



# STATE OF THE SECTOR

WATER MANAGEMENT  
2016



# GREATER NEW ORLEANS

INC  
REGIONAL ECONOMIC DEVELOPMENT

As the Greater New Orleans region faces major coastal and urban water challenges including erosion, flooding, and subsidence, there is a groundswell of momentum around the productive and profitable management of water that includes building a thriving labor force.

Managing both natural and manmade water events, the region has taken an unprecedented approach to tackling flood protection, coastal restoration, and urban water management. Investments in the Hurricane and Storm Damage Risk Reduction System, the implementation of the Louisiana Coastal Master Plan for a Sustainable Coast, and the adoption of the Greater New Orleans Urban



Water Plan have the potential to not only safeguard and shape our region, but, also, catalyze the development of a burgeoning economic cluster. The fines stemming from the Deepwater Horizon Oil Spill and other federal and local funding are supporting this work.

Moreover, as we continue to strategically address our local challenges, the region is gaining exportable expertise that will uniquely position it to compete for water management contracts nationally and globally. The result is the genesis of the Environmental Management industry, which describes the cluster of companies that provide products and services that help other companies and governments manage environmental challenges related to energy, waste and water, while creating jobs and revenue.

To ensure this industry's vitality over time and to maximize the various opportunities



associated with its growth, a robust pipeline of trained workers, who are local, skilled, and knowledgeable of water opportunities, first and foremost, in and throughout the region, is required. Diverse education partners from K-12 to higher education have already begun to lead the way with demand driven curriculum and innovative programs contributing to the industry's growth.

This report is the second in a series of State of the Sector workforce reports illuminating the scope and context of labor demand from our region's key industries. I would like to give a special thank you to Chevron for providing the support that made it possible to do this work.

A handwritten signature in black ink, appearing to read "Michael Hecht".

**Michael Hecht**  
President and CEO



# EXECUTIVE SUMMARY

**23% GROWTH** → The water management sector employs 30,350 people in the Greater New Orleans region and is projected to grow 23% over the next ten years

**52% MIDDLE SKILL JOBS** → 52% of water management jobs require only middle skills and are often overlooked as promising opportunities and viable pathways to the middle class

**KEY FUNDING SOURCES** → The Restore Act, FEMA Hazard Mitigation Grant Program, National Disaster Resilience Competition, and other key funding sources guarantee monies to water management efforts over the next decades

**CAREER LADDERS** → Multiple high-wage, high-demand career pathways are accessible to entry-level workers within the water management sector

**GNO, INC. ACTION PLAN** → GNO, Inc. is working on several key initiatives and developments that will increase innovation, workforce opportunities, and business development opportunities within the water management sector

Source: EMSI

# TABLE OF CONTENTS



## **WATER MANAGEMENT AT A GLANCE**

PAGE 5

## **DISTRIBUTION OF SKILLS**

PAGE 6

## **WORKFORCE DEMOGRAPHICS**

PAGE 7

## **SKILLS & JOBS**

PAGE 8

## **WATER MANAGEMENT EMPLOYMENT DRIVERS**

PAGE 11

## **KEY FUNDING SOURCES OF WATER MANAGEMENT PROJECTS**

PAGE 12

## **CAREER LADDERS**

PAGE 13

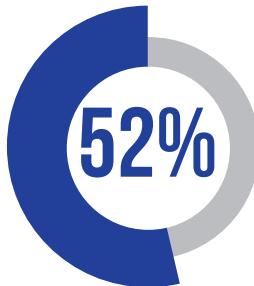
## **PATH FORWARD**

PAGE 15

# WATER MANAGEMENT AT A GLANCE

EMPLOYS 30,350 IN THE GREATER NEW ORLEANS REGION

PROJECTED TO GROW 23% OVER THE NEXT 10 YEARS



OF JOBS REQUIRE  
MIDDLE SKILLS

3,250 HIGH SKILL JOB OPENINGS  
OVER THE NEXT 10 YEARS WITH A  
MEDIAN ANNUAL  
SALARY OF  
**\$73,000**

**13,632** PROJECTED JOB OPENINGS OVER THE NEXT 10 YEARS

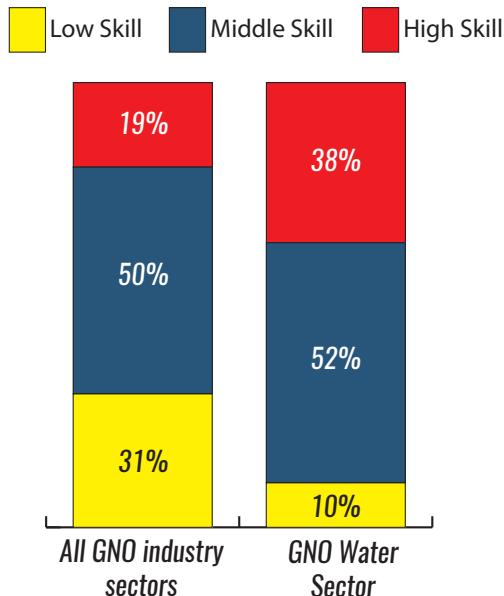
APPROXIMATELY 9 OUT OF 10 WATER MANAGEMENT WORKERS ARE MIDDLE OR HIGH SKILLED

## DISTRIBUTION OF SKILLS

The water management sector, which includes both construction products & services and business services, such as surveying, planning, engineering and design, requires slightly more middle and high skilled workers than other sectors in the overall GNO economy.

### What is a middle skill job?

We define middle skill jobs as those that generally require some education and training beyond high school but less than a bachelor's degree. These postsecondary education and training requirements can include associate's degrees, industry-based credentials, on-the-job training, previous work experience, or generally "some college" less than a bachelor's degree. High skill jobs require a bachelor's degree or higher.



Source: EMSI

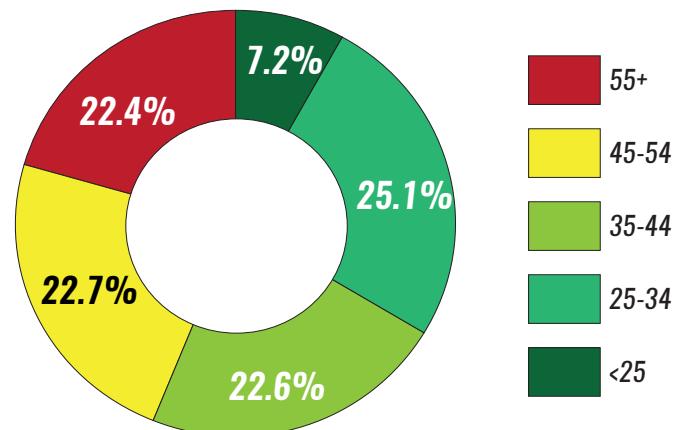
# WORKFORCE DEMOGRAPHICS

Over the last several decades, Louisiana (and the U.S. more broadly) has focused on encouraging youth to pursue 4-year degrees at the expense of middle skill career pathways.

As a result, there are relatively fewer younger and mid-career workers in these occupations. This affects all industries that rely on skilled craft workers. Over 20 percent of water management workers are over 55 years old, meaning they will soon retire.

Although a number of these occupations require minimal amounts of preparation for entry-level work, the loss of an experienced workforce will create challenges as employers seek to replace experienced workers exiting the labor force while also hiring to meet new demand.

## WORKFORCE DEMOGRAPHICS BY AGE DISTRIBUTION



Source: EMSI

APPROXIMATELY ONE IN FIVE WATER  
MANAGEMENT WORKERS ARE 55 YEARS OR OLDER

# SKILLS & JOBS

## TOP MIDDLE SKILL JOBS

| Middle Skill Occupation                                   | % of Total Jobs in Industry Group (2015) | Employed in Industry Group (2015) | Job Openings to 2025 | Median Hourly Earnings | Typical Entry Level Education     | Typical On-The-Job Training Needed to Attain Competency |
|---|--|-----------------------------------|----------------------|------------------------|-----------------------------------|---|
| Sales Representatives, Services, All Other                | 1.7%                                     | 518                               | 281                  | \$18.93                | High school diploma or equivalent | Short-term  |
| Carpenters  | 1.6%                                     | 514                               | 228                  | \$16.22                | High school diploma or equivalent | Apprenticeship  |
| Supervisors of Construction Trades and Extraction Workers | 1.7%                                     | 523                               | 203                  | \$26.80                | High school diploma or equivalent | Long-term   |
| Business Operations Specialists                           | 1.6%                                     | 514                               | 188                  | \$26.11                | High school diploma or equivalent | None  |
| Welders, Cutters, Solderers, and Brazers                  | 1.4%                                     | 429                               | 186                  | \$21.75                | High school diploma or equivalent | Moderate-term   |
| Operating Engineers and Construction Equipment Operators  | 1.4%                                     | 450                               | 178                  | \$17.38                | High school diploma or equivalent | Moderate-term   |
| Inspectors, Testers, Sorters, Samplers, and Weighers      | 1.2%                                     | 372                               | 147                  | \$20.04                | High school diploma or equivalent | Moderate-term   |
| Computer User Support Specialists                         | 1.0%                                     | 308                               | 129                  | \$21.84                | Some college, no degree           | Moderate-term   |
| Civil Engineering Technicians                             | 0.9%                                     | 278                               | 119                  | \$21.46                | Associate's degree                | None  |
| Maintenance and Repair Workers, General                   | 0.9%                                     | 272                               | 114                  | \$15.90                | High school diploma or equivalent | Long-term   |

Note: Administrative positions removed

Source: EMSI

**6,599** PROJECTED MIDDLE SKILL  
WATER MANAGEMENT JOB OPENINGS OVER THE  
NEXT TEN YEARS



## TOP HIGH SKILL JOBS

| High Skill Occupation                              | % of Total Jobs in Industry Group (2015) | Employed in Industry Group (2015) | Job Openings to 2025 | Median Hourly Earnings | Typical Entry Level Education   | Typical On-The-Job Training Needed to Attain Competency |
|--|--|-----------------------------------|----------------------|------------------------|---------------------------------|---|
| Civil Engineers                                    | 3.4%                                     | 1,062                             | 699                  | \$43.27                | Bachelor's degree               | None  |
| Accountants and Auditors                           | 2.2%                                     | 677                               | 495                  | \$28.25                | Bachelor's degree               | None  |
| General and Operations Managers                    | 3.2%                                     | 996                               | 422                  | \$40.48                | Bachelor's degree               | None  |
| Management Analysts                                | 2.9%                                     | 904                               | 400                  | \$32.56                | Bachelor's degree               | None  |
| Mechanical Engineers                               | 1.2%                                     | 372                               | 272                  | \$46.09                | Bachelor's degree               | None  |
| Market Research Analysts and Marketing Specialists | 0.9%                                     | 284                               | 196                  | \$23.19                | Bachelor's degree               | None  |
| Architectural and Engineering Managers             | 1.1%                                     | 334                               | 190                  | \$65.53                | Bachelor's degree               | None  |
| Electrical Engineers                               | 1.1%                                     | 329                               | 184                  | \$46.75                | Bachelor's degree               | None  |
| Lawyers  | 0.7%                                     | 205                               | 181                  | \$51.41                | Doctoral or professional degree | None  |
| Construction Managers                              | 1.4%                                     | 432                               | 179                  | \$31.74                | Bachelor's degree               | Moderate-term   |

Note: Administrative positions removed



Source: EMSI

**5,959**  
PROJECTED HIGH SKILL WATER MANAGEMENT  
JOB OPENINGS OVER THE NEXT TEN YEARS

# OVERLAP OF WATER MANAGEMENT AND ENERGY SECTOR OCCUPATIONS

Several past analyses from The Data Center and GNO, Inc. have identified the overlapping occupations in water management and various other industries, most notably the energy sector. Findings illustrated in the venn diagram indicate that the water management and energy sectors will compete for many of the same types of workers. Ninety percent (24,217) of the total job openings in Water Management and Energy will be transferrable skills across these two sectors creating competition for labor and tremendous opportunity for workers with these coveted skills.

With tens of billions of dollars flowing into Louisiana's energy sector and hundreds of millions of dollars flowing into Louisiana's water management sector over the next several years, there is a large, sustained, and increasingly competitive demand for skilled workers. So, the question remains, how will the water management sector effectively compete for and retain the skilled labor it needs?

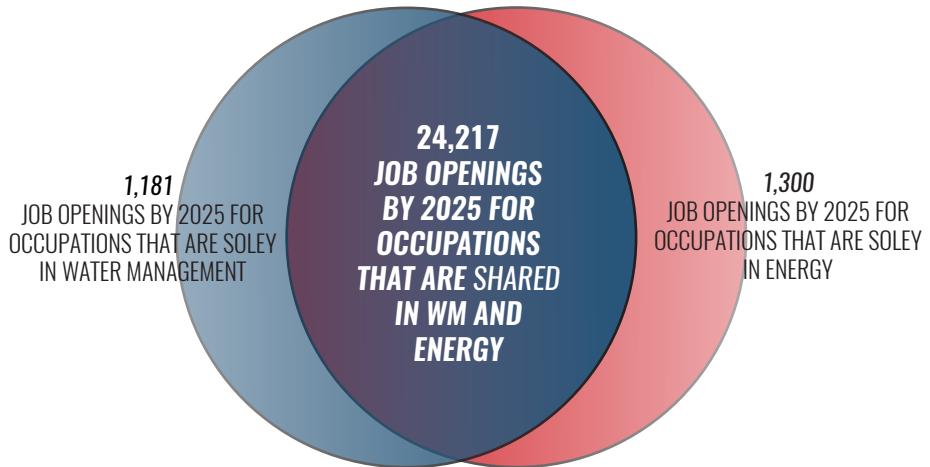
Several recommendations can be found in a report authored by GNO, Inc. titled, "Analysis of Coastal Restoration Workforce Assets, Challenges, and Opportunities in South Louisiana." A digital copy is available at [www.gnoinc.org/uploads/GNO\\_Inc\\_FFL\\_Report\\_Final.pdf](http://www.gnoinc.org/uploads/GNO_Inc_FFL_Report_Final.pdf).

## WATER MANAGEMENT

13,632 Total Projected  
New Job Openings by 2025

## ENERGY

13,066 Total Projected  
New Job Openings by 2025



**Top Overlapping Occupations:** Occupations that exist in both water management (WM) and energy sectors

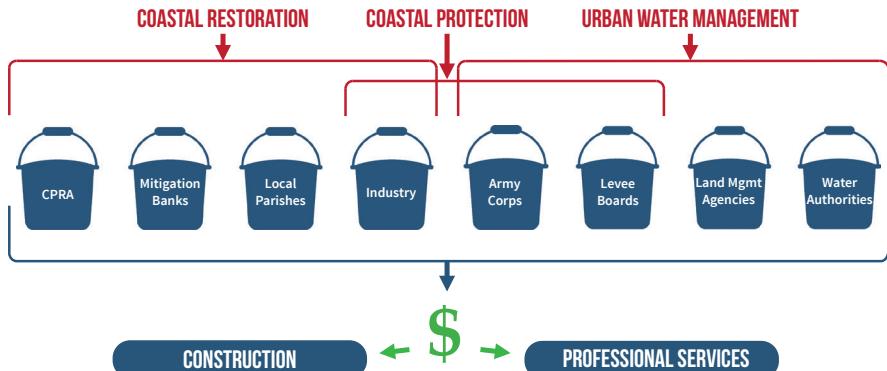
|                                 | WM Job Openings by 2025 | Energy Job Openings by 2025 |
|---------------------------------|-------------------------|-----------------------------|
| Civil Engineers                 | 699                     | 683                         |
| Construction Laborers           | 529                     | 60                          |
| Accountants and Auditors        | 495                     | 215                         |
| General and Operations Managers | 422                     | 360                         |
| Management Analysts             | 400                     | 420                         |

Source: EMSI

# WATER MANAGEMENT EMPLOYMENT DRIVERS

Water management is driven by public and private entities within three distinct but related categories - coastal restoration (e.g. rebuilding wetlands), coastal protection (e.g. constructing levees), and urban water management (e.g. addressing stormwater impacts).

These entities contract with both professional business service firms (environmental engineering, surveying, etc.) to plan, design, and monitor the work and construction firms to implement the projects. The largest private employers in both construction and professional services based on total contracts by the Army Corps of Engineers and the Coastal Protection and Restoration Authority (CPRA) between 2008 and 2014 are listed along with top subcontractors based on CPRA data. Additionally, many of these entities, such as the Army Corps of Engineers, Sewerage & Water Board of New Orleans, and CPRA are key employers in and of themselves.



## Top Regionally\* Headquartered Subcontractor-Service Firms

|                            | Number of LA Employees | Total Number of Contracts Procured |
|----------------------------|------------------------|------------------------------------|
| ENCOS, Inc.                | 14                     | 10                                 |
| Coastal Environments, Inc. | 28                     | 6                                  |
| T. Baker Smith, LLC        | 242                    | 6                                  |

Note: Information retrieved from CPRA services contractor information, 2010 - 2014

## Top Regionally\* Headquartered Construction Firms

|  | Total Contracts Awarded |
|--|-------------------------|
| CBY Design Builders: CDM, Brafield & Gorrie, & Yates Construction                      | \$675,000,000           |
| PCCP Constructors: Kiewit LA South Company, M.R. Pittman Group and Traylor Bros., Inc. | \$631,500,000           |
| Weeks Marine, Inc.   | \$214,900,000           |
| Bob Bros. Construction Co., L.L.C.   | \$80,600,000            |
| Phylway Construction, L.L.C.   | \$60,600,000            |

## Top Regionally\* Headquartered Professional Service Firms

|  | Total Contracts Awarded |
|--|-------------------------|
| The Water Institute of the Gulf                  | \$30,000,000            |
| Coastal Estuary Services                         | \$18,900,000            |
| Evans-Graves Engineers, Inc.                     | \$11,300,000            |
| GCR & Associates, Inc.                           | \$10,000,000            |
| GEC, Inc.  | \$10,000,000            |
| Professional Engineering Consultants Corporation | \$10,000,000            |
| SJB Group, LLC                                   | \$10,000,000            |

\*The geographic region referred to on this page consists of Greater New Orleans and the Greater Baton Rouge areas.

# KEY FUNDING SOURCES OF WATER MANAGEMENT PROJECTS

## CIVIL AND NATURAL RESOURCES CLAIMS AGAINST BP

### NATIONAL ALLOCATION

**Natural Resource Damages**  
\$8.8B

+

**Clean Water Act Civil Penalties**  
\$5.5B

+

**Economic Damages\***  
\$5.9B

=

**U.S. TOTAL: \$20.2B** **LA TOTAL: \$6.93B**

### CRIMINAL CLAIMS AGAINST BP AND TRANSOCEAN

**Criminal Penalties**  
\$4.4B

**Criminal Penalties**  
\$1.272B

\*As these claims are tied directly to revenue losses and economic activity from the oil spill, these monies are not required to be used on coastal restoration projects & repairs

### LOUISIANA ALLOCATION

**Natural Resource Damages**  
\$5B

+

**Clean Water Act Civil Penalties**  
\$930M+

+

**Economic Damages\***  
\$1B

=

**\$7.2+ BILLION**

IN DEEPWATER HORIZON OIL SPILL FINE SETTLEMENT MONEY WILL HELP FUND LOUISIANA COASTAL RESTORATION PROJECTS AND REPAIRS FOR THE STATE OVER THE NEXT SEVERAL YEARS

While the Deepwater Horizon oil spill damages took five years to determine, a settlement was announced in July of 2015 providing a new source of substantial funds for rebuilding Louisiana's coast. With the vast majority of these funds legislatively dedicated to the State's Coastal Trust Fund, current estimates predict that Louisiana will receive upwards of \$8.2 billion from oil spill related fines and penalties.

With more than \$7.2 billion of these funds dedicated to coastal restoration activity, the Louisiana Comprehensive Master Plan for a Sustainable Coast (the Master Plan) is expected to receive funding over a 15 year period with an estimated \$500 million a year for coastal restoration work. When combined with other sources such as the Gulf of Mexico Energy Securitization Act (GOMESA), the state has a strong financial foundation for Master Plan implementation.

Much of the recent \$233 million National Disaster Resilience Competition awards from HUD to the State of Louisiana and the City of New Orleans will fund urban and coastal water management projects. In addition, the FEMA Hazard Mitigation Grant Program (HMGP) and other private and public sources of funding are supporting urban water management projects.

# CAREER LADDER: CONSTRUCTION

**WORK ACTIVITIES** Plan and direct multiple sites concerned with the construction and maintenance of structures, facilities, and systems

**PAY PER HOUR** Bottom 10% – \$22; Median – \$32; Top 10% – \$49

**REQUIREMENTS** Bachelor's degree

**LICENSES** Various certifications and licenses (example: Contractor's License)

**EDUCATIONAL ATTAINMENT** Some college – 25%; Associate's Degree – 8%; Bachelor's Degree – 28%;

## CONSTRUCTION MANAGER

**WORK ACTIVITIES** Construct, install, create or repair structures and fixtures at various work sites

**PAY PER HOUR** Bottom 10% – \$12; Median – \$16; Top 10% – \$22

**REQUIREMENTS** High school diploma

**LICENSES** Various certifications (example: NCCER), registered apprenticeships

**EDUCATIONAL ATTAINMENT** Less than high school diploma – 23%; High school diploma – 43%; Some college – 21%

## FIRST-LINE SUPERVISOR

**WORK ACTIVITIES** Site-specific supervision and coordination of construction trades and extraction workers

**PAY PER HOUR** Bottom 10% – \$18; Median – \$27; Top 10% – \$47

**REQUIREMENTS** High school diploma & 5+ years experience

**LICENSES** Various certifications

**EDUCATIONAL ATTAINMENT** Less than high school diploma – 14%; High school diploma – 43%; Some college – 26%;

## CARPENTER

**WORK ACTIVITIES** Provide support to craft workers (such as carpenters) at construction sites that may include operating hand and power tools, or cleaning and preparing sites

**PAY PER HOUR** Bottom 10% – \$9; Median – \$14; Top 10% – \$19

**REQUIREMENTS** Less than a high school diploma

**LICENSES** None

**EDUCATIONAL ATTAINMENT** High school diploma – 41%; Less than high school diploma – 33%; Some college – 17%

INCREASING LEVELS OF  
EDUCATION, EXPERIENCE,  
RESPONSIBILITY AND PAY

## CONSTRUCTION LABORER

Source: EMSI

# CAREER LADDER: WELDING

**WORK ACTIVITIES** Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources

**PAY PER HOUR** Bottom 10% – \$22; Median – \$40; Top 10% – \$94

**REQUIREMENTS** High school diploma & 5+ years experience

**LICENSES** None

**EDUCATIONAL ATTAINMENT** Some college – 24%; Associate's Degree – 16%; Bachelor's Degree – 34%;

**WORK ACTIVITIES** Use hand-welding or flame-cutting equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products

**PAY PER HOUR** Bottom 10% – \$15; Median – \$22; Top 10% – \$29

**REQUIREMENTS** Certification and/or apprenticeship and drug test

**LICENSES** Various certifications (example: AWS)

**EDUCATIONAL ATTAINMENT** Less than high school diploma – 23%; High school diploma – 50%; Some college – 20%

## WELDER

## CONSTRUCTION FOREMAN

## GENERAL & OPERATIONS MANAGER

**WORK ACTIVITIES** Directly supervise and coordinate activities of construction or extraction workers

**PAY PER HOUR** Bottom 10% – \$25; Median – \$38; Top 10% – \$62

**REQUIREMENTS** High school diploma & 5+ years experience

**LICENSES** None

**EDUCATIONAL ATTAINMENT** High school diploma – 27%; Some college – 25%; Bachelor's – 28%

**WORK ACTIVITIES** Assist a journeyman welder in laying out, positioning, and securing parts and assemblies

**PAY PER HOUR** Estimated apprentice salary – \$15

**REQUIREMENTS** Drug test

**LICENSES** None

**EDUCATIONAL ATTAINMENT** Less than high school diploma – 36%; High School diploma – 52%; Some college – 11%

INCREASING LEVELS OF  
EDUCATION, EXPERIENCE,  
RESPONSIBILITY AND PAY

Source: EMSI

# PATH FORWARD

GNO, Inc. is well positioned to lead, coordinate and collaborate on multiple initiatives taking place within the water management sector. The organization's priorities moving forward include, but are not limited to, five main developments:

## **1. The University of New Orleans Coastal Engineering and Sciences (CEAS) graduate certificate program**

- In 2014, GNO, Inc. collaborated with the University of New Orleans to develop a Coastal Engineering and Sciences (CEAS) graduate certificate program. The CEAS program will continue to provide specialized deltaic coastal training for engineers and scientist as well as a case study for best practices for coastal course development in the region.

## **2. GNOWORKS**

- A comprehensive workforce development initiative that creates, clarifies and promotes seamless career pathways, which pipeline into high-wage, high-demand jobs in our target sectors through data analysis, career awareness, and systems change approaches to workforce development.

## **3. Returning Citizens (reentry into workforce)**

- The workforce demand in coastal restoration and urban water management creates purposeful opportunities to connect returning citizens to work. GNO, Inc. is collaborating with partners to identify relevant streams of employment in the water management sector that will

- 
- provide a space for returning citizens to learn essential employable-related soft-skills, connect to training opportunities, and position returning citizens to access and pursue career pathways.
- ## **4. A Regional Alliance Around Water Management**
- As the region begins to implement key design and construction aspects of the coastal Master Plan and Greater New Orleans Urban Water Plan, GNO, Inc. will work to connect the confluence of public and private stakeholders to build a sustainable regional alliance that will lead in branding, shaping, and developing the Environmental Management industry nationally and globally.
- ## **5. Advocating for Access to Procurement Opportunities**
- Funding in coastal restoration provides an exceptional opportunity for small and middle size firms to gain access and experience carrying out state level contracts. GNO, Inc. recognizes that establishing procurement opportunities will help these businesses gain experience and scale, grow tax revenue, and create more jobs for the future.

Digital copy available at [www.gnoinc.org/stateofthesector\\_water.pdf](http://www.gnoinc.org/stateofthesector_water.pdf)



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