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**Re: Response to Request for Information regarding the Interstate 66 Corridor Improvements Project**

Dear Mr. Farajian,

Meridium Infrastructure North America Corp. ("**Meridium**") is pleased to submit to the Office of Transportation Public-Private Partnerships ("**OTP3**") its response to the Request for Information ("RFI") for Interstate 66 Corridor Improvements Project ("Project").

Meridium is highly experienced in the formulation of effective partnership arrangements with governmental entities, including the allocation of risk between government and the private sector in the context of the development of large and complex projects such as the Interstate 66 Corridor Improvements Project.

We would be pleased to provide any further information you may require, and welcome the opportunity to meet with you in regards to the Project.

Should you have any further questions, please do not hesitate to get in touch with:

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Best Regards,

Olivier Garnier  
Meridium Infrastructure North America Corp.  
Chief Operating Officer



**THE OFFICE OF TRANSPORTATION PUBLIC PRIVATE PARTNERSHIPS (“OTP3”)**

**VIRGINIA DEPARTMENT OF TRANSPORTATION (“VDOT”)**

**VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION (“DRPT”)**

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RESPONSE TO REQUEST FOR INFORMATION REGARDING INTERSTATE 66 CORRIDOR  
IMPROVEMENTS (“I-66”)

November 25<sup>th</sup>, 2013

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RESPONDENT

**MERIDIAM INFRASTRUCTURE NORTH AMERICA CORPORATION**

## 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.)?**

Meridiam Infrastructure North America Corporation (“**Meridiam**”) is a leading equity investor, developer, asset manager and long-term partner in Public-Private Partnership (“**P3**”) projects in North America and Europe. Meridiam is dedicated to delivering sustainable public infrastructure in the United States that will increase the quality of life in the respective communities.

Meridiam’s dedicated 25-year funds enable it to be a long-term partner with the public sector from project inception through operations. With global assets under management of approximately \$3.5 billion, Meridiam has a distinct position in the industry as a buy-and-hold investor in P3 transportation, social, and environmental projects that involve new construction or capital improvements. Meridiam believes our long-term focus, as well as long-term stable partnerships with the public sector, are critical to providing high-quality public infrastructure. Meridiam’s team includes more than 50 infrastructure professionals with expertise in construction, engineering, finance, and public policy across offices in New York, Toronto, and Paris. Meridiam’s unrivaled success in North America is achieved by its closing of eight P3 projects since early 2009. Meridiam has closed 25 P3 projects globally to date.

Meridiam, as an experienced P3 developer in transportation projects, is very interested in pursuing the Interstate 66 (“**I-66**”) Corridor Improvements under a DBFOM delivery model. Meridiam would be a member of a larger team as a developer, equity investor and asset manager for the Project.

- 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?**

Meridiam understands that VDOT is still in the process of evaluating the details of scope and type of procurement of the Project. Therefore for the stage of development and hence the basis of this RFI, we do not have further questions. We would however recommend that VDOT completes certain procedures before going out to procurement, such as achieving environmental clearance by obtaining a Record of Decision, and achieving NEPA.

- 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?**

The Design-Build-Finance-Operate-Maintain (“**DBFOM**”) model balances the short-term construction needs with the long-term operational and renewal needs providing a holistic approach to project delivery. It will ensure that the assets procured will be built and will serve the community for their whole design life. Under a well-planned procurement with strong public sector leadership, including a long-term maintenance and lifecycle component in the concession agreement presents significant opportunities to VDOT, OTP3 and DRPT for cost savings and risk transfer as described below.

**Holistic Approach to Project Design:** Under a DBFOM model the operator participates in the conceptual design phase and provides input into materials, maintainability, lifecycle costs, and innovative technologies and techniques. The trade-off between capital cost and lifecycle and maintenance costs is thoroughly evaluated throughout the development process, with the intent to minimize the NPV of the project and maximize its quality and longevity. This forces the developer to put as much emphasis on the long-term planning of the project as on the construction planning ensuring that at completion of the concession term (not just at construction completion), VDOT/DRPT/OTP3 will be handed a well-designed, well-maintained and fully tested asset that will continue to provide value well into the future.

**Whole-life cost Optimization:** Overall an integrated approach to project delivery is most beneficial to capture the “whole-life optimization” aspects of the project. This method involves optimizing design, construction, operations and financing for the life of the concession.

**Traffic and Revenue Risk:** Please see our answers to items 16 and 17.

**Reduced Overall Risk:** The P3 or DBFOM approach allows VDOT/DRPT/OTP3 to transfer a significant portion of risk to its private sector partner, thereby shielding VDOT/DRPT/OTP3 from a range of potential liabilities. The risk allocation in a DBFOM method is based on interwoven documentation that fits together and passes risk to the party best positioned to manage and mitigate it.

The P3 model provides a transfer of most short- and long-term technical, performance and interface risk to a sole party with full accountability to VDOT/DRPT/OTP3. A single point of responsibility will create synergies in the planning and design of the project and will allow VDOT/DRPT/OTP3 to avoid the typical interface issues between the design builder, the maintenance contractor and the operator.

### **What are the potentially offsetting disadvantages?**

There are a few potential disadvantages, which include (i) a longer and more complex procurement, (ii) higher transaction and financing costs.

**Longer procurement:** There is a perception that a P3 procurement process may take longer and be more complex than a traditional procurement process, but experience has shown that the time between start of procurement and the delivery of a completed asset has been shorter under a P3 procurement than under a more traditional procurement approach.

**Higher transaction and financing costs:** Due to the additional work that is done upfront during procurement, multiple teams have to spend significant funds to prepare full bids. A smoothly run

procurement process and defined scope will partly mitigate the transaction costs. Higher financing costs are encountered due to the risk transfer involved in P3 projects. Overall projects however have been shown to be better value for money due to efficient pricing and fully considering, yet pricing, manageable risks that have been transferred to the private sector.

## 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 proposed procurement schedule seems achievable as long as all necessary approvals are obtained prior to issuance of the RFP and VDOT/DRPT/OT3 has a defined scope of work (i.e. the preferred scope has been chosen) and clear understanding of the contract requirements.

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

Development of a Project of a size and complexity such as I-66 requires a well-planned schedule and fully defined scope of work prior to the RFP process. Based on our experience, the following items are critical for delivering the project on time:

**Clear communications with all stakeholders:** Buy-in by all stakeholders into a transparent and fair procurement process and the project with its procurement mechanism (i.e. PPP) is highly important. For a successful outcome, local, state and federal support are necessary.

**NEPA Process:** Environmental approvals from various agencies with the most important one being the Record of Decision to proceed with the project under NEPA. A significant risk to timely completion of the project exists if the procurement is completed prior to obtaining the FONSI for the project. Certainty is required in this area to achieve competitive pricing and a definite construction schedule.

**Right-of-Way ("ROW") Acquisition:** ROW acquisition should remain the public partner's responsibility and be completed prior to the RFP issuance. If it is not possible, a clear description of the status of ROW acquisition should be provided in the initial draft of the RFP documents, along with the responsibilities of the parties to conclude any remaining ROW acquisition, along with a committed timeline. In order to keep the project's cost as low as possible; the ultimate risk of cost and timing should be retained by the public partner with the private partner possibly acting as a process agent on its behalf.

**Source of public sector funding identified:** Clear identification of the sources of the public sector funding should be identified prior to the RFQ process. This will bring needed certainty to the Project.

**Unreasonable delays in obtaining major permits:** Major permits are on the critical path to being able to commence construction. Therefore the risk of delays to obtaining these permits needs to be properly addressed. A effective solution to this often includes the concessionaire being responsible for obtaining major permits, with the owner's obligation to assist as necessary paired with contractual cost and schedule relief if the concessionaire has met all obligations but the permit issuing agency is causing undue delays.

**Third Party Support and Engagement:** Should the Project involve any significant ongoing third party involvement (e.g. land owners, governmental oversight bodies, utilities, rails, roads), VDOT should involve the third party as early as possible. Often, relevant third parties are not engaged until after financial close and then are expected to come up to speed quickly, which is difficult given the complexity of the Project. Project success can be dependent on these entities fully understanding the contract requirements and the expectations of a private partner performing services. To avoid unnecessary delays, all key third party entities must be fully engaged in the Project.

**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?**

Yes, Meridiam expects to take part in a procurement process as outlined for the Project.

However, risks that we have encountered on similar transactions that could impact our participation in the procurement include:

**Suitable size of the project:** Meridiam manages three 25-year infrastructure funds with fully committed, irrevocable capital exceeding \$3 billion, which enables us to be a long-term partner with the public sector from project inception through operations and maintenance. As such we will look for large infrastructure projects with a minimum equity commitment by Meridiam of around \$20-30 million. Meridiam has a strong preference for a large Project scope to be included into a single procurement.

**Fully defined scope of work:** We give preferences to projects that provide essential public services and enhance quality of life, meet environmental objectives and support economic growth. Nevertheless, it would be helpful to get more clarity as to the basis for the scope of the Project and its estimated capital cost. VDOT/DRPT/OTP3 and its advisors should early in the process determine the critical project features that must be included in the final project solution and make these features clear and prescribed in the output specifications.

**Appropriate risk allocation:** It is important for VDOT/DRPT/OTP3 to define early in the process the risk allocation intended for the project. Some key risk allocation considerations include Right-of-Way acquisition, revenue and patronage risk, change of law, certain geological risks, change in

technical standards and technology, market pricing risk and competing highway and transit options not currently considered.

**Clear communication with all stakeholders and their support:** Many misconceptions exist about PPP (e.g., the myth that a PPP is a privatization or asset sale as opposed to a long-term generator of employment). These arguments need to be confronted and dispelled in order to get stakeholder buy-in. The stakeholder communication from public agencies to the local community is critical as many are unfamiliar with this approach to project delivery and may be hesitant to adopt a new model.

**Public and political support:** A key success factor that will influence our decision whether to participate in the procurement is the clear and strong political support for the project to be procured as a DBFOM.

**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?**

Based on previous successful procurements in the market, a proposal due date of between 180 to 240 days after issuance of the draft RFP and 90 days after the final version of the RFP should be sufficient to allow for the design to be developed, the project agreement to be adjusted (through one-on-one meetings and comments) and committed bids to be prepared and submitted.

## **B) 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.**

Based on the complexity of the Project, defining an effective and reasonable phasing plan is critical. OTP3, VDOT and DRPT must explicitly allocate their and developer's responsibility throughout the design, construction and operation phase to achieve the optimal risk transfer. Should the public sector have a phasing requirement, this should be stated in the RFP scope.

Department should carry out all surveys and investigations as comprehensively as it can so that VDOT/DRPT/OPT3 can provide reliance on the surveys and investigations being undertaken to the proposers.

**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**

As an Investment Fund, Meridiam does not provide specific technical recommendations. However the DBFOM structure will permit OTP3/VDOT/DRPT to select the best suited Designer, Contractor and O&M provider for the project who will be able to most efficiently mitigate or overcome the challenges such system may impose.

**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?**

At a high level, we would expect the key cost drivers to be determined by the ultimate technical solution chosen for implementing ML, BRT or rail. The concepts need not be mutually exclusive. As already mentioned in studies and fact sheets, it is unlikely that any of the ML, BRT or rail extension will be feasible if they rely only on patronage revenues as their sole source of revenue. Therefore the plan of all 3 schemes are dependent on whether VDOT/OTP3/DRPT have the available funding over the life of the proposed project, which should be analyzed by the overall transport and economics development plan rather than only for this project.

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

Our experience in integrating existing tolling system to a new concession suggests that existing elements can be upgraded to match the new operating system requirements.

**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?**

As an initial remark, we would note that the P3 model should not be chosen and implemented with the objective to shift the risks related to project management, coordination and interfaces between the various projects to the private sector. Key elements for a successful implementation of all projects are ongoing communications, stakeholder management and carefully planned and executed construction phasing. VDOT/OTP3/DRPT should coordinate amongst projects such that the ongoing interfaces are clear and communication channels are open. Contractually sufficient relief via VDOT/OTP3/DRPT will need to be included.

**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 treatment of lifecycle risks will depend upon the ultimate scope of the project, especially whether any existing assets will be transferred to the P3 project to be maintained by the private sector. Together with our partners we would fully analyze the technical requirements of the proposed project scope and address the risks and mitigants at the time of the procurement.

**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?**

Meridian recommends breaking the project into two phases – BRT, highways (regardless if selected concept will be GP or ML or both) and rail transit (Metrorail and/or light transit rail). This decreases the risk associated with single elements de-railing the entire project and therefore increases the delivery success of both of them. Based on the size and complexity of these two components it will be difficult to deliver them as a single phase. It also reflects the different approaches required by road versus rail. However, we would also note that breaking the project down into more than these two phases would diminish the benefits of a P3 procurement, lead to higher transaction costs and provide for a less attractive investment opportunity.

**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.**

While one of the benefits of P3 procurements is design innovation, such innovative alternative technical solutions will have to be developed through the competitive process during the RFP stage. These will have to be developed and discussed with OTP3/VDOT/DRPT through a structured Alternative Technical Concept (ATC) process, which we strongly encourage to be included as an element of the procurement.

## **C) 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?**

***General Purpose Lanes ("GP")***

Untolled GP lanes require an availability payment mechanism. This delivery method shows the most efficient risk allocation, since in addition to design and construction, the private sector also retains the risks of financing, technology, project management, operation and maintenance and lifecycle risks (including condition of asset at handback at the end of DBFOM contract term). Furthermore a DBFOM project provides for an efficient procurement process and allows for earliest traffic availability, while the overlap of design and construction provides significant synergies that reduce both the cost of the Project and the implementation schedule. Performance metrics through the availability payment mechanism in DBFOM projects embed a culture of operational and maintenance excellence.

***Managed Lanes ("ML")***

Based on our experience in the US market in closing similar transactions and our understanding of the current state of the financing market, this concept is also well suited to be procured under the DBFOM availability payment method. However, even using the toll revenue from MLs, we would expect there to remain a need for further support from VDOT/DRPT/OTP3 in the form of upfront capital payments or

further support to revenues over time. If VDOT/DRPT/OTP3 decides to procure MLs as a toll concession, the project will require more equity investment to protect debt holders – in the 30-45% range, compared with 10-15% for an availability transaction – with a higher required rate of return on the equity investment due to the additional risk transferred.

### ***Bus Rapid Transit (“BRT”)***

Meridiam suggests that the VDOT/DRPT/OTP3 should retain the ability to manage demand on the system as well as take full control of the fare policy. VDOT/DRPT/OTP3 can then provide annual availability payments in exchange for the services to be provided by the private party.

#### **17) Please discuss your firm’s interest in:**

##### **a. Accepting traffic and revenue risk in a toll concession**

Meridiam invests in toll facilities projects and from an investor’s standpoint, the greatest risk with very long term obligations is that future development patterns will not provide the traffic to sustain revenues even if toll rates are allowed to climb on a regular basis. The concessionaire does not have any influence on future economic development. Even though the toll revenue risk project may be financed if there was a support mechanism, such as a minimum revenue guarantee (MRG) providing “top-ups” if the toll revenues fall short of expectation, we still believe that full toll risk transfer to the private sector results in a sub-optimal outcome due to the much higher risks that are transferred and there still not being sufficient revenues to fully finance the project with toll revenues only.

##### **b. Accepting performance risk in an availability structure**

Based on our experience in the market, an availability payment structure will provide the best value for money to VDOT/DRPT/OTP3. Given the economic benefits of this investment to the area, contrasted with the uncertainty of traffic levels on long distance Greenfield highways, VDOT/DRPT/OTP3 are better placed parties to manage this risk. An availability payment structure still ensures that the developer is service and quality-oriented in their provision of the asset to users through a performance regime which incentivizes the private partner to meet standards or else suffers deductions from the availability payments.

#### **18) What is a reasonable concession term for a ML or a BRT concept? Why?**

For an availability concession a typical term (operating term post-construction) is between 30 to 40 years. This duration requires the private developer to design, build and plan for a long term successful project and matches the duration of one or two major renovations/ replacements of main elements of the asset. This way, the project is in a freshly rehabilitated and good condition when it is handed back to the client. In addition this allows the amortization of debt over a longer period which reduces the annual payments and reduces the requirement from VDOT/DRPT/OTP3’s annual budget.

For demand risk based concession such as toll concessions or fare collection, the necessity of a significantly longer period is due to the higher risk profile of this method of payment over others. A typical term is between 50-60 years as this length of project gives comfort to both debt and equity players that should there be shortfalls early in the project there is a significant tail later in the concession to allow the parties to re-structure and in time break-even. For a concession that benefits from a MRG mechanism this concession period could be reduced.

**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.**

While Meridiam is neither a DBE/SBE nor a SWaM, we always seek to work with DBE, SWaM and local contractors on projects. Meridiam follows a comprehensive Sustainable Development Charter that sets out strict environmental, social, and governance (“ESG”) guidelines for all of its investments. Our ESG guidelines often surpass the public owner’s DBE/SWaM goals ensuring a high level of local hiring and community involvement to the greatest extent possible.

OTP3/VDOT/DRPT could help Disadvantaged Business Enterprises and Small, Women-owned and Minority-owned Business in three ways. The first is to keep these firms informed as the procurement progresses. The second strategy is to provide them an easy way to establish a relationship with the winning team. One possibility is to hold Outreach Events and Meetings and present the project scope and the subcontracting possibilities to interested firms. The third way is to provide these firms with specialist training that will enhance their skills and expertise. The Projects have complex scopes and Meridiam has found that many of the DBE / SWaM firms lack the adequate technical skills to perform the necessary work. For OTP3/VDOT/DRPT to facilitate training would be valuable for the I-66 Corridor Improvements and the local businesses.

**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 supports your arguments**

In our opinion this issue requires a separate research that would be based on the surveys with the I-66 corridor users and the environmental studies. Well-designed, appropriately-sited HOV lanes have been shown to significantly increase transit use and car occupancy for the journey to work in congested urban travel corridors. This, in turn, results in reduced vehicle trips vehicle-miles traveled and pollution. However, we would note that the permission of high-occupant vehicles to use Managed Lanes for free can become a significant challenge in a toll risk concession structure unless VDOT/DRPT/OTP3 provides payments to the concessionaire for these vehicles.

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

Establishment of an appropriate number of shortlisted bidders is very important from a technical and financial point of view. The optimal number of Selected Proponents has to balance strong competition for the OTP3/VDOT/DRPT with a sufficiently high chance of winning for the Proposers. Based on our experience, the ideal number of shortlisted bidders is three (3). Having additional shortlisted proponents limits innovation potential as it is more difficult to have an effective Alternative Technical Concept (ATC) process with an increased total number of meetings required to review ATCs and less time available to assess individual proposals, resulting in less likely approval of proposed innovations. It will also increase resources needed by the procuring authority and the private sector for no increased competitive benefit.

Further VDOT/DRPT/OTP3 should be aware of the lead times required to put in applications for TIFIA and PABs financings. These sources of finance have proven key in the US infrastructure market.

**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?**

We have set out our thoughts above, and thank you VDOT/OTP3/DRPT for this RFI process. We are happy to discuss items further in the format of one-on-one meetings.