



Southwest Mississippi

THE PLACE FOR
METAL
FABRICATION



SOUTHWEST MISSISSIPPI PARTNERSHIP

Accessibility

888.528.2390 • www.southwestmississippi.us

THE PLACE FOR METAL FABRICATION

Executive Summary 1

Introduction 3

Overview of Southwest Mississippi 4

- Area Description
- Historical Background
- Economic Development Trends
- Business and Industrial Investments
- Dedication to Development

Location Advantages for
Metal Fabrication Facilities 7

- The Metal Fabrication Industry
- Why Locate a Metal Fabrication Plant
in Southwest Mississippi?

Cost-Saving Opportunities 13

- Personnel
- Building and Land
- Combined Building and Land Costs
- Energy Costs
- Taxes
- Summary of Costs



SOUTHWEST MISSISSIPPI PARTNERSHIP

Accessibility

888.528.2390 • www.southwestmississippi.us

Contact: Britt Herrin, President
Post Office Box 83, McComb, Mississippi 39648
800-399-4404 or 601-684-2291.

Executive Summary

“Southwest Mississippi is an especially attractive location for metal fabrication plants and manufacturers of devices made from metal.”

This has been documented by BFPC, LLC, a leading site selection and location strategy consulting firm. BFPC recently completed an in-depth investigation of the Southwest Mississippi region and its economy.

Metal Fabrication was selected for its particular ability to take advantage of economic, business, and other conditions in the area. Reasons for selecting this industry as a target include the following Southwest Mississippi area assets:

- Selected business costs over **22% below typical or national average costs for metal fabrication facilities**. Projected costs for staffing, construction, utilities, and certain taxes and other expenses to establish and operate a fabrication plant in Southwest Mississippi are well below the comparable US national average figures. Details of these savings are presented at the end of this report.
- Above average **availability of personnel experienced in manufacturing** due to a well-established industrial base—over 7,400 people work in 140 manufacturing plants in Southwest Mississippi. About 830 of them are employed at the 21 existing metal fabricating facilities widely distributed throughout Southwest Mississippi, so there is much specific experience for companies to draw from. Local industrial training facilities contribute to labor availability. The area’s attractiveness as a living environment, with a high quality of life and low cost of living, support transfer and recruitment of people from outside the immediate area.
- A **high level of preparedness**. Southwest Mississippi has been the location of major manufacturing and other industrial activity for many decades. It is at a high level of readiness for new de-



Southwest Mississippi has an above average availability of personnel experienced in manufacturing.

velopment, with a wide choice of sites and existing buildings ready for quick use by metal fabrication plants. Major investments are being made in new industrial parks and sites and supporting access/infrastructure.

- **Academic, research, and industrial assistance capabilities directly related to metals**. Mississippi State University, the state’s primary technology-oriented institution, has extensive programs in all branches of engineering. These include many specifically related to metals and fabrication such as the fatigue and fracture study capabilities of the Walker School of Aerospace Engineering and other components of its Bagley School of Engineering. The University of Southern Mississippi in Hattiesburg, about an hour from the eastern edge of the Southwest Mississippi region, also has programs through the PhD in fields relevant to metals. In the Southwest region itself are Alcorn State University, Copiah-Lincoln Community College, and Southwest Mississippi Community College, which offer diverse business and industrial training and education through the master’s level.



continued

- **Huge regional customer base.** The South is by far the fastest-growing region in the US, both in population and in business development. Numerous metals-using industrial plants and other major consumers of fabricated metals are in and near Mississippi; more information is in the body of this report.
- **Excellent transportation including access to major markets for fabricated metal products.** I-55 connects Southwest Mississippi with Louisiana and the Gulf Coast where many chemical plants, petroleum refineries, drilling facilities, and other users of large fabricated metal equipment are located. It proceeds on to Chicago and other industrial centers of the Midwest. I-20 between Atlanta and Dallas is just to the north, and there are several other major highways. The main north-south line of the CN Railway parallels I-55 as it passes through the region and also hosts Amtrak passenger service. Commercial airports including Jackson, New Orleans, and Baton Rouge are within one to two hours drive of various parts of Southwest Mississippi. Several Southwest Mississippi airports serve corporate aircraft.
- An aggressive state economic development policy including a **right-to-work law established in the Mississippi Constitution**, an attractive **package of industrial development incentives**, and other policies contributing to a measurable growth of the state economy. Mississippi ranks well above the national average—as well as above many other states such as Texas and Florida—in the increase of its average compensation and other economic development and socioeconomic indicators.
- A **growing regional business sector.** The Southwest Mississippi economy has generated new jobs at a time when many areas experienced a decline in employment. Total jobs in the ten-county area grew over 2.5% during the most recent five-year period for which US Commerce Department figures are available.
- A **quality of life that supports recruitment, transfer, and maintenance of staff.**
 - A scenic environment including the Mississippi River and the Homochitto National Forest. Throughout Southwest Mississippi are beautiful historic houses and other structures in classic downtown settings. This attractive setting is combined with easy access to New Orleans, Jackson, and the Gulf Coast.
 - A cost of living 15% to 25% below the national average.
 - Local culture and entertainment including college sports.

The Southwest Mississippi economy has generated new jobs at a time when many areas experienced a decline in employment.



More data about Southwest Mississippi and the region's advantages for your company are available from the

SOUTHWEST MISSISSIPPI PARTNERSHIP

Britt Herrin, *President*

Post Office Box 83

McComb, Mississippi 39648

800-399-4404 or 601-684-2291

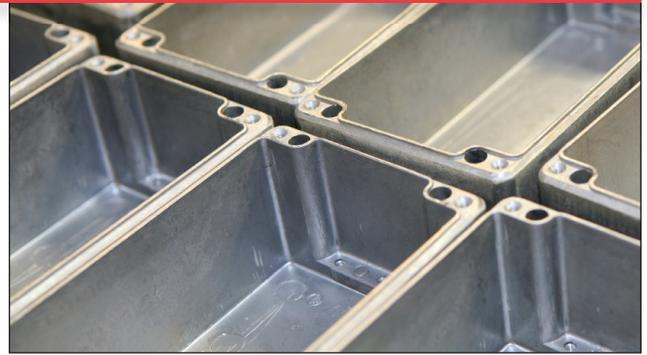
www.southwestmississippi.us

Introduction

Mississippi has been a national leader in economic development for decades, having made a very successful transition from a traditional agricultural base into one of the most dynamic business and industrial economies in the nation. Nowhere is this optimistic, forward-looking attitude more evident than in Southwest Mississippi, where ten counties have banded together to undertake creative new economic development activities.

This regional organization, the Southwest Mississippi Partnership, has begun a new campaign to market this area as a location for specific businesses and industries that can profit from its appealing features. The Partnership is supported by many regional and statewide economic development allies including:

- The Mississippi Development Authority,
- Entergy (the commercial provider of electric energy to Southwest Mississippi),
- The Electric Power Associations of Mississippi (representing the electric cooperatives), and
- Momentum Mississippi (a unique public-private organization dedicated to advancing the state's economy).



BFPC, LLC, a major international site selection and location consulting firm, has been retained to provide professional counsel to this program. It was charged to identify specific business activities that are a particularly good fit with the locational attributes of Southwest Mississippi, and which might benefit by establishing a facility in the community. This was based on a solid, focused business and economic analysis as well as extensive experience assisting businesses to identify the right location for new and expanding facilities and investments.

The study concluded that Southwest Mississippi is an especially appropriate and attractive location for metal fabrication plants. This report provides details and makes a strong business case why companies in this large and important industry should consider Southwest Mississippi as the location for new and expanded production facilities.



SOUTHWEST MISSISSIPPI PARTNERSHIP

Accessibility

888.528.2390 • www.southwestmississippi.us

Overview of Southwest Mississippi

AREA DESCRIPTION

The area covered in this report is a ten-county region in the southwest corner of Mississippi along the Louisiana border between the Mississippi and Pearl Rivers. All ten have linked together for economic development purposes as the Southwest Mississippi Partnership. Component counties are Adams, Amite, Claiborne, Franklin, Jefferson, Lawrence, Lincoln, Pike, Walthall, and Wilkinson. Bridging the area between the Jackson and Baton Rouge metropolitan areas, the region contains 5,268 square miles and about 187,000 people. Larger urban areas of the ten-county region include Brookhaven, McComb, and Natchez, which are Micropolitan Statistical Areas, as defined by the US Census Bureau.



Major transportation routes include I-55 which passes through Southwest Mississippi as it connects New Orleans with Memphis, St. Louis, and Chicago. The Natchez Trace Parkway follows a historic route from Natchez to Nashville, Tennessee. Interstate highway 20 lies just north of the ten-county area; I-10 and I-12 are about 30 miles south. US Highways crossing the region include 61, the “Blues Highway,” that parallels the Mississippi River from Louisiana to Minnesota; 84 en route from the Atlantic Ocean to Colorado; and 98 from Florida to the Mississippi River. Southwest Mississippi is also served by a major north-south line of CN Railway (formerly Illinois Central) on which Amtrak’s “City of New Orleans” passenger train runs along with heavy rail freight traffic.



From the southern edge of Southwest Mississippi, it is about 60 miles to New Orleans via I-55, so residents have easy access to the services and amenities of a major metropolitan area. At the same time, this part of Mississippi is 75 or more miles from the Gulf so that it is out of the hurricane impact area. In fact, Southwest Mississippi provided shelter for many persons who left New Orleans as a result of Hurricane Katrina.

continued

HISTORICAL BACKGROUND

Southwest Mississippi was founded as a fortified settlement in 1716 and held successively by France, Great Britain, Spain, and the United States. The region prospered as the south terminus of the Natchez Trace, a road connecting the area with Nashville, Tennessee, that was commercially and strategically important through the early 19th Century. Natchez became a great river port and cultural center before the Civil War and was the state capital from 1817 to 1821 as well as home of the state's first institution of higher education. Benefiting from the rich surrounding agricultural area, Southwest Mississippi became a shipping and processing center for soybeans, corn, cotton, livestock, and timber. It also served as the commercial hub for a wide area of Mississippi and Louisiana.

Other cities in Southwest Mississippi such as Port Gibson developed as part of the river-based exchange of agricultural products from the South and manufactured goods from upstream cities such as Louisville, Cincinnati, and Pittsburgh. Brookhaven, McComb, and other cities inland from the river sprang up with construction of roads and railroads from New Orleans north to Jackson and Memphis. In the 1800's, Southwest Mississippi was a classic American melting pot, with immigrants from Europe and Asia, free people of color, and relocatees from the North and East. Southwest Mississippi has effectively preserved its antebellum charm and the area's extraordinary past is documented today by its many historic houses, commercial buildings, churches, synagogues, and other structures.

The area has generated arts, culture, literature, and music ranging from classical to Blues. The Mississippi Blues Trail commemorates artists such as McComb native Bo Diddley, harmonica player Papa Lightfoot, and the Rabbit's Foot Company which started in Port Gibson in 1900. Amite County native Jerry Clower was a writer, comedian, and recording artist who made regular



Southwest Mississippi has effectively preserved its antebellum charm.

appearances on the Grand Ole Opry. Southwest Mississippi has developed a large tourism industry that attracts visitors worldwide to experience its unique heritage and sincere southern charm.

ECONOMIC DEVELOPMENT TRENDS

The earliest commercial development in Southwest Mississippi was trade via the Mississippi River, which continues to be important. The Port of Natchez maintains bulk and liquid terminal facilities and infrastructure to support barge traffic. Interior counties of Southwest

Mississippi held huge stands of pine and other trees. The post-Civil War construction boom and expanded railroad service promoted development of a major lumber and forest products industry which also continues to be important through the present.

Mississippi's establishment of the nation's first comprehensive state economic development program in the 1930's helped expand regional business activity. Manufacturing plants were constructed to produce clothing, textiles, wood and forest products, electrical appliances, fabricated metals, and machinery. Thus the current effort to recruit metal fabrication plants builds on nearly a century of previous manufacturing activity and takes advantages of skills and knowledge in this area developed over several generations.

While Southwest Mississippi has diversified and now has a well-rounded economic base, manufacturing remains a key component of its economy. Currently the region has about 7,400 employees in 140 plants, with facilities in each of the ten counties of the region. Details on these companies and other aspects of the individual counties are available at: [http://www2.locationone.com/\(S\(3meafz45gc3zvfcxwljarj45\)\)/StateMain-Page.aspx?type=state&profileid=MS-Mississippi](http://www2.locationone.com/(S(3meafz45gc3zvfcxwljarj45))/StateMain-Page.aspx?type=state&profileid=MS-Mississippi).

continued

State and community leaders make it clear that manufacturing continues as the cornerstone of economic development. Mississippi has worked diligently to create an attractive and prosperous setting for industry. It has received well-deserved attention and compliments for some of its large successes such as Nissan, but has also made a point of striving to recruit and accommodate medium-sized and smaller facilities as well. The list below illustrates the variety of industry in Southwest Mississippi.

BUSINESS AND INDUSTRIAL INVESTMENTS

A quick scan across Southwest Mississippi shows that its economic development work has been successful; for example:

- Adams County:** Delta BioFuels, Dynasteel (steel rolling), Stine Lumber
- Claiborne County:** Southern Lumber
- Lawrence County:** Atlas Manufacturing
- Lincoln County:** Great Southern Yella-Wood, EPCO Carbon Dioxide, Reed's Metals, Rex Lumber
- Pike County:** Summit Plastics, Weyerhaeuser, Magnolia Biofuel
- Walthall County:** Brigade Manufacturing, Kalencom Stringer Industries
- Wilkinson County:** Netterville Lumber Company, Magnolia Honey Jelly

A promising event related to the former International Paper site in Natchez is the potential for its re-use for production of synthetic jet fuel described in <http://www.vicksburgpost.com/articles/2009/12/20/opinion/doc4b2bedc473684264533488.txt>.

DEDICATION TO DEVELOPMENT

One reason for continued manufacturing growth is the vigorous ongoing effort to maintain the area at a high state of readiness. The communities of this part of Mississippi have worked hard to develop sites and buildings, train workers, ensure widespread availability of energy and utilities, and assist prospects with a quick path to profitability. Over 800 acres of new industrial parks and sites have been made available in the past three years.

Workforce preparation is managed through area high schools and two state postsecondary schools with campuses throughout Southwest Mississippi: Copiah-Lincoln Community College and Southwest Mississippi Community College. In April, 2010, SWMCC broke ground on a new \$6 million, 80-employee Regional Workforce Training Center which will greatly expand the college's capability to train workers for a wide range of positions.

Alcorn State University, rated by US News among the nation's best colleges, maintains its historic main campus in Claiborne County. Its new center in Natchez houses the Nursing and MBA Program (<http://colleges.usnews.rankingsandreviews.com/best-colleges/alcorn-state-ms/alcorn-state-university-2396>). Its academics include diverse business and professional training and education through the master's level to 3,500 undergraduate and graduate students. Alcorn is true to its land grant university heritage with many outreach programs to make its capabilities available to local business and industry clients.

PhD programs in engineering, materials science, and other relevant disciplines are offered by Mississippi State University and the University of Southern Mississippi.



Location Advantages for Metal Fabrication Facilities

Southwest Mississippi's counties comprise a unique and particularly attractive location for facilities that fabricate and assemble products composed primarily of metal. This section begins with a concise review of business conditions and trends in the metal fabrication industry. It then points out how Southwest Mississippi is well suited to serve this industry's locational needs.

THE METAL FABRICATION INDUSTRY

Industry Definition. The primary target envisioned in the category is NAICS Code 332. This sector includes a very broad diverse range of technologies for shaping and treating metal and joining or assembling it into certain products. The output of the sector may be a structural component such as a beam or plate that goes on to become part of a building, tower, boiler, or other assembled device; and may also be the finished fabricated equipment or device such as a tool, spring, container, valve, bullet or piece of hardware. It uses means such as forging (heating metal to a malleable but not molten state and using hammers, dies, or rollers to achieve the desired shape), stamping (subjecting it to heavy forces that push the metal against a shape or form), and casting (heating metal until it becomes molten and pouring or injecting it into a mold or form).

Industries that plate, coat, engrave, or heat-treat metal are also categorized in this sector. However, this industry does not include basic metals processing (ore refining and smelting and the production of basic metal forms and shapes by rolling or drawing) nor does it include the manufacturing of machinery such as vehicles and industrial equipment, although that business is a consumer of the fabrication industry's products.

About 1.6 million employees work in about 60,000 US establishments in the industry. By number of jobs, it ranks second only to transportation equipment among the 21 major manufacturing industry sectors and comprises nearly 12% of all manufacturing employment. Annual value of its production is about a quarter of a trillion dollars. The products of this industry are used by virtually every sector of the business, industrial, and consumer market. Anything which is made of metal, or has any metal components, or which has gone through forming and shaping processes originally developed to handle metal passes through the facilities of this industry. The industry has dozens of subsectors, some of which are described on the following pages.

Machine Shops. By far the fastest-growing subsector of the industry is that involving machine shops and related facilities which use a variety of physical, chemical, and other processes to shape metal, plastics, composites, and other materials. Some of the products are mass-produced, while some are short runs of customized items such as parts for machinery. They are also often involved in maintenance, repair, and upgrading of machinery. Much of the activity of the industry is highly automated, such as computer-controlled metal turning and cutting equipment, but many processes also require a high level of personal technical skill. This is a business where

long periods of apprenticeship and exposure to more senior staff are common. This industry underlies a wide range of US business and industrial activities and represents some of the highest added value. Many machine shops are relatively small—15 to 20 employees—and highly focused on a given product, service, or client.

continued



Metal Structural and Architectural Products. The manufacture of structural and architectural metal products is another segment which has shown robust growth in the past decade, although the recent decline in construction has certainly affected it. Its products range from complete prefabricated metal buildings to major components of bridges and civil engineering works, electrical transmission towers, and structural steel for buildings. Many buildings, especially those for industrial purposes, have structures and exteriors comprised primarily of metal beams, panels, and other components that are prefabricated in this industry's manufacturing plants; this results in major savings of time and effort when the buildings are constructed on site.

Industrial materials handling systems are often made primarily of components produced by this business, such as hoppers and conveyors. It also manufactures many types of architectural products such as windows and doors and decorative sheet metal work. The facilities of this subsector tend to be much larger than those of machine shops; and since they are often preparing large components they may have a sizable physical footprint. The equipment needed to carry out operations such as stamping and bending of major components can be large and require a special production environment with high ceilings and strong floors and foundations to support heavy moving machinery.

Boilers, Tanks, and Shipping

Containers. Another expanding business is the production of large but often precisely made equipment used in manufacturing, energy generation, health care, transportation, and other applications.

Boilers and related devices are often huge and heavy but must also be designed and assembled to a high degree of precision since they must safely contain gas, steam,

or corrosive vapors under high pressure. Containment vessels for nuclear reactors, chemical plants, and other major industrial activities also are assembled by this industry. Its products are a key part of equipment used in environmental controls and in specialized processes such as autoclaves which use high temperatures and pressures to sterilize medical and health care equipment, an essential function for hospitals. Many products of this type are made of stainless steel, titanium, and other unusual metals whose fabrication requires special capabilities.

Shipping containers are used more and more widely. Transportation of many goods can be conducted more efficiently if the products are enclosed in a standard sized sealed container that can be handled by cranes and easily placed on ships, rail cars and trucks, and which protect their contents from dirt, the elements, and pilferage.



Coating, Plating, and Other Treating of Metals.

A somewhat separate but growing part of the fabrication business is the treatment of metals—often after they have been manufactured or assembled into a product—to improve them or add some new characteristic. These processes include metal plating and coating, in which a thin layer of new material is applied to make the product stronger, more attractive, or more resistant to rust or wear; to improve its capacity to conduct electricity or heat; or to impart some other desirable engineering characteristic. Some coating processes are essentially nanotechnology, where the glazing may be only a few molecules thick.

Another service is various types of heat treatment, which can change the physical and chemical characteristics of metals at the atomic level. The resulting recrystallization

Another service is various types of heat treatment, which can change the physical and chemical characteristics of metals at the atomic level. The resulting recrystallization

continued

makes metal harder, softer, stronger, more ductile, or better in other aspects for a given use. This is a very useful way to manufacture some metal products, since they can initially be machined, drilled, cut, or turned while in a relatively soft, easily manageable state; then after being assembled they can be tempered to become much stronger and more rigid. Heat treating can restabilize items whose strength was reduced by welding.

Low-Technology Metal Fabrication. Some metal shaping technologies have remained essentially unchanged for centuries. Not surprisingly, several of these parts of the metal fabrication industry are not growing in the US—often unsophisticated forming and shaping activities. Many hand tools, small pieces of hardware, springs, wire, and other metal products used in consumer and non-critical applications can often be made less expensively in China and other overseas locations.

Emerging Technologies. While some metal fabrication methods have existed for thousands of years, the industry is also benefiting from research and development efforts that are leading to totally new approaches for working metals. For example, **Powder Metals** processing is a new addition to the inventory of metal shaping methods, along with forging, stamping, and roll forming. It has potential both to replace some traditional metalworking methods and to offer new ways of producing items which are difficult or complicated to manufacture by conventional metal shaping mechanisms.

Production of devices by PM technology begins with compounding a precisely defined mix of one or more metals (and possibly also ceramics, plastics, and other materials) and additives such as lubricants. The material is in the form of fine powder, with individual particles often no more than a micron in diameter. The choice of powders and additives imparts various desired characteristics to the finished product.

The compound is then compacted—a common method is to force it into a mold under pressure. This action mechanically compresses the mix together to a point where its density is about 80% that of solid metal. The item being produced has some degree of stability at this point, simply from the friction holding the particles with each other (like a castle on the beach made by squeezing together handfuls of sand) but it is still brittle and fragile. In the trade, the product is now called a “green compact.” The compact then goes through the process of sintering. This involves heating it below its melting point but high enough to bond individual metal particles. Microscopic physical connections or bridges are formed among powder particles. At this point it is much stronger and denser, now around 95% of the density of solid metal. Parts so made may possibly then be used as is, or subjected to further processing such as machining or polishing.

Components produced this way are more precise than those shaped by some other metalworking technologies, which often require further machining before they meet their final dimensional and quality levels. Raw forgings and castings, for example, are often 20% larger than the finished product and must often be machined to final dimensions, a process requiring skill and expense and generating much waste. The strength of products made by powder metal can be close to that of metals shaped by other means, but the cost can be lower because PM technology usually requires less energy, simpler equipment, and fewer steps in the process.

Powder metal production allows modifying certain physical properties of the material being formed. For example the mix may include a lubricating agent so that the finished item (say, a gear) is self-lubricating, or another metal to be alloyed with the primary metal. Some basic metallurgical properties can be determined or altered via powder metal technology. Characteristics such as density and porosity of the finished item can be affected according to

The industry is also benefiting from research and development efforts that are leading to totally new approaches for working metals.

continued

features desired in the end product. There is no need for large, fast-moving machinery of the type sometimes used in stamping and forging, which can require heavy floors and foundations and has the potential to be dangerous to the operators. Powder metal approach allows the working of some metals that do not lend themselves to other shaping technologies—it is difficult to machine, forge, stamp, or cast some metals and alloys.

Friction Stir Welding is another emerging metal fabrication technology, used to join certain products made of aluminum and other metals that are not candidates for conventional welding. It is useful to assemble products such as aircraft, where bonds must be strong, and results in lighter weight than alternative metal joining processes such as rivets or nuts-and-bolts. It can bond panels composed of dissimilar metals.

Composite Materials are comprised of diverse materials; a common product is carbon or metallic fibers contained in a matrix of plastic or other polymer base. The resulting material can be lighter and stronger than either component used alone, and has uses in aircraft, other transportation equipment, medical/surgical devices, and numerous others.

WHY LOCATE A METAL FABRICATION PLANT IN SOUTHWEST MISSISSIPPI?

Southwest Mississippi is particularly well suited as a location for metal fabrication plants and functions. This is due to a combination of unique local conditions as well as a diligent effort by the community to welcome new manufacturers and provide an operating environment that allows them to prosper. Here are some specific reasons:



Aircraft manufacturers are one of the major consumers of fabricated metal parts...

Market Opportunities in the Surrounding Region.

A Southwest Mississippi location puts metal fabricators in the middle of the fastest-growing part of the nation. The region from Texas to the Southeast ranks highest in expansion of demographics, economic development, purchasing power, and other key indicators of market strength.

There is a strong market for fabricated metal products and services to metal-using industries in and around Mississippi. Specific examples include:

Aviation. Mississippi has identified aviation and aerospace as a focus for development, both on its own and in collaboration with nearby states. Air-

craft manufacturers are one of the major consumers of fabricated metal parts and have a need for a wide variety of sophisticated components. American Eurocopter, a subsidiary of EADS North America, opened a production plant in Columbus, Mississippi, in 2006 at which it is manufacturing UH-72A Lakota for the US Army and other helicopters. Southwest Mississippi is well positioned to serve that plant as well as one owned by the company in Dallas, Texas.

The Stennis Space Center located in southern Mississippi near Louisiana is NASA's largest rocket engine test facility. Moss Point houses Northrop Grumman's Unmanned Systems Center. There is a chain of important US Air Force installations extending from Biloxi eastward into Northwest Florida. The Raspet Flight Laboratory at Mississippi State University focuses on materials for lightweight aircraft systems.

Other Transportation Equipment Manufacturing.

Facilities in and near Southwest Mississippi include the Northrop Grumman Shipbuilding plant and the Rolls Royce Naval Marine center in Pascagoula, Mississippi. American Railcar Industries maintains a major facility in Southwest Mississippi.

continued

Energy. Southwest Mississippi is an excellent location from which to serve the oil and gas industry. Drilling and extraction activities require towers, platforms, and other major structures. Southwest Mississippi is close but benefits from being outside the area of probable hurricane impact. Plants in this area are unlikely to be shut down due to storms or surges.

Emerging energy generation technologies are also being explored. Solar shows promise, given the area’s sunny climate. New plants manufacturing components of solar panels and other components of photovoltaic generating systems are under construction in Mississippi and adjacent states. License applications have been filed for a second unit at the Grand Gulf generating station in Port Gibson, Mississippi; electric generating facilities require extensive amounts of fabricated metals and metal parts.

Availability of Good People.

Southwest Mississippi is better prepared than many other locations to offer well qualified employees to a new or expanding metal fabrication plant. Availability of people with industrial work backgrounds, often going back several generations, is a main feature—over 7,400 people currently work in 140 manufacturing plants here, according to the latest US Commerce Department data. About 830 of them work in 21 metal fabricating plants widely distributed throughout Southwest Mississippi, so there is much existing specific experience for companies to draw from.

Mississippi’s industrial training programs are among the nation’s oldest and best. The state is constantly updating and expanding its training capabilities, with the new Regional Workforce Training Center in Southwest Mississippi a primary example. Mississippi has advanced steadily up the ranks of states in improving the quality of jobs and income of its citizens. It ranks well above the national average in the increase of average pay received by its private sector employees over the most recent five-year period for which complete statistics are available. This reflects a

workforce in Southwest Mississippi that is better educated and prepared to be productive for employers.

With the area’s quality of life, low cost of living, and proximity to urban and ocean attractions, it is possible to recruit skilled people from other areas. Mississippi has a right-to-work law and low unionization. Although its average income is lower than the national average, its percentage of home ownership is higher, reflecting a strong work ethic, sense of personal responsibility, and commitment to the area.

Public Policies. For nearly 80 years, Mississippi has made economic development a priority of the state. Its “Balance Agriculture With Industry” initiative, begun in the 1930’s by Southwest Mississippi native and Governor Hugh White, was the first comprehensive statewide public economic development program in the nation. Many techniques that became keystones of business recruitment and expansion, such as industrial development revenue bonds, emerged from this innovative program. While many other states’ programs have often been inconsistent and variable, Mississippi’s focus on economic development has remained firmly in place through changes of time, administration, and other conditions. Public officials up to the Governor have made it clear that economic development is a primary responsibility of the state and its communities. The state has a widely recognized reputation for aggressive recruitment, thorough attention to the needs of prospective and existing companies, and works hard to close deals with new and expanding companies.

Some states have incentives and other recruitment efforts that sound impressive but are actually available to only a few prospects. Mississippi has a record of supporting business development at all levels, including small and start-up facilities. Its incentives can lead to payback of

continued



Mississippi has made economic development a priority.

a large percentage of a new or expanding operation's capital expenses. Details on these programs are available from the Mississippi Development Authority website at: <http://www.mississippi.org/index.php?id=45><http://www.mississippi.org/index.php?id=458>

Manufacturing plants have faced difficulties and reluctant public acceptance in much of the US. Mississippi, by contrast, is proud of its commitment to attract new production industry and has made this process easier for companies than virtually any other state. Success of this policy is clear. US Commerce Department data show that the contribution made to the Mississippi economy by its manufacturing sector has grown at a rate well above the national average (at a time when it has declined in some states). Manufacturing is well established in Southwest Mississippi. People living here understand the value and opportunity which it brings.

Transportation, Infrastructure and Business Support Services. Southwest Mississippi has been an important business and industrial center for many decades and has a wide range of services likely to be needed by a metal fabrication plant.

It is well-served for inbound and outbound shipping. The presence of Interstate Highway 55 and a major CN Railway line make up an important transportation advantage, reducing cost and time of inbound raw materials shipment. No part of Southwest Mississippi is farther than a one to two-hour drive from a commercial airport. Within the ten counties are several general aviation airports capable of handling

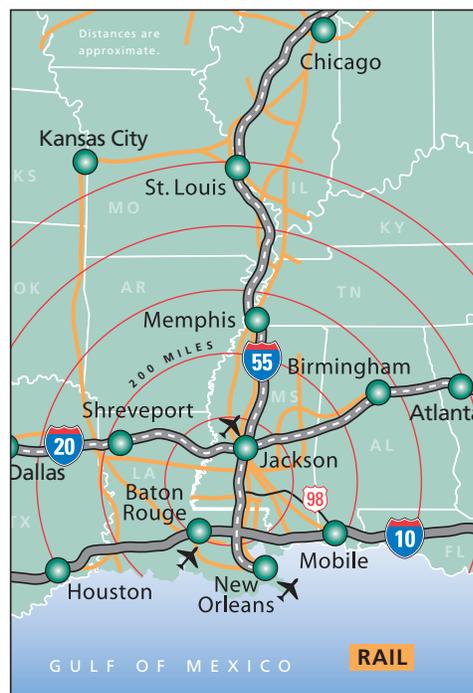
large corporate aircraft and some with major service and maintenance capabilities. These include Brookhaven Airport (5,000 X 75-foot runway), Hardy-Adams Field in Natchez-Adams County (runways of 6,500 X 150 and 5,000 X 150 feet), and Lewis Airport in McComb-Pike County (5,000 X 75-foot runway).

Virtually all providers of specialized services such as repair and maintenance specific to metal fabrication plants are readily in and near Southwest Mississippi.

Preparedness. A terrific general business climate is not of much use to a company unless the area has available sites and buildings ready for quick acquisition and use. Most counties in Southwest Mississippi have developed publicly-owned industrial parks and sites, some have available buildings, and the utilities, energy, and industrial support services likely to be needed by a metals fabrication facility of almost any type are in place in many areas. Industrial property is available in all ten counties of Southwest Mississippi. Over 800 acres—more than a square mile—of newly prepared industrial parks and sites have come on line in the area recently.

Other infrastructure is also widely available, such as broadband telecommunications networks, electric service at a variety of voltages suitable for various industries, and natural gas lines.

Favorable Economics. A metal fabrication plant in Southwest Mississippi can possibly save over 22% relative to the US average for the industry. This asset is so important and compelling that it deserves more detail, which is provided in the following chapter.



Cost-Saving Opportunities

Southwest Mississippi offers metal fabricating plants the potential for more than a 22% reduction in capital and operating costs, compared with the national average or typical costs for such facilities. This section illustrates some of those potentials. It estimates certain costs for a hypothetical production facility in Southwest Mississippi and then compares them with national average or typical costs for plants in the industry. This hypothetical plant consists of a 50,000-square foot building on a site assumed to be 20 acres and is assumed to employ 50 personnel. Its electrical energy consumption is 30 million kilowatt-hours per year, a load based on similar plants in this industry.

PERSONNEL

The national average annual pay for a typical metal fabrication plant is estimated from various public and private sources to be about \$52,500. It is estimated that a similar pool of employees could be hired in Southwest Mississippi for an average of \$41,000. This is based on data from public sources including the US Department of Commerce and discussions with managers of numerous industrial plants in Southwest Mississippi. On this basis, annual direct wage costs for 50 employees in Southwest Mississippi would be \$2,050,000, while the national average would be \$2,625,000.

Benefits are estimated to cost an additional 34% in both cases, annually costing \$697,000 in Southwest Mississippi and \$892,500 in the national average plant.

Therefore the total annual personnel cost in the hypothetical Southwest Mississippi production plant would be \$2,747,000 and in the national average plant \$3,517,500.

On this basis, **a metal fabrication plant located in Southwest Mississippi could save its owner \$770,500 per year in staffing costs.**

BUILDING AND LAND

On a national average basis, construction would probably cost \$200 per square foot. This reflects heavy construction with strong floors, high ceilings, and structures capable of supporting cranes. A building of 50,000 square feet would thus cost \$10,000,000.

The 2010 R.S. Means Building Construction Cost Data report indicates that construction costs in Southwest Mississippi are about 78.4% of the national average. Therefore a local cost of \$7,840,000 is assumed for constructing the hypothetical plant. **This is a saving in construction costs of nearly \$2.2 million.**

A recent national average estimate for above-average quality industrial sites was \$37,000 per acre. In Southwest Mississippi, serviced land can be purchased for \$12,000 per acre, and possibly even less. So for a site of 20 acres, the national average cost would probably be \$740,000 and the Southwest Mississippi cost would be \$240,000, representing **savings in land costs of one-half million dollars.**

COMBINED BUILDING AND LAND COSTS

Based on the above assumptions, the national average cost for building and land together would total \$10,740,000; while in Southwest Mississippi the comparable cost would be \$8,080,000. The total in Southwest Mississippi would be nearly \$2.7 million lower.

One way to express this cost in a manner comparable to wages and other ongoing expenses is to spread it across a period of years, in a manner similar to a mortgage. Even if the firm does not literally borrow money from a bank, in effect it pays an opportunity cost for money that could otherwise be invested or used profitably elsewhere.

Based on a 6% interest rate and monthly amortization over 8 years, annual payments for the national-average facility would be \$1,693,664. In Southwest Mississippi, this cost would be \$1,274,190. This amounts to **an annual saving of nearly \$420,000 in facility costs in Southwest Mississippi compared with the national average.**

continued



Construction costs in Southwest Mississippi are about 78.4% of the national average.

ENERGY COSTS

Based on a review of similar plants, the hypothetical metal fabrication plant considered in this study is assumed to have an annual average electricity consumption of 30 million kilowatt-hours with a 5 MW load. According to the US Energy Information Administration, the national average cost for electric power sold to industrial users is \$0.0655/kilowatt-hour (*Electric Power Monthly*, data for February, 2010, http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html). It is thus projected that the nationwide average annual electric power cost for a plant with these requirements would be \$1,965,000. Based on estimates from Entergy, which supplies electric energy to much of Southwest Mississippi, the likely rate would be \$0.0456/kilowatt-hour so the plant's total annual average electric energy cost would be \$1,368,000. Using these figures, **a metal fabrication plant located in Southwest Mississippi would save nearly \$600,000 per year in electric energy bills.**

The natural gas consumed by this plant is assumed to be purchased from a broker or wholesale supplier, rather than directly from the local gas company. The cost of such "transportation gas" is dependent on the spot price of gas at the wellhead rather than local tariffs, and so its variations are mostly not affected by location. In fact, Southwest Mississippi's proximity to major gas fields and large number of pipelines would almost certainly result in lower costs for a major user but no figure can be projected.

TAXES

The plant's liability for state and local taxes is difficult to project. BFPC has made an approximation based on data from various nationwide surveys. Using an assumed national average base of one million dollars, the cost in Southwest Mississippi is projected to be \$969,000, representing an **annual saving of \$31,000.**

SUMMARY OF COSTS

The capital and operating costs associated with a metal fabrication plant as discussed on the previous pages, are summarized below:

Cost Item	National Average or Typical Plant	SW Miss. Plant
Wages	\$2,625,000	\$2,050,000
Benefits	892,500	697,000
Amortization of Land and Building	1,693,664	1,274,190
Electric Energy	1,965,000	1,368,000
State and Local Tax Cost	1,000,000	969,000
TOTAL	\$8,176,164	\$6,358,190
Index (National Average = 100)	100.0	77.8

Thus the total of these selected costs in Southwest Mississippi is over 22% below the national average for a comparable facility. All of these costs are before the application of any incentives, so the savings potential in Southwest Mississippi may be significantly understated.

These costs are highly generalized estimates for a hypothetical metal fabrication plant. Most base data are derived from figures developed by the US Commerce Department and other governmental agencies, industry organizations, and BFPC's experience with clients in this business.

The overall finding is very compelling. **Southwest Mississippi shows great promise as a location for metal fabrication plants, based on a wide range of cost and other advantages.**



More data about Southwest Mississippi and the region's advantages for your company are available from the

SOUTHWEST MISSISSIPPI PARTNERSHIP

Britt Herrin, *President*

Post Office Box 83

McComb, Mississippi 39648

800-399-4404 or 601-684-2291

www.southwestmississippi.us