ITEM NO. DRPA-12-093    SUBJECT: Concept Study for PATCO Subway Tunnels Forced Air Ventilation

COMMITTEE: Operations & Maintenance

COMMITTEE MEETING DATE: October 17, 2012

BOARD ACTION DATE: November 21, 2012

PROPOSAL: That the Board authorizes staff to negotiate an agreement with Hatch Mott MacDonald to provide a Concept Study for the PATCO Subway Tunnels Forced Air Ventilation Project.

Amount: $621,090.00

Consultant: Hatch Mott MacDonald

Other Consultants: Arup USA, Inc.
Parsons Brinckerhoff, Inc.

Engineers Estimate: $560,000.00

PURPOSE: To evaluate the ventilation in PATCO’s subway tunnels and underground stations and address the need for upgraded smoke control systems during a fire emergency.

BACKGROUND: The underground portions of the PATCO system located in Philadelphia and Camden are comprised of 2.5 miles of tunnels and six operational stations. The smoke generated by an underground fire emergency is a major threat to life safety. Effective smoke control is part of a comprehensive fire safety strategy to protect the life safety of PATCO’s commuters and facilitate evacuation, fire fighting and rescue operations in the event of a fire emergency.

The scope of work includes the evaluation of the existing ventilation conditions in the tunnels and stations and studying alternatives for new ventilation systems to capture and contain smoke. The Consultant will develop computer models and simulate fire events to predict and quantify the benefits of the recommended improvements. The Consultant will also evaluate associated electrical power, control and communication subsystems.

The Authority publicly advertised its intent to retain a consultant and
invited interested firms to submit Statements of Qualifications. Three (3) firms responded with Statements of Qualifications on June 14, 2011. All three (3) firms were deemed qualified and were sent a formal Request for Proposal. All three (3) firms responded with Proposals. A review committee of five (5) DRPA/PATCO technical staff members evaluated the Technical Proposals on the basis of technical merit.

Hatch Mott MacDonald was the highest technically ranked firm. Hatch Mott MacDonald’s experience and capabilities closely match the requirements of the project. Hatch Mott MacDonald presented a team of experts that is eminently qualified to successfully deliver the project. The project manager has extensive experience and is a leading expert in three dimensional ventilation and fire analysis.

This project involves the use of federal funding through the Federal Transit Administration (FTA). In accordance with the federally approved Brooks method of consultant selection, which is qualifications based, the Price Proposal submitted by Hatch Mott MacDonald was opened and evaluated against the Engineer’s Estimate. Based on this evaluation, a negotiated price of $621,090.00 was determined to be fair and reasonable.

It is recommended that an engineering services agreement be negotiated with Hatch Mott MacDonald for the costs and associated fees not to exceed $621,090.00 to provide engineering services in accordance with the Request for Proposal.

SUMMARY:

Amount: $621,090.00
Source of Funds: General Fund/Subject to Reimbursement by Future Bond Proceeds
Capital Project #: PF1001
Operating Budget: N/A
Master Plan Status: N/A
Other Fund Sources: Federal Transit Administration (80%) ($496,872.00)
Duration of Contract: 12 months
Other Parties Involved: Federal Transit Administration
Estimated Number of Jobs Supported: 2
RESOLUTION

RESOLVED: That the Board of Commissioners of the Delaware River Port Authority accepts the Proposal of Hatch Mott MacDonald to provide a Concept Study for the PATCO Subway Tunnels Forced Air Ventilation Project and that the proper officers of the Authority be and hereby are authorized to negotiate an Agreement with Hatch Mott MacDonald for an amount not to exceed $621,090.00, as per the attached Summary Statement; and be it further

RESOLVED: The Chairman, Vice Chairman and the Chief Executive Officer must approve and are hereby authorized to approve and execute all necessary agreements, contracts, or other documents on behalf of the DRPA. If such agreements, contracts, or other documents have been approved by the Chairman, Vice Chairman and Chief Executive Officer and if thereafter either the Chairman or Vice Chairman is absent or unavailable, the remaining Officer may execute the said document(s) on behalf of DRPA along with the Chief Executive Officer. If both the Chairman and Vice Chairman are absent or unavailable, and if it is necessary to execute the said document(s) while they are absent or unavailable, then the Chief Executive Officer shall execute such documents on behalf of DRPA.

SUMMARY:

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The Request for Qualifications (RFQs), which was posted on the Authority’s web-site, invited consultants to submit Statements of Qualifications (SOQs). Three firms submitted SOQ’s on June 14, 2011.

Since this project is partially funded by the Federal Transit Administration the Brooks method of consultant selection was used. The SOQ evaluation serves as a method for developing a “short list” of firms to receive a Request for Proposal (RFP). The Review Committee evaluated the SOQ’s and recommended soliciting Technical from all three firms:

Arup USA, Inc.
Hatch Mott MacDonald
Parsons Brinckerhoff, Inc.

The short listed firms were sent a RFP on November 4, 2011. The Technical Proposals were received on December 21, 2011 from all three short listed firms. The Review Committee, consisting of four (4) staff engineers and one (1) PATCO representative, reviewed and evaluated the Technical Proposals.

Hatch Mott MacDonald was the highest technically ranked firm. Hatch Mott MacDonald’s experience and capabilities closely match the requirements of the project. Their proposal presented a very good project approach and included a thorough discussion of the SES & CFD modeling tasks. Experience on similar rail tunnel and station ventilation projects includes: Metro-North Railroad Park Avenue Tunnel, Grand Central Station Terminal Ventilation, and Dulles Airport Tunnel and Station projects. Hatch Mott MacDonald presented a team of experts that is eminently qualified to successfully deliver the project. Hatch Mott MacDonald’s project manager, Norman Rhodes, PhD, has extensive experience and is a leading expert in three dimensional ventilation and fire analysis. Staff identified in the proposal provided support for the example projects listed.
The Review Committee recommended that the Price Proposal be requested from Hatch Mott MacDonald and negotiations commence using the Engineer’s Estimate in the amount of $560,000.00, as a guide. The Price Proposal was opened on March 20, 2012.

Below are the Technical Proposal rankings, proposed hours and fees of the firm, along with the Engineer’s estimate of hours.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Hours</th>
<th>Original Price Proposal</th>
<th>Negotiated Hours</th>
<th>Fee</th>
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</thead>
<tbody>
<tr>
<td>Engineer’s Estimate</td>
<td>4,146</td>
<td>$560,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hatch Mott MacDonald</td>
<td>9,498</td>
<td>$1,433,344.80</td>
<td>4,246</td>
<td>$621,086.76</td>
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</tbody>
</table>

Upon reviewing the recommended firm’s price proposal it was determined that both Hatch Mott MacDonald’s price and anticipated man-hours were much higher than the Engineer’s estimate. Hatch Mott MacDonald overestimated the level of effort required for the study and conceptual design. Hatch Mott MacDonald estimated 9,498 man-hours and Engineer’s Estimate anticipates 4,146 man-hours.

Discussions were held with Hatch Mott MacDonald to review the scope of work. The Scope of Services was reevaluated and revised in order to reduce the man-hours required without reducing the quality of the design. The technical modeling portion of the work was reduced and the requirement of 30% design drawings for the final deliverables was replaced with 15% - 20% conceptual design sketches. As a result, Hatch Mott MacDonald reduced their estimated number of man-hours to 4,246 hours, and revised their cost estimate to $621,086.76.

Based on the Review Committee’s findings, the Price Proposal of $621,090.00 has been determined to be fair and reasonable and therefore the committee recommends that an Engineering Services Agreement be issued to the highest technically ranked firm, Hatch Mott MacDonald.

Based on a review of the Review Committee’s evaluation and supporting documentation, I concur with the recommendation to engage Hatch Mott MacDonald of Philadelphia, Pennsylvania, in the amount of $621,090.00 for this Agreement.

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