THE LANZO DIG

Lanzo Corporation's Quarterly Magazine

2019 | QUARTER 2

LANZO CORPORATION'S NEW $22M MIAMI PROJECT

Historic City Uses Innovative Technology to Repair Aging Infrastructure

World Largest CIPP Project P.14

New $22 Million Lanzo Project P.6

MB Water Main Rehab P.6

Lanzo celebrates **50 years** of delivering quality projects and improving the quality of life.

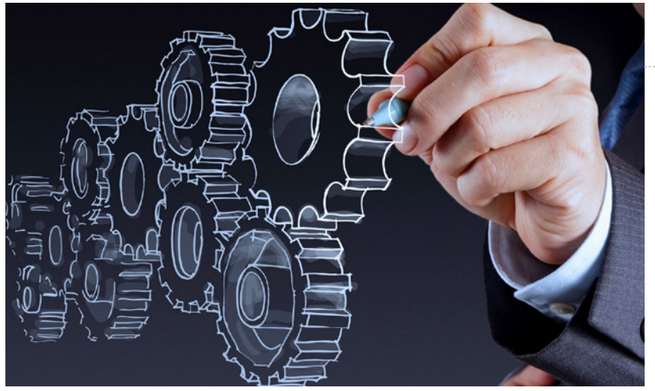
Welcome to the first edition of The Lanzo Dig, our new quarterly magazine. As you flip through the pages of any Lanzo Dig issue, you'll find some impressive small and large-scale projects. That's because Lanzo is a trusted engineering, construction and project management partner to industry and governments. Lanzo specializes in underground construction, trenchless technologies, plant work, road work, bridges and tunneling. The quality of Lanzo's employees and our relentless drive to deliver the most successful outcomes differentiates us from the competition. At Lanzo, we align our capabilities to our customers' objectives, creating a lasting, positive impact on our communities. However, at Lanzo, we know we cannot achieve success if we choose to pursue these goals independently. Rather, success requires that we consistently work to achieve our goals through integrated initiatives. Those integrated initiatives, placing a high priority on moving forward simultaneously through multiple fronts while managing our total impact as a company, will award Lanzo with the most success. Balance and integration are the core of our sustainability and commitment, which are indispensable if we wish to attain the aspirations reflected in our company vision. Lanzo maintains its absolute commitment to client relationships, satisfaction, integrity and transparency. We are constantly enhancing our technology and risk management capabilities to ensure that our people have the most state-of-the-art tools available to serve our customers. The Lanzo Dig is a small window into our people, company, culture and capabilities.

JACOB SCHLESINGER
Chief Executive Officer

CONTENTS

COVER STORIES

LANZO



LANZO CORPORATION'S NEW MIAMI PROJECT

By **Dr Kristy Smolenski Nelson**
Consultant

On July 26, 2019, the **$22 million Flagler Street renovation project** was awarded to the Lanzo Corporation.

Since 2011, renovating downtown Miami's Flagler Street emerged as a topic of necessity. While construction on the Flagler Street renovation project initially started in 2016, only one block achieved renovation since then. Many problems occurred once the renovation began, including underground utilities that do not conform to site maps and other issues.

However, now there is some fantastic news for those individuals long desiring the renovation of Flagler Street. The Flagler Street renovation in downtown Miami is due to begin once again after city commissioners unanimously approved a $22 million beautification plan and awarded the contract to the Lanzo Corporation.

The Flagler Street makeover is scheduled to begin soon, focusing on the area from Biscayne Boulevard to Northwest First Avenue. The original plan for these buildings, created by Zyscovich Architects and funded by Flagler Street landowner and investor Moshe Mana, inspired the approval of both local merchants in the area and the development authority. With that plan in hand, the nod of approval given on Thursday to Lanzo Corporation, the chosen contractor, means work on Flagler Street is set to begin again shortly.

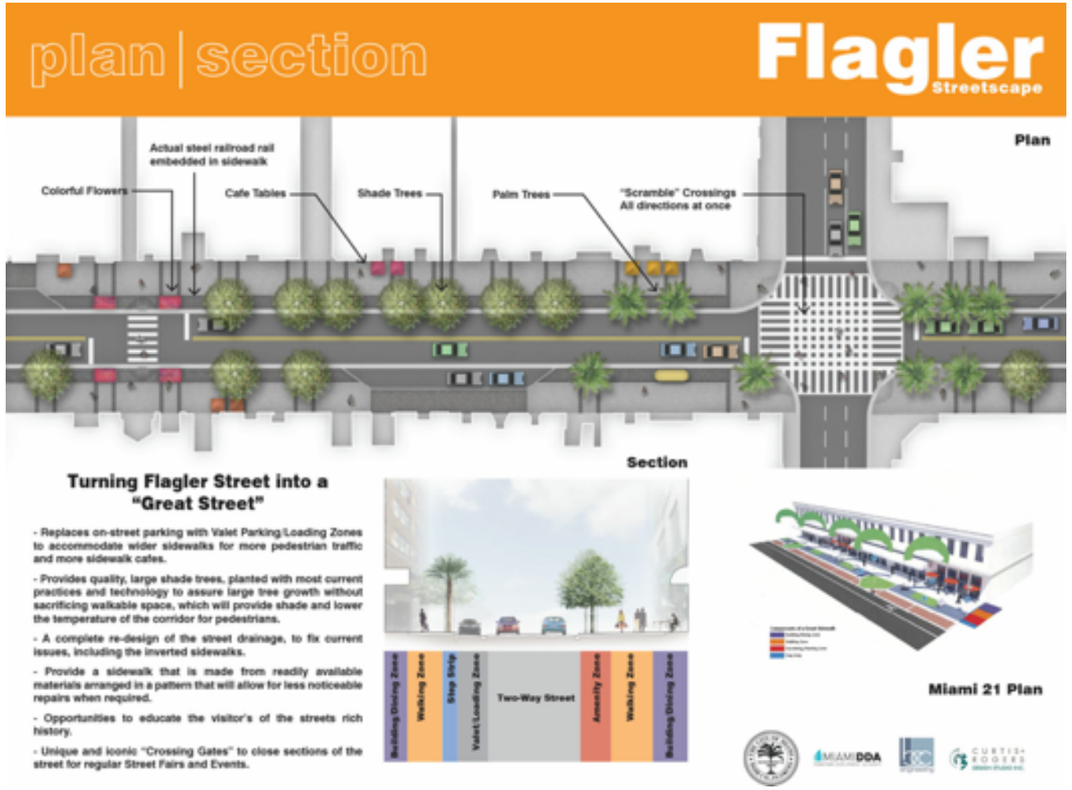
Many of the renovation visions surrounding the Flagler Street area are ideas generated by Mana. Mana also commissioned several of these notions, receiving a bevy of support throughout the district. For example, many business owners located in the Flagler Street district mentioned their support for Mana's plan to build a curbless road that could be easily closed for street festivals and covered in pavers instead of asphalt. The creation of the curbless road would attract more pedestrians into the area, which is one of the reasons so many business owners located in the Flagler Street area threw their voices behind this concept. The Flagler Street business owners feel the redesigned street area will appeal to new merchants and customers in a growing downtown neighborhood.

"The street could be closed and we could manage it so it can be a traditional downtown street, and when we have events, we can close it to cars," said Terrell Fritz, executive director of the Flagler District Business Improvement District.

Gary Ressler, the principal of the Tilia family of companies that is planning a brewpub concept on Flagler, described the project as a keystone to the future growth of a commercial downtown district.
"Our vision is for a comprehensive revitalization and rebirth of downtown Miami," he said.

However, these improvements are not the only new design concepts that exist to

Flagler Street's renovation will continue again soon after city commissioners unanimously approved a $22 million beautification plan and awarded the contract to Lanzo Corporation.



help restructure the Flagler Street area. The project includes wide sidewalks with planters, improved lighting, and much-needed infrastructure upgrades such as improved drainage.

When the new contractor, Lanzo Corporation, and the unanimous approval offered by the city commissioners for the Flagler Street beautification project hit the news, many local business owners in the Flagler Street area felt revived after dealing with many disappointing years of stalled renovation. Each time delays occurred related to the Flagler Street renovation project many local business owners saw their livelihoods declining. The multitude of postponements, which have happened off and on since 2016, devastated some of the small businesses located in the area. In fact, many multi-generational businesses once located in the Flagler Street area left. These occasional delays cost some business owners in the area everything, causing several to shut down their shops for good.

Now that the Flagler Street beautification project is set to begin again, several business owners in the area are experiencing excitement instead of disappointment, which is a great turnaround for them. Many of the small business owners in the area felt elated after hearing about the unanimous approval for a streetscape that stalled out

Many of the small business owners in the area felt elated after hearing about the unanimous approval for a streetscape that stalled out after construction delays.

after construction delays. After a task force of owners selected Lanzo Corporation from a statewide pool of pre-qualified contractors, many business owners on Flagler Street felt relieved that somebody new would be at the helm of the project.

The downtown business owners who helped select Lanzo, Fritz said, were impressed with Lanzo's "focus on problem-solving." Since the Flagler Street beautification project has experienced many problematic delays, the task force of owners felt a business that demonstrated skill and experience solving problems was the way to go.

The upgrades Lanzo plans to complete were received with much excitement from the Flagler Street business owners. With a time-table of about two years to finish the project, funding for the improvements is split between city taxes and county taxes, including bonds and parking fees. Furthermore, the property owners on Flagler Street are also helping out by taxing themselves to pay for $2 million worth of the renovation.

While some of the business owners in the Flagler area have left because of the delayed renovation project, there are still several local owners found in that area. There are over 100 food and beverage establishments in the Flagler area. While visitors are still likely to find plenty to eat still in the Flagler area, retail establishments suffered, and many of them vanished. However, the city hopes that by renovating the Flagler area, they'll be able to attract retail stores to the area again, and even bolster a restaurant and nightlife scene featuring bars like Lost Boy Dry Goods bar and Mama Tried. Proprietors weren't the only ones advocating for the streetscape.

"The beautification of Flagler, our Main Street, cannot be delayed anymore," said Cristina Palomo, who lives in downtown. "This several-year-long delay has been hurting for too long existing business owners and preventing many new businesses from coming into the area. Downtown cannot meet its full potential without the completion of this project." ■

MIAMI DADE EFFLUENT OCEAN OUTFALL

MDWASD S-633 PHASE 2 Ocean Outfall
Engineer: Hazen and Sawyer Environmental Engineers and Scientists

MARATHON, FL SEWAGE AND WATER COLLECTION SYSTEMS

Engineer's Project #: SA5
Engineer: The Weiler Engineering Corp. **Owner:** City Of Marathon

TECHNICAL KNOWLEDGE AND PEOPLE SKILLS

Many years ago, during my college days, I had the opportunity to study under Professor Luis A. Prieto-Portar, PhD., current CEO and Chairman at Piedroba Consulting Group.

In one of the classes I took with him, I remember Dr. Prieto said one time that when we get out into the field and start working as an engineering contractor, eventually you will find out that in order to have success you need 50% skill and 50% people skills. The longer I work in the construction industry, the more I realize that knowledge and people skills not only go hand in hand, but also require practice and implementation daily. I have learned how important it is to know the ins and outs of the industry and know how to, not only communicate that knowledge, but also my thought process in a simple and concise way. It does not matter how good anyone is at something, if that person cannot relate to others and/or communicate properly with their colleagues. Habitually, people only need the technical skills to get a job in the construction industry,

but if the goal is to keep, and thrive, at that job, then working on communication and getting a simple message across is essential. According to the Merriam-Webster dictionary, People Skills is defined as “the ability to work with or talk to other people in an effective and friendly way.” In other words, it does not matter how much anyone knows about a subject, it is also important to know how to express it effectively and in a friendly manner. Therefore, in order to be successful, we need to master both skills.

Technical Knowledge + Effective Communication = Success

Whether you are a recent graduate or a person new to the construction industry, you will find out that people skills are needed just as much as your construction or engineering skills. Even those who have been in the industry for a while may one day realize that things could have been handled differently had they either known more about a particular subject or known how to deal with people in a better way.

From my early days in this profession, I was thought to treat people respectfully so that I could demand that respect back. In the construction industry, as in many others, you will find a wide range of individuals, from the ones who know it all and want others to hear them at all times, to the ones that are really good at something but shine away from the spotlight or from others to hear them, or even know that they are there. From the person at the front desk, to the one at the corner office, everyone deserves a chance to be treated kindly and respectfully. It does not matter how much knowledge you have or what title you currently have, if you cannot see eye to eye with others, your options in this industry can be very limited. The construction industry in the United States represents a big part of the economy. Construction spending in the United States topped $1.23 trillion in 2017. [Statista]. That same year, it was reported that the *Construction industry employed about 10.7 million people* in the United States [Statista]. The industry employs people from many cultures and origins, so it is imperative that we make communication and proper people skills a priority. Our success in the industry depends in part, on how we deal with everyone, including those with whom we could have differences.

In my opinion the key to the engineering contractor’s success is a perfect balance between technical skills and our ability to effectively communicate with others.

Communicating effectively and in a friendly way does not mean you will never have a conflict or that people will always go along with whatever you say. Being a good communicator goes in hand with being able to express your ideas or knowledge effectively and be able to see things differently when others explain them to you. In the words of John Maxwell, one of the greatest communicators of the United States and author of leadership books, teaches, “One is too small of a number to achieve greatness.” As good as one can be, at some point in time, you may need to rely on others to help you see things in a different, or perhaps a better way. It is our responsibility to learn how to interact with the crew, how to take the best approach for every situation, and how to use our human resources to everyone’s benefit.

A contractor is generally one that is hired to perform work or to provide goods at a certain price or within a certain time (Merrimack-Webster dictionary), and the success of a project is rooted in the ability to understand what you are being hired to do and the ability to perform the work or provide the goods on time and on budget. From the person who bids the project to the one installing the pipe in the trench, it is necessary to make use of the technical and people skills. How you communicate with others what the project is all about or how you interact with the crew while the pipe is being installed or tested is as important as knowing how to do the work and both are essential for the success on every bid, project, or construction activity. Regardless of what part of the industry you work in, (drafting, designing, bidding, processing invoices, fixing or maintaining equipment, supervising, operating a piece of equipment, installing or lining pipe, flagging for traffic, managing, etc.) you will need both skills to be successful. In the words of John Ruskin, a British Art Critic, “The highest reward for a person’s toil is not what they get for it, but what they become by it.”

In my opinion the key to the contractor or engineer’s success is a perfect balance between technical skills and our ability to effectively communicate with others. The greatest resources to have in the industry is the knowledge and ability to properly communicate with others. I meet many different people, some who are excellent at their technical skills, others that are excellent at dealing with people; and today, more than ever, I understand what Dr. Prieto said back then. As Marie von Ebner-Eschenbach, Australian writer once said, “In youth we learn; in age we understand. ■

By **PABLO RIANO**
Director Of Operations

Historic City uses Innovative Technology to Repair Aging Infrastructure

Bolton Street **102-inch Brick Line Cured in Place Pipe Rehab** - One of the largest cured in place project in the world

The City of Savannah, Georgia's first city is a vibrant forward-thinking community with a progressive government. If Savannahs trees could talk they would tell you about pirates, cotton and a revolutionary town plan dating to 1733. These same gnarled twisted trees form an urban canopy hundreds of years old, But under these trees and cobbled-stone streets lie some of Americas oldest drainage systems. As early as 1817 the city provided for commissioners of drainage. The Georgia Code of 1873 no.4854 gave city council the power to establish a drainage system in and around Savannah. However the yellow fever epidemic of 1876 was blamed on the failure to maintain proper drainage and poor sanitary conditions in and around the city. City officials applied to the state for assistance and under an act of legislature in 1877 funds were appropriated and a drainage commission was appointed to supervise the project to drain Springfield plantation and other lowlands. Today these drainage systems are the responsibility of the Facilities Maintenance Bureau.

In the summer of 2017 the City of Savannah conducted a mandatory pre bid meeting to discuss their desire to rehabilitate a hand constructed 102 inch diameter 150 year old brick storm line. Prospective bidders were required to inspect the historic storm line which is comprised of three (3) layers of brick and mortar, inspection was mandatory along this 1600 LF length due to missing brick and imperfections, in some places only compression was holding brick in place. These areas needed to be repaired and prepped before the cured in place pipe rehabilitation to ensure a uniform wall was achieved.

The 1600 LF line was located between a storm water manhole in the intersection of East Broad and Bolton Street and extended east to a storm water man hole in Bolton Street just west of Paulsen Street. Due to its location and condition no other access points are available or will be considered.

The City of Savannah requested proposals to design and install a continuous fully structural cured in place pipe rehabilitation for this challenging and historic drain. Typically the low bidder is awarded project and then works with project owner to build job. However, in this scenario we must submit our plan of "means and methods "along with our cost proposal. After the bid opening the City of Savannah selected the most responsive bidders (3) I'm told and conducted a series of interviews with each looking for an experienced team with the project plan that best meets their expectations for a quality well executed project. Lanzo is eventually selected in the fall of 2018 and the real work begins.

> Ideas are relatively easy, it's the execution that's really hard

Before

After

Perhaps you've heard the phrase "Ideas are relatively easy it's the execution that's really hard." Well Lanzo has a history of taking on the more challenging projects, The Bolton Street 102 inch storm drain is no exception to this. However, I would add that the brick work in this 150 year old plus storm pipe is a testament to man's ability to achieve great things in a time when resources are scarce, the country is rebuilding after the civil war, firing brick on site, using mortar made of sand, cement, hay and compression to fit. If Savannahs trees could talk, they would tell you about a more recent history where technological innovation is desired to preserve the rich and beautiful charm that is Savannah "something out of a fairy tale "according to USA Weekend magazine.

The Lanzo plan is developed into four (4) separate and distinct operations staged to minimize impact on the community while achieving quantifiable project progress. Our first order of operations is to inspect and prepare the brick drain for the liner installation. We have several conflicts traversing the drain which have been rerouted but must be trimmed back to the pipe wall. Protruding service connections are trimmed back to the wall as well and marked for later reinstatement. Flowable concrete fill is used to rebuild the invert and sideline voids are filled or covered to provide smooth landing surface for the cured in place liner.

Our project used flow diversion instead of full flow bypass as the pipe is a storm water drain. We used a series of pumps to pick up flow behind our bulk head. Lift station flow was pumped into a parallel pipe. Pipe was relatively dry, subject to infiltration with flow diverted downstream.

Our second order of operations was to open the system by removing the 20,000 pound vault top at the intersection of East Broad and Bolton Street. Before work commenced, we met with the project engineer's office along with representatives from the traffic control engineer's office and the police

Brick work in this 150 year old plus storm pipe is a testament to man's ability to achieve great things.

and public information office. The meeting was to talk through our maintenance of traffic (MOT) plan since we would be closing the intersection of East Broad and Bolton streets as well as Bolton Street from Price Street to East Broad. Our plan was eventually approved and our schedule set for commencement on May 28, 2019.

The third order of operations is to set up our over the hole liner wet out and installation equipment. This liner is a glass reinforced polyester felt weighing 52 pounds per foot or nearly 100,000 pounds, when impregnated with resin and catalyst it will weigh nearly 300 pounds per foot. We will use 425 gallons of water per foot to invert into place which translates to 3800 pounds of hanging weight per foot. Our inversion tower has been fabricated to accommodate the liner dimensions and weight and will require custom job fit and welding to withstand the drag forces and liner weight compression. With 16 feet of head necessary, the liner loading or hanging weight is incremental but could exceed 60,000 pounds or more when you consider the drag forces associated with the material handling from the crane transitioning the wet out liner from the resin metering station into the inversion column. Our wet out metering station is set followed by the drive belt feeder rollers and static conveyor to guide liner through the resin wet out process. Finally we install our static mixer and wet out station to mix resin and catalyst and pump into liner. Our dry liner was spliced on site to avoid any special over the road permitting requirements. Our entire wet out operation is performed in an air-conditioned tent to protect against the adverse effects of heat and UV light and provide resin catalyzed stability.

Our wet out and liner installation began on time and was completed exactly as scheduled, liner processing was extended to offset environmental conditions. As soon as our liner was in place our water boilers and water circulating pumps were connected and engaged to heat and turn over nearly 800,000 gallons of water. Following this stage we immediately began the site breakdown to reduce our job site footprint.

Liner is processed in stages ramping up curing temperatures to ensure good heat transfer to the back side. When complete the ends are trimmed to reestablish main line flow, connections are opened and post video pipe line inspection is completed. Manhole restoration is complete and with lids closed our project is complete. ■

By **JOHN WILLIAMSON**
Lanzo's Lining Division Manager

MIAMI WATER MAIN REPLACEMENT AND REHABILITATION

NSF 61 Sequential Carbon Fiber Internal Wrap
Owner and Engineer: Miami-Dade Water and Sewer Department

CITY OF HOLLYWOOD 60 INCH FORCE MAIN EMERGENCY

60 Inch Force Main
Owner: City of Hollywood, FL Department of Public Services

THE ESTIMATE THE BUDGET THE BUILD

The satisfaction of a job well done comes from coordinating the successful delivery of a project that is built under budget, on time and to the satisfaction of our clients. This satisfaction is something that is well-earned and justly rewarded in our industry. Heavy civil construction is necessary for modern society to exist and presents unique challenges to build. The build process must be managed and monitored every step of the way. To best manage the construction process, the cost to build must be fully understood by the people responsible for the delivery of the project.

Clearly communicating with stakeholders such as clients and managers the progress of the build while maintaining the relationships that allow for that communication to be productive. The challenge is being everything to everyone and having the answers to questions beforehand. Coordination with subcontractors, tracking their daily accomplishments, and their daily struggles, to ensure a win-win situation. Making sure that all the material needed for our forces to perform efficiently are available and up to standard. Allocating the appropriate labor and equipment for the task at hand.

Reviewing daily reports to track the costs, looking for the markers that indicate budget busters ready to spring unexpectedly. The challenge is the ability to track all costs incurred throughout construction while maintaining your budget and project delivery strategy. The budget offers the beacons of light to guide us through the high seas of the storm that is the build.

THE ESTIMATE

Everything begins with the estimate, the acquisition of the contract and the opportunity to build the project. The estimate or the cost is a result of diligent efforts by the estimator and the estimating Team. By the estimator carefully reviews of the scope of work and the information provided, conducts site visits, and builds the estimated cost to construct the project. The process is meticulous and involves building the job in their mind's eye first. Next, the plan take-off is performed to develop the actual material needs and to confirm the understanding of the scope as presented by the client. After, the team will begins gathering the information that will be used to develop the estimate such as material costs, subcontractor services needed, and labor

and equipment required for the build. All this is loaded into our bidding software and manipulated to generate the bid cost based on the strategy to build. The strategy to build the project is developed to economize the cost, to be more competitive, and to be more successful at winning bids. These strategies are subsequently shared with the people who will build the project so the cost savings can be captured. The process also involves consultation with stakeholders for a better understanding of scope and how the project will fit into the big picture. The cost is then reviewed by the stakeholders, clarifications are offered, and mark-up is assigned based on what is believed the market will bear.

THE BUDGET

The budget all began with the estimate developed at bid time and is generated in the bidding software. The scope of the project is re-analyzed by Lanzo's management staff and any gaps in the estimate are identified and discussed to see if the build strategy addresses them. As the cost codes, the backbone of the budget, are developed, the Project Management staff will influence the structure of the code. This team works in developing the budget and fostering a greater understanding of the estimate and the strategy that was developed to capture the work. It will mirror the pay application line items to facilitate forecasting the costs up and down to a great degree of accuracy. The budget with the forecast becomes a powerful tool to see the cost trends as the project is built. With this data being monitored, the course of the project build can be adjusted to meet the budget and the schedule requirements. With the cost codes and budget established the project can then be brought out and all the resources necessary for construction can be scheduled.

THE BUILD

When the project kicks off, the cost to build is understood by the management staff and they now need to communicate the strategy to the teams responsible for performing the work. Each cost code has an intention and defined scope of work that will allow the management staff access to the data they need to make decisions about the course of the build. This information comes from the dedicated men and women who are out there making it happen every day and reporting on their activities. Undoubtedly there will be a need for clarification of the intention of the cost codes as the project is built. Daily tracking of the construction progress is the only real way to gather data to understand the cost to build the project. This level of detail requires the management staff to maintain constant accountability and communication with the dedicated staff in the field. Using the job cost tracking software along with constant monitoring and maintenance of the information coming in from the field, the budget and schedule can be met to the satisfaction of our clients. These challenges faced daily can seem daunting and sometimes overwhelming but with a well thought out plan and a budget there will always be the opportunity for success.

All these concepts are brought to life through the experience and daily efforts of all the team members here at Lanzo who are dedicated to the vision of the execution and delivery of our projects on time and under budget. ■

By **JAMES TILLI**
Chief Estimator

MIAMI BEACH CIPP WATER MAIN REHAB

Open, Honest, Accountable is perhaps our most virtuous Core Value. When a team of people are pitted against a difficult, complicated and time sensitive objective, these attributes become the difference between success and failure. A Team Leader must be in a position to expect each of these characteristics from the team, without exception, so that he knows precisely where his project stands with respect to all necessary measurables up to and including completion.

Lanzo's recent installation of an NSF 61 CIPP water main rehabilitation in a canal crossing

beneath Miami Beach required coordination of many resources across Divisional Lines. Our employee spotlight shines on Bobby Bucci who largely insured the success of this combined Lining/Construction effort. All phases included SAFETY, Pit Construction, Cleaning, Pipeline Survey, Traffic Control, the first-ever application of our Cityliner Truck, new resin technology, NSF 61 Protocol for Rehabilitation of a Potable Waterline, Testing and Closeout were implemented.

This required coordination, communication and reliance on each of our team members to be held accountable for their respective tasks. Bobby scheduled and held project meetings, training meetings and efficiently coordinated milestone events with Construction personnel including Daniel Mesquita and Joe D'Alessandro Jr. The job required installing 140-feet of 20-inch diameter fully structural "Stand Alone" water main lining to restore a cracked cast iron pipe to a new 50-year service life expectancy. The restoration was performed under Lanzo Construction's Sunset Harbour Contract for the City of Miami Beach. ■

WATER TREATMENT PLANT CONSTRUCTION

Coral Springs Improvement District
CH2M Hill

SDWWTPS - 811 CLARIFIER ADDITIONS & IMPROVEMENTS

South District Wastewater Treatment Plant
Owner: Miami Dade Water & Sewer Department

Lanzo provides Water, Sewer & Roadway Improvements that “Reach the Beach”

Over the course of two contracts totaling some $15M, Lanzo delivered a suite of construction services on Hillsboro Beach, under and alongside Florida State Road A1A which showcased the company’s total package capabilities in several construction disciplines, as well as breaking infrastructure construction and rehabilitation technologies.

The Town of Hillsboro Beach, nestled along the Gold Coast of South Florida, had need for rehabilitation or replacement of over 4 miles of 6 through 12-inch asbestos cement and ductile iron water mains serving this seaside community. The 50-year-old water mains buried beneath Florida State Road A1A had ruptured numerous times requiring emergency point repairs

causing significant disruption to traffic providing sole access to the multimillion-dollar residences, as well as a landmark scenic route connecting Deerfield Beach with the Hillsboro Shores subdivision of Pompano. Additionally, sanitary sewers were replaced under this road prior to pavement.

Two contracts were Hard Dollar Bid for The Town of Hillsboro Beach and Broward County, respectively, both of which were won then constructed by Lanzo. With respect to the water piece; the original plan was to use cured-in-place pipe (CIPP) to rehabilitate the ductile iron line while using a technology known as “pipe bursting” to renovate the asbestos cement piping. These existing 50-year-old pipelines were failing at an alarming rate given the brittle nature and age of the pipes already at or beyond their service life expectancy. Given FDOT concerns about hazardous particulate material and regulations governing friable substrates, pipe bursting of AC Pipe was no longer an option. It was decided that all water mains would be rehabilitated with CIPP.

More than 4 miles of AWWA M28 Class IV, NSF 61 certified CIPP Watermain Liners were prepared on site and installed in single shots of up to 650 LF. This portion of the project was completed between March and December 2018. All rehabilitated lines were pressure tested at 100 psi, and new services were installed to the luxury homes, beachfront condos and boat houses along the impressive scenic highway. The use of CIPP minimized disruption to the residents, tourists and other stakeholders affected by the project.

Benefits included construction efficiency, scheduled time reduction and a rapid flow of completed water main rehabilitation which proceeded at a rate of over six hundred and fifty (650) feet per construction day.

The Sanitary Sewer Phase of construction proceeded upon completion of the water main. Although a separate contract; it is not uncommon that the water mains are structurally stabilized prior to the deep cuts required in a Sewer Project. This practice eliminates any potable water disruption which might otherwise be caused by line breaks instigated during demolition phase in a remove and replace operation.

Sanitary Sewer replacement was challenging as it combined a demanding Traffic Maintenance in a State Road with deep Dig and Replace of Pressure Pipe Force Main, Sewer and Lateral pipelines. Multiple crews were employed to proceed with two pipelines, restoration and testing being performed simultaneously in order to meet Broward County’s stringent critical path for completion.

The Hillsboro Mile Sanitary Improvement project included a dig and replace live gravity sewer, within the A1A area, with over 16,000 lineal feet of sewer main ranging between eight (8) inches to twenty-four (24) in diameter, also the installation of an additional 20,942 lineal feet of Force Main up to sixteen (16) inches in diameter; the replacement of fifty-seven (57) maintenance access structures (MAS) with excavations as deep as twenty (20) feet, while crossing over 150 private utilities. In addition, it will require the milling and resurfacing of approximately 44,000 SY of an FDOT road project which is scheduled to be completed within the 365 contractual days.

One of the stated priorities of this project was to insure tight Open Cut/ Paving sequencing where restoration and Asphalt Paving followed directly behind the backfill and compaction phase. Lanzo’s “in house” fully integrated Paving Division allowed for no slack between Pipeline Installation, Restoration and paving of this critical arterial roadway.

Multiple crews were employed to proceed with two pipelines, restoration and testing being performed simultaneously

The projects served to rejuvenate the entire Utility Corridor within the Town of Hillsboro Beach between Deerfield and Pompano along State Road A1A. Residents now enjoy the benefits of Water, Sewer, Drainage and a renewed Roadway which will serve them well into the 21st Century. ■

By **FRED TINGBERG JR.**
Chief Technology Officer

SAFETY FIRST!

Is day-to-day language used by LANZO employees for over 50 years.

LANZO's Philosophy in safety; **"Protecting our most valuable resource……our employees"**. Our mindset is that all accidents can be prevented, and that safety is an integral part of everyone's job. Our subcontractors, customers, management and employees are responsible for demonstrating safety leadership, providing a safe work environment and promoting safety as a VALUE. Furthermore, our employees' health and safety is viewed as VALUES we hold that adhere to every facet of our operation. Safety is not viewed as a priority that can be arranged in vertical order of importance when others bring pressure to bear or to place more importance on another aspect of our business.

SAFETY IS OUR ETHICAL RESPONSIBILITY.
At its core, our ethics hold up a positive vision of what is right and what is good. Workplace injuries and deaths are too often seen in the abstract as statistics. But when it happens to someone we know; we suddenly see the reality of the horrible pain and suffering and its widespread effect. It is our moral and ethical responsibility to do what is necessary to protect employees from death, injury, and illness. This is the only foundation upon which our safety culture exist today and continuously progresses forward.

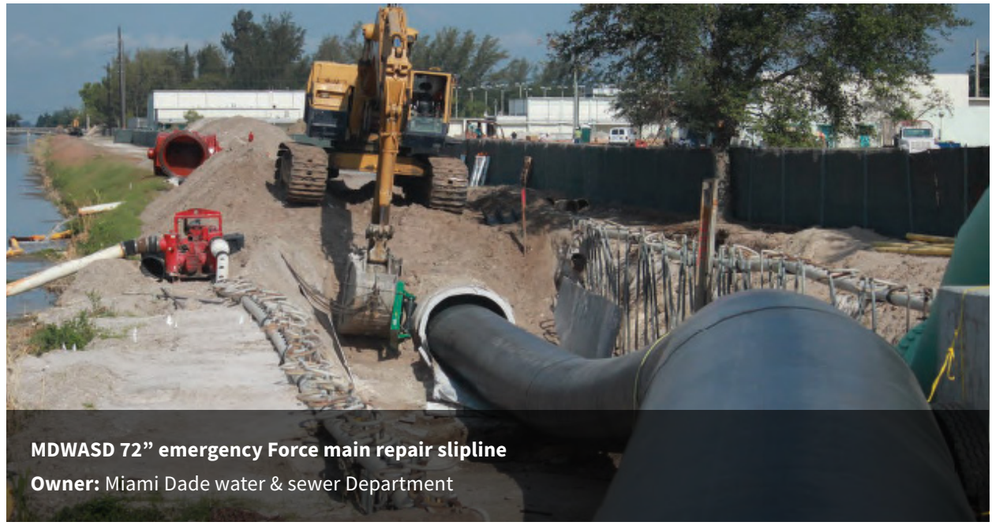
SAFETY IS A CULTURE NOT A PROGRAM.
The combined commitment and participation of the entire organization is necessary to create and maintain an effective safety culture. Every person in the organization, from the top management of the corporation to the newest employee, is responsible and accountable for preventing injuries.

EMPLOYEES ARE TRAINED TO WORK SAFELY.
Awareness of safety does not come naturally; we all need to be trained to work safely. Effective training programs both teach and motivate employees to be a productive part of the safety culture. Prior to releasing a new employee into the workforce, he or she participates in OSHA's 10-hour construction training. The employee is then assigned to a Competent person in the field, where site-specific training is administered until the employee is skilled. Furthermore, prior to the commencement of the workday, each crew conducts a "Daily Safety Meeting." We also conduct a "Weekly Toolbox Training", and a "Weekly Job-Site Safety Inspection" to ensure our best management practices are vast and continuously improving.

SAFETY IS GOOD BUSINESS.
Reducing the number of workplace injuries and illnesses reduces the costs of workers' compensation, medical expenses, potential government fines, and the expenses of litigation. Effective workplace safety is not an expense, its an asset.

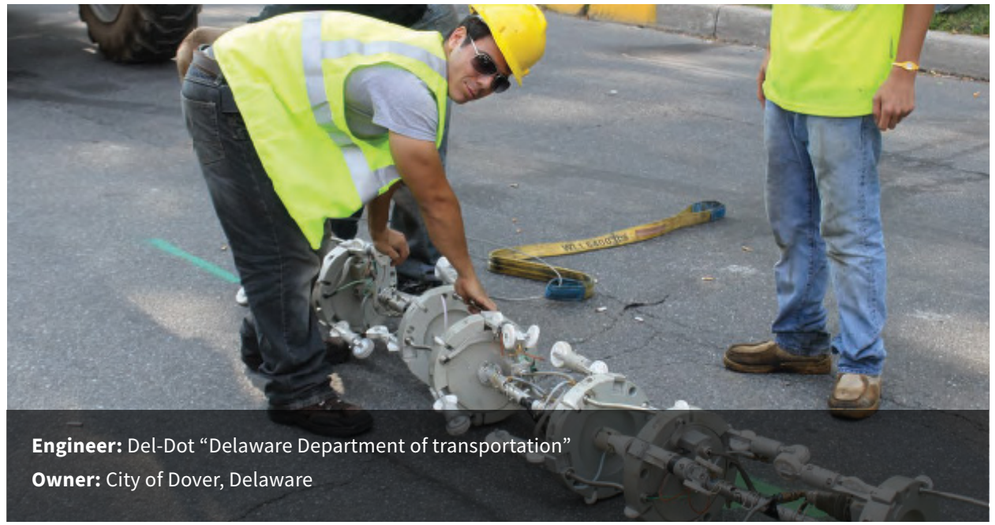
By **PAUL MCCLURE** CSE
Vice President Health,
Safety and Environmental

MIAMI GARDENS WORLD RECORD SLIP-LINE REHABILITATION



MDWASD 72” emergency Force main repair slipline
Owner: Miami Dade water & sewer Department

UNIQUE UV-CURED CIPP SEWER REPAIR FOR CITY OF DOVER



Engineer: Del-Dot “Delaware Department of transportation”
Owner: City of Dover, Delaware

WHAT IS ASPHALT OVERLAY?

Asphalt overlay is a paving method of applying a new layer of asphalt to a deteriorating surface. Rather than tearing up an old surface entirely, an asphalt overlay project will use the existing layers as a base for new asphalt pavement. Some asphalt surfaces with severe damage like rutting, potholes, large cracks, and expansion will need to be milled or repaired before an overlay is applied. These are the asphalt overlay steps:

ASPHALT ASSESSMENT

Not all existing surfaces are suitable for asphalt overlay. If an asphalt surface has extensive structural damage such as large potholes, root damage, or ruts in the surface, it will need to be ripped up. Asphalt surfaces that are not draining water correctly may also not be suitable for asphalt overlay because the surface may need to be regraded to handle the water more effectively.

ASPHALT MILLING

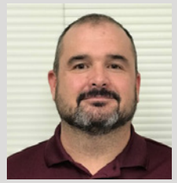
Asphalt milling will remove the top layer of an asphalt surface that has taken on cracks, raveling, or other damage. The old layer that has sustained damage must be removed to ensure an even bond when the new asphalt surface is applied, and to maintain a level surface. An asphalt milling machine will grind down 1” to 3” depending on the wear of the existing asphalt surface. The ground surface material (millings) will be hauled to an asphalt recycling plant where it can be intergraded into new asphalt mix designs.

BASE REPAIRS

The base of an asphalt surface may need to be replaced in areas where potholes, rutting, and sinking have formed. In order to make sure a severe problem will not form again the base of the asphalt surface will be rebuilt using multiple lifts of aggregate and asphalt.

PAVED SURFACE

Once the existing asphalt surface has been prepared, asphalt overlay can be paved on top of the prepared, clean surface that has been properly tacked so the new wearing course properly adheres to the existing surface. The amount of overlay applied to the surface will vary depending on the thickness of the existing surface and the amount of traffic volume projected., but typically will be within 1”-1.5”.



By **DOUG CARPENTER**
Senior Estimator

MIAMI GARDENS FORCE MAIN PIPELINE REHABILITATION

The City of Detroit awarded Lanzo Trenchless Technologies (then Lanzo Lining Services) a multiple outfall project that included fourteen large bore outfalls. Lanzo structurally rehabilitated nearly 20,000 linear feet of concrete, brick, box culvert, and tile sewers between Jefferson Avenue and the Detroit River using either over-the-hole or conventional ASTM F 1216 direct inversion methodologies.. The project served to structurally stabilize and renew the existing pipelines without excavating large swaths of Detroit's prized developed riverfront shoreline.

Pipes ranged in size from 51" to 110" inch diameter while the wall thicknesses utilized for constructing fully stand alone pipes within the existing pipes went to 54 mm (in excess of 2" thick).

One of the outfalls (Joseph Campeau) was, at the time of this project, the largest singular utilization of cured-in-place pipe (CIPP) technology in the world. The 3600 linear feet of 84" equivalent round box culvert consumed over 1,000,000 pounds of resin and took approximately one week per barrel to invert.

COMPLEXITIES OF A **HIGH-PROFILE** NEIGHBORHOOD IMPROVEMENT PROJECT

Since the financial crisis of 2008, we have found a steady increase in new developments, and neighborhood improvements projects.

With the Tri-County area in Florida, Miami Dade, Broward, and Palm Beach counties having a substantial budget for infrastructure improvements and the need to upgrade the existing living conditions to keep up with the growing population and weather changes, we have found ourselves more involve in the neighborhood improvements projects and rebuilding of infrastructure.

Improving existing infrastructure already has major complications; it all starts with the analysis of what the neighborhood is in need of, how to resolve the concerns and what is the best approach. This can include the replacement of existing utilities, installation of new infrastructure to mitigate and/or upgrade the resident's needs.

These types of challenges are common to any civil engineer with experience in this industry, but what nobody prepares you for is how to properly convey the realities of heavy construction in an active neighborhood. This brings a completely different approach to the project. Not only do you have to concern yourself with the design approach and construction difficulties on the project but you must be able to coexist and explain the construction to the community.

I am part of a project which includes the replacement and upgrade of all infrastructure disciplines; water main, sanitary sewer, storm drainage, pump stations, utility undergrounding, road construction, and private property harmonization; out of all the efforts needed to complete the project, the most difficult has been the private property harmonization, hence we need to explain the design approach to individuals not familiar with construction and more importantly, who are wary of contractors and/or city employees working inside their property.

This approach was causing additional frustration to an already annoyed resident, as it is well understood, due to the construction and demolition efforts, a neighborhood improvement project is a life altering event in the eyes of the residents, and here came a group of strangers communicating their plan to work on their property, with engineering drawings and practically speaking another language.

Once I changed my approach and started to explain the design and plans in a less technical and in a more practical way, the project team started experiencing more success with resident communication, and even though we were not always successful, we saw a large improvement. Some residents were more receptive to the design approach and felt they were understood.

As engineers, sometimes we forget that not everyone speaks the technical terms and the construction language; we found it hard to be more practical in our communication when speaking to people in other fields, but as one of the greatest minds understood during his time, Can you explain it to a six year old? ■

By **VICTOR M. SERRANO**
Project Manager

Global Bypass for System Isolation at OMID

CAPACITY TO BE DIVERSE AT OMID 6

by **FRED TINGBERG Jr. Chief Technology Officer**

In late 2014 Lanzo received a call from NTH Consulting and Drain Commission officials asking for help on projects within the Oakland-Macomb Interceptor Drain (OMID). The job required Deep Interceptor Pipeline & Structure rehabilitation in a problematic sewer straddling Oakland and Macomb Counties in Southeast Michigan. This 50-year old concrete system ran adjacent to a crucial roadway (M 59) connecting the East and West sides of heavily populated Metro Detroit.

Engineers had identified the system as succumbing to sulfide attack of Reinforced Concrete Pipe and Manholes which were installed during the late seventies. It was deemed a priority to evaluate and Repair over seven (7) miles of Large Diameter Interceptor Sewers as large as 13 feet in diameter some forty (40) feet beneath the active County thoroughfare to preempt any "catastrophic" failures.

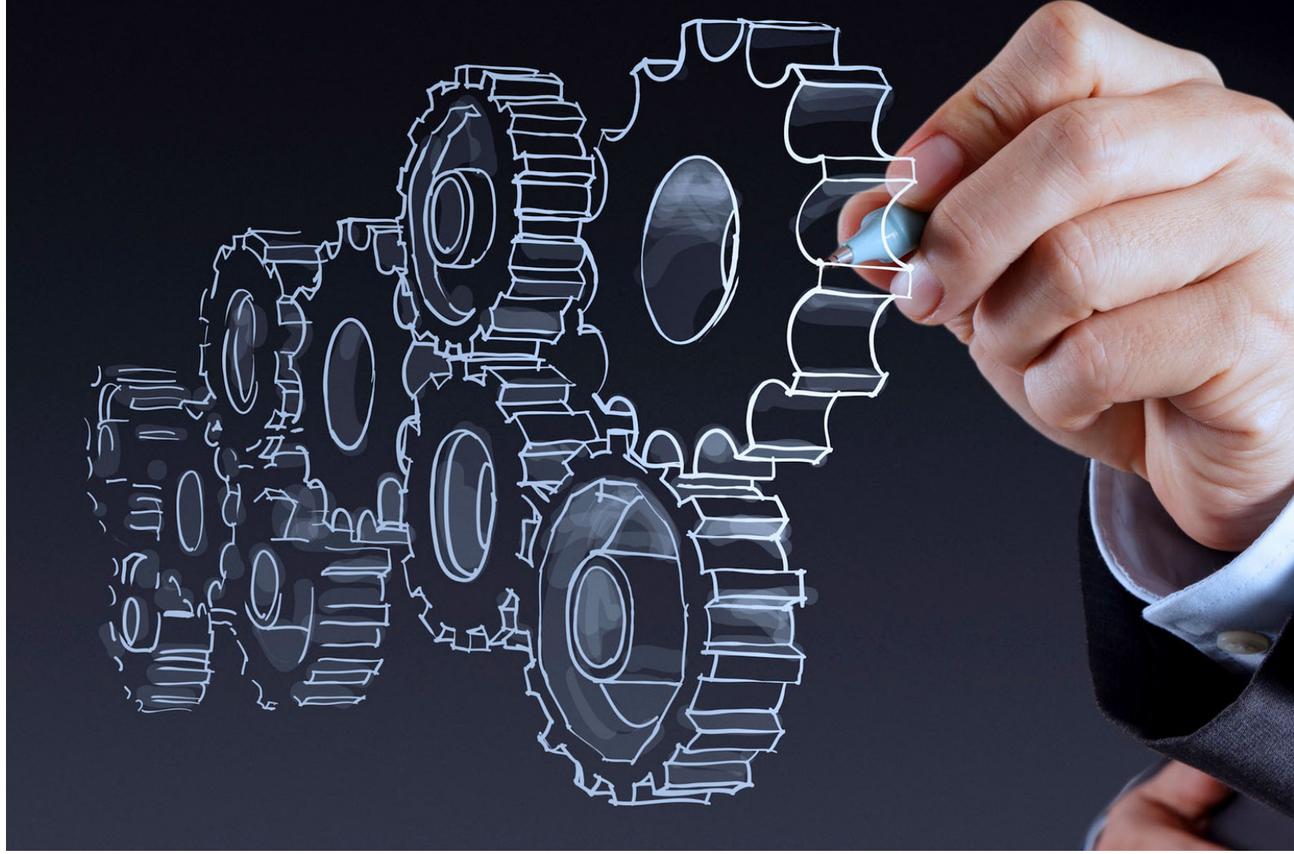
The project implemented many technologies including, Permanent Access Road Construction, High Volume Sewage Flow Control, Cementitious Grout in Place Liners, Fully Deteriorated Model CIPP, Large Bore Spot Repairs, Cementitious Grouting of Voids, Access Manhole Restoration, Localized Crack/Failure Repairs using Chemical Grout, “Insitu” Steel reinforcement of existing concrete pipe and CCTV.

Pre -Qualified Contractors were required to “self-perform” much of the construction trade work by Dollar Volume. This provision added quality to the specification, minimized risk and insured that the general contractor selected would perform the work as specified while providing first quality materials and workmanship.

Having experience in all the proposed technologies, Lanzo was selected with an overall price of under $16 Million. Work was difficult and dangerous, requiring the utmost care in Safety Consideration, Monitoring and Management.

This project won Trenchless Technologies Project of the Year Award in 2016, while Lanzo’s Core Value of **Teamwork**, **Smartwork**, **Hard Work** again paid off!

Lanzo utilized “Fully Deteriorated Design Model” Cured in Place (CIPP) liners with stand-alone structural characteristics while meeting the demands of a Fifty (50) year service life expectancy. One of the early tasks was to tunnel a 16-0-foot diameter shaft down to the 96” Diameter Sewer Crown, create access and build a platform for staging of both the Chemical and Cementitious Grouting Activities within the Pipeline. Challenges included working in and around flow which was disrupted during construction. Much of the work was conducted above existing flow lines with a cabled Hammerhead Winch System being erected to pull construction carts between access points as far as twelve hundred (1200) feet apart. ■



IMPLEMENTING CHANGE

“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.”–Niccolo Machiavelli (*20 Transformational Quotes on Change Management, 2017*).

Change is never easy, you get accustomed to do it one way, the “that’s how we do it here” motto. I fell prey to this saying, working for the same company for over 15 years. This is how they have always done it and have been very successful for over 50 years. Recently there were changes made to the leadership and that motto no longer applies. Having said that to describe a change that I would like to bring to my organization would be hard since a lot of those changes are happening right now. One of those changes was to implement an incentive program for all employees, not just a select few.

Description of the Change

This change can help motivate and reward all the organization's employees and not just a select few. The success of an organization does not rest with just a select few people, but it rests with each and every employee of the organization. To do this the leaders of organization need to figure out just what motivates the employees and what the organization can do to help with motivation. "Managers must recognize the imperativeness of employee motivation, its concepts, and differences in individual needs (Kim, 2006)." Once that is figured out then a policy needs to be put into place in writing and given out and made available to each and every employee. An organization can implement a program that rewards employees for coming up with ideas that could help the company save money or improve productivity. Another example can be an employee recognition where team leaders or managers nominate an employee that has gone above and beyond their normal scope of work. In the organization I work for we are only successful if we win bids on jobs, the more bids we win the more jobs. That success lies heavily with the estimating department. In an effort to improve on the completion of bids and submittals, our CEO has launched a monetary incentive program just for them.

Value the Change Would Bring

What an incentive plan can bring to an organization is motivation from the employee, loyalty to the organization, lower turnover rate, and strong work relationships. When you have a motivated employee, it can lead to increase productivity and happy employees when they are recognized for going above and beyond their everyday work duties. When employees know

When you have a motivated employee, it can lead to increased productivity

that there is a possibility to impact their earning potential through incentive plans, they will most likely remain loyal to the organization, creating longevity in the professional relationship. When employees feel that they are being overlooked or unappreciated they will start to look elsewhere for a job. Using an incentive plan that rewards those top-performing employees shows that they are appreciated. In return this will help to reduce turnover in the organization, which will also save the organization money and time training a new hire. An incentive plan can also help in the recruiting process of top candidates. Incentive plans can also help bring a team together, creating sense of camaraderie among them. It also strengthens the bind between co-workers, managers, and business owners. By doing this it creates a unified workforce that is a more efficient, pleasant work environment for everyone.

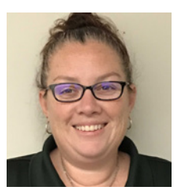
Change Methodology

To implement this change I would use the top-down methodology. As I have seen the effect it has on an organization first hand. If I was the person that was implementing the change, I would have a one-on-one conversation with all the upper management to go over my ideas in regard to the incentive plan and then ask them for their input on whether the plans need to be altered or if they feel it will accomplish our goals. Once those changes were sold, upper management would be able to sell the changes to those that work under them. Some of the upper management has been with the company for many years and they have earned the loyalty and respect of those that work for them. Even though I choose to start at the top doesn't mean that those considered at the bottom should not be heard. "Change can be driven solely from the top. However, for continued success, change must come from within each employee and this can only happen in organizations that have an organizational culture that encourages each employee to contribute to the initiatives (MSG Management Study Guide, nd)." I feel that once you have the top on-board with the change that it can help make the change happen. But the top must remember that the bottom makes up the majority of the company and it is important to listen to the them in regard to change.

Change can be hard but is a necessity for an organization at some point in time so that they can remain competitive not only in business but also retain and hire qualified candidates.

Insights and Conclusions

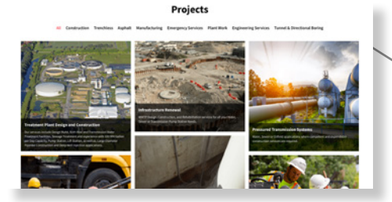
What I have learned in my research is that change can be hard but is a necessity for an organization at some point in time so that they can remain competitive not only in business but also retain and hire qualified candidates. When you implement change, you must evaluate the situation, you must analyze the situation and you have to come up with a viable resolution to the situation. I would choose an incentive plan because without employees a business cannot survive and or maintain high quality employees. Offering an incentive can create a sense of loyalty between the organization and their employees, by choosing the implement plan of top-bottom. I have seen it work first hand. I kind of feel lucky that I have been able to see and experience what I have. It helps me put things into perspective, so when I reach that point in my career where I will be the one implementing change, I will know how it should be done and how it can be a success. ■

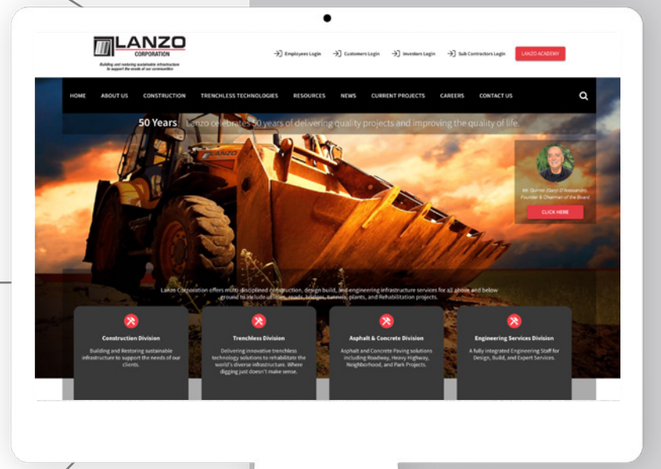


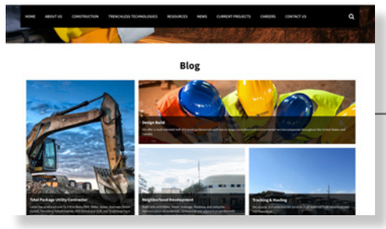
By **CASEY SCOLARI**
Human Capital Director

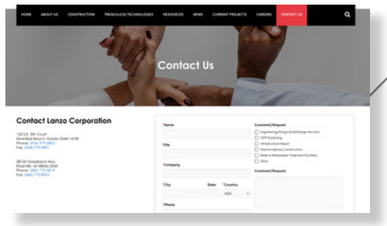
The New Lanzo Website

The new site was launched, and pages are being added daily. The site look and feel are more modern in nature and has more practical features that can present the company in a better light and provide shareholders, employees and customers a better way to be informed and communicate.









Back in the day of our founding fathers surveying was performed by a select few. In fact, when our first president George Washington was not fighting the British, he made his living surveying land.

You may not know it but 3 of the four men including ole George on Mount Rushmore were surveyors. Back then men would pack up their equipment and travel many miles to survey what was then virgin lands. The tools used then and not so long ago were accurate but took a lot of time. Traditional surveying methods using a tripod, the transit and tape still have a place in today's survey world but advances in the way we

collect data has evolved dramatically. What used to take several days, or weeks can now be accomplished in several hours.

In the past surveying required “line of sight” which required us to blaze trails through the woods to see to the other end of a line. Now with the development of GPS (Global Positioning Systems) obstacles that impeded our “line of sight” are no longer a problem. We can now use G.P.S. receivers to collect data from satellites orbiting 24 miles above the surface of the earth to locate the horizontal and vertical position of points instead of using traditional means. Automobile traffic which made for some very dangerous situations is now also somewhat averted. Since we do not have to occupy with our theodolites survey points that typically fell in the middle of roadways GPS has increased the safety for our people.

Surveyors used to record data in field books and then had to type that information into computers, but using modern day data collectors we have removed that step. We simply plug in the data collector and transfer the data. These collectors are actually mini computers which not only store data, but allow us to calculate and convert information rapidly. The one we currently use can even be submerged under water for several minutes without sustaining any damage. Many people think that GPS is the name given to the act of using satellites but in fact it is the name of the United States constellation of satellites. Europe also has their own system of satellites called the Galileo Constellation. Using a combination of ours and theirs, the accuracy is “out of this world”.

In the past surveying required “line of sight” which required us to blaze trails through the woods to see to the other end of a line.

As you can see, avoiding many of the traditional obstacles encountered by early surveyors not only makes us more efficient but also makes the job safer. We currently have several GPS units which some of you may have seen us use in the field. Hopefully in the future we can expand our arsenal with a scanner or drone which will make us even more efficient.

If you see one of our guys using this equipment and are interested, please ask us for a quick demonstration. It is very easy to learn and use.

By **ERNEST W. DUNCAN**
P.S.M-Chief Surveyor

MIRAMAR NEIGHBORHOOD IMPROVEMENT PROJECT **“MEAT & POTATOES”** OF UTILITY CONTRACTING

By FRED TINGBERG JR.
Chief Technology Officer

Perhaps one of the most significant contribution an Underground Contractor can make to the community is participating in what is commonly known as Neighborhood Improvement. One such project was completed by Lanzo for the City of Miramar. In a typical “Improvement” project of this type roads are torn out and replaced but only after new sanitary sewers and watermains are introduced along with an improved drainage system, rebuilt walkways, curbs, and landscaping. It is not uncommon for real estate values to increase by 30% or more along with greatly improved aesthetics and an overall “feel” of community betterment.

Lanzo has taken on many such assignments for Broward, Palm Beach and Miami Dade counties, with a project in Miramar being a model of this type of effort. This project required regular communications and outreach with community leaders and stake holders especially residents. Close attention was paid to complex timing of traffic patterns with preparations for noise and other environmental issues a high priority. As always SAFETY FIRST.

After award Lanzo scheduled project components starting with a new Ductile Iron water Distribution system including over three miles of 8” and 6” piping requiring twenty-six (26) wet taps.

The new Sanitary System required dewatering ore “well pointing” of an OSHA compliant Safe Trench to allow for:

- De Silting and turbidity monitoring of outfalls in the sensitive ECO environment
- 24,122 linear feet of 8” PVC Gravity line with cuts to 20’ deep
- 92 new manholes
- 1,488 linear feet of 8” force main which tied a new pump station into the existing system
- The pump station required construction of a thirty-five (35’) foot steel sheeted vertical shaft

The new Drainage improvements included:

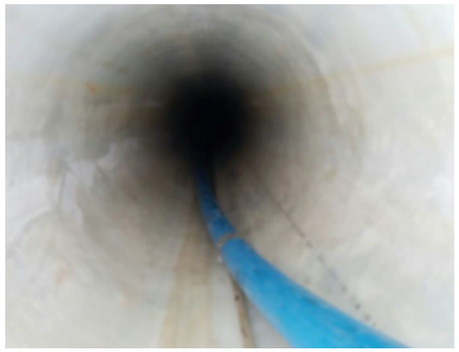
- 353 new structures
- 31,427 linear feet of 15” – 42” reinforced concrete pipe
- 2 large control structures

Final restoration was completed on time and under budget with an overlay of 76,821 square yards of S-III asphalt overlay, sidewalk and curbing.

PRESSURE PIPE TRENCHLESS PROJECTS IN WEST PALM BEACH AND MIAMI COMBINES OPEN CUT, CURED IN PLACE AND CARBON FIBER ACTIVITY

by **FRED TINGBERG JR.** Chief Technology Officer

Access pits constructed by Lanzo for Watermain Rehab



Finished CIPP Pressure Pipe for testing to 100psi

Cured-in-Place Pipe (CIPP) lining or Carbon Fiber Reinforced Polymer (CFRP) Pressure Pipe Rehabilitation Services include providing labor, materials, and equipment for restoration of pressure pipes typically require pit construction, global bypass, disinfection, and pressure testing.

These breaking technologies were recently employed on each of two projects by Lanzo Corporation using both the Construction and Trenchless divisions. Providing pressure pipe rehabilitation requires a combination of many services offered by Lanzo resulting in an efficient, economical and turnkey “one stop” selection experience for the Owner.

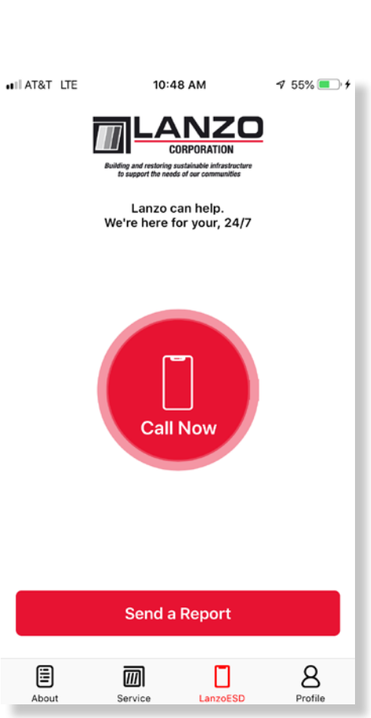
In West Palm Beach, over 6,000 lineal feet of 48” PCCP cylinder pipe had succumbed to hydrogen sulfide failure requiring full structural rehabilitation using CIPP. With a pressure test being required and the desire for minimal disruption, Lanzo implemented a High Elongation Reinforced CIP Tube Design requiring only seven (7) pits while installing Liner shots in excess of 1100 feet! A Global Bypass system allowing for complete system isolation while the work was completed in heavily trafficked roadways including a School Zone using an expedited construction schedule. Project Managers Bobby Bucci, Michael Green and John Williamson seamlessly coordinated parallel efforts including Open Cut, Lining, and Directional drilling activities.

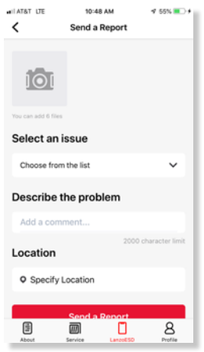
Separately, the existence of deteriorated large diameter Prestressed Cylinder Pipes (PCCP) in water mains is a liability shared by municipalities nationwide. Miami Dade WASD declared an emergency to preempt catastrophic line breaks in their Prestressed Cylinder Pipe Watermain System. “CFRP” or Carbon Fiber Reinforced Polymer systems have become increasingly popular as a reliable means of internally or externally dealing with defects in all types of pipeline systems. Lanzo was called on to provide Carbon Fiber Rehabilitation of 54” and 48” pipes and is among only a handful of Qualified and Certified Engineering Contractors capable of providing this service on a Hard Dollar Bid, Design Build, or Emergency basis. All repairs are fully structural and stand alone without the need for any reduction in hydraulic capacity. Over the next two decades it is estimated that an anticipated $1 trillion will be needed to replace our nation’s failing water transmission.

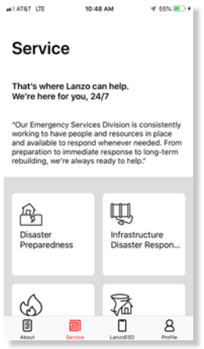
NSF 61 Certified Carbon Fiber Rehabilitation of a 54”

The Emergency App

The emergency app is completed, and we started to expose it to some of our current customers. We are planning to market it to all the municipalities in South Florida, large corporations, universities and sports teams.







Careers at Lanzo

At Lanzo, we keep our legacy in motion by living our core beliefs. We act. We learn. We get better. We are never content with just being satisfied, therefore we strive to be more tomorrow than we are today. Some companies are retreating - we are moving our culture and our opportunities forward to embrace the future.

Build Your Future with Lanzo
Whatever the experience that first sparked your interest in construction, we are pleased that you are interested in Lanzo Corporation.

Every Lanzo project starts with a team of dedicated employees. We are looking for individuals who are eager to develop their skills and apply them together to create the desirable working environment that fits the Lanzo culture and core values.

More than Construction
Lanzo is interested not only in candidates with backgrounds related to construction, management or engineering, but also those with skills in finance, accounting, human resources and business development. We know it takes a diverse team to build the future and we are looking for all types of talent to contribute.

A Great Place to Work
Lanzo is an Affirmative Action and Equal Opportunity Employer.

Visit **www.Lanzo.net** to learn more about career opportunities at Lanzo Corporation.

Phone: **(954) 979-0802**

CURED-IN-PLACE-PIPE LINING IN BIRD’S EYE VIEW

What is CIPP?
Cured-In-Place-Pipe (CIPP) is a technology, developed in the early 1970’s by an Englishman named Eric Wood to repair a leaky pipe under his garage without having to dig his entire garage floor. He named the process insit-u-form, which derives from Latin meaning “form in place”. In 1977 Insituform Technologies commercialized the patent for cured-in-place pipe lining and brought the technology to the united states.

A textile liner tube and a liquid resin are the two major components of CIPP lining. The liner tube is impregnated with the resin mixture in controlled conditions and inverted into the pipe with air pressure or hydrostatic pressure, after which the composite liner is cured using hot water or air thus activating the resin and causing it to harden, creating a smooth, tight, corrosion resistant pipe wall.

Why CIPP?
CIPP is one of the most efficient trenchless sewer repair methods that requires little or no digging and significantly less time to complete compared to conventional dig & replace methods. In most cases, a section of pipe that is typically several hundred feet can be repaired in one day. Working crews avoid digging & instead access the pipe using existing access structures.

This champion technology can be used in a wide range of pipes, from Water Mains to Sanitary Sewers and Gravity Pipes to Pressure Pipes with minimal environmental impact. Apart from being economically feasible & less labor intensive, the new pipelining provides better flow efficiency. With a design life of up to 50 years, Cured-In-Place-Pipe lining is less intrusive & results in less collateral damage therefore, making it a superlative option when the repairs are to be done on pipes, under or in the proximity of buildings with historic significance.

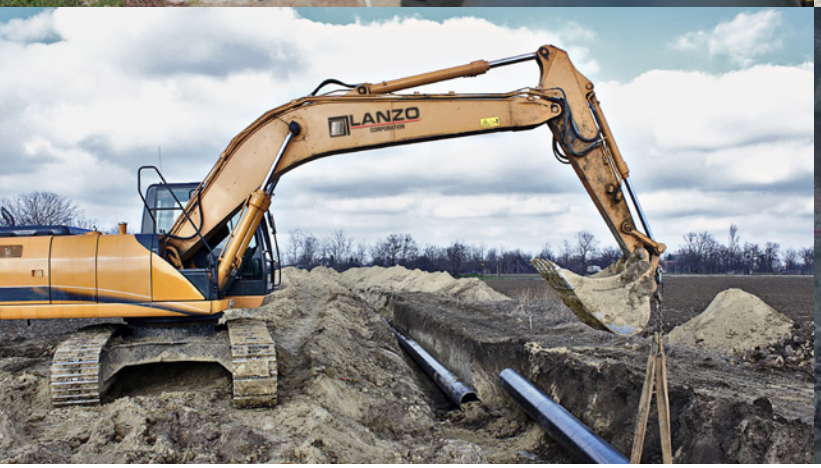
Over the years Cured-In-Place-Pipe has emerged as a great solution for the rehabilitation of pipelines around the world due to its credits for minimal traffic disruption, protection of pipes from corrosion, less maintenance and a time saving process.

By **PRAJWAL ADITYA**
Project Manager









LANZO CORPORATION

Building and restoring sustainable infrastructure to support the needs of our communities

Construction • Trenchless • Asphalt • Plant Work • Manufacturing
Emergency Services • Engineering Services • Tunnels and directional boring

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