



### Cluster Evaluation & Selection

Selecting target clusters for a community is an iterative process that integrates quantitative and qualitative information. Factors such as global trends, existing industry base, workforce skills and educational programs, and the community's goals and vision are all considered.

Growing target clusters in a community requires a multi-faceted approach. Community leaders should commit to working together to create an environment in which each cluster can thrive. This involves investing in infrastructure, real estate, workforce training and education programs, entrepreneurship capacities, and smart public policies that address the cluster's needs. The community must also lead marketing and business development activities – both at home and outside of the community – to raise awareness among target cluster businesses and influencers. The *Strategic Economic Vitality Program*, the final report in this strategic planning process, will recommend specific activities needed to help grow its target clusters.

To identify target clusters, four broad questions are explored to filter the universe of potential targets into a highly focused, actionable list:

#### 1. Which clusters have strong projected performance within the US and world?

Local strengths and assets are an important component of the cluster selection process. Examining regional, national, and international trends places local information into a broader context.

#### 2. Which clusters have an existing presence in the region and the community?

Answering the second question in the evaluation process involves examining regional dynamics such as current local cluster concentrations and those of surrounding communities.

#### 3. Which clusters are best suited to the community's and the region's many assets?

The Discovery phase of this strategic planning process examined local dynamics, strengths and assets that can enhance cluster activity and support cluster ecosystems.

#### 4. Which clusters align with community values and provide a high return on investment?

High impact clusters must reinforce the values of the community and have the highest potential to accelerate the community toward its vision. Conversations with residents, business owners, education representatives, and political leaders in the community helped the consulting team understand local values.

It is important to note that having target clusters does not mean that the community ignores other industry sectors. Economic vitality resulting from target cluster growth will bring new dollars into the community, boosting wealth creation, generating new business opportunities, and enhancing residents' standards of living.

### HIGH IMPACT CLUSTER EVALUATION

Which clusters have strong projected performance within the US and world?

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Which clusters have an existing presence in the region and in the community?



Which clusters are best suited to the community's many assets?



Which clusters align with the community's values and provide a high return on investment?



### Target Cluster Identification

Following the review process outlined in this chapter, the consulting team recommends the following three target clusters and supporting niche sectors for the EDF service area:

Advanced Manufacturing
Logistics & Distribution
Healthy Lifestyles & Recreation

These targets provide high-growth opportunities to attract investments and jobs within the EDF service area while ultimately contributing to the community's economic resiliency and the wellbeing of residents.

**TARGET CLUSTER NICHE SECTORS Advanced Materials & Composites** Fabricated Metal Manufacturing **ADVANCED MANUFACTURING** Machinery & Robotics Manufacturing Petrochemical & Plastics Manufacturing **Predictive Maintenance Technologies** Freight Transportation Support **Logistics Management Technologies LOGISTICS & DISTRIBUTION** Retail Distribution & Online Retail Fulfillment Centers Refrigerated Storage **Retail & Dining HEALTHY LIFESTYLES Ecotourism** & RECREATION **Healthcare Services** 

NICHE SECTORS

Advanced Materials & Composites

Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

**Predictive Maintenance Technologies** 



**NICHE SECTORS** 

Advanced Materials & Composites

**Fabricated Metal Manufacturing** 

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

**Predictive Maintenance Technologies** 

#### Cluster Overview

Advanced Manufacturing is the transformation of raw materials into more refined materials, component pieces, and finished products using complex machinery. Despite many reports to the contrary, the death of US manufacturing has been greatly exaggerated. The US remains the world's second-leading manufacturer and employment has increased during each of the last five years.

US Advanced Manufacturing has proven remarkably resilient in the face of growing competition globally thanks to sustained increases in domestic productivity. Productivity gains have been powered by the integration of a skilled workforce capable of operating highly automated production systems. The complexity of modern manufacturing machinery often requires employees with specialized training and/or extensive professional experience, contributing to relatively high wages within the sector.

Infrastructure and workforce availability are critical to Advanced Manufacturing operations. Companies typically invest in locations with a skilled, low-cost workforce and plentiful, affordable energy supplies. Both attributes are critical in maximizing productivity and reducing costs. Advanced Manufacturing firms often locate in close proximity to an interstate, major port, and/or intermodal rail facilities, as the presence of these infrastructural assets can help facilitate delivery of both raw materials and finished products. Given the outsized capital investment of Advanced Manufacturing facilities, they are among the country's most highly sought after clusters and often command comprehensive incentives packages from prospective communities.

### **Global Forces**

In recent years, US Manufacturing has stabilized thanks to increased automation, stagnant domestic wages, rising foreign labor costs, and lower North American energy prices. The fracking revolution has been especially beneficial to the petrochemical industry, as energy prices represent a disproportionately high share of the sector's overall production cost. Between 2005 and 2015, US natural gas production increased 50%. During this period, the price of natural gas declined approximately 70%. While the Trump administration has emphasized its commitment to an expanded manufacturing industry, talk of imposing stiff tariffs on imported goods has raised the specter of a trade war that would threaten domestic manufacturing. Additionally, possible renegotiations of trade agreements such as NAFTA would likely have significant impacts on US manufacturing, though the ultimate impacts remain highly speculative in the absence of additional details. Should trade policies stay consistent, the EDF service area is in a competitive position to continue its robust manufacturing and trade activity.

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**NICHE SECTORS** 

Advanced Materials & Composites

**Fabricated Metal Manufacturing** 

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

Predictive Maintenance Technologies









SOURCE: AVALANCHE CONSULTING / EMSI

#### Niche Sectors

Advanced Materials & Composites – Advanced Materials & Composites involve the research, development, and fabrication of materials derived from innovations in metal, polymers, glasses, composites, and textiles. Advanced Materials & Composites combine high performance with lightweight design and are often used for automotive, aerospace, medical, and military applications. For example, the introduction of Advanced Materials & Composites such as carbon-fiber and reinforced epoxies has contributed to the weight reduction of modern aircraft, helping the aerospace industry deliver increasingly fuel efficient fleets. In healthcare, Advanced Materials are employed to enhance or replace natural functions. The convergence of technology and textiles may lead to the creation of "functional fabrics" with novel properties such as exceptional flame resistance, extraordinary strength, or sensing capabilities. Thermoplastics, which can be reformed into other shapes, represent a small but growing niche due to their inherent flame retardant nature and resistance to corrosion. Such attributes make them ideal for industries such as aerospace and oil & gas.

Fabricated Metal Manufacturing – Fabricated Metal Manufacturing involves the transformation of metal into component parts or finished products. Individual components may be crafted by forging, stamping, and machining raw metal inputs. More complex items may involve welding and assembling constituent parts into an end-use product. Fabricated Metal Manufacturing parts and products support a variety of industries, including agriculture, oil and gas, architecture and construction, and aerospace and defense. When these industries faltered during the recession, so too did Fabricated Metal Manufacturing. In recent years, however, Fabricated Metal Manufacturing employment has rebounded as the health of these industries have improved; between 2010 and 2015, the sector added more than 90,000 jobs. Within Texas, the recovery of Fabricated Metal Manufacturing has been more modest due to the slowdown in the oil & gas sector. Rising crude prices, however, are likely to bolster growth in the years ahead. As Fabricated Metal Manufacturing facilities typically require skilled labor capable of operating highly automated assembly systems, this sector is characterized by relatively high wages. In 2016, for example, the average Fabricated Metal Manufacturing worker in the Houston metro earned more than \$76,000 annually.

**NICHE SECTORS** 

Advanced Materials & Composites

Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

Predictive Maintenance Technologies

ESTIMATED AVERAGE ADVANCED MANUFACTURING SALARY, 2016

AVERAGE SALARY OF ALL JOBS

EDF Service Area

US \$81,554

\$0 \$80,000 \$160,000

SOURCE: AVALANCHE CONSULTING / EMSI

\$152,784

#### Niche Sectors

Machinery & Robotics Manufacturing — Machinery & Robotics Manufacturing involves the production of large-scale industrial equipment. Machinery & Robotics products are used in a variety of industries, including agriculture, manufacturing, food processing, and oil & gas. During the past 20 years, robots have become especially integral to many domestic manufacturing operations due to both increased automation and technological advances. The increasing sophistication and flexibility of robots is likely to propel increased adoption in other areas such as logistics, military and defense, and healthcare. While the US remains the world's largest market for machinery and among the largest markets for robots, the sector is also highly reliant on foreign markets for continued growth. In 2015, US exports of Machinery & Robotics products approached \$140 billion annually; Canada, Mexico, China, South Korea, and Japan are the largest foreign markets for domestic Machinery & Robotics products. The sector currently employs approximately 1.1 million US workers. Due to the complexity of Machinery & Robotics Manufacturing, the cluster is highly innovative and requires a skilled workforce. In 2016, average wages of Machinery & Robotics Manufacturing workers exceeded \$80,000 annually.

Petrochemical & Plastics Manufacturing – Petrochemical & Plastics Manufacturing involves the production of organic chemicals from unprocessed hydrocarbons known as feedstocks. Petrochemical & Plastics Manufacturing is also known as the "downstream" sector of the oil and gas industry. Within the US, typical feedstocks include natural gas and oil. Petrochemical & Plastics serve as the building blocks for a variety of products, including synthetic fibers and rubber, paint and coatings, lubricants, and industrial chemicals. These applications serve many industries, including the automotive, electronics, textile, and pharmaceutical sectors. As most Petrochemical & Plastics products are commodities, operating margins are often modest. As a result, Petrochemical & Plastics Manufacturing operations benefit from large economies of scale and access to abundant and inexpensive energy.

Despite the rise of Chinese production, the US remains a leader in Petrochemical & Plastics Manufacturing. Domestic Petrochemical & Plastics Manufacturing has remained competitive in part due to the advent of hydraulic fracturing and an extraordinary rise in US natural gas production. Within the US, Petrochemical & Plastics Manufacturing is highly concentrated in Texas and Louisiana along the Gulf Coast. Lower production prices, a sustained market rebound since the depths of the recession, and the promise of increased export activity have all contributed to massive investments in new and expanded Petrochemical & Plastics Manufacturing facilities, including in the EDF service area and the Greater Houston area.

**NICHE SECTORS** 

Advanced Materials & Composites

Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

**Predictive Maintenance Technologies** 

#### Niche Sectors

While recent EPA decisions on air quality have raised concerns about Petrochemical & Plastics Manufacturing's growth prospects within Houston and other nonattainment areas, a new presidential administration is likely to limit or reverse policies that threaten production activity. If EPA regulations stay consistent, the EDF service area may see less growth in manufacturing operations that produce air pollutants compared to clean manufacturing operations and/or large manufacturing firms that can afford offset fees.

Predictive Maintenance Technologies — Traditionally, Predictive Maintenance Technologies have involved sensory techniques such as infrared and ultrasonic imaging to detect and address corrosion prior to a mechanical failure. Predictive Maintenance Technologies are critical to the oil & gas industry. A single broken pipeline, for example, can result in millions of dollars in lost revenue and other financial liabilities while threatening both the environment and public support for the industry as a whole. In recent years, the integration of existing sensor technologies with data analytics has emerged as a promising field within Predictive Maintenance Technologies. Real-time analysis of oil & gas facilities help companies model and optimize performance while simultaneously determining the root cause of machine breakdowns. Predictive Maintenance Technologies can also help oil & gas operators identify more precise maintenance schedules that reduce unnecessary work stoppages while also ensuring reliable plant performance.

Pioneer Natural Resources cut costs and increased efficiencies of its drilling activities by utilizing real-time computer connections at the rig that could be monitored and analyzed by geoscientists at their headquarters rather than in the field. Alternatively, GE Oil & Gas decided to move its scientists closer to the field in Oklahoma City to test their new technologies, such as drones that inspect equipment and identify potential oil leaks. ABB, a Swiss firm that develops automation technologies for utility and industry, recently opened two plants in Houston that assemble robotics and instrumentation for oil field operations. Predictive Maintenance Technology providers include Software AG, SKF, Ayasdi, Maintenance & Reliability Technologies, Inc., to name a few. Across the board, this sector is seeing a growing demand for robotic engineers, mechanical engineers, data analysts, mathematicians, software developers, and communications specialists.

**NICHE SECTORS** 

Advanced Materials & Composites

Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

**Predictive Maintenance Technologies** 

### Local Sales Messages

Home to ExxonMobil and Chevron Phillips, the EDF service area is a juggernaut when it comes to Advanced Manufacturing assets. Plentiful and affordable energy supplies, robust transportation infrastructure, and a high concentration of Advanced Manufacturing operations and service providers make the community an attractive location for this sector.

- The recent expansions at ExxonMobil, Chevron Phillips, Enterprise Products, Covestro, and DUNA-USA illustrate the scale and concentration of operations that support Advanced Manufacturing firms in the EDF service area. Not only does the community boast the assets and capacity to recruit and expand Advanced Manufacturing operations on a large scale, it has created a distinct cluster of suppliers, providers, and support systems that are attractive for recruiting additional Advanced Manufacturing firms across its niche sectors.
- ExxonMobil's newest expansion will be the largest investment the company has made in the US. The new ethane steam cracker at Baytown Olefins Plant will be the largest in the world. Two new polyethylene lines at Mont Belvieu Plastics Plant will also be built.
- The EDF service area's extensive pipeline infrastructure and support services for Petrochemical & Plastics Manufacturing make it an ideal location for firms in this sector. The presence of polymers and other composite material producers also provide promising opportunities for Advanced Materials & Composites operations.
- Houston is the **dominant exporting port for plastics** in the entire US. In 2015, 75% of plastics and polymers came through the Port of Houston.
- The Port of Houston, a strong highway network with access to heavy haul corridors, and intermodal rail service and rail-served sites at TGS Cedar Port and Ameriport help facilitate delivery of raw materials, parts, and finished products for Advanced Manufacturing operations.
- The EDF service area is home to award-winning Lee College, which provides a robust pipeline of skilled workers to the Advanced Manufacturing industry. Lee College offers more than 100 associate degree and certificate programs as well as workforce-specific courses for local employers. The McNair Center, where hands-on technical and industrial training is conducted with state-of-the-art equipment, was expanded in February 2016.

**NICHE SECTORS** 

Advanced Materials & Composites

Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

**Predictive Maintenance Technologies** 

### Local Sales Messages

- UH Energy is a cross-disciplinary platform that integrates various University of Houston programs with the local energy industry. The University of Houston is a strategic partner with the energy industry, providing workforce training and degree programs, research and development, and technology incubation. There are opportunities to partner with the University of Houston on next generation Predictive Maintenance Technologies.
- The EDF service area is business-friendly, pro-development, and delivers strong tax abatements and incentive packages, making it an attractive location for Advanced Manufacturing firms making large capital investments.
- The average Advanced Manufacturing salary in the EDF service area is over \$150,000, almost double the US average of \$80,000.

**NICHE SECTORS** 

Advanced Materials & Composites

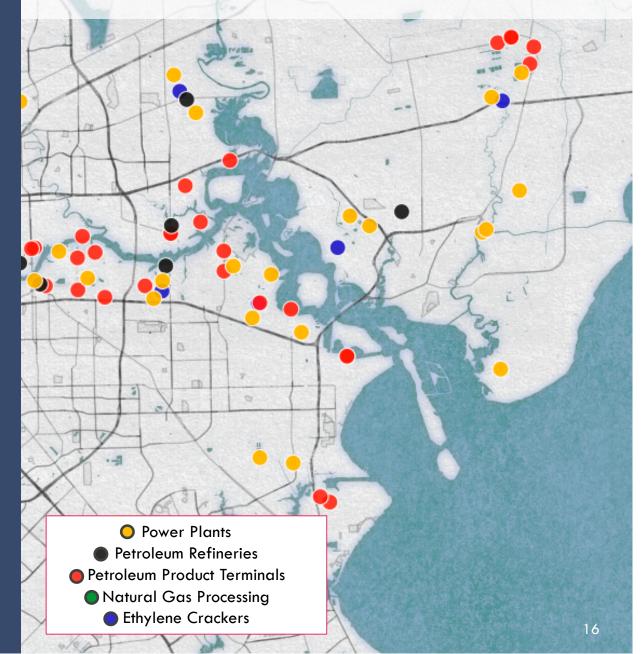
Fabricated Metal Manufacturing

Machinery & Robotics Manufacturing

Petrochemical & Plastics Manufacturing

Predictive Maintenance Technologies

# EDF SERVICE AREA ENERGY PRODUCTION & DISTRIBUTION FACILITIES



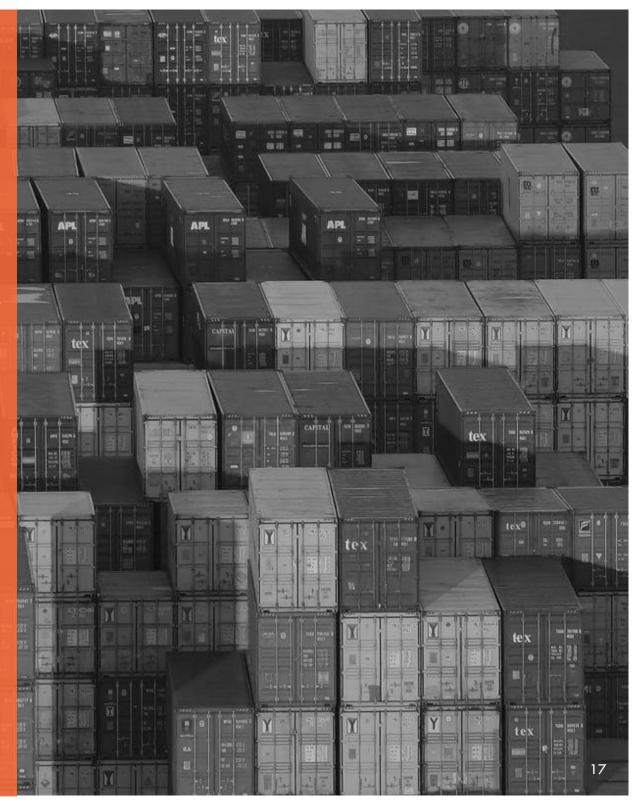
**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

Retail Distribution & Online Retail Fulfillment Centers

Refrigerated Storage



**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

Retail Distribution & Online Retail Fulfillment Centers

Refrigerated Storage

#### Cluster Overview

Logistics & Distribution encompasses a wide range of activities that support the storage and distribution of goods. During the past 25 years, a series of reciprocal trade agreements between the US and foreign countries has contributed to a dramatic rise in global trade. Few clusters have benefited from the development of market opportunities for both foreign imports and domestic exports as Logistics & Distribution. The Logistics & Distribution cluster has also been bolstered by a resurgent domestic manufacturing industry as well as the explosive growth in online retailing. Technological advances that increase efficiency and reduce costs have also helped facilitate increasingly complex supply chains, creating new Logistics & Distribution growth opportunities. Total Logistics & Distribution employment in the US increased by more than 625,000 jobs between 2011 and 2016, growing at twice the rate of employment growth across all industries.

Logistics & Distribution operations typically concentrate in communities that are located near large consumer markets and/or centers of production. The Port of Houston, for example, has thrived thanks to both the accessibility of the Texas consumer market as well as the state's extensive petrochemical presence. Logistics & Distribution operations also require extensive regional transportation infrastructure such as rail, port, and air facilities. The presence of a major port can be critical, as more than 90% of globe trade is transported by sea. The availability of interstate access can also be very important to prospective Logistics & Distribution firms. Finally, a region's tax environment can influence the location of Logistics & Distribution facilities; states and localities that levy a tax on goods in storage are significantly less attractive to Logistics & Distribution firms than locations without such costs.

### **Global Forces**

After several decades of ascendancy, the movement toward growing global economic integration has recently revealed signs of strain. Overall, global trade increased at a snails pace in 2016. Britain's decision to exit the EU may result in significant changes to trade agreements with one of the US's largest trade partners. On the campaign trail, President Trump promised to renegotiate NAFTA. Already, the administration has withdrawn the US from the Trans-Pacific Partnership. The multilateral trade agreement among 12 countries would have encompassed approximately 40% of global economic output. At the same time, talk of "Peak Trade" appears premature. Global trade continues to increase. Brexit may facilitate a direct trade agreement between the US and Britain. The expansion of the Panama Canal, completed in 2016 after nearly a decade of construction, will allow passage of ever larger cargo ships. The Port of Houston will likely benefit from evolving trading routes due to congestion and labor issues at several west coast ports. Should trade policies stay consistent, the EDF service area is in a strong position to continue its manufacturing and trade activity.

**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

Retail Distribution & Online Retail Fulfillment Centers

Refrigerated Storage

LOGISTICS & DISTRIBUTION EMPLOYMENT GROWTH, 2011-2016

**EDF Service Area** 

42.1%

US 15.4%

0% 20% 40% 60%

SOURCE: AVALANCHE CONSULTING / EMSI

#### Niche Sectors

Freight & Rail Transportation Support – Freight & Rail Transportation Support involves activities that facilitate the movement of commodities, industrial products, and consumer goods. While Freight & Rail Transportation Support may involve a variety of transportation modes, truck and rail are responsible for transporting approximately two-thirds of all freight in the US. In the Greater Houston region, however, most freight moves via trucks or sea. Like the Logistics & Distribution sector as a whole, Freight & Rail Transportation Support has benefited from rising global trade, increased domestic manufacturing, and rising energy production. Freight & Rail Transportation Support is expected to sustain these gains in the decades ahead; according to the US Department of Transportation, total truck, rail, and water freight volumes are projected to increase nearly 40% by 2040. Freight & Rail Transportation Support employment is primarily driven by regional transportation assets and global trade dynamics. In the EDF service area, Freight & Rail Transportation Support employment typically reflects activity at the Port of Houston and in the energy industry. Sustained increases in traffic volumes at the Port of Houston have supported strong local growth in Freight & Rail Transportation Support employment. Between 2011 and 2016, the number of Freight & Rail Transportation Support jobs in the EDF service area rose approximately 19%, nearly twice the rate of growth experienced by the sector in the broader Greater Houston region. The sector is also characterized by very high wages; the average salary for a Freight & Rail Transportation Support worker in the EDF service area exceeds \$110,000 annually.

Logistics Management Technologies – Logistics Management Technologies include devices and systems that increase the efficiency, reliability, and safety of the supply chain. In recent years, advances across several Logistics Management Technologies have helped support increasingly cost-effective, complex supply chains. Currently, most innovation involves substantial gains in the collection and analysis of information throughout the supply chain. Sharp declines in the cost of sensor and scanning technologies have supported the growth of automatic identification and data capture (AIDC) technologies that manage inventory, improve security, and track delivery of goods throughout the fulfillment process. RFID and Bluetooth technologies, for example, can provide Logistics & Distribution companies automatic, real-time location information on goods in transit. For specific items such as drugs or volatile chemicals, these devices can even capture and communicate information on temperature and humidity. The rise of cloud computing also allows smaller companies to deploy sophisticated transportation management systems that have traditionally been the domain of larger Logistics & Distribution firms. The rise of big data analytics, when combined with AIDC technologies and transportation management systems, may also help Logistics & Distribution companies improve fleet management by identifying and eliminating inefficiencies in the supply chain. Looking ahead, increased adoption of automatous fleet assets such as robots and self-driving trucks promise even more radical changes in the Logistics Management Technologies sector. 19

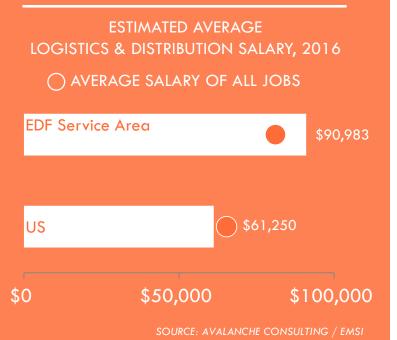
**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

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Refrigerated Storage



#### Niche Sectors

Retail Distribution & Online Retail Fulfillment Centers — Retail Distribution & Online Retail Fulfillment Centers are facilities that store and ship consumer goods. Retail Distribution & Online Retail Fulfillment Centers include internal operations of a larger company such as Amazon or a third-party logistics (3PL) firm that works on behalf of client companies. The rise of online shopping has contributed to an increase in Retail Distribution & Online Retail Fulfillment Centers in four primary ways. Increasing overall demand by online retailers has created a need for additional Retail Distribution & Online Retail Fulfillment Centers. Secondly, the desire to reduce shipping times has forced companies to open new facilities throughout the US. Additionally, online retailing has vastly increased the number of products available to the typical consumer. The average Wal-Mart offers 120,000 items. In contrast, Amazon directly sells more than 12 million products, excluding third-party sellers. The variety of available products further increases the need for Retail Distribution & Online Retail Fulfillment Centers. In 2007, for example, Amazon had constructed less than 4 million square feet of distribution space since its inception. In 2016 alone, Amazon added 15 million square feet to its fulfillment center network. Finally, the rise of Amazon and other online retailers have forced traditional brick and mortar stores such as Home Depot and Target to adopt "omnichannel" distribution strategies that allow consumers to pick up their orders at existing stores or have them delivered, underscoring the need for Retail Distribution & Online Retail Fulfillment Centers. Even Amazon has invested in physical pick-up centers and kiosks throughout the US.

Refrigerated Storage - Refrigerated Storage is one component of a cold supply chain in which products are stored and distributed within a specific temperature range. Demand for Refrigerated Storage is primarily driven by the food industry, including dairy and poultry products, frozen vegetables, and frozen meat. Other markets for Refrigerated Storage include pharmaceuticals and floral products. Approximately 75% of Refrigerated Storage facilities are owned and operated by third-party companies, allowing retailers to outsource much of their cold supply chain needs. The remaining 25% of Refrigerated Storage facilities are company owned. While many larger retailers such as Target and Costco have recently built their own Refrigerated Storage facilities, the overall balance between company-owned and third-party Refrigerated Storage capacity has changed little during the past 20 years. Significant differences exist between the operational requirements of ordinary warehouse facilities and Refrigerated Storage facilities. Specifically, Refrigerated Storage facilities are more expensive to construct and operate. In addition to higher energy costs, for example, Refrigerated Storage facilities also require backup generators to ensure product safety in the event of a power failure. Currently, Refrigerated Storage capacity in the US exceeds 4 billion cubic feet. With more than 250 million cubic feet of refrigerated storage, Texas trails only California and Florida in refrigerated storage capacity. Thanks to strong population growth, total Refrigerated Storage capacity in Texas increased by more than 25% between 2010 and 2015, nearly three times the overall rate of growth in the US. 20

**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

Retail Distribution & Online Retail Fulfillment Centers

Refrigerated Storage

#### **Local Sales Messages**

The EDF service area's thriving Advanced Manufacturing sector and strong transportation network that supports the movement of raw materials, parts, and finished goods make it a natural fit for Logistics & Distribution operations.

- The EDF service area is home to IKEA, Home Depot, and Wal-Mart distribution and fulfillment centers.
- The concentration of Advanced Manufacturing firms in the EDF service area present opportunities to recruit Freight & Rail Transportation Support services to move these commodities and industrial products, including warehousing, materials handling, order fulfillment, and third-party logistics management.
- Between 2011 and 2016, overall Logistics & Distribution employment growth was
  42% in the EDF service area compared to the US growth rate of 15%. Additionally, the
  average Logistics & Distribution salary in the EDF service area was \$90,000 compared
  to the US average of \$60,000.
- Between 2011 and 2016, the number of Freight & Rail Transportation Support jobs in the EDF service area rose approximately 19%, nearly twice the rate of growth experienced by the sector in the broader Greater Houston region. The sector is also characterized by very high wages; the average salary for a Freight & Rail Transportation Support worker in the EDF service area exceeds \$110,000 annually.
- The EDF service area is home to TGS Cedar Port Industrial Park, the largest master-planned rail- and barge-served industrial park in the US. Over 10,000 acres are available for development. TGS Cedar Port will expand their railcar spots from 1,800 to over 3,000. The park will also construct new interchange tracks, bringing the total to six this increases capacity for both United Pacific and BNSF Railway. Additionally, its close proximity to the Port of Houston and the Grand Parkway make it an ideal location for Logistics & Distribution firms.

**NICHE SECTORS** 

Freight & Rail Transportation Support

Logistics Management Technologies

Retail Distribution & Online Retail Fulfillment Centers

Refrigerated Storage

### **Local Sales Messages**

- The **Port of Houston's recent infrastructure investments** include dredging and purchasing larger cranes. The Port will be making another billion-dollar investment over the next 7-10 years in order to increase capacity and meet the needs of post-Panamax ships.
- Thanks to strong population growth, total Refrigerated Storage capacity in Texas increased by more than 25% between 2010 and 2015, nearly three times the overall rate of growth in the US. This presents a unique opportunity for the EDF service area to leverage its competitive location and Logistics & Distribution assets to recruit Refrigerated Storage facilities.

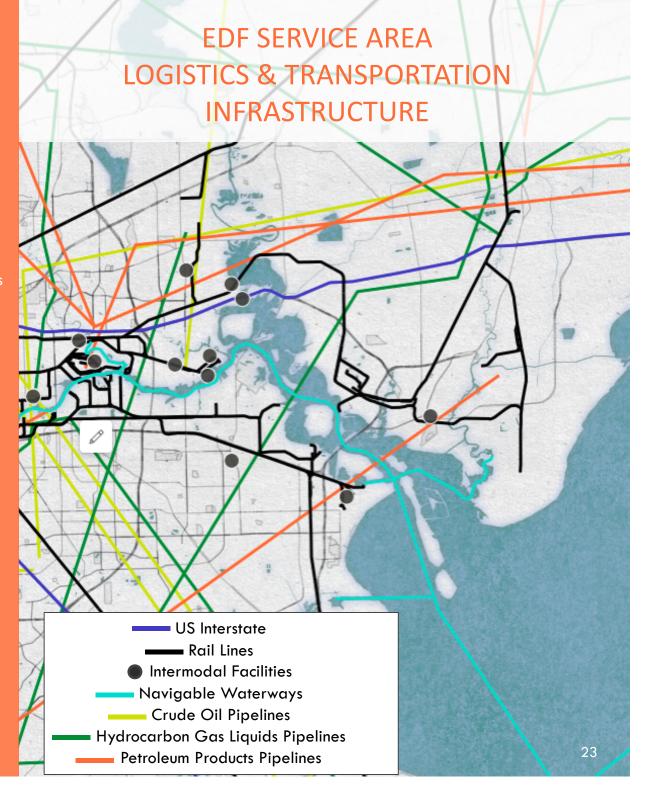
NICHE SECTORS

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**NICHE SECTORS** 

Retail & Dining

**Ecotourism** 

Healthcare Services

#### Cluster Overview

Healthy Lifestyles and Recreation encompasses sectors involved in providing services that address the physical, mental, and recreational wellbeing of individuals. Retail & Dining and Ecotourism encompass more leisurely pursuits such as shopping and eating as well as outdoor activities such as hiking and swimming. The primary focus of Healthcare Services, on the other hand, is improving and extending human life.

Retail & Dining and Ecotourism suffered during the recession as consumers pulled back on discretionary purchases. In recent years, however, the sustained economic recovery has contributed to employment gains in both Retail & Dining and Ecotourism; between 2011 and 2016, total Retail & Dining and Ecotourism employment increased faster than the overall rate of US job growth. If the fortunes of Retail & Dining and Ecotourism typically rise and fall alongside broader macroeconomic forces, Healthcare Services has proven virtually immune to the ups and downs of the overall economy, with jobs gains occurring in both boom times and during economic downturns.

From a workforce perspective, Retail & Dining and Ecotourism have relatively minimal workforce requirements. As a result, location decisions for Retail & Dining are less focused on available labor and instead based on a community's demographic and economic characteristics. Ecotourism typically requires a distinctive environmental feature such as a coastline, mountains, or a river. Healthcare Services firms often cluster near one another to create medical hubs. The most successful hubs attract large numbers of customers and workers; for each Healthcare Services occupation that requires extensive education and training, there are many additional positions that have less specific labor requirements.

#### Global Forces

Healthy Lifestyles & Recreation continues to evolve in response to technological and demographic changes. Many larger brick and mortar retail chains are faltering due to sustained threats from online retailers. In 2016, Amazon reported its best holiday season ever while JC Penney, Kohl's, Macy's, and Sears all suffered declining sales. In response, many retails have embraced experiential and unique offerings that cannot be readily delivered by digital platforms. Although the future of the Affordable Care Act remains highly uncertain, changes in the law are likely. Regardless of public policy, however, demographic forces virtually ensure increased health care spending over the next several decades. According to the Pew Research Center, approximately 10,000 Baby Boomers will turn age 65 and become eligible for Medicare every day for the next 15 years. Even in the absence of an aging population, continued advances in technology and industry fragmentation make significant cost reduction formidable.

**NICHE SECTORS** 

Retail & Dining

**Ecotourism** 

Healthcare Services

HEALTHY LIFESTYLES & RECREATION EMPLOYMENT GROWTH, 2011-2016

EDF Service Area

14.8%



0% 10% 20%

SOURCE: AVALANCHE CONSULTING / EMSI

#### Niche Sectors

Retail & Dining — Retail & Dining includes leisure-oriented establishments such as shopping centers, boutique retailers, and full-service restaurants. The location and geographic density of Retail & Dining outlets is largely driven by local characteristics such as overall population size and concentration, median household income, and the presence of specific consumer markets such as young professionals or immigrants. As the sector is typically characterized by many lower-skill, low-wage positions, the employment benefits of the Retail & Dining sector are modest. Traditionally, the Retail & Dining sector has been targeted by communities looking to increase and diversify their tax bases. In recent years, this dynamic has been complemented by an increased focus on quality of place. In today's war for talent, young professionals often flock to places rich in lifestyle amenities, including communities with plentiful dining options and unique retail outlets.

The rise of online retailers and an increased interest in culinary culture have helped transform the Retail & Dining sector during the past decade. To remain relevant in an age of online shopping, many retailers are offering unique experiences. Newer Restoration Hardware outlets, for example, feature wine bars. A Bass Pro Shop houses a small museum, trout pool, and firing range. Where some stores have become more grandiose, other retailers are thinking small. Historically, big box retailers thrived by offering the widest possible selection at the lowest possible price. With this role increasingly being filled by online retailers that can offer a virtually unlimited selection, several retailers are now emphasizing smaller, curated offerings that include craft items than cannot be found elsewhere. Such establishments are more likely to be locally-owned and locate in unique physical environments, such as a historic downtown or former industrial space. Evolving shopping trends have been accompanied by a heightened emphasis on dining options within retail spaces. As several real estate developers have observed, "Dining is the new retail anchor." Historically, large tenants such as Sears helped draw in customers to a mall while food was often treated as an afterthought. In newer retail developments, however, abundant dining opportunities are likely to be a primary draw for potential customers.

Ecotourism – Ecotourism involves sustainable travel and outdoor recreational endeavors that help preserve the natural environments and contribute to the wellbeing of local residents. Specific Ecotourism activities include hiking, swimming, birdwatching, and fishing. In recent years, Ecotourism has expanded as a growing number of travelers have become aware of the potentially damaging consequences of traditional mass tourism on fragile ecosystems. Given the sector's emphasis on sustainability, Ecotourism firms are typically strong advocates for the environment and can be great community partners. In addition to contributing to a community's quality of place, Ecotourism is also a significant driver of economic activity. According to the Outdoor Industry Association, outdoor recreation generates more than \$646 billion in annual consumer expenditures.

**NICHE SECTORS** 

Retail & Dining

**Ecotourism** 

Healthcare Services

**EDF Service Area** 

\$0

AVERAGE SALARY OF ALL JOBS

US \$47,974

\$25,000

SOURCE: AVALANCHE CONSULTING / EMSI

\$75,000

\$50,000

\$45,924

#### Niche Sectors

Healthcare Services – Healthcare Services involves the provision of medical assistance and includes hospital medical care, outpatient care, dental work, and urgent care. The Healthcare Services sector is highly fragmented and involves many different players, including medical professionals, institutional providers, and health care companies. Larger integrated health care providers may offer a full range of medical services while smaller health care providers compete through specialization and geographic focus. While healthcare research institutions and research hospitals typically cluster near affiliated universities and around established medical hubs, Healthcare Services are far more disbursed throughout the US. Healthcare Services firms typically establish operations in locations with access to a large potential patient population. Facility requirements for physician offices are minimal, though many specialties may prefer to locate adjacent to hospitals and outpatient centers. During the past five years, Healthcare Services employment in the EDF service area increased by 12.5% between 2011 and 2016, approximately 50% greater than the overall level of sector growth in the US during this period.

NICHE SECTORS

Retail & Dining

**Ecotourism** 

Healthcare Services

### **Local Sales Messages**

The Healthy Lifestyles & Recreation sector provides economic opportunity while improving quality of place in the EDF service area. This will help the community become even more attractive to new residents and companies across a variety of sectors.

- The EDF service area has seen an increase in Retail & Dining establishments over the last few years. Continued population growth and demand for high-end Retail & Dining offerings will support continued growth in this sector.
- The San Jacinto Mall redevelopment by Fidelis will enhance Retail & Dining offerings in the EDF service area. The open-air concept outlined in the redevelopment plan is in line with national trends that emphasize lifestyle and an experiential environment.
- The EDF service area's Ecotourism opportunities are vast. Outdoor amenities include Baytown Nature Center, Great Texas Coastal Birding Trail, and Anahuac National Wildlife Refuge, to name a few. Outdoor recreation opportunities include fishing, bird watching, boating, and paddling. Annual events, such as Gator Fest, draw in visitors from throughout the region and state.
- The EDF service area's **increase in hotel offerings** will support the Ecotourism sector. This includes the 115-room Hilton Garden Inn Baytown scheduled to open in 2017 and an 85-room TownePlace Suites Baytown scheduled to open in 2017.
- The City of Baytown's acquisition of waterfront property and the potential development of a Hotel and Conference Center on the Bayland Island waterfront lends itself to additional Ecotourism opportunities.
- Population growth in the EDF service area will drive demand for Healthcare Services.
   During the past five years, Healthcare Services employment in the EDF service area increased by 12.5% between 2011 and 2016, approximately 50% greater than the overall level of sector growth in the US during this period.
- Lee College offers programs that support the local Healthcare Services sector, including Certified Nursing Assistant, Certified Medical Assistant, Dental Assisting, and Phlebotomy. An Electrocardiogram (EKG) Technician program and Emergency Medical Technician (EMT) program are also being developed.