GNO, Inc.
Environmental Management Sector
Advancing the Water Industry

May 19th, 2016
GNO, Inc. Overview

GNO, Inc. is the economic development organization serving the ten counties of Southeast Louisiana.

Business Development
- Business Attraction
- Business Growth
- Business Retention
- Research

Product Development
- Policy
- Workforce
- Brand Development
- Access to Capital
Economy Overview - Key Industries

Greater New Orleans’ economy is anchored by three “Foundational” industries.

- Advanced Manufacturing
- International Trade
- Energy (Oil and Natural Gas)
Economy Overview - Key Industries

Greater New Orleans’ economy is growing with three “Diversifying” industries:

- Digital Media (Software Development)
- Environmental Management
- Biosciences (Medical Center of Excellence)
Skilled Crafts - Key Industries

Skilled Craft super-sector is an aggregation of three key industries.

- Advanced Manufacturing
- Environmental Management
- Energy (Oil and Natural Gas)
Environmental Management

The sector of companies that create jobs and wealth by providing products and services that help other companies, and governments manage environmental challenges such as:

Flooding  Coastal Erosion  Subsidence
Environmental Management

Market research has validated the sector and provided specificity

“Blue Ocean” Study  
Identified Sustainable Industries as Future Growth Segment for LA  
90,000 jobs over 20 years

Deloitte (2011)  
Sustainable Industries Feasibility Analysis  
Original, primary research to a) determine if opportunity is real; and b) provide specificity  
Interviews with 50+ multi-national corporations

Results  
13 Verified Sub-Sectors

GNO, Inc. EE Strategy:  
Energy, Waste & Water

- Perform original research via global client base  
- Determine key client issues with regard to managing environmental challenges  
- Define our specific advantages  
- Determine our specific niches and opportunities  
- Suggest implementation plan  
- Funded by U.S. Economic Development Administration
Verified Sub-Sectors

Recognized Advantages for Louisiana Expertise: Water is #1

Recommended Sectors

Top Sub-sectors:

1) Coastal Restoration & Water Management
   Environmental engineering
   Barrier material manufacturing

2) Hazardous Waste Disposal
   Specialty design + build of processing facilities
   Equipment manufacturing

3) Advanced Biofuels
   Equipment manufacturing
   Energy industry service providers

4) Disaster Mitigation/Management
   Specialty software development
   Architecture/Engineering

5) Waste Water Treatment
   Treatment product manufacturers
   Micro-filtration

6) “Next Wave” Oil & Gas
   Enhanced oil recovery
   Specialty engineering and design firms

7) Waste-to-Energy
   Plasma Arc Technology
   Municipal solid waste to liquid fuel

8) Sustainable Agriculture
   Equipment suppliers
   Organic food production

9) Bioengineering, Materials Sciences
   Bioremediation
   Natural pesticides

10) Waste Heat Recovery
    Design/Manufacturing of equipment
    Electricity generation

11) Sustainable Aquaculture
    Aquaculture pool manufacturing
    Food production

12) Biorefinery Development
    Cellulose biofuel production
    Engineering/Construction

13) Wind–Structure Manufacturing
    Turbine generator manufacturing
    Turbine trunk manufacturing

Focus Sectors

1) Energy
2) Waste
3) Water
Environmental Management

Environmental Management, with a focus on water, has been validated and defined by research and program development.

McKinsey & Co. - "Blue Ocean Study"

Deloitte - "Sustainable Industries Feasibility Analysis"

$8.1M invested by GNO, Inc. in market research, advocacy, resiliency planning, and workforce development, to further this industry sector.
In contrast to traditional “supply-driven” workforce system, GNO, Inc. promotes a “demand-driven” system, whereby business is the ultimate customer.

Traditional Supply-Driven

- Education
  - Intermediary
  - Business
- Business must supply jobs!

New Demand-Driven

- Business
  - Intermediary
  - Education
- Education must meet business need!
State of the Sector: Water Management

Funded by Chevron

**EMPL OYS 30,350 IN THE GREATER NEW ORLEANS REGION**

**PROJECTED TO GROW 23% OVER THE NEXT 10 YEARS**

**52% 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**

Source: EMSI
State of the Sector: Water Management

Top Middle Skill Occupations

<table>
<thead>
<tr>
<th>Middle Skill Occupation</th>
<th>Job Openings to 2025</th>
<th>Median Hourly Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Representatives, Services, All Other</td>
<td>281</td>
<td>$18.93</td>
</tr>
<tr>
<td>Carpenters</td>
<td>228</td>
<td>$16.22</td>
</tr>
<tr>
<td>Supervisors of Construction Trades and Extraction Workers</td>
<td>203</td>
<td>$26.80</td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>188</td>
<td>$26.11</td>
</tr>
<tr>
<td>Welders, Cutters, Solderers, and Brazers</td>
<td>186</td>
<td>$21.75</td>
</tr>
<tr>
<td>Operating Engineers and Construction Equipment Operators</td>
<td>178</td>
<td>$17.38</td>
</tr>
<tr>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>147</td>
<td>$20.04</td>
</tr>
<tr>
<td>Computer User Support Specialists</td>
<td>129</td>
<td>$21.84</td>
</tr>
<tr>
<td>Civil Engineering Technicians</td>
<td>119</td>
<td>$21.46</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General</td>
<td>114</td>
<td>$15.90</td>
</tr>
</tbody>
</table>

6,599 projected middle skill water management jobs openings over the next ten years
**State of the Sector: Water Management**

**Top High Skill Occupations**

<table>
<thead>
<tr>
<th>High Skill Occupation</th>
<th>Job Openings to 2025</th>
<th>Median Hourly Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineers</td>
<td>699</td>
<td>$43.27</td>
</tr>
<tr>
<td>Accountants and Auditors</td>
<td>495</td>
<td>$28.25</td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>422</td>
<td>$40.48</td>
</tr>
<tr>
<td>Management Analysts</td>
<td>400</td>
<td>$32.56</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>272</td>
<td>$46.09</td>
</tr>
<tr>
<td>Market Research Analysts and Marketing Specialists</td>
<td>196</td>
<td>$23.19</td>
</tr>
<tr>
<td>Architectural and Engineering Managers</td>
<td>190</td>
<td>$65.53</td>
</tr>
<tr>
<td>Electrical Engineers</td>
<td>184</td>
<td>$46.75</td>
</tr>
<tr>
<td>Lawyers</td>
<td>181</td>
<td>$51.41</td>
</tr>
<tr>
<td>Construction Managers</td>
<td>179</td>
<td>$31.74</td>
</tr>
</tbody>
</table>

5,959 projected high skill water management jobs openings over the next ten years
State of the Sector: Water Management

Technical training in skilled crafts is transferrable across industries

Water Management
13,632 Total
Projected WM job openings by 2025

Energy
13,066 Total
Projected Energy job openings by 2025

24,217
Job Openings by 2025 for occupations that are shared between WM and Energy

1,181
Job openings by 2025 for occupations that are solely in WM

1,300
Job openings by 2025 for occupations that are solely in Energy
State of the Sector: Water Management

Water Management Employment Drivers

COASTAL RESTORATION  COASTAL PROTECTION  URBAN WATER MANAGEMENT

CPRA  Mitigation Banks  Local Parishes  Industry  Army Corps  Levee Boards  Land Mgmt Agencies  Water Authorities

CONSTRUCTION  $  PROFESSIONAL SERVICES

Top Regionally* Headquartered Subcontractor-Service Firms

<table>
<thead>
<tr>
<th>Top Firms</th>
<th>Number of LA Employees</th>
<th>Total Number of Contracts Procured</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENCOS, Inc.</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Coastal Environments, Inc.</td>
<td>28</td>
<td>6</td>
</tr>
<tr>
<td>T. Baker Smith, LLC</td>
<td>242</td>
<td>6</td>
</tr>
</tbody>
</table>

*Regional Headquarters
State of the Sector: Water Management

Career Ladders

**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%

**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**

**GENERAL & OPERATIONS MANAGER**

**CONSTRUCTION FOREMAN**

**WELDER**

**WELDING APPRENTICE**

Greater New Orleans Regional Economic Development
Creating a Water Cluster

Water jobs are only the first steps

- Southeast Louisiana has water jobs: lacks a true cluster
- Influx of BP funds and HUD National Disaster Resilience Competition funding can catalyze stronger industry growth
- True success, however, is merited by a functioning ecosystem of diverse stakeholders working together
Critical Elements

Building a Cluster Takes a “Super” Region

Economic Factors
- Industrial Structures
- Geographic Concentration
- Labor Force Quality
- Job Growth
- Wages
- Investment
- Research and Development
- Export Potential

Political Support
- Public Funding
- State Subsidies

Social Factors
- Philanthropic Support
- Social Capital
- Social Leadership

Source: The Data Center
Super-Regional Resources

Mapping funded by Chevron

Economic Factors
The Water Institute of the Gulf
Tulane River & Coastal Center
Louisiana State University
The Data Center
University of New Orleans
Southeastern Louisiana State University
Louisiana Universities Marine Consortium
The Ripple Effect
The Good Work Network
NO/LA Angel Network
PowerMoves.NOLA
Propeller
Greater New Orleans, Inc.
Baton Rouge Area Chamber
South Louisiana Economic Council
Research Park Corporation
New Orleans Regional Innovation Alliance
Louisiana Economic Development

Political Support
Coastal Protection & Restoration Authority
New Orleans Office of Resilience & Sustainability
Sewerage & Water Board of New Orleans

Social Factors
Baton Rouge Area Foundation
Greater New Orleans Foundation
Coalition for Coastal Resilience & Economy
Restore the Mississippi River Delta Campaign
Greater New Orleans Water Collaborative
Louisiana Water Network
Advancing the Cluster

Key Elements

1. Building Resources—Create a website and communications materials with information on coastal innovation access points and pathways

2. Aligning Partners—Bridge relevant programming between partners so that pathways extend beyond the points of entry

3. Identifying Export Potential—Identify what products, services and expertise are exportable and to what extent

4. Attracting Outside Investors—Capitalize on the work above to bring in further VC funds and investment
SAVE THE DATE

Working for our Coast: BUSINESS DEVELOPMENT

How do we support large firms, small business and entrepreneurs to compete and innovate in the coastal sphere?

June 7th, 2016

Greater New Orleans, Inc. Boardroom
1100 Poydras St.
New Orleans, La 70163