

INTERSTATE 66 CORRIDOR IMPROVEMENTS FROM US ROUTE 15 IN PRINCE WILLIAM COUNTY TO INTERSTATE 495 IN FAIRFAX COUNTY

REQUEST FOR INFORMATION
RFI Closing Date: November 25, 2013



Kiewit

November 25, 2013

ATTN: Morteza Farajian
Office of Transportation Public-Private Partnerships
600 E. Main Street, Suite 2120
Richmond, VA 23219

RE: OTP3 REQUEST FOR INFORMATION RESPONSE-INTERSTATE-66

Dear Morteza Farajian:

Kiewit Infrastructure South Co. and Kiewit Development Company are grateful for the opportunity to provide a response to your Request for Information on the Interstate 66 Corridor Improvements project. We believe our response contains practical information gleaned from more than 44 years in the transportation and heavy civil construction markets that will assist in the decision making process for this project.

Kiewit Infrastructure South Co. and Kiewit Development Company are subsidiaries of Kiewit Corporation, which is one of the largest and highly regarded construction and engineering organizations in North America. Kiewit operates through a network of district and area offices located throughout the United States. Through this network, these operating subsidiaries are competitive, local contractors with the relevant experience and backing of a financially stable, national firm. These subsidiaries share specialized personnel and equipment resources to strengthen their project teams and provide clients with superior service.

At Kiewit, innovation is a driving factor of the company's culture. We consistently find better, faster, smarter ways of doing things. We fine-tune to meet our clients' needs. We continue to adapt our business model to the times and in doing so, we remain entrepreneurial, innovative and, most of all, competitive. In preparing this response letter, we drew upon the extensive knowledge of a wide range of Kiewit organizational entities and personnel, with expertise in alternate delivery, mega-project management, and highway and transit system improvements. Kiewit's strength has always been the high caliber of our team members and their willingness to go above and beyond to solve our client's challenges. We have engaged these dedicated, knowledgeable personnel to craft our answers.

Kiewit has vast experience with a wide range of alternative project delivery methods such as Public-Private Partnership, Design-Build, and Construction Management at Risk. In fact, we deliver approximately 75 percent of our work to clients through alternative delivery methods projects.

We look forward to participating in additional future industry outreach for this exciting project, and ultimately submitting a response. Please do not hesitate to contact me or our team if we can further assist you in bringing the Interstate 66 Corridor Improvements to fruition.

Sincerely,


BENJAMIN J. CARNAZZO
Senior Vice President, District Manager
KIEWIT INFRASTRUCTURE SOUTH CO.


JOE WINGERTER
Vice President, Origination
KIEWIT DEVELOPMENT COMPANY

INTRODUCTION

Kiewit Infrastructure South Co., a subsidiary of Kiewit Corporation, has worked hard to earn the distinction of one of the industry's most respected contractors and has a demonstrated track record of successfully completing some of North America's largest and most complex projects. We have built miles of freeways, highways and bridges, and consistently oversee each detail to ensure our clients' expectations are met. This commitment has kept Kiewit in the *Engineering News-Record's* top 10 of contractor rankings since 1995.

Kiewit Development Company (KDC), also a subsidiary of Kiewit Corporation, has developed a multi-faceted business presence across North America with a staff of management, development, technical, financial, and legal experts dedicated to investing equity capital and successfully delivering Public-Private Partnership (P3) projects. KDC assists Kiewit Infrastructure Group by bringing the expertise, experience, and resources needed to manage the necessary development and financial elements required to support execution a P3 project of this size and complexity.

Collectively, the Kiewit companies have been involved in many P3 projects throughout North America. This includes the Midtown Tunnel project, a \$2.1 billion design-build finance-operate-maintain project in the state of Virginia. This project consisted of building a new two-lane tunnel next to the Midtown Tunnel, improving the existing Midtown Tunnel, extending the Martin Luther King Freeway, and other improvements. In addition, Kiewit recently reached a successful financial close in the Goethals Bride Replacement Project, a \$1.5 billion P3 project in New York City that involved replacing an 85-year-old bridge.

A) GENERAL

1. Please describe your firm, its experience in relation to public-private partnership projects, and its potential interest in relation to the Project (e.g., design/engineering firm, construction firm, operations and maintenance firm, lender, equity investor, etc.)?

Kiewit Corporation had 2012 revenues exceeding \$11 billion, a bonding capacity of \$8 billion, and no operational long-term debt. Our strong balance sheet offers clients the assurance their projects will get completed. Kiewit was ranked by Engineering News Record in 2012 as No. 3 in Mass Transit and Rail, No. 2 in Transportation, and No. 4 in the Top 100 Design-Build Firms. Kiewit's workforce includes 11,500 core staff and 18,500 skilled craft workers. Our people make Kiewit a career. The average tenure is an impressive 27 years for executives, 23 years for district managers, 15 years for project managers and 11 years for superintendents. Our project management teams are on-site from start to finish, and the key decision-makers are committed and readily available to make sure our projects have sufficient resources at all times to meet schedule and quality performance standards.

Kiewit has one of the largest and most modern privately-owned equipment fleets in North America with 26,000 units—including specialized track and paving equipment—with a replacement value of \$2.4 billion. Our equipment is efficiently mobilized to all regions of the country at a moment's notice. We will also draw upon our affiliates' specialized personnel and equipment from local project sites.

To date, Kiewit has delivered nearly \$40 billion in design-build/P3 projects. Our success is based on the trust built with government officials, project stakeholders, and the financial community. As a recognized leader in design-build and private sector finance projects, Kiewit combines financial credibility (A private S&P rating) and extensive resources with a creative, solution-oriented approach to make public-private projects a reality.

Kiewit's potential involvement includes the role of developer, design-build contractor, O&M/lifecycle and equity investor. The final structure and form of the delivery method will ultimately determine the services and value offered. Kiewit has consistently undertaken the cost and schedule risk associated with construction during the design-build phase of P3 projects, and is confident in its ability to deliver construction projects. Taking this to the ultimate level of commitment for our clients, we are willing to invest in delivery and performance while participating with "best for the project" decisions as part of the concessionaire consortium. As a result, Kiewit is able to commit equity in the Special Purpose Vehicle Entity. On the Goethals Bridge Replacement Project, an important P3 availability-based project that connects New York's Stanton Island to New Jersey, Kiewit is participating as a design-build contractor, equity investor, maintenance/lifecycle partner/developer and the construction joint venture.

Our other regional project experience includes the design-build WMATA Red Line Tier I improvements in Washington D.C.; the Inter-County Connector-Contract B, an award-winning, design-build highway project in Montgomery County, MD; and the Telegraph Road Interchanges widening and reconstruction bid-build project in Alexandria, VA.

2. Are there any particular concerns with any of the information that has been provided in this RFI, the Detail-Level Project Screening Report or the DEIS? Please explain any concerns and provide any proposed solutions or mitigations to address those concerns.

While we look forward to supporting VDOT optimize a successful procurement and delivery of the I-66 project, if the delivery method becomes a toll-based concession, where the state requires the private sector to take the risk associated with projected future revenues, the project will be viewed as a speculative and expensive venture and be constrained with a significant reduction in the competitive field. If that occurs, Kiewit will probably not pursue this project. We believe a successful P3 project is one where each risk has been allocated to the party best able to manage it; and, the risks that should be assigned to the private sector are the ones that can be commercially mitigated at a reasonable cost. Experience has shown that shifting the revenue risk to the private sector in a competitive procurement creates an environment that significantly drives the owner's value downward with substantially higher weighted cost of capital (three to four times the equity required for nearly twice the term). Our solution is using the Availability Payment model where the public bears the revenue risk.

Unlike the majority of states that have enacted P3 legislation, the legislation framework needed for executing an Availability Payment model does not currently exist in Virginia. We fully support and are willing to assist with VDOT's initiative to pursue the necessary legislative actions to add the Availability Payment model to its toolkit.

3. What, if any, advantages will the Commonwealth potentially gain by entering into an agreement in which operations and maintenance, lifecycle responsibility, and/or traffic and revenue risk are transferred to the private sector? How do you assess the likely magnitude of such advantages? What are the potentially offsetting disadvantages?

Transferring O&M Risk to the Private Sector: Assigning the Operation and Maintenance responsibility and risk to the private sector fosters innovation and provides incentives to consider the most efficient design and construction solution for optimizing lifecycle costs. When the private sector is responsible for the design-build period, the objective is minimizing the cost with less consideration of the financial consequence of O&M costs after design-build. However, once the private sector is responsible for O&M and design-build, the objective can become identifying the best solution to minimize the net present value of capital cost and lifecycle cost of the asset.

For instance, using a specific material may be cheaper in the design-build phase, but more difficult to deal with in the operation period and require a significant amount of maintenance cost. In contrast, an alternative material may be more expensive in the construction period, while leading to a smoother asset operation and cheaper maintenance cost. Therefore, the fully integrated approach of the design, construction and O&M teams collaborating to achieve the best solution would foster innovation and optimization of asset lifecycle costs that simply can't be achieved if each entity worked independently. The state also benefits from the predictability of high-level O&M and rehabilitation costs throughout the term.

With clearly defined O&M requirements and metrics, the state actually receives an asset at the end of the concession period that is nearly the same quality as it was at the commencement of the contract.

Transferring Revenue Risk to the Private Sector: Transferring the revenue risk to the private sector increases the overall price; decreases value for money to the owner; reduces competition; alters the objective of the concessionaire from delivering the best solution to maximizing the revenue; and, in extreme cases, makes the project non-financeable. Once the revenue risk is transferred to the private sector, the investors and lenders assume significant margin risk and thus require a higher rate of return on their investments, which results in a significantly higher bid price. As a result, the value for money to the owner may decrease as the present value of all the costs incurred during the asset's lifecycle would increase materially.

Moreover, there are numerous documented toll concessions in the U.S. and internationally that have faced serious problems of traffic prediction, and have defaulted, leaving the authority with an unpredictable long-term maintenance profile, and erosion or public/lender confidence, and numerous creditors (potentially including local small and disadvantaged

businesses) that become “victims” of the default process. Thus, transferring the revenue risk to the private sector in a competitive procurement can have a material impact on the project’s competitive landscape. In current market conditions, most investors and lenders are no longer likely to take aggressive positions on highly uncertain revenue projects.

Furthermore, if the revenue risk is transferred to the private sector, the concessionaire’s most important objective would be maximizing the revenue. However, in an Availability Payment structure where the fixed payments from the public are subject to availability and performance of the road, the concessionaire’s most important objective would be giving the best service to the public. As demonstrated by the steep growth both nationally and internationally in the AP P3 model, many other DOTs and transportation agencies also believe that revenue risk should be retained by the public sector because it is the most suitable entity to manage this particular risk.

B) PROCUREMENT PROCESS

4. Do you have any particular concerns with or major observations about the milestone schedule provided in this RFI? Please provide your views on proposed solutions to address these concerns?

The length of the proposal period depends on the quality of the project documentation, including elements such as the Tier II ROD, ROW acquisition, legal documentation, and technical documentation. It is beneficial to resolve (or significantly advance) these issues prior to issuance of an RFQ to experience a smooth and focused proposal period. The project timeline should consider the required bid commitment period, commercial and financial close, and decision making periods for VDOT. In addition, the timeline should be committed and transparent so all parties can use it as a reliable tool to deliver the project.

Including a draft RFP in the procurement process enables teams to better evaluate potential commercial terms, risk, public impacts and third-party coordination. A reasonable duration for final RFP preparation is four to six months after issuance of the draft RFP. Moreover, there should be adequate time between commercial close and financial close. For example, the recently executed Goethals project contracts contained a five-month period between the RFP submission deadline and commercial close, and a two-month period between commercial close and financial close. We suggest a similar timeframe for this project.

5. What are the critical path items for the procurement of this Project and why?

These items should be in place prior to the RFP:

- » Relevant permits and approvals to ensure the project is executed in a timely manner.
- » Utility risk needs to be identified and understood by the owner and potential contractors to the greatest extent possible. Costs associated with unanticipated additional utility work should be capped, and the contract should provide a mechanism for compensation in the event of a schedule delay triggered by this unanticipated work.
- » A familiar/bankable Project Agreement should be developed for all proponents to bid on. This requires VDOT to issue a draft; and then, through a process of separate confidential meetings, determine whether any changes to the risk allocation should be made.
- » The appropriate legislation required to enable the Availability Payment model in Virginia.

In terms of schedule development, our experience suggests consideration of the following elements:

- » Focusing on project development and structure, including preparation of RFQ and RFP documents. Since design risk transfers to the private sector under this approach, we require only enough design to define the parameters of a performance-based specification to develop a complaint proposal.
- » Acquiring additional rights-of-way, when needed, should be considered critical.
- » Applying early, or “in principle” application, for construction permitting requirements on the schedule’s critical path would benefit the schedule and assist in achieving the target opening date.
- » Identifying and capping the utility cost risk, as well as realistic timeframes and potential extensions for the utility schedule risk.

6. Looking ahead over the next two to three years, do you believe your firm will be interested in submitting a committed proposal for the development of the Project (any or all of the build concepts)? Are there any particular concerns that may prevent your firm from getting engaged in the project development? How might those concerns be resolved?

We will be interested in submitting a committed proposal for the development of this project. However, our role will be directly impacted by the decision whether or not it will retain project revenue risk. We believe that the Availability Payment model, in which the revenue risk is retained by the public sector, will generate a much stronger response by potential bidders in this marketplace. Kiewit will be ready to commit equity and act as the developer, design/construction joint venture, and possible O&M provider, if the revenue risk is retained by the public entity. Other critical factors determining our participation in the project are:

- » Demonstration of project feasibility
- » VDOT/stakeholder commitment to the project, and one or more high-level project champion(s)
- » Level of detail and transparency of data available regarding funding, environmental, technical, traffic reports, and other key components required to ultimately deliver the project
- » Demonstration of a process that provides a level playing field for the evaluation and selection of the best-value proponent
- » Alignment of risk allocation and compensation structure
- » Compensation upon termination provisions
- » Balanced and symmetrical risk allocation between public and private sectors

We believe a commercially reasonable and balanced risk allocation in a P3 project between public and private sectors should be as follows:

- » Risks that can be commercially mitigated at a reasonable cost should be transferred to the private sector. Some examples include risks related to completion (schedule), design and construction quality, operations, lifecycle maintenance, financing, and an insurable event.
- » Risks that cannot be commercially mitigated at a reasonable cost should be transferred to the public sector. These risk areas include permitting, land expropriation, pre-existing site conditions, contamination, changes in law, third-party commitments, ROW, revenue risk, utility delay, and an uninsurable event.

7. What is the minimum amount of time that your firm requires to develop and submit a committed detailed proposal for the Project after issuance of potential RFP?

We recommend VDOT allows four to six months between issuance of the final RFP and the submission deadline to ensure sufficient time for proposers to develop alternate technical concepts, and allow for comments to the DBFOM agreement. Allowing for input from lenders is particularly important since they are paramount to securing committed financing for the project. A toll concession approach adds to the due diligence the team needs to complete, and it will add at least four months to the RFP process.

Moreover, we recommend VDOT allows approximately four months between the deadline of proposal submission and the financial close, with mechanisms for appropriate time extensions as warranted (TIFIA negotiations for example).

C) TECHNICAL CHALLENGES AND ALTERNATIVE SOLUTIONS

8. Based on your experience in the development of similar projects and characteristics of the I-66 corridor, please explain the technical challenges that may be encountered with the highway and transit improvement concepts described in the Tier 1 DEIS. Please provide recommendations for mitigating or overcoming those challenges.

Kiewit has a long history of successfully mitigating and managing the types of challenges that may occur in the I-66 Corridor project from numerous similar highway and transit system improvement projects. This experience has fostered the development of best management practices centered on advance planning to prevent or quickly resolve each possibility.

Based on the multi-modal characteristic of this project, we recommend that the VDOT consider a phased approach for project development. The first phase can be defined as design and construction of the managed lanes. This phase would result in revenue generation to pay for future project phases, and preserves the flexibility around the building of BRT or LRT options in the second and third phases. This approach increases flexibility, makes the project financially feasible, and is favorable politically.

The table below outlines the typical challenges encountered on a project of this size and scope, as well as potential actions to effectively mitigate each scenario.

| Improvement Concept | Technical challenge | Mitigation |
|------------------------------|--|---|
| General Purpose Lanes | Acquisition of ROW is challenging since this capacity improvement naturally requires more ROW | <ul style="list-style-type: none"> VDOT starts early in acquiring ROW with its power of eminent domain. Developer/contractor can assemble acquisition packages for acquired ROW; but VDOT conducts the taking. |
| | Interference with utilities | <ul style="list-style-type: none"> Narrow ROW; or VDOT relocates utilities in advance. Contractor to design around as possible, but should have regime for compensable relief, caps for delay, etc. (same message as above). |
| | Hazardous material | <ul style="list-style-type: none"> VDOT removes hazardous materials early on, or provides contractual relief. VDOT maintains generator status, including throughout O&M phase as well. |
| Managed Lanes | Managed lanes revenue is at risk when combined with other capacity improvements | <ul style="list-style-type: none"> The design should consider some level of congestion in GP lanes, so managed lanes can be effective. Otherwise, no one uses managed lanes. One easy mitigation is to eliminate scenarios where managed lanes and GP improvements are concurrent. Consideration over all policy objectives and balance between revenue generation and optimal congestion relief. |
| | Managed lanes revenue is at risk when combined with HOV | <ul style="list-style-type: none"> A proper HOV policy (3+) rather than (2+) can increase the revenue in managed lanes. Design to consider enforcement practices and facilitation. |
| | The interference of managed lanes with GP undermines safety (the weaving condition) and decreases speed in managed lanes | <ul style="list-style-type: none"> Designing the direct connection or having concrete barriers. |
| | Enforcement issues for HOV policy | <ul style="list-style-type: none"> Designing the direct connection, having concrete barriers, using booths and leveraging technology. |
| Metrorail Extension | Noise | <ul style="list-style-type: none"> Construction of noise barriers. Pavement type selection. |
| | Station Location | <ul style="list-style-type: none"> Think carefully about future use, design of future foundations, etc. |
| | Pedestrian access to the stations | <ul style="list-style-type: none"> Careful consideration and analysis regarding pedestrian access to specific locations adjacent to ROW, cross the highway, and get to the station afterwards. Parking – drop-offs |

| Improvement Concept | Technical challenge | Mitigation |
|---|--|---|
| Light Rail Transit | Station location | <ul style="list-style-type: none"> Same as Metrorail.) |
| | Noise | <ul style="list-style-type: none"> Construction of noise barriers. |
| | Pedestrian access to the stations | <ul style="list-style-type: none"> Same as Metrorail. |
| Bus Rapid Transit | Station location | <ul style="list-style-type: none"> Same as Metrorail. |
| | BRT should be able to get to managed lanes/HOV Lane | <ul style="list-style-type: none"> Designing specific access points and ramps for BRT to get into Managed lanes/HOV Lane allows for schedule reliability. |
| | Pedestrian's access to the stations | <ul style="list-style-type: none"> In addition to points discussed in rail access, can build the stations outside the highway and consider specific ramps to get into the highway. |
| | The combination of bus and rail may result in lower demands on busing, based on the notion of more safety and predictability for the users | <ul style="list-style-type: none"> Eliminating scenarios where BRT and rail improvements are concurrent. Bus operations are generally more complementary with managed lanes. |
| VRE (Virginia Railway Express) Extension | Noise | <ul style="list-style-type: none"> Source noise control: use of special hardware at turnout locations, and electrical EM use. Path noise control: construction of noise barriers. Receiver noise control: providing sound insulation improvements. |
| | Vibration | <ul style="list-style-type: none"> Items described in section 5.1.5 DEIS-1 seems reasonable – vibration mats. |
| Improve Spot Locations/Chokepoints* | Traffic Management (especially at interchanges) | <ul style="list-style-type: none"> Define LOS at each interchange; need to make sure Tier 2 has very rigorous LOS analysis. Allow maximum flexibility to adjust access points, interchanges, etc., to maximize revenue and LOS. Include options for expanded ROW acquisition to allow for improved efficiency. VDOT be aggressive with acquisition process as soon as possible. |
| Inter-modal Connectivity* | Pedestrian access to the transit stations | <ul style="list-style-type: none"> As discussed in the capacity improvement concept section. |
| Safety Improvements* | Any type of geometry optimization can be a technical challenge | <ul style="list-style-type: none"> Good signage, CCTV, total ITS , including dynamic signage. |
| Transportation Communication and Technology* | Software integration, technical updates, and user education | <ul style="list-style-type: none"> Education, training and public awareness. Systems need to run from common platform and control center, tied to other major systems such as WMATA and HOT Lanes. VDOT should give careful consideration to final system selection as separate contract. Under AP model, contractor provides infrastructure for VDOT system and integration, and VDOT operates revenue collection. |

*These concepts are more geographically focused and have lesser impacts. They can complement capacity improvement concepts.

9. Do you believe a bifurcated highway system along the I-66 corridor is technically feasible? Please provide any experience and supportive information that you may be able to share from similar projects.

A bifurcated highway system is technically feasible; however, it will most likely be significantly more expensive than other improvement concepts. The additional infrastructure, multi-level traffic integration, and access points will require extremely detailed design and coordination with multiple third-party stakeholders. All of these factors will negatively impact cost and schedule considerations.

10. What are the most significant cost drivers in the development and operation of the ML and BRT concepts along the I-66 corridor? How can these concepts be implemented in such a way as to preserve the potential for rail extension?

Optimizing access points for managed lanes, incident management, law enforcement and technology are the most significant cost drivers in developing and operating of managed lanes. The revenue derived from managed lanes is highly dependent on the locations of access points from general purpose lanes to managed lanes. To optimize the revenue stream, some modifications may include installing additional ramps and improving easy and proper access points, which can be costly. In addition, incident management and safety improvements can be a significant cost driver based on the requirement of having at least two managed lanes and a breakdown shoulder to keep the free flow of traffic and a quick response to incidents. Moreover, ITS, toll collection, and proper law enforcement in managed lanes can be costly in the operation phase.

Optimizing the access points for BRT to move into the HOV/managed lanes and for passengers to arrive at the stations are the most significant cost drivers in developing the BRT concept. Since the BRT needs to enter the HOV lane, the required ramps and connections to make this happen can be costly. An additional cost driver can be design and construction of facilities that allow passengers to efficiently access the stations.

11. What, if any interoperability issues do you foresee with the current tolling system on I-495 Express Lanes?

With more than 50% of the traffic entering or exiting I-66 at the I-495 intersection (based on section 2.3.1 Draft EIS), it is important to consider any interoperability issues with the current tolling system on I-495 express lanes. These lanes use Dynamic Pricing, which varies based on the demand and traffic conditions every 15 minutes. The price can range from 20 cents per mile to \$1.25 per mile, resulting in an average trip cost between \$3 and \$6.

We suggest that I-66 use the same Dynamic Pricing model for its managed lanes to maximize the revenue and be compatible with I-495. We also suggest implementing a direct connection from the I-495 express lanes to the I-66 managed lanes, and a close access point for vehicles in I-66 managed lanes to go to general purpose lanes. In addition, we suggest using an integrated tolling system with I-495 to eliminate significant costs associated with managing collection. This integration is practical because the majority of expected revenue comes from the vehicles using the path connecting the two interstates.

Furthermore, we suggest utilizing the Availability Payment model. This would enable the State of Virginia to optimize the toll rates and collection mechanisms at I-66 relative to I-495, as the public is completely in charge of rates and managing the revenue collection on I-66.

12. What suggestions do you have for better coordination between this Project and other projects currently under design or construction along the I-66 corridor?

We suggest VDOT manage I-66 and other ongoing area projects with a “mega projects” office staffed with an adequate number of dedicated VDOT and/or consultant personnel to support the facilitation of concessionaire/operator coordination with multiple projects. This approach has been effective for us in the past with projects such as the Telegraph Road Interchanges, the Woodrow Wilson Bridge and the I-495 Improvements. Protocols for communication among the parties should be established, including scheduled meetings during major interface periods with information sharing to facilitate mutual cooperation. Decisions will be made to ensure that the over-arching goals of each project are considered.

13. What challenges are associated with managing the lifecycle costs for the improvement concepts as described in the Tier 1 DEIS? What measures would you suggest to mitigate these risks?

The capacity improvement concepts can be grouped into the following three categories based on their lifecycle costs (highest to the lowest):

- » **Metrorail Extension, Light Rail Transit, and Virginia Railway Express Extension.** The lifecycle costs of rail systems are relatively higher than other capacity improvement concepts, based on the higher O&M costs. In the U.S., the average revenue collected through rail facilities rarely covers the O&M costs, let alone equity or debt services. These projects require subsidies from the public side. We suggest VDOT allocates enough subsidies for the operation phase if it opts to implement any of the rail concepts; items like rolling stock replacement, energy usage bands and technology upgrades should consider the inefficiencies of pricing unquantifiable risk exposure.

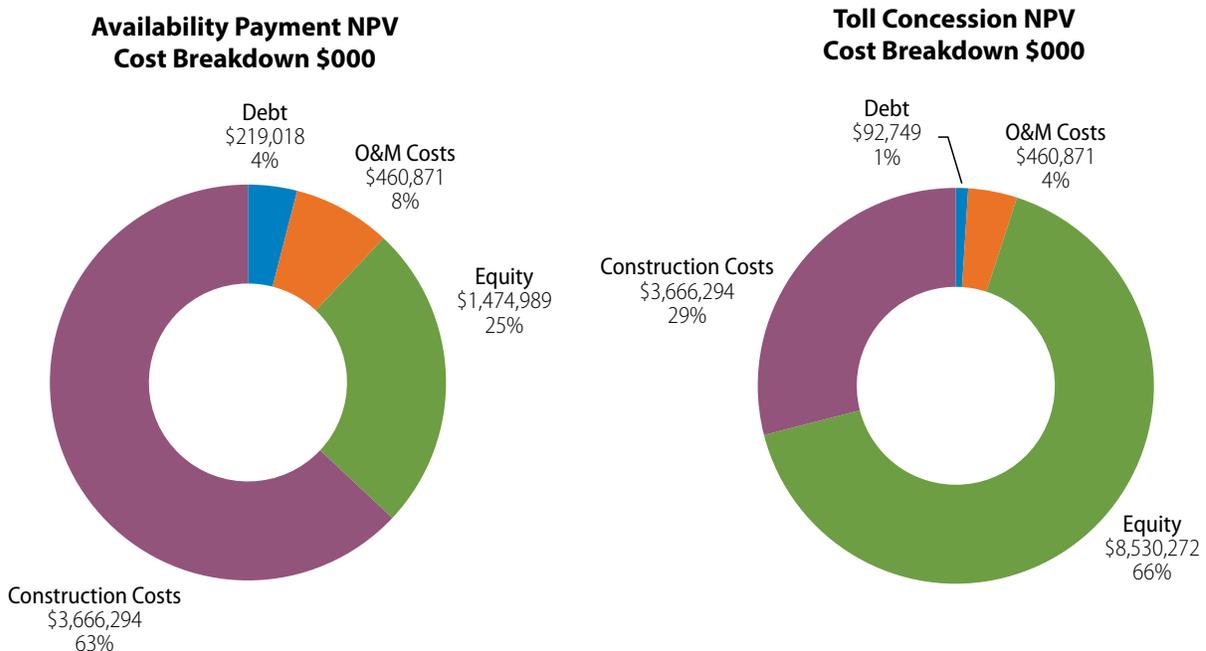
- » **Bus Rapid Transit.** The lifecycle cost for BRT is less than the rail group and more than general purpose lanes/managed lanes because the loading of the bus on the road's surface is different than cars. However, the challenge from an operational standpoint is that people usually prefer to use rail and trains based on the notion of safety and predictability. Thus, developing the rail and bus concurrently might result in an unbalanced demand in operation.
- » **General Purpose Lanes and Managed Lanes.** The decision of what material is used for this option can affect the lifecycle costs. For instance, using asphalt may result in low capital costs and high maintenance costs, versus using concrete that may result in high capital costs and low maintenance costs. Appropriate lifecycle analysis considering the asset's whole life is crucial.

One of the challenges associated with the lifecycle costs of managed lanes is enforcement issues such as preventing vehicles from entering the lanes without paying tolls, and enforcing the appropriate HOV policy if managed lanes and HOV physically share lanes. The enforcement costs in the operation phase can be reduced by designing the direct connections or barriers that separate managed lanes from general purpose lanes.

14. What adjustments to the Project scope, or development strategies (including potential phasing of project elements) would you consider/recommend to reduce the upfront capital costs and/or the lifecycle costs of the overall project costs?

As mentioned above, if VDOT were to build out the additional managed lanes capacity in an initial phase minimizing the general purpose lanes improvements as required only to support contiguous managed lanes connectivity; revenue generation could be optimized for future mode/capacity expansion. When revenue risk is retained by the public sector, it can significantly reduce the project's lifecycle costs because investors will require a lower return on their investment reflective of the reduction in their revenue risk. On the other hand, if revenue risk is retained by the private sector, investors would demand a greater return on their invested equity to compensate for this risk transfer.

A project with a \$4 billion capital cost may have as much as eight times more payout to equity in a toll concession compared to Availability Payment (on the Net Present Value basis considering higher cost of equity capital and difference in the contract term). As demonstrated in the following charts, the capital construction cost has minimal impact in the Toll Concession model versus the distributions to equity over the term. It is worthwhile mentioning that the construction costs in the two scenarios are identical to each other. In this project, the public could have retained \$7 billion NPV of toll cash in the O&M phase that would otherwise be equity dividends necessary to offset the revenue risk transfer.



15. Please explain in detail any alternative technical solutions that may enhance the development of the Project. Identify the risks associated with the alternative technical solutions and discuss the potential cost of each technical solution.

We are not prepared to respond to this question at this time; but, we are of the strong opinion that a mechanism for allowing the confidential introduction of Alternative Technical Concepts along with a process for engagement with VDOT and other stakeholders as appropriate during the procurement period will enhance the project delivery outcome. In preparation for this input, we suggest VDOT seeks to maintain flexibility in the process for allowing the introduction of ATCs. We also recommend VDOT continues to examine concepts outside the corridor's geographic confines to enhance multi-modal usage, and seeks to assign some level of prioritization to the development plans to maximize future potential and opportunities. Our experience throughout the country has demonstrated that this is the most effective means to optimize the development.

D) COMMERCIAL AND FINANCIAL STRUCTURE

16. Please explain your firm's interest in the improvement concepts discussed in the Tier 1 DEIS. What is your recommended approach for financing the capital cost of each concept?

Regardless of any specific type of improvement concept discussed in the Tier1 DEIS, the following financing solutions are appropriate to utilize in addition to equity from the private sector:

MILESTONE Payments (Or Periodic Payments)

The use of milestone payments during construction as a mechanism for injecting public sector contributions has been used successfully on many projects in North America. In many instances where the milestones are appropriately spaced, we have been able to reduce the short-term financing and provide value to the public sector. We would encourage the VDOT to set up any milestone structures to avoid or minimize the need for short-term bridge financing. In terms of what stages the milestones are used, we have seen them at the completion of key elements, including at substantial completion. This works well because the milestones are linked to large capex items. Ultimately, milestone payments result in reduced financing principal and carried interest expense. We offer the following milestones as basic guidance for structuring partial payments during construction:

- » A lump sum payment for mobilization and startup
- » Milestone payments for delivery, review and acceptance of major design deliverables
- » A lump sum payment for mobilization and set up of major equipment, portable plants, and maintenance facilities
- » Additional construction milestone payments for completion of key segments and major interchange elements
- » A scheduled periodic payment that is based on a percentage of the maximum payment curve

Private Activity Bonds

We highly recommend VDOT seek an allocation for the ability to issue PABs to help finance the project. PABs allow private developers and operators access to tax-exempt interest rates, which lowers the cost of capital significantly and enhances investment prospects. Our experience on P3 projects often involves evaluating PABs in the context of a wider competitive funding process alongside taxable bonds and project finance loans. PABs often show favorably as showcased in their use on the recent financing for the Midtown Tunnel Crossing, I-95, Ohio River Bridges, and the Goethals Bridge project.

TIFIA Financing

Utilized on almost every major U.S. P3 project over the last decade, the pricing benefits and flexibility of TIFIA credit assistance will be important to optimize I-66 Corridor's financing. TIFIA financing provides a number of benefits that outweigh its challenges. More specifically, these benefits include:

- » Reduced interest costs
- » Longer tenor of TIFIA loans (up to 35 years after construction completion), which allows for a more efficient capital structure, particularly given the higher cost of long tenor senior debt
- » Cash-flow subordination of TIFIA loan and deferral of repayment
- » Increased certainty of deal execution due to the success of the TIFIA JPO in executing other P3 projects
- » Additional or redundant source of capital for the project

Furthermore, the recent passage of MAP-21 resulted in changes that may greatly benefit the I-66 project. Under this bill, TIFIA credit assistance may cover the following portions of the total project cost:

- » A TIFIA line of credit of up to 33%
- » A TIFIA loan of up to 49% (or, if the loan does not receive an investment grade rating, up to the amount of senior project obligations)
- » A combined TIFIA loan and line of credit of up to 49%
- » Total federal assistance (grants and loans) to a project receiving a TIFIA loan of up to 80%

17. Please discuss your firm's interest in: a. Accepting traffic and revenue risk in a toll concession, and b. Accepting performance risk in an availability structure.

Kiewit's investment criteria places revenue risk transaction as the least attractive investment consideration and generally a NO GO. Accordingly, the industry typically is not interested in retaining traffic and revenue risk in a toll concession. As discussed before, transferring the revenue risk to the private sector, materially increases the bid price; decreases value for money; reduces competition; alters the objective of the concessionaire from delivering the best solution to maximizing the revenue; and, in extreme cases, makes the project non-financeable. The following table shows a few examples of P3 projects that are in jeopardy of default as a result of revenue risk transfer to the private sector and ending up with actual revenue and traffic significantly below their projections.

| Project | Country | Negative Developments |
|--------------------------------|-------------|--|
| Southbay Expressway | U.S. | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error further complicated by mortgage crisis and deep recession. |
| Pocahontas Parkway | U.S. | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error further complicated by deep recession |
| Northwest Parkway | U.S. | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error primarily. |
| SH 130 Segments 5 and 6 | U.S. | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error further complicated by deep recession. |
| Eurotunnel | U.K./France | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error further complicated by emergence of low-cost airlines and a ferry war price. |
| Taiwan High Speed Rail | Taiwan | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error. |
| High Speed 1 (Original) | U.K. | <ul style="list-style-type: none"> ■ Actual traffic and revenue significantly below projections. ■ Forecasting error and overestimation of socioeconomic benefits. |
| Lane Cove Tunnel | Australia | <ul style="list-style-type: none"> ■ Optimistic traffic forecasts were made worse by high gas prices. ■ The concession entered receivership in 2010; this default followed earlier P3 defaults on the AUD700 million Cross City Tunnel in Sydney and the AUD4.8 billion Brisbane Airport Rail Link. ■ Also due to overly optimistic traffic expectations. |

Source: Fitch report - P3 Lessons Learned - Oct 2013

We believe the industry is not interested in taking the revenue risk. Availability Payment is the most effective structure that brings value both to private and public sectors. We are comfortable with accepting performance risk in this type of payment structure. In fact, we believe allocating this risk to the private side would result in providing better performance in the operation period.

18. What is a reasonable concession term for a ML or a BRT concept? Why?

As an Availability Payment, a reasonable concession term is 30 to 35 years. As a revenue-based transaction, that period is 50 years or more. The difference in terms is driven by the fact that in a revenue-based model the investors expect a greater return on their investment to compensate for the additional risk borne by the private sector. Based on a comparison with similar projects, a 50-year toll concession would likely be necessary to generate ridership projections that investors are comfortable with and will provide them with an adequate return on their investment.

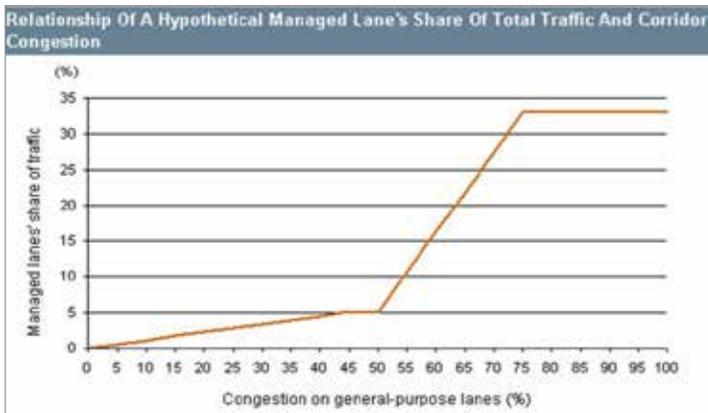
E) ADDITIONAL CONSIDERATION

19. If your firm is a Disadvantaged Business Enterprise (“DBE”) or a Small, Women-owned, and Minority-owned Business (“SWaM”), please provide any suggestions or comments on how OTP3, VDOT or DRPT can help to develop teaming opportunities with prime contractors.

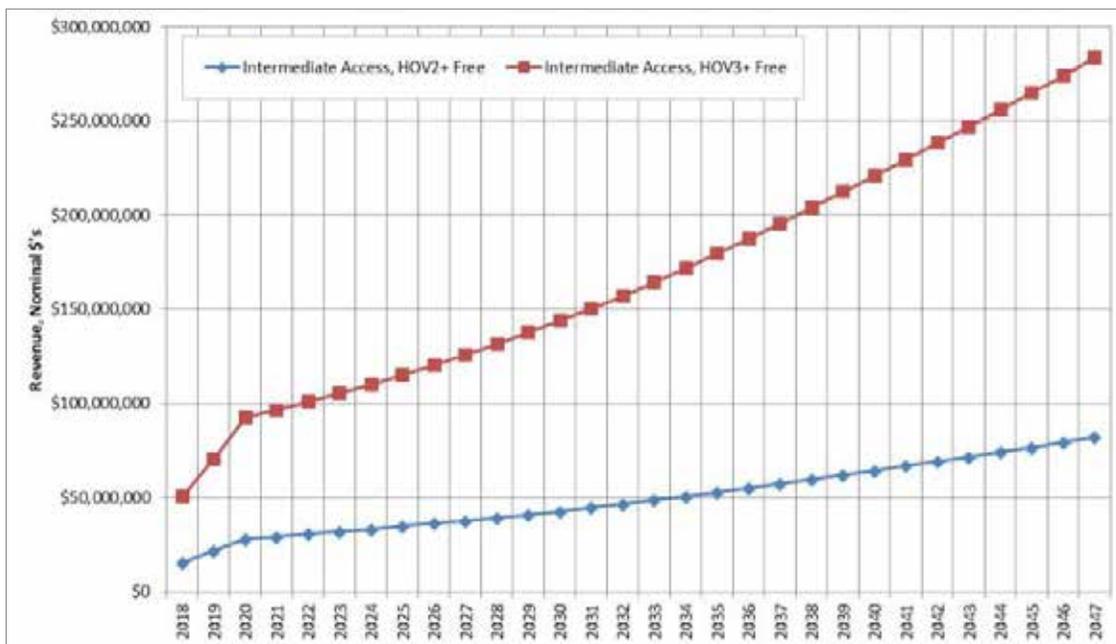
N/A

20. Based on characteristics of the I-66 corridor, suggest the number of persons per vehicle that should be required to qualify as a high-occupant vehicle. Explain why selecting this number may be in public interest and beneficial to comply with the federal Clean Air Act of 1990? Please provide quantitative and qualitative evidence to support your arguments.

We suggest VDOT considers 3+ people for HOV lanes instead of 2+ in order to drive revenue to the managed lanes. Studies show that the managed lanes are able to produce revenue once there is adequate congestion in the general purpose lanes. The following general chart demonstrates the relationship between the congestion level in the GP lanes and the managed lanes’ share of traffic. Once the congestion level in the GP is 50% or less and the Level of Service is at an LOS of E or better, the managed lanes traffic share becomes proportionally more and more insignificant. The managed lanes share of the market increases with high rate after reaching the cut-in point (around 50%) and remains constant after reaching the cut-out point (around 75%). The majority of revenue from managed lanes is produced at this time when there is adequate congestion in the general purpose lanes.



As a result, having a HOV policy and managed lanes together can be tricky. In the chart for a hypothetical project, the managed lanes that have the 3+ people policy is profitable, and the HOV 2+ people policy is not profitable. This behavior can be justified based on the fact that the stricter HOV policy would help congestion in the general purpose lanes that results in more usage of the managed lanes. Thus, we suggest VDOT opt for the HOV 3+ policy as a starting point to ensure the managed lanes concept is able to produce sufficient revenue.



21. What additional challenges or risks should OTP3, VDOT, DRPT or CTB be aware of in regard to Project's scope, procurement process, delivery method, term of contract, technical and financial feasibility, etc.?

The market conditions for a multi-modal project like I-66 seem favorable now. However, future market conditions may not be suitable. As a result, engaging in this project in a timely manner is critical and enables VDOT to take advantage of several project cost benefits such as:

- » Favorable political environment
- » Elevated public awareness as a result of the recent Virginia transportation finance legislation
- » Highly competitive market due to reduced demand for construction services relative to historical market demand.
- » Very competitive private lending rates due to low interest rates
- » Construction material pricing remains stable at this time
- » Capturing the value of Virginia bill that raised the sales tax by 0.8% and the NOVA sales tax by 0.3%
- » Future cost of capital may be higher

22. Other than the answers that you have already provided, what information would help your firm to make the business decision to engage in the development of the Project?

An Availability Payment model will be a critical component necessary for us to pursue this project as part of the SPV/consortium. It will optimize the value of the project to the state and to the developer by optimizing allocation of revenue risk.

Of critical concern to Kiewit are the contractual obligations around utility risk associated with projects of this scale and scope. Identification and capping of the utility cost risk, setting realistic timeframes and potential extensions for utility schedule risk should be included in the contract. Asking the private sector to price out and take on risk associated with unknown utility conditions and utility agencies that operate according to their own schedules results in significantly high construction costs due to contingencies that must be built into the estimates.

CONCLUSION

We would like to express our interest in participating in the development, investment and construction of this project. Our extensive valuable construction experience, combined with our strong financial capability, will help us to choose the best strategic partners suitable to deliver this project.

The industry anticipates that the I-66 project will evolve as an Availability Payment model, in which the revenue risk is retained by the public. Kiewit is committed to assist VDOT in any capacity, to ensure the required Availability Payment legislation is added to its toolkit. Another critical issue for Kiewit based on our previous experience, is the necessity of having an appropriate compensation regime for unknown utility related delays.

The Kiewit team is committed to the success of the I-66 Corridor Improvements project. We look forward to one-on-one meetings and further industry engagements so we may help shape the project, especially in terms of innovation, efficiency, and competition.

We hope that the ideas and experience contained in this RFI are of assistance to VDOT and that our resources contribute to the optimal project delivery. We are available to continue discussions with VDOT regarding this great opportunity.