

# Memorandum



Date: December 30, 2014

"DESIGN"

To: Lester Sola, Director  
Internal Services Department

From: Bill Johnson, Director  
Miami-Dade Water and Sewer Department

Subject: Review Item: Design-Build Services for the Installation of a 48-inch diameter Water Transmission Main for Area N; Project No. DB14-WASD-03

It is recommended that the Small Business Development division of Internal Services Department review the attached request for Community Business Enterprise (CBE), Community Small Business Enterprise (CSBE), and Small Business Enterprise (SBE) measures for the above mentioned project, in order to proceed with the advertisement and subsequent consultant selection for this project.

The duration of the proposed design-build contract is 960 calendar days. The total compensation for the design-build contract is \$69,278,707.00 which includes the following listed below:

- \$58,972,452 estimated construction cost;
- \$ 5,000,000 estimated engineering cost;
- \$ 2,948,623 contingency fees for construction (5%);
- \$ 500,000 contingency fees for engineering (10%);
- \$ 1,857,632 permitting fees.

The Design-Builder shall provide existing conditions investigations, engineering, design, preparation of technical specifications, permitting, construction, testing and commissioning services, and customer contact for the implementation of a new 48-inch diameter water transmission main for "Area N". The design and construction services rendered by the Design-Builder shall result in a complete, functional, and operable piping project with a minimum 80 year design life. The scope of services shall include, but is not limited to, the following main Project elements:

- a) Coordinate the design and installation of the new 48-inch diameter water transmission main to connect to the Miami-Dade Water and Sewer Department's new 36-inch diameter water transmission main project along S.W. 152 Street at S.W. 127 Avenue.
- b) Approximately 6.7 miles of 48-inch diameter water transmission main, to be constructed of either ductile iron pipe or concrete (prestressed concrete cylinder or bar wrapped) pipe approximately along the route described below, including approximately 2,000 linear feet of micro-tunneling for the 48-inch diameter carrier pipe at crossings with canals, railroads, highways, and major intersections:
  - Connect to a proposed 36-inch diameter water transmission main on S.W. 152 Street at S.W. 127 Avenue;
  - Along S.W. 127 Avenue from 152 Street to S.W. 88 Street, crossing under the C-100/Cutler Drain Canal, CSX railroad, and the C-1/Black Creek Canal;

- Along SW 127 Avenue to the Miami-Dade Water and Sewer Department's Southwest Wellfield property, and continuing along the northwest side of that property to S.W. 76 Street;
  - Along SW 76 Street to S.W. 122 Avenue;
  - Along S.W. 122 Avenue to S.W. 72 Street;
  - Along S.W. 72 Street to S.W. 117 Avenue, crossing under the Homestead Extension of Florida's Turnpike;
  - Along S.W. 117 Avenue, to the Snapper Creek Canal, crossing under the canal; and
  - Connect to existing 60-inch diameter prestressed concrete cylinder pipe (PCCP) water transmission main in North Snapper Creek Drive.
- c) Tap the existing 60-inch diameter PCCP water transmission main approximately at the intersection of S.W. 61 Street and North Snapper Creek Drive. The Design-Builder shall design and construct the tapping and connection, and commissioning the new 48-inch diameter water transmission main without any interruption of service to the existing Miami-Dade Water and Sewer Department customers.
- d) Installation of all required fittings and valves, manholes/vaults, ancillary piping, tapping, utility relocation, temporary bypass, and tie-in connections to facilitate successful construction and commissioning.
- e) Clean, disinfect and test the new water transmission main.
- f) Restore of all areas disturbed by construction activities to conditions equal or better to those before the commencement of work activities.

The scope of services shall include all professional services, all labor, supervision, quality control, project controls, safety programs, materials, tools, equipment, services, methods and procedures necessary or convenient for the Contractor to fulfill all duties and obligations imposed by the Contract Documents, which can be reasonably assumed as necessary to fulfill the intent of the Contract Documents and to provide a complete, fully functional and satisfactory Project.

Firms providing engineering services must be certified in the following technical categories and the respective percentages of the disciplines as indicated below:

<i>Technical Category No.</i>	<i>Description</i>	<i>Total Percentage</i>	<i>CBE Percentage</i>
<b>3.02A PRIME</b>	Highway Systems – Tunnel Design	5%	
<b>6.01 PRIME</b>	Water And Sanitary Sewer Systems - Water Distribution And Sanitary Sewage Collection And Transmission Systems	32%	
<b>16.00 PRIME</b>	General Civil Engineering	25%	
<b>17.00 PRIME</b>	Engineering Construction Management	10%	
3.04	Highway Systems - Traffic Engineering Studies	3%	2%

9.01	Soils, Foundations And Material Testing- Drilling, Subsurface Investigations And Seismographic Services	1%	
9.02	Soils, Foundations And Materials Testing - Geotechnical And Materials Engineering Services	5%	
9.04	Soils, Foundations And Materials Testing – Non-Destructive Testing And Inspections	1%	
10.02	Geology Services	2%	
10.05	Environmental Engineering - Contamination Assessment And Monitoring	1%	1%
11.00	General Structural Engineering	3%	
12.00	General Mechanical Engineering	2%	2%
15.01	Surveying And Mapping - Land Surveying	5%	5%
15.03	Underground Utility Location	5%	5%
	TOTALS	100%	15%

WASD is recommending a 15% CBE, 7.20% CSBE, and a 0.25% (public relations) SBE goal participation. Attached are WASD's Departmental Input Worksheets and CBE and CSBE minimum requirements for your review and approval.

If you have any questions, please contact Patty David, Chief, Intergovernmental Affairs Section at [pattyd@miamidade.gov](mailto:pattyd@miamidade.gov) or (786) 552-8040.

Attachments

**Design-Build Services for the Installation of a 48-inch diameter  
Water Transmission Main for Area N  
Project No. DB14-WASD-03**

**Minimum Experience and Qualifications**

**EXPERIENCE AND QUALIFICATIONS**

Proposed Design-Builder shall demonstrate its project team experience by presenting the qualifications and capabilities of each Design-Build Team member firm, for projects completed within the last 10 years from the date of this solicitation, including projects that may be at least 50% complete prior to the required submittal date of this Request Design-Build Services (RDBS) Step 1 solicitation, that demonstrate related minimum project experience as indicated below:

**Qualification and Experience for Lead Constructors and Lead Designers**

a) Lead Constructors:

1. The construction firm performing the open cut installation work must have a minimum of 4 years total industry experience from the date of this solicitation. It also must have successfully constructed at least 3 water main projects of similar size and complexity in an urban environment consisting of a minimum of 10,000 combined total linear feet of installation, and minimum 42-inch nominal diameter of such pipeline installation is required in the last 10 years of this solicitation.
2. The construction firm or specialty subcontractor performing the micro-tunneling work must have successfully constructed at least 3 micro-tunneling projects consisting of jacking similar type of casing pipe that is selected by the Design-Builder for the crossings, and completed a minimum of 1,200 linear feet of micro-tunneling in the last 10 years from the date of this solicitation. To qualify, each of these micro-tunnels must have been a minimum of 5-feet internal diameter in soft ground below the groundwater and at least 2 of the micro-tunnels excavated in ground similar to the conditions expected for this Project.
3. The construction firm or specialty subcontractor performing the shaft construction shall have successfully constructed at least 3 deep shafts that were at least 50-foot deep (below grade). At least 2 of these shafts must have been extended below groundwater and required means of controlling inflow and bottom heave of the shaft.
4. The construction firm or specialty subcontractor performing the installation of the carrier pipe within the casing pipe shall have successfully completed at least 1 project involving the installation of a carrier pipe of minimum 42-inches inside diameter, similar pipe material, installation length that exceeds 1,000-feet and grout fill of the annular space between casing and carrier pipe.
5. The construction firm or specialty subcontractor performing the tapping of the operating 60-inch diameter prestressed concrete cylinder pipe water transmission main shall have successfully completed at least 1 project of similar size and type.
6. The Lead Constructor on the Design-Builder team shall qualify for Item 1 of the above requirements.

b) Lead Designers:

1. The Lead Designer firm performing the design of the water transmission main installation must have a minimum of 5 years total industry experience from the date of this solicitation. It also must have designed at least 3 pressure pipeline installation projects in an urban environment consisting of a minimum of 10,000 total linear feet of minimum 42-inch nominal diameter within the last 10 years from the date of this solicitation.
2. The Lead Designer firm or its Subconsultant performing the design of the micro-tunnel(s) must have designed at least 3 micro-tunneling projects consisting of jacking a similar casing pipe as proposed for this project. Total length of the projects shall be a minimum of 1,000 linear feet of 5-foot diameter casing pipe or larger. At least 2 of the micro-tunnel segments shall have been in similar ground conditions and similar crossings to those proposed (under active railroad tracks, under four lanes of limited access roadways and one under open water).
3. The Lead Designer firm or its Subconsultant performing the design of the carrier pipe within the casing pipe shall have designed 1 project with a carrier/product pipe of 42-inches minimum nominal diameter, and required a detailed geotechnical instrumentation program to monitor the ground behavior to the tunneling.
4. The Lead Designer firm or its Subconsultant performing design for the deep shafts shall have designed a deep shaft project to support a micro-tunneling operation. The shaft shall be at least 50-foot deep (below grade).

c) Subconsultants:

Subconsultants to the Lead Constructor or Lead Designer must demonstrate that they have designed at least 3 projects that were successfully completed within the last 10 years from the date of the solicitation that involved the main project element for which the Subconsultant is being proposed, unless the experience and qualifications of the Lead Constructor or Lead Designer listed above require otherwise.

d) Additional Preferred Project Experience and Past Performance:

The Design-Builder teams may receive higher qualifications scores from the Competitive Selection Committee (CSC) if their submitted project experience and past performance can demonstrate any of the following listed below:

1. Listed projects are of a similar or greater size and level of complexity.
2. Any listed projects of the proposed Design-Builder entity were designed and constructed through Design-Build project delivery.
3. The Lead Constructor and Lead Designer have worked together on previous projects, particularly on Design-Build projects.
4. Listed projects of the Lead Constructor and Lead Designer for the micro-tunneling work include experience in reasonably similar geotechnical conditions.
5. Listed projects demonstrate capabilities and experience of utilizing soil stabilization and grouting techniques for water control during boring and shaft excavation. (This may be a specialty subcontractor).
6. Key personnel, most significantly the proposed Project Manager, Design Manager and Construction Manager, that have served on the Projects listed and their client reference can validate that performance.

## Design-Build Team Key Personnel Experience and Qualifications

a) Minimum industry and position experience of Design-Build team Key Personnel are as follows:

1. Minimum 10 years total industry experience of which 5 years in a similarly responsible position for each of the following Key Personnel:
  - i) Design-Build Project Manager
  - ii) Lead Designer- Design Manager
  - iii) Lead Constructor - Construction Manager
  - iv) Micro-tunneling Superintendent
  - v) Shafts Construction Superintendent
  - vi) Lead Civil Engineer
  - vii) Pipe Installation Superintendent
2. Minimum 10 years total industry experience of which 5 years in a similarly responsible position for each of the following Key Personnel:
  - i) Lead Structural Engineer
  - ii) Lead Geotechnical Engineer
  - iii) Lead Pipeline/Mechanical Engineer
  - iv) Pipe Tapping Superintendent
  - v) Permitting/Compliance Manager
  - vi) Design-Builder Quality Assurance/Quality Control (QA/QC) Manager
  - vii) Design-Builder Safety Manager
3. Key Personnel must demonstrate experience with the type work to be performed.
  - i) Proposers shall identify, in their proposal, those State of Florida registered Professional Engineers who will sign and seal construction plans and specifications.
  - ii) Key Personnel resumes shall indicate the individual's current firm association, their professional qualifications, a client reference with contact information, and their role and duration on each project for which they are being credited the related experience.

b) Additional Preferred Experience and Past Performance:

1. Experience in significant role on a Design-Build project, especially in a similar role as proposed for this Project.
2. Superior references with regard to meeting cost, schedule, and quality objectives on previous projects, and maintaining a positive client relationship.

The expertise must be met by a qualified individual(s) of the Design-Builder team. The experience must be demonstrated by direct or substantial involvement of the individual(s) in a supervisory capacity at the Project Manager level or above. The determination of the individual's qualifications and compliance with the experience and qualifications shall be at the sole discretion of the County. The Competitive Selection Committee (CSC) may negatively evaluate proposals from firms they determine have failed to meet the above experience and qualification(s).

## **Design-Builder Safety Record – Past Performance**

Past performance as reflected by a 3 year average for the last 3 previous full years of the Experience Modification Rate (EMR) for the Design-Builder is recommended to be below 1.10 for each firm.

Design-Builders shall provide EMR data for the previous 3 full calendar years (2011, 2012, and 2013) on a firm-wide basis shall be documented by a signed letter with contact information from the firm's insurance carrier, or the insurance carrier's agency representative. Higher qualifications score shall be provided by the CSC for the Design-Builder demonstrating an average EMR lower than other competing Design-Builder firms. Design-Builder shall also provide their Occupational Safety and Health Administration (OSHA) forms 300 and 300A for the last 3 full calendar years indicating OSHA submitted accident data for evaluation by the CSC as to their frequency and severity



# Memorandum



Date: December 30, 2014

To: Lester Sola, Director  
Internal Services Department

From: Bill Johnson, Director  
Miami-Dade Water and Sewer Department

Subject: Review Item: Design-Build Services for the Installation of a 48-inch diameter Water Transmission Main for Area N; Project No. DB14-WASD-03

"Build"

It is recommended that the Small Business Development division of Internal Services Department review the attached request for Community Business Enterprise (CBE), Community Small Business Enterprise (CSBE), and Small Business Enterprise (SBE) measures for the above mentioned project, in order to proceed with the advertisement and subsequent consultant selection for this project.

The duration of the proposed design-build contract is 960 calendar days. The total compensation for the design-build contract is \$69,278,707.00 which includes the following listed below:

- \$58,972,452 estimated construction cost;
- \$ 5,000,000 estimated engineering cost;
- \$ 2,948,623 contingency fees for construction (5%);
- \$ 500,000 contingency fees for engineering (10%);
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The Design-Builder shall provide existing conditions investigations, engineering, design, preparation of technical specifications, permitting, construction, testing and commissioning services, and customer contact for the implementation of a new 48-inch diameter water transmission main for "Area N". The design and construction services rendered by the Design-Builder shall result in a complete, functional, and operable piping project with a minimum 80 year design life. The scope of services shall include, but is not limited to, the following main Project elements:

- a) Coordinate the design and installation of the new 48-inch diameter water transmission main to connect to the Miami-Dade Water and Sewer Department's new 36-inch diameter water transmission main project along S.W. 152 Street at S.W. 127 Avenue.
- b) Approximately 6.7 miles of 48-inch diameter water transmission main, to be constructed of either ductile iron pipe or concrete (prestressed concrete cylinder or bar wrapped) pipe approximately along the route described below, including approximately 2,000 linear feet of micro-tunneling for the 48-inch diameter carrier pipe at crossings with canals, railroads, highways, and major intersections:
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  - Along S.W. 117 Avenue, to the Snapper Creek Canal, crossing under the canal; and
  - Connect to existing 60-inch diameter prestressed concrete cylinder pipe (PCCP) water transmission main in North Snapper Creek Drive.
- c) Tap the existing 60-inch diameter PCCP water transmission main approximately at the intersection of S.W. 61 Street and North Snapper Creek Drive. The Design-BUILDER shall design and construct the tapping and connection, and commissioning the new 48-inch diameter water transmission main without any interruption of service to the existing Miami-Dade Water and Sewer Department customers.
- d) Installation of all required fittings and valves, manholes/vaults, ancillary piping, tapping, utility relocation, temporary bypass, and tie-in connections to facilitate successful construction and commissioning.
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<i>Technical Category No.</i>	<i>Description</i>	<i>Total Percentage</i>	<i>CBE Percentage</i>
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WASD is recommending a 15% CBE, 7.20% CSBE, and a 0.25% (public relations) SBE goal participation. Attached are WASD's Departmental Input Worksheets and CBE and CSBE minimum requirements for your review and approval.

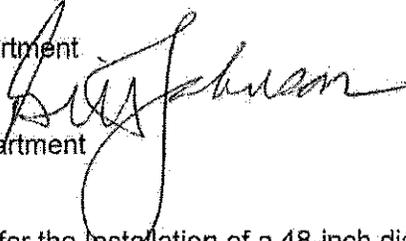
If you have any questions, please contact Patty David, Chief, Intergovernmental Affairs Section at [pattyd@miamidade.gov](mailto:pattyd@miamidade.gov) or (786) 552-8040.

Attachments

**DEPARTMENTAL INPUT  
CONTRACT MEASURE ANALYSIS AND RECOMMENDATION**

DATE: December 30, 2014

TO: Lester Sola, Director  
Internal Services Department

FROM: Bill Johnson, Director   
Water and Sewer Department

PROJECT TITLE: Design-Build Services for the Installation of a 48-inch diameter  
Water Transmission Main for Area "N"  
Project No. DB14-WASD-03

PROJECT ESTIMATE: \$58,972,452.00 Construction Cost  
\$ 2,948,623.00 Contingency Allowance  
\$ 1,857,632.00 Permitting Fees 3%

TOTAL: \$63,778,707.00

FUNDING: Water Renewal and Replacement Fund, Future WASD Revenue Bonds,  
and WASD Revenue Bonds Sold

ITEM	DESCRIPTION	ESTIMATED COST	PERCENT OF ITEM OF BASE BID	CSBE AVAILABILITY
1	Demolition	\$441,371.00	0.75%	0.75%
2	Erosion Control	\$174,923.00	0.30%	0.30%
3	Water main construction (includes mobilization, furnish and install pipe, tapping and connections, trenchless construction, utility relocation, dewatering, valves)	\$53,174,187.00	90.17%	3.09%
4	Air Release Valve and Flushing Valve Assemblies	\$699,887.00	1.19%	1.19%
5	Roadway restoration (including curb and gutter)	\$3,959,402.00	6.71%	1.81%
6	Miscellaneous restorations (sidewalks, sodding, signalization)	\$102,439.00	0.17%	0.06%
7	Maintenance of Traffic	\$420,243.00	0.71%	0%
	<b>Total Construction Cost</b>	<b>\$58,972,452.00</b>	<b>100%</b>	<b>7.20%</b>
	Contingency Allowance 5%	\$2,948,623.00		
	Permitting	\$1,857,632.00		
	Dedicated Allowances	0		
	<b>Total Estimated Construction Cost including Contingency and Permitting Fees</b>	<b>\$63,778,707.00</b>		

**Design-Build Services for the Installation of a 48-inch diameter  
Water Transmission Main for Area N  
Project No. DB14-WASD-03**

**Minimum Experience and Qualifications**

**EXPERIENCE AND QUALIFICATIONS**

Proposed Design-Builder shall demonstrate its project team experience by presenting the qualifications and capabilities of each Design-Build Team member firm, for projects completed within the last 10 years from the date of this solicitation, including projects that may be at least 50% complete prior to the required submittal date of this Request Design-Build Services (RDBS) Step 1 solicitation, that demonstrate related minimum project experience as indicated below:

**Qualification and Experience for Lead Constructors and Lead Designers**

a) Lead Constructors:

1. The construction firm performing the open cut installation work must have a minimum of 4 years total industry experience from the date of this solicitation. It also must have successfully constructed at least 3 water main projects of similar size and complexity in an urban environment consisting of a minimum of 10,000 combined total linear feet of installation, and minimum 42-inch nominal diameter of such pipeline installation is required in the last 10 years of this solicitation.
2. The construction firm or specialty subcontractor performing the micro-tunneling work must have successfully constructed at least 3 micro-tunneling projects consisting of jacking similar type of casing pipe that is selected by the Design-Builder for the crossings, and completed a minimum of 1,200 linear feet of micro-tunneling in the last 10 years from the date of this solicitation. To qualify, each of these micro-tunnels must have been a minimum of 5-feet internal diameter in soft ground below the groundwater and at least 2 of the micro-tunnels excavated in ground similar to the conditions expected for this Project.
3. The construction firm or specialty subcontractor performing the shaft construction shall have successfully constructed at least 3 deep shafts that were at least 50-foot deep (below grade). At least 2 of these shafts must have been extended below groundwater and required means of controlling inflow and bottom heave of the shaft.
4. The construction firm or specialty subcontractor performing the installation of the carrier pipe within the casing pipe shall have successfully completed at least 1 project involving the installation of a carrier pipe of minimum 42-inches inside diameter, similar pipe material, installation length that exceeds 1,000-feet and grout fill of the annular space between casing and carrier pipe.
5. The construction firm or specialty subcontractor performing the tapping of the operating 60-inch diameter prestressed concrete cylinder pipe water transmission main shall have successfully completed at least 1 project of similar size and type.
6. The Lead Constructor on the Design-Builder team shall qualify for Item 1 of the above requirements.

b) Lead Designers:

1. The Lead Designer firm performing the design of the water transmission main installation must have a minimum of 5 years total industry experience from the date of this solicitation. It also must have designed at least 3 pressure pipeline installation projects in an urban environment consisting of a minimum of 10,000 total linear feet of minimum 42-inch nominal diameter within the last 10 years from the date of this solicitation.
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c) Subconsultants:

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d) Additional Preferred Project Experience and Past Performance:

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6. Key personnel, most significantly the proposed Project Manager, Design Manager and Construction Manager, that have served on the Projects listed and their client reference can validate that performance.

## **Design-Build Team Key Personnel Experience and Qualifications**

a) Minimum industry and position experience of Design-Build team Key Personnel are as follows:

1. Minimum 10 years total industry experience of which 5 years in a similarly responsible position for each of the following Key Personnel:

- i) Design-Build Project Manager
- ii) Lead Designer- Design Manager
- iii) Lead Constructor - Construction Manager
- iv) Micro-tunneling Superintendent
- v) Shafts Construction Superintendent
- vi) Lead Civil Engineer
- vii) Pipe Installation Superintendent

2. Minimum 10 years total industry experience of which 5 years in a similarly responsible position for each of the following Key Personnel:

- i) Lead Structural Engineer
- ii) Lead Geotechnical Engineer
- iii) Lead Pipeline/Mechanical Engineer
- iv) Pipe Tapping Superintendent
- v) Permitting/Compliance Manager
- vi) Design-Builder Quality Assurance/Quality Control (QA/QC) Manager
- vii) Design-Builder Safety Manager

3. Key Personnel must demonstrate experience with the type work to be performed.

- i) Proposers shall identify, in their proposal, those State of Florida registered Professional Engineers who will sign and seal construction plans and specifications.
- ii) Key Personnel resumes shall indicate the individual's current firm association, their professional qualifications, a client reference with contact information, and their role and duration on each project for which they are being credited the related experience.

b) Additional Preferred Experience and Past Performance:

- 1. Experience in significant role on a Design-Build project, especially in a similar role as proposed for this Project.
- 2. Superior references with regard to meeting cost, schedule, and quality objectives on previous projects, and maintaining a positive client relationship.

The expertise must be met by a qualified individual(s) of the Design-Builder team. The experience must be demonstrated by direct or substantial involvement of the individual(s) in a supervisory capacity at the Project Manager level or above. The determination of the individual's qualifications and compliance with the experience and qualifications shall be at the sole discretion of the County. The Competitive Selection Committee (CSC) may negatively evaluate proposals from firms they determine have failed to meet the above experience and qualification(s).

## **Design-Builder Safety Record – Past Performance**

Past performance as reflected by a 3 year average for the last 3 previous full years of the Experience Modification Rate (EMR) for the Design-Builder is recommended to be below 1.10 for each firm.

Design-Builders shall provide EMR data for the previous 3 full calendar years (2011, 2012, and 2013) on a firm-wide basis shall be documented by a signed letter with contact information from the firm's insurance carrier, or the insurance carrier's agency representative. Higher qualifications score shall be provided by the CSC for the Design-Builder demonstrating an average EMR lower than other competing Design-Builder firms. Design-Builder shall also provide their Occupational Safety and Health Administration (OSHA) forms 300 and 300A for the last 3 full calendar years indicating OSHA submitted accident data for evaluation by the CSC as to their frequency and severity