INDUSTRY DEFINITION

The advanced aerospace and defense manufacturing industry is a high-tech industry focused on design, manufacturing, and assembly of transportation vehicles, with a focus on space and defense-oriented shipbuilding, but it also includes automotive and heavy duty truck manufacturing, aerospace parts manufacturing, and a number of other related industries. What these industries share, in addition to their focus on producing transportation vehicles, is a set of workforce requirements defined by dependence on technology advances and precision manufacturing skills.

Aerospace is a broad industry that consists of civilian and military aircraft, space vehicles, and missiles. Aerospace instrument manufacturing and space research and technology provide large portions of the industrial employment across the industry. Additionally, aircraft suppliers provide parts and machinery for aircraft assembly and maintenance, including engines, interior components, avionics, and aircraft hardware such as landing gear. Suppliers are important for both the assembly and maintenance of aircraft. Defense manufacturing is a large niche industry focused on the production of naval ships for U.S. armed forces. The industry’s customers include the military, commercial airlines, and general aviation.

Additionally, the advanced manufacturing sector revolves around auto assembly and auto parts production, commercial ship and boat building, advanced materials and metalworking, and other related advanced manufacturing requiring high skilled labor. Automobile manufacturing can focus on assembly plants or part manufacturing, including highly technical brake, transmission, and engine manufacturing. Ship building and outfitting focuses on construction, repair, and conversion of boats and ships for both civilian and military uses and are associated with shipyards and dry docks. Heavy manufacturing industries (steel, metal smelting, and petroleum refining) are not included in this target definition.

The advanced aerospace and defense manufacturing industry, particularly the aerospace and shipbuilding industries, rely heavily on the U.S. government for continued work. Other large customers for these products in this industry include commercial aerospace firms, commercial freight lines, and U.S. automotive manufacturing firms. Companies in this industry provide traditional manufacturing and assembly jobs, require highly skilled technical workforces, and produce highly value-added products that are produced only in a few areas around the world.

NATIONAL GROWTH TRENDS

Historically, manufacturing has been a primary driver of economic development in America. Propelled by the prospect of high paying jobs and the subsequent spin-off of jobs to suppliers and services, cities across the country competed fiercely with one another to attract manufacturing firms.

In recent years, however, advances in technology and the removal of global trade barriers have unleashed the twin forces of increased domestic productivity and foreign
competition. As a result, while U.S. manufacturing output has consistently increased in value over the last half-century, the number of manufacturing jobs has steadily declined. In the past five years alone, the U.S. has lost nearly three million manufacturing jobs. In the advanced manufacturing sector alone, more than 160,000 jobs have been lost since 2000. Increased productivity, however, has helped fuel significant wage increases in the advanced manufacturing sector; since 2001, average wages in Advanced Aerospace and Defense Manufacturing have risen by 23%. The simultaneous rise in wages and decline in employment has only increased the competition for jobs in this industry.

The current challenges facing the domestic industrial market do not signal the end of U.S. manufacturing. Instead, American manufacturing is undergoing a profound transformation as the industry adapts to the current realities of the global marketplace. Specifically, domestic manufactures are increasingly relying on massive investments in research and development to maintain their competitive advantage against foreign competitors.

As the country’s economy becomes increasingly knowledge-based, formerly clear divisions between industries have been replaced by mutually reinforcing interconnections. Pure production can no longer be divorced from pure research; manufacturing firms currently fund 60% of private sector research and development each year. Although industrial sectors are presented separately for organizational purposes, it is important to remember that many of the highlighted industries provide vital, reciprocal support to one another.

**Aerospace and Space**

As the U.S. government replaces aircraft destroyed or damaged in its wars in Iraq and Afghanistan, defense-oriented aviation firms will seek to expand. The government is the largest customer segment of the aviation and aerospace industry (about 60% of all sales), and increased sales to the Pentagon offset declines in the commercial aircraft market after September 11, 2001. Commercial aviation employment growth is now being driven by Boeing and Airbus's new aircraft and increasing demand for advanced aircraft in the Asian markets.

Space research and technology is increasingly at the mercy of the NASA budgetary process, with administration and internal NASA goals driving the growth of the human space flight industry. Government space research and technology has expanded somewhat since 2001, adding more than 4% to its workforce, although this is fewer than 800 employees. With a lull in manned space flight expected within the near future between the retirement of the Space Shuttle and the beginning of the Constellation program, NASA’s commercial contractors are preparing for stagnation in workforce over the next few years. Wages have increased significantly, from an average of $62,500 to $80,500, a 29% increase in 6 years.

Overall, aerospace industry employment fell every year from 1998 to 2003, but has been in expansion mode since, adding nearly 45,000 jobs through 2006. It has been estimated by the Aerospace Industries Association that one since 2004, three of every four manufacturing jobs created in the U.S. have been in the aerospace industry.

**Ship and Boat Building**

Shipbuilding employment and wages have also risen, with orders from the U.S. Navy and Marines continuing to drive growth in the industry. Additionally, large growth in commercial shipbuilding to supply offshore oil rigs, transport oil in tankers subject to new U.S. regulations, and commercial barge shipping and international trade growth are providing opportunities for low-cost shipbuilders to compete in niche markets, while the majority of large container ships are built in Asia through heavily subsidized programs. Ship and boat building employment has grown 7% in the last 6 years, adding 11,000 jobs. Wages have grown faster, from $41,000 to $48,500, an increase of about 2.8% annually.
Automobile and Truck Manufacturing
Automobile manufacturing is where large numbers of jobs have been lost, as U.S. auto manufacturers close older manufacturing plants in the Midwest due to continued market share loss in the U.S. and Asian automakers move into leaner, non-unionized locations in the South. The automobile assembly and parts manufacturing industries have shed more than 150,000 jobs in the past 6 years, though wages continue to increase, from $50,000 to $59,000, an increase of about 2.8% annually. Truck and trailer manufacturing, however, provides a bright spot in an otherwise shrinking industry, with a gain of more than 15,000 jobs since 2001, an increase of almost 10% in employment.

Despite the fluctuations in employment over the past decade, average wages for the advanced aerospace and defense industry as a whole maintained a steady growth trend. Average wages have increased approximately 23% from about $52,000 per year in 2001 to just over $64,000 per year in 2006.

LOCATION DECISION CRITERIA
The advanced aerospace and defense manufacturing industry depends to a large extent on the available workforce of a location. Aerospace, space, ship and boat building, and automotive manufacturing all require highly skilled and educated workforces. For smaller supplier firms and contractors, the presence of a large manufacturer or a NASA facility may be required. For large manufacturing plants, incentives packages running to the hundreds of millions of dollars may be required for attraction. Additional location criteria include large, cheap tracts of land, access to transportation infrastructure, and low-cost utilities. The top five decision criteria for this industry include:

- **Educated Workforce**: Engineers (aerospace, materials, electrical), technicians, electronics techs, precision metal-workers
- **Significant NASA/Large Defense Manufacturer Presence**: Availability of contracts, etc.
- **Cheap/re-usable land**: Often in search of free or easily reusable land with hangars (decommissioned bases). Must provide shovel-ready mega-sites for automotive manufacturing
- **Access to multi-modal transportation**: Airport runways, road, port, and potentially rail access required
- **Incentives**: Workforce training, defense communities’ incentives, free land, long-term tax breaks, etc.
- **Utilities**: Must have low-cost electricity, natural gas, water

Structural Assets
While the site selection criteria of companies in this industry are rather varied according to the product or parts being manufactured, several standard structural requirements apply across companies. Advanced manufacturers are typically medium to large-scale operations requiring a sizable tract of land. Proximity to a large, international airport is desirable, but small regional airports will still allow for flight service. A land buffer or a limit to residential growth nearby helps prevent public complaints of noise that could threaten future operations. Facilities range in size from several hundred thousand square feet to the millions. Any facility will require ample access to electricity, natural gas, water, and wastewater. Regions with low electric rates can often lure power-hungry manufacturers such as automotive producers away from areas with higher electric rates. An excellent transportation system including both interstate and either airport or port access, and potentially rail access, will also be required.
Costs of Doing Business
Companies within these industries are large users of electricity and natural gas and pay large amounts of property taxes. Any location decision will be heavily influenced by tax rates, utility costs, and prevailing wage rates. Although each industry has different cost structures and subsequent site selection priorities, taxes are a predominant factor in the site selection process for manufacturers. Due to the number and diversity of employees, these operations are fiercely sought after and command large amounts of incentives for attraction purposes, and may solicit continued help for retention purposes. Increasingly, parts manufacturing operations are being located overseas, and components are shipped to the U.S. for assembly. Space research is more concerned with the costs of R&D equipment, and companies often seek tax incentives for purchasing equipment or expanding operations.

Research & Development
R&D activity in the aircraft and shipbuilding manufacturing industries abounds, though it generally focuses on product development rather than later-staged manufacturing processes. Major funding sources for underlying aerospace and defense-focused technologies come from the Department of Defense and NASA. The majority of industry research is conducted in-house at private research and design facilities. For traditional industries, R&D is largely about maintaining dominance in an industry.

Economic Conditions
Primary economic conditions include the presence of large end-user facilities, including major shipyards, NASA facilities, aerospace assembly plants, or an automotive assembly plant. A sizeable aerospace industry sector benefits from end-producer demand and a local pool of skilled workers. Major relocations often occur so a company can be closer to customers or positioned in a high growth area with the right image and demographics for its business. For example, automotive suppliers locate near major automotive assembly plants to reduce transport time. Some manufacturers (Toyota, for example) are making investments in states such as Texas where they desire greater market share.

Workforce
Workforce needs vary among industries and companies. Manufacturers relying on low-skilled labor often operate in rural areas where they can find affordable workers and generous incentives. Manufacturers requiring large amounts of skilled workers often experience difficulty attracting and retaining qualified talent. Many of these jobs require formal education and specialized skills and experience. While not all skilled positions require a bachelor’s degree, many of the positions require at least a technical degree. Skilled machinists are required to make parts that are not mass-produced. As with automotive suppliers, an aircraft manufacturing facility will desire both a four-year engineering university, as well as a good technical college. Companies have to compete for talent and are willing to pay higher wages for these workers. Local workforce development groups play an important role in helping companies find and develop the skilled workers they require. Availability of a skilled workforce is often the number one site selection criteria.

GNO REGIONAL ASSESSMENT

GNO GROWTH TRENDS
Advanced aerospace and defense manufacturing presents an ideal target for retention efforts and selected attraction efforts. Greater New Orleans’ assets in this industry are focused on its’ shipbuilding and space manufacturing assets, namely NASA’s Michoud Assembly Facility, nearby Stennis Space Center, Northrop
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Grumman’s Avondale Shipyards, and Bollinger’s numerous ship building and repair facilities across the region and the State of Louisiana.

Aerospace employs approximately 2,400 people in the Greater New Orleans region in 2007, at an average salary of nearly $54,000 per year. Aerospace manufacturing at Michoud is focused on the external fuel tank for the current Space Shuttle program, while future efforts are focused on external tank assemblies for the Constellation space program. With multiple programs being developed on-site for the first time in thirty years, and the diversification of the Michoud facility to include private contractors and other federal programs provides additional opportunities for economic growth in the region. Large aerospace contractors are presently on-site, and efforts are beginning to attract future contractors to co-locate on site. In addition, the location of the National Center for Advanced Manufacturing at the Michoud site provides excellent incentives for location of NASA contractors and other manufacturing companies interested in advanced composites manufacturing, solid-state welding processes, high-speed machining, and advanced computer-aided design technologies. The State of Louisiana has also committed $102 million in funding for the projects in Michoud. The University of New Orleans also plans to create an Advanced Technology Research Park along I-10 in Slidell focused on leveraging technologies developed at nearby Stennis Space Center. This 100 acre tract would be part of a $100 million public-private, mixed use campus and lifestyle center.

Shipbuilding at both the Northrop Grumman Avondale Shipyards and the Bollinger facilities across the Greater New Orleans region continues apace, with large U.S. Navy contracts underway at Avondale and increasing commercial boat and shipbuilding and repair underway at the Bollinger facilities. Bollinger’s focus continues to evolve toward increasing service for the offshore oil supply ships, service and repair for offshore oil rigs, and continued building of smaller naval ships, commercial barges and tugboats, and other industrial service ships. According to Economy.com data, ship and boat building employs nearly 8,800 people in the Greater New Orleans region, at average annual wages of nearly $47,000 in 2007.

While there are no automobile assembly plants and few automotive parts manufacturing plants in the region, Tangipahoa Parish has an option on a 2,900 acre mega-site that is certified to be ready for a large manufacturing plant such as an automotive assembly plant or other advanced manufacturing operations. This would allow for future automobile assembly plants or other large manufacturers to locate in the region. Advanced defense manufacturer Textron Marine and Land Systems, a 1,000 person employer with regional operations based in Slidell and manufacturing operations in East New Orleans, provides additional weight to this sector. As a world leader in the design, production, and support of advanced marine craft, light armored combat vehicles, and related military and commercial systems, Textron demonstrates that advanced land-vehicle manufacturing can thrive in the region.
COMPETITIVE COSTS AND CONDITIONS ANALYSIS

AngelouEconomics has evaluated the potential for economic development in the advanced aerospace and defense manufacturing industry based on a site-selection based model of costs and conditions comparisons. Greater New Orleans shows excellent potential within this area, with access to several large defense contractors as well as NASA to leverage for government procurement contracts and regional technology expertise. With the primary competition in this industry coming from surrounding Gulf Coast states, including Houston and San Antonio in Texas, Gulfport-Biloxi-Pascagoula in Mississippi, Mobile and Huntsville in Alabama, and Jacksonville, Florida, Greater New Orleans area is not at a disadvantage from a cost perspective – its tax rates and wage rates are comparable or lower than many of its competitors, and it has no air quality restrictions, unlike both Houston and San Antonio. Greater New Orleans land costs and electricity costs are, however, somewhat higher than virtually all of its competitor cities.

While land costs are high in the region, several sites have been identified for advanced manufacturing operations on the North Shore, including several located equidistant between Michoud Assembly Facility and Stennis Space Center, the UNO Advanced Technology Research Park in Slidell, and the potential megasite in Tangipahoa Parish. The preparation of these sites and the marketing of their attractiveness to potential manufacturers provide the Greater New Orleans area with a counter to high land costs in other parts of the region.

Large incentives packages are offered by all competitor states and incentives depend largely on the particular project to be sited. Greater New Orleans does, however, have access to Gulf Opportunity Zone (GO-Zone) federal tax incentives to offer businesses, a competitive advantage for relocation or expansion of large manufacturing facilities. In addition, Greater New Orleans advanced aerospace and defense manufacturing

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Gulfport, MS</th>
<th>Houston, TX</th>
<th>Huntsville, AL</th>
<th>Jacksonville, FL</th>
<th>Mobile, AL</th>
<th>San Antonio, TX</th>
<th>GNO, LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (Provider)(^{3})</td>
<td>Mississippi Power</td>
<td>Reliant Energy</td>
<td>City of Huntsville</td>
<td>Jacksonville Elec. Power</td>
<td>Alabama Power</td>
<td>CPS Energy</td>
<td>Regional Average(^{3})</td>
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<tr>
<td>Commercial (per kWh)</td>
<td>$0.0781</td>
<td>$0.1148</td>
<td>$0.0764</td>
<td>$0.0768</td>
<td>$0.0787</td>
<td>$0.0802</td>
<td>$0.0929</td>
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<tr>
<td>Industrial (per kWh)</td>
<td>$0.0502</td>
<td>$0.0744</td>
<td>$0.0470</td>
<td>$0.0501</td>
<td>$0.0456</td>
<td>$0.0560</td>
<td>$0.0798</td>
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<tr>
<td>Average Annual Wage (5-year growth)(^{2})</td>
<td>28.1%</td>
<td>24.9%</td>
<td>16.9%</td>
<td>19.0%</td>
<td>29.3%</td>
<td>25.2%</td>
<td>20.6%</td>
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<tr>
<td>2007</td>
<td>$82,520</td>
<td>$77,329</td>
<td>$77,112</td>
<td>$36,637</td>
<td>$48,174</td>
<td>$57,497</td>
<td>$64,169</td>
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<tr>
<td>2006</td>
<td>$90,903</td>
<td>$85,437</td>
<td>$71,351</td>
<td>$34,863</td>
<td>$41,799</td>
<td>$53,535</td>
<td>$48,199</td>
</tr>
<tr>
<td>2005</td>
<td>$56,159</td>
<td>$51,140</td>
<td>$69,587</td>
<td>$37,009</td>
<td>$39,642</td>
<td>$48,199</td>
<td>$41,116</td>
</tr>
<tr>
<td>2004</td>
<td>$52,048</td>
<td>$46,902</td>
<td>$68,490</td>
<td>$46,473</td>
<td>$38,035</td>
<td>$44,323</td>
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<td>2003</td>
<td>$48,821</td>
<td>$46,037</td>
<td>$66,178</td>
<td>$45,777</td>
<td>$36,716</td>
<td>$45,919</td>
<td>$40,770</td>
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<tr>
<td>Real estate prices(^{7})</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Office park (per acre)</td>
<td>$10,000</td>
<td>$50,000</td>
<td>$131,000</td>
<td>$436,000</td>
<td>$50,000</td>
<td>$120,000</td>
<td>$150,000</td>
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<tr>
<td>Industrial park (per acre)</td>
<td>$30,000</td>
<td>$270,000</td>
<td>$100,000</td>
<td>$218,000</td>
<td>$25,000</td>
<td>$50,000</td>
<td>$120,000</td>
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<td>Land (non-park) (per acre)</td>
<td>$20,000</td>
<td>$140,000</td>
<td>$175,000</td>
<td>$2,178,000</td>
<td>$50,000</td>
<td>$100,000</td>
<td>$80,000</td>
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<tr>
<td>Tax(^{8})</td>
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<td></td>
<td></td>
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<tr>
<td>State income tax rate(^{6})</td>
<td>3.0% - 5.0%</td>
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<td></td>
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</tr>
<tr>
<td>Sales tax rate</td>
<td>7%</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Average real and personal property tax rate(^{9})</td>
<td>7.09 mils</td>
<td>18.87 mils</td>
<td>3.78 mils</td>
<td>10.38 mils</td>
<td>3.53 mils</td>
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<tr>
<td>Real and personal property tax rate range(^{9})</td>
<td>4.49 - 12.82 mils</td>
<td>8.20 - 29.27 mils</td>
<td>2.02 - 6.72 mils</td>
<td>4.08 - 16.14 mils</td>
<td>1.76 - 10.11 mils</td>
<td>8.62 - 28.82 mils</td>
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<tr>
<td>Air Quality Non-Attainment Status(^{10})</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
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<tr>
<td>Airport connections(^{11})</td>
<td>Domestic</td>
<td>Foreign</td>
<td>Domestic</td>
<td>Foreign</td>
<td>Domestic</td>
<td>Foreign</td>
<td>Domestic</td>
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<tr>
<td>Nonstop destinations</td>
<td>10</td>
<td>0</td>
<td>118</td>
<td>73</td>
<td>12</td>
<td>0</td>
<td>32</td>
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<tr>
<td>Significant NASA/Defense Mfg. Presence</td>
<td>YES (Northrop Grumman)</td>
<td>YES (NASA)</td>
<td>YES (NASA)</td>
<td>YES (U.S. Navy)</td>
<td>YES (Northrop Grumman)</td>
<td>YES (Toyota)</td>
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</tbody>
</table>

(1) Source: Energy Information Agency, 2007
(2) Source: Economy.com, 2007
(3) Source: NAVICP, 2007
(4) Source: Federation of Tax Administrators, 2006
(5) Source: AngelouEconomics, 2006
(6) Source: AngelouEconomics, 2006
(8) Source: AngelouEconomics, 2007

GNO REGIONAL TARGET INDUSTRY ANALYSIS

AngelouEconomics technology-based economic development
benefits from its strong international trade, logistics, and distribution industry, which provides easy access to industrial supplies, such as rolled steel for shipbuilding.

Greater New Orleans’ educational attainment falls squarely in the middle of the pack, with 27.7% of the population having a bachelor’s degree or higher, but a below average 26.2% of the population have received some college but no degree or an associate’s degree. Houston and Huntsville are primary competitors for companies requiring a large, college-educated population, while Gulfport-Biloxi-Pascagoula and Jacksonville provide excellent percentages of the population with some college or an associate’s degree. While operating costs are relatively moderate, labor availability is a serious concern for the Greater New Orleans region.

WORKFORCE ASSESSMENT

Given the Greater New Orleans region’s long-standing focus on manufacturing, and its below average wages in the industry as a whole, the region continues to have substantial workforce needs across a variety of technical and trade-oriented occupations which require a sustained focus on workforce training and retention for this important industry to continue to succeed. GNO, Inc. must focus on maintaining the supply of skilled technical workers for this vital industry, and continue to attract higher-degreed workers such as engineers.

Key positions with regional shortages include avionics technicians, machine tool operators, industrial engineering technicians, welders, cutters, and solderers, and electronics installers for transportation equipment. Interviews with regional business leaders also revealed significant difficulty in attracting sufficient numbers of carpenters, computer-aided design operators, fabricators, and pipe fitters. Additional problems occur because of the similar requirements of the advanced aerospace and defense manufacturing industry and the energy, petrochemicals, and plastics industry. Workers frequently move from company to company to reap increased salaries and benefits in the tight labor market, and then move back for additional raises.

While technical and trade-oriented workforce shortages are not unique to the Greater New Orleans region, they have reached chronic levels regionally. Between retaining employees after the destruction of their homes and the lack of systematic training programs for welders, carpenters, and engineering technicians, Greater New Orleans faces larger obstacles to overcome workforce shortages. Overall, the Greater New Orleans region has significant workforce shortages in trade and technical occupations that require investment and training from the nascent technical and community college systems.
To further refine the focus of economic development efforts, AngelouEconomics undertook a supply chain analysis of the advanced aerospace and defense manufacturing industry using IMPLAN. This data reveals the source and amount of purchases among many different industries. By identifying the areas where the advanced aerospace and defense manufacturing companies purchased goods and services from outside the regional economy, we can help to identify niche sectors to target for recruitment, retention, and expansion efforts. The chart below shows the flows of trade by industry both within the region and from outside of the Greater New Orleans MSA.
Orleans region. Niche sectors to target for expansion appear as imports from outside the region, but still within the industry.

In this case, motor vehicle parts and aircraft engines and parts were identified as gaps in the industrial supply chain for the industry. Key purchases from within the region include:

- gasoline, diesel, and miscellaneous chemicals from the energy, petrochemicals, and plastics industry ($19.7 million)
- advertising, software, and miscellaneous creative services from the creative media and design industry ($37.4 million)
- truck transportation services and warehousing from the international trade, logistics, and distribution industry ($24.7 million)
- insurance, management services, consulting, machinery repair, telecommunications, and waste management services ($229.8 million)

In addition, other related products and services were purchased from outside of the region, including:

- air, rail, and truck freight transportation from the international trade, logistics, and distribution industry ($10.1 million)
- steel, turbines and engines, motors, computers, and data processing services from all other industries ($580.4 million)
- adhesives, chemicals, marine paints, and laminating plastics from the energy, petrochemicals, and plastics industry ($70.0 million)
- advertising, software, and creative services from the creative media and design industry ($11.4 million)

Though high end services, such as management consulting, telecommunications and insurance services are all purchased locally, these services are broadly required to support industry across the region, and not specific to the advanced aerospace and defense manufacturing industry. **This analysis indicates how raw materials, such as steel, adhesives, and turbines, many of which are either produced locally in the petrochemicals sector or are transported into the region through the Ports of South Louisiana, are combined with local knowledge and skilled manufacturing labor to create highly complex space vehicles and ships. These value-added manufacturing processes and the regional corporate and workforce knowledge in providing these essential services should be the focus of retention and expansion efforts within the Greater New Orleans area.**
NICHE SECTORS

Niche sectors to be pursued within the advanced aerospace and defense manufacturing industry should focus on continuing to strengthen existing large employers through expansion, and workforce development efforts. Should small suppliers be recruited, appropriate sites are available, but extreme workforce shortages present continuing problems to recruiting new companies to the region.

Space Systems Manufacturing
Much of the Greater New Orleans region’s strength in the aerospace industry is not reflected in traditional aircraft parts manufacturing, but instead in advanced space systems manufacturing and engineering companies that can consult on technical challenges. In addition, Greater New Orleans’ companies have developed core competencies in rocket design and manufacturing. Given the increasing need for product development of composite materials and advanced welding techniques in various industries, including aerospace, wind turbines, and advanced automotive applications, Greater New Orleans should look for ways to diversify the focus of space systems niche to provide manufacturing services to other industries.

Boat and Shipbuilding and Repair
The Greater New Orleans region includes irreplaceable assets in shipbuilding, boatbuilding, and ship and boat repair. With Greater New Orleans position as the preferred location for servicing the offshore oil industry, local ship and boat building can continue to focus on the construction and repair of offshore supply ships, oil rigs, and industrial barges. Primary efforts in workforce development and retention can help this niche sector to remain healthy and ensure that its essential services continue to provide the Greater New Orleans region with high-wage, technical and industrial manufacturing jobs well into the future.

Aerospace Component Manufacturing
Aerospace component manufacturing provides high tech manufacturing jobs in keeping with the Greater New Orleans region’s focus on aerospace technology development. Aerospace components can be as large as wing assemblies or as small as electronic instrumentation. Developing aerospace component manufacturing requires an excellent workforce, and growth areas include outsourced subassemblies from major airplane manufacturers and small corporate jet manufacturers.

REGIONAL LOCATIONS
Regional locations for the advanced aerospace and defense manufacturing industry should be near existing regional assets. Companies that can easily serve existing shipyards will likely locate near those facilities, and ongoing technical park efforts at or near NASA facilities at Michoud Assembly Facility or Stennis Space Center will provide the best locations for aerospace companies. The megasite in Tangipahoa Parish gives the region the ability to attract a large manufacturing operation in the future if workforce issues have been sufficiently addressed.

ADVANCED AEROSPACE & DEFENSE MANUFACTURING OVERVIEW:
Greater New Orleans has enviable assets in this industry, including NASA’s Michoud and Stennis Centers, Northrop Grumman Shipbuilding and Bollinger. While these large employers face continuing workforce problems, competitor regions are developing workforces to meet the needs of their shipbuilders, aerospace engineering firms, and space contractors. Short-term focus should remain on retention, expansion, and workforce development efforts.