

**Maryland Department of Transportation  
and  
Maryland Port Administration**

**REQUEST FOR INFORMATION**

**PUBLIC-PRIVATE PARTNERSHIP**

**CAPACITY RECOVERY IN MPA'S COX CREEK  
DREDGED MATERIAL CONTAINMENT FACILITY  
BY CONVERTING DREDGED MATERIAL  
INTO LIGHTWEIGHT AGGREGATE**

Responses due no later than 5:00 PM EST on January 24, 2014.



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# 1. Administrative/Legal Provisions

## 1.1 Overview

The Maryland Department of Transportation (MDOT) and the Maryland Port Administration (MPA) are currently exploring the feasibility of a public-private partnership (P3) to recover dredged material placement capacity in the Cox Creek Dredged Material Containment Facility (Cox Creek DMCF). A private partner would facilitate this capacity recovery by removing Baltimore Harbor dredged material from the Cox Creek DMCF and converting the material into light weight aggregate (LWA) in a cost effective and environmentally responsible manner (the “Project”).

MDOT/MPA’s presumption is that the private partner would sell the LWA that it produces for use in construction or other appropriate projects in the commercial marketplace. The private partner will be responsible for all or a portion of the initial funding and financing of the Project. During the P3 agreement term, it is anticipated that MDOT/MPA would make periodic payments to the private partner for ongoing removal of material and/or recovery of capacity in the Cox Creek DMCF.

MDOT/MPA is issuing this Request for Information (RFI) to obtain information that may help MDOT/MPA confirm and/or refine certain assumptions in connection with the feasibility and delivery of the Project. In particular, MDOT/MPA seeks to learn whether the conversion of dredged material into LWA can be performed on a full-scale, commercial basis as a P3, with a process and product that will be able to receive all necessary environmental permits. MDOT/MPA will consider responses to this RFI in connection with, or relating to, the on-going development of Project delivery concepts and the further development of financial plans and solicitation

documents for the Project.

This RFI is not intended to initiate any solicitation for the Project. This is not a Request for Qualifications (RFQ), Request for Expression of Interest (REI), a Request for Proposal (RFP) or any solicitation for goods or services under Maryland Procurement Law.

This RFI does not constitute the commencement of any solicitation process for the Project nor does it represent a commitment to proceed with any such solicitation in the future. Therefore, those choosing to respond to this RFI will not, merely by virtue of submitting such a response, be deemed to be “proposers” or “bidders” on the Project in any sense, and no such respondent will have any preference, special designation, advantage or disadvantage whatsoever in any subsequent selection process related to the Project. Submitting a response to this RFI is not a prerequisite to participating in any future solicitation related to the Project. Neither MDOT nor MPA shall be liable for any costs incurred in responding to this RFI.

Any questions regarding this RFI should be directed to Bill Lear at [blear@marylandports.com](mailto:blear@marylandports.com). No employee of MDOT, MPA, or any Project consultant is authorized to interpret the RFI or give additional information as to its requirements. Such interpretation or additional information will only be given by written addendum to this RFI.

For additional information on MDOT’S P3 process, see the regulations published in the Code of Maryland Regulations (COMAR) Title 11, Subtitle 01, Chapter 17.

*THIS P3 PROCESS IS SUBJECT TO TITLE 10A, PUBLIC PRIVATE PARTNERSHIPS, OF THE STATE FINANCE AND PROCUREMENT ARTICLE OF THE ANNOTATED CODE OF MARYLAND AND ONLY THOSE OTHER SECTIONS OF THE PROCUREMENT CODE REFERRED TO IN TITLE 10A. THIS P3 PROCESS IS NOT A “PROCUREMENT.”*

## **1.2 Who should respond?**

MDOT/MPA encourages responses from a variety of firms and organizations, including, but not limited to:

- manufacturers of light weight aggregate;
- kiln manufacturers;
- firms in the field of chemical, polymer and materials manufacturing;
- innovative technology firms;
- manufacturers of dewatering equipment;
- businesses engaged in construction materials or related fields;
- financiers and/or equity investors with a substantial development and investment track record in new-build manufacturing projects;
- private sector firms, such as engineering firms, working for or representing any of the above or related firms; and
- local, small, and/or minority businesses who might seek to participate on a team or consortium of Project proposers.

## **1.3 Submission Instructions**

Written responses to this RFI are requested in electronic PDF format only from each respondent no later than 5:00 PM EST on January 24, 2014. There is a 50-page limit on responses, but responses should be succinct and respondents are encouraged to refrain from the presentation of materials intended to

establish their qualifications to respond to any future solicitation. To the extent that questions below ask about your firm's background, it is only for the purpose of assisting MDOT/MPA in understanding the context of responses. It is not necessary to respond to each and every question. Respondents are encouraged to respond only to those questions to which they bring relevant and specific perspective.

Please submit electronic responses by e-mail to Bill Lear at [blear@marylandports.com](mailto:blear@marylandports.com). Please indicate the name and contact information for a primary point of contact to which further materials or inquiries should be directed. Please be advised that information provided by your firm or organization may be subject to disclosure under the Maryland Public Information Act. *Please clearly note any specific information -- and only that specific information -- which you believe may be protected from disclosure as confidential, proprietary, commercial or financial information of your firm or organization.*

MDOT/MPA will confirm receipt of electronic submissions. If you do not receive a confirmation within one business day of submitting a response, please call Bill Lear at (410) 385-4462.

## **2. Cox Creek DMCF Placement Capacity Recovery Project Overview**

### **2.1 Background**

MPA and its partners are responsible for managing the dredging of approximately 1.5 million cubic yards (mcy) of material annually in Baltimore Harbor to maintain shipping channels and anchorages at their

authorized depths and widths to ensure reliable navigational channels for vessels transiting the Port of Baltimore. All material dredged from the Baltimore Harbor must be placed in approved placement sites, referred to as dredged material containment facilities (DCMF) or beneficially used. While capacity remains in some DCMFs for additional dredged material, MPA continuously searches for ways to acquire additional dredged material placement capacity, including new ways of disposing of or reusing the dredged material or providing additional capacity in existing DCMFs. MPA is interested in recovering dredged material placement capacity in the Cox Creek DCMF and has concluded that the material can be removed from the Cox Creek DCMF and can be converted into marketable lightweight aggregate (LWA). To be useful in the State of Maryland's Dredged Material Management Program, the conversion process must be feasible from engineering/manufacturing and economic perspectives, as well as environmentally responsible.

The goal of a potential P3 Project would be to partner with a qualified private entity to recover dredged material placement capacity through conversion of the material into light weight aggregate (LWA). The private partner would be responsible for providing the necessary facilities and equipment, financing, and operation and maintenance of a production facility converting dredged material to LWA to be marketed and sold by the private partner. The private partner would need to demonstrate the ability to transfer dredged material from the Cox Creek DCMF to its LWA production facility, determine, obtain and adhere to all permits required for the Project, and produce LWA that meets all applicable standards.

## 2.2 Project Description

MPA's Cox Creek DMCF is located at 1000 Kembo Rd., Curtis Bay, MD, which is off MD 173 (Ft. Smallwood Rd.), in Anne Arundel County, MD. (See attached site map.) As of December 19, 2013, the volume of dredged material currently in the Cox Creek DMCF is estimated at 3.5 mcy. Though annual dredged material volumes are outside of MPA's control and prone to fluctuation, an average of 1.3 mcy per year has been dredged from the Baltimore Harbor from 1992 to 2011. The Cox Creek DMCF is designed to accept approximately 500,000 cy of dredged material per year. As of 2012, the average percent particle size of the dredged material in the Cox Creek DMCF was 23% sand and gravel and 77% silt and clay; and the material averaged 67% solids by weight. MPA will make available to the private partner for its production facility sufficient land located nearby under a lease for the term of the Project.

The private partner will be responsible for delivering major components of the Project, including developing the method of converting dredged material into LWA, providing the conversion facility, operating and maintaining (O&M) the conversion facility, and marketing and selling the LWA. The private partner will also be expected to provide all or a portion of initial funding and financing for the Project. MDOT/MPA anticipates that the market for the LWA would be in the mid-Atlantic region, although the final decision on the market would be up to the private partner. It is anticipated that MDOT/MPA would make periodic payments to the private partner for ongoing removal of material and/or recovery of capacity in the Cox Creek DMCF.

MPA generally places dredged material in the Cox Creek DMCF from

October through March of each year. During these months, the private partner would be required to extract the dredged material in a way that does not interfere with MPA's obligation to conduct dredging and placement operations at the Cox Creek DMCF. Year round, the private partner will be expected to work in a cooperative manner with MPA's contractor who manages the Cox Creek DMCF, particularly during dewatering and crust management activities at the Cox Creek DMCF.

### **2.3 Technical Proof of Concept**

MPA has funded a demonstration project that converts Baltimore Harbor dredged material from the Cox Creek DMCF into lightweight aggregate using a thermal process, and the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) jointly evaluated one thermal concept for converting dredged material to lightweight aggregate (see Estes, T.J., D.E. Averett, T.E. Myers, D.A. Acevedo, E.J. Glisch, V.S. Magar and N.D. Soler. 2011. Mass Balance, Beneficial Use Products, and Cost Comparisons of Four Sediment Treatment Technologies Near Commercialization. ERDC/EL TR-11-1). This report may be accessed at the following link (copy and paste into your internet browser):

<http://www.epa.gov/superfund/health/conmedia/sediment/pdfs/Sed%20Treatment%20Report%20ERDC%20March%202011.pdf>

The demonstration project that MPA funded which converted dredged material to lightweight aggregate was evaluated by a third party independent initial review of the vendor's proposed technology and estimated costs associated with producing lightweight aggregate (LWA) from dredged materials at the Cox Creek DMCF. This evaluation concluded that the vendor's proposed technology was promising from a technical standpoint.

Based on the demonstration project funded by MPA and the USEPA/USACE study, MDOT/MPA has concluded that capacity in the Cox Creek DMCF can be recovered by removing dredged material from the DMCF, transporting the material to a processing facility and subjecting the material to dewatering and thermal processing.

### **3. Questions about the Cox Creek DMCF Placement Capacity Recovery Project**

#### **3.1 About Your Firm**

*Respondents must respond to the three questions in this subsection 3.1 for the purpose of assisting MDOT/MPA in understanding the context of responses.*

1. Please describe your firm and what role you might play in a solicitation for the Cox Creek DMCF Placement Capacity Recovery Project.

2. Please describe your firm's experience and background in full scale turn-key production involving conversion of dredged material, or closely allied materials, into LWA. Please indicate any specific experience with delivery methods. Also, please indicate any specific experience with obtaining permits for such a project and conducting public outreach/community relations activities.

3. Please list and describe any instances in which your firm has participated in a public private partnership.

*It is not necessary to respond to each and every question in subsections 3.2 through 3.5, below. Respondents are encouraged to respond only to those questions to which they bring relevant and specific perspective.*

### **3.2 Solicitation Process and Teaming**

4. What information would be particularly useful at an industry forum designed to advance a Request for Qualifications (RFQ) and/or Request for Proposals (RFP)? Would your firm be interested in having individual meetings with MDOT/MPA staff as part of the industry forum to share your views regarding the Project and any potential solicitation?

5. There are different options for structuring a competitive solicitation process for a P3. One option is a multi-step process involving a Request for Qualifications, shortlisting of qualified proposers, followed by a Request for Proposals. Another option is a one-step process involving just the issuance of a Request for Proposals. Which one would be a preferable solicitation process for a potential P3 and why?

6. Based on your answer to Question 5, what would be a reasonable timeframe for a full competitive solicitation process? How much time should be allocated to proposal development?

7. Would reimbursements for intellectual property make your firm more or less likely to respond to a request for solicitations?

8. What is the pursuit cost that you anticipate it would take to develop a submitted proposal?

9. MDOT/MPA is interested in reducing any unnecessary expense associated with preparing or responding to P3 solicitations. Please provide specific examples of requirements or specifications in other design-build or P3 solicitations that your firm believes could have been modified to reduce proposal costs, without adversely

affecting the public goals for, and ability to review the solicitation and to obtain competition?

10. To what extent would you expect to involve business entities located in the State of Maryland, as well as Small Business Enterprises (SBEs) and Minority Business Enterprises (MBEs)? What types of work would you most likely seek local participation for, as well as SBE and MBE participation? How could MDOT/MPA be most helpful in facilitating opportunities to use these firms?

11. What are your views regarding the form and amount of performance and payment security that would be appropriate for a P3 agreement for this Project, and what is the basis for your views?

### **3.3 P3 Agreement Concepts**

12. From your firm's perspective, what are the advantages of entering into a P3 agreement in which O&M of a LWA conversion facility, as well as marketing and selling of the LWA product, are placed with the private partner? What are the disadvantages? What are the Project characteristics that the private sector considers in this decision?

13. How might you structure a P3 agreement for the Cox Creek Placement Capacity Recovery P3? What are the potential efficiencies, risks and schedule impacts of your suggested P3 agreement structure that have potential to bring value to both the public and private sector partners?

14. What is a reasonable agreement term length for the P3 as described above, and to

what extent would the length of term impact your firm's decision to participate in a solicitation involving O&M as well as marketing/sales responsibilities?

15. Within the P3 agreement term, it is likely that there would be an initial demonstration period. During this time, the private partner would be required to demonstrate the technical viability of the conversion of dredged material into LWA on a full-scale basis potentially at its own expense. During this time, MPA expects that the successful proposer would need to demonstrate that their process will meet all applicable environmental and ASTM standards before moving to the production phase. How much time should be allocated to this initial demonstration period?

16. Should potential P3 agreement terms be more prescriptive for specific technical delivery of the Project, or should they be more outcome-driven and focused on Project performance measures?

17. How could payments to the private partner be structured over the term of the P3 agreement? How would payment structure impact your firm's decision to participate in a solicitation for a potential P3?

### **3.4 Financial Factors**

**(Please respond to the questions in this subsection 3.4 only if your firm would lead a team or would be an equity partner therein.)**

18. Looking ahead over the next one to three years, are there any particular financial risks or factors which would give your firm concern about entering into a P3 agreement for this Project? How might those risks be mitigated?

19. Please comment on the current and projected future LWA markets in the mid-

Atlantic region and what factors may influence that market pro or con.

20. With whom should intellectual property ownership of the LWA conversion process lie? How would ownership of intellectual property affect your firm's decision of whether to participate in a P3 for the Project? What would be the key factors driving your decision? What form of ownership would be mutually beneficial to the private partner and MDOT/MPA?

21. What do you see as the most significant cost drivers for the development and operation of the facility as well as marketing and selling the LWA?

22. What would be the expected asset life of a LWA conversion facility? Could the asset life be extended with strategic capital investments?

23. Please provide suggestions on how ownership and control of the LWA conversion facility can be addressed in a potential agreement. Should the State or private partner retain ownership of the conversion facility after expiration of the agreement, and why?

24. What is the potential role for financial tools and incentives such as Private Activity Bonds (PABs)?

25. What do you see as the most significant financial risks for the development and operation of the facility as well as marketing and selling the LWA? How might the key risks be mitigated over time?

26. To what extent could Project funding and financing responsibilities be shared between the public and private partners?

### **3.5 Technical Factors**

27. What are potential technical challenges to establishing and sustaining a full-scale, commercial operation that converts dredged material into LWA? What are ways to mitigate the overall risk of these technical challenges?

28. Please provide examples of commercial LWA operations of a comparable scale and scope that could provide a model for structuring the Project.

29. Please comment on the extent of geotechnical information for the stockpile of dredged material that should be included in the solicitation in order to provide sufficient information to minimize the risk to both parties.

30. Please comment on the desirability of a site visit prior to submitting a proposal for the Project.

31. What other information, of any kind, would you need in order to decide whether or not to respond to an RFQ or RFP to convert dredged material into LWA?

32. Would you prefer that MDOT/MPA specify the method you use to remove the dredged material from the Cox Creek DCMF and transfer it to your processing

facility, or would you rather have the ability to establish the method that best suits your means and methods, subject to satisfying the agreement performance criteria?

33. MPA has an ongoing need to deposit dredged material in the Cox Creek DCMF during the dredging season of October through March, and MPA's contractor has an ongoing need to manage the DCMF throughout the year. How would you anticipate obtaining dredged material and transferring it to your facility in a way that is compatible with the State's ongoing needs?

34. What are the most critical areas of design development for a dredged material recovery/LWA conversion project (manufacturing process, transfer of material from the Cox Creek DCMF to the manufacturing facility, ingress/egress requirements, property requirements, permitting, etc.)? What are the most important technical surveys and investigations that MDOT/MPA should advance or emphasize in its solicitation?

35. Please describe the anticipated workforce requirements for the Project, both during the initial Project development and the long-term O&M and marketing/selling. Can these requirements be accommodated by the existing supply of workers in the local labor market?

36. What role do you see public outreach/community relations playing in permitting, construction, operation and maintenance of this type of project?

**ATTACHMENT 1**  
**SYNOPSIS OF**  
**INNOVATIVE REUSE OF DREDGED MATERIAL**  
**INVESTIGATIONS**  
**MARYLAND PORT ADMINISTRATION**

Maryland law requires that dredged material from the Baltimore Harbor be re-deposited only in a confined area permitted by the Maryland Department of the Environment (MDE), thereby limiting dredged material management options.

MPA has investigated the possibility of placing dredged material in other types of confined facilities, such as existing mines, quarries, and landfills but these options have proven not to be feasible. The dredged material must be transported to a mine or quarry that is acceptable from an environmental regulatory perspective. Such sites are frequently limited because of the danger of groundwater contamination from the metals and organics. Additionally, costs to transport large volumes of dredged material to a mine or quarry would be significant regardless of the mode of transportation used and the distance travelled. Most municipal-type landfills would not take large volumes of Harbor dredged material because of the need to reserve capacity for municipal waste management.

Relative scarcity of sites for new confined facilities which are cost effective, environmentally acceptable and acceptable to communities, led MPA to investigate ways of innovatively reusing dredged material. Generally speaking, methods of innovatively reusing dredged material to create some type of useful/salable product require on site dewatering, or transportation to a site for dewatering, and assurance that any contaminants are rendered harmless to avoid, or at least acceptably minimize, negative impacts to human health and the environment when the salable product is put into use. MPA has spent over ten years vigorously investigating options for beneficial reuse of dredged material. After reviewing submissions in response to a Request for Proposals, MPA funded two demonstration projects. One project combined dredged material with steel slag fines to create structural fill intended to be used for road construction. Unfortunately, the demonstration showed leaching of metals and both challenges with and significant costs for controlling the leachate.

The second demonstration project, conversion of dredged material into lightweight aggregate (LWA), showed potential for several reasons. Dewatering could occur on MPA's property near its Cox Creek dredged material containment facility (Cox Creek DMCF), thus minimizing transportation costs. The demonstration process converted organic contaminants to carbon dioxide and water, which are harmless to human health, and sequestered the metal contaminants in the aggregate matrix. The demonstration LWA and products produced from it passed American Society of Testing and Materials (ASTM) standards, making it a candidate for use in certain construction components, such as concrete masonry units. Additionally, the demonstration indicated that while costs would be significantly higher than those for traditional methods of dredged material management, they were projected to be more affordable than other methods of innovative reuse that have been investigated to date.



Fort Carroll

Coke Point

Cox Creek

Upland

DMCF

Kembo Road

Fort Smallwood Road

**Cox Creek Location Map**



**MPA Owned Property**