



GREATER NEW ORLEANS
INC
REGIONAL ECONOMIC DEVELOPMENT

WORKFORCE OUTLOOK

COASTAL RESTORATION
2019



LETTER FROM THE CEO



As the economic development alliance for the 10-parish Greater New Orleans region, GNO, Inc. consistently seeks to provide clarity and vision around emerging industry sectors and career pathways.

In the case of coastal restoration, government, education, and economic leaders are aware of the incredible opportunity and challenge facing Louisiana. With billions of dollars committed to coastal projects in the region through the implementation of the State's Coastal Master Plan, there is great hope these large scale infrastructure projects will bring new jobs to our parishes.

Given the unprecedented nature of our most ambitious coastal restoration projects, this report sets out to provide further definition and explanation of the complex job profiles and skill sets associated with coastal restoration.

What GNO, Inc. has found through our research and outreach to coastal companies is that the profile of coastal work mirrors any other major infrastructure project or investment; there are clear phases of work with clear workforce needs in each phase.

Though the numbers in this report are based on workforce multipliers, the project lifecycle is well documented in the CPRA procurement and work flow process. As with any major infrastructure project, there is a preliminary design and engineering phase, a construction period, and then an ongoing operations and maintenance regime.

Each of these periods requires distinct and sometimes overlapping skill sets, yet each represents an opportunity to train and employ Louisiana residents and enhance the specialization of Louisiana firms to tackle existential coastal challenges.

GNO, Inc. sees the numbers and statistics in this report not only as indicators of a new economic opportunity, but also as a call to action. A call to our higher education partners to train an unparalleled local labor pool who can staff these projects. A call to our industry partners to proactively work with education and economic development to build demand-driven pipelines. And a call for government entities to allow these contracts to see the economic potential of coastal projects and prioritize hiring Louisiana firms and Louisiana labor.

We at GNO, Inc. stand ready to assist our network of partners in capitalizing on this information to catalyze positive change in our environment and economy.

Sincerely,

Michael Hecht
President and CEO
Greater New Orleans, Inc.

INTRODUCTION

As the Greater New Orleans region faces coastal and urban environmental challenges, the Water Management sector represents a significant opportunity for the regional economy. Of particular importance in this sector are the coastal restoration-related jobs.

These jobs are vital in protecting Greater New Orleans and the entire state. As the Louisiana Coastal Master Plan continues to be implemented, hundreds of new jobs will be created in order to see these projects through. It is important that workers have the proper skills necessary to meet the demands of coastal restoration, not only to ensure the vitality of our coastline, but also to ensure that our economy is able to continue to grow.

While there is no doubt that these jobs are significant in terms of total employment, due to the complex and interconnected nature of the sector, providing a definitive job count is a highly complex process.

For example, a construction firm may have employees working on both coastal restoration projects and urban infrastructure projects, or an engineering firm may have employees working on both building bridges and levees. Thus, separating these workers who are working on coastal projects from those at the same firm who are working on unrelated projects is difficult.

Furthermore, because the water management sector is an emerging industry and less established than other sectors, little consensus exists in terms of how to measure the sector.

Both the Brookings Institute and the New Orleans Data Center have conducted exhaustive research regarding the scope of jobs in the water and environmental management sectors.

In their 2018 report, *Renewing the Water Workforce: Improving Water Infrastructure and Creating a Pipeline to Opportunity*, Brookings estimates that in the New Orleans Metropolitan Area there are 8,123 water-related jobs. However, these figures largely do not account for coastal restoration jobs. Rather, they primarily capture municipal water jobs. Utilizing the methodology as seen in the New Orleans Data Center's 2017 Coastal Index, there are an estimated 25,000+ jobs.

This report builds upon previous research to reflect the opportunities in the sector that will exist moving forward. This report sets out to shed light on how many jobs will be created in coastal restoration – primarily through the Coastal Master Plan – and the skills necessary for a worker to succeed in the sector.

Using impact multipliers, this report examines the planned expenditures through the 2017 Coastal Master Plan and separates the projects into three phases according to the funding phases. Although projects are identified over the next 50 years, this report only examines projects that will be implemented in years one through ten of the master plan, indicating the immediate need for labor.



Not all of the jobs listed in this report are “new” jobs. While some may be net new jobs, others will be “sustained” jobs. For example, a welder may work on three different projects, and while that shows up as three jobs, it is ultimately being held by the same worker.

Furthermore, not all of the job projections listed in this report will be domiciled in New Orleans. Often, coastal restoration projects are conducted by outside firms, and as a result, the work is being performed outside of the region. This underscores the importance on ensuring workers in our region have the necessary skills to excel in this industry.

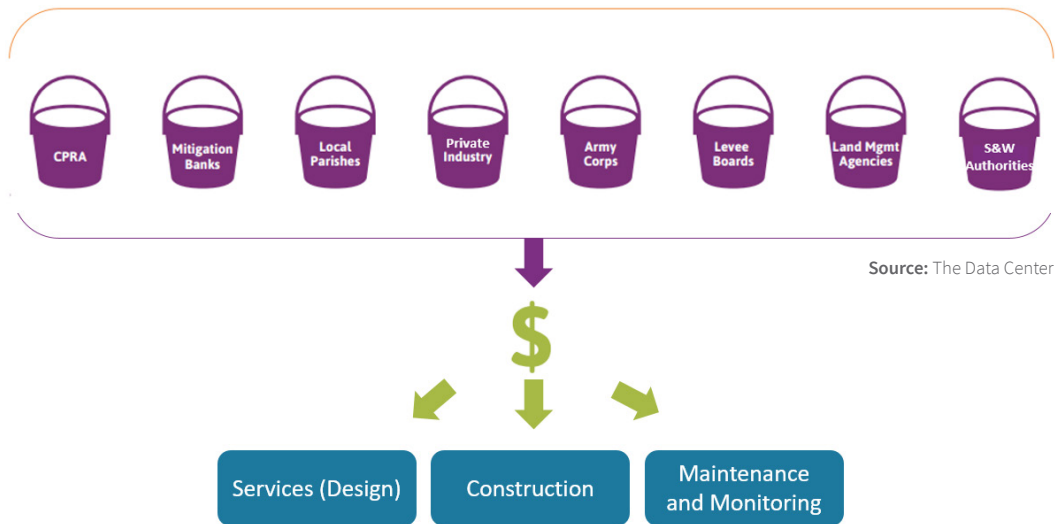
What follows in this report is an outline of the jobs and skills associated with the three distinct phases of coastal restoration projects in Greater New Orleans.

EMPLOYMENT DRIVERS

There are a number of entities distributing contracts and implementing work in the coastal and urban water management landscape. The funding streams behind each of these entities varies, with contracts typically granted for design, construction, and ongoing maintenance. Contrary to the graphic below, not all entities have equal financial bandwidth, and the most significant funds and biggest contracts are housed at the State's Coastal Protection and Restoration Authority (CPRA).

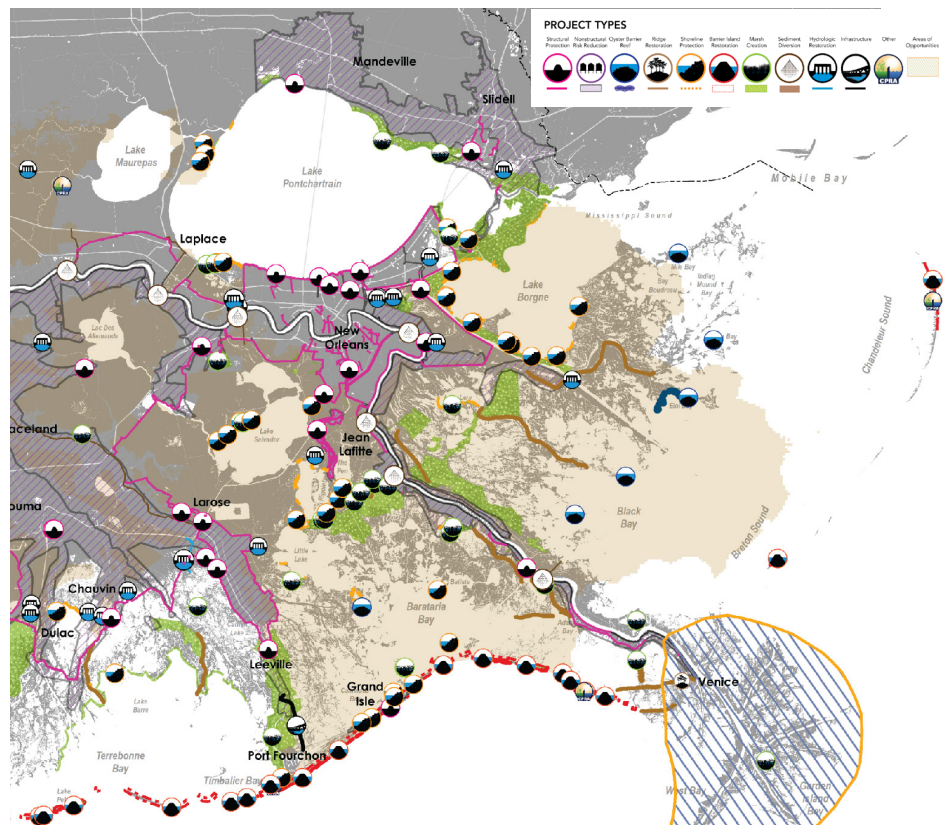
The CPRA is a Louisiana state entity responsible for developing, implementing, and enforcing a comprehensive coastal protection and restoration Master Plan. Since 2009, the CPRA has been successful in securing over \$7.5 billion¹ for coastal protection and restoration projects in Greater New Orleans. These projects include everything from structural protection to barrier island restoration to sediment diversions.

¹ CPRA Annual Plan Fiscal Year 2020



This map illustrates the significant presence of CPRA projects in Greater New Orleans.

Source: CPRA



WATER MANAGEMENT PHASES

Job growth in the Water Management sector is directly related to the fluctuating nature of projects.

For many projects in the sector, there are three distinct, yet equally important phases.

These phases include:

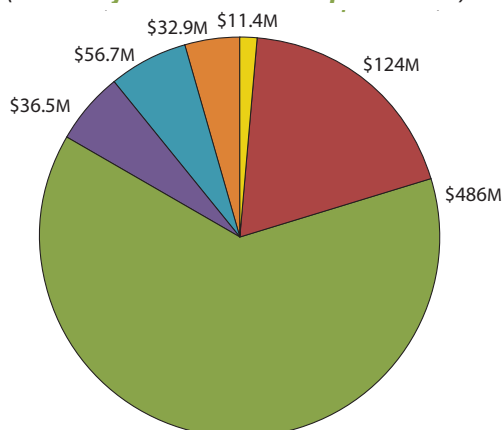
1. **Planning, Engineering, and Design**
2. **Construction**
3. **Operation and Maintenance**

Each of these phases requires workers to possess a unique set of skills and competencies.

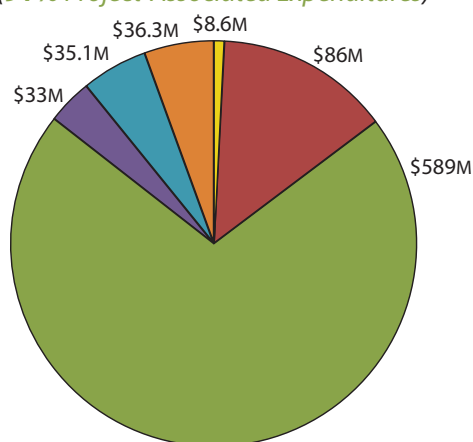
In accordance with state law, the CPRA annually releases an Annual Plan that outlines projects, implementation schedules, and funding. Below are funding streams by project phases through 2022 as listed in CPRA's 2020 Annual Plan.

Source: CPRA Fiscal Year 2020 Annual Plan

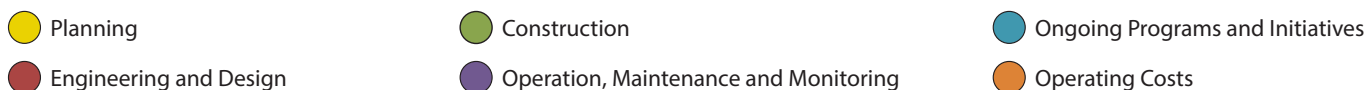
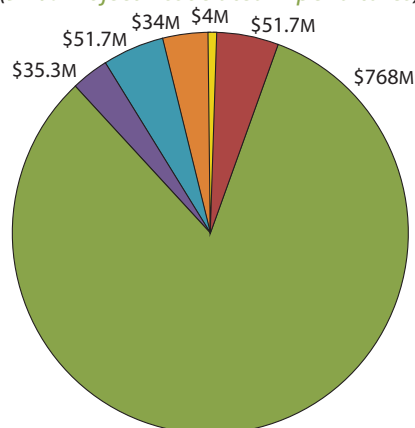
FY2020: TOTAL EXPENDITURES \$748 million
(88% Project-Associated Expenditures)



FY2021: TOTAL EXPENDITURES \$788 million
(91% Project-Associated Expenditures)



FY2022: TOTAL EXPENDITURES \$945 million
(91% Project-Associated Expenditures)



PLANNING, ENGINEERING, AND DESIGN

The planning, engineering, and design phase is the first stage of a project in the environmental management sector. This phase involves a highly technical workforce that develops and assesses projects. A large portion of workers in this phase are high-skill workers with STEM backgrounds. However, opportunities exist for middle-skill workers, including engineering technicians and environmental science technicians.



According to the CPRA's 50-year Coastal Master Plan approved in 2017, \$262.6 million is identified for the planning and design of restoration projects across Greater New Orleans.

Based on investments over the next decade, it is estimated that these projects will sustain 151 jobs annually. In addition to these jobs, there are hundreds

of additional planning and engineering jobs created and sustained by other entities including the Army Corps of Engineers.

As mentioned earlier, although the completed work benefits Greater New Orleans, the jobs may be located outside of the region. These numbers illustrate a significant opportunity for job creation in our region and highlight the importance of having a highly-trained workforce.

TOP JOBS

Occupation	2018 Jobs Across All Industries	2018 – 2028 Job Openings	Median Hourly Earnings	Typical Entry-Level Education	Work Experience Required	Typical On-the-Job Training
Environmental Scientists and Specialists	401	374	\$34.22	Bachelor's	None	None
Environmental Engineers and Technicians	191	152	\$13.81-\$51.47	Bachelor's/ Associate's	None	None
Surveyors	295	203	\$26.74	Bachelor's	None	Internship
Geoscientists	357	362	\$59.99	Bachelor's	None	None
Civil Engineers	937	721	\$47.51	Bachelor's	None	None

Source: Emsi 2019.3

CONSTRUCTION

For many coastal management projects, the construction phase is often the most labor and capital intensive of the three phases. Projects that fall under this phase cover a wide spectrum of activities, including dredging, wet and dry concrete work, and heavy machinery operation.

According to the State's Coastal Master Plan, over the next ten years, \$3.6 billion in expenditures is identified for the construction of projects in Greater New Orleans. It is estimated that together these projects will result in 2,673 annual sustained jobs.

However, because construction bids are awarded to the lowest bidder, it is possible that a contract is awarded to an outside firm that employs workers who are not domiciled in the region.



A significant portion of these jobs sustained during the construction phase of a project are middle-skill jobs that do not require a bachelor's degree.

Furthermore, in almost all cases the median wage associated with the largest jobs is near or above the regional median wage of \$16.24 an hour. More importantly, many of these jobs are directly transferable to other industries, such as oil and gas pipeline construction and street and bridge construction.

TOP JOBS

Occupation	2018 Jobs Across All Industries	2018 - 2028 Job Openings	Median Hourly Earnings	Typical Entry-Level Education	Work Experience Required	Typical On-the-Job Training
Construction Laborers	3,813	4,517	\$15.39	No formal educational credential	None	Short-term
Welders, Cutters, Solderers, and Brazers	2,487	2,736	\$23.88	High school diploma or equivalent	None	Moderate-term
Construction Managers	1,048	904	\$43.24	Bachelor's	None	Moderate-term
Operating Engineers and Other Construction Equipment Operators	1,470	1,835	\$20.03	High school diploma or equivalent	None	Moderate-term
First-Line Supervisors of Construction Trades and Extraction Workers	2,700	2,945	\$29.22	High school diploma or equivalent	5 years or more	None

Source: Emsi 2019.3

OPERATION, MAINTENANCE, AND MONITORING

The increasing number of environmental projects in the region means that, as these projects are completed, hundreds of workers will be needed to operate, maintain, and monitor these projects to ensure their continued effectiveness. In fact, the \$402.9M in planned operation and maintenance expenditures for projects over the next decade will result in 268 annual sustained jobs.



Similar to the previous two phases, this work may be contracted out to firms outside of the region, and the sustained jobs may not be located in the region.

Jobs in this phase of the environmental management project life cycle include a wide range of basic-, middle-, and high-skill jobs.

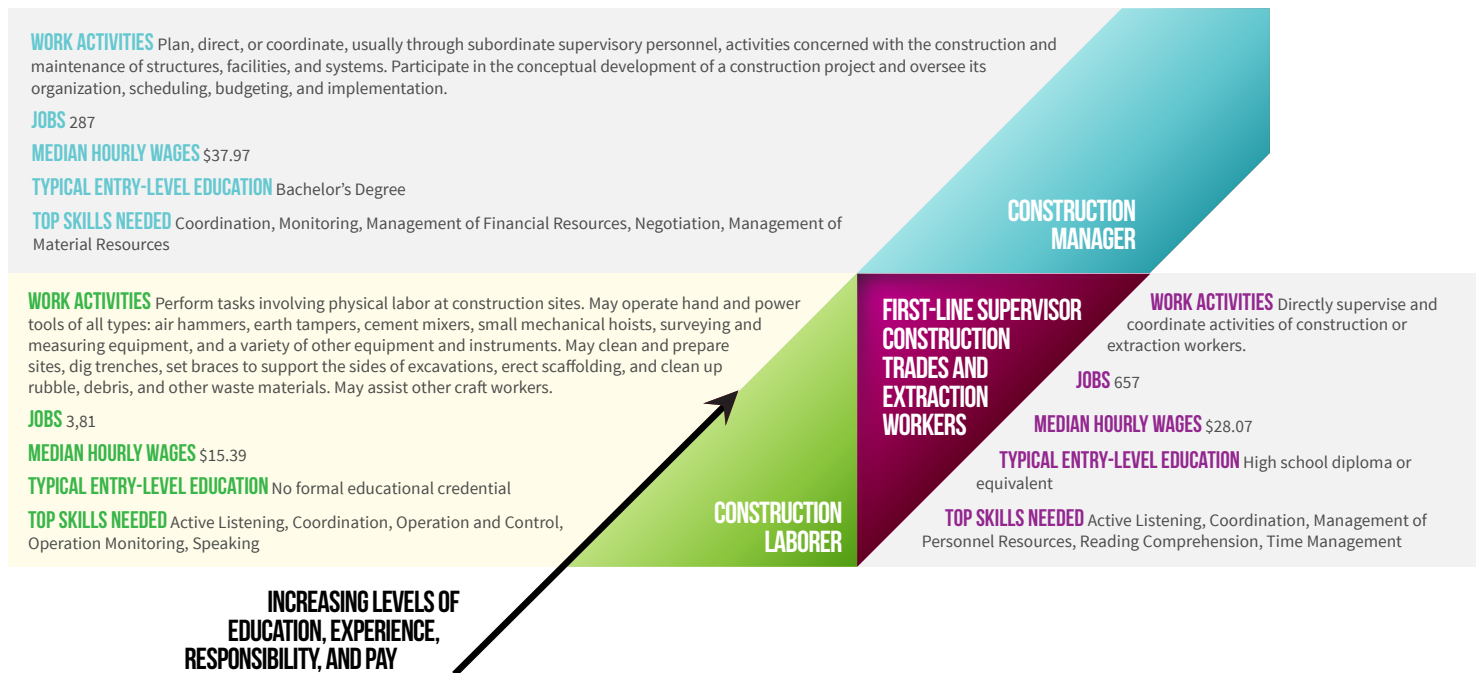
TOP JOBS

Occupation	2018 Jobs	2018-2028 Job Openings	Median Hourly Earnings	Typical Entry-Level Education	Work Experience Required	Typical On-the-Job Training
Water and Wastewater Treatment Plant and System Operators	563	473	\$17.71	High school diploma or equivalent	None	Long-term
General and Operations Managers	9,140	8,378	\$46.31	Bachelor's	5 years or more	None
Landscaping and Groundskeeping Workers	2,415	3,102	\$11.71	No formal educational credential	None	Short-term
Maintenance Workers, Machinery	732	805	\$22.86	High school diploma or equivalent	None	Long-term
Industrial Machinery Mechanics	1,798	1,726	\$25.37	High school diploma or equivalent	None	Long-term

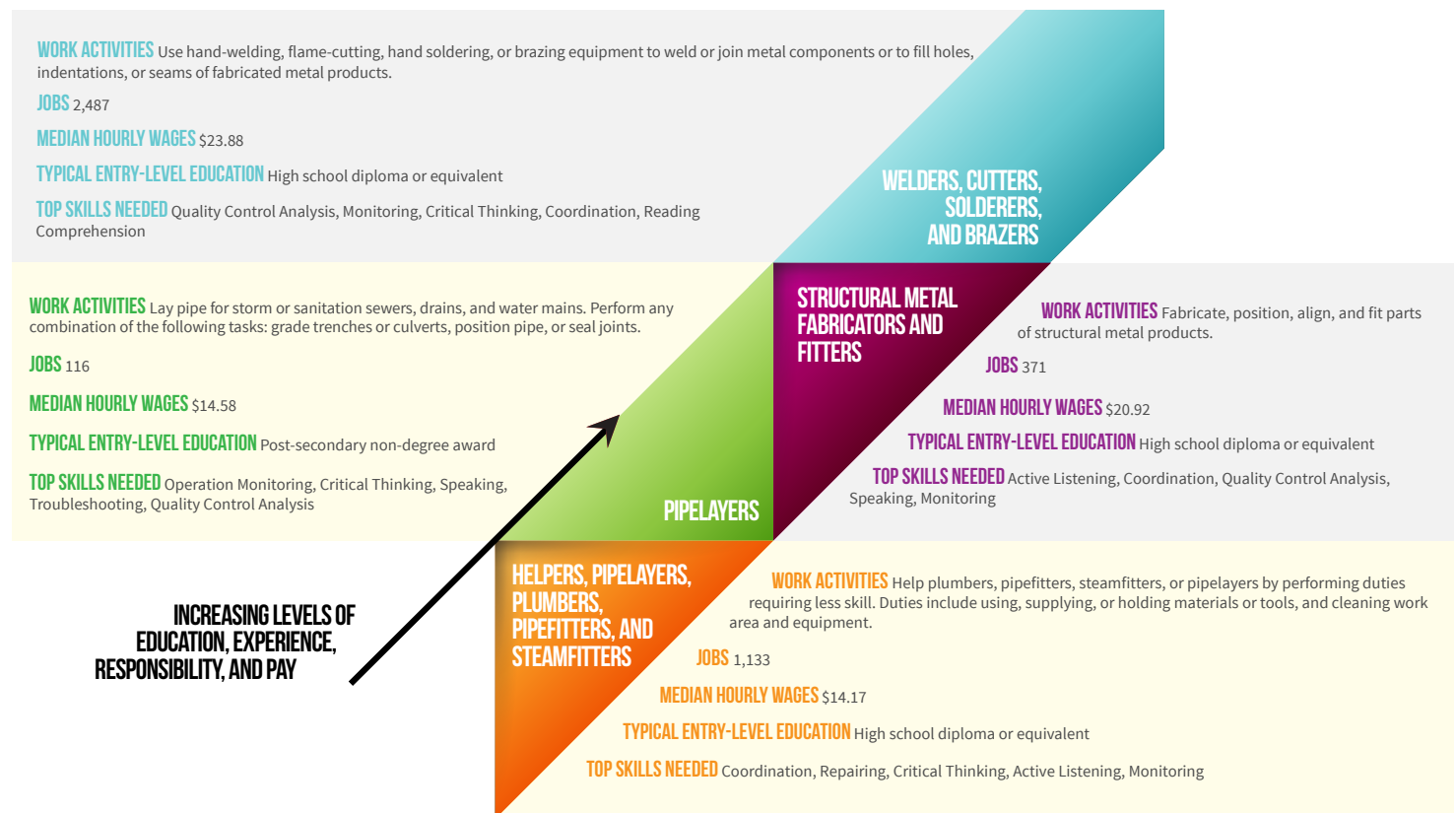
Source: Emsi 2019.3

CAREER LADDERS

CONSTRUCTION



CRAFT SKILLS



POLICY

Due to the nature of work in the water management sector, many of the projects are dependent upon public funds. Initiatives including the Coastal Master Plan and the Urban Water Plan are essential, not only in protecting southeast Louisiana, but also in growing the industry as a whole. GNO, Inc. remains committed to providing an informed and educated voice of advocacy. Therefore, GNO, Inc. will continue to work closely with public and private partners, including the Coalition for Coastal Resilience and Economy (CCRE), to maximize funding and support for these and other water management projects.



LOCAL PROCUREMENT

Through the efforts of a number of local partners, such as the Greater New Orleans Foundation, Urban Water Collaborative, Good Work Network, and Propeller, a number of pathways exist to engage local firms and contractors in the water sector. From workshop series

to specialized business incubation processes, water-focused businesses have opportunities to expand or create business lines in water management. However, procurement systems and public contracting entities must ensure there are appropriate structures for these businesses to not only join winning bids, but also generate business and profits through public contracts as well. GNO, Inc. and partners will continue to focus on the business environment and systems which will ultimately advance our local firms' capacities and business lines.

WORKFORCE DEVELOPMENT

Recognizing the job opportunities on the horizon and overlap of skills with foundational industries—such as the energy sector—GNO, Inc. and workforce development partners are positioned to ensure the forthcoming job opportunities are filled by a local labor pool. Currently, GNO, Inc. is working with schools of higher education, such as the University of New Orleans, Dillard University, Southeastern Louisiana University, Delgado Community College, Northshore Technical Community College, Nunez Community College, and Fletcher Community College to ensure curriculum and programming is in place to build a local water workforce. Additionally, GNO, Inc. is working with Youth Force NOLA and regional Career Technical Education (CTE) coordinators to build out environmental programs at the high school level.

DIVERSITY AND EQUITY

As the water sector is in the early stages of development, it presents a unique opportunity to ensure diversity and equity benchmarks are being considered from the outset of workforce development and contractor inclusion. GNO, Inc.'s research has highlighted gaps that currently exist in racial breakdowns in the sector, including a 7:3 ratio of white people employed versus people of color employed. Recognizing these discrepancies early on can assist in driving targeted education and workforce development efforts around equity and inclusion.





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