

# Special Experimental Project No. 14 (SEP-14) Alternative Contracting

February 2017

District Department of Transportation - Tunnel Asset Preservation and Maintenance Program

For SEP (Special Experimental Project) 14

## **A. Introduction**

In April 2007, the District of Columbia Department of Transportation (DDOT) signed a performance-based asset management contract for the maintenance and preservation of 17\* tunnels in the District of Columbia.

## **B. Scope**

The contractor selected assumed responsibility for managing, rehabilitating and maintaining tunnel assets for all of DDOT's tunnels. DDOT evaluates the contractor's performance on how well they address each of the contractual condition and time-critical performance measures for all the electrical, mechanical, structural and lighting assets in each of DC's 16\* tunnels which are listed below. DDOT also evaluates the contractor's management performance.

Tunnel 99 – Thomas Circle - This tunnel is located under Thomas Circle along Massachusetts Avenue at the cross section of 14th Street with an approximate length of 415.' The tunnel has two travel lanes in both the eastbound and westbound directions.

Tunnel 100 – Scott Circle - This tunnel is located at Scott Circle and carries 16th Street under Massachusetts Avenue and Rhode Island Avenue NW with two travel lanes in each direction and a total length of 221'.

\*The initial performance based tunnel contract included 17 tunnels. In subsequent contracts it was determined that one tunnel was more appropriately categorized as a bridge.

Tunnel 101 – DuPont Circle - This tunnel is located directly underneath DuPont Circle with two travel lanes in each direction and an approximate length of 579’.

Tunnel 102 – Washington Circle - This tunnel is located at the northwest corner of the George Washington University campus carrying K Street Expressway under Washington Circle with an approximate length of 519.’ The Tunnel has two travel lanes in each direction.

Tunnel 172N – 12th Street (North) - This one-way tunnel is located under the National Mall at 12th Street from the south curb of Jefferson Drive to the north curb of Madison Drive with a total length of 730’ from portal to portal. There is a transition of traffic lanes from three-lane to two-lanes.

Tunnel 172S – 12th Street (South) - This one-way tunnel is located south of the National Mall, passing under a portion of 12th Street and Independence Avenue with an approximate length of 260’. There is a transition of traffic lanes from one-lane to two-lanes.

Tunnel 173 – 9th Street - This three-lane one-way tunnel is located where 9th street passes under the National Mall between Madison Drive and C Street and has an approximate length of 1610’.

Tunnel 1101 – Southwest Freeway over I-395 Ramp - This two-lane one-way tunnel is located within two blocks south of the Capitol Building and carries traffic northbound on I-395 Ramp A under Southwest Freeway. The tunnel has an approximate length of 480’.

Tunnel 1113 – Southwest Freeway over 12th St, Southwest - This double box tunnel is located between Washington Channel and L’Enfant Plaza carrying 12th Street and Main Avenue traffic under I-395 with two travel lanes in both northbound and southbound directions. The tunnel has an approximate length of 295’.

Tunnel 1142 – Mall - This tunnel runs in the north-south direction between D street northwest and C street southwest, passing beneath the reflecting pool in

front of the Capitol Building. The southbound tunnel is 3362' from portal to portal, and the northbound tunnel is 3434' from portal to portal. The northbound and southbound sides each vary from three to four lanes throughout its length. Both northbound and southbound directions of traffic have entrance and exit ramps.

Tunnel 1143 – Air Rights - This tunnel is part of Interstate 395. The south portal is located at the south curb of “K” street northwest and the north portal is located at the north curb of Massachusetts Avenue NW. The tunnel has a total length of 1239' from portal to portal with four travel lanes, two in each direction running north and south.

Tunnel 1208 – 23rd St, Northwest over E Street Expressway - This tunnel is located between the Lincoln Memorial and George Washington University, the 23rd Street Bridge over the E Street Expressway. The tunnel has an approximate length of 107' and carries 3-lanes eastbound and 2-lanes westbound.

Tunnel 1209 – Virginia Ave, Northwest over E Street Expressway - This double-box tunnel is located under Virginia Avenue one block south of the George Washington University campus with two travel lanes in both eastbound and westbound directions. The tunnel has a total length of 635'.

Tunnel 1302 – Virginia Ave, Northwest over I-66 - This double-box tunnel is located west of George Washington University and carries I-66 under G Street, New Hampshire Avenue, 25th Street and Virginia Avenue. The tunnel contains four traffic lanes in both northbound and southbound directions. The tunnel has an approximate length of 558'.

Tunnel 1409 – Barney Circle Ramp - This two-lane one-way tunnel is located under Pennsylvania Avenue and is the ramp to the Southeast Freeway Ramp at Barney Circle. The tunnel has a total length of 304'.

Tunnel 1410 – Barney Circle - This double-box tunnel is located at Barney Circle along the Anacostia River and carries the traffic from Southeast Freeway under Pennsylvania Avenue, SE, and Ramp G. The tunnel has a total length of 440'.

DDOT clearly delineated acceptable minimum contractual performance levels that the Contractor is required to meet. These acceptable minimum contractual performance levels for each performance measure are defined as “Good,” or a score of “4,”.

**The Structural system** includes all tunnel structural elements between the boundaries of the tunnel portals (including the portals) and all DDOT’s associated tunnel facility rooms and tunnel support spaces, with the exclusion of roadway elements.

**The Mechanical system** includes all mechanical elements associated with the above-named tunnels except for some exclusions.

**The Electrical system** includes all electrical elements associated with the above-named tunnels, except for some exclusions.

The District will pay the Contractor for all work under this contract by CLIN (Contract Line Item Number) on a firm fixed price with incentives/disincentives applied when applicable.

The Firm Fixed Price Schedule is shown below for the successful proposer:

CLIN #	Maintenance Category	Base Period Year 1	Base Period Year 2	Option Year 1	Option Year 2	Option Year 3
0001a	Structural Rehabilitation and Maintenance (C.6.12)	\$1,142,950.00	\$1,170,526.00	\$1,207,182.00	\$1,245,041.00	\$1,279,511.00
0001b	Tile and Concrete Repair (C.6.12.1.4)	\$586,461.00				
0001c	Force Account (C.6.12.1.7)	DDOT Discretion	DDOT Discretion	DDOT Discretion	DDOT Discretion	DDOT Discretion
0002	Mechanical Rehabilitation and Maintenance (C.6.13)	\$1,331,268.00	\$1,055,047.00	\$1,006,519.00	\$ 994,947.00	\$1,012,408.00
0003	Electrical Rehabilitation and Maintenance (C.6.14)	\$1,396,865.00	\$1,034,417.00	\$1,061,919.00	\$1,088,158.00	\$1,140,277.00
0004	Lighting Rehabilitation and Maintenance (C.6.15)	\$652,390.00	\$666,044.00	\$680,181.00	\$ 658,410.00	\$673,508.00
<b>GRAND TOTAL (Each Year)</b>		<b>\$5,109,934.00</b>	<b>\$3,926,034.00</b>	<b>\$3,955,801.00</b>	<b>\$3,986,556.00</b>	<b>\$4,105,704.00</b>
<b>EVALUATED TOTAL (2 Year Base including \$40,000 Mobilization)</b>					<b>\$9,075,968.00</b>	
<b>GRAND TOTAL (2 Year Base Plus All Option Years)</b>					<b>\$21,124,029.00</b>	

The District will pay the Contractor for all work under this contract by CLIN on a firm fixed price with incentives/disincentives basis.

The Contractor invoices DDOT on a monthly basis an amount equal to 1/12 of the annual base contract amount for each fixed price CLIN. The Contractor shall support each monthly invoice with a statement of the work that the Contractor performed for that month and the materials and other goods and services that the Contractor used to complete that work.

DDOT retains ten (10) percent from the monthly billing of the firm fixed price items. The retainage will be released when specified conditions are met which are described in the contract.

The Contractor is eligible for an Asset Condition incentive/disincentive fee on an annual basis for CLINs 0001 to 0004 based upon objective evaluations relative to performance measures and the subjective score from DDOT's Performance Evaluation Board (PEB). Also the Contractor is subject to a Management Performance disincentive fee on a quarterly basis for CLINs 0001 to 0004 based upon the Contractor's point's tally at the end of the quarterly evaluation period. Deficiencies that are not corrected within the timeframe specified will cause points for that performance measure to be applied to the applicable Points Tally. Each point in the points tally will result in a disincentive fee of 0.01% of the contractor's fixed fee for that period up to a maximum of 3.00%. Incentives and disincentives cannot exceed three percent of the fixed price amount paid for each applicable CLIN.

To determine the incentive or disincentive fee for asset conditions, the COTR (Contracting Officer's Technical Representative) will provide a Final Annual Score for the Contracting Officer's consideration for each CLIN 0001-0004. Each quarterly evaluation of asset conditions will comprise 20% of the Final Annual Score (80% total). The PEB score will comprise the remaining 20% of the Final Annual Score.

### **C. History**

In 2000 DDOT procured a Best Value contract with a private contractor to rehabilitate and maintain all DDOT assets (from right of way to right of way and with the exception of traffic signals) on the District's National Highway System (NHS) segments, including tunnels.

DDOT wished to continue with this successful concept exclusively for their tunnels and again used the Best Value award process. Under this effort, DDOT entered into a performance-based contract to obtain asset management services to rehabilitate and maintain specific tunnel assets within the District of Columbia.

Through this contract, a private firm assumed the responsibility for managing DC's tunnels as named in RFP along with all of their associated facilities and systems.

The contract is awarded to the responsible Offeror whose offer is technically acceptable to DDOT, and offers the best value to the District as determined by the total overall score from the evaluation criteria specified below.

The Technical Rating Scale is as follows:

- 1 Unacceptable - Fails to meet minimum requirements; major deficiencies which are not correctable.
- 2 Poor - Marginally meets minimum requirements; significant deficiencies which may be correctable.
- 3 Acceptable - Meets requirements; only minor deficiencies which are correctable.
- 4 Good - Meets requirements; no deficiencies.
- 5 Excellent - Exceeds most, if not all requirements; no deficiencies.

DDOT only evaluate an Offeror's Price Proposal if DDOT's proposal evaluation panel finds that Offeror to be technically acceptable.

Proposals will be evaluated based on the following technical evaluation factors.

**Technical - (20 Points)**

The extent to which Offerors provide a clear, concise, high probability for success in meeting all of the performance standards and tasks set forth in the contract documents.

The extent to which the proposed Prime Contractor demonstrates experience, knowledge, and understanding of preservation, and maintenance for all of the tunnel assets referenced in this RFP.

The extent to which the proposed subcontractors demonstrate experience, knowledge and understanding of operations and maintenance for the assets referenced in this RFP.

The extent to which the proposed Prime Contractor and subcontractors demonstrate experience, knowledge and understanding of the key safety issues.

Experience, knowledge and understanding in using innovative techniques, processes, or materials related to operations and maintenance of the tunnel assets.

The extent to which Offerors demonstrate knowledge and understanding of the type and level of effort necessary to ensure that all assets meet the performance standards as quickly as possible.

The extent to which the Offeror's Traffic Control Plan demonstrates experience in controlling traffic in a busy urban environment.

### **Staffing/ Management/ QC/QA/ Past Performance (40 Points)**

The extent to which the Prime Contractor's and subcontractors' experience and past performance on asset preservation, maintenance, and management contracts of comparable size demonstrates a likelihood of successfully performing all of the tasks set forth in this RFP.

The relevancy of the past performance management experience examples provided by the Offeror.

The quality of references provided by the identified contact personnel.

The extent to which personnel from the referenced projects are proposed on this project.

The adequacy and relevance of the qualifications and experience of the proposed program manager.

The qualifications and experience of key personnel by task area, for the proposed Prime Contractor and the subcontractors.

The extent to which key and non-key personnel are available for the term of the proposed contract.

The adequacy of the Offeror's plan to ensure adequate training and understanding of requirements.

The extent to which certified disadvantaged business enterprises are represented.

The extent to which the Prime Contractor's management plan demonstrates the ability to manage, rehabilitate and maintain tunnel.

The extent to which the Prime Contractor's management plan demonstrates the ability to effectively manage the proposed subcontractors.

The extent to which the management plan demonstrates the ability to control prices and reduce financial risks to the government.

The extent to which the management plan demonstrates an adequate approach for ensuring the availability of staff and resources, over the term of the contract, for routine and emergency/fast response activities.

The extent to which the management plan demonstrates an understanding of the need for a good management relationship with utility companies, and demonstrates a good understanding of utility permitting procedures and other utility requirements.

The adequacy of the Offeror's ability to attend project meetings on short notice.

The extent to which the Prime Contractor's quality control/quality assurance plan is likely to ensure that all tasks meet the performance standards set forth in this RFP.

The adequacy of the Offeror's plan for ensuring quality work.

The adequacy of the Offeror's plan for ensuring that equipment remains in good working order.

The adequacy of the Offeror's plan for ensuring that materials meet specifications and are readily available.

The extent to which the Offeror's plan demonstrates a good understanding of utility permitting procedures and other utility requirements.

The extent to which the proposed Prime Contractor's and major subcontractor's facilities and equipment demonstrate a likelihood of successfully performing all of the tasks set forth in this RFP.

**Price Criteria (40 Points)**

The Offeror with the lowest price will receive the maximum price points.

$$\frac{\text{Price of Lowest price proposal}}{\text{Price of proposal being evaluated}} \times \text{weight} = \text{evaluated price score}$$

**D. Bids Received**

For the contract that just ended the bids received were:

<b>BIDDER</b>	<b>BID</b>
Transfield Services	\$21,084,029.00
Martins Construction	\$43,558,025.00
Fort Myer Construction	\$82,338,215.00
M. C. Dean	\$28,182,560.00
Engineer's Estimate	\$26,753,122.01

The contract is for two base years and three option years. All base and option years require that a proposer submit a bid and the contract is awarded based on the total bid for all base and option years. Price receives a 40 percent weight when assigning a Best Value score to a proposer.

The variation in bids can be explained by the fact that very few general contractors have experience with performance based contracts and also tunnels are complex engineering systems that require expertise in many areas. Another factor is that a successful proposer will tend to have a distinct advantage because they become very familiar with the tunnel assets, their condition.

### **E. Time And Cost Saving**

Time savings are not applicable to this type of Best Value contract.

Cost savings have been quantified for ventilation fan upgrades. The upgrades to these ventilation fans included converting fans from chain drive to belt drive and replacing oil bearings with grease bearings. These upgrades resulted in more than 2 million dollars in cost savings for ventilation fan routine maintenance over the five year life of the contract.

Other savings could not be quantified because DDOT is not responsible for the electric power costs. Because all tunnel mechanical and electrical systems operate solely on electric power these cost savings are probably substantial.

While the cost savings are not quantified electric power savings are being realized because of the variable frequency drive (VDF) motor upgrades. For example the ventilation fans can now operate at 80% capacity with only 50% of the power that previously had to be supplied, and at 50% capacity the power necessary is reduced to only 12%. The VDFs need only minimal maintenance.

Also the mechanical/electrical system controls have been automated with PLCs (Programmable Logic Controllers). These controllers save money by keeping systems

functioning optimally with the inputs they receive (e.g. CO levels, lighting requirements, system malfunctions etc.) Again the cost savings have not been quantified, but cost savings are being realized with this upgrade.