

## ADDENDUM NO. TWO

**DATE:** May 23, 2014  
**DEPARTMENT:** Miami-Dade Water and Sewer Department (WASD)  
**ISD PROJECT NAME:** Design-Build Services for Replacement/Rehabilitation of 72-Inch Sanitary Sewer Force Main Along NW/NE 159<sup>th</sup> Street between NW 17<sup>th</sup> Avenue and NE 10<sup>th</sup> Avenue  
**ISD PROJECT NUMBER:** DB14-WASD-01  
**SUBMITTAL DATE:** May 30, 2014  
**CONSULTANT COORDINATOR:** Amelia M. Cordova-Jimenez

This Addendum is issued to clarify and/or modify the previously issued Request for Design-Build Services (RDBS), and is hereby made part of the RDBS. All requirements of the RDBS not modified herein shall remain in full force and effect as originally set forth. Please be sure to acknowledge receipt of this Addendum on ISD Form 8 DB.

### **MODIFICATIONS:**

**1. Delete the following language from Section 1.2, Scope of Services, first paragraph, page 6:**

The Design-Builder shall provide engineering, design, permitting, construction, testing and commissioning services for the implementation of the replacement/rehabilitation of the 72-inch sanitary sewer force main along Northwest/Northeast 159th Street between Northwest 17th Avenue and Northeast 10th Avenue. The design and construction services rendered by the Design-Builder shall result in a complete, functional, and operational piping project with a minimum of 80 years of design life. The Project shall consist of the following main elements:

**And replace with the following text:**

The Design-Builder shall provide engineering, design, permitting, construction, testing and commissioning services for the implementation of the replacement/rehabilitation of the 72-inch sanitary sewer force main along Northwest/Northeast 159th Street between Northwest 17th Avenue and Northeast 10th Avenue. The design and construction services rendered by the Design-Builder shall result in a complete, functional, and operational piping project with a minimum of 50 years of design life. The Project shall consist of the following main elements:

**2. Delete the following language from Section 1.2, Scope of Services, page 6:**

7. Approximately 6,400 linear feet of Class IV fully structural (to act as a separate pipe with the existing pipe acting as merely a right-of-way for the installation) Cure-in-Place Pipe (CIPP) application between North Miami Avenue and Northeast 10th Avenue. The preferred material for this CIPP application shall be furnished with a tube fabricated with non-woven synthetic fiber or non-woven synthetic fiber with fiberglass reinforced material and a vinyl ester or epoxy resin system which is compatible with the inversion process. The CIPP application shall be designed to withstand an internal pressure between 60 pounds per square inch (psi) to 65 psi.

**And replace with following text:**

7. Approximately 6,400 linear feet of Class IV fully structural (to act as a separate pipe with the existing pipe acting as merely a right-of-way for the installation) Cure-in-Place Pipe (CIPP) application between North Miami Avenue and Northeast 10th Avenue. The preferred material for this CIPP application shall be furnished with a tube fabricated with non-woven synthetic fiber or non-woven synthetic fiber with fiberglass reinforced material and a vinyl ester or epoxy resin system which is compatible with the inversion process. The CIPP application shall be designed to withstand an internal pressure of 40 pounds per square inch (psi).

**3. Delete the following language from Section 1.2, Scope of Services, page 7:**

Substantial Completion Date is on or before 180 calendar days, after the date of Notice to Proceed, which requires putting into service the rehabilitated 72-inch sewer force main pipeline between Northwest 17th Avenue and Northeast 10th Avenue. No additional compensation will be made if the Design-Builder has to demobilize and remobilize before the Substantial Completion of the work due to this interim milestone.

Final Completion Date on or before 240 calendar days after the date of Notice to Proceed which requires obtaining acceptance by all applicable regulatory agencies including WASD for all Work and Services under the Contract, all remaining site restorations, as-built drawings, record documents and all other remaining incomplete or unacceptable work items identified at or subsequent to Substantial Completion.

**And replace with the following text:**

Substantial Completion Date is on or before 270 calendar days, after the date of Notice to Proceed, which requires putting into service the rehabilitated 72-inch sewer force main pipeline between Northwest 17th Avenue and Northeast 10th Avenue. All trenches shall be backfilled and restored. All roadways shall be paved with the first lift of asphalt and open to traffic. No additional compensation will be made if the Design-Builder has to demobilize and remobilize before the Substantial Completion of the work due to this interim milestone.

Final Completion Date on or before 330 calendar days after the date of Notice to Proceed which requires obtaining acceptance by all applicable regulatory agencies including WASD for all Work and Services under the Contract, all remaining site restorations, as-built drawings, record documents and all other remaining incomplete or unacceptable work items identified at or subsequent to Substantial Completion.

**4. Delete the following language from Section 2.1, Experience and Qualifications, pages 18 and 19:**

The proposed Design-Builder shall demonstrate its project team experience by presenting the qualifications and capabilities of the Design-Builder, Lead Constructor(s) and Lead Designer(s) supported by listing projects completed within the last ten (10) years, including projects that are at least fifty percent (50%) complete, prior to the required submittal date of the solicitation, that demonstrate related minimum project experience as indicated below:

The proposed Design-Builder, including Lead Builder(s) and Lead Designer(s), any of which also may serve as the Design-Builder entity, shall be identified in the Proposer's Statement of Qualifications (SOQ) submittal. Experience and qualifications information must be included in the Internal Services Department Experience and Verification Chart(s) provided to be included with the Request for Design Build Services (RDBS).

1) Design-Builder:

I. The Design-Builder shall demonstrate that it has performed and/or managed as a Prime contractor or Design-Builder the construction of at least two (2) pipeline rehabilitation projects, one (1) of which was a minimum length of 1,000 linear feet with a minimum 48-inch diameter.

II. The Design-Builder may also qualify for any of the Lead Constructor or Lead Designer requirements.

2) Lead Constructors:

I. The Lead Constructor firm performing the Cure-In-Place-Pipe (CIPP) work must have constructed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 48-inch internal diameter.

II. The Lead Constructor firm performing the pit/shaft construction shall have constructed at least two (2) pits/shafts that were each at least 15-feet deep (below grade).

III. The Lead Constructor firm performing the installation of the continuous Slip-lining must have constructed at least two (2) continuous slip-lining projects with Class IV fully structural fusible high density polyethylene (HDPE) for pressure pipe, one (1) of which was a minimum of 1,000 linear feet, and a minimum 48-inch internal diameter.

IV. The Lead Constructor firm performing the open cut installation of 60-inch pipe shall demonstrate having performed two (2) projects utilizing the open cut method with pipe of minimum 48-inches inside diameter, including one (1) for a total installed length of at least 1,000 linear feet.

V. Design-Build Team includes a firm having demonstrated experience with one (1) project of tapping into an operating sewer system pipe of reasonably similar size and type. This firm may be a specialty subcontractor.

Lead Constructor(s) may qualify for one (1) or more of the above Lead Constructor requirements.

### 3) Lead Designers:

I. The Lead Designer firm who will design the Cure-In-Place-Pipe (CIPP) work must have designed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 48-inch internal diameter.

II. The Lead Designer firm performing the design of the continuous slip-lining must have designed at least two (2) projects with Class IV fully structural fusible HDPE for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 48-inch internal diameter.

III. The Lead Designer firm performing the design of the open cut installation of 60-inch pipe must have designed at least two (2) projects utilizing the open cut method with pipe of minimum 48-inches inside diameter, including one for a total installed length of at least 1,000 linear feet.

IV. The Lead Designer firm performing design for the pits/shafts shall have designed one (1) deep pit/shaft project to support a rehabilitation operation of at least 15-feet deep (below grade). Lead Designers may qualify for one (1) or more of the above Lead Designer requirements.

### **And replace with the following text:**

The proposed Design-Builder shall demonstrate its project team experience by presenting the qualifications and capabilities of the Design-Builder, Lead Constructor(s) and Lead Designer(s) supported by listing projects completed within the last twenty (20) years, including projects that are at least fifty percent (50%) complete, prior to the required submittal date of the solicitation, that demonstrate related minimum project experience as indicated below:

The proposed Design-Builder, including Lead Builder(s) and Lead Designer(s), any of which also may serve as the Design-Builder entity, shall be identified in the Proposer's Statement of Qualifications (SOQ) submittal. Experience and qualifications information must be included in the Internal Services Department Experience and Verification Chart(s) provided to be included with the Request for Design Build Services (RDBS).

### 1) Design-Builder:

I. The Design-Builder shall demonstrate that it has performed and/or managed as a Prime contractor or Design-Builder the construction of at least two (2) pipeline rehabilitation projects, one (1) of which was a minimum length of 1,000 linear feet with a minimum 42-inch diameter.

II. The Design-Builder may also qualify for any of the Lead Constructor or Lead Designer requirements.

2) Lead Constructors:

I. The Lead Constructor firm performing the Cure-In-Place-Pipe (CIPP) work must have constructed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 42-inch internal diameter.

II. The Lead Constructor firm performing the pit/shaft construction shall have constructed at least two (2) pits/shafts that were each at least 15-feet deep (below grade).

III. The Lead Constructor firm performing the installation of the continuous Slip-lining must have constructed at least two (2) continuous slip-lining projects with Class IV fully structural fusible high density polyethylene (HDPE) for pressure pipe, one (1) of which was a minimum of 1,000 linear feet, and a minimum 42-inch internal diameter.

IV. The Lead Constructor firm performing the open cut installation of 60-inch pipe shall demonstrate having performed two (2) projects utilizing the open cut method with pipe of minimum 42-inches inside diameter, including one (1) for a total installed length of at least 1,000 linear feet.

V. Design-Build Team includes a firm having demonstrated experience with one (1) project of tapping into an operating sewer system pipe of reasonably similar size and type. This firm may be a specialty subcontractor.

Lead Constructor(s) may qualify for one (1) or more of the above Lead Constructor requirements.

3) Lead Designers:

I. The Lead Designer firm who will design the Cure-In-Place-Pipe (CIPP) work must have designed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 42-inch internal diameter.

II. The Lead Designer firm performing the design of the continuous slip-lining must have designed at least two (2) projects with Class IV fully structural fusible HDPE for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 42-inch internal diameter.

III. The Lead Designer firm performing the design of the open cut installation of 60-inch pipe must have designed at least two (2) projects utilizing the open cut method with pipe of minimum 42-inches inside diameter, including one for a total installed length of at least 1,000 linear feet.

IV. The Lead Designer firm performing design for the pits/shafts shall have designed one (1) deep pit/shaft project of at least 15-feet deep (below grade).

Lead Designers may qualify for one (1) or more of the above Lead Designer requirements.

**QUESTIONS:**

**Q1.** We have been reviewing the draft documentation posted on the County website for the upcoming Design-Build Services for the Replacement/Rehabilitation of 72-inch Sanitary Sewer Force main along Northwest/Northeast 159<sup>th</sup> Street between NW 17<sup>th</sup> Avenue and NE 10<sup>th</sup> Avenue (DB14-WASD-01). Currently the Draft RFP states that the design and construction services rendered by the Design-Builder shall result in a complete, functional, and operable piping project with a minimum of 80 years design life. The RFP then goes on to define nine elements of the Project.

Element # 7 states the following:

“7. Approximately 6,400 linear feet of Class IV fully structural (to act as a separate pipe with the existing pipe acting as merely a right-of-way for the installation) Cure-in-Place Pipe (CIPP) application between North Miami Avenue and Northeast 10th Avenue. The preferred material for this CIPP application shall be furnished with a tube fabricated with non-woven synthetic fiber or non-woven synthetic fiber with fiberglass reinforced material and a vinyl ester or epoxy resin system which is compatible with the inversion process. The CIPP application shall be designed to withstand an internal pressure between 60 pounds per square inch (psi) to 65 psi.”

Our design team has been in contact with the major manufacturers and installers of CIPP pressure pipe: Aqua-Pipe, Insituform Technologies, Layne Inliner and SAK construction. According to our research the largest diameter pressure pipe liner currently available for the listed criteria is a 54-inch diameter liner, manufactured by Insituform Technologies.

We recognize that the pressure pipe lining technology is constantly improving, but as of this date it appears that a 72-inch diameter pressure pipe CIPP liner is not available on the market. Based on our previous project experience, there other technologies currently available for 72-inch diameter pipe capable of providing a Class IV fully structural lining, such as Carbon Fiber Wrap and Steel Can Slip lining. Will MD-WASD allow the use of these alternative proven technologies in lieu of the Cure-in-Place Pipe (CIPP) lining currently specified?

**R1.** The CIPP application shall be designed to withstand an internal pressure of 40 psi with surge protection devices to prevent additional internal pressure. The Design-Builder shall furnish, install and provide all design, labor, materials, tools, construction equipment and all other ancillary devices to maintain the 40 psi CIPP design pressure. It shall be the Design-Builder’s responsibility to perform all necessary engineering, design and construction to accomplish this objective as part of the base bid.

The RDBS allows for alternate technical proposals. Specifically, a Class IV, fully structural liner is necessary for this line. Other technologies currently available for a 72-inch diameter pipe will be considered, providing said alternatives meet the project requirements. It is important to highlight that section 3.6 ALTERNATE TECHNICAL PROPOSALS of the RDBS denotes “...the Competitive Selection Committee, at its sole discretion, may validate or reject any or all alternate proposals”.

**Q2.** The current pre-qualification requirement states that the Design-Builder, Lead Constructors, and Lead Designers are to meet certain criteria completed within the last 10-years. The pre-qualification requirement focused on in this inquiry is in Section 2.1.3.1, on Page 19 of 37 of the RDBS which states:

The Lead Design firm who will design the Cure-in-Place-Pipe (CIPP) work must have designed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum 48-inch internal diameter.

Our experience and the experience of our staff (as well as statements made by other firms at last week's Pre-Submittal Project Briefing) indicates that CIPP projects for pressure pipe with an inside diameter of 48-inch or greater are not commonly completed. We have seen several years pass between projects of this size and complexity.

Because of the nature of this work and the time between which projects of this size and nature are completed, we are requesting the pre-qualification requirement of "... completed within the last ten (10) years" be modified to "...completed within the last twenty (20) years" to account for the time lapse between projects similar in nature to the ISD Project No. DB14-WASD-01. It should also be required that the individual or individuals bringing this experience currently works for the proposing firm.

We feel modifying this current requirement as requested above will provide an opportunity for more firms to pursue this work and provide a more competitive procurement for the County.

- R2.** Refer to Modification No. 4 above.
- Q3.** We are formally requesting that the County extend the submission deadline of the aforementioned project due to its special nature and the contractors/engineers required to participate. As you may know, assembling a team for design-build projects like this takes time due to specific agreements that need to be executed by all parties involved. Providing these teams less than a month to respond to a package of this kind is far too restrictive if the County desires to receive submissions from renowned contractors/engineers. Our recommendation is to delay the Step 1 submittal deadline to June 20th.
- R3.** The deadline for Step 1 submittals was extended to May 30<sup>th</sup> via Addendum No. 1. WASD is not contemplating any further time extensions due to the time constraints inherent to this project.
- Q4.** What is the definition of substantial completion?
- R4.** Definition of Substantial Completion: The entire 72-inch pipe shall be rehabilitated and placed into service. All trenches shall be backfilled and restored. All roadways shall be paved with the first lift of asphalt and open to traffic.
- Q5.** What is will be the contract time for this solicitation?
- R5.** The contract time will be 545 consecutive calendar days. Unless otherwise approved by the Engineer, the construction phase of the project is required to be performed in the dry season. The Design-Builder shall have one complete dry season, approximately Dec. 1<sup>st</sup> to April 30<sup>th</sup>, for the construction phase of the work. Liquidated Damages will not be applicable unless the Design-Builder has a minimum of 150 dry season construction days available.
- Q6.** As it relates to the lead constructor HDPE sliplining experience, is the county requiring that the contractor have experience sliplining an existing pipeline which has a minimum inside diameter of 48"? Also, would the county consider lowering this requirement to allow experience in 36" diameter pipelines, due to the specialty nature of this type of work?
- R6.** Refer to Modification No. 4 above.
- Q7.** We respectfully request that the county also allow the inclusion of AWWA Class III continuous HDPE slip-lining experience instead of only AWWA Class IV experience. This is because AWWA Class III applications utilize the same labor and equipment to fuse and install a continuous pipe. The only

difference in these installations is the HDPE material thickness, which is solely the responsibility of the material manufacturer.

- R7.** Refer to Modification No. 4 above.
- Q8.** Will the County consider reducing the stringent qualifications to allow for a minimum 20-inch pipe design and permitting experience? Very few projects involving large diameter pipeline have been designed in the recent 10 years locally. If this criteria was modified a larger pool of qualified LOCAL firms could then compete on this solicitation.
- R8.** Refer to Modification No. 4 above.
- Q9.** Section 1.2, Scope of Services, first paragraph at top of Page 6 of 37: The RDBS requires an 80 year design life for the CIPP. Can this be changed to 50 years to be consistent with AWWA Manual M-28?
- R9.** Refer to Modification No. 1 above.
- Q10.** Section 2.1, Experience and Qualifications, opening paragraph: Can the term projects will serve to demonstrate related minimum project experience be changed from ten (10) years to twenty (20) years?
- R10.** Refer to Modification No. 4 above.
- Q11.** Section 2.1, Experience and Qualifications, Paragraph (3), Lead Designers: Can the requirements be changed as follows:
- I. The design engineer who will design the Cure-In-Place Pipe (CIPP) work must have designed at least two (2) CIPP projects consisting of Class IV fully structural for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum of 24-inch diameter? And
  - II. The design engineer who will design the continuous slip-lining must have designed at least two (2) projects with Class IV fully structural fusible HDPE for pressure pipe, one (1) of which was a minimum of 1,000 linear feet and a minimum of 42-inch diameter?
- R11.** Refer to Modification No. 4 above.
- Q12.** Will the County consider adding an experience requirement for installation of large diameter valves. The installation of these valves is very sensitive and can cause damage to the seat of the valves if performed incorrectly.
- R12.** Refer to Modification No. 4 above.
- Q13.** Lead Designers: IV states: The Lead Designer firm performing design for the Pits/Shafts shall have designed 1 deep Pit/shaft project to support a rehabilitation operation of at least 15-feet deep (Below grade). Can the words "to support a rehabilitation operation" be removed. There is no difference between shafts for operations such as a micro tunnel or deep excavation and the shafts that will be required to perform the rehab work for this project. The words "to support a rehabilitation operation" will unnecessarily preclude qualified firms from participating in this project.
- R13.** Refer to Modification No. 4 above.

**Q14.** Can a single Firm/Company meet one or more of the requirements for the Lead Constructor as well one or more of the requirements for the Lead Designer?

**R14.** Refer to Modification No. 4 above.

**Q15.** Can the Step 1 submission date be extended? There are several reputable firms who are having a very difficult time putting together a team to meet the very specific experience requirements. It would be in the best interest of the County to allow these firms sufficient time to receive the pending addenda and restructure the teams as necessary to allow for a competitive response to the solicitation.

**R15.** Refer to R3 above.

**Q16.** The experience requirements for the slip lining refer to having experience in Designing/Constructing a project of 1000' and 48" inside diameter. Does 48" ID refer to the "Host" pipe?

**R16.** Refer to Modification No. 4.

**Q17.** What is the estimated project value?

**R17.** Section 1.3, Project Cost, states the following:

“The estimated total Contract amount is twenty million, eight hundred and ninety thousand three hundred sixty-nine dollars (\$20,890,369) inclusive of the contingencies and dedicated allowances. The estimated Design-Build project cost is eighteen million seven hundred fifty-five thousand eight hundred and three dollars (\$18,755,803), exclusive of allowances and contingencies.

The County reserves the right to negotiate or reject any and all proposal(s), if the price exceeds the estimated project cost. The Price Proposal Form is to include all design and construction services, labor, materials, equipment, tools, utilities, permit fees, approvals, authorizations, certificates, including applicable taxes and all facilities necessary for the completion of the Work.”

**CLARIFICATION:**

1. Attached is the Revised Lockwood Andrews and Newnam PowerPoint presentation discussed at the May 9, 2014, Step 1 Pre-Submittal Project Briefing.

**ALL OTHER PROVISIONS OF THE ORIGINAL “REQUEST FOR DESIGN-BUILD SERVICES” REMAIN UNCHANGED.**

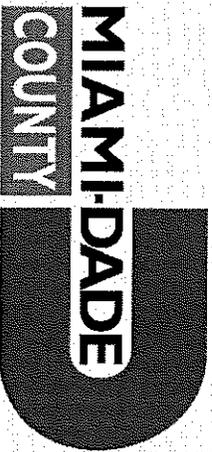
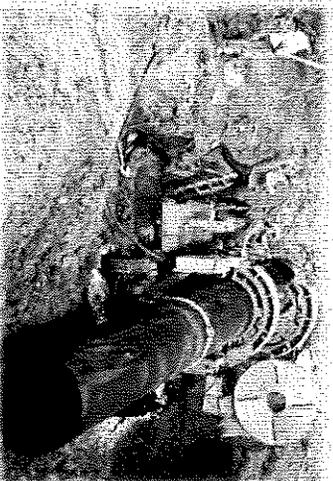
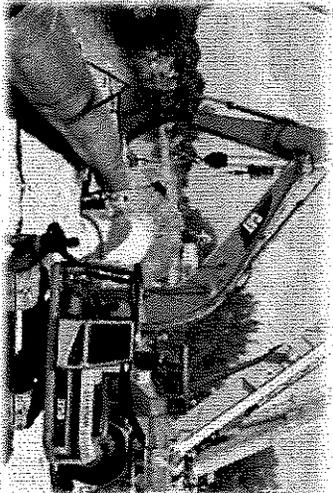
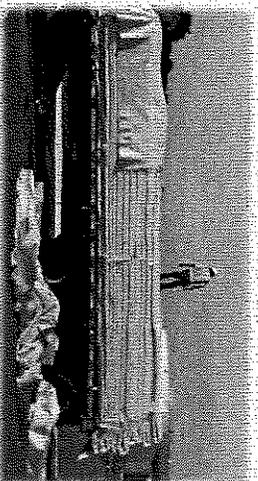
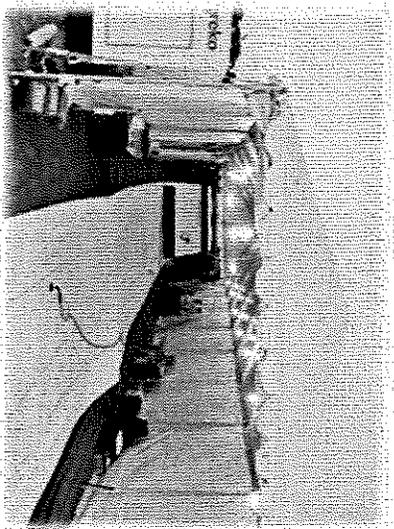
c: Patricia David, WASD  
Clerk of the Board

PLANNING | ENGINEERING | PROGRAM MANAGEMENT

# REPLACEMENT/REHABILITATION OF A 72-INCH FORCE MAIN

## ISD PROJECT NO. DB14-WASD-01

MAY 2014



Lockwood, Andrews  
& Newnam, Inc.  
A LEO A DALY COMPANY



# AGENDA

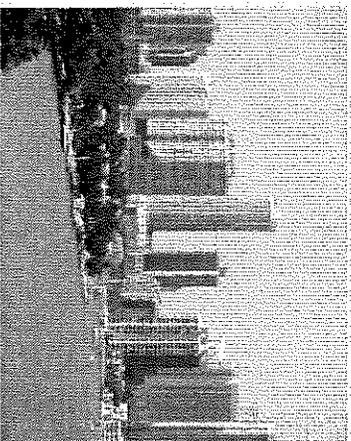
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- BACKGROUND
- INTRODUCTION
- PROJECT SCOPE
- REQUEST FOR DB SERVICES – PROCUREMENT
- PROCESS
- QUESTIONS AND DISCUSSION

# ANALYSIS GENERAL PROJECT INFORMATION

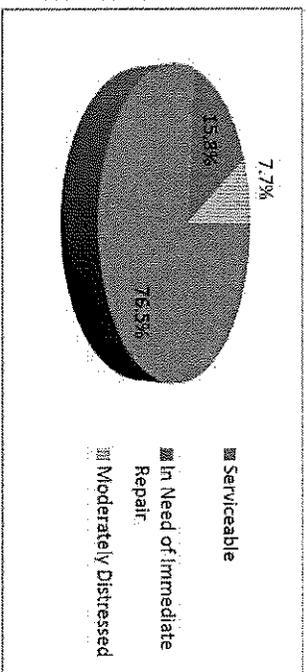
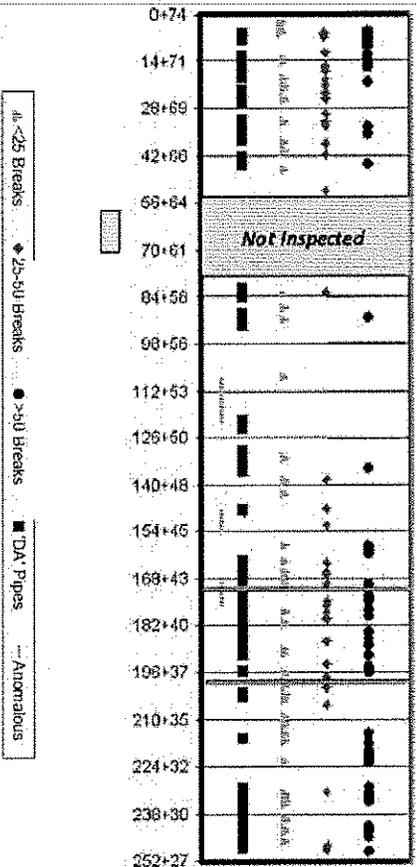
- On June 18th, 2010, a portion of the 72-inch Prestressed Concrete Cylinder Pipe force main experienced a catastrophic failure just west of Northwest 17th Avenue.

- Due to concerns over the condition of the pipeline, and the risk associated with an additional failure, WASD contracted Pure Technologies in November, 2010 to conduct an internal inspection and a condition assessment of the 72-inch force main's pre-stressed wires.



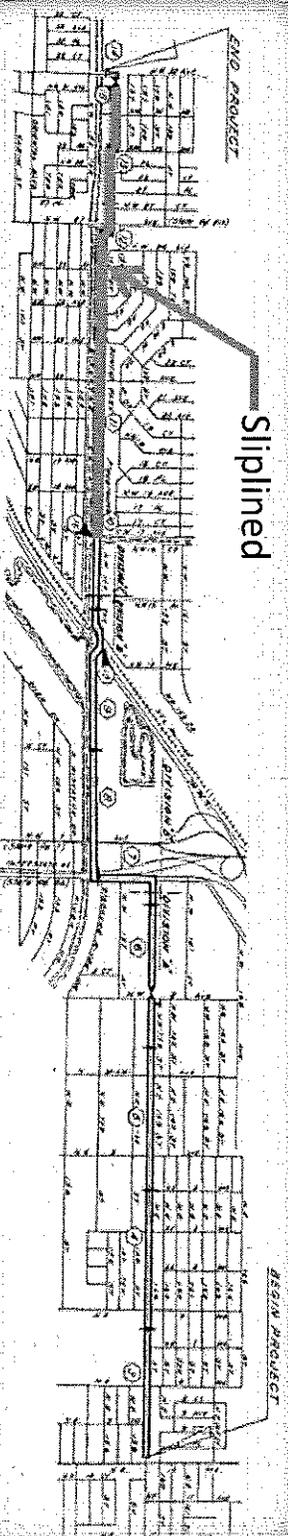
MANHOLE WATER AND SEWER DEPARTMENT  
 Condition Assessment of Prestressed Concrete Cylinder Pipe  
 North District Watermain Transmission System  
 72-inch Force Main  
 Contract 3105

URS 2011 - Draft Report



## BACKGROUND

- PCCP NDWT System 72-inch Interceptor N-9 Force Main (FM)
- Constructed in late 1970's
- Experienced catastrophic failure on June 18th, 2010
- 1.5 miles between NW 32 Ave and NW 17 Ave already sliplined
- Remaining 3.5 miles:
  - 2/3 within residential area
  - multiple sections identified as "distressed" & in danger of rupture
- At this time, WASD needs to replace/rehabilitate the 3.5 miles of 72-inch force main between Northwest 17th Avenue and Northeast 10th Avenue





# PROJECT SCOPE

## DATA COLLECTED

- 1978 geotechnical report by Pittsburgh Testing Laboratory
- Pipe Laying Schedule
- Plat information
- 2012 aerial photography
- Field reconnaissance
- Obtained "as-built" information from utility companies

PROCESSED DATA

DATE: 5/1/2013

TIME: 10:00 AM

PROJECT: [illegible]

LOCATION: [illegible]

SCALE: 1" = 100'

DATE OF SURVEY: 5/1/2013

BY: [illegible]

REVISIONS:

NO.	DATE	DESCRIPTION
1	5/1/2013	INITIAL SURVEY
2	5/1/2013	FIELD RECONNAISSANCE
3	5/1/2013	DATA COLLECTION
4	5/1/2013	REPORT PREPARATION

PROCESSED DATA

DATE: 5/1/2013

TIME: 10:00 AM

PROJECT: [illegible]

LOCATION: [illegible]

SCALE: 1" = 100'

DATE OF SURVEY: 5/1/2013

BY: [illegible]

REVISIONS:

NO.	DATE	DESCRIPTION
1	5/1/2013	INITIAL SURVEY
2	5/1/2013	FIELD RECONNAISSANCE
3	5/1/2013	DATA COLLECTION
4	5/1/2013	REPORT PREPARATION

Utility Contract Table

Utility Company	Letter Sent	Response Received
ATT - Miami-Dade	5/3/2013	5/7/2013
ATT - Miami-Dade	5/3/2013	4/8/2013
City of North Miami	5/3/2013	4/22/2013
City of North Miami Beach Public Utilities	5/3/2013	5/29/2013
City of Opaloka	5/3/2013	Pending
Comcast Cable	5/3/2013	5/28/2013
Florida Department of Transportation	5/3/2013	5/9/2013
Florida City Gas	5/3/2013	5/8/2013
FPL	5/3/2013	5/22/2013
PRC FiberNet, LLC	5/3/2013	6/29/2013
WAG	5/3/2013	4/18/2013
Miami Dade Water Sewer	N/A	5/21/2013
WDC Public Works	5/3/2013	5/14/2013
Teaco Peoples Gas	5/3/2013	4/19/2013
American Traffic Solutions	5/3/2013	5/6/2013
Florida Gas Transmission Company	5/3/2013	5/7/2013
Level 3 Communications LLC	5/6/2013	5/22/2013
City of Miami Gardens	5/4/2013	6/29/2013
Systems Integrator & Maintenance, INC	5/3/2013	5/29/2013
XO Communications	5/3/2013	Pending

# PROJECT SCOPE

## DATA COLLECTED

### ENVIRONMENTAL EVALUATIONS

- Goal – avoid, minimize and mitigate/address potential project impacts and
- Findings:
  - Level-I contamination assessment; No evidence of potential contamination
  - Re-evaluating the site prior to replacements around Routes 1 & 2



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## PROJECT SCOPE

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- Remove and salvage the existing 60-inch inline valve
- Installation of two new 60-inch inline valves
- Pump Station reconfiguration or shutdown
- Temporary bypass
- ±6,400 LF Class IV CIPP
- ± 8,860 l of Class IV continuous slip-lining HDPE pipe, DR 32.5
- ±1,800 LF 60-inch pipe open cut construction.
- Ancillary piping, tapping, temporary bypass and tie in connections to facilitate successful construction and commissioning of the rehabilitated 72-inch sanitary sewer

# DATA ANALYSIS & EVALUATION

## DESIGN BASIS FOR REPLACEMENTS

In-line Plug Valves

every 0.5 mile

ARV

installed at all high points and other intermediate points

MANHOLES

every 1,200 feet and at valves and closures

PRESSURES

100 PSI

VELOCITY

5 FPS MAX

PIPE FRICTION FACTOR

Hazen Williams "C" Factor: 120, 140 preferable

HYDRAULIC CAPACITY

equivalence of a 72-inch diameter

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# INSTALLATION AND CONSTRUCTABILITY ISSUES

## CONSTRUCTABILITY ISSUES

- Coordination with Miami-Dade County and Miami-Dade County Police Department for street closures
- Geological conditions are dominated by Sand, Gravel and Limerock, thus Vibration may be a concern
- Major impacts to Evangel Church International (Evangel Temple Of Miami), the Christ Community Church (First Alliance Church Of Miami) and Oak Grove Elementary for Route 1

# REHABILITATION EVALUATION

## DESIGN BASIS FOR REHABILITATION

PRESSURES

40 psi

STRUCTURAL FUNCTIONALITY

Class IV

VELOCITY

5 FPS MAX

PIPE FRICTION FACTOR

Hazen Williams "C" Factor: 140 preferable

HYDRAULIC CAPACITY

equivalence of a 72-inch diameter

# REHABILITATION EVALUATION

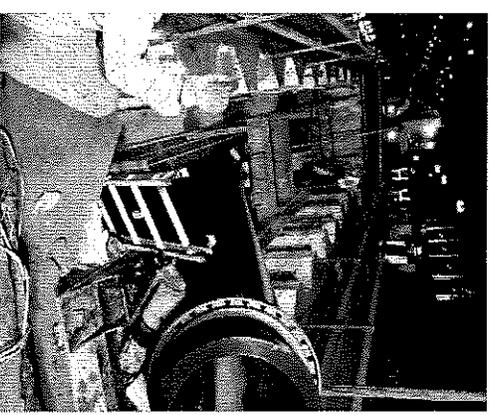
- Continuous Sliplining with HDPE
  - ✓ Installation and Load Analysis

***PE 445574C in lieu of the PE 335434C (Difference in Density, Tensile Strength at Yield and Environmental Stress Crack Resistance)***

- ✓ Maximum Pulling Forces; MPL  $\approx$  6,000 ft.
- ✓ Cold (Field) Bending; bend  $\approx$  220 ft.

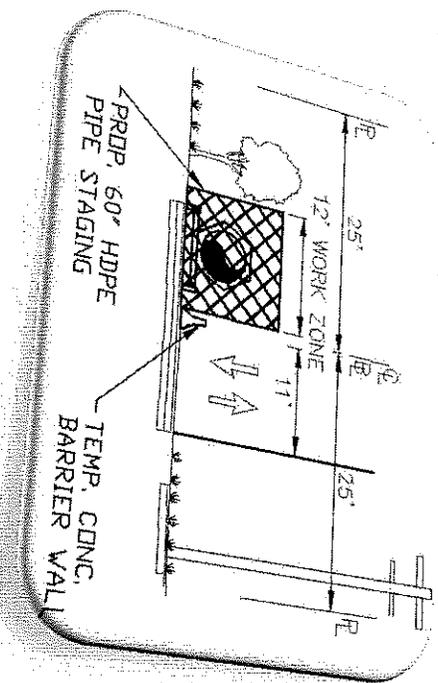
Entry and exit pits shall be 120 ft. long minimum

- ✓ Staging Areas

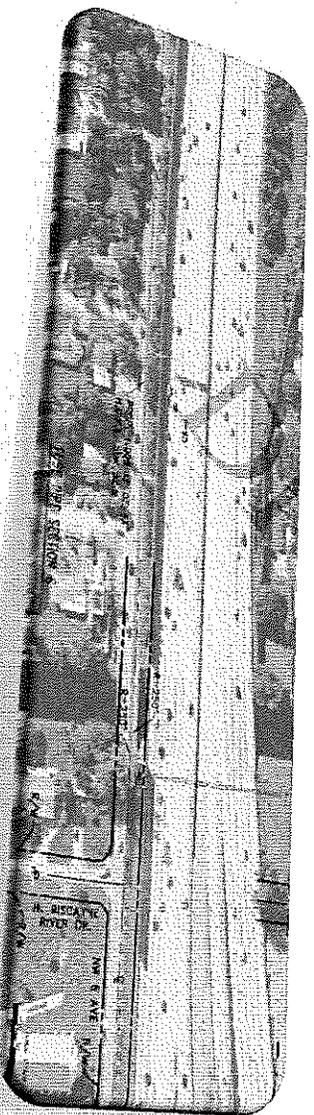


# REHABILITATION EVALUATION

- Continuous Sliplining with HDPE
  - ✓ Maintenance of Traffic
    - Temporary pavement where traffic is to be routed over a swale or median areas
    - Advanced traffic operations and control strategies, such as: signal adjustments, reversible lanes, lane closure restrictions and truck restrictions
    - Street to remain open to traffic during work
    - Fuse-and-pull operation.
    - Public Information



Typical Section for Slip-lined Pipe Installed Along NW 6 Ave

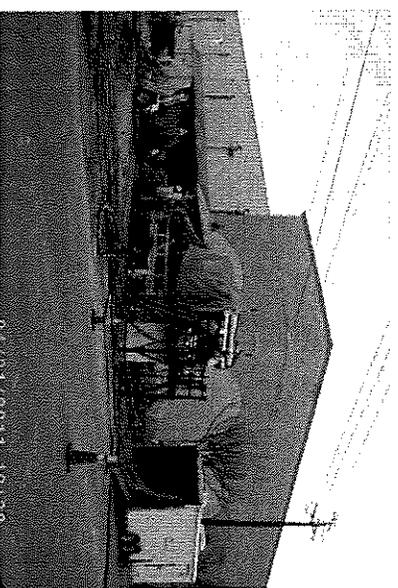
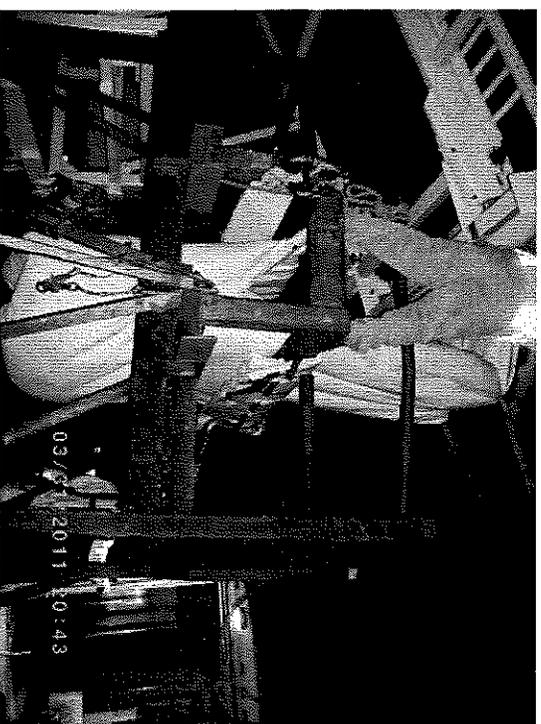


# REHABILITATION EVALUATION

- Conventional Cured-In-Place

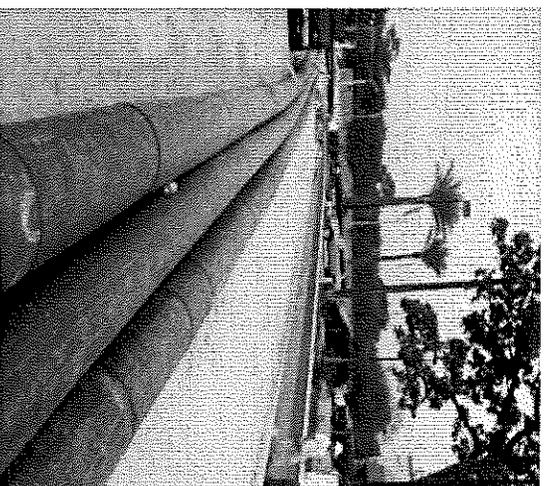
- Installation and Load Analysis

Inside diameter of host pipe (in)	D = 72
Design safety factor	N = 2
Internal pressure (psi)	P = 100
Tensile strength of CIPP, long-term (psi)	STL = 3,000
<b>H2O Calculations (Highway Loads)</b>	
Impact factor for traffic load (dimensionless)	I <sub>H</sub> = 1
Distributed load area over pipe at depth H (ft <sup>2</sup> )	A <sub>LL</sub> = 370.4
Total applied surface wheel load (lb)	P <sub>LW</sub> = 48,000
H2O live load transferred to pipe at depth H (psi)	W <sub>H</sub> = 0.9
Minimum thickness required to withstand all external (in) loads and the full internal pressure (mm)	t <sub>CP1</sub> = 2.25
CIPP outside diameter (host pipe inside diameter - in )	D = 57.15
Minimum CIP thickness calculated in	t <sub>calc</sub> = 2.25
Nominal CIPP thickness (mm)	= 57.15
Nominal CIPP thickness to be supplied	t <sub>CIPP</sub> = 58.5
SDR	SDR <sub>CIPP</sub> = 31
CIPP inside diameter (in)	D <sub>i</sub> = 67.4



## BYPASSING PLAN

- Any work that will affect any of the pump stations as part of the temporary bypass, need to be coordinated with the Department's Pump Station and Maintenance Division.
- Booster Pump Stations 1310 and 300, may need to be reconfigured or shutdown
- 16" FM bypass associated with Pump Station 496 and Pump Station 497
- At NW 2nd Ave. the City of North Miami could be bypass just by disconnecting from MD-WASD's system. This operation shall be coordinated between the City and the County
- A temporary 8-inch FM recommended from existing North Miami Beach connection to 72" FM



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## PROJECT SCOPE

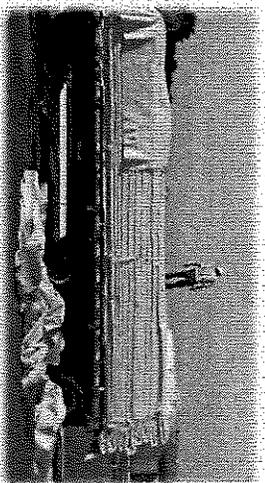
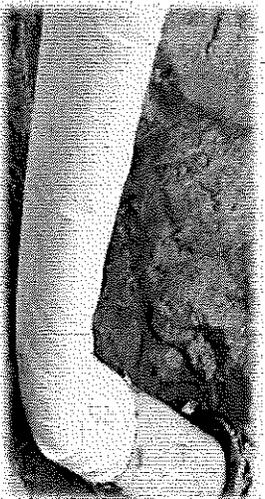
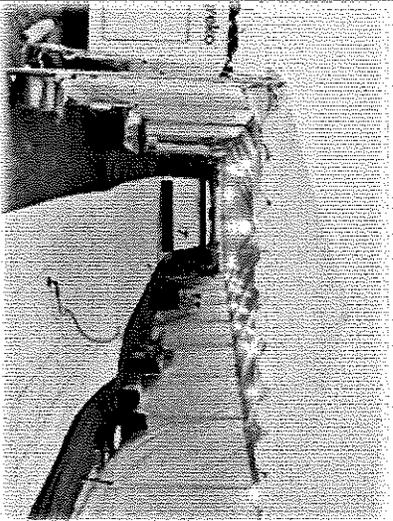
### PROJECT PRELIMINARY SCHEDULE:

- Substantial Completion Date is on or before **270 calendar days**, after the date of Notice to Proceed; the entire 72-inch pipe shall be rehabilitated and placed into service. All trenches shall be backfilled and restored. All roadways shall be paved with the first lift of asphalt and open to traffic.
- Final Completion Date on or before **330 calendar days** after

### ESTIMATED COSTS (ROUNDED):

- Design-Build contract \$20.9 M
- Estimated construction cost \$17.1 M
- Dedicated Allowances & Contingency \$3.8 M

Questions?



Thank you!

