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## PRESS RELEASE

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### **Miami Beach Receives Engineering Project and Engineer of the Year Awards**

*— From the Cuban American Association of Civil Engineers —*

**Miami Beach, FL** – The City of Miami Beach has successfully completed the horizontal directional drilling (HDD) of a 54-inch raw sewage force main, providing the city’s wastewater collection system redundant access to the Miami-Dade County Central District Wastewater Treatment Plant. The project was completed in two pulls totaling 4,200 linear feet and is the largest diameter HDD constructed in North America.

Recognizing this extraordinary accomplishment, the Cuban American Association of Civil Engineers (CAACE) has chosen this project to receive their prestigious Project of the Year Award. Additionally, Miami Beach City Engineer Bruce Mowry who played an integral role in the project’s development and construction is the recipient of the CAACE Luis P. Saenz (Engineer of the Year) Award.

With world renowned beaches and vibrant neighborhoods, the infrastructure that services Miami Beach residents and visitors is of vital importance. One particularly invaluable piece of infrastructure is the city’s principal sewage force main, which serves as the primary means for the disposal of all wastewater within the city.

The city was well aware of the criticality of the existing 54-inch sewage force main and commissioned Pure Technologies to assess the condition of the pipeline. After deploying a proprietary device able to detect deficiencies within the force main, Pure determined that the pipe was structurally deficient and could potentially fail at any moment. Knowing that operational resiliency is of paramount importance in a well-planned municipality and armed with the inspection results of the force main evaluation, the city embarked on the formidable task of constructing a new 54-inch redundant force main. While the completion of the new force main prior to a catastrophic failure of the aging existing force main was a primary concern, city staff also needed to mitigate the construction impact to the adjacent project stakeholders.

The city contracted the services of engineering design firm AECOM to create a preliminary design of the proposed force main, commonly referred to as a design criteria package (DCP). Once the DCP was finalized, the city procured the project as a design build job using the services of the construction firm David Mancini and Sons, Inc., the engineering design firm A&P Consulting and Transportation Engineers (APCTE), and AECOM for the construction inspection services.

The design build process is often used by the city in many of its construction contracts to provide flexibility in design, innovative solutions, risk mitigation, and reduced construction costs. Although the original DCP specified a micro-tunnel approach, the project team evaluated all available options and concluded that the best alternative was to use HDD to install the pipe.

As Bruce Mowry noted regarding the project's construction methods: "the bottom line was to manage risk and make it operational with minimal impact to the community." The HDD construction methodology and the base bid option of tunnels and shafts, by only requiring excavations in limited areas as opposed to an almost mile long trenching operation, did just that. When speaking of the construction approach, Mowry made reference to a key risk mitigation strategy, specifically performing the HDD in two pulls. "We wanted to be innovative, but not risk failure. The project could have been done in one pull, but at what risk? Why be that aggressive? We brought in specialized equipment capable of handling the pulling forces and paid close attention to the hydraulic fluids integral to the process. We effectively managed risk by completing the project in two pulls."

The right balance of managed risk and innovation was crucial in the completion of a largely successful project for the city and the entire South Florida community. A newly installed force main will play an instrumental role in the city's future growth and prosperity by preventing the outfall of raw sewage to the nearby ocean, which would create a catastrophic effect on the city's tourist based economy.

The 54-inch HDD redundant sewage force main, while just one of the many impressive projects in the city's capital improvements program, clearly illustrates that the Miami Beach public works department is not a run of the mill municipal engineering and construction operation. The team works proactively on solving big picture problems such as sea level rise and infrastructure resiliency. A typical day at their office involves the use of highly advanced technologies such as the combination of Light Detection and Ranging (LIDAR) and hydraulic modeling software to develop effective plans to combat sea level rise, one of the city's primary concerns.

"The public works department continues to look for additional ways to improve the city's infrastructure," added Mowry. "We can be here one hundred years from today if we start planning now and build a foundation on which to work from. The idea is to phase in the improvements, but it cannot be done in one day."

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