road. At that time, the Association was paying down the debt of the bonds and VDOT was paying the bills to operate, maintain and repair the facility.

In 2005, Transurban, LLC, approached VDOT and the Association with a proposal to assume the rights and obligations to manage, operate and maintain the Pocahontas Parkway in exchange for a 99-year concession lease. The lease would allow Transurban the right to collect tolls and utilize their in-house resources in order to efficiently maintain and improve the facility.

After 18 months of negotiations, VDOT executed an Amended and Restated Comprehensive Agreement (ARCA) allowing Transurban a sole right to manage, operate and collect tolls on the facility. Simultaneously, Transurban and the Pocahontas Parkway Association executed an Asset Purchase Agreement.

The commercial terms of the agreement, which was valued at over $500 million, provided that Transurban was responsible for the following:

- Pay off approximately $500 Million in existing debt owned by the Pocahontas Parkway Association;
- Reimburse VDOT for cost incurred to operate, maintain and repair the facility;
- Finance and build the Airport Connector, subject to gaining federal loans;
- Taking responsibility for the cost management for all operations and maintenance of the facility; and
- A permit fee defining revenue sharing provisions with Virginia if the facility exceeds expectations.

Financial closure of the first P3 concession in Virginia occurred in June 2006. "With Virginia taking smart advantage of the resources that the private sector brings to the table, we are able to move forward on important transportation projects that would otherwise not be possible," said [Virginia] Governor Timothy M Kaine.[24]

3. THE PROPOSED I-495 HOT LANES P3 PROJECT

The Capital Beltway (I-495) is probably one of the most well known roadways in the USA due to its proximity to the Nation's Capital and for the significant recent economic development and population and traffic growth around the Beltway. This highway was designed as part of the original Interstate Highway Plan in the 1950's and was opened to traffic as a two-lane bi-directional facility in 1964. Today, the Beltway is a multi-lane circumferential highway traversing through the surrounding urban areas of Washington, D.C. The 22-mile section (64-mile total length) in Virginia links with Maryland at the crossing of the Potomac River and forms an arc from the American Legion Bridge on the northern border to the Woodrow Wilson Bridge on the southern border.

Pursuant to the PPTA, in June 2002, Fluor Daniel (original developer of the Pocahontas Parkway) submitted an unsolicited conceptual proposal to the Virginia Department of Transportation (VDOT) requesting the right to develop and operate approximately 14 miles of I-495 from the American Legion Bridge to the Springfield Interchange by providing improvements to the general purpose lanes and adding high occupancy toll lanes (HOT). It was clear from the conceptual proposals that the amount of public dollars needed to move the project forward was unavailable from Virginia and that the proposers would have to bring innovative ideas and equity investment to the proposal to create a financially feasible project. The private sector met this challenge by adding Transurban, an equity investor, to their development team. In August 2004, VDOT's commissioner made a

decision to begin negotiations of a comprehensive agreement for the Beltway HOT Lanes project with the team of Fluor Daniel and Transurban under the PPTA.

3.1. Private proposals and a public planning process

During the procurement process and development of the preliminary engineering documents there have been many challenges that both the public and private sectors continue to encounter and strive to overcome. Two of the more significant challenges involve the level of scope definition with the procurement of an unsolicited proposal and overcoming the financial challenges of implementing a very large infrastructure improvement project with limited public funds.

Virginia's PPTA allows for the development of a solicited proposal by VDOT and the submittal of unsolicited proposals by the private sector. When an unsolicited proposal is submitted to VDOT, the level of scope definition is usually limited to a concept and in most cases the proposal does not contain the preliminary engineering and design documentation needed to accurately estimate the budget, and finance and construct the project. This creates challenges for the public sector on both the state and federal level.

At the Federal level, the information gained from the environmental review process created in the National Environmental Policy Act (NEPA) of 1969, provides essential information for the public and private sectors to determine the scope of the project and potential risks. NEPA requires state and federal agencies to integrate environmental values into their scope definition process by considering the environmental impacts of any proposed actions and reasonable alternatives to those actions.

On the Beltway HOT Lanes project, the Federal Highway Administration (FHWA) made a determination that an Environmental Impact Statement (EIS) was the required level of documentation needed to define and consider the environmental impacts caused by the development of the Capital Beltway project. At the time of the unsolicited proposal, the environmental documentation was unfinished and the EIS did not contain a candidate alternative specific to the HOT Lanes concept. This created an initial challenge of including the concept in the environmental documentation so the impacts of the proposed alternative could be properly defined, assessed and documented.

Additionally, this created a challenge for VDOT, which was required to initiate evaluation of a procurement utilizing a conceptual proposal and scope that lacked approval by FHWA through the NEPA process. As the procurement proceeded without the NEPA approval, the risk potential increased for both the public and private sectors. The private sector was expending at-risk dollars to advance the project and the public sector was evaluating conceptual information that did not enable careful evaluations of significant business issues related to the financial feasibility of the project.

The type of challenge noted above is prevalent in other public-private partnerships proposals to government agencies that allow unsolicited proposals. Besides having an undefined scope or unfinished environmental process, the proposed project could be inconsistent with the Constrained Long Range Plan (CLRP); inconsistent with other state, local or regional transportation plans, or in conflict with the priorities of the transportation agency.

VDOT has initiated a P3 program that proactively identifies potential P3 projects, develops the preliminary engineering documentation (including the environmental documents,

interchange justification reports, toll feasibility studies, etc.) that refines the scope of the project for the private sector. Providing this information to the private sector while they are developing their conceptual proposal will allow for a fair, competitive and consistent procurement and ultimately a lower price for the infrastructure.

3.2. Public projects and private funds

The second significant challenge for the Capital Beltway project was the lack of public dollars to fund the project. As noted earlier in this document, the buying power of traditional highway funds from the state, federal and local governments to develop new infrastructure is being reduced every year by the rising cost of construction and maintenance needs (inflation). When the conceptual proposals for the Capital Beltway project were submitted, there remained a significant shortfall in the estimated cost of the project and the public funds requested by the private sector to make the project financially feasible. VDOT informed the private sector proposer that the public dollars requested were not available and an innovative financial approach by the private sector would be required to advance the proposal.

One of the cornerstones for development of a public private partnership is the pooling of resources that may not be accessible to the public sector partners. These resources may be people, materials, equipment or money. The Fluor Daniel team brought together team building and financial resources to present a revised financial plan with their detailed proposals that reduced the funding gap by bringing in a new team member that was able to provide a substantial equity investment in the project. The Fluor-Transurban team presented an improved financial proposal to advance the project to the development stage. Virginia and the Fluor-Transurban team signed a comprehensive agreement in April 2005 and continue to work as partners to advance to the planned construction and financial closure of the project in 2007 or 2008.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. The engineering is the easy part…

The engineering issues of P3 projects are frequently less demanding than the development risks, which include substantial financial and operational challenges. That is not intended to suggest that the engineering is simple or inconsequential. The designers play a critical role, to work with the builder, to develop the most cost effective solution to reduce life-cycle costs for facility operation and maintenance. Although, the engineering challenges are frequently significant, those issues may be overshadowed by the financial and operational items that must be addressed in a new way.

Few greenfield toll projects are likely to be revenue positive. As a result, appropriate selection and planning of P3 DBFOM projects is a fundamental factor in project success. These few revenue positive projects are likely to be for limited access facilities with traffic congestion near growing population centers.

Project partners and investors must quickly evaluate the potential project costs and revenues. The pressures of time are significant, and the largest single line item cost may be the escalation cost due to inflation. Therefore, a project that offers a relatively short schedule between the selection of a preferred developer through the phases of financial closing and construction may be more attractive to potential developers. If time is of the

essence, then two success factors may be the completion of the NEPA environmental review process prior to the procurement phase, as well as early completion of preliminary traffic and revenue studies.

The NEPA process is a critical milestone for scope definition and for project approval by the state, regional metropolitan planning officials, and by federal transportation officials. The environmental review process will likely identify significant environmental impacts and risks. It will provide potential project sponsors the information needed to assess the feasibility of obtaining the essential environmental permits. Although the results of the NEPA process may reduce potential for timely changes to the project scope, its completion provides an indication of project certainty that is important to project sponsors.

While completion of the NEPA process provides a basis for project support by the responsible public agency, the traffic and revenue forecasts are also an important factor for public agencies and private investors. Such early studies are not investment grade documents, but provide a preliminary basis for project selection. If such early studies indicate that there are adequate free roads, or that the potential toll revenues will not offset the construction, operations, maintenance, and finance costs, then the public agency should carefully consider its project delivery model. Perhaps a P3 partnership is practical, but may require a partial subsidy of public transportation funds.

4.2. Policy and programmatic direction

The Virginia PPTA establishes clear public policy objectives; general methods and measures for project selection are further defined in Virginia's PPTA Implementation Guidelines. Methods and measures for selection of a preferred developer are detailed in project specific procurement documents. Those documents provide the agency, the public and potential private developers with the framework for Virginia's P3 program.

There are numerous complex issues to consider when developing and implementing a P3 program. Virginia's P3 program is evolving. The legal and policy framework continue to change to address new issues. Legal issues that have been addressed by the Virginia General Assembly and the Governor include:

- Objectives and relevant projects
- Whether to accept unsolicited proposals from industry
- How to allocate concession payments
- Transparency in government and public involvement - The Freedom of Information Act and the PPTA
- Vehicles exempt from tolls on certain facilities (HOV v. HOT)

There are numerous other policy issues that must be addressed on a programmatic or project specific basis. Such policy level topics include:

- Has the agency clearly identified its plans and priorities?
- Do the agency's processes promote innovation?
- Whether to address highway and/or multimodal needs
- Which party sets toll rates?
- Which toll regime is most appropriate – set rates, congestion pricing, or specific vehicle types (e.g. truck only toll lanes)?
- Will the agency share responsibilities or contribute funds to the project?
- Which party will operate the facility and collect tolls?

- Which party is responsible for toll enforcement?

Each agency must address those issues as pertinent to its legal framework and programmatic objectives. There are many potential solutions to each problem. Each agency can determine its preferred method of project delivery after careful evaluation of the pertinent legal framework, policy objectives, and project characteristics (scope, cost, and revenue potential).

4.3. A P3 program requires resources

The issues and studies that must be addressed require significant financial and personnel resources. Prior to 2003, VDOT did not dedicate specific staff to develop a P3 program, nor to evaluate unsolicited proposals from the private sector. As a result, VDOT addressed project proposals with ad hoc committees and did not solicit P3 proposals for its priorities.

Since the PPTA was enacted in 1995 VDOT has received more than 50 unsolicited proposals for more than 20 projects. Only eight of those proposals have been awarded contracts. VDOT has completed five design-build P3 projects for a combined value of $767 million. An additional contract is under construction, for more than $320 million of design-build work.

After reviewing VDOT's progress under the PPTA, the Transportation Commissioner, VDOT's Chief Engineer, and VDOT's Chief Financial Officer determined to establish the resources necessary to direct a proactive P3 program. The Chief Engineer established the Innovative Project Delivery Division (IPDD) to procure and implement P3 projects, and identify priority projects for procurement. The Chief Financial Officer instituted the Innovative Finance and Revenue Operations Division to manage the Agency's bond program, manage VDOT's toll facilities, and to evaluate the financial aspects of potential P3 projects. The two divisions, staffed by nearly 30 engineers, planners, and financial professionals, now work closely together to evaluate, develop and implement the department's P3 program. These staff resources are supplemented by project development funds, technical staff from other divisions and agencies, and engineering, legal, and business consultants.

The USDOT and the FHWA have also provided resources to support P3 programs nationwide. The FHWA developed its own P3 support teams within the FHWA Headquarters and within its Virginia Division. VDOT's federal partners are an essential part of the success of its P3 program.

4.4. P3 is not a panacea

The DBFOM P3 model is a unique delivery tool for a small percentage of carefully selected projects. The vast majority of VDOT's construction projects are delivered by conventional design-bid-build procurement. VDOT develops the plans, specifications and contract documents, and awards more than 300 construction contracts each year to the lowest responsive bidder. It is anticipated that design-bid-build procurement will continue to be VDOT's predominant project delivery method. Quite simply, most of its small road construction contracts would not be profitable toll roads and are not attractive to investors.

However, the P3 model is an important tool for public agencies. If an agency can develop priority projects in congested areas with private funds that are otherwise not accessible, then its limited public funds may be allocated to important projects that are not attractive to private investors. Those opportunities are unique and limited.

VDOT has recognized that few green-field projects will be revenue positive. It has developed project screening criteria and will continue to identify candidate projects that may provide opportunities for DBFOM partnerships. Those candidate projects may include partnerships completely financed by private partners as well as candidate projects that require a blend of public and private funds.

As in the case of the 895 refinancing agreement, future opportunities may also include brownfield projects coupled with requirements for capacity improvement or multi-modal collaboration, and may include DBOM contracts with availability payments from public funds. The possibilities for the broader definition of public-private partnerships are extensive, as both parties seek creative ways to optimize use of limited resources to deliver priority transportation projects.

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