The Gas Boom in East Central Indiana

James A. Glass

East central Indiana is known for its mixture of agricultural production, medium-sized industrial cities, and small towns with turn-of-the-century architecture. The production of corn, cereal grains, and livestock in the region goes back to the beginnings of settlement before the Civil War. The industrial characteristics were brought about by one of the great booms of the late nineteenth century in the Midwest: the discovery of natural gas. The eruption of real estate speculation, industrial development, commercial expansion and population growth transformed a 2,500-square-mile portion of the state from a landscape of farms, forests, and agricultural villages into a territory in which cities and boom towns dominated, each teeming with factories, neighborhoods, and commercial districts. Between 1886 and 1901, an eleven-county area in the east central portion of the state became one of the leading centers of heavy industrial production in the United States and the principal manufacturing region of Indiana. Although gas ran out after the turn of the century, thereby greatly diminishing the economic vitality and size of many boom towns, the principal cities created by the boom persevered and used the industrial foundation bestowed by natural gas to lure additional factories and commerce. In the smaller cities and towns of the area, the gas boom left a few factories, distinctive brick commercial business districts, and attractive residential neighborhoods.

In 1886, east central Indiana contained some of the richest farmland in the state. Interspersed with the fields were remnants of the hardwood forests that once covered much of the state. County seats, the largest communities in each county, contained a modest number of stores, lawyers' offices, grain elevators, and furniture or wagon plants. There were a few neighborhoods containing Italianate-style houses erected by well-to-do farmers or merchants and a few churches representing the principal Protestant denominations. The populations of the county seats rarely exceeded 2,500 people. There were

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also crossroads villages of not much more than an elevator, a general store, and a gridiron plat of streets lined with houses belonging to farmers in the surrounding district.  

In the county seats there were frequently a couple of wealthy men who had made modest fortunes after the Civil War with small manufacturing operations that utilized the surrounding hardwood forests or agricultural produce. Others had made money in banking, real estate, or by luring railroads to run through their town. In Muncie the wealthiest man in the 1870s and early 1880s was James Boyce, who gained a small fortune operating a bag plant and a handle factory. In Anderson the McCullough family and Major Charles T. Doxey made their money in banking and in real estate respectively.  

There were four major railroad lines that crossed the region in 1886—the Cleveland, Cincinnati, Chicago & St. Louis Railroad (“Big Four”); the Chicago, St. Louis & Pittsburgh (“Panhandle”); the Cincinnati, Wabash & Michigan; and the Toledo, St. Louis & Kansas City (“Clover Leaf”). Most of the county seats had managed to persuade at least one major railroad to run through their communities by the mid-1880s. Several large towns, such as Muncie, Anderson, Marion, and Kokomo, boasted three or more railroads. Some smaller towns in each county were also located on rail lines. The railroads connected the area with markets for agricultural and forest products.  

In 1886, the discovery of the Karg well in Findlay, Ohio, signaled the end of the slow-paced agricultural life of east central Indiana. Natural gas had previously been found in large quantities in western Pennsylvania and had revolutionized the iron, steel, and glass industries of Pittsburgh, as industrialists adapted their factories to use the natural gas in place of the more expensive coal. The Karg well demonstrated that gas existed in substantial quantities in the Trenton limestone beneath northwestern Ohio, and a speculative frenzy ensued, as gas companies drilled and real estate speculators drove up the prices of land in anticipation of factories locating in the new boom area.  


For a list of the railroads serving Muncie, Anderson, Marion, and Kokomo in the late 1800s and early 1890s see Hardesty, What Everybody Wants to Know, 6; Muncie: Past, Present, Future, 19; Souvenir of the [Marion] Daily and Weekly Reader (Marion, Ind., c. 1892), 6-7; Kokomo Enterprise Company, Kokomo, Past, Present, and Future (Kokomo, Ind., c. 1893), 17.  

Within a short time, hometown investors in several Indiana communities also began to drill, anticipating gas in the large Trenton limestone belt that extended into the north central portion of the state. Gas was first struck at Portland, Indiana, in March 1886. The first well to produce enough gas to make a profit was sunk at Eaton, Indiana, a small town north of Muncie, in October 1886. The principals involved—George W. Carter, a businessman from Eaton; William W. Worthington, superintendent of the Fort Wayne, Cincinnati, & Louisville Railroad; and State Senator Robert C. Bell of Fort Wayne—hired gas driller A. H. Cranell to sink the bore. Gas was struck at 922 feet below grade. The flame emitted by the well when it was piped and lit rose ten feet in the air and could be seen in Muncie, twelve miles to the south. The sight of the flame, burning brightly and seemingly inexhaustibly, drew crowds of people for many weeks.5

The sensation caused by the Eaton discovery spurred the organization of drilling companies all over the state. In November 1886, gas was discovered at the end of East Jackson Street in Muncie and in several locations south of Wild Cat Creek in Kokomo. Successful drilling took place in Anderson and Marion early in the spring of 1887. Between 1886 and 1889, local businessmen and farmers in much of the state sank their own wells. In 1889, S. S. Gorby, the Indiana state geologist, reported that gas had been found as far north as Auburn in DeKalb County, as far south as Lawrenceburg in Dearborn County, as far east as Portland in Jay County, and as far west as Kokomo in Howard County. The initial territory in which gas was reported covered 5,000 square miles. In 1892, the state supervisor of natural gas reported that the area in which profitable wells could be located embraced about 2,500 square miles, the largest gas field known in the world at the time and larger than the Pennsylvania and Ohio fields combined.6

The sequence of events in the county seats assumed a familiar pattern: a group of local businessmen formed a gas exploration company and proceeded to drill until a series of profitable wells were located. They then built gas mains in the principal streets and piped gas to local businesses and homes. Local and out-of-state investors bought land around the platted area of town as sites for factories and for expansion of the town. Prices in land doubled and tripled as a

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First gas well in Anderson, March 31, 1887.

Reproduced from John L. Forkner and Byron H. Dusen, Historical Sketches and Reminiscences of Madison County, Indiana (1897).
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real estate frenzy gripped the town. The speculative craze ended in most of the county seats by 1890, as investors realized that real estate prices far exceeded the income potential of most of the property. Local business leaders also began campaigns to attract factories to their communities. The successes in luring factories led to rapid increases in population as workers moved to the county seats for employment and to substantial boosts to the local economies. The four major county seats grew into the region's first cities during the first five or six years of the gas boom.7

Muncie, Anderson, Marion, and Kokomo serve as apt illustrations of the transformations that happened to other communities between 1886 and 1893. In Muncie, the seat of Delaware County, several local investors organized a gas exploration company and located gas in November 1886. This company was soon superseded by gas-supplying firms organized by local businessmen, among them Boyce. By the spring of 1887 the Muncie Natural Gas Company had laid gas mains to most sections of town and was piping gas at a low, flat annual rate to individual households and businesses. Within a year, the use of coal had nearly vanished, and Muncie enjoyed emancipation from the soot, ash, and high costs of coal.*

Some of the same local investors purchased farmland all around Muncie as potential sites for industry and residential additions. As real estate prices rose, a syndicate of investors from Ohio, New Jersey, and New York organized the Muncie Natural Gas Land Company. Led by Leon Abbett, a former governor of New Jersey, and a blue-ribbon board of directors from the East, the company purchased a large tract of open land south and southeast of the city limits. The concern issued a prospectus for investors in 1889 that extolled the growth potential of Muncie as a Midwestern metropolis and its attraction for factory owners in coal-burning areas of Pennsylvania and eastern Ohio who could cut their operating costs and compete more successfully with gas-fueled factories. The company offered free land and nearly free gas for factories and issued a plat of house lots for factory workers covering several miles south of the city. A competing company of investors from Michigan City, Indiana, and Michigan

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*Throughout the fifteen-year period of the Indiana gas boom, the gas companies supplied their domestic, commercial, and industrial customers at flat annual rates, rather than on a metered basis measuring the amount of gas actually used. This system was possible because the gas required no processing or refining and appeared to companies and customers alike to be available in inexhaustible supplies from the wells. See Jordan, "The Gas Area," 340-41, 343-45; J. C. Leach, "The Indiana Natural Gas Field," in Indiana, Department of Geology and Natural Resources, Report, 1901, 441.
called the Delaware County Land Improvement Company purchased land west of Muncie and platted residential lots and factory sites in anticipation of a surge of investors, factory locations, and residential lot buyers.9

Despite the ballyhoo of the two syndicates, most of the early industrial growth of the gas boom in Muncie occurred closer to town at the behest of local business leaders. A board of trade organized in 1887 solicited industrial firms from the East to locate in Muncie by offering free land and gas as inducements. Boyce, a leader in the board of trade, was probably the most active figure. He was instrumental in persuading Frank C. Ball, president of the Ball Brothers Company, to relocate his fruit jar factory from Buffalo, New York, to a site southeast of the city. Boyce and the board of trade offered Ball eight acres of land, a gas well, and five thousand dollars as inducements. A natural promoter, Boyce also negotiated the location of the Over window glass plant and the Hemingray bottle plant in the new “Industry” suburb just east of Ball Brothers and the relocation of the Maring, Hart and Company window glass plant from Bellaire, Ohio, to a new suburb that Boyce platted east of Muncie called Boyce- 
ton. Other plants that manufactured bridges, nails, rubber, paper, straw- 
board, and bricks moved to Muncie in the midst of the real estate speculations of the late 1880s. By 1890, Muncie had grown from a population of about 5,500 in 1886 to 11,345 and was becoming the largest city in the Indiana gas belt.10

In Anderson, the seat of Madison County, the discovery of gas in March 1887 sparked a “frenzy” of real estate speculation. Two gas supply companies competed for Anderson’s domestic and commercial customers, one of which was led by Doxey and Neal C. McCullough. Shortly after the discovery of gas in March, McCullough found more gas on the east bank of White River in Anderson. The resulting well, dubbed “Vesuvius,” was one of the largest of the Indiana gas belt. McCullough arranged for excursion trains of curiosity-seekers to see Vesuvius, and, in the years that followed, groups of investors regularly traveled to see the big well gushing lighted gas, a testament to the abundance of gas for industry.11

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9Muncie Natural Gas Land Improvement Company, Muncie, Indiana: The Natural Gas City of the West (Muncie, Ind., c. 1889), 22-26; Delaware County Land Improvement Company, The Monarch Natural Gas City of the West, Muncie, Indiana (Muncie, Ind., c. 1889), 20-23.

10Boyce, Biography of James Boyce, 8-9, 26-28; Kemper, A Twentieth Century History, 146; Frank Clayton Ball, Memoirs of Frank Clayton Ball (Muncie, Ind., 1937), 76-78; Delaware County Company, Monarch Natural Gas City, 12; Muncie: Past, Present, Future, 4; Indiana, State Board of Health, Indiana’s Changing Population 1880–1980 (Indianapolis, 1982), 170.

In May of 1887, leading local businessmen formed a board of trade. This board offered the inducements of free land and gas to outside industrial concerns and "landed" their first factory, the Fowler Nuts and Bolts Company from Buffalo, New York, in late 1887. In rapid succession throughout 1888 and into 1889 came the J. W. Shefton Butter Dish Company; American Wire and Nails Company from Covington, Kentucky; Anderson Flint Bottle Company from Butler, Pennsylvania; Pennsylvania Glass Company from Meadville, Pennsylvania; Union (later American) Strawboard Company from Ohio; and the Knife and Bar Company works from Dayton, Ohio. All were attracted by cheap or free natural gas, donated land, and the position of Anderson at the juncture of four railroads. The firms located their plants on undeveloped sites along the northern edge of the business district, the southern edge of the city limits, or along the west bank of White River southeast of the courthouse square.\textsuperscript{12}

After the initial flush of speculation had passed, local investors in Anderson platted factory suburbs and nearby residential additions. Charles Henry, a local businessman, and Philip Matter, an investor from Marion, platted the suburb of North Anderson in 1890, about a mile north of White River and the town limits, and by the early 1890s had attracted four factories: Anderson Glass Company, Wright (later Ames) Shovel Works, North Anderson Pressed Brick Works, and the Anderson Window Glass Company. Former Indiana Lieutenant Governor Will Cumback laid out the Shadeland Addition southwest of the city in the early 1890s as a high-grade residential section, while other investors platted the Hazelwood Addition and Park Place to the south as neighborhoods for both working-class and middle-class houses.\textsuperscript{13} With the operation of the new factories, the population in Anderson grew rapidly. The 1890 census reported 10,741 people in the city, an increase of some 6,000 since 1887.\textsuperscript{14}

During the late 1880s and early 1890s some of the most extravagant real estate speculations and promotions of the gas belt occurred in Marion. Soon after gas was discovered in February 1887, two experienced "boomers" from Findlay, Ohio, named Gray and Dodds purchased land north of the Mississinewa River, which was then the northern border of the town. Gray and Dodds called their suburb North Marion and within two years had attracted the North Marion


\textsuperscript{13}State Board of Health, \textit{Indiana's Changing Population}, 161.

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Window Glass Company, Marion Flint Glass Company, Western Glass Company, Marion Handle Works, and the Marion Paper Company to sites located on rail spurs running to the three major railroads that intersected in Marion. In 1889 a separate real estate syndicate, the Marion Real Estate Company, purchased a tract of land about one and a half miles northwest of the Grant County courthouse, west of the Mississinewa. In the next three years, eleven factories were attracted to sites in the Marion Real Estate tract, including the Canton Glass Works from Canton, Ohio, makers of bar and prescription glassware, pressed glass, and skylight windows.15

Approximately three miles south of the center of town, real estate investors Winchel and Webster laid out a third factory suburb, South Marion, in 1888. This separate town, connected to Marion by a streetcar line, contained its own business district, residential plat for workers' cottages, and factory sites. The promoters were particularly successful in attracting glass factories such as the Marion Fruit Jar Company of J. L. McCullough and J. Wood Wilson; the Stewart-Estep Company; and the Estep Window Glass Company.16

The grandest of all of the promoters in Marion and in the gas belt as a whole was George L. Mason. Mason arrived in Marion within two years of the discovery of gas and billed himself as the guiding force behind the booming of Birmingham, Alabama, a major iron city of the 1880s. He and his partners, William H. Wiley and Thaddeus Butler, bought 500 acres west of the city limits, which they laid out in several real estate additions. The gridiron plats featured street names from cities in Mason's home state of New York and a long diagonal Mason Avenue. The senior partner showed his genius for booming in 1890 and 1891 when he advertised in Frank Leslie's Illustrated Newspaper, a national weekly with wide circulation in the East, and announced in big, multiple-page articles the wonders of both the additions and his adopted city, which he called "Marvelous Marion." The advertisements served primarily as a means for reaching industrial plant owners in eastern states that were running out of natural gas. They also served to announce regular excursion trains, which Mason ran monthly from Buffalo, New York, to Marion. He would transport visiting capitalists to his additions on the Queen City streetcar line that he had built, lavishly entertain them at the York Inn, a showplace hostelry built especially for that purpose, and give them tours of the new factories that were being steadily erected between 1889 and 1892 near the hotel.17

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15Indianapolis News, December 17, 1892; Sanborn-Perris Map Company, Marion, Grant Co., Indiana, November 1890 (New York, 1890), 1; Souvenir of the [Marion] Leader, 18-29.
16Sanborn-Perris Map Company, Marion, 4; Souvenir of the [Marion] Leader, 23, 51-52.
17Richard S. Simons deserves the credit for "discovering" Mason and providing an informative account of the promoter's Marion period. Richard S. Simons, "Boom Days
Among the major heavy industries that Mason and his partners attracted were the Westerman Rolling Mill, Sweet and Clark Malleable Iron Company, Marion Rolling Mill, and Marion Cornice and Sheet Metal Works. His biggest promotional stunt, fully advertised in Leslie's Weekly, came in 1891 when Mason erected a pavilion near the York Inn to house the “Gas Belt Exposition,” which was to showcase the varied marvels of natural gas and industrial products produced in Marion and east central Indiana. At the height of the Mason promotions, lots in the partnership’s additions were selling for $225 to $1000.18

A final boon to Marion of the gas boom was the establishment by the federal government of a National Soldiers Home southeast of the city limits. The home was obtained for the city in 1889 through the influence of George W. Steele, an Indiana congressman, on the ground that the cheap natural gas available there would make operating costs much lower than elsewhere in the nation. By 1900, the home had grown to include some two thousand veterans, who resided in substantial brick buildings standing in a carefully landscaped setting.19 As a result of all these developments, Marion’s population rose from approximately 3,500 people in 1887 to 8,769 in 1890.20

In Kokomo, the seat of Howard County, two young businessmen, A. Y. Comstock and D. C. Spraker, organized a subscription drive in the spring of 1886 among local citizens to raise capital to drill for gas. On October 6, they struck gas in a cornfield just south of Wild Cat Creek. When a second well near the first confirmed an abundant supply, boom times took over in Kokomo. In the spring of 1887, real estate syndicates made up of outside investors bought most of the property in and around the town. Local businessmen joined the competition for real estate in anticipation of a demand for factory sites and residential additions. Other investors leased large tracts of farmland to drill for gas. The Kokomo Natural Gas and Oil Company was organized soon after the initial discoveries to supply the city of Kokomo. Other companies provided fuel to communities outside Howard County.21

As in other county seats, attention soon turned to attracting factories. Local businessmen formed the Kokomo Improvement Company in 1887 to offer incentives for industrialists to locate plants in

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18Marvelous Marion, the Queen City of the Natural Gas Belt,” Frank Leslie’s Illustrated Newspaper, November 22, 1890, 297-99; and “Marvelous Marion: The Story of a Natural-Gas Town in Grant County, Indiana,” ibid., July 4, 1891, 380-82.
19Marvelous Marion, the Queen City,” 299; “Marvelous Marion: The Story of a Natural Gas Town,” 381-82; Simons, “Boom Days,” 46-47.
20Indianapolis News, November 25, 1909; Souvenir of the [Marion] Leader, 3.
Kokomo. In addition to a nearly free supply of natural gas, the improvement company provided cash subsidies and assistance in acquiring sites. Kokomo, like other county seats, could also offer access to three major regional railroads. The first factory to be attracted was the Kokomo Window Glass Company, which received a free site at the intersection of North Street and the Lake Erie and Western Railroad and a cash bonus raised by subscriptions. Later in 1887, two businessmen, Seiberling and Williams, organized the Kokomo Strawboard Company and constructed a plant southeast of the city. The Kokomo Improvement Company provided the investors with $2,000, which they used to purchase ten acres of land for the site. Within the next two years, two other mills manufacturing paper products, the G. P. Wood woodpulp mill and the Kokomo Paper Company, located near the strawboard factory. In 1888 the owner of a bit factory in Rockford, Illinois, William C. Smith, solicited a site for relocating his plant. A local speculator donated six acres south of the city limits.

The Diamond Plate Glass Company of Pittsburgh constructed the largest factory in Kokomo during the late 1880s. Led by its president, Akron industrialist Colonel Arthur L. Conger, the company sent the Seiberling brothers, Monroe and James H., to build and manage one of the most substantial factories in the gas belt. The brick plant the Seiberlings erected at the intersection of Vaile Avenue and the Pittsburgh, Chicago, and St. Louis Railroad, southeast of the center of town, covered approximately thirteen acres and employed 750 men by 1893. It helped establish Kokomo as a major industrial city of the belt.

As the industrial plants began operation, the holders of adjacent real estate divided it into gridiron additions with lots for workers' cottages. Situated between the plate glass factory southeast of town and a strawboard plant to the southwest, the farmland south of Wild Cat Creek filled with residential neighborhoods. West of the downtown, fine residences rose for the managers of plants, real estate and gas investors, and retailers. As these transformations occurred, Kokomo increased in population from some 4,000 people in 1886 to 8,261 in 1890.

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DIAMOND PLATE GLASS COMPANY, KOKOMO, INDIANA, C. 1896.
The smaller villages and country towns of the gas belt were overshadowed by the county seats during the first three to four years of the gas boom. But by the early 1890s, both gas belt businessmen and outside investors began to shift attention to developing the many small communities in east central Indiana. Often the impetus for promotion and speculation came from the same investors who had previously participated in the development of the county seats.

In 1891 four Anderson businessmen together with five outside investors organized the Alexandria Land Company in the small Madison County town of Alexandria. They purchased large tracts of farmland on the west, south, and east sides of Alexandria and filed plats for the land, dividing it into residential lots with several reservations for factory sites. After aggressive promotion, the Alexandria Land Company attracted some of the largest businesses in the gas belt: the DePauw Plate Glass Company and DePauw Window Glass Company from New Albany, Indiana, the Alexandria Window Glass Company, the Kelly Axe Company, the Lippincott Lamp Chimney works, the Union Steel Company works, and the Indiana Brick Works. Alexandria mushroomed in size from a population in 1891 of 500 people to 5,000 by the late 1890s.

In Elwood, just west of Alexandria, at the western edge of Madison County, two prominent local families, the Callaways and the DeHoritys, led the way in setting up land companies to promote the town for industrial plants. In 1889 A. L. Conger, who had already constructed a large plant in Kokomo, decided to build a factory of similar size in Elwood. The fourteen-acre plant was to be one of the largest plate glass factories in the country. Another impressive industrial arrival was the plant of the American Tin Plate Company, which was organized in 1891–1892 by two Richmond, Indiana, capitalists, Daniel G. Reid and William B. Leeds. The Elwood plant of American Tin Plate soon became the largest tin plate factory in the United States, employing two thousand workers. In 1890 a third major plant was attracted to the northwest part of the town: the George A. Macbeth Lamp Chimney Works, one of the principal American firms manufacturing glass chimneys for kerosene lamps. As a result of these industrial arrivals, Elwood by the mid-1890s became the fifth largest city in the Indiana gas belt.

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25The businessmen were Doxey, Lovett, Kilgore, and Nichol.
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In southeastern Grant County, outside investors turned the tiny hamlet of Harrisburg, located on the east bank of the Mississinewa River, into a boom town with a new name. Gas City was the brainchild of the Seiberlings, managers of the Diamond Plate Glass plant of Kokomo, and John E. Miller of the Pennsylvania Railroad, which had a rail line through the town. In 1890–1891, the Seiberlings transferred the natural gas leases that they held on a large tract east of the river to the new Gas City Land Company. The land company, which had been organized by Miller on behalf of the railroad, platted the tract in the familiar gridiron pattern, gave Harrisburg its new name, and began distributing promotional circulars to industrial prospects. Within two years, Gas City boasted five glass plants, a tin plate factory, an iron and steel works, and a strawboard manufacturing plant. Employment of workers, many of whom were skilled laborers imported from the East, rose to over four thousand.

As every small town learned promotional techniques and began to outbid each other in the inducements they offered outside industrialists, the established gas boom cities of Muncie, Anderson, Marion, and Kokomo found themselves pressed to maintain their rates of growth. In addition, the economic panic of 1893, although cushioned somewhat by the low cost of fuel in Indiana, caused several banks and factories to close or suffer losses. Each of the four cities responded forcefully to these challenges to its economic dominance. In Muncie, Boyce and George F. McCulloch led other local businessmen in forming the Muncie Citizens Enterprise Company in 1891 as a fund-raising organization for promoting the city. By 1893 local businesses had subscribed $211,000, a huge sum for a city of approximately 15,000 people, as a fund from which bonuses could be paid to the owners of new plants.

The Enterprise Company secured four large iron and steel and machinery factories for the city in 1892 and 1893: the Whiteley Reaper Works, the Midland Steel Company, the Common Sense Engine Company, and the Indiana Iron Works. In the next few years, the company also attracted the Whiteley Malleable Iron Works, the Muncie Wheel Company, and the Muncie Iron and Steel Company. South of the Indiana Iron Works, the Muncie leadership convinced


Conger, the Akron industrialist, to lay out a factory suburb for workers in the iron and steel plants, which he named Congerville. These successes made Muncie the center of iron and steel manufacturing in the gas belt by the mid-1890s.

In Anderson, the local leadership continued to advertise the attractiveness of the city for new industrial development during the 1890s and managed to lure the Anderson Malleable Iron Manufacturing Company, the Gould Steel Company, the Haugh-Kurtz Steel Company, and the Cathedral Glass Company to sites along the west, southwest, and south sides of Anderson. The plants in North Anderson thrived throughout the decade, and in 1894, the American Tin Plate Company, already in operation in Elwood, opened another plant in the northern suburb.

In Marion, Mason's economic fortunes declined with the panic of 1893. The extravagantly priced residential lots in the west side additions went begging, the York Inn closed, and, by 1901, much of the platted area was used for farming. The factories in Mason's additions and those in both North and South Marion continued to operate, fueled by cheap gas and ready labor supply. The chastened business leadership, which included Mason's former partner Wiley, sought to attract more industries. In the late 1890s the Thomas Evans Company, a manufacturer of kerosene lamp chimneys, and the Indiana Brewing Association moved onto sites southeast of the city center near the Mississinewa.

In Kokomo, the Kokomo Enterprise Company promoted the availability of a free natural gas line for new manufacturers, who would be supplied by a gas trust elected by businessmen of the city. During the middle and late 1890s, the enterprise company stimulated the establishment of the Great Western Pottery Works northwest of the central business district, the Kokomo Rubber Works on the south side of the city, and the Globe Stove and Range Works on the near north side.

In each of the four leading gas belt cities, the business leadership also sought to reinforce their community's position as an attractive place for industrial investment by building belt railways connecting

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32Conger was also persuaded by the Enterprise Company to build the Indiana Iron Works, which became the source of employment for many of the workers in Congerville, Indiana. See Kemper, History of Delaware County, 153; Ned H. Griner, Gas Boom Society (Muncie, Ind., 1991), 21.
33Hardesty, City of Anderson, 136.
34Forkner and Dyson, Historical Sketches of Madison County, 452-55; Hardesty, What Everybody Wants to Know, 16-18.
36Kokomo Enterprise Company, Kokomo, Past, Present, Future, 10-12; Morrow, History of Howard County, 244-45; Sanborn-Perris Map company, Insurance Maps of Kokomo, 1.
all the major railroad lines and providing convenient access for plants located on the belt or adjacent rail spurs. In Muncie, two railroad companies constructed a belt line railroad in 1889 along the east and south edges of the city. The belt ran between the east-west Big Four Railroad and north-south Lake Erie and Western Railroad. In Marion, by 1890 three railroad firms had built a belt railway through the city that extended twelve miles from the Marion Real Estate Addition northwest of the city south to Mason’s additions and then east. The belt railroad constructed in Anderson during the 1890s ran west three miles along the south edge of the city, from the intersection of the Big Four and Pennsylvania Railroads to the Cathedral Glass Works. Finally, in Kokomo the railroads constructed a belt railway around the south side of the city providing access for the Diamond Plate Glass Works southeast of Wild Cat Creek and several other major factories.36

The gas boom continued to sustain existing industrial plants and to stimulate construction of additional plants in nearly every town and city of the gas belt until 1900. That year Indiana was producing the most natural gas in the United States, with $7,254,539 worth of gas produced and $5,412,307 consumed in Indiana.37

The boom also was responsible for stimulating industrial and community growth in cities outside the gas belt. As early as 1887, several Indianapolis gas companies and the Standard Oil Company had sunk gas wells in northeastern Marion County and in Hamilton County, with the intention of supplying Indianapolis. Although in the early years of the boom Hamilton County proved to be a heavy producer of gas, its towns experienced relatively modest growth during the 1890s. Most of the gas from Hamilton County was piped south to serve the industrial and domestic customers of the Indianapolis gas companies. Much of Indianapolis’s impressive industrial growth from 1889 to 1900 and its status as the largest city in the state at the end of that decade can be attributed to the availability of cheap gas and free land along the city’s belt railroad. Techniques similar to those in the gas belt were employed in the capital city, as exemplified in an 1889 article in Leslie’s Illustrated Newspaper extolling the potential of Indianapolis and an 1893 advertisement by the Indianapolis Improvement Company in the Indianapolis city directory, offering free land and gas at special flat rates to firms that located along the belt railroad.38

36Muncie Natural Gas Land Improvement Company, “Muncie, Indiana: The Natural Gas City of the West,” 19; Sanborn-Perris Map Company, Insurance Maps of Muncie, 1; “Marvelous Marion, the Queen City,” 298; Souvenir of the Marion Leader, 4; Forkner and Dyson, Historical Sketches of Madison County, 85; Morrow, History of Howard County, 254.


38Indiana, Department of Statistics, Report, 1885-86, xx; Arthur John Phinney, “The Natural Gas Field of Indiana," in U.S. Congress, House, Executive Docu-
PLAT OF ELWOOD, INDIANA, C. 1890.

Courtesy of Elwood Public Library, Elwood, Indiana.
Another early beneficiary of gas outside the belt was the city of Richmond located about fifteen miles southeast of the eastern limits of gas-yielding Trenton limestone. C. T. Doxey, one of the pioneering gas entrepreneurs in Anderson, sank a successful well at Chesterfield, a little village east of Anderson, and organized the Richmond Pipeline Company to supply the eastern city. Richmond's industries benefited from cheap gas throughout the boom. Likewise, investors in Fort Wayne, Bluffton, Huntington, Wabash, Peru, Logansport, Frankfort, Lafayette, Decatur, Connersville, Lebanon, Shelbyville, and Crawfordsville all leased or purchased gas-producing farmland in the portions of the gas belt nearest to their customers by the early 1890s and piped gas to the homes, businesses, and factories in their cities.

Establishing hundreds of factories in some fifty Indiana cities and towns supplied by natural gas produced a startling economic impact on the state by 1900. The United States Census Manufactures report for that year noted that Indiana ranked second among all the states in the production of glass, third in wagons and carriages, fourth in iron and steel products, fifth in agricultural implements, ninth in paper and wood pulp, and tenth in foundry and machine shop products. Especially with respect to glass and iron and steel products, the state had gone from a minor role in those industries in 1886 to a prominent position in 1900. For example, in 1890, three years after the discovery of gas, Indiana produced $2,995,409 worth of glass, about 7.3 percent of the total value in the United States. Ten years later, the state's glass factories produced $14,757,883 worth of glass, 26 percent of the total value. Similarly, the monetary value of iron and steel products rose in Indiana from $3,063,853 (0.7 percent) in 1890 to $19,338,481 (2.4 percent) in 1900. Muncie, with its two large Ball Brothers factories, two window glass factories, and three bottle and insulator glass plants, had become the second-high-

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Forkner and Dyson, Historical Sketches of Madison County, 119.


J. C. Leach, "Natural Gas," in Indiana, Department of Geology and Natural Resources, Report, 1896, 437–38.

Although several of these industries, such as wagons, agricultural implements, and paper and wood pulp, existed in Indiana before the gas boom and depended on the natural resources of the state, cheap natural gas attracted outside capital and confirmed Indiana's position in those industries. U.S. Bureau of the Census, Manufactures, 1900, Vol. VII, part I, United States by Industries, clxxxiv.

Ibid., cxcvi.
ed-producing glass city in the country in 1900, manufacturing 4.2 percent of the domestic glass output, compared to Pittsburgh's 4.3 percent. Marion produced 2.5 percent, Gas City and Alexandria each 1.8 percent, and Elwood 1.7 percent of the total production.44

The 1900 census reports also showed some dramatic increases in other statistics for Indiana cities supplied by natural gas. Muncie and Anderson, the two largest cities in the gas belt by 1900, had grown from populations of 11,345 and 10,741, respectively, in 1890 to 20,942 and 20,178 a decade later. Muncie in 1900 boasted 138 manufacturing plants, 5,756 manufacturing workers, and a manufacturing production value of $7,641,567. Anderson in 1900 had 131 manufacturing plants, 3,888 manufacturing workers, and a manufacturing production value of $9,519,854. Indianapolis, outside the belt but supplied with natural gas, saw its number of manufacturing plants rise from 657 in 1890 to 914 in 1900, its number of manufacturing workers from 13,441 in 1890 to 22,264 in 1900, and its manufacturing production value from $32,098,487 to $61,535,557.45

Smaller cities and towns throughout the belt shared in the industrialization and were important contributors to the total manufacturing output of the state. For example, the American Tin Plate Company plants in Elwood, Anderson, Gas City, Middletown, Atlanta (Ind.), and Montpelier comprised a commanding part of the total tin plate manufactured in the United States by 1899. The American Window Glass Company, a large trust of window-glass manufacturers formed in the late 1890s, operated thirty-six factories in both large cities and small towns in the Indiana gas belt by 1900.46

<table>
<thead>
<tr>
<th>City/Town</th>
<th>Number of Plants</th>
<th>Value of Production</th>
<th>Number of Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria</td>
<td>95</td>
<td>$3,062,182</td>
<td>1,903</td>
</tr>
<tr>
<td>Elwood</td>
<td>135</td>
<td>$4,513,128</td>
<td>2,958</td>
</tr>
<tr>
<td>Fairmount</td>
<td>37</td>
<td>$272,528</td>
<td>649</td>
</tr>
<tr>
<td>Gas City</td>
<td>36</td>
<td>$1,606,938</td>
<td>1,427</td>
</tr>
</tbody>
</table>

This astounding growth in industry, commerce, population, and size came at a price—depletion of the natural gas supply. As early as 1889, state geologist S. S. Gorby noted in his annual report that, although the supply of natural gas in the newly-discovered Indiana belt was huge, an average of one hundred million cubic feet of gas were being wasted each day through wells and flambeaux burning day and night as promotional devices. By the early 1890s, the Findlay gas field in Ohio and the gas field in western Pennsylvania had both become nearly exhausted due to overuse, and E. T. J. Jordan, holder of the new position of natural gas supervisor in Indiana, alluded in his report for 1893 to the pattern of extravagant consumption and failure in Ohio. Jordan reported that in Indiana gas pressure had declined from 325 pounds per cubic inch in most locations in 1887 to between 200 and 290 pounds per cubic feet in 1892. Using the Ohio experience as a model, Jordan proposed several conservation measures: a new law prohibiting the burning of flambeaux should be enforced; wells should be carefully packed after drilling to avoid unnecessary escape of gas; the flat fee contract system of selling gas should be replaced with a metered system that rewarded conservation; and more efficient mixes of gas and oxygen should be used by consumers in their gas burners.

Despite annual exhortations by the natural gas supervisor against waste and despite additional legislation by the Indiana General Assembly to penalize wasteful practice, gas producers and large consumers of the gas belt paid little heed to the alarms and the legislation through most of the 1890s. Many towns and individual well owners continued to burn flambeaux three to four years after the torches were prohibited in 1891. After several cities supplied by the gas belt experienced shortages during the winter of 1892–1893, most owners finally acknowledged the legitimacy of the supervisor’s warnings, and flambeaux-burning declined. With respect to the other conservation measures, however, most producers and consumers refused to give up the low prices that seemed to be the basis for the continuing commercial and industrial prosperity. As long as gas continued to be available at low prices, most consumers were slow to adopt conservation measures.

Even with all of the waste caused by flambeaux, flat prices, and inefficient burning apparatuses, the gas in the Indiana Trenton field would probably have lasted well into the new century had not so

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48Indiana, Laws (1891), 55-56.
much of the fuel been pumped to locations outside east central Indiana. By the late 1880s, the Indiana Natural Gas Company had constructed a pipeline approximately one hundred and twenty miles in length from Howard County to Chicago and was pumping millions of cubic feet of natural gas from Indiana to consumers in the largest city of the Midwest. As natural gas production declined in northwestern Ohio due in part to waste during the 1880s, Ohio gas companies tapped into wells located in the Indiana gas belt to supply factories and domestic customers in Findlay and other cities. By 1900, nearly $2 million of the $7.2 million monetary value of gas produced in Indiana was leaving the state and going either to Chicago or northwestern Ohio.

As the pressure at the wells dropped below 175 pounds of pressure in 1898–1899, pipeline gas companies and factory owners began to build pumping stations to increase the gas pressure. J. C. Leach, the natural gas supervisor in 1900, reported that, by the end of the 1890s, the unity of the Indiana gas field as a single large reservoir had disintegrated because of the encroachment of salt water into the gas-bearing limestone rock. Gas pressure dropped below 100 pounds in 1901, and producers abandoned many wells thereafter. After 1901, few factories in the belt could obtain natural gas, since gas companies reserved available supplies for domestic customers.

The gas boom came to a dramatic end. Most of the small boom towns in the gas belt experienced an economic bust after 1901. A few of their factories hung on, hoping for new gas supplies or converting to other fuels. By the 1920s, most of these had closed. Communities such as Windfall, Ingalls, Greentown, Converse, Upland, Sweetser, Eaton, Frankton, Matthews, Fairmount, and Redkey shrank from one-third to one-half their preboom size. Many plants in each community shut down at the first failure of the gas supply, and the temporary timber and corrugated iron buildings were dismantled. With no factories, workers and their families left, and sections resembled ghost towns for several years. Medium-sized cities, such as Elwood

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54Leach, “Report of State Natural Gas Supervisor [1899],” 438-44.
55On the corrugated iron cladding on wood construction of many glass factory buildings see Sanborn-Perris Map Company, Albany, Delaware Co., Indiana, December 1899 (New York, 1900), 1.
56Forkner, History of Madison County, 128, 132, 157-58; Netterville, Centennial History of Madison County, I, 280-61, 324-26; “National Glass Trade Directory 1898–1904, Glass & Glass Manufacturers,” typed manuscript, c. 1938, Marion and Grant County File (Marion Public Library, Marion, Ind.); Indianapolis News, June 6, 1905.
and Alexandria, struggled into the twentieth century with three or four of their large factories in operation. The other plants closed and were removed. In Alexandria, large sections of neighborhoods containing workers' cottages and saloons were abandoned. The expansive plats laid out by the land boom companies returned to farmland in several locations.

The four largest cities of the gas belt—Muncie, Anderson, Marion, and Kokomo—felt a momentary shock from the failure of gas, and each lost several major plants. The business leadership in each city organized new campaigns to lure new industries to replace the old. In addition, several major factories converted to alternative fuels, such as manufactured gas or coal. In Muncie, the Ball Brothers Company, which had become the largest producer of glass fruit canning jars in the world by 1900, converted to coal soon after the turn of the century. In Anderson, the American Steel and Wire Company, the Sefton Manufacturing Company, the Wright Shovel Company, and the Anderson Knife and Bar Company all converted to coal. In Kokomo and Elwood, the Pittsburgh Plate Glass Company plants (formerly Diamond Plate Glass) switched to coal, as did the American Tin Plate Company and Macbeth-Evans Lamp Chimney Works in Elwood. In Marion the Marion Flint Glass, Canton Glass, Marion Gray Iron, Macbeth-Evans Lamp Chimney, and the Marion Paper Companies also changed fuels. Many factories stayed because of the advantages of location. Stimulated in part by the gas boom, the major railroads serving Indiana had built additional tracks that honeycombed east-central Indiana and provided convenient access to coal, raw materials, and markets for finished manufactured products. Also, many of the remaining industrial plant owners had made substantial capital investments, particularly in the glass industry, which experienced significant mechanization of production during the 1890s. In order to stay competitive large Indiana glass plants had installed continuous tank furnaces and annealing lehrs to replace less efficient pot furnaces and tempering ovens. Iron and steel companies spent considerable cap-

58Indiana State Geologist W. S. Blatchley had suggested as early as 1898 that gas belt factories adapt their plants to manufactured gas from coal or to coal itself, which was available abundantly in southwestern Indiana. See W. S. Blatchley, "Introductory," in Indiana Department of Geology and Natural Resources, Report, 1897, 8.
59Leach, "Indiana Natural Gas Field," 444; Austin, "Glass," 974; Muncie of To-Day, 2; Netterville, Centennial History of Madison County, 1, 248, 250, 254; Sanborn-Perris Map Company, Insurance Maps of Anderson, Indiana, 31; "The Pittsburgh Plate Glass Company," clipping, History Room (Kokomo Public Library, Kokomo, Ind.); Indianapolis Star, October 26, 1913.
60See, for example, Muncie of To-Day, 1; and Central Indiana Gas Company, Story of the Magic City: A Souvenir of Muncie, Indiana (n.p., 1912), 3, 5.
ital during the same period building their furnaces, rolling mills, muck mills, and finishing mills. These investments persuaded some industrial firms to stay in Indiana and pay more for fuel, rather than relocate to new natural gas fields in West Virginia, Kansas, Oklahoma, and Texas.61

The boards of trade and commercial clubs in the four principal cities continued to promote the manufacturing advantages of their communities: existing plants, skilled workers, excellent rail connections and rates, and reasonable fuel costs. In Muncie, the Kitselman brothers from Ridgeville, Indiana, constructed two factories in 1901 and 1904. The brothers built the Indiana Steel and Wire Company in the old suburb of Boyceton, where the Maring, Hart and Company glass plant had been abandoned. Thomas W. Warner formed the Warner Arc Lamp Company in 1901 and Warner Gear Company in 1903, both of which grew from small machine shops into large plants tied to General Motors and the Borg-Warner Corporation, respectively. In 1900 the American Lawn Mower Company of Richmond, Indiana, moved its manufacturing operation to the former Common Sense Engine Company plant on the south side of Muncie.62

In Anderson, a new commercial club formed in 1905 and set out to retain existing plants and bring in new ones. The Remy brothers' Remy Electric Company, a machine shop specializing in "magneto" for automobile engines, was persuaded to remain in 1900 and grew into the immense Delco-Remy factory of General Motors. In north Anderson, the Lynch Glass Machine Company moved into the plant of the former Ames Shovel Company.63 In Kokomo, Elwood Haynes, who had gotten his start as an engineer analyzing the potential for natural gas, founded a motor car company and helped stimulate the formation of the competing Apperson company. These local concerns eventually spurred the arrival of Chrysler Corporation and General Motors plants. The Kingston Company, founded after 1900, manufactured carburetors, spark coils, and magneto, while local businessmen organized the Kokomo Steel and Wire Company to manufacture woven steel fences. Marion was able to attract a few new plants in the early decades of the new century, such as the Standard Chain

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62Haimbaugh, History of Delaware County, 463-64; The Magic City (Muncie, Ind., c. 1907-1908), 6, 9, 10; Richard A. Greene, "The Story of Iron and Steel in Muncie," 9, 14, 16, address for annual membership dinner, Muncie Chamber of Commerce, Muncie, Ind., typescript in Archives and Special Collections (Bracken Library, Ball State University, Muncie, Ind.); Muncie, Ind., Board of Education, "Story of the American Lawn Mower Company for Use in Junior High Schools, Monograph K," typescript, 7, ibid.

63By 1925, several automobile engine plants were located in Anderson. Netterville, Centennial History of Madison County, 1, 254-56, 309-11; Indianapolis News, June 6, 1913; Forkner, History of Madison County, 150.
Company, Marion Machine and Foundry Company, and the Marion Insulated Wire and Rubber Company. Eventually the city found an industrial base in the automobile industry. Small automobile manufacturing plants also sprang up in the first two decades of the century in the former gas boom communities of Indianapolis, Richmond, Fort Wayne, Peru, Albany, New Castle, Wabash, Logansport, and Converse.

The gas boom was thus responsible for the creation of the general industrial base of both the gas belt and, to a significant degree, the cities that drew natural gas from the belt. Although east central Indiana's status as the manufacturing center of the state declined after the failure of natural gas, the principal cities remained centers of industrial production and economic prosperity during much of the twentieth century.

64Morrow, History of Howard County, 250; Indianapolis Star, June 2, 1919, November 9, 1913; Wallace Spencer Huffman (comp.), “Indiana Built Automobiles, Etc.”, 1, manuscript, Archives and Special Collections (Bracken Library).

65The boom also shaped the physical character and atmosphere of its cities and towns. Although most of the factories of the boom have long since been dismantled or demolished, many commercial districts and neighborhoods remain. The trademark architecture of the gas boom is present in the brick buildings with Romanesque arcades along upper stories and corbeled battlements. In the neighborhoods where the industrialists, merchants, and wealthy farmers lived, Queen Anne-frame houses predominate, with irregular masses, turrets, and wrap-around porches. The cottage design workers' homes are usually one or one and one-half stories with wooden frames, gable roofs, and expansive porches.