

3.0 HISTORIC CONTEXT

3.1 Overview of Ohio, 1940–1950

During World War II, Ohio experienced significant industrial development and population growth. The state's diversified industrial base and geographical proximity to transportation routes and other population centers made it well suited for wartime production needs. The industrial development and consequential economic prosperity generated during World War II shaped Ohio's economic, cultural, and social history for decades thereafter.

The United States resisted involvement in World War II from 1939 through much of 1941. Even as the Axis powers swept through Europe and eastern Asia, American isolationists insisted that the U.S. had no key interests at stake. At President Franklin D. Roosevelt's urging, Congress enacted a "cash and carry" policy in 1939, allowing the U.S. to supply goods to any nation that could pay cash and carry the goods away (Knepper 2003:367). While providing great assistance to Great Britain and its allies, the program also offered economic benefits to the U.S., which remained enmeshed in the Great Depression. More importantly, it began the process of shifting American industries to a wartime footing.

In September 1940, Congress established the first peacetime military draft in the nation's history. The Ohio National Guard was activated and designated the 37th Division. Guard units traveled to Camp Shelby, Mississippi, for training. In Columbus, Fort Hayes served as a reception center for military draftees and recruits and was staffed by 2,000 troops in its own right (Fort Hayes Metropolitan Education Center 2010). Roosevelt, a Democrat, handily won Ohio in the November 1940 presidential election, but Republicans dominated the state government and the Congressional delegation. Senator Robert A. Taft, a Cincinnati native, ranked among the most prominent isolationists. On the other hand, Governor John W. Bricker, also a Republican, took steps to place Ohio in a defensive posture. With Ohio's National Guard units called to active duty, he ordered recruitment and training of an Ohio State Guard. He also created a Defense Council to coordinate industrial planning with national defense needs. Furthermore, the state Manpower Council authored one of the first statewide studies to project employment needs that would arise in the event of full wartime employment (Knepper 2003:369).

In 1941, Congress increased aid to Great Britain and the Allied powers with the "lend-lease" policy permitting the loan of war materiel. Isolationists, including Ohio's Senator Taft, opposed this move. Their resistance, however, evaporated upon Japan's December 7, 1941, surprise attack on the U.S. naval base at Pearl Harbor, Hawaii (Knepper 2003:368–369). After the United States entered World War II, Ohioans joined their fellow Americans in stepping up to serve at all levels of society. Approximately 839,000 Ohioans, 12 percent of the state's 1940 population, served in the armed forces for the duration of the war. Of these men and women, 23,000 died or were missing in action (Ohio History Central 2005a).

On the home front, Ohioans joined in scrap drives, grew victory gardens, obeyed rationing and blackout regulations, and served in civil defense programs (Ohio History Central 2005a). The Ohio State University Cooperative Extension Service conducted farm-labor recruitment

programs, allocated scarce supplies of fertilizer and machinery, and helped find substitutes for unobtainable foods (Ohio State University Extension 2010). Thousands of Ohioans worked long hours on production lines, dealt with shortages of basic goods, lacked adequate housing, and often had at least one family member serving in the military (Knepper 2003:375). A crucial aspect of Ohio's wartime contribution came from the state's industrial base, which had been developing for more than a century.

3.1.1 Ohio's Industries during World War II

From the time Ohio attained statehood in 1803, the state's ready access to raw materials and navigable waterways at its northern and southern boundaries offered industrious entrepreneurs opportunity for profit. With an abundance of coal and iron ore, industrialists throughout the state erected iron works for the production of pig iron. Hanging Rock in south-central Ohio, and the Mahoning Valley, in northeast Ohio, developed into significant iron smelting areas. The iron industry in turn facilitated development of a large steel industry, with Youngstown in the Mahoning Valley arising as one of the most prominent steel towns in the country (Hunker 1958:11–17; Knepper 2003:219).

Following the completion of a network of canals during the second quarter of the nineteenth century, improved transportation and an abundance of waterpower stimulated industrial development at major points along the state's canal system. Cities such as Cleveland, Akron, Toledo, Dayton, and Cincinnati became prominent industrial centers, manufacturing everything from machine tools to textiles. Located at the western edge of the Appalachian and Allegheny Mountains, Ohio industries benefited from a relatively centralized location between the urban centers of the eastern seaboard and the expanding markets of the western states. Development of railroads during the mid-to-late nineteenth century further cemented Ohio's role as the gateway to the West. Indeed, as a consequence of its geographic location, Ohio quickly evolved into a transportation hub, with most east-west shipments through the Midwest originating, terminating, or passing through Ohio (Hunker 1958:11–17).

A critical aspect to Ohio's success as an industrial hub lay with its workforce. From the mid-nineteenth to the mid-twentieth century, European immigrants flocked to Ohio, many of them seeking better economic opportunities than could be had in their homelands. German immigrants comprised the largest percentage, to such an extent that only Wisconsin had a greater proportion of German-descended residents than Ohio. Bowling Green, Columbus, Cincinnati, Dayton, and Toledo all came to have large German populations. Cleveland, on the other hand, had the largest concentration of Slovaks, Hungarians, and Slovenians of any city in the United States (Bonutti 1984:19).

By the mid-twentieth century, Ohio was a long-established industrial powerhouse, with a large, highly skilled, and diversified labor force. Raw materials remained abundant, with coal and iron ore available within the state or accessible via a short haul from the Great Lakes region. These factors played a crucial role during World War II, when the United States government called upon Ohio to contribute its industrial might to wartime production needs. On the war's eve, Ohio ranked fourth in the nation in industrial production. A major supplier of iron, steel, heavy machinery, automotive components, and tires, Ohio played a key role in the manufacture of wartime goods, especially aircraft, automotive products, ordnance, and

ships. With its immense industrial capacity, Ohio secured more than \$15 billion in government contracts for war goods, with the largest share going to Cleveland, followed by Cincinnati, Akron, Dayton, Youngstown, Toledo, and Columbus (Knepper 2003:370). Building on their success during the war years, these cities reigned as Ohio's major metropolitan areas through the remainder of the twentieth century.

One of Ohio's most important wartime production plants was the Goodyear Tire and Rubber Company in Akron. The tire company's subsidiary, Goodyear Aircraft, produced Corsair fighter planes for the Navy and Marines. Akron's rubber manufacturers contributed to the development of synthetic rubber, enabling Ohio's rubber industry to continue producing tires and other wartime goods, despite the loss of access to natural rubber supplies in Japanese-controlled territory. Ohio's steel industry also played a significant role in wartime production, with mills at Youngstown, Cleveland, and Canton producing vital materials for all nature of war machinery. Other significant wartime industries included munitions production, such as the Ravenna Ordnance Plant, near Ravenna in Portage County. This 30-square-mile facility employed 15,000 workers, who worked around the clock manufacturing artillery shells. Additional arsenals appeared at Rossford, near Toledo, as well as at Marion, Lima, Columbus, and other locations around the state (Knepper 2003:370). The Willys-Overland Company, based in Toledo, produced the iconic jeep for America's military. In a show of wartime cooperation, the firm shared its design specifications with the Ford Motor Company so both firms could supply the Army's demand for these vehicles. Of the 700,000 jeeps used by the U.S. military between 1941 and 1945, the Willys-Overland Company manufactured 330,000 (Ohio History Central 2005b). In 1938, the War Department acquired about 9000 acres of land to construct the Plum Brook Ordnance Works near Sandusky. This plant produced munitions, such as TNT, until the end of World War II. After the war, the plant closed and the site remained idle for more than a decade (NASA/PBS 1999).

Another facility associated with the military was Air Force Plant 85, operated by North American Aviation Operations, Rockwell International Corporation. Constructed in 1941 by the Defense Plant Corporation, the completely government-owned plant covered 518 acres and 3.4 million square feet. It occupied a site located 6 miles from downtown Columbus, just south of the Port Columbus Airport and north of the Defense Construction and Supply Center. The plant included a high bay fabrication and assembly area, part of which was used as a machine shop, and flyaway capability from the Port of Columbus Airport. During World War II, over 24,000 people worked here, producing more than 3,500 naval aircraft under contracts with Curtiss-Wright Corp. Production declined after the war, and Curtiss-Wright ceased operations in 1950 (GlobalSecurity.org 2010).

Built in 1942, the Cleveland Bomber Plant, located at 6300 Riverside Drive in Brook Park, was owned by the Department of Defense throughout World War II. It also was known as the Fisher Body Aircraft Plant No. 2, as General Motors operated the facility to manufacture the B-29 Bomber here. It later became known as the Cleveland Tank Plant. At its peak, the plant employed 15,000 workers, many of whom lived in housing projects built on Triskett and Berea roads in the immediate neighborhood. When the plant closed with the war's end, the City of Cleveland turned down an opportunity to lease the site for future airport expansion. Although tempted by a lease rate of \$1 per year, the city feared it could not afford

maintenance costs for the site. After a brief tenure as an exhibition hall and sales center, the plant was leased to National Terminals for soybean storage. During the Korean War, defense production resumed under the auspices of General Motors' Cadillac Division. Used to manufacture various tank models, the facility remained in operation through the early 1970s. The Defense Department sold the plant to Park Corporation of West Virginia in 1977. Since 1985, Park has operated the former plant as the I-X Center, an exhibition facility (Encyclopedia of Cleveland History 2010a).

The war effort kept approximately one million workers employed in Ohio factories. With much of the state's traditional workforce serving in the military, Ohio's factory owners relied on non-traditional sources of labor. Among those filling wartime job positions were retired workers, whose skilled labor helped bolster a drastically depleted pool of seasoned craftsmen. Women, too, entered the job market in unprecedented numbers. Overall, women comprised about 30 percent of Ohio's wartime workforce, with some cities, such as Dayton, seeing an increase to as much as 40 percent. Despite initial resistance by male co-workers, "Rosie the Riveter" soon proved her worth, working jobs previously thought beyond the capabilities of the average woman (Knepper 2003:371).

Also important to Ohio's war effort were African Americans, who migrated from the South to northern factories by the thousands during the early-to-mid 1940s. At the outset of the war, factories relegated these workers to menial jobs, but as skilled labor became scarce, industries began promoting African Americans to higher levels of responsibility. By the end of the war, they comprised 8 percent of Ohio's workforce. The promise of work in Ohio factories continued to lure African Americans from the Deep South after the war's end. So dramatic was the migration that, between 1930 and 1950, black population increased from approximately 309,000, or 2.3 percent of the state's total population, to 513,000, or about 6.5 percent of total population (Knepper 2003:371).

Mass migrations occurred among southern highland whites who left the Appalachian region to find wartime jobs in Ohio's factories as well. Large numbers of Appalachian whites from southern Ohio and West Virginia relocated to Hamilton, Middletown, Cincinnati, Dayton, Columbus, and industrial cities in northeast Ohio. The unprecedented wave of migrant workers overwhelmed their adoptive communities, forcing cities to build temporary housing to accommodate the thousands of workers employed by local factories. Similar to southern blacks, Appalachian whites maintained a steady pace of migration to the north. By 1950, upland southerners numbered roughly 568,000, or about 7.2 percent of Ohio's population (Knepper 2003:372).

3.1.2 Ohio's Military-Industrial Complex

At the start of World War II, Ohio's long-established industrial base manufactured a wide range of goods, generally relying on the natural resources within the state's own borders or within easy shipping distance. The war years, however, laid the groundwork for a period of unprecedented industrial expansion and innovation that was not as dependent on ready access to raw materials. The results of this expansion continued to shape the state's economy and culture for the remainder of the twentieth century. Crucial facets of this transition lay in the

establishment of a major military airfield near Dayton and in technological research and development at private research facilities.

As early as the 1910s, Ohio took a leading role in military technological development. President Woodrow Wilson's National Advisory Committee on Aeronautics (NACA) advised creation of a research center for the military use of aircrafts. Due to the automobile and aircraft plants that already existed in Ohio, the center was established at McCook Field in Dayton. By 1924, operations at McCook Field required additional space, and in one of many transactions that shifted rural lands statewide from agricultural to industrial uses, Dayton city officials and residents donated 5,250 acres of land on the city's outskirts. The Air Corps established Wright Field on the site, naming it in honor of native sons Orville and Wilbur Wright's contributions to flight. The Army Air Corps stationed its Materiel Division at Wright Field and employed scientists who researched aircraft improvements for military applications. They developed a new, multidisciplinary approach for their work that provided groundbreaking insights into airplane design (Ohio History Central 2005c).

Preparing for wartime in 1939, the U.S. Congress authorized \$300 million to expand air field facilities and provide the Air Corps with 6,000 aircraft. Wright Field was among the facilities included in the improvement program. Research at Wright Field focused on improving engine power, aircraft range, maneuverability and safety and weapons. After the war ended, Wright Field continued to play a major role in aircraft research and construction. In 1947, the newly established United States Air Force combined Wright Field with nearby Patterson Field, creating Wright-Patterson Air Force Base. Research at the base continued to be a major element of its mission through the remainder of the twentieth century (Futrell 1951:13; Ohio History Central 2005c).

At Ravenna, the Atlas Powder Company began manufacturing shells and bombs in 1941 for the war effort. This endeavor expanded considerably a year later, with the opening of the Ravenna Arsenal on the same site. Operating from 1942 to 1945, the facility employed more than 15,000 Ohioans and produced more weapons than any other plant in the United States. The massive arsenal eventually included 1,371 buildings located on 21,418 acres. Arms production ceased at the end of World War II, only to resume with the outbreak of the Korean War, this time under the control of the Firestone Company. Production ceased again in 1957, then resumed during the Vietnam War. After the early 1970s, Ravenna Arsenal workers principally disarmed ammunition. Much of the site is now devoted to the Ohio National Guard's Ravenna Training and Logistics Site (Ohio History Central 2005d).

Another component of Ohio's military-industrial complex came with the facility now known as the NASA John H. Glenn Research Center at Lewis Field. Originally dubbed the NACA Aircraft Engine Research Laboratory, the installation was established in 1941 on a 200-acre parcel immediately west of the Cleveland Municipal Airport (Dawson 1991:11-12). Similar to Wright Field, its original purpose was developing and improving aircraft engines. During World War II, AERL was involved in "trouble shooting" for both the military and engine manufacturers. Research conducted at AERL led to numerous aeronautical innovations, including research and testing of jet propulsion technology (*Lewis News* 1966:5). Following World War II, the laboratory focused on research and development of jet engines.

In 1947, the facility was renamed the Flight Propulsion Research Laboratory, marking a shift in its mission from engines to all types of propulsion. Another name change came in 1948, when the Flight Propulsion Laboratory became known as the Lewis Research Center in honor of George W. Lewis, the Director of Aeronautical Research for NACA. By the 1950s, the center played an important role in America's emerging space program. In 1958, the Lewis Research Center became part of the National Aeronautics and Space Administration (NASA). In addition to studying ways to propel aircraft and spaceships, scientists sought methods to speed up civilian air travel, improve communication, and reduce harmful aircraft emissions. The facility's research efforts have continued up to the present. In 1999, the center was renamed again to honor astronaut, and Ohio native, John Glenn. It is now known as the John H. Glenn Research Center at Lewis Field (Ohio History Central 2005e).

Complementing its military facilities, Ohio became home to numerous private entities engaged in research and development, such as Monsanto in Dayton and the Battelle Memorial Institute. Monsanto operated a top-secret research facility at the Runnymede Playhouse in Dayton's Oakwood neighborhood. Known as the Dayton Project, their work was directly associated with the Manhattan Project that built the world's first atomic bombs. In Dayton, a highly radioactive element, polonium, was produced, purified, and harnessed for use as triggers in the bombs. After the project was completed, the research facility where much of the work took place was so extensively contaminated with radioactivity that it was dismantled and buried in Oakwood, Tennessee. Dayton retained other buildings involved in the trigger project, including the General Electric Supply Warehouse at 610 East Third Street, which housed one of the nation's first radiation health safety programs, and six buildings that surrounded the Bonebrake Seminary on West First Street (DeBrosse 2004). Dubbed Unit III of the Dayton Project, the buildings around Bonebrake were listed in the NRHP for their association with this significant historic event. Postwar construction of a permanent site for Dayton Project activities began in 1947 and resulted in a facility in Miamisburg. Originally known as the Dayton Engineer Works, its name later changed to Mound Laboratories. Operations began a year later and continued into the early twenty-first century; after being declared a Superfund site in 1989, cleanup of hazardous materials began in 1995.

The Battelle Memorial Institute, meanwhile, was founded in 1923 in Columbus with an endowment from the estate of Gordon Battelle with the purpose of developing practical applications for scientific research. Battelle officially was incorporated in 1925 and its laboratory operations began in 1929 in a building next to the campus of The Ohio State University. During its first ten years of operation, Battelle's scientists focused on the iron and steel industries. During World War II, Battelle participated in nuclear research for the Manhattan Project as well. The institute also provided the U.S. military with improved armor for tanks and other military vehicles. After the war, Battelle expanded tremendously. Research for military applications continued, as Battelle scientists developed fuel for the U.S. Navy's first nuclear-powered submarine, *Nautilus*, in 1949. Projects with civilian uses also joined Battelle's portfolio, such as research in xerography for use in copy machines. Battelle has continued to be a key research and development facility in Ohio through to the present (Ohio History Central 2005f).

3.1.3 Wartime Housing Development

During the early 1940s, the mushrooming rate of industrial growth in Ohio precipitated a housing crisis that also owed, in part, to economic conditions of the preceding decade. Residential construction had been hampered throughout the Great Depression. Builders and developers found few options to finance new projects. High unemployment rates among workers significantly depleted the pool of potential home buyers. With the onset of World War II, these issues became irrelevant, but residential construction efforts continued to be impeded as attention focused on meeting military defense needs. The resulting scarcity of construction materials, in particular, affected capacity for housing starts.

Recognizing that a lack of adequate housing for defense workers posed a threat to defense preparedness, the Roosevelt administration established the Defense Homes Corporation (DHC) in October 1940. The agency provided emergency financing facilities for financial institutions, and aided in financing agriculture, commerce, and industry (National Archives 2010). In January 1941, Roosevelt signed Executive Order 8632 coordinating national defense housing. The order applied to all housing authorized under a range of laws, including the U.S. Housing Act of 1937 and the Second Supplemental National Defense Appropriation Act approved in September 1940. The order established a Division of Defense Housing Coordination within the administration's Office for Emergency Management. The president appointed the head of the agency. This agency was empowered to plan, construct, or operate defense housing facilities; to grant loans or subsidies for public housing purposes; to encourage or assist the financing or construction of private housing; and to conduct surveys or analyses of housing conditions and housing markets (American Presidency Project 2010).

Numerous examples of defense worker housing were constructed in Ohio. In Akron, the Cole Avenue Housing Project at 744 Colette Drive became the city's first public defense housing project under federal jurisdiction. Its construction was authorized under the Lanham Act of 1940, which provided \$150 million to the Federal Works Administration. Working with local authorities, the agency built more than 625,000 housing units. Most were intended to be temporary in nature. The Cole Avenue project occupied 24 acres and included 300 apartments in 61 buildings. In accord with the period's typical architectural and landscape design tenets and with Federal Housing Administration (FHA) standards, the complex featured a park-like setting with buildings clustered around courtyards, large open spaces, and separate areas for pedestrians and vehicle. Cole Avenue housed defense workers for the duration of the war and later was marketed to World War II veterans as a cooperative housing venture; the complex is now listed in the NRHP (Griffin 2007).

In Medina County, Medfair Heights at 221 N. State Street was built as temporary housing for employees at Permold, an aluminum castings plant in Medina. The buildings were constructed with concrete block, reflecting the shortage of traditional construction materials that set in early in the war years. Like Cole Avenue, Medfair Heights was constructed under the Lanham Act according to FHA standards. After the war ended, the apartments provided housing for returning veterans and their families. In 1953, the complex was turned over to the Medina County Housing Authority and served as non-profit, low-income housing through the late 1970s; it also is listed in the NRHP (Van Atta and Sheehan 2008).

Meanwhile, in the Columbus suburb of Worthington, the Colonial Hills subdivision was constructed by the DHC during the early 1940s. The neighborhood has been documented extensively by a local resident, George Campbell (2010a). According to Campbell, the neighborhood's site had been targeted for development since the 1920s but without success. In 1940, a model home finally was constructed at 36 East Southington Avenue as part of the 1940 Model Home Show of Columbus. Development did not proceed, however, due to lack of potential buyers. A year later, the DHC chose the vacant Colonial Hills site to build rental housing for executives at defense plants. Many of the tenants worked at the Curtis Wright Aviation Plant in management positions (Campbell 2010a).

A 1925 speculative plat, as identified by Campbell, provided the basis for the neighborhood plan that ultimately was designed in 1941 (Figure A9). The plan generally featured a rectilinear arrangement oriented along an east/west axis. The primary entry into the subdivision was along Selby Boulevard. At a park to be located roughly in the center of the neighborhood, the road then branched into two parallel streets, Selby North and Selby South. Another street, Kenbrook, roughly paralleled Selby along the northern third of the plan. A series of five streets crossed the neighborhood from north to south. In keeping with the period's suburban residential planning tenets, no alleys were included in the plan. The residential lots were almost uniformly square or rectangular in shape, while demonstrating some diversity in size. An aerial photograph of the neighborhood taken in 1947 demonstrated that the neighborhood was built largely according to the plan (Plate B1).

Campbell states that Columbus architect Todd Tibbals designed nine house models for the neighborhood. Campbell found examples of each through the Franklin County Auditor's website. The smallest model was found exclusively on corners (Plate B2). A scaled-down Cape Cod dwelling, the house featured very modest Colonial Revival detailing. The principal architectural flourish came in the form of a bay window facing the side street. A total of 23 units were built of this model (Campbell 2010a). The largest of the nine designs offered an extra room between the house and the garage (Plate B3). It, too, was an example with slight Colonial Revival details. A front-facing gabled bay with an inset entry stoop broke up the plane of the primary façade. A total of 21 units of this model were constructed during the war years (Campbell 2010a).

Campbell found that the houses were prefabricated off site then delivered as kits via rail to the Potter Lumber Company at State Route 161 and Proprietors Road. The houses also were noteworthy for the use of sheetrock manufactured by United States Gypsum. Finishing interior walls with sheetrock rather than traditional plaster quickened construction and was less expensive. On-site construction had commenced by January 1942. Only two houses were finished by October. A total of 58, however, were ready for occupancy by the following spring and, ultimately, 200 were constructed during the course of the project. Although the houses were designed to be built quickly and efficiently, sufficient variation existed among the nine models to create a visually appealing streetscape (Plate B4). After the war's end, many of the houses were sold either to current residents or to returning veterans. Investors bought a number of houses as well and maintained them as rentals into the 1950s (Campbell 2010a).

3.1.4 Wartime Changes in Rural Ohio

The agricultural sector of Ohio's economy also benefitted from wartime expansion and demand. True of farmers everywhere, Ohio's farmers worked within a constantly changing dynamic that involved weather, market forces, and technological developments. A farmer's success often depended on his or her acumen at correctly assessing both current events and future trends. At the onset of World War II, Ohio's farmers faced numerous difficult challenges, many of which had been brewing for more than two decades. Small and family farms met additional obstacles as most federal government programs were tailored toward consolidating farms and meeting the needs of large farmers. The resultant industrialization of agriculture that began during this period continued through the remainder of the twentieth century, although small farmers also experienced some benefits.

The federal government began providing technical assistance to farmers during the nineteenth century. In 1862, Congress passed the Morrill Act, which provided for the establishment of a university in each state that had not seceded to educate citizens in agricultural and mechanical fields. The mandate was funded by federal land grants, leading these schools to become known as "land-grant universities." Ohio State University is Ohio's land-grant university. Within a brief period, the university's focus expanded to include liberal arts education. In 1882, the university established the Ohio Agricultural Experiment Station (OAES) near Wooster to fulfill the school's founding mission of agricultural research. Research in the Station's early years focused on animal husbandry, nutrition, and pest control. The OAES also played a major role in educating young farmers to apply science to increase efficiency in food production (Whitmoyer 2009:np; Ohio State University Extension 2010). The OAES also fit within the research farm model Congress established in 1887 with the Hatch Act. Under this law, land-grant universities were charged with using research farms to conduct research into agricultural, mechanical, and related problems faced by rural citizens (Ohio State University Extension 2010). In 1914, Congress passed the Smith-Lever Act, which established the Cooperative Extension Service within the U.S. Department of Agriculture (USDA). This service offered local assistance to farmers, such as agricultural courses to inform them of the latest farming technologies and methods (Hurt 2002:x-ix). Ohio's Cooperative Extension Service is based out of Ohio State University.

The Ohio Farm Bureau Federation (OFBF) formed in 1919 with the mission of lobbying local, state, and federal leaders to pass legislation to assist farmers. Rural electrification and crop insurance ranked among the organization's early goals, as well as encouraging cooperatives among farmers to reduce production costs. In 1926, the OFBF created the Farm Bureau Mutual Automobile Insurance Company, an insurance agency for Ohio's farmers. Based in Columbus, by the 1930s the company offered policies to farmers in several other states and to urbanites, and began selling fire and life insurance. In 1955, the Farm Bureau Mutual Automobile Insurance Company changed its name to Nationwide Insurance, and by 1965, it underwrote policies in thirty-two states; the firm continues to be a major corporate presence in Ohio (Ohio History Central 2005g).

In 1920, the Ohio Department of Agriculture (ODA) formed, replacing the Ohio State Board of Agriculture. The ODA built upon successes of its predecessor agency, especially the county and state fair system. It also extended government involvement in agriculture. For

example, the Division of Animal Industry sought to eliminate diseases from Ohio's domestic and wild animals (Ohio History Central 2007a).

During the Progressive Era, farmers faced major problems associated with soil exhaustion resulting from agricultural methods that depleted soil nutrients. The Great Depression further eroded agricultural profits as crop surpluses increased and food prices crashed. The entry of the United States into World War II brought farmers a degree of prosperity they had not seen in years. In fact, many wartime farmers had grown up during the difficult times of the 1920s and 1930s, and experienced their first prosperity during the war (Hurt 1988:50).

During the 1930s, federal agricultural aid legislation focused primarily on large land holders and successful farmers. Smaller family farms were seen as inefficient and incapable of improvement, so the government began to encourage successful farmers to increase their holdings and make their operations more efficient and less costly. World War II temporarily ended the woes of the small farmer, as demand for foodstuffs soared. With rising demand came a reduction in surpluses and an increase in prices. Ohio's farmers saw their cash income increase from \$2.3 billion to \$9.2 billion. With their improved financial fortunes, they were able to purchase more land and machinery, pay off debts, and save for the future (Hurt 2002:98; 1984:77).

Despite these gains, farmers' income remained well below that of workers in non-agricultural sectors. In an attempt to put farmers on more equal footing with other wage earners, the federal government passed the Emergency Price Control Act of 1942. The act guaranteed 90 percent of parity on corn, cotton, wheat, rice, and tobacco for two years after the war's end to prevent a post-war recession. The guaranteed price supports established in 1942 were continually extended into the present. The immediate effect of the legislation was financial security for many of Ohio's farmers (Hurt 2002:99–101).

Ohio's farmers, like those nationwide, feared a repeat of the price collapses that followed World War I, erasing the financial gains made since 1940. In addition to looking to government regulation to control prices, Ohio's farmers began a relentless campaign to increase their productivity. Wartime needs had brought about a decline in the farm population as rural residents left the countryside to join the military or take defense-related manufacturing jobs in urban centers. Mechanization of Ohio farms, however, reduced the labor required to produce crops and made it possible for fewer workers to match and even exceed the output of earlier years. By late 1945, Ohio farmers were purchasing twine binders, self-propelled combines, corn pickers, tractors, and threshers. The mechanical equipment replaced all types of hand tools. The increase in tractors also corresponded with a decline in the number of draft horses; fewer horses allowed land once set aside for forage to be turned to other agricultural purposes. As a result, nearly 2.5 million acres of Ohio farmland became available for crop or livestock production (Hurt 1984:77).

Another major change for Ohio farmers during the early 1940s came with rural electrification programs. No longer seen as a luxury, electricity was recognized as a means to boost profits by powering milk coolers, feed grinders, and heating systems. By December 1945, Ohio had more electrified farms than anywhere else in the United States. As of mid-1947, six out of

every seven Ohio farms had electricity or access to it. Just a year later, 97.6 percent of Ohio farms were electrified, a rate that was 21 percent above the national average (Hurt 1984:78).

The widespread adoption of mechanized farming and introduction of electricity influenced the layout of Ohio farmsteads, as well as the types of buildings that were needed. From the mid-nineteenth century through the early twentieth century, farmstead layouts saw few major changes. Although each farm exhibited its own variations, the general plan for a farmstead included a dwelling that typically stood near the main road passing by or through the farm, with associated outbuildings nearby. The outbuildings might include springhouses, cisterns, smokehouses, woodsheds, utility sheds, root cellars, and other buildings geared toward domestic use. Privies, however, may have been located further from the house than the other buildings; they were sometimes hidden behind another outbuilding or a trellis to give more privacy (Noble 1984:87). Livestock shelters were placed a greater distance from the house to avoid the odors, rodents, and insects typically found with livestock. Outbuildings that stored crops, such as corn cribs and granaries, often stood near barns where the crop was used to feed livestock. Fields and any pasture land surrounded the campus of buildings. As the soil was depleted in areas, some outbuildings were relocated to take advantage of the more fertile soil underneath.

Through the early twentieth century, gradual incorporation of indoor plumbing within farmhouses made some outbuildings and structures, particularly privies, cisterns, and spring houses, obsolete. These structures often were left to stand idle, converted to other uses, or were removed. With the introduction of electricity in rural Ohio during the 1930s and 1940s, other outbuildings devoted to domestic use, such as root cellars and smoke houses, also became obsolete. However, it was not unusual for farmers to retain older outbuildings and either leave them vacant or repurpose them for new uses. Many of these historic outbuildings remained extant for decades after they ceased serving their original use, and some can still be seen today across Ohio.

By the early 1940s, farmers began constructing equipment sheds designed to house large machinery, such as combines, tractors, and threshers. By this time, a shift in the design and construction methods used for agricultural outbuildings was under way. Two types of outbuildings proliferated. One was a vernacular type that farmers could build themselves, or hire a local carpenter to do so. Sawn dimension lumber was used for interior framing. Corrugated metal siding and roofing became commonplace, in lieu of the wood siding and shingles that once typified such structures.

The second type of agricultural buildings consisted of prefabricated, or kit, structures. During the early twentieth century, specialized builders began designing prefabricated utility structures, such as galvanized steel grain bins (Plate B5). Believing them to be more structurally sound, efficient, fire-resistant, and economical, the USDA encouraged farmers to purchase these types of structures. By the late 1930s, builders began using rigid frames composed of steel studs and trusses and metal siding and roofing to create prefabricated, or kit, buildings (Plate B6). The Butler Manufacturing Company, based in Kansas City, Missouri, was one such firm. An early example of the company's pre-engineered buildings was a gable-roofed, one-story structure with a rigid steel frame (Plate B7). The roof and

walls were clad with metal, and a series of small square windows were regularly spaced along the perimeter walls (Butler Manufacturing Company n.d.:4-6, 8, 14). This design quickly came to typify prefabricated utility structures of all types. Such buildings were intended to be utilitarian and economical, and little, if any, attention was paid to aesthetic considerations.

During the 1940s, a technological innovation changes silo construction and materials. The Milwaukee-based A.O. Smith Company developed a process for fusing glass to steel. In 1948, a new type of silo, the prefabricated Harvestore, using this technology was introduced to farmers. The Harvestore silo's glass lining resisted silage acids, thus requiring less maintenance than older silos built of stone or concrete. The airtight silos also kept the silage from freezing during cold winters and reduced spoilage during warmer weather. The silo's efficient design, combined with the invention of the automatic silo unloader, allowed silos to be filled at the top while simultaneously being unloaded at the bottom. On the landscape, the Harvestore silo was distinguished by its trademark cobalt blue color and its size. By the 1960s, Harvestore silos averaged 20 feet in diameter and 60 feet in height, making them considerably larger than silos built using traditional materials and designs (Beedle 2001:14-15).

Since the 1940s, the vast majority of agricultural outbuildings constructed on Ohio farmsteads have been iterations of these types of prefabricated structures. Constructed of unadorned, mass-produced metal parts, the buildings brought an anonymity, conformity, and homogeneity to Ohio's farmsteads. These were a significant departure from earlier farmstead buildings that had exhibited variations in form and appearance based on local needs and locally available materials.

3.1.5 The Aftermath of World War II

When World War II ended in August 1945, American veterans and citizens attempted to return to a normal, peacetime way of life. Following a decade of economic depression and the stringencies of the war years, many Americans found themselves in an altogether prosperous climate. The war effort had pulled the nation out of one of the worst economic crises in American history, generating more jobs than the population could fill. Wartime rationing, however, prevented stateside workers from spending their newfound wealth on just about everything, with the exception of entertainment. Consequently, personal savings reached \$140 billion by 1945. Advertising agencies prepared Americans for an era of private consumption after the war, informing Americans that with the end of wartime rationing, production of consumer goods would resume on an unprecedented scale. Assured by advertisers that consumption constituted the American way, the public waited impatiently for the chance to contribute their share of savings to postwar prosperity (Cross 2000:85–86).

Advertising paid off. Despite initial fears of a postwar slowdown, personal consumption increased 20 percent between 1945 and 1946, which in turn contributed to a 70 percent increase since 1941. Fueled by rising incomes, production of consumer goods escalated as factories switched from building jeeps, tanks, and aircraft to making refrigerators, radios, televisions, and all manner of consumer goods for a prosperous public. The Baby Boom that followed the return of millions of service members from overseas only further added to the

demand for consumer goods. Demand for toys, diapers, larger cars, new houses, and furniture to fill these houses helped insure against any economic downturn. Their needs never fully met, Americans consumed more food and goods than at any time in previous history (Cross 2000:88–89).

Nevertheless, America was not fully prepared for the influx of young people looking for homes, education, and work. Housing shortages affected people all over the country. Even before and during the war, the shortage led some people living in public housing to refuse higher paying defense jobs. If they accepted the proffered positions, they would no longer be eligible for public housing, and few affordable housing opportunities were available (Martinson 2000:xvi). In some cases, young couples unable to find a home moved in with family members. Immediately after the war, approximately two million families were living doubled-up in houses and apartments (Straus 1952:6). The housing shortage also led hundreds of thousands of veterans to live in substandard housing, such as garages, barns, trailers, and chicken coops (Wright 1981:242).

Congress passed the Veterans' Emergency Housing Act in May 1946. The act created the Veterans' Emergency Housing Program, which allowed significant government involvement in housing production. Controlling critical materials, allocating factory capacity to residential construction manufacturing needs, and providing loans through the Reconstruction Finance Corporation figured prominently in the program's mission. Faced with limited supplies of materials, would-be residential builders experimented with a variety of approaches, including various schemes for prefabricating dwellings and with adapting non-traditional materials, such as steel, for building houses. From this dilemma, Carl Strandlund conceived Ohio's iconic Lustron House (Lustron Preservation 2010).

During the war years, the Swedish-born Strandlund, an engineer by training, worked for the Chicago Vitreous Enamel Product Company. After the war's end, he attempted to acquire an allotment of steel to build gas stations. The government refused the request, stating that housing construction needs took precedence. Recognizing a potential economic boon, Strandlund conceptualized a prefabricated house built of steel panels. Cautiously supportive of the idea, Chicago Vitreous established an offshoot firm, the Lustron Corporation in 1947.

Although financing the venture proved challenging, Strandlund obtained a loan from the Reconstruction Finance Corporation (RFC), a government agency formed to support industry during the Depression. Despite controversy over using federal funds to subsidize such an experimental venture, the housing shortage was viewed as significant enough to warrant the support. Based in Columbus, Ohio, production began the next year at the one-million square foot facility housed on a site adjacent to the Columbus airport. Borrowing from the efficiency of the continuous production of automobile manufacturing, Strandlund envisioned a rationalized, organized and integrated method of home building. Initially concerned about public skepticism regarding pre-fabricated houses, the Lustron Corporation overcame this obstacle by incorporating innovative features into a family oriented design. The "Lustron Esquire" was the prototype designed by Chicago architects, Morris Beckman and Roy Burton Blass. Widely advertised, this model offered a 1,025 square foot, two bedroom, ranch style house with bay window and recessed side porch. The use of built-in storage including

kitchen cabinets, bookshelves and china cabinets with a distinctive kitchen to dining room 'pass-through' feature, master bedroom vanity and pocket doors unified function and livability. In addition, the Esquire also boasted a novel combination dishwasher-washing machine called the Automagic; an obvious selling point in the mid 1940s. These innovations, coupled with a Hollywood-style promotional campaign, met with considerable marketing success and sales were brisk. From the beginning, however, the venture encountered difficulties. While the production and distribution processes were integrated and consistent, local, state, and federal building codes were not. Buyers faced a myriad of regulations that governed the fabrication of housing components. The innovative steel wall construction failed, in many cases, to meet code standards and was often prohibited. Financing factory made homes was also problematic. Lenders considered the house to be chattel property until permanently attached to real estate and hesitated to finance them until the site assembly was complete. Coupled with these obstacles, by 1949, conventional house building materials were once again available and traditional home builders could actually produce a home at a lower selling price than could Lustron. Another significant disadvantage for Lustron was an inability to accurately quote a universally fixed price for each model due to locally diverse land, foundation, transportation and labor costs. While the market willingly accepted the product, the execution of production, finance and delivery was mired in red tape. Negative media coverage and political controversy over continued public funding resulted in further damage to the Strandlund's reputation and the eventual termination of the RFC backing. The company never recovered and in 1951, after prolonged legal maneuvering, the assets of the company were foreclosed and liquidated. (Knerr 2005:19-33)

Approximately 2,680 Lustron houses were constructed, of which approximately 1,500 currently survive (Lustron Preservation 2010). In Ohio, approximately 40 examples of the house type have been identified through survey and documented on Ohio Historic Inventory forms, held at the Ohio Historic Preservation Office.

Notwithstanding the mixed results of the Lustron experiment, the post-World War II era saw unprecedented levels of housing construction, in part due to government assistance programs for returning veterans. During the mid to late 1940s, builders and developers responded to the escalating demand for housing by acquiring large tracts of land on the outskirts of cities for the construction of entirely new neighborhoods. These became rings of suburbs encircling Ohio's traditional urban cores in Cincinnati, Columbus, Dayton, Cleveland, Akron, Youngstown, and Toledo, as well as smaller cities such as Portsmouth, Lima, and Marietta. As new single-family houses were constructed outside city centers in these new suburban areas, veterans applied for home loans through the assistance of the 1944 veterans' mortgage guarantee program of the G.I. Bill. The loans gave many families their first opportunity to purchase a house. Prior to the war, most mortgages required a 50 percent down payment and a relatively short repayment schedule, which put home ownership out of reach of most middle- and lower-income families. The G.I. Bill allowed veterans to borrow the entire value of a house without a down payment, circumvented state laws that restricted access to mortgages, and guaranteed mortgages by assuming responsibility for the financed houses and their resale in the event of default. Veterans further benefited through the low interest rates and payments of the G.I. Bill home loans. Nationally, approximately five million veterans purchased homes via G.I. Bill benefits, accounting for almost half of the new homes built in

the decade after the war (Humes 2006:91–99). Ohio’s 839,000 World War II veterans were eligible for G.I. Bill benefits as well. The economic benefits of such initiatives, however, were applied unequally, with racial minorities suffering from restrictive housing covenants and lack of access to financing.

3.2 Ohio During the 1950s: Expansion and Prosperity

The economic foundation established during World War II served Ohio well during the 1950s. The state enjoyed a steadily rising demand for workers, which prompted increasing population, particularly in the industrialized areas of the state such as the Cleveland, Columbus, Cincinnati, and Toledo areas. With economic security, many more Ohioans participated in the social opportunities presented during the postwar era, especially access to higher education and suburban home ownership, both of which were made possible by federal initiatives. Ohio also received federal largesse through vast improvements to its transportation systems. The state’s agricultural sector benefited from major innovations that ranged from increased mechanization to the development of engineered crops and improved fertilizers. At the same time, not all segments of the population enjoyed the same levels of success, thus sowing seeds for discontent that would bloom a decade later.

3.2.1 Ohio’s Decentralized Industrial Base

In the immediate postwar period, fears of an economic recession were prevalent, especially as the federal government faced the prospect of reintegrating 12 million veterans into the work force. With a limited number of jobs available, society exerted great pressure on women and minorities, who had acquired wartime jobs, to relinquish their positions to returning service members. Receiving little or no support from unions, women and minorities had little recourse when called upon to vacate their jobs. Many women returned to domestic life without argument, but others found it difficult to surrender their new-found independence. African-American men fared somewhat better than women, with many retaining their positions and elevated levels of responsibility (Knepper 2003:376).

By 1950, most of Ohio’s veterans had returned to work and prosperity had become widespread. American consumers were compensating for years of economic depression and wartime rationing, causing demand for material goods to reach all-time highs. Fueled by a baby boom and the outbreak of the Korean War, Ohio’s economy boomed, enabling factories to expand production (Murdock & Darbee 2007:168–169). So successful were Ohio’s industries that through the 1950s, the state’s workforce, which accounted for only 5.3 percent of the nation’s population, generated 6 percent of the nation’s Gross National Product. Statistics vary from study to study, but through the 1950s, Ohio ranked either fourth or fifth in industrial production, and second only to Michigan in value of exports. Some of the more significant Ohio exports at this time included steel, automotive components, appliances, and rubber products (Knepper 2003:377).

New technologies and processes developed during wartime dramatically altered the shape of Ohio’s industrial economy in the postwar era. Research and development became a key component within every industry (Murdock & Darbee 2007:169). Ohio’s paint, soap, oil, rubber, and electric power industries all created their own laboratories to develop new

products and improve production. Cincinnati based Proctor and Gamble established extensive research facilities and in Akron, the rubber industry invested in significant rubber research laboratories. Akron's laboratories employed more Ph.D. chemists than any other American city, with the exception of Wilmington, Delaware. Northeastern Ohio's dominance in rubber manufacturing even extended into latex gloves. After years of experiments with coating cotton gloves with vulcanized rubber, Edward Montgomery established the Edmont Manufacturing Company in Coshocton. By the 1950s, the firm ranked as the world's largest producer of coated gloves. Finally, the aforementioned Battelle Institute in Columbus, NASA's Lewis Research Center in Cleveland, and Wright-Patterson Air Force Base in Dayton all played key roles in research and development activities in the state (Knepper 2003:448; Ohio History Central 2006a).

Ohio's universities invested in facilities and faculty to undertake a considerable range of research with applications in industry, medicine, and agriculture. For example, following up on its creation of the Rubber Technical Institute in 1942, the University of Akron worked in partnership with Goodyear, Firestone, and Goodrich to research rubber chemistry and synthetic polymers. At the University of Cincinnati and Cincinnati Children's Hospital, Dr. Albert Sabin researched polio during the late 1940s and 1950s, and ultimately developed a polio vaccine that allowed the polio virus to be virtually eradicated in the United States (Ohio History Central 2005h). Adhering to its mission as a land-grant university, Ohio State University continued its support of the Cooperative Extension Service and conducted research in biotechnology and crop sciences.

Another major aspect of the postwar industrial landscape was the rise of organized labor. At the end of the war, in 1945, roughly 36 percent of Ohio's workers belonged to unions. The majority of these people worked in the steel, rubber, and automobile industries. With demand for new cars and construction materials at all-time highs, labor unions gained considerable strength during the 1950s. As the balance of power shifted in favor of unions, strikes became a routine feature of labor negotiations. As a result, long-term contracts between employers and unions became increasingly common during this period (Cayton 2002:329).

Labor unions benefitted from their connections with the Democratic Party. A strong alliance with the Democrats helped legitimize labor unions, and in turn, labor unions helped secure the party's control of the northeast. Unnerved by the growing influence of organized labor, Ohio's pro-business advocates organized to stem the influence of unions in the workplace. This effort culminated in the 1958 "right-to-work" constitutional amendment, proposed by the Ohio Chamber of Commerce and other pro-business organizations. The amendment gave Ohio voters an opportunity to decide whether it would be legal to prevent non-union workers from securing employment in unionized factories. Arguing that people had a right to work independently of organized labor, anti-union advocates campaigned for a state-wide, open shop policy (Cayton 2002:329-330).

Seeking reelection in 1958, Republican Senator John W. Bricker championed the right-to-work amendment. Bricker offered both positive and negative assessments of open shops. Opposing both big business and big unions, Bricker argued that no one should have to endure a corrupt boss, but ultimately, he contended, the decision to join a union belonged to the

employee. Initially, Bricker's open shop campaign gained momentum, due in large part to internal fighting within the American Federation of Labor and the Congress of Industrial Organizations. In addition, the anti-Communist hysteria of the McCarthy era further hampered pro-labor forces (Cayton 2002:330).

Despite considerable support from Ohio's rural communities, Bricker's bid for reelection fell short. Labor organized at all levels to defeat the right-to-work amendment. Unions organized an advertising campaign and helped voters register. With the exception of the 1956 presidential election, the right-to-work amendment election attracted more voters than any other election in state history. Only 16 of Ohio's 88 counties voted in favor of the amendment, giving the opposition a two-to-one margin of victory. In addition, the state's incumbent Republican governor, C. William O'Neill, lost to Democrat Michael DiSalle. The election also spelled the end of Bricker's career, as he lost to Democrat Stephen Young by a margin of 155,000 votes. Despite winning many of the state's southern and rural counties, Bricker lost the pro-labor counties of northeast Ohio's industrial cities (Cayton 2002:331).

A mild recession and six years of Republican rule fueled the Democratic victory. With strong political support, unions cemented their position within the state's landscape, forcing politicians to recognize their legitimacy. Unions also benefited from a general feeling of solidarity, attributed to decreased ethnic immigration and a common desire to attain the same goals. Unlike the pre-war labor agenda, waging a revolution no longer seemed relevant in the prosperous climate of the postwar era. Instead, most union representatives focused their attention on the issues of wages and working conditions, factors which would improve the quality of life for members and their families. Indeed, the quest for a middle class lifestyle dominated the aspirations of working class Ohioans during the 1950s (Cayton 2002:331). Census data from 1950–1970 reflect a measure of success in this quest. Ohio saw a tremendous amount of home construction from the 1940s until the 1970s (Figure A2). The areas of Ohio with the greatest number of housing units (Figure A3) were in the most industrialized areas of the state, especially northeastern and southwestern Ohio, as well as the Columbus and Toledo areas. These areas also had the greatest housing and rental values (Figures A4-A5) and, as shown on Figure A2, also had a high percentage of newer housing stock.

As the relationship between labor and big business evolved, so did the locations and designs of industrial plants. Following the trend toward decentralization away from urban centers, large corporations began relocating to the outskirts of cities. The cost of urban land, high taxes, and the difficulties associated with realigning existing streets and utility lines, prompted many corporations to build new factories away from traditional industrial zones (Murdock & Darbee 2007:170).

Among the early experts in industrial park design was the Austin Company, based in Cleveland. Samuel J. Austin (1850-1936), a carpenter, founded the company in 1871. Within a decade, he began designing and building commercial, residential, and factory buildings. After his son, Wilbert Austin (1878-1940), joined the firm, it became Samuel Austin and Son Company. The name later was shortened to Austin Company. During the Austins' tenure, the firm became a highly successful building concern specializing in the design and construction

of industrial plants. Among its noteworthy achievements are the Austin Method of “undivided responsibility,” the standardization of factory construction, and the development of the controlled-conditions plant for saving energy. In 1911, at Noble and Terrace roads in East Cleveland, Austin Company built Nela Park, one of the earliest (if not the first) planned industrial research parks in the nation. Franklin Terry and Burton Tremaine, officers of the National Electric Lamp Company, conceptualized the research park, while Austin Company’s approach to its construction is credited with leading directly to the standardization of construction methods in industrial building (Johannesen 1975).

During World War I, Austin built the 28-acre Curtiss aircraft plant in Buffalo, New York. In 1929, the company was responsible for the first all-welded steel frame building at 10465 Carnegie Avenue in Cleveland. An especially notable international project by the firm took place in Nizhni Novgorod, Russia, at the request of the Soviet Union’s government. In 1929-1930, Austin Company designed and built a giant automobile plant as well as an entire workers’ city there. By 1931, Austin Company had designed over 5,000 industrial plants. During the 1930s, the company began manufacturing prefabricated porcelain enamel service stations that were erected across the United States. On the eve of World War II, Austin Company built the first windowless, completely “controlled-conditions” factory for the Simonds Saw & Steel Company in Fitchburg, Massachusetts. In the postwar period, Austin Company became an international corporation with subsidiaries in 40 offices in 10 countries. Remaining in operation for the duration of the twentieth century, the firm became a part of Kajima USA Group in 2005 (Cleveland Landmarks Commission 2010; Encyclopedia of Cleveland History 2010b; Encyclopedia of Cleveland History 2010c).

At its research and industrial parks, the Austin Company’s work emphasized self-contained designs that incorporated a multitude of uses and used standardized construction methods. These approaches soon typified the design of research and industrial parks that began to be seen at many of Ohio’s semi-rural manufacturing centers. Located on open, rural land without the constraints of an urban setting, the postwar-period parks took on a look unlike anything previously built. They were situated along superhighways outside the congested confines of city centers, and occupied spacious, manicured grounds. Buildings typically rose only a single story in height, with straight, horizontal lines. The job opportunities at these plants drew workers and their families away from city centers (Murdock & Darbee 2007:170). The communities that grew up around the industrial parks to provide housing, education, recreation, and other services for workers and their families became the suburban developments that defined much of the evolution of Ohio’s built environment during the recent past.

Light manufacturing, or “clean” industries, pioneered this move towards decentralization, but eventually larger, heavier industries followed. By 1966, General Motors, for example, had completed an immense manufacturing facility at Lordstown in rural Trumbull County (Knepper 2003:384). This factory catapulted Ohio into second place in car production nationwide, behind only Michigan. Located in northeastern Ohio, it was in a region that already was home to numerous industrials, although expanses of rural areas remained outside the major cities of Youngstown, Akron, and Cleveland. During the mid-1960s, the village of Lordstown was not an industrial center, but its proximity to these major metropolitan areas

made it a viable candidate for the decentralizing industrial development typical of the period. The impact of such development included a rapid population increase for the area. Population in Trumbull County grew from 158,915 residents in 1950, to 208,526 in 1960, and to 232,579 in 1970. In comparison, in neighboring Mahoning County, which already was quite industrialized, population increased from 252,629 in 1950 to 300,480 in 1960, and to 303,424 in 1970 (United States Census Bureau 1950–1970).

3.2.2 Transitions in Transportation

Ohio's transportation systems underwent many changes as the state emerged from World War II. From a new commitment to the automobile to the continued development of the aeronautics industry, Ohio remained a leader in the transportation field throughout the postwar era. As automobile usage rapidly expanded in the immediate postwar period, the state's existing federal-aid highways grew overcrowded. Increasing numbers of vehicles traveled longer distances, and unlimited access points to existing highways caused major delays and traffic backups. At the same time, the size and ease of access to these early highways helped to preserve the small-town feel of towns and the drawing power of the cities' cultural and commercial institutions. Residents might have moved outside the urban core to live, but they still traveled back to the city daily for work and recreation (Kaszynski 2000:152). From the late 1940s through the 1950s, Ohio witnessed explosive growth in the construction of interstate highways, expressways, and the Ohio Turnpike, which played a major role in transforming Ohio's landscape and development patterns.

Some road projects, such as the Ohio Turnpike, were funded through innovative state- and local-level methods that included issuing public bonds. The degree, however, of federal involvement and funding in improving transportation infrastructure comprised a defining aspect of the 1950s, far outpacing earlier periods of American history. During the nineteenth century, Ohio's industrial and commercial success depended on its transportation infrastructure. The state's strategic location between the eastern seaboard and developing West, and its access to the major waterways of Lake Erie and the Ohio River benefitted both farmers and manufacturers. Rail transportation supplanted water transportation during the late nineteenth century. Both of these systems were constructed with funding that depended heavily on private investment, with considerable public subsidy and support. With a comprehensive network of water and rail transportation, Ohio entered the twentieth century with one of the nation's most comprehensive transportation networks (Knepper 2003:284).

By the 1910s, road transportation was on the rise due to the increasing popularity of the automobile. In response to widespread public demand, governments at both the state and federal levels took a role in financing road construction that was much greater than had been the case for water- and rail-based infrastructure projects. A series of federal laws provided a formula for distributing federal monies to states to pay for roads. States, in turn, were required to pay a portion of the costs as well. The roads constructed through this funding method came to be known as the "federal aid highway system." Most states formed a Department of Highways to manage their construction projects. During the early years, these agencies often were very modest in size and scope. Established in February 1905, Ohio's Department of Highways initially had an annual budget of \$10,000 and a four-person staff tasked with studying the state's roads and "the science of road construction" (ODOT 2006).

Over subsequent decades, the agency assumed responsibility both for road construction and for the safety of the traveling public. In 1933, in the face of rising fatalities caused by traffic accidents, the department organized and trained the first Ohio Highway Patrol (ODOT 2006).

By the advent of World War II, the “federal aid highway system” consisted of a national network of hard-surfaced roads extending over 230,000 miles (Kaszynski 2000:93). Most of the roads were two-lane highways with narrow, dirt shoulders (Plate B8). Bridges, likewise, were narrow, particularly in comparison to current standards, and their clearance heights were more modest than would be the case in later decades (Plates B9-B10). In keeping with the design tenets and construction technology of the period, these roads tended to follow existing topography. As a result, their visual impact on rural landscapes, in particular, was not significantly different from earlier dirt and gravel roads. During World War II, restrictions on petroleum and rubber temporarily dampened road improvements, but the federal government remained cognizant of the need to continue developing a comprehensive, national road network for the nation. The Federal Aid Highway Act of 1944 authorized creation of a National System of Interstate Highways. The system would include metropolitan expressways, which were envisioned as a means of reducing traffic congestion and providing a framework for urban redevelopment. Despite authorizing an interstate system, however, Congress did not appropriate any federal funds to help pay construction costs. Individual states were left to their own devices to design and pay for their road systems (Ames and McClelland 2002:24).

3.2.2.1 Ohio Turnpike

In the immediate post-war period, the need for improved transportation systems quickly became apparent, but the federal government’s resources were consumed by demobilization. Consequently, the Ohio Department of Highways took the lead in improving Ohio’s surface transportation network. The agency worked to eliminate sharp curves, excessive grades, and inadequate bridges. In 1947, the agency awarded 422 construction contracts and spent \$38 million on new construction and \$4 million on maintenance. By the end of the decade, however, such work was being hampered by an inadequate funding system based on a gasoline tax (Grant 2000:21; ODOT 2006).

At this time, the federal government still wrestled with finding a means for developing a nationwide network of improved highways. Numerous debates took place, in particular, over funding the system. In the meantime, with congestion growing on Ohio’s roads, state legislators looked for other ways to raise money for transportation improvements. During the late 1940s, voters approved a bond issue to create the Ohio Turnpike, a multi-lane highway that became one of the most successful transportation arteries in the country. The Ohio Turnpike Commission was established in 1949 to “construct, maintain, and operate a trans-state turnpike” (Grant 2000:22). Financing for the roadway came from \$326 million in voter-approved state revenue bonds, rather than the gas taxes with which the Ohio Department of Highways had previously worked. Workers broke ground on the turnpike in 1952, and less than three years later, the entire 241-mile route opened to traffic (Plate B11). At the peak of the turnpike’s construction, Ohio employed 10,000 workers and 2,300 construction vehicles (Ohio History Central 2005i).

The Ohio Turnpike enjoyed instant success. The limited-access, four-lane divided highway provided a vital link between New England, the Mid-Atlantic, and the Midwest. Complete with 17 interchanges, the turnpike featured restaurants and service stations totally contained within the turnpike system so that motorists did not have to exit the highway to access services. Maintenance and radio buildings also were constructed as part of the system. Upon its completion, the turnpike connected the Massachusetts Turnpike, New York Thruway, New Jersey Turnpike, and Pennsylvania Turnpike with Ohio and, the following year, extended the connection farther west with the opening of the Indiana Toll Road and the Chicago Skyway (Grant 2000:24). Drivers could travel nonstop from New York City to Chicago on publicly operated toll roads (Kaszynski 2000:146). Revenues from tolls and concession rentals helped make the turnpike a financial success. The last bonds from the original 1949 bond issue were redeemed on June 1, 1992. Although the turnpike did not pass through any of Ohio's major cities, it admirably fulfilled its main function, providing quick and easy transport for through traffic and freight across Ohio (Ohio History Central 2005i).

In its first full year of operation, ten million vehicles traveled over the Ohio Turnpike, which was later renamed the James Shocknessy Turnpike in honor of the commission's first administrator. Fifty years later, in 2006, more than 51 million vehicles traveled the turnpike, providing evidence of the roadway's lasting viability (Ohio Turnpike Commission 2007:np). The turnpike not only provided motorists with an easy route across northern Ohio, but also helped farmers located in the state's interior get goods to market without relying on cumbersome and costly secondary road travel to reach the Ohio River or Lake Erie. The resulting decrease in costs helped spur further agricultural development in the interior. Much as had earlier canals and railways, the presence of the Ohio Turnpike increased land values in areas adjacent to the roadway. New businesses and industries, such as the General Motors manufacturing complex in Lordstown, Ohio, set up operations in these areas because of the ease of access to one of the main transportation arteries of the period (Grant 2000:24; Knepper 2003: 384).

With its service plazas, the turnpike was designed to meet motorists' needs so they would not have to exit the highway. At turnpike interchanges with secondary roads, however, Ohioans soon gained a glimpse of future development patterns. Privately owned travelers' services began to be developed at turnpike interchanges, particularly lodging, fuel, and food. Although locally owned businesses were among the offerings, they faced ever growing competition from chain and franchise businesses, many of which were corporately owned. Because the turnpike was constructed on a new alignment rather than following older roads, many of the interchanges were in sparsely populated, rural areas. The arrival of these commercial entities introduced new visual elements, spatial relationships, and populations in settings that previously had been dominated by agricultural uses.

Moreover, the turnpike's construction represented the first step in introducing a major new element to Ohio's overall landscape. The divided highway bisected farms in rural areas, irrevocably altering their settings, as well as altering local traffic patterns and local residents' ability to access their own and neighboring properties. Much as the selection of railroad routes had represented economic boom or bust for locales during the nineteenth century, the turnpike's construction did the same in the twentieth. Roadside businesses that were located

along older state routes often saw a significant decline in business as motorists shifted to the turnpike instead, as did traditional downtown commercial centers. For example, businesses and communities located along State Routes 18 and 20 in Northeast and North-central Ohio witnessed this phenomenon firsthand. The ramifications of all these trends would become increasingly apparent during the 1960s and 1970s.

3.2.2.2 *Origins of the Interstate Highway System*

In addition to the housing shortage, factors that fueled the American postwar suburban building boom included increased automobile ownership, advances in building technology, and the Baby Boom. Traffic congestion plagued the nation's roads and highways, particularly in and around urban areas. The nationwide road network also was insufficient for interstate travel. As trucking became increasingly important to commerce, the lack of efficient highway systems hampered economic activity. Special interests, ranging from automobile enthusiasts to travel industry groups to trucking companies lobbied for a massive highway construction program.

Building on the federal aid programs of the 1920s and 1930s, the federal government continued to provide road construction funds to states through the late 1940s and early 1950s. Highway construction during the immediate postwar period started slowly, but by 1951, every major American city was working on arterial highway improvements. Of the federal aid money available, 65 percent was being spent on urban expressways (Ames and McClelland 2002:24).

As passage of the 1944 Federal Aid Highway Act had demonstrated, the federal government realized the need for an overhaul of the federal highways system. Congress, however, was unable to draft strong and lasting legislation until a decade after World War II ended. In 1956, President Dwight D. Eisenhower signed the Federal-Aid Highway Act of 1956, also known as the National System of Interstate and Defense Highways. This legislation established the basis for today's modern interstate highway system (Kaszynski 2000:162, 166).

Among the largest investments of public funds in American history, the National Interstate and Highways Defense Act committed the federal government to building 41,000 miles of toll-free highways across the nation by 1976. The project's massive scale was justified on the basis of its role in national defense, specifically to provide transportation arteries for troop mobilization. In reality, use of the interstate network was dominated by commercial shipping interests and the traveling public. The federal government established the Highway Trust Fund to pay for 90 percent of the work, with individual states supplying the remaining 10 percent. Taxes on gas, tires, and other automobile-related goods and services went directly into the trust fund for future work on the highways. In addition, Congress granted the federal government the power to condemn and purchase land for right-of-way acquisitions and other land purchases related to the highway system. In the event that a state was financially or legally unable to purchase needed land, the federal government acquired it and transferred it to the state (Kaszynski 2000:166–167). This regulation in particular would have a great impact on the modern landscape, as highways often cut through large cities and divided neighborhoods as part of urban renewal projects. When the highway system was complete, it

had the effect of greatly increasing the mobility of ordinary citizens, drastically changing traffic and development patterns, and enabling the establishment of new suburbs and exurbs farther from the city center than ever before.

Upon completion of the Ohio Turnpike in 1955, Ohio was poised to receive federal aid for interstate highway construction, which would arrive the following year. The interstate highways constructed within Ohio directly as a result of the National Interstate and Highways Defense Act were Interstates 70 (I-70), I-71, I-74, I-75, I-77, and I-90. Much as in the late 1940s, when Ohio began the turnpike, state officials were not content to wait for the federal government to begin upgrading the state's road network. As interstate construction progressed over the next decade, Ohio continued to improve its existing primary highways. In 1946, Ohio voters approved a \$500 million highway bond issue to supplement existing gas tax revenue for roadway improvements. This money went to expand two-lane roads such as Route 11 from Ashtabula to East Liverpool, Route 32 from Athens to Cincinnati, and Route 3 running through Cleveland, Columbus, and Cincinnati. These highways, as well as others, were upgraded to four-lane divided highways, similar in design to the Ohio Turnpike, but toll-free and with unlimited access (Grant 2000:26).

While the previous federal-aid highway system had major effects on the modern American landscape, these changes were greatly multiplied by the Interstate Highway System. When the first federal-aid highway system was being constructed during the interwar period, far fewer Americans had access to automobiles. As World War II ended, however, more inexpensive automobile models became available and, between 1945 and 1950, 18 million new cars entered the aging highway system (Kaszynski 2000:137). As the United States entered the post-war boom period, new advances in engine technologies and modern vehicle designs lured ever more Americans to the road. By the late 1940s, urban as well as suburban design plans were modified to accommodate the automobile. Drive-in theaters and car washes, service stations, and motels popped up along the existing highway system to take advantage of the new flow of commerce along America's highways. The travel industry also flourished as Americans gained greater access to car ownership. Entrepreneurs began opening motels (or "motor-courts"), service stations, and restaurants along the highly traveled original highway routes. These establishments usually were located just outside cities and towns along federal-aid highways. Their numbers were impressive; for example, approximately 50,000 motor courts were in operation across the United States by the early 1950s (Kaszynski 2000:151-152).

With the construction of the new interstate system, another form of commercial development emerged at interchanges with secondary roads. These new auto-centric developments included establishments similar to those that had been found on the older federal-aid highways, albeit in a more modern form. New service stations, fast food restaurants, motels, and shopping centers all catered heavily to the automobile. During the first phases of such development, many of these concerns were locally owned, independent operations that featured considerable diversity in aspects such as their range and quality of goods and services, advertising and branding, and architectural style. Increasingly, however, corporate-owned chains proliferated, as well as franchises purchased by either individual entrepreneurs or pre-existing businesses seeking to be identified with a well-known brand. The corporate

chains and franchises, in particular, came to be constructed in a way that rarely took into account a human pedestrian scale. The only practical way to reach these places was via automobile.

By the late 1950s, Ohio's highway and interstate system had assumed much of its current configuration (Figure A10). Subsequent interstate construction projects from the 1960s through the 1990s would build upon this framework (Plate B12). The state's growing network of high-speed highways opened new land for development. Large, self-contained suburbs emerged that included residential subdivisions, multiple family apartment complexes, office and industrial parks, and shopping centers. These new communities were built on a scale previously unimagined, and were made possible through increasing national prosperity, coupled with the availability of low-cost, long-term mortgages and use of mass production and prefabrication methods to make construction more efficient and economical than ever before (Ames and McClelland 2002:24).

3.2.2.3 Railroads

Nationwide, as commercial interests began relying more on highway transportation networks, declines in rail shipping meant that traditional commercial loci eroded and what John Stilgoe described as the "metropolitan corridor" began to decline. Although Ohio's dependence on rail shipping decreased during the 1950s, the state still maintained one of the highest densities of railroad routes in the country. Additionally, the Ohio River and Lake Erie, with its connection to the St. Lawrence Seaway, continued to contribute to Ohio's industrial and commercial success. Along both routes, the United States Army Corps of Engineers (USACE) invested in major improvements, marking another example of federal involvement in the state's transportation infrastructure.

Because of Ohio's strategic location, railroad companies invested heavily in rail routes through the state throughout the late nineteenth and early twentieth centuries. Railroad companies made up some of the largest employers in the state and Ohio ranked first in the nation in 1860 with nearly 3000 total miles of trackage. Ohio railway construction peaked in 1908 with 9581 total miles of trackage (Knepper 2003:284). However, from the immediate pre-World War I period through the 1930s, 1000 miles of low density track were removed as railroads consolidated to prevent closures. Thanks in large part to Ohio's expansive industrial base and mining in the southeast part of the state, Ohio's rail network stabilized following the 1930s closures. Between 1934 and 1954, only 170 miles of rail were removed (Grant 2000:100).

The advent of World War II greatly increased rail ridership due to fuel rationing, and the increase continued during the immediate postwar period. Railroad executives took this opportunity to build new passenger depots in Akron, Toledo, and Youngstown, and improved their existing trackage while converting locomotives to diesel-electric power. The diesel locomotives proved faster, cheaper and cleaner, and were able to travel greater distances between refueling and maintenance stops than steam locomotives. By the end of the 1950s, all rail lines in Ohio had switched to diesel-electric locomotives. Despite these improvements, passenger travel declined drastically by the 1960s as larger numbers of people gained access to automobiles and air travel increased in popularity (Grant 2000:102).

During the 1950s, railroads managed to hold onto their leading position for freight shipping. The opening of the Ohio Turnpike in 1955, however, and the subsequent work on Ohio's Interstate Highway System further eroded passenger rail travel and began to have an effect on freight traffic as well. Ohio's traditional freight shipping avenues along rail lines were soon superseded by highways as industries and businesses began locating along the highway routes to take advantage of easily accessible truck transportation (Knepper 2003:443).

3.2.2.4 Waterways

Since the United States' initial westward expansion, the Ohio River served as a primary transportation artery. Settlers reached the west via flatboats from Pittsburgh to Louisville, and then on to St. Louis, and down the Mississippi River to New Orleans. Later, the Ohio River became the main shipping route for industry and commerce as flatboats, and later steamboats, carried freight up and down the river. Although rail lines began to steal some traffic from the river during the late nineteenth century, the Ohio River has remained a vital transportation corridor.

In 1875, Congress appropriated funds for construction of an experimental movable dam on the Ohio River at Davis Island, just downstream from Pittsburgh. The project proved the technical and economic viability of movable dams on the upper Ohio. In 1888, Congress authorized the construction of five additional locks and dams, which would create a 6-foot deep channel from Pittsburgh to the mouth of the Beaver River. In 1899, 12 additional locks and dams were authorized, extending the 6-foot channel to the mouth of the Muskingum River at Marietta, Ohio. In 1901, an additional 20 locks and dams were authorized to extend the channel to Cincinnati. In 1905, as a result of the increasing use of larger barges that drew more water, Congress authorized a study to examine the feasibility of deepening the navigation channel to 9 feet. The resulting report recommended canalization of the entire Ohio River to a navigable depth of 9 feet. The report further recommended that those locks and dams whose pools would provide harbors for cities be constructed first. The River and Harbors Act of June 1910 adopted the recommended plan for 54 locks and movable dams between Pittsburgh to Cairo. This plan, somewhat modified to total 49 locks and dams, was completed in 1929 (O'Bannon 2009:32–33).

The USACE made further improvements to the waterway beginning in the 1950s and proceeding through the 1970s. The introduction of diesel-powered towboats allowed larger and heavier barge traffic on the Ohio River. The small existing locks and the restricted channel depth hampered use of the new generation of large steel barges. The USACE began a program to eliminate the old dams and locks and replace them with larger, more modern facilities with locks twice as long as before. The program also established a twelve foot deep channel that allowed even the heaviest barges to travel year-round (Grant 2000:38–39).

All of these improvements combined to make the Ohio River one of the cheapest and most efficient shipping lanes in the region. Shortly after the USACE began its postwar improvements to the Ohio River, riverside industry entered a period of expansion that continued through the latter half of the twentieth century. Coal, chemicals, oil, sand and

gravel, and other bulk cargoes benefitted the most, due to the sheer size of their freight loads and the low cost of shipping by river (Knepper 2003:285).

Even small river cities, such as Marietta, benefitted from the industrial expansion made possible by improvements to the Ohio River. For example, the local Chamber of Commerce used business publications to boast of favorable conditions for new industrial facilities, ranging from an abundant workforce (dubbed “hard-working farm stock”), an abundance of coal, oil, natural gas, and water resources as well as raw materials needed for manufacturing processes, ease of access to transportation networks, a reliable and expanding electricity grid, and cheap land (Business Week 1948:4–5). An article for Marietta included a panoramic photograph of the city’s riverfront with potential industrial plant sites labeled, along with power transmission lines, coal mines, a coal tipple, and a railroad corridor. An accompanying map provided locations of plants already in operation, those in development, and their proximity to oil and gas fields, rock salt, and coal in mineable quantities (Business Week 1948:2–3). The article also included photographs of a new plant constructed by B. F. Goodrich near Marietta to manufacture plastics, and a facility operated by American Cyanamid’s Calco Division in nearby St. Mary’s, West Virginia (Business Week 1948:4).

The only other major waterway in Ohio that has rivaled the shipping capacity of the Ohio River is the St. Lawrence Seaway and the Great Lakes. Much like the Ohio River on the state’s southern border, the USACE undertook in the transformation of the partially navigable northern waterway into a heavily traveled international shipping channel. From 1900 through the Great Depression, ship builders built bulk carriers on Lake Erie at a standard 600 foot length. During the post-World War II period, oil-fired turbine boats often reached over 700 feet, and with technological advancements, the length of the lake carriers continued to grow. With the introduction of carriers with automated power plants, lengths reached nearly 1000 feet and the vessels carried loads of up to 60,000 tons (Grant 2000:44). These massive new carriers were too large to pass through the locks on the St. Lawrence River to reach the ocean and international markets, but were successful in transporting raw materials such as iron ore, oil, coal, and grain from New York, Canada, and Michigan to and from rail systems in the Great Lakes states.

Beginning in 1954, the USACE constructed a series of three new canals and seven locks along the St. Lawrence Seaway that created a shipping channel 27 feet deep. This system allowed massive ships to pass from the Atlantic Ocean to the Great Lakes and on to Ohio ports. The St. Lawrence Seaway officially opened in April 1959, and several Ohio cities instantly became international ports (Grant 2000:45–46). After the Seaway opened, Toledo became the first Ohio city to establish a port authority, run like a business (Knepper 2003:443). While Cleveland and Ashtabula eventually adopted this method, Toledo gained an early start, benefitting from trade in grain, which usually comprised the largest outbound commodity on the Seaway.

3.2.3 Housing Development as Social and Political Policy

As previously noted, Ohioans faced a major housing shortage by the time World War II ended. Fueled by the postwar economic boom, however, government and private interests undertook a building boom that lasted well over a decade (Figure A2). Up until the 1940s,

much of the state had been characterized by vast tracts of rural and agricultural lands dotted by small towns and cities that served local needs. Several cities emerged as major industrial centers, including Youngstown, Akron, Cleveland, Toledo, Columbus, Dayton, and Cincinnati, that propelled Ohio to a nationally leading position in industrial capacity. These cities also were the locus of construction activity. From 1940 through 1970, Northeastern Ohio saw the greatest increase in housing construction, and was followed by Cincinnati, Columbus, Dayton, and Toledo. Such development patterns were logical, as these same areas had been Ohio's industrial and population centers during the pre-World War II period. Thus, much of the wartime development and postwar building boom took place in areas that already were highly developed in comparison to the rest of the state. A comparison of the total number of housing units in each county demonstrates that these same regions had the highest overall number of such units both in 1940 and in 1970 (Figure A3).

3.2.3.1 *Roots of Postwar Residential Suburbs*

As the postwar housing construction boom proceeded, Ohio's landscape and built environment began a major transformation. Suburbanization wrought major changes to the built environment, development patterns, architectural styles, and circulation patterns in rural areas, towns, and cities throughout the state. Although the rise of suburbia often has been attributed to the Interstate Highway System, the ascendancy of suburbs actually began during the mid-nineteenth century, with the development of railroad suburbs during the 1850s. The cramped and dirty living conditions typical of nineteenth-century urban cores reflected the haphazard fashion in which most cities had grown in response to ever-changing economic conditions and population fluctuations. As new transportation routes and technologies emerged during the 1850s, however, it became possible for urban residents to move into the countryside without sacrificing convenient access to the city. In these open spaces, farmland could be acquired, planned, and designed from the ground up to suit a specific set of needs without being hemmed in by earlier development. Railroad suburbs, dating to the 1850s, were the earliest suburbs to be constructed. Glendale, Ohio, platted in 1851, is considered one of the earliest picturesque-designed railroad suburbs within the state. They formed in nodes around railroad stations and, thus, could be widely dispersed across the landscape. Within a couple of decades, these commuter rail lines were followed by streetcar lines. Located well away from the urban core, from their beginnings these new subdivisions were intended to function as residential landscapes. Their characteristic open spaces, fresh air, and natural settings could not be had in an urban setting (Ames and McClelland 2002:16).

The earliest suburbs were available only to upper- and upper-middle class families who could afford the costs of commuting by rail. As streetcars proliferated during the late nineteenth century, the costs of commuting declined. With more land available for development, land and house prices declined as well. Suburban living became possible for middle-class families as well. The linear streetcar routes promoted creation of new circulation patterns that provided the spatial framework around which new land uses and suburbs organized. Suburban developments typically sprang up first around rural villages now connected by streetcar routes and then along the corridors formed by the routes themselves (Ames and McClelland 2002:16-17). Streetcar suburbs also were representative of the "two-part" city plan, which established distinct areas for commerce and industry, separate from residential areas. Since commerce and industry were already firmly rooted in the urban core, residential

districts moved further outside. The growing network of streetcar lines made possible the increasing distance between work and home (Martinson 2000:19, 52).

At the turn of the twentieth century, automobiles became the next mode of transportation to shape land development patterns. Unlike rail lines, roads could be constructed along almost any alignment, allowing a major departure from the linear corridors typical of railroad and streetcar suburbs. As a result, the gaps between the rail lines radiating from urban cores began to be filled with new suburban development (Ames and McClelland 2002:22).

During the late-nineteenth and early-twentieth century, suburbanization acted as a major impetus for economic growth in many areas. The expanding road infrastructure, along with an ever-growing electric grid, made it possible for factories, warehouses, distribution centers, businesses, and commercial concerns to relocate away from urban centers. Workers followed the job opportunities, and development on the periphery became more dispersed as automobiles allowed workers to commute longer distances (Ames and McClelland 2002:22). Moreover, the consumption required for building roads, bridges, and buildings created markets for both raw and finished materials. Mining, quarrying, lumbering, and manufacturing of all kinds saw increased demand for their goods. The expanding job opportunities that accompanied this economic activity added to the growing middle- and working classes, thus enlarging the population of potential suburbanites. In this fashion, suburbanization could be almost self-perpetuating, at least as long as ample land remained available.

Although construction activity significantly declined during the Great Depression, the Roosevelt administration pushed legislation and established policies that recognized workers' rights to organize into unions and bargain collectively. In industrialized states, such as Ohio, the widespread creation of unionized workplaces meant that a significant percentage of the workforce were union members. Carpenters, plumbers, electricians, and other trade unions benefitted directly from construction activity associated with suburban development. As unions gained job security and living wages for their members, the ranks of the middle class increased even more (Borchert 2010).

From the beginning of the movement toward suburbanization, class and racial mores of the period informed patterns of development. The nineteenth-century railroad suburbs were the purview of upper class families and unquestionably beyond the means of the less affluent. As suburbs became more affordable, however, and thus within reach of a greater range of the population, private-sector interests sought to guarantee a return on their financial investments by restricting access to newly constructed neighborhoods. Financing institutions, developers, and builders wrote "restrictive covenants" into legal descriptions and deeds that were intended to prevent racial and religious minorities from purchasing houses in many suburban developments. Such restrictions were legal throughout the late nineteenth and early twentieth century. The resultant homogeneity of suburban neighborhoods made for a stark contrast to the cultural milieu found in cities.

Along similar lines, land use restrictions were intended to prevent the re-creation of urban streetscapes in suburbs. Mixed-use buildings, with commercial space on the first floor and

living quarters either behind or on an upper floor, were not permitted in suburbs. Multiple-family dwellings and hotels also were restricted, and no rental space was permitted within dwellings. Consequently, those excluded from the suburban boom included single, widowed, divorced, and elderly people because suburban dwellings usually were either too large or too expensive for their needs (Wright 1981:256–260). The suburbs, instead, were characterized by detached, single-family dwellings occupying at least modestly sized yards. As a result, suburban living became synonymous with family living.

As neighborhood planning matured, another element that profoundly shaped the suburban streetscape emerged around concerns over pedestrian safety. With increasing automobile use, subdivision designers and housing reformers alike became concerned with separating pedestrian traffic from street traffic. The “Radburn Idea,” first introduced by Clarence Stein and Henry Wright in 1928, specified separate circulation systems to serve pedestrians and automobiles. This later expanded to include separation of local traffic made up of neighborhood residents from through traffic made up of commuters and commercial trucks (Ames and McClelland 2002:23). Removal of neighborhoods from arterial routes quickly became a standard aspect of subdivision plans. This, combined with restrictions on land uses within subdivisions (particularly commercial uses), meant that suburban residents became increasingly dependent on their automobiles to see to their everyday needs.

3.2.3.2 Impact of the Great Depression on Housing

The Great Depression sharply curtailed new housing construction and suburban development. In 1931, the Hoover administration convened the President’s Conference on Home Building and Home Ownership. The event brought together a diverse array of housing experts to find solutions to the lack of building activity. A number of committees were convened, each charged with investigating a specific problem and providing recommendations to address them. Each committee’s name generally alluded to its purpose. For example, the Committee on Design brought together experienced architects and developers. The group recommended that houses be built in well-planned groups that avoided monotonous repetition of uniform houses on narrow lots; such streetscapes were common in streetcar suburbs of the early twentieth century. House designs also were recommended to take advantage of opportunities for sunlight, fresh air, and outdoor space (Ames and McClelland 2002:60; Auman et al. 2004:3/9).

The Committee on Construction consisted of representatives from trade organizations, building associations, and materials manufacturers. This group upheld the need for labor- and time-saving methods; standardized building codes; improved standards of workmanship, education and research by trade associations; and economies of scale through use of prefabricated components. Meanwhile, the Committee on Fundamental Equipment examined the affordability of heating, ventilating, and air conditioning, and set basic requirements for plumbing and sanitation, electric wiring, and refrigeration. The Committee on Landscape Planning and Planting included landscape architects as well as representatives of private organizations, such as the Garden Club of America and the National Council of State Garden Club Federations. The group’s recommendations focused on the importance of attractive yard designs and landscape plantings to enhance a homeowner’s comfort and enjoyment as well as to increase property values. The President’s Conference also endorsed reformation of the

home financing system, improvement of housing for moderate and lower-income groups, and stimulation of the building industry (Ames and McClelland 2002:61).

As the Great Depression persisted through the 1930s, the Roosevelt administration also experimented with various housing programs, with some of the most well-known including low-density, multiple-family public housing projects, resettlement of rural residents, and creation of greenbelt communities such as Greenhills near Cincinnati. Following the lead of financing institutions and developers, federal agencies, such as the FHA, adopted neighborhood planning guidelines that largely mirrored practices already entrenched in the private sector, including the use of restrictive covenants (Straus 1952:219). The overall impact of the New Deal-era housing programs was limited, however, and with the onset of World War II, the lion's share of building materials went to the war effort, as did the efforts of much of the American labor force.

As previously noted, the Great Depression's prolonged economic distress, followed by World War II-era shortages of construction materials, created a housing crisis throughout Ohio. Upon the war's end and the resumption of prosperity, Ohioans who had been renting or living with extended family were anxious to move into their own homes. The 1944 G.I. Bill and the 1946 Veterans' Emergency Housing Act (discussed in Section 3.1.5) sought to address housing shortages specific to military veterans. The U.S. Housing Act of 1949, with its goal of "a decent home and a suitable living environment for every American family," represented a major attempt to address the civilian population's housing needs (Wright 1981:246; Ames and McClelland 2002:24).

3.2.3.3 Cultural and Social Forces in Suburban Development

Prevailing cultural and social mores shaped the federal government's implementation of its housing program. The vast majority of programs were aimed at meeting the needs of families. Because suburbs long had been considered the ideal setting for family life, suburban development projects received the lion's share of federal funding appropriated for housing (Wright 1981:246). As a result, along with single, widowed, divorced, and elderly people who found the suburbs to be a poor fit for their needs, urban residents who wished to remain in urban cores saw few benefits from the postwar housing programs.

Even more pervasive, racial, ethnic, and religious minorities endured curtailed opportunities for suburban living. Since the early twentieth century, restrictive covenants had been used to prevent various minority groups from purchasing suburban property. New Deal-era housing programs incorporated such restrictions into their own guidelines. Properties that included restrictive covenants were more likely to receive government backing for a mortgage. Such practices continued during the postwar period. The 1947 FHA Manual stated, "[i]f a mixture of user groups [meaning ethnic, racial, or religious groups] is found to exist, it must be determined whether the mixture will render the neighborhood less desirable to present and prospective occupants. Protective covenants are essential to the sound development of proposed residential areas since they regulate the use of the land and provide a basis for the development of harmonious, attractive neighborhoods" (Straus 1952:219).

Wartime employment opportunities had lured hundreds of thousands of migrants to Ohio, including upland Southerners and African Americans. Changes in the racial makeup of Ohio cities and counties were especially striking in the period between 1940 and 1950 (Figure A6). Industrial regions, particularly in northeastern and southwestern Ohio witnessed the greatest increase in non-white populations compared to the rest of the state. Increases were recorded as well, however, in the state's Appalachian counties in southeastern Ohio as well as in northeastern counties along the Ohio/Pennsylvania state line. At the same time, cities such as Cleveland and Youngstown long had hosted a diverse assortment of ethnic enclaves, made up primarily of southern and eastern Europeans. Many cities also featured Jewish communities. The housing shortage during the war meant that many Ohioans could secure only temporary living quarters for the duration. After the war ended, with employers seeking suburban locales for future development, the worker population logically followed the job opportunities. Consequently, the population makeup in many Ohio communities was in flux during the immediate postwar years. Interestingly, between 1950 and 1970, the overall number of non-white Ohioans declined in all regions of the state, while holding steady or increasing in the major metropolitan areas of Cleveland, Toledo, Columbus, Dayton, and Cincinnati (Figure A6).

The FHA, however, refused to grant loans in areas they deemed to be in "transition." Private lenders and savings and loan institutions similarly denied mortgage loans in these areas. Restoration of prewar segregation patterns was deemed desirable as a means of ensuring the financial success of suburban development projects. In 1948, the U.S. Supreme Court ruled restrictive covenants unenforceable; however, Raymond Foley, Director of the Housing and Home Finance Administration, waited until late in 1949 before stating that the FHA would not issue mortgages in restricted areas. Furthermore, the FHA honored mortgages granted in restricted areas before this date and continued to accept unwritten restrictive covenants until 1968 (*New Republic* 1949; Wright 1981:248; Borchert 2010).

The Veterans Administration (VA) also made home ownership difficult for minority veterans. Some members of Congress wanted the G.I. Bill to have limited federal oversight, preferring the benefits fall to local and state controls. As a result, because *de jure* and/or *de facto* racial discrimination existed in the vast majority of the United States, VA loan officers could simply refuse to guarantee a minority service member's home loan through his G.I. Bill benefits. A nationwide survey conducted during the mid-1970s showed that, out of the approximately 11 million veterans who purchased homes with VA-backed loans, less than 2% were African American (McKenna 2008:59). A state-by-state breakdown of African American veterans who received such loans is not available. That Ohio, however, accepted use of restrictive covenants and other discriminatory practices is presumed to have stifled home ownership opportunities for Ohio's African American veterans in the same fashion as elsewhere. For example, the Colonial Hills subdivision in Worthington included a deed restriction in the first planned subdivision, dated 1938, that stated

No part of said addition or any building thereon shall be owned, leased to, or occupied by, any person other than one of the Caucasian race, but this prohibition is not intended to exclude or prevent occupancy by such other persons as domestic servants of any resident of said addition...

This restriction was reproduced in full in the 1942 deed drawn up by the Defense Homes Corporation. It remained in place until the Fair Housing Act of 1968 nullified such covenants (Campbell 2010a).

Implemented in conjunction with restrictive covenants that limited opportunities for African-American residents was a program administered by the FHA to provide much needed housing specifically for African-American veterans. One example is Hanford Village, located on the east side of Columbus. In 1944 the FHA authorized the construction of four hundred housing units in Columbus. By 1946, one hundred and forty six Cape Cod style homes were completed in Hanford Village. Named the George Washington Carver Addition, it was laid out in a square configuration, bisected by a single curvilinear street lined with generous 5,000 square foot lots with 45 foot frontage each. Consistent with FHA housing plan specifications, each home included five finished rooms on the first floor; living room, dinette/kitchen, bathroom and two bedrooms. The second floor contained unfinished space, which could be converted to additional bedrooms at a later time. Amenities within the development included paved streets, curbs, sewers, gas, and a sidewalk to the curb. While a driveway was installed, no garage was included in the original package. Local developer, Ivan Gore partnered with New York investors and was backed by FHA financing to offer the modest five room homes for \$125 down on the \$6,500 selling price. As the Village planned for a significant influx of residents, it was noted that while the tax base would increase, so would the need for services such as cross town bus service, school facilities, parks and playgrounds (Posey, 1946).

Many of the homes constructed within Hanford Village are extant, however, the character of the neighborhood changed with the construction of I-70 through the northwest corner of the development in the 1960s. While most of the residences located within the right-of-way of the freeway were demolished, others were sold and moved; those that remained were in the shadow of the interstate. It remains today a mix of owner occupied and rental units with varying degrees of integrity (Welsh-Huggins, 2008).

Female veterans, regardless of their race, also encountered difficulties obtaining home loans via G.I. Bill benefits. Women who served during the war, such as Women Airforce Service Pilots (WASP) and Woman's Army Corps (WAC), were not recognized as members of the military, and therefore, were denied G.I. Bill benefits. Single women who managed to achieve recognized veteran status had to provide personal testimony and references unrelated to their financial resources to receive a VA-backed home loan. For example, single women had to submit letters and doctors' notes attesting that they either could not or would not have children through infertility or the use of birth control before a loan was issued. While these measures were extreme, women were typically discriminated against when applying for loans and credit during this period (Humes 2006:204). Regardless of the difficulties that women and ethnic and racial minorities suffered in obtaining a mortgage, home ownership rates increased in Ohio from 50% in 1940 to 61.1% in 1950 (U.S. Census Bureau Census of Housing 1950-1960).

In addition to assuring racial and ethnic homogeneity in the suburbs, discriminatory practices meant that a significant percentage of older urban neighborhoods experienced declines. Financing for new development in these places was not made available to improve housing

stock. Economic development was curtailed as most activity shifted to the suburbs, depriving urban residents of job opportunities. Those who were affluent enough moved to the suburbs, leaving behind a population that was generally older, poorer, and less educated. As the tax base eroded, many cities began cutting services and programs, even as the percentage of their population in need started to grow (Borchert 2010).

3.2.3.4 Examples of Suburbanization in Ohio

The process of suburbanization in Cleveland and Cuyahoga County offers an excellent case study of the phenomenon in postwar Ohio. Like many cities, by the mid-1940s, Cleveland already had a ring of streetcar suburbs, including Bedford, Euclid, Garfield Heights, Maple Heights, Rocky River, and Shaker Heights. Streetscapes within these suburbs exhibited a distinct pattern made up of two-and-one-half story, single- and double houses with narrow street frontage. Front yards were narrow, with front porches on the dwelling serving as intermediary space between the public street and the privacy of the dwelling's interior. Backyards were deep enough to include a detached garage at the rear of the lot. Alleys bisected each block to permit access to the garages. Commercial properties lined the streetcar routes, including small groceries, bakeries, butchers, and fruit and vegetable stores. These were convenient to commuters on their way home from work as well as those who stayed at home all day. Because access to automobiles was not yet universal, streetcar suburbs by intent and design were walkable in scale. Finally, unlike postwar suburbs, apartment buildings and hotels were permitted in streetcar suburbs. Given the small lot sizes and presence of multiple-family buildings, the population density in streetcar suburbs generally was considerably higher than that of postwar suburbs (Borchert 2010).

The decades immediately following World War II witnessed unprecedented residential construction in suburbs encircling Cleveland. Suburban developments included Bay Village, Mayfield Heights, Lyndhurst, Fairview Park, Brook Park, North Olmsted, Warrensville Heights, Bedford Heights, and Seven Hills. Inner ring suburbs also experienced dramatic growth. For example, Parma's population in 1931 was 14,000, but had nearly doubled by 1950. At the same time, city of Cleveland entered a period of population decline. From 1940 to 1970, Cleveland lost 127,457 residents while Cuyahoga County's overall population grew by 631,042. In 1940, only 28 percent of Cuyahoga County residents lived in suburbs; this had increased to 62 percent by 1970 (Borchert 2010).

Streetscapes in Cleveland's 1950s automobile suburbs demonstrated significant variations from the city's earlier streetcar suburbs. Most importantly, only single-family dwellings were constructed within the neighborhoods, while commercial development was focused along arterial roads. The housing stock consisted largely of one-story ranch, split level, and Cape Cod dwellings with attached garages, rear decks, and patios. Front porches were not generally a prominent design element for these houses. Each lot had ample street frontage with the width of the house oriented parallel to the street. Streets within the neighborhoods usually were curvilinear. Most houses were placed along cul-de-sacs that branched off main roads. Neighborhood plans usually included provisions for open space and public parks. The restrictions on land use within automobile suburbs meant that residents could reach shopping, schools, government offices, and jobs only by car. The walkable scale of streetcar suburbs was not a feature of postwar residential developments (Borchert 2010).

Cleveland's suburbs developed distinct identities, based largely on the makeup of their population. The city's social elites gravitated to eastern suburbs such as Bratenahl, Cleveland Heights, East Cleveland, and Shaker Heights. Both eastern and western suburbs housed mostly white-collar workers. Southern suburbs, on the other hand, surrounded major industrial employment centers and, thus, acquired significant number of blue-collar workers. Just as ethnic immigrants had tended to cluster together in urban neighborhoods, ethnic groups formed in Cleveland's suburbs. The area's Jewish population moved successively into Woodland, Glenville, and Kinsman. Even with restrictive covenants still in use during the early 1950s, the Jewish community managed to shift to the elite eastern suburbs. In contrast, African Americans moved east through Kinsman and Hough. Most suburban opportunities, however, were limited for African Americans due to a combination of restrictive covenants and discriminatory home lending and financing practices. By 1970, African Americans made up a majority of only one suburb, East Cleveland (Borchert 2010). The limited housing and economic opportunities available to African Americans and other ethnic minorities during the 1950s and 1960s created conditions for extensive social and civil unrest in Cleveland by the latter 1960s.

Another example of a typical 1950s residential development in Ohio can be found in the Kirkmere neighborhood in Youngstown. Located between two arterials, Meridian and Canfield roads, the neighborhood offered convenient access both to downtown Youngstown and southwestern suburban areas. The neighborhood has approximately 550 single-family houses on irregularly-sized and -shaped lots ranging in size from one-third to one-half acre. Built from the early to late 1950s, the housing stock is made up primarily of Cape Cod dwellings, although ranch and split-level examples also are present (City of Youngstown 2010). An aerial view of Kirkmere (Plate B13) demonstrates that the neighborhood plan is typical of the 1950s. There are no through streets; rather the interconnected roads are winding and curvilinear with cul-de-sacs branching from the main roads. Each property has a driveway leading from the street to the front or side of the dwelling. The front yards are somewhat shallow, while the backyards are quite deep and often have trees at the sides and rears of the lots. The emphasis on backyards reflected a postwar shift away from the front porch and yard as an intermediary with the public street and toward a private outdoor space intended for family activities. Reflective of the desire to incorporate open space, nature, and recreation into suburban living, the neighborhood includes Kirkmere Park at the southeast end of the neighborhood, and Ax Factory Run, a tree-lined creek. Finally, in keeping with residential plans of the period, all other services, such as grocery, drug, and clothing stores, restaurants, and gas stations, were not within Kirkmere. Neighborhood residents required access to a car in order to see to their everyday needs.

Huber Heights Subdivision, just north of Dayton is characteristic of large-scale, post-war, integrated suburban development. This community was uniquely tied to local developer, Charles Huber who began developing farmland in Wayne Township near Dayton in 1956. By 1960, his company, Huber Homes, had constructed 3,000 new single family dwellings. Where utilities like water and sewer were not available, Huber created his own company and installed them. Neatly placed on curvilinear streets, early models were standardized three bedroom ranch houses with attached garage, varying only in the choice of gable or hipped

roofs. Brick quickly became a trademark of a Huber built home; all models were at least partially faced with brick. New model homes were designed and marketed every three to four years, introduced at heavily advertised open houses that attracted thousands of potential home owners. Initially targeting returning veterans and factory workers, Huber later expanded his market to include middle and upper class home buyers. He called his plan an 'integrated community for modern living,' and set aside hundreds of acres of land for schools, churches, parks and commercial development. Huber Homes, Inc. was so successful that it gained a national presence, building several thousand houses in other cities, such as Columbus and Cincinnati, Ohio, Atlanta, Georgia, Scottsdale, Arizona, Indianapolis, Indiana, and Ft. Lauderdale, Florida (Avdakov et al. 2010).

3.2.4 Meeting Educational Needs in the Postwar Era

During the war years, it became apparent that technological innovation was a key component of national security and economic prosperity. The level of educational attainment among the general population, however, was regarded as inadequate. For example, in Ohio in 1940, only one-quarter of adults had attained a high school degree, and fewer than 5 percent had a bachelor's degree (Cauthen et al. 2010). At the same time, reintegration of 12 million service members into the labor force represented a major concern for policy makers, especially as manufacturers were in the process of shifting from a war- to a peacetime footing. The dual goals of increasing education levels and easing the transition for veterans were targeted with the 1944 G.I. Bill, which offered educational incentives to enable veterans to attend trade and technical schools and colleges across the country. This acclimation period helped the United States avoid the massive unemployment that had followed World War I (Knepper 2003:376).

During the war, many colleges had experienced budget deficits as student enrollment plummeted and large numbers of college-aged soldiers served in the military. Funds and materials for maintaining campus buildings were limited, leading to an overall deterioration of many campuses. By the late 1940s, the combination of deferred improvements and skyrocketing student enrollments created an immediate demand for more dormitories, classroom buildings, faculty housing, and other infrastructure. Additional housing for new students comprised the largest need for most campuses. Ohio's universities sought rental properties and spare rooms for new students among local townspeople. Several schools acquired surplus military barracks and cots to temporarily house single male students. At Xavier University in Cincinnati, this temporary arrangement was not ready in time for the 1946 fall semester, so 194 students slept on army cots in the fieldhouse (Fortin 2006:195). Miami University in Oxford acquired surplus barracks from Fort Knox for single students and 196 temporary duplex units from the Willow Run Aircraft Plant in Detroit for married students (Ellison 2009:194). At Ohio University, single students slept on cots in the gymnasium, Armory, and stadium, while others were given government housing in nearby towns as far away as Point Pleasant, West Virginia, some 39 miles from campus (Hollow 2003:149). Ohio University had such large postwar classes that the school opened temporary branch campuses in Chillicothe, Portsmouth, and Zanesville to serve as many students as possible. These branches proved so successful that two others in Belmont County and Lancaster opened during the 1950s (Hollow 2003:148). All these branches are still in operation.

The postwar arrival of large numbers of new students, faculty, and staff also affected college towns. In addition to housing, towns needed to develop new businesses, more efficient traffic patterns, and public infrastructure for the newcomers. In Oxford, the Oxford Lumber Company advertised to incoming faculty the materials to build “Your Dream House,” which was a “colonial cottage” style, three bedroom house (Ellison 2009:197). The university faculty, in turn, influenced development in the towns. For example, new Miami University architecture professors introduced modernism as they designed new buildings around Oxford. Professors Victor Fürth and C.E. Stousland, in particular, designed International Style dwellings east of campus in the Springwood subdivision. Other modernist buildings in Oxford include the Bern Street Apartments, Holy Trinity Church, and Talawanda High School (Ellison 2009:216–217). Meanwhile, at the University of Cincinnati (UC), the architecture department used its cooperative education program to provide students with opportunities to work in local architectural firms. For example, architects Carl Strauss and Ray Roush served as co-op employers for UC students for more than 40 years. Their mentoring influenced local architecture as well as the careers of architects who went on to become internationally known. Among their interns was Michael Graves, a 1958 graduate, who recalled during a 1996 interview, “Strauss and Roush were great mentors and lifelong friends. I remember we all worked in one room during my co-ops. Carl allowed the co-op students to do so much. The more I worked, the more responsibility I was given” (University of Cincinnati DAAP 2010).

Ohio’s public grade schools experienced several major changes during the period following World War II. First, with the advent of new housing subdivisions, local governments needed to construct new public schools to accommodate the influx of students into the newly developed areas. Old and new schools often received building additions to make space for the large population of “Baby Boom” students during the 1950s and 1960s. Consolidation of public schools also was an ongoing concern during this time frame. Consolidated schools were regarded as more efficient and economical to operate, making them better suited to meeting the educational needs of students and of society at large (Bard et al. 2006). The emphasis on economy and streamlining dovetailed with the architectural trends of the period. In particular, the International Style, characterized by clean lines, flat roofs, windows flush to the outer walls, and little, if any, ornamentation, became almost synonymous with school designs during the 1950s and 1960s.

Representative examples of International-style schools in Ohio dating from this period are numerous. Old Ohio Schools is an online photo gallery of Ohio schools built from the eighteenth century through the early twenty-first century (www.oldohioschools.com). The website appears to be maintained by volunteers. Among the schools mentioned are the ca. 1961 Kingsbury School in Ironton (Plate B14); the ca. 1959 Lawrence Street School #2 (now the St. Lawrence Catholic School) at N. Seventh Street in Ironton (Plate B15); the McBroom Junior High School in St. Mary’s, Auglaize County, which was built in several phases in 1953, 1956, 1963, and 1966 (Plate B16); and the ca. 1954 Overlook School at 524 Broad Street in Wadsworth, Medina County (Plate B17). All of these schools feature elements that are characteristic of the International Style, including flat roofs, bands of windows, severely restrained ornamentation, and rectilinear massing with clean, simple lines. Many of these

schools have been closed, converted to other uses, or slated for demolition as local school districts undertake new school construction projects (Old Ohio Schools 2010).

Racial desegregation was the third major change confronted by Ohio's public school system during the 1950s and 1960s. Although Ohio retained few laws requiring segregation, some examples remained. In Highland County, the Hillsboro school district had local laws in effect in the early 1950s that required separate schools for whites and African Americans. For the most part, however, schools were segregated due to the racial segregation that prevailed in most neighborhoods. These segregation patterns partially resulted from self-selection of neighborhoods among immigrant communities, beginning with Eastern and Southern European immigrants during the nineteenth century and continuing with the influx of African Americans and Appalachian whites from the South during the 1940s, 1950s, and 1960s. As previously noted, federal housing policies also profoundly shaped the racial makeup of many neighborhoods (Knepper 2003:391; Ohio History Central 2005j).

Following the U.S. Supreme Court's *Brown v. the Board of Education of Topeka, Kansas* decision in 1954, the courts required all school systems with either *de facto* or *de jure* segregation to integrate (Knepper 2003:391). In Ohio, the court decision *Clemons v. the Hillsboro Board of Education* resulted in a court order that all children were assigned to schools without regard to race. It was designed to prevent children living in the same neighborhoods or in close proximity from being assigned to different schools simply because of their race or ethnicity (McCormick 2001:249). To achieve desegregation and racial balance within student populations, most school systems chose to bus students to schools outside their neighborhoods. Widespread implementation of busing programs, however, took place over a number of years and remained largely unfinished by the close of the 1950s.

3.2.5 The Agricultural Revolution Begins

In the years following World War II, European demand for American agricultural goods helped keep food prices high. The time between World War II and the Korean War was the most prosperous sustained period for agriculture in U.S. history. As modernizing agricultural techniques greatly enhanced crop yields, it exacerbated traditional problems Ohio farmers had with surplus crops and price fluctuations. The continuation of federal price supports, however, created greater stability in pricing and income for farmers (Hurt 2002:120).

During the 1950s, Ohio's farmers continued to experience the overall prosperity enjoyed nationwide. The state ranked among the nation's leaders in the production of milk, meat, grain, eggs, and specialty crops, such as tomatoes, and nursery trees and plants. At this time, agriculture in Ohio was marked by a threefold pattern of development that revolved around mechanization, technological innovation, and scientific research. These trends actually began during the war years and continued throughout the state for decades thereafter.

By 1945, Ohio farmers already had started heavily investing in machinery such as tractors, self-propelled combines, corn pickers, and twine binders, despite high prices caused by wartime scarcities of metal and oil. As previously noted, the increase in mechanization on the farm had two major consequences. First, the replacement of draft horses with tractors made 2.3 million acres of forage land available for production. Second, machines reduced the need

for manual farm labor. For example, in Northwest Ohio, sugar beet producers reduced their labor by 30 to 50 percent by using machines for planting and blocking (Hurt 1984:77).

With 2.3 million additional acres of land available for planting, Ohio farmers looked to a new crop that had begun to gain acceptance in the United States. Soybeans not only filled a market demand, but also helped return nutrients to the soil when planted in rotation with corn. Corn had long been the main cash crop of Ohio farmers, but it was notoriously hard on the soil, sapping nitrogen and other nutrients from the ground and inhibiting greater yields in successive growing seasons. Soybeans grow wherever corn does and have the benefit of adding nitrogen back to the soil and increasing the next year's corn yield on the same land. Because of these factors, soybeans quickly replaced oats in the crop rotation, as farmers no longer needed oats in great quantity as machinery replaced draft animals (Hudson 1994:158, 163).

A major technological change that benefitted Ohio's farmers began to take hold during the 1940s: electrification of rural areas. By the end of 1945, electricity had become widespread on Ohio farms. The state had more electrified farms than any other state in the nation and by the end of the decade, 98 percent of Ohio farms were electrified. This was 21 percent higher than the national average, and the United States as a whole would not reach this percentage until 1960. A major reason Ohio lead the nation in electrification of farms was the formation of the Ohio Farm Bureau Federation (OFBF) in 1919. The OFBF lobbied local, state, and federal leaders to pass legislation that would assist farmers and made rural electrification one of their earliest priorities. Electricity reached farms closer to metropolitan areas in the earliest years, with those in more rural settings receiving the technology by the 1940s. Electricity boosted profits by powering milk coolers, feed grinders, heating systems, and other integral parts of the farm. Additionally, as with mechanization, electrification further reduced the need for manual farm labor (Hurt 1988:51; Hurt 2002:115).

Farmers also began using scientific research to increase their crop yields and ensure economic stability (Hurt 1988:50-52). Corporate and government involvement in agricultural research increased steadily after World War II. Although private- and publicly-funded research tended toward a symbiotic relationship with large-scale commercial agriculture, small family-owned farms also benefitted from the expertise gained. For Ohio's farmers, land-grant institutions such as Ohio State University also played a particularly important role in agriculture-related research and continuing education.

Soil enrichment and disease and pest control ranked among the most important research areas. Manure had been the traditional source of soil fertilizer for generations of farmers, but mineral fertilizers began to be developed to allow application of a specific nutrient to compensate for a given soil's deficiency. Fertilizer also was found to aid plants damaged by insects or poor weather. Remediation of depleted soils had become especially important during World War II. As the war years brought farmers prices higher than ever before, they were encouraged to produce as much food as possible, resulting in greatly depleted nutrients in the soil (Hurt 2002:116).

Disease control focused on the use of chemical treatments to eliminate molds, rusts, blights, mites, worms, and other organisms that damaged crops. Chemical applications of fertilizer and disease treatments represented the increasing industrialization that characterized agriculture through much of the twentieth century. For example, by 1947, 95 percent of all commercial fruit growers already used DDT. Along with powerful insecticides, herbicides became increasingly popular. These chemicals further reduced the need for manual farm labor, as well as production costs. For example, chemical herbicides cost approximately \$5 per acre, compared with manual weeding, which cost roughly \$40 per acre (Hurt 2002:116). The deleterious environmental effects of various chemical and fertilizer applications were poorly understood through the mid-twentieth century. As consequences of certain chemicals, such as DDT, became more widely understood, their usage was discontinued and alternative applications were sought. The scientific research and industrial-scale production level required to supply farmers with the newest, most effective, and least expensive treatments came to comprise a major commercial aspect of agriculture.

Another benefit to farm productivity came with the widespread adoption of genetically engineered hybrid crops, specifically corn. From 1924 to 1959, an agronomist affiliated with the OAES, Glen Stringfield, developed the first inbred and hybrid corn strains resistant to the European Corn Borer, a pest that had devastated corn crops during the early twentieth century. These Ohio hybrids were deployed across the world to improve corn yields and Stringfield's work directed the OAES toward a program of crop breeding for resistance to environmental hazards (Cumo 1997:84–85). In Ohio, as rural land values continued to rise following World War II, farmers looked for ways to increase their yields without having to purchase additional land for planting. As previously discussed, mechanization, chemical application, and electricity all helped to achieve this goal. The introduction of hybrid corn fit well into these new agricultural practices. Hybrid corn had sturdier stalks, which were able to stand in the field longer if the harvest was delayed, and were better able to withstand mechanical corn picker's blades without falling, resulting in a more efficient harvest. Hybrids also made better use of nutrients in the soil and responded better to chemical fertilizers than traditional corn varieties (Hudson 1994:167–171).

Perhaps one of the best known agricultural research firms operating in Ohio during this period was Monsanto. Founded in 1901 in St. Louis, Missouri, by John F. Queeny, the firm initially specialized in producing the artificial sweetener saccharine. A partnership with a German firm in 1910 let Monsanto begin manufacturing aspirin as well. By the 1920s, Monsanto's operations expanded to include production of industrial chemicals such as sulfuric acid. As previously noted, Monsanto was involved in research and development associated with the Dayton Project. By the mid-1940s, the firm was a leading manufacturer of plastics and synthetic fibers. Operations expanded to include research and development of agricultural chemicals, including the herbicide 2, 4, 5-T and the insecticide DDT (Evans 2003). Although still headquartered in St. Louis, Monsanto has operated numerous research and manufacturing plants in Ohio over the years at Findlay, Marion, London, Greenville, Deshler, and Arcanum.

The rapid rate of technological development and scientific progress meant that continuing education programs and growers' associations became increasingly important. Farmers had

to learn to weigh numerous variables in their quest for the most efficient farming operations. Farmers' organizations, such as the Ohio State University Extension Service, played a critical role in assisting farmers. In 1957, the service hired its first rural development agent to work directly with farmers (Ohio State University Extension 2010). Profitability, production, planning, seed variety selection, soil testing, and fertilizer applications ranked among the topics addressed by extension agents through demonstrations, meetings, farm visits, and even literacy training. Growers also learned about new methods for insect, weed, and disease control and correct crop varieties for different growing conditions. These educational programs were offered in addition to guidance regarding seed germination and seed examination for disease.

Expanded job opportunities in Ohio's metropolitan areas, combined with the dramatically reduced manual labor requirements brought about by mechanization and industrialized agriculture, made consolidation of farms both a possibility and a necessity. Throughout this decade, market conditions also increasingly tilted in favor of large growers. Although new scientific farming methods and technological innovations led to greater productivity, they also required substantial capital expenditures that often were beyond the reach of small-scale farmers. Globalizing agricultural trade also directly impacted Ohio's farmers, as exports from Latin American countries became increasingly competitive and other regions, such as the Pacific Rim, Asia, and parts of Europe, increased exports of farm products (Goodman et al. 1987). As a result, farm consolidation, along with reduction in the overall number of farmers, became the norm rather than the exception in Ohio by the 1950s.

3.3 Ohio During the 1960s: Illusions of Unlimited Horizons

Ohio continued to witness significant patterns of development during the 1960s. The state's population increased and its industrial and commercial bases enjoyed steady growth. Ohio also participated in the 1960s "race to the moon," which precipitated considerable investment in the state's research facilities. Unprecedented prosperity, coupled with industrial and technological innovations and the civil rights movement, transformed the United States. Quests that had been dismissed as quixotic dreams, such as landing on the moon, recognition of civil rights for racial minorities, and inventions to simplify everyday life, achieved concrete results. Anything seemed possible and Americans believed that the American dream lay easily within the grasp of anyone who wanted to seize it.

By this time, however, the outlines of future transitions were becoming evident. The Sunbelt region of the American South and Southwest became increasingly attractive to firms seeking lower labor and operating costs. Environmental degradation had taken a toll on Ohio's waterways and air quality. Although the federal government continued to play a strong role in state and local-level improvements, particularly urban renewal programs and ongoing highway construction, these were achieving mixed results with consequences that reverberated into subsequent decades. Social and political life in Ohio also transformed as previously marginalized groups sought full access to civil and economic rights, and as the antiwar movement swept college campuses.

3.3.1 Ohio's Consumer Culture and Growing Commercial Base

The explosive growth of the American consumer culture after World War II was symptomatic of the unprecedented economic prosperity that Americans experienced during the 1950s and 1960s. Postwar commercial development in Ohio followed similar patterns experienced elsewhere throughout the United States. Standardized marketing campaigns came to dominate postwar commercial development in America, as demonstrated by successful chain stores, franchise restaurants, motels, and service stations. These enterprises reflected a growing reliance on the automobile as much as they did an appreciation for predictable, consistent service. Directly linked to consumer trends, postwar commercial development reflected prevailing attitudes about style and fashion, as promoted by advertising agencies of the day. Built upon postwar optimism and economic prosperity, commercial development reflected a faith in the future and all that American ingenuity and perseverance could deliver.

During the late 1940s and 1950s, as Europe and Japan recovered from the devastating effects of war and the Soviet Union focused its efforts on consolidating military power, America had few competitors in the world marketplace. An abundance of natural resources, including oil, coal, iron, and timber, enabled the United States to sustain growth on a mammoth scale. In the process, the living standards of the average American increased significantly. Between 1940 and 1954, for example, the number of American houses equipped with indoor plumbing rose from 65 to 80 percent. Telephone ownership increased from 36 percent of the population in 1940 to 80 percent by 1954. Ownership of refrigerators rose 61 percent in the same period (Cross 2000:89–90).

Simply owning a refrigerator or an automobile was not enough for many Americans of the prosperous postwar years. Encouraged by advertisers, consumers constantly updated to the latest product. Ringer washing machines gave way to automatic washers, and last year's car model made way for that of the next. New goods symbolized progress and "bigger and better" was the theme of the day (Cross 2000:89–90). Companies spent vast sums of money on marketing, ensuring that their products remained current and fashionable. Through the popular medium of television, advertisers saturated the airwaves with slick promotions and fabulous claims. Tobacco companies, for example, increased their TV ad purchases from \$40 million in 1957 to \$115 million by 1962. Claiming that filtered cigarettes removed harmful chemicals in cigarettes, advertising agencies increased tobacco sales with each passing year, escalating from 332,345 million in 1945 to 506,127 million by 1960 (Cross 2000:88).

Due in part to booming advertising campaigns, numerous iconic brand names emerged during the 1950s and 1960s. Cincinnati-based Procter & Gamble was responsible for a number of such products. Following up on the success of Tide laundry detergent in 1946, the company developed Prell shampoo in 1950 and, five years later, began selling Crest, the first toothpaste to contain fluoride. In 1957, the company purchased Charmin Paper Mills of Green Bay, Wisconsin, and began manufacturing toilet paper and other paper products. Returning to laundry products in 1960, Procter & Gamble began making Downy fabric softener, followed by Bounce fabric softener sheets. Among its most revolutionary products was Pampers, first test-marketed in 1961 to introduce disposable diapers to the American consumer (Ohio History Central 2005k).

Meanwhile, during the early 1950s, Joseph McVicker head of Cincinnati-based Kutol Products Company, produced soap and wallpaper cleaner. He realized, however, that the product also could be used as modeling clay. Dubbing it Play-Doh, he tested the clay in Cincinnati-area schools and daycare centers in 1955. The next year, McVicker and his uncle, Noah McVicker, founded the Rainbow Crafts Company to manufacture and sell the clay, resulting in a toy for American children that has enjoyed enduring popularity. The United States Patent Office officially patented the clay in 1965, the same year that General Mills purchased Rainbow Crafts (Ohio History Central 2006b).

Another iconic toy that originated in Ohio was the Etch-a-Sketch. The company's roots extended as far back as 1908, when Henry Simon Winzeler started a manufacturing company in Archbold, Ohio. His firm, named the Ohio Art Company in reference to his personal interest in art, produced metal picture frames and other novelty items. These were sold at retail stores nationwide. In 1912, the company moved to Bryan, Ohio, and began using metal lithography equipment in a new line of picture frames. During the 1910s, the firm expanded its line to include toys, such as tea sets and drums. The firm continued operations through the mid-twentieth century, even during the darkest years of the Great Depression and World War II. With prosperity returning to the country during the 1950s, the Ohio Art Company capitalized on a technological innovation to introduce an entirely new kind of toy, the Etch-a-Sketch. The toy's original concept started with Andre Cassagnes, an electrician in France, who stumbled upon the idea of creating a drawing toy with a joystick, glass, and aluminum powder. Cassagnes called his invention a "Telecran." The novelty made its way to Winzeler through business connections. Winzeler, in turn, assigned Jerry Burger, Chief Engineer at the Ohio Art Company, to collaborate with Cassagnes in refining the toy for production. As a result of their work, the Etch-a-Sketch went into production at the Bryan factory on July 12, 1960. Although the firm has undergone numerous changes since the 1960s, metal lithography has remained a core part of Ohio Art Company's production to the present day. The firm is now one of the leading producers of specialty lithographic components and serves a diverse customer base that includes Disney, Starbucks, Altoids, and Coca-Cola (Ohio Art Company 2010).

Despite increasing costs and rising consumer debt, wage earners sustained their purchasing habits through the 1950s and 1960s. Helped in part by the decrease in food costs brought about by industrializing agriculture, Americans had more disposable income than ever before. Thanks to advances in farming technology and food production, the percentage of wage earners' family income required for food declined from 43 percent in 1918 to 32 percent in 1950. By 1973, only 20 percent of average wage earners' income went toward food. As a result, Americans found themselves with more money for consumer goods, enabling them to purchase everything from radios to homes, although racial disparities continued. Through the 1950s and 1960s, home ownership kept pace with disposable incomes as nearly 40 percent of African American families and about 70 percent of white families owned homes by 1973. In Ohio, overall home ownership increased from 50% in 1940 to 67.7% by 1970 (Cross 2000:87; United States Census Bureau 1940-1970).

A general sense of optimism and faith in the future helped foster a culture obsessed with the latest gadgetry. Advertisers promoted push-button convenience, where everything was available at one's fingertips. Push-button ranges, dishwashers, and washing machines, as well as improved plumbing and kitchen and bathroom surfaces promised to eliminate the drudgery of everyday chores (Plates B18-B23). The future was effortless and carefree, according to popular ads of the day. Even the climate was no longer a concern, now that push-button air conditioners and furnaces were available for little money down and only a few dollars per month (Cross 2000:91).

Ohio inventors and manufacturers were directly responsible for some of the most widely adopted and recognized products created during this period. Youngstown Kitchens ranked among the most successful manufacturers of steel kitchen cabinets. Originally known as Youngstown Pressed Steel Kitchens, the firm was a division of Mullins Manufacturing Corporation of Warren, Ohio. The Youngstown Kitchens division later was purchased by American Standard, which also produced metal kitchen cabinets (Retro Renovation 2010c). Youngstown Kitchens marketed their products extensively in magazines and other periodicals (Plates B24-B25). During the early 1950s, the firm's products included modular cabinet units with integrated sinks, dishwashers, and garbage disposals (Plates B26-B27). Gleaming white surfaces were meant to illustrate the cleanliness and hygienic quality provided by steel cabinets. The firm also emphasized the convenience and efficiency its kitchen designs offered customers, allowing them more leisure time and an enjoyable environment for performing domestic chores. Youngstown Kitchens updated their products to keep pace with changing tastes and styles. By the 1960s, the company's offerings had shifted from plain white to a variety of colors and textures. One advertisement illustrated a kitchen with a quintessential 1960s color combination, brown and blue (Plate B25), while another presented a similar color combination but with naturalistic wood grains incorporated (Plate B27). The popularity of steel cabinets eventually faded and wood and, later, veneered composite and particle board, became the materials of choice for kitchen cabinets. Rising costs associated with steel production also may have affected the affordability of steel cabinets compared to those made from wood products.

In 1955, the Tappan Stove Company, based in Mansfield, manufactured the first microwave oven for home use. The design was based on a microwave oven issued by the Raytheon Company's in 1947, but their large size made them impractical and too expensive for home use. Raytheon contracted with Tappan to reduce the size and cost of microwave ovens in 1952. The firm's 1955 microwave measured just 24 inches wide. At \$1,200, its price marked it as a luxury item, but rapid advances in design and production lowered the cost substantially over the years. By 2000, an estimated 150 million microwave ovens could be found in American homes. This number was greater than one microwave oven for every family (Ohio History Central 2006c).

Another household staple, the coffeemaker, received a makeover thanks to Vincent Marotta, Sr., a Cleveland developer. Although home coffeemakers had been available for decades, Marotta sought greater convenience and speed. Experiments between 1968 and 1972 yielded Mr. Coffee, which almost immediately became a bestseller. Within three years, North American Systems, Inc., the first manufacturer of Mr. Coffee, was selling approximately

38,000 Mr. Coffees each day. Eventually, Sunbeam Corporation and American Household, Inc., each acquired the production rights to Mr. Coffee. In 2006, Mr. Coffee, now manufactured by Jarden Corporation, remained the world's best-selling coffeemaker for home use (Ohio History Central 2006d).

Convenience, efficiency and affordability became important hallmarks for all types of home products after World War II. For example, in 1951, the Archbold-based Sauder Woodworking Company created the "knock-down" table. Packaged flat in a box, it was designed to be assembled at home by an average consumer, making it among the first types of ready-to-assemble furniture. The earliest version sold for \$4 to \$5. Sauder experienced enduring success and in the early twenty-first century ranked as the largest ready-to-assemble furniture company in the United States (Ohio History Central 2006e).

Ohioans' obsessions with gadgetry and convenience extended to food packaging as well. One of the best known inventions was the product of Ermal "Ernie" Frazee, founder of the Dayton Reliable Tool Company in 1948. The firm manufactured tools and machinery and its clients included General Electric, Ford, Chrysler, and NASA. Frazee's personal interest, however, lay with improving beverage cans. In 1959, cans were opened only with a "church key" opener. After forgetting his one day at a picnic, Frazee decided to create a better design. He came up with the "pull-top" can, equipped with a removable tab attached by a ring. By 1967, when Frazee received a patent for the design, over 75 percent of America's beer brewers used pull-top cans. The waste generated by the cans' popularity prompted Frazee to revise the design. In 1977, he patented the first push-in and fold-back tab that remained attached to the can. This continues to be the principal design used on beverage cans today (Ohio History Central 2006f).

Shrouded in streamlined casing, even the most mundane items assumed a Space Age appearance. Items bearing a resemblance to jet aircraft and rockets captured the imagination of a public fascinated with the rapidly evolving Space Age technology typified by the "race to the moon." Vacuum cleaners took the form of satellites, and table lamps became flying saucers. Abstract mobiles and furniture resembling boomerangs appealed to a public clamoring for a piece of tomorrow. Interestingly, these items also represented mass produced replicas of the Modernist style originally developed during the 1920s and 1930s.

Indeed, during the postwar era, the Modernist style dominated every aspect of consumer fashion and style, including the built environment in which commerce transpired. Aided by the availability of modern building materials and new construction methods, Modernist designers tailored postwar commercial buildings to keep pace with contemporary fashions. Manufacturers of modern building materials aggressively promoted their products, such as glued laminate timber arches, concrete blocks, precast concrete panels, "tilt-up" concrete panels, and vinyl and rubber floor coverings (Plates 28-32). Such materials made possible the open interior spaces uninterrupted by support columns and walls, smooth, unadorned exterior wall surfaces, curtain walls with a non-load bearing surface treatment, and even durable floor coverings that could be stamped, colored, or otherwise designed to suit any décor. Ohio's architects put these and other materials to use in their innovative, modernist designs. High-strength tempered glass and aluminum framing allowed designers to open up storefronts with

large display windows, cases, and slipcovers for older façades. Modern materials facilitated construction of large, prominent signage, which designers attached directly to the primary façade or atop the roof in bold fashion (Plates B33), typical of the advertising spirit of the day (Dyson 2008:1). Logo signage also often was installed at shopping center entrance or in prominent locations designed to be seen from adjacent highways (Plate B35).

Retail chains and specialty shops adhered to the Modern aesthetic. In an attempt to keep pace with current trends in commercial design, these businesses built new buildings or renovated existing structures. Often, these commercial enterprises introduced the first examples of Modernism into their respective communities. Designed by some of the leading architects of the period, retail architecture set new trends in the industry, significantly altering the approach to marketing and merchandising (Dyson 2008:1). Typical examples of commercial developments in Ohio from the 1950s and 1960s include the ca. 1955 O'Neil Sheffield Shopping Center in Elyria, designed by Weinberg and Tear (Ohio Architect 1955) (Plate B34).

Marketing schemes aimed at speed and convenience soon came to dominate nearly every aspect of life. Most notable among commercial ventures of the time were franchises designed to streamline service and offer products at a lower cost. The franchise concept was far from new in the 1950s. Soft drink companies, like Coca-Cola, had utilized the same principle for decades, as did Rexall Drugs and Howard Johnsons. Franchising, however, reached new levels of success during the period of prosperity that followed World War II. Many of the well-known franchises of today originated during this time, with Holiday Inn, AAMCO Transmissions, Roto-Rooter, Dunkin' Donuts, McDonald's, and Kentucky Fried Chicken all building outlets throughout the country during the 1950s and 1960s (Millard 1991:2).

Many of these companies benefited from an expanding network of freeways and an increasing reliance on the automobile. Among the more obvious examples of roadside franchises were the drive-in restaurants. These businesses evolved from the roadside food stands of the 1920s and 1930s. Individually owned, many of the early roadside stands mimicked the products they sold, such as an ice cream stand shaped like a cone or a milk bottle. Considered unsightly by many, the proliferation of hotdog stands and roadside markets led to public outrage and a call for their removal. It was under these conditions that the precursors of today's modern franchises developed (Millard 1991:3).

As early as 1937, southern California restaurateurs Maurice and Richard McDonald experimented with food service in an attempt to improve the drive-in experience. By 1948, the brothers had settled on a formula that soon proved revolutionary to the roadside restaurant. They eliminated jukeboxes, cigarette machines, and carhops from their restaurant, forcing patrons to walk up to a takeout window. Offering a simple menu and an assembly line approach to food preparation, McDonald's developed a reputation for quick and inexpensive food served in a clean environment. Commercial milkshake manufacturer salesman Ray Kroc purchased franchising rights from the McDonald's company in 1954. Within six years, Kroc bought out the McDonald brothers. Kroc franchised the restaurant but maintained strict controls over the quality of food and the appearance of the restaurants. Located in towns and cities across the country, the company's trademark Golden Arches

became synonymous with fast food in the postwar era (Millard 1991:3; Cross 2000:103). A 1964 McDonald's restaurant at 988 E. 152nd Street, Cleveland, was representative of the company's corporate design practices during the 1960s. Its historical association with a nationally significant restaurant chain, as well as its significance as a corporate building type that emerged in the recent past, warrants the building's listing the NRHP; the building, however, is no longer extant. (Hess and Beach 1990)

Following a similar approach, in 1952 a Tennessee house builder established Holiday Inn motels. Using a standardized plan for his buildings, road-weary travelers came to associate Holiday Inn motels with uniform service. Aimed at the middle-class market, the hotels imparted a sense of predictability that smaller, independent establishments lacked. Unlike earlier motels, Holiday Inns were located on modern thoroughfares, within easy reach of the freeway. By the 1960s, travelers could see corporate emblems from any freeway in the country, offering familiar food, lodging, and even muffler repair (Cross 2000:104). The ca. 1960 Holiday Inn Westlake at 1100 Crocker Road, Westlake, was constructed during the hotel chain's early years of success (Westlake Porter Public Library 2010). Its proximity to I-90 and location in the suburbs west of Cleveland are typical site characteristics of hotels from this period.

Retail development continued to evolve post-World War II as well. In response to planned residential developments that gained popularity after World War I and the rise of the automobile age, developers experimented with the concept of community or neighborhood shopping centers. These plans included outlets to provide household staples, such as groceries and pharmacies as well as specialty shops and recreational facilities. In general, early shopping centers retained familiar elements; they fronted the sidewalk and retained streetside parking, although scale and design varied.

Shaker Square in Cleveland is an early example of a retail outlet integrated with residential development. The complex was built in conjunction with Shaker Heights and the Terminal Tower by prominent land and building speculators, the Van Sweringen brothers. Shaker Square was designed by architects Philip Small and Charles Bacon Rowley to serve as a port of entry to the west side of Cleveland and Terminal Tower via the well-established Shaker Rapid in addition to servicing local residents. Opened in 1929, its approximately forty outlets were anchored by food stores, complimented with specialty shops, a bowling alley, restaurant and small hotel. Connected to urban modernism and Terminal Tower through the rail system, Shaker Square embodied the ideals of domestic serenity through its graceful Georgian façade and tranquil landscape fronting an open green. Successful in luring shoppers in transit to and from the city as well as local residents, Shaker Square attracted the attention of iconic Cleveland based department store, Halles, as a location for its suburban expansion in 1948. (Longstreth 1997)

Halle's was one of a handful of historic department stores that dominated Cleveland's downtown retail market. Others included Higbee's, May Company, and Sterling-Linder. Of these, Halle's was the first to make the move to the suburbs when they built their contemporary style department store branch on Shaker Square. Integrated with the traditional style embraced by the Van Sweringen's, Halle's chose the modern, International Style for

their store. It blended with the existing architecture through the use of complimentary materials and scale; a design that won awards in 1948 as the best store building from the Cleveland Chamber of Commerce and Ohio Society of Architects. The Halle's building represented the continuing evolution of the retail shopping experience. Using modern day retail characteristics like site planning to lure patrons inside, convenient parking and interior flexibility to facilitate rotating merchandise, the design appealed to an increasingly mobile shopper. Halle's enjoyed commercial success throughout the 1950s and 60s, culminating in eight suburban based stores in addition to the downtown location. It was bought by Marshal Fields & Company in 1970 and later sold to liquidator who closed the downtown store in 1981. The suburban stores closed soon thereafter. The Shaker Square Halle's was listed on the NRHP in 2005 for its role in the history and development of department stores. (Wellman 2005)

Other Ohio based urban based department stores included Columbus-based Lazarus; Cincinnati-based Shillito's; Toledo-based LaSalle's and The Lion Store; and Dayton-based Rike's and Elder Berman. The established department stores that built in suburban locations enabled retailers to purchase in volume, making their prices more competitive with discount stores and also appealed to an auto-based consumer with convenient parking. Some department stores opened spin-off discount store chains specifically for suburban markets. Among those retailers making the move to suburbia were S.S. Kresge, which created Kmart in Detroit; Dayton's of Minneapolis, Minnesota, which opened Target discount stores; and J.C. Penney's discount chain of stores called Treasure Islands (Cross 2000:172).

In September 1961, the F.W. Woolworth Company announced that it would open Woolco, its first discount store in Columbus (Plates B33-34). A full-line discount department store, Woolco offered considerably more merchandise than its five-and-dime parent company, Woolworth's. According to Woolworth chair Robert C. Kirkwood, Columbus was selected as the launch point for the endeavor due to its growth potential as an industrial center. The Columbus store opened on June 6, 1962, and occupied a 106,000 square foot space at the city's Great Southern Shopping Center. Approximately ten miles north of this store, a second Woolco opened in Columbus at Graceland Shopping Center in early October 1962. By the mid-1970s, the Woolworth Company operated over 300 Woolco stores throughout the United States and Canada. In 1982, the company closed all its stores in the United States, and in 1994, Wal-Mart acquired the Woolco stores remaining in Canada (Cross 2000:172; Pleasant Family Shopping 2009).

Streamlined, generally one-story strip mall, or open-air 'plaza's' with convenient, ample, store-front parking became the standard for suburban shopping in the 1950s-1960s. Like their predecessors, these shopping centers were usually anchored by a major grocery chain which was supplemented by specialty shops, service providers and often bank branches. The ca. 1956 Town and Country Shopping Center in Columbus may have been the first modern-style open-air shopping center in the nation, although several other centers across the country claim to have been opened more than twenty years earlier (Ohio History Central 2005). In the Cincinnati area, an example of this type of development was the ca. 1959 Shillito's Department Store Tri-County Shopping Center, designed by Cyrus L. Baxter & Associates,

with interior planning by Raymond Loewy Corporation and the Design Office of Federated Department Stores (Ohio Architect 1960).

Another example of a 1950s-era shopping center is the aforementioned Graceland, located in Columbus. According to local historian George Campbell, the Casto and Gibson families purchased a former horse farm (also named Graceland) for \$100,000 in 1953. The developers engaged architect C. Melvin Frank to create a design for a new shopping center (Plates B36-37). The plan included both one- and two-story commercial buildings that were designed to house major retailers. Among the companies that operated anchor stores here were J C Penney and Hart's. Over the years, the shopping center also featured supermarkets, including Kroger's (based in Cincinnati), Alber's, and Big Bear (Campbell 2008). A noteworthy later development near Graceland Shopping Center was the 1967 Graceland Cinema and Graceland Lanes Bowling.

During the mid-1950s, the strip mall configuration began to evolve into the enclosed shopping mall. Opened in 1956 the Southdale Mall, located in Edina, Minnesota, became the first indoor mall in America. Designed by commercial architect, Victor Gruen, the Southdale Mall set a precedent for shopping mall design. Following Gruen's example, subsequent enclosed shopping malls typically centered on a large department store, such as Sears or the May Company. The anchor store dictated which stores could operate within the mall, thereby insuring against competition from discounters. Designed to inspire consumption, enclosed malls often included wide walkways with fountains, tropical plants, and other attractions designed to encourage browsing. Multi-level interiors, all visible from a central atrium, imparted a sense of choice. These small retail cities lay within easy reach of surrounding suburban communities, thanks to an ever-growing network of freeways. Mall developers located these retail centers in lightly populated areas, anticipating future growth. Growing ever larger, by the late 1960s, some shopping malls housed as much as one million square feet of commercial space under one roof (Hardwick 2004:142–148; Cross 2000:172–173).

Ohio became home to numerous enclosed shopping malls, many of which were constructed between the mid-1950s and early 1970s. Midway Mall is located just off of I-90 and the Ohio Turnpike in Elyria Ohio, east of Cleveland. The mall, built in 1965, features 138 stores, services, and restaurants, including anchors Dillard's, Macy's, J C Penney, and Sears. Summit Mall opened in Akron in October 1965, and was followed by Chapel Hill Mall two years later (City of Akron 2010). Southwyck Mall opened in August 1972, becoming the Toledo area's third enclosed shopping mall (Woodville Mapp opened in 1969 and Franklin Park in 1971). Southwyck's 100-foot translucent dome skylight quickly became a signature element of the mall's interior, while its seven-screen movie theater was billed as the first theater included within a mall. Montgomery Ward, Lamson's of Toledo, and The Lion Store were Southwyck's original anchor stores. The mall itself served as the principal element within developer Dean Bailey's Hawthorne Hills planned community in South Toledo (Reindl 2008).

In the Columbus area, the 1960s boom in commercial construction and the rapid proliferation of shopping centers and malls were illustrated by three suburban developments: Northland, Eastland, and Westland. Northland Center was designed by Grossel & Jensen and developed

by the F and R Lazarus and Pacific Mutual Life Insurance companies (Plates B38-39). It opened in August 1964. Originally an open-air shopping center it occupied an 84-acre site in unincorporated Franklin County, later annexed by the City of Columbus. The 710,000-square-foot complex included two anchors, a 3-level F and R Lazarus and a 2-level Sears. A single-screen movie theater and an Alber's supermarket also were part of the original complex. Northland became a fully enclosed mall in 1978-1979. After a lengthy period of decline, the mall was demolished in 2003 and the site was subdivided and redeveloped for other uses (Mall Hall of Fame 2008a).

Opening in 1968, Eastland was Columbus's first fully enclosed shopping mall (Plates B40-41). The 813,000-square-foot complex housed 69 stores. It occupied a 60-acre site adjacent to the I-270 Expressway; an interchange accessing the mall opened in late 1970. The Cleveland-based firm, Visconsi Mead-Jacobs Company (later known as the Richard E. Jacobs Group) developed the project. In addition to the 69 inline stores, there were three anchors: a 3-level F and R Lazarus, a 3-level J C Penney, and a 2-level Sears. The mall continued in operation for the rest of the twentieth century, undergoing several renovations along the way (Mall Hall of Fame 2008a).

Like Northland, Westland began as an open-air shopping center (Plate B42). Opened in February 1969, the development likely ranks among the last such major open-air projects completed in the recent past (1940-1970). The shopping center was actually an addition to a F and R Lazarus department store that had opened as the Columbus-based chain's first suburban store in 1962. Cleveland's Visconsi Mead-Jacobs Company developed the shopping center site. Westland occupied a 59.9-acre parcel adjacent to the I-270 expressway; an interchange with access to the mall opened in August 1970. In addition to F and R Lazarus, a 1-level J C Penney and a 2-level Sears served as anchor stores. Westland enjoyed considerable commercial success for much of the remainder of the twentieth century. By the advent of the twenty-first century, however, the complex was largely vacant and its future was undetermined (Mall Hall of Fame 2008a).

For those stores remaining on Main Street, a modern makeover of the storefront offered the most practical solution to changing fashions. Catering to the commercial market, architects and architectural product manufacturers offered an array of approaches and materials necessary for the renovation of outdated commercial properties. By simply applying new materials over the primary façade of an older commercial building, merchants rejuvenated the appearance of their business. During the 1920s and 1930s, the Art Moderne and Art Deco styles lent themselves well to such renovations. Simple, two-dimensional streamlined shrouding, with sheet metal, tile, or glass gave an older building a modern appearance (Jackson 2000:2-57).

During the late 1940s and 1950s, Art Moderne and Art Deco gave way to more three-dimensional modern designs. The earliest examples of the new style date to 1940, when *Pencil Points* magazine sponsored a competition to design the "Storefront of Tomorrow." Focusing on the display window, participating architects explored ways to liberate the store window from the confines of an otherwise two-dimensional space. Using high-strength tempered glass and improved attachments, the architects extended the display windows from

the storefront, creating a suspended, “jewel-box” like effect. Architects labeled the new storefront design the “open front” or “visual front.” Elaborate examples of the open front design included a renovation of the store’s interior, wherein the entire store became one extensive display window. Widespread adoption of the design did not occur until after the end of World War II, when the lifting of wartime rationing restrictions signaled the resumption of new residential and commercial construction (Jackson 2000:2–58).

During the 1950s and 1960s, the open front storefront typically followed asymmetrical, angular plans, with large display windows, cantilevered display boxes, projecting flat canopies, and some form of floating element, such as a sign. To emphasize the merchandise inside, the display window took center stage, relying on the overall configuration of the storefront to highlight the façades’ most important feature (Jackson 2002:2–58). A typical, albeit very modest, example of this building type is a ca. 1962, one-story, two-storefront building at 13234-13238 Cedar Road in Cleveland Heights (Plate B43). Constructed of concrete block with a red-brick veneer, the building features many of the typical elements found on commercial buildings at the time. The primary façade is dominated by large, plate glass display windows. The roof is flat with only a narrow, overhanging eave. The entire building is devoid of ornamentation or architectural embellishment. Its anonymity, however, lends itself well to the oversized signage and varied window displays that commonly were used by retail establishments at mid-century.

The open front approach lent itself well to both new construction and old, but it was in the renovation of older buildings that the theme took its most interesting forms. Due to variations in existing architecture, architects often found it necessary to improvise when renovating an old façade. Sometimes a commercial building owner was content to renovate only the lower story, but occasionally they included the entire primary façade. Typically, the new façade covering included no windows on the upper stories. The wall covering itself became the primary feature of the upper levels of the façade, consisting of some type of monolithic shroud. The wall covering might serve as a backdrop for a large sign, which might take the form of a large pylon or even an amoeba-shaped panel emblazoned with the company’s name (Jackson 2002:2–61).

Countless examples of such treatments can be found in older commercial districts in communities throughout Ohio, such as N. Court Street in Medina (Plate B44). Detailing, form, massing, and materials visible on the upper stories indicate that the buildings were constructed during the late nineteenth and early twentieth century. An exception is the Ziegler’s building, on which the street façade has been entirely covered with what appears to be either painted or enameled metal. The store name is written across the upper story in an oversized script, typical of the overblown commercial signage often found during this period. The butterfly overhang across the storefront is a classic midcentury modern design element, and shelters a replacement storefront made up almost entirely of plate glass display windows. On the remaining buildings, the first-story storefronts display a variety of treatments. Most have canvas or metal awnings, and the transom levels that originally most likely held glass to increase interior light levels have been covered with new signage. The storefronts are primarily composed of plate-glass display windows surmounted over bulkheads covered with smoked glass or tile.

In the same manner that retail stores underwent a modern makeover in the 1940s through the 1960s, so too did bank buildings. Still reeling from the effects of the stock market crash, banks made a concerted effort during the 1930s to improve their image and effectively remove themselves from the tragic events of the late 1920s. In an attempt to create a new image for themselves, banks looked to modern architecture to set a new tone for the future. Bank buildings of the late 1930s often took the form of Streamlined Classicism, which amounted to a blend of Art Moderne and Classical architecture. Featuring flat, planar surfaces with Deco-fluted pilasters and subdued ornamentation, these buildings appealed to conservative bankers and the public alike (Dyson and Rubano 2000:2-43–2-44).

Much like other forms of commercial architecture, new bank construction came to a standstill during World War II. After the war, bank construction resumed at an unprecedented rate. Postwar prosperity facilitated a high-paced credit economy, with mortgages and automobile loans generating huge profits for the banking industry. In an attempt to capture as many customers as possible, banks adopted a friendly and convenient approach to their service. Following many of the same principles employed by the retail industry, banks focused on customer service. They did so by eliminating physical obstacles between the customer and the bank's representatives. In the process, the bank assumed a warmer, more open atmosphere (Dyson and Rubano 2000:2-45).

The new approach to bank design took the form of asymmetrical Modern façades that might include large plate glass fronts, elaborate signs that extended from the architecture itself, and temperature boards that told time and the local temperature. In the suburbs, bank institutions perpetuated the Modern aesthetic, building branch banks that evoked a sense of informality, where anyone might feel welcome. Drive-up windows, automated services, and push-button technology offered customers all the conveniences they had come to expect in the modern era (Dyson and Rubano 2000:2-46).

A modest example of this new bank design can be seen at the ca. 1955 former bank at 11173 Reading Road in Cincinnati (Plate B45). The International-style building has a predominantly horizontal orientation that is bisected by a dramatic vertical element left-of-center on the primary façade. Along one side, the flat roof features a deep overhang supported by angled steel supports. The two facades most visible from the street are composed almost entirely of glass, creating a sense of openness and transparency. A tall signpost to the right of the building no longer has signage, but appears to be of a type design to include a time and temperature board.

Additional examples of recent past (1940-1970) bank buildings in Ohio include the ca. 1965 Buckeye Federal Savings & Loan Building at 1330 Morse Road and the ca. 1961 State Savings & Loan Association Building at 1500 Morse Road, both in Columbus and designed by Brubaker & Brandt (Samuelson et al. 1976); the ca. 1960 Ohio Savings Association building at 515 Euclid Avenue in Cleveland, designed by Dalton-Dalton & Associates (Ohio Architect 1961); the ca. 1959 East Side Office Branch of Fahey Bank in Marion, designed by Edwards & Burris (Ohio Architect 1960); the ca. 1967 Port Clinton National Bank, designed by Lawrence-Hawver Associates (Ohio Architect 1968); and the ca. 1965 Dayton View

Branch of Winters National Bank & Trust Company, designed by Lorentz & Williams (Ohio Architect 1966).

3.3.2 Ohio's Industrial Sector Continues to Evolve

Amidst the growing costs of labor and an exodus from urban cores, Ohio's manufacturing sector continued to expand into the 1960s. Statistics show that between 1947 and 1963, Ohio manufacturing grew at a more rapid pace than did the rest of the country, with a 6.0 percent gain, compared to 4.8 percent nationwide (Development Department State of Ohio 1965:i). In 1963, Ohio ranked fourth in manufacturing employment and second in new capital expenditures. Value of manufactures reached \$15.4 billion in 1963, marking a 35 percent increase since 1958. By 1963, Ohio ranked third in the nation in value of manufactures, exceed only by New York and California. Cuyahoga, Hamilton, Montgomery, Summit, Franklin, Lucas, Stark, and Lorain Counties each reported manufacture values in excess of \$500 million. Five of these counties boasted of several major industrial groups. Cuyahoga County, for example, contributed significantly to the manufacture of transportation equipment, non-electrical machinery, primary metals, and fabricated metals (Development Department State of Ohio 1965:11).

Manufacturing, the largest source of employment in the state, provided work for 1.3 million Ohioans during the early-to-mid 1960s (State of Ohio Development Department 1965:3). In 1963, 84 of Ohio's 88 counties reported some form of manufacturing employment. The number of manufacturing employees in each county ranged from 255 in Gallia County to more than 257,000 in Cuyahoga County. Eleven of the state's counties each reported more than 25,000 manufacturing employees. The majority of these workers were located in the state's traditional industrial districts, including Cuyahoga, Hamilton, Montgomery, Summit, Franklin, Lucas, Stark, Mahoning, Trumbull, Lorain, and Butler counties. These counties accounted for more than 71 percent of the state's industrial workers. An additional 9 percent of the state's industrial workforce was concentrated in the counties of Richland, Clark, Lake, Allen, Jefferson, Miami, and Wayne. Altogether, in 1963, approximately 1,251,000 employees worked in 15,177 manufacturing establishments throughout Ohio (Development Department State of Ohio 1965:8).

Among Ohio's manufacturing endeavors, transportation equipment, which includes the auto industry, ranked number one in terms of overall employment. In 1963, 401 transportation equipment factories employed 163,386 workers, with 64 percent of workers building automotive components. Nationally, the state ranked third in employment and value added by manufacture of transportation equipment. The majority of the state's transportation manufacturing plants were located in Cuyahoga, Montgomery, Hamilton, Lucas, Lorain, and Allen counties (Development Department State of Ohio 1965:57).

Also significant to Ohio's economy was the rubber industry. Labor statistics indicate that in 1963, some 472 rubber factories employed 79,634 workers. The largest rubber manufacturer in the nation, in 1964, Ohio's rubber industry accounted for more than 19 percent of the nation's total number of rubber workers. Ohio also led the nation in value added by rubber manufacture, and in new capital expenditure in the rubber industry. Half of those employed in Ohio's rubber industry manufactured tires and inner tubes. Miscellaneous rubber products

employed another 33 percent of the state's rubber workers, with the remaining 17 percent manufacturing plastic products (Development Department State of Ohio 1965:7).

Ohio's chemical industry also expanded in the postwar era, and by the early 1960s, the state ranked sixth in chemical and allied products manufacturing. The manufacturing census of the mid-1960s indicates that there were 755 chemical factories in the state. Nearly 75 percent of the state's chemical workers were concentrated in ten counties, including Ashtabula, Lake, Cuyahoga, Summit, Lorain, Lucas, Lawrence, Pike, Hamilton, and Montgomery counties. The majority of the state's chemical workers made soap, with Cincinnati-based Proctor and Gamble accounting for 87 percent of Ohio's chemical workforce (Development Department State of Ohio 1965:33).

During the mid-1960s, the production of food and kindred products ranked fourth in the state in number of workers employed. At least 77,000 employees worked in 1700 plants throughout the state, with only two counties not reporting some form of food manufacturing activity. The counties of Cuyahoga, Hamilton, Franklin, Montgomery, and Lucas accounted for 53 percent of the food processing employees (Development Department State of Ohio 1965:17).

In addition to the previously mentioned industries, Ohio ranked first in the production of stone, clay, and glass, and second in non-electrical machinery, which grew by 65 percent between 1947 and 1960. The state also ranked third in paper production and fifth in printing and publishing and in electrical machinery. During the mid-1960s, the state expected all of these industries to expand through 1976 (Development Department State of Ohio 1965:5).

Not all of Ohio's industries were projected to enjoy substantial growth. For example, the textiles, tobacco, wood products, and petroleum industries were anticipated to decline in output. The state's defense industry also witnessed significant decreases in revenue. Following World War II, western states began acquiring a larger percentage of government defense contracts. The shift had much to do with conflicts in the Pacific, including the Korean and Vietnam Wars. Geographic location gave west coast states the obvious strategic advantage over states further east. During the Korean War, states in the Midwest and Northeast won only 27.4 percent of the available military contracts. By 1961, the number of defense contracts going to Ohio had declined to 11.8 percent (Development Department State of Ohio 1965:5, 7).

Despite continued growth within numerous key industries, the late 1960s saw a trend toward business loss, due largely to industries leaving the state. The loss of industries to other states, however, was nothing new to Ohio. Indeed, as early as the 1920s, some Ohio companies relocated to the American south to avoid labor conflicts common to the upper Midwest. Volatile strikes during the Great Depression motivated additional companies to locate outside the state. Prior to World War II, the Mead Corporation of Dayton, for example, relocated mills to Tennessee, Georgia, and Michigan's Upper Peninsula. The trend toward decentralization accelerated after the war, with more companies taking advantage of cheaper labor costs in the South and Southwest (Knepper 2003:445).

An example of an important manufacturing firm that contributed significantly to Ohio's economy during this period is the Owens-Illinois Glass Company, based in the Toledo area. The firm's roots extend back to 1818 and the New England Glass Company, founded in East Cambridge, Massachusetts. In 1873, William Eliot Smith and Edward Levis Sr. founded the Illinois Glass Company in Alton, Illinois. Four years later, William L. Libbey took over New England Glass along with his son, Edward Drummond Libbey. The younger Libbey visited Toledo in 1887 and decided to move New England Glass here, although without changing the company name. By 1890, New England Glass began producing electric light bulbs for Edison General Electric. Two years later, the company name finally changed to Libbey Glass Company. The firm built a model glass plant at the Columbian Exposition in Chicago, and their exhibit was so successful that Libbey glass tableware became internationally known. In 1895, Edward Libbey partnered with an employee, Michael Owens, to found the Toledo Glass Company. Owens and engineer William Emil Bock designed several pieces of machinery to automate production of glass bottles. Such machinery later was credited with helping to eliminate child labor. Around the same time, Edward Ford decided to leave Pittsburgh Plate Glass Company to open a new, eponymous plate glass factory in Rossford, near Toledo. In 1904, in an indication of the glass industry's growing significance in Toledo, the American Flint Glass Workers Union headquarters moved to Toledo. Irving W. Colburn founded the Colburn Machine Glass Company in 1906 to manufacture glass using machinery of his own design but the firm went bankrupt in 1911. The following year, the Toledo Glass Company purchased Colburn's patents and hired him as an employee. By 1913, the company had perfected Colburn's plate glass refining process and began manufacturing. Three years later, the Libbey-Owens Sheet Glass Company was organized, while the Owens Bottle Machine Company functioned as a separate entity (University of Toledo Libraries Canaday Center 2007a).

All of the firm's original owners passed away by the mid-1920s, but the firm remained in operation. In 1929, the Owens Bottle Company acquired the assets of the Illinois Glass Company. The combined companies, now renamed the Owens-Illinois Glass Company, became the largest glass company in the world. A year later, the Edward Ford Plate Glass Company and the Libbey-Owens Sheet Glass Company merged to form Libbey-Owens-Ford Glass Company. In 1935, Owens-Illinois acquired Libbey Glass Company as a subsidiary; it was made an operating division in 1943. In 1938, Owens-Illinois and Corning Glass Works formed Owens-Corning Fiberglass Corporation. Owens-Illinois acquired Kimble Glass in 1946 and began production of a newly emerging product, television picture tubes. In 1954, the firm's corporate name changed to Owens-Illinois, Inc. During the mid 1950s, Owens-Illinois began experimenting with manufacturing with plastics. In 1958, the company made the first blown plastic containers using high density polyethylene. A year later, the company was named one of the 30 Dow Jones industrial average stocks. The new Libbey-Owens-Ford headquarters building opened in 1960 in downtown Toledo at 811 Madison Street (Plate B46). Eight years later, Owens-Illinois surpassed \$1 billion in annual sales for the first time (University of Toledo Libraries Canaday Center 2007a).

Meanwhile, the 30-story, International Style Fiberglass Tower at 200 N. St. Clair Street was completed in 1969 (Plate B47). Part of the Riverview Development urban renewal project, it was constructed by Riverview One Corporation. I.M. Pei planned the overall redevelopment

of the 16-acre site. Harold Boeschstein, chair of Owens-Corning Fiberglass, played a key role in securing Pei's services. His involvement in the project's first stages is presumed to mean that his firm was always intended to be the project's major tenant. The New York-based architectural firm Harrison & Abramovitz designed Fiberglass Tower itself. In addition to the tower, the project site included a parking garage and a plaza (Knibbe 2010).

3.3.2.1 Research and Development Milestones

Although Ohio's share of defense contracts decreased during the 1950s, the facilities at Lewis Field and Plum Brook Station continued to play important roles in scientific and industrial research and development. On October 1, 1958, NACA became the National Aeronautical and Space Administration (NASA) and Lewis became part of NASA. The agency was responsible for aeronautical and space activities sponsored by the United States, including non-military space projects, such as lunar probes and scientific satellites (Hagerty 1958:1). Lewis continued its ongoing work on high-energy rocket engines and fuels, especially the use of liquid hydrogen. The development of liquid hydrogen propulsion technology paved the way for the United States' successful manned space program and the research conducted at Lewis helped lay the base for many of NASA's earliest missions (Dawson 1991:202). In 1956, NACA had obtained 500 acres for construction of a nuclear research reactor at the idled Plum Brook Station. The Reactor Facility, designed to study the effects of radiation on materials used in space flight, was the first of 15 test facilities eventually built by NACA and its successor agency, NASA, at Plum Brook Station. By 1963, NASA had acquired the entire 9000-acre site at Plum Brook for these additional facilities (NASA/PBS 1999).

Ohio's participation in astronomical research was not limited to the U.S. space program. During the 1950s, Dr. John D. Kraus, a professor of electrical engineering and astronomy at Ohio State University, designed the Big Ear Radio Telescope to search for evidence of extraterrestrial life. Kraus began his work by designing a prototype that was placed on the roofs of two Ohio State buildings. The prototype's success at detecting interstellar radio waves allowed Kraus to raise enough funds to build a larger telescope. In 1956, Ohio Wesleyan University allowed a radio observatory to be built on twenty acres the school owned near its Perkins Observatory. The (at that time) rural location was away from terrestrial radio sources that could interfere with the telescope's observations. Students undertook much of the construction work to keep costs down. Larger than three football fields, the new observatory finally became operational in 1963. Kraus's first goal was to map outer space for radio waves. After this project finished in 1973, scientists began trying to detect radio transmissions from extraterrestrial life. Although definitive evidence was not discovered, the telescope received a powerful signal in 1977, known as the "Wow!" signal, the source of which was never identified and no similar signal has been since received. The Big Ear Radio Observatory ultimately received recognition from the *Guinness Book of Records* for conducting the longest search for extraterrestrial life. In 1983, the observatory's site was purchased by land developers, who ordered the telescope's closure in 1997. The observatory was demolished a year later to make way for a golf course expansion and several hundred houses (Ohio History Central 2005m).

Ohio firms and scientists also engaged in research efforts with more pragmatic, day-to-day uses. For instance, in 1955 Dayton resident and National Cash Register Company employee Barrett K. Green received a patent for the process of microencapsulation, or filling capsules with liquid. Over a period of time and under certain conditions, the capsules break open and release the liquid. Green first applied his invention to typing paper, creating the first carbon-free carbon paper in the world. The technology also was used by Dayton Power & Light Company to create the first scratch-and-sniff advertisements. The firm gave scratch-and-sniff cards to its customers to teach them how to distinguish the smell of natural gas. Microencapsulation found its most widespread use in pharmacy, as it allowed scientists to develop pills that slowly released medication into a patient. The process continues to be widely used today (Ohio History Central 2006g).

Another National Cash Register employee, Carl O. Carlson, invented microfiche in 1961. The film could hold hundreds of pages of printed text while occupying a much smaller volume of space. It allowed various types of institutions to save space and preserve fragile paper documents by converting them to microfiche files. Libraries, in particular, found microfiche very useful to expand their collections while saving space. Although digitizing records is now more often the norm, thousands of libraries across the country continue to maintain their microfiche collections for public use (Ohio History Central 2007b).

Retail and grocery stores throughout the United States use the bar code system, known as the Universal Product Code or UPC symbol, developed by Battelle scientists in 1965. Battelle also developed cruise control in cars in 1970 (Ohio History Central 2005e). James L. Ferguson, associate director of the Liquid Crystal Institute at Kent State University during the mid-1960s, developed an improved liquid crystal display (LCD) in 1969. Ferguson's design used what he described as a "twisted nematic field effect." He left Kent State in 1970 to form the International Liquid Crystal Company and received a patent for his invention in December 1971. His firm created the first LCD watch in history. LCDs soon entered widespread production and came to be common in digital watches, calculators, and numerous other types of electronic devices (Ohio History Central 2006h).

In the medical field, the Cleveland Clinic Foundation played a significant role in medical training and research through the twentieth century. Founded by Cleveland doctors George W. Crile, Frank E. Bunts, William E. Lower, and John Phillips in 1921, the foundation built a new hospital in 1924. In the decades after World War II, the Cleveland Clinic Foundation gained a reputation for its advancements in medical research and treatment, especially heart disease. Dr. Irvine Page studied the causes of high blood pressure and determined that the disease could be linked to diet. Dr. Mason Sones pioneered the first heart catheterization in 1958. Nine years later, Dr. Rene Favoloro performed the first heart bypass surgery using a leg vein in 1967. Other doctors have made advances in the design and use of artificial organs, organ transplants, and the treatment of kidney disease (Ohio History Central 2005n).

In Columbus, Alfred Bosworth, a scientist with the Moores & Ross Milk Company, created an infant formula with a milk base in 1925. Dubbing the product Similac, Moores & Ross began marketing it soon thereafter. The company saw so much success that regular milk operations were sold to Borden in 1928 and the name changed to M&R Dietetic

Laboratories. The firm took an innovative approach to marketing by targeting doctors as well as consumers. While acknowledging the superiority of breast milk, M&R argued Similac could provide a healthy alternative. By the late 1940s and early 1950s, Similac was the most widely used infant formula in the United States. At this time, doctors began recommending that mothers use formula because it allowed them to measure the amount of food consumed by their babies and guaranteed the nutritional quality of their intake; this advice continued to be accepted into the 1970s. In 1956, M&R created Ross Laboratories to continue its experimentation with improvements in infant formulas. Five years later, the firm opened its first overseas factory to produce Similac. Ross Laboratories merged with Chicago-based Abbott Laboratories in 1964, and within a few years introduced Isomil, a soy-based infant formula, and Pedialyte, an electrolyte solution. In 1973, Ross Laboratories introduced a nutritional supplement for adults called Ensure. All of these products continue to be on the market (Ohio History Central 2005o).

Research milestones such as these are important to note. These events can imbue the facilities with which they are associated with historical significance. Although the facilities themselves may be architecturally non-descript, their significance lies with their historical associations.

3.3.3 Highway Transportation Continues to Shape Ohio's Built Environment

The previously noted changes in the landscape and built environment that began with street railways and continued with early federal-aid highways achieved a new dynamic with the Interstate Highway System by the late 1950s. Interstates were much larger than earlier federal aid highways, featuring 12-foot lanes divided by medians, 14-foot bridge clearances, and 6 percent maximum grades. Additionally, unlike the Ohio Turnpike, which was built with the goal of quickly moving traffic through the state and actually bypassed major urban areas, Ohio's interstate system connected cities. Construction of the urban sections of the freeways had the consequence of demolishing large sections of the urban built environment through right-of-way acquisition.

Historic photographs from the 1960s and early 1970s provide striking evidence of the profound changes wrought upon Ohio's landscape and built environment by construction of urban expressways and the interstate system (Plates B48-B53). Cleveland had been heavily industrialized for more than a century by the time construction of interstates began through the metropolitan area during the 1950s. Yet, as shown in a 1969 aerial view of Cleveland, an elevated expressway was considerably greater in scale than earlier infrastructure projects, such as the elevated railroad bridge to its left, the vertical lift span crossing the river at the far left, and the various surface roads in the foreground (Plate B48).

In Cuyahoga County, the first signs of suburban sprawl associated with interstate construction were apparent in a 1969 aerial view (Plate B49). The interstate sliced across the landscape without regard to the existing environment. It towered over earlier roads, as earth-moving equipment had been used to grade and shape the ground as needed to cross two rivers. Adjacent to access ramps visible at the right background, what appears to be light industrial and commercial development has been constructed, while undeveloped land remains to the left of the interstate. Meanwhile, in a 1969 aerial view of Akron, the iconic

cloverleaf interchange is readily apparent (Plate B50). What appear to be residential and commercial subdivisions are located alongside each interchange; such developments commonly started adjacent to interchanges and gradually spread into the surrounding countryside. The open fields and woodlots visible to the right, left, and above the interchanges suggest that this area still was quite rural in character during the late 1960s.

In addition to altering rural landscapes, interstate construction transformed urban skylines as well. As can be seen in a 1973 aerial view of Cincinnati, the double-deck bridge carrying both I-71 and I-75 across the Ohio River added a major visual element to the cityscape (Plate B51). To the right, a through-truss railroad bridge projected visual heft as well. The two bridges, however, entered downtown Cincinnati slightly differently. The railroad bridge was somewhat lower in height, placing the railroad tracks close to the same level as the large industrial buildings lining the riverbank. Traffic crossing the interstate bridge, meanwhile, soared above the riverfront for a considerable distance before the roadway split several ways, with I-75 continuing north and I-71 turning east and two exit ramps providing access into downtown Cincinnati.

Elevated freeways were constructed in all types of settings in Ohio. In the Columbus area, I-270 was designed to encircle the city, with the intention of diverting through traffic and reducing congestion in the urban core. As seen in an aerial view of an elevated section in rural Franklin County, the highway stood as an element separate from the surrounding landscape (Plate B52). The separation between interstates and the context of their surroundings demonstrated the technological capability now commonly used to overcome all types of obstacles in the process of building roads. An even more vivid example can be seen in the Sandusky Bay Bridge (Plate B53). The four-lane highway crossing the broad expanse of water allowed more efficient automobile and truck traffic flow at a greater volume than had ever been possible in previous period.

Even more modest road and bridge projects illustrated the evolution in road design and engineering through the mid-twentieth century. A bridge carrying US 50 across a river in Ross County, east of Chillicothe (Plate B54), and a bridge in Athens County (Plate B55) each feature design elements that became standard during this period. The bridges were wider, with greater height clearances, than were used in earlier designs (Plates B9-B10). In lieu of reinforced concrete railings, the Athens County bridge also featured the plain steel guardrails that had become common by this time.

When President Eisenhower began advocating for the Interstate Highway system during the 1950s, he never intended for the freeways to pass directly through urban areas. Rather, they were meant to connect cities by passing along the outskirts of urban areas. Eisenhower commissioned a study to examine urban highway policies, among other existing policies within the Federal Aid Highway Act of 1956. The study, led by General John Stewart Bragdon, found that urban highways were “excessive and destructive” and did not fit the intentions of the Interstate Highway System because they were geared toward intracity, rather than interstate, transportation. As proof, Bragdon pointed to the many exits within urban areas that served to slow traffic during peak usage. Furthermore, urban freeways were being constructed with little consideration of integrating them into a larger comprehensive

transportation system consisting of mass transit. Bragdon recommended maintaining existing federal-aid highways within cities for adequate defense needs, and establishing a comprehensive urban planning process for each city prior to construction (Lewis 1997:145–149).

Despite the study's findings, Eisenhower capitulated to a pugnacious pro-urban freeway group led by federal highways administrator Betram Tallamy. Tallamy presented a copy of the mapping each congressman had received prior to the approval of the Federal Aid Highway Act of 1956. The mapping clearly showed the new freeways passing through city centers. Rather than admitting a lack of attention to detail, and drafting new legislation to address the problem, Eisenhower proceeded with urban freeway construction as planned. During the Eisenhower Administration, urban areas had been neglected, as Eisenhower focused more on rural issues. As a result, many city mayors across the country were starved for funding. They agreed to accept the destructive forces of urban freeways out of fear of losing federal appropriations for highway construction. Road construction, at least, would result in an immediate, if temporary, increase in jobs and economic activity (Lewis 1997:152–153).

The net result of urban freeway construction was a loss for urban centers. Planning for interstate routes was driven by road engineering and design constraints, but with little regard for the landscapes and streetscapes through which the roads would pass. The destructive routing policies also were influenced by socio-economics, as the cheapest route was usually through areas with the lowest property values and the poorest citizens (Kaszynski 2000:175). Consequently, numerous neighborhoods were bifurcated by highway construction, resulting in the loss of thousands of dwellings, destroying the social fabric of communities, and isolating areas from the city center.

Increasing public outcry arose over the destruction of urban neighborhoods in order to make way for freeways, exit and entry ramps, and overpasses. Slum clearance, or “urban renewal” as it was known, had begun during the Great Depression and continued after World War II. Areas judged as blighted or substandard were leveled and replaced with apartment complexes and public housing projects for low-income residents. In response to critics of interstate construction, federal, state, and local governments began a new round of urban renewal projects. Planners believed that coupling urban renewal with highway construction meant that two goals could be accomplished instead of just one. Slums would continue to be cleared and in the process cities would be provided with new transportation avenues (Lewis 1997:153).

As happened with much post-World War II development, these projects were undertaken at a considerably greater scale than had previously been the case. Housing projects built before 1940 tended to be lower density and small in scale, and somewhat mimicked the settings of semi-detached housing found in many cities. By the 1950s, however, conceptualizations of public housing had shifted to emphasize high-rise apartment buildings built in clusters with common spaces among them. Such projects often, although not always, had unintended consequences, including further destruction of historic streetscapes and high concentrations of poverty in small areas.

An example of a 1960s urban renewal project in Ohio is the former Kenyon-Barr redevelopment in Cincinnati's West End. The West End was one of Cincinnati's poorest neighborhoods, populated almost entirely by African American residents, and was one of the densest areas in the city with more substandard housing than anywhere else. Despite its material shortcomings, it also was the center of African-American life in Cincinnati. Plans for urban renewal in the neighborhood began the same year Eisenhower's Federal Aid Highway Act of 1956 passed Congress. The plan centered on the development of the Mill Creek Expressway, which would later become I-75. The urban freeway would cut through the West End, splitting the neighborhood in half. Charles H. Stamm, Cincinnati's first Urban Renewal Director, designed a small residential housing area northeast of the freeway with public housing projects and high-rise apartments, and a larger light industrial park named "Queensgate" to the southwest. City leaders envisioned Queensgate as a rival to the industrial parks being built outside the city limits, as it offered a close connection to downtown and good access to rail and highways (Hurley 2006:61–62). Upon the project's completion in the 1960s, the Kenyon Barr redevelopment had almost completely obliterated the historic West End's housing stock. Its former population dispersed among the city's other neighborhoods. The Queensgate industrial area replaced an urban walking neighborhood, with an auto-centric, suburban style industrial park.

Another example of urban renewal is the Erieview project in Cleveland (Plate B56). First adopted in 1960, the renewal plan was one of the most ambitious to date under the Federal Urban Redevelopment Program. Older buildings in the northeast section of downtown had been deemed substandard and blighted, presenting an opportunity to use federal funds to pay for redevelopment of the area.

The project extended roughly from E. 6th to E. 17th streets and from Chester Avenue to the lakefront. The area west of 14th St. was designated for public and commercial uses, while to the east would have residential use. Internationally known architect I. M. Pei & Associates prepared the overall plan for the project. Acting as visual accents, vertical towers would be strategically placed among groups of low-slung buildings. The 40-story Erieview Tower at E. 12th St. and St. Clair (Plate B56) functioned as the hub of the project. In keeping with the public-spirited intent that had originated the urban renewal concept, such plans often included provisions for open and public space. A plaza with a reflecting pool was placed west of E. 9th Street, while at E. 12th Street and Chester Avenue, an open space or plaza called Chester Commons was created for leisure activities.

Major office and commercial buildings constructed as part of the project included the aforementioned Erieview Tower (1964), the Federal Building (1967), One Erieview Plaza (1965), the Bond Court office building (1971), and the Public Utilities Building (1971). Park Center (1973) was a combination 20-story apartment building and shopping mall. All of the buildings were designed in various iterations of the International Style.

A second phase of development at Erieview took place during the 1980s. They included the Ohio Bell Building, One Cleveland Center, Eaton Center, and Northpoint. In 1985, developers Jacobs, Visconsi & Jacobs acquired Erieview Tower and renamed it the Tower at

Erievuew. On the site of the original public plaza on E. 9th Street, the firm built a shopping mall, known as The Galleria that attached to the Tower. The mall opened in October 1987 (Encyclopedia of Cleveland History 2010d).

The Interstate Highway System affected far more than just Ohio's urban centers. The new freeways bypassed many of the older federal-aid highways, which passed through small towns and rural areas. The older roads, which had supported the initial wave of modern roadside architecture in the form of motor courts and service stations, experienced a drastic decline in traffic and the tourism that supported these industries. Businesses along these highways saw a massive decrease in patronage and had little choice but to close or relocate to an area closer to the new Interstate freeways. The freeways robbed small towns on the older federal-aid highways of much-needed traffic and business, which sometimes resulted in the almost total abandonment of the town. Once thriving Main Streets became shells of their former selves with empty storefronts and sidewalks (Kaszynski 2000:175).

As work on Ohio's interstate highways neared completion by 1970, the federal government made funds available for construction of belt highways around the state's major urban centers. These outer belts were more in keeping with Eisenhower's original conception for the interstate system. As historian George Knepper noted, the outer belt bypasses, in particular, effectively funneled traffic from urban centers to outlying areas and expanded growth of residential and business complexes at major intersections (Knepper 2003:385). Consequently, construction of the interstate highway system did not lead only to destruction of existing streetscapes. It also was directly responsible for new developments in towns and cities across Ohio.

New residential housing developments spread ever father into the farmland outside cities and older suburbs. These "exurbs," also known as edge cities, sprang up along the highways many miles from urban centers and their residents' occupations. For example, the completion of Interstate 71 through Cleveland helped develop previously rural Medina County into an exurb of Cleveland (Knepper 2003:385). A similar development occurred outside Cincinnati with the development of West Chester Township along Interstate 75. These areas, which previously consisted primarily of farmland, had been too far from the city center for extensive residential development under the previous federal-aid highway system. The high-speed Interstate Highway System, however, allowed residents to commute quickly from their homes to their workplaces. Similar development patterns occurred along all of Ohio's initial major interstate highways, such as I-70, I-71, I-74, I-75, I-77, and I-90.

Elsewhere in the Cleveland metropolitan area, along interstate highways 71, 77, 90, 271, and 480, a variety of exurban and suburban developments can be found. These new centers attracted mixed uses, including white-collar employment, retail shopping, and entertainment. To a lesser degree, blue-collar employment opportunities also could be found in these areas. The effects of deindustrialization that began during the 1970s have meant that heavy industrial, light industrial and other types of blue-collar employment have not been as prolific in the suburbs. As large companies left urban cores in search of cheaper land and the aesthetic appeal of suburban settings, corporate headquarters and office parks represented a significant aspect of this growth. The American Greetings Corporation and Cleveland *Plain*

Dealer office parks are examples of these. In a similar trend, institutional organizations began moving their headquarters to suburban office parks as well; the First Catholic Slovak Ladies Association in Beachwood is representative of this trend. Shopping malls, such as Great Northern in Olmstead and Randall Park in North Randall, also proved to be well suited to these environments. Given their proximity to major transportation arteries, traveler services also figured prominently in edge city and exurban developments. Restaurants, gas stations, convenience stores, motels, and hotels are ubiquitous in the exurbs, with particularly dense concentrations around interchanges. Through the 1970s and beyond, edge cities that grew up around interstates drew commercial activity, residential development, businesses, and employment away from Cleveland, older inner-ring suburbs, and outlying small towns and, thus, created a decentralized urban-like environment (Borchert 2010).

Upon the completion of the final section of Interstate 275 around Cincinnati in 1992, Ohio's interstate system was complete with 1,580 road miles, making it the fourth longest system in the nation (ODOT 2004). As of 2000, Ohio interstate highways carry thirty times more truck traffic and six times more weight than originally envisioned in 1956 (ODOT 2004: 30). While no section of the original highway remains as it was originally constructed, the majority of the changes consist of road widening, resurfacing, and new interchanges, while the actual routes remain relatively unchanged. Road widening has been conducted in areas of heavy traffic and resurfacing has occurred throughout the entire system to replace deteriorating materials. New interchanges have been built where development pressures have demanded more access points. For example, the Mall Road interchange was built along I-70 in Belmont County as a result of the construction of a shopping mall (ODOT 2004: 32).

Construction of the Interstate Highway System had demonstrable, profound consequences for Ohio. The system transformed both urban and rural areas, as the massive freeways changed traffic and development patterns in cities and country alike. Negative effects on urban areas included obliterating neighborhoods in their path, leeching residents from the urban core by fostering suburban sprawl, and destroying farmland in the hinterlands in favor of new residential suburbs and exurbs. The highways also had a tremendous impact on economic growth in Ohio. Commerce, industry, and agriculture no longer needed to rely on rail and water for cheap and quick transportation (Grant 2000:24–25). The freeways freed up thousands of acres of land in Ohio's interior for development by these interests. Ohio's strategic location ensured heavy use of the freeways for shipping and many trucking companies located in Ohio to take advantage of the location (Knepper 2003:444). For better or worse, the Interstate Highway System responded to Americans' love affair with the automobile, and as a result, the development patterns of Ohio and the nation were transformed.

3.3.4 Social Upheavals of the 1960s

Changes in demographic patterns in Ohio during the 1960s continued along trends that had been in force for several decades. Beginning in the late 1920s, people from rural areas of Kentucky, Tennessee, and West Virginia moved into northern industrial cities to find work (Collins 1957). These Southern Migrants, as they were called, often clustered together in low-income inner city neighborhoods to be close to industrial job opportunities as well as other people in similar situations. Migration of southern-born whites and African Americans

continued into the 1960s as friends and relatives joined those already established in the cities (Knepper 2003:377).

Many natives of these cities viewed the rural newcomers as a social problem. In Cincinnati during the 1950s, sociologist Roscoe Giffin of Berea College, Kentucky, hosted a workshop explaining how the mountain people's culture left them ill-prepared to assimilate into urban life. Giffin's address was circulated among Cincinnati's social workers and clergy to help them understand the plight of the migrants. The general consensus after the address was that southern migrants would eventually adapt to living outside rural Appalachia and leave the inner cities for the surrounding suburbs, just like other immigrant groups before them. A decade later, however, the predicted adaptation and movement was not happening. To combat the issue, social workers attempted to bring government aid directly to the migrants by rehabilitating poor neighborhoods and introducing social welfare programs to residents. The effects of these interventions are not fully understood, but by the 1970s, many migrant families had made the transition from inner cities to suburbs (Tucker 1992:228–240). Unlike earlier generations, the post-World War II migrants had little impact on Ohio's urban architecture, as they took residence in extant apartment buildings being vacated by those moving to new suburbs (Knepper 2003:386).

During the 1960s, intensive efforts were made to remediate the depressed economic conditions found throughout the multi-state Appalachian region from which many upland Southern whites had migrated. It was hoped that such efforts would reduce the need for Appalachian residents to leave the region in search of educational and career opportunities. The difficulties in Appalachia affected Ohio directly, as a substantial portion of it was within the region (Figure A1).

Poverty in America became a subject of widespread attention and debate during the early 1960s. Among those who raised the subject were Homer Bigart, who wrote a lengthy series on Appalachian poverty that appeared in the *New York Times* and Dwight McDonald, whose *The Other America* was an indictment of the widespread poverty that still existed in the United States even during a period of unprecedented economic prosperity. Eliminating poverty became a focus of presidential administrations for the remainder of the 1960s. During the truncated administration of President John F. Kennedy, Congress passed the Area Redevelopment Act in 1961, which provided a means for improving infrastructure in the Appalachian region, and the Manpower Development and Training Act in 1962 to create job training programs. An experimental food stamp program was also introduced (Germany 2005).

President Lyndon Johnson made combating poverty a centerpiece of his administration. His War on Poverty, as it came to be known, was part of a larger agenda geared toward extending equal opportunity and social justice to a wide cross-section of American society. Johnson achieved significant successes during his administration, with Congress implementing most of his budget proposals. In his dealings with Congress, he advocated passage of legislation for civil rights, ending poverty and hunger in the United States, redeveloping cities, providing Americans with federally-financed health care, and increasing funding for education. Passed in 1964, the Economic Opportunity Act provided the basis for the Office

of Economic Opportunity (OEO), the Job Corps, Volunteers in Service to America (VISTA), Upward Bound, Head Start, Legal Services, the Neighborhood Youth Corps, the Community Action Program (CAP), the college Work-Study program, Neighborhood Development Centers, small business loan programs, rural and migrant worker programs, remedial education projects, and local health care centers. An Ohioan, Theodore Berry, worked closely with Johnson in establishing Head Start. Through the mid-1960s, a plethora of additional legislation followed, including the Civil Rights Act of 1964 and Voting Rights Act of 1965. Other landmark measures included an \$11 billion tax cut (Revenue Act of 1964), the Food Stamp Act (1964), the Elementary and Secondary Education Act (1965), the Higher Education Act (1965), the Social Security amendments that created Medicare and Medicaid (1965), the creation of the Department of Housing and Urban Development (1965), the Model Cities Act (1966), the Fair Housing Act (1968), several job-training programs, and various urban renewal-related projects (Ohio History Central 2005p; Germany 2005).

These initiatives met with considerable controversy, as they upset long-established power structures and social orders. One of the most controversial was CAP, in part due to its daring approach to empowering the poverty-stricken people it was founded to serve. By design, the CAP bypassed traditional federal, state, and local bureaucracies to provide “power to the people,” as a common idiom of the period expressed it. Required by law to provide “maximum feasible participation of the poor” in Community Action Agencies, the CAP also became inextricably intertwined in the civil rights movement. During the late 1960s, however, as urban and civil unrest erupted in cities nationwide, the CAP became a means of providing proof of the government’s concern for the needs of the poor and marginalized. By 1969, over 1,000 Community Action Agencies had been established and they offered a direct conduit for addressing tensions in urban neighborhoods. In subsequent years, the CAP’s mission was redefined but its core goal of providing direct action for and by poor citizens remained (Germany 2005).

In concrete terms, the number of Americans living in poverty declined during Johnson’s administration. Although the ramifications of Johnson’s War on Poverty remain a subject of considerable debate, many of his programs, especially Medicare, Medicaid, and Head Start, became cornerstones in the American social safety net through to the present day (Ohio History Central 2005p).

3.3.4.1 *Civil Rights for all Ohioans*

Southern-born African Americans who moved into Northern cities encountered even greater resistance to their arrival than had Southern whites. They also moved into inner cities where rents were less expensive and apartments were close to unskilled jobs in industrial factories. But while white Appalachians had opportunities to move to the suburbs, many African Americans could not because of restrictive covenants, antipathy from white residents, and difficulties with obtaining financing. The civil rights movement brought these and other injustices to the forefront of America’s political consciousness.

When state and local governments showed little initiative toward redressing racial discrimination, federal legislation, such as the Civil Rights Act of 1964 and the Voting Rights Act of 1965, established principles of equal rights, citizenship, and political

participation. In turn, white resistance to greater civil rights for minorities increased. Racism played a significant role in opposition to civil rights initiatives, but a complex interweaving of cultural mores, fears of economic competition, suspicion of the supposed “Communist” associations of civil rights leaders, social customs, and religious beliefs meant that no single, simple explanation for the phenomenon existed. Among African Americans, anger tended to focus on white-dominated police departments, which they regarded as insensitive to law-abiding African Americans’ needs. As tensions mounted, violent clashes occurred in numerous urban settings during the late 1960s, fueled in part by political assassinations of leaders such as the Reverend Dr. Martin Luther King, Jr., Robert F. Kennedy, and Malcolm X (Knepper 2003:392-393).

In Cleveland, Dayton, and Cincinnati, uprisings resulted in injuries, deaths, and significant destruction of property. Among the first of these was a series of disturbances in Cleveland in June 1966. Centered in the predominately African-American Hough neighborhood on the city’s east side, the episode lasted for several days. The Cleveland police force proved unable to quell the violence, and 2,200 National Guard troops were brought in to reestablish order. Four African Americans died in the violence. In the aftermath, neighborhood residents were left with several blocks of homes and businesses that had been destroyed by arson fires. A number of investigations into the origins of the uprising followed. A grand jury determined that “outsiders” were responsible. Another panel found that pre-existing social conditions in Cleveland’s poorest inner city neighborhoods caused the riots. This was due, in part, to a prevailing feeling among many African-American residents in these areas that city, state, and federal government officials were unresponsive to their needs. During the course of the twentieth century, Cleveland’s eastern neighborhoods had suffered from lack of business development and a declining population, as many residents, especially whites, moved to suburbs (Ohio History Central 2005q). As previously noted, such population shifts led to an eroded tax base, less affluent population, and lack of investment in infrastructure improvements and economic development in older city neighborhoods.

Another notorious event was a July 1968 shootout between African Americans and police in Cleveland’s east side Glenville neighborhood that resulted in the deaths of 3 policemen and 4 civilians, as well as numerous injuries. Over the next forty-eight hours, additional looting, arson, and physical assaults took place. In this instance, the Cleveland police were able to reestablish order without the National Guard’s aid (Knepper 2003:392–393; Ohio History Central 2005r).

Alongside the growing tendencies toward violence, however, concrete evidence of progress began to appear by the late 1960s. These successes were the result of years of effort on the part of countless individuals and organizations. Perhaps the foundation for Ohio’s modern civil rights movement lay with the Ohio Public Accommodations Law of 1884, which banned discrimination by race in public facilities. The law, however, was ineffectively enforced. Well into the twentieth century, widespread discriminatory practices occurred across Ohio, such as denying African Americans access to hotels, restaurants, skating rinks, swimming pools, and cemeteries (Knepper 2003:391).

During the 1950s, a nationwide civil rights movement emerged. Among its landmarks were the 1954 *Brown v. Board of Education* court decision to desegregate public schools and citizen demonstrations for equal access and equal rights, such as the bus boycott in Montgomery, Alabama. In Ohio, the move to redress civil rights grievances began with a focus on race-based discrimination in employment. The Ohio state legislature created a Fair Employment Practices Commission for Ohio in July 1959. In 1961, the legislature changed the agency's name to the Ohio Civil Rights Commission (OCRC) and expanded its mission. While primarily concerned with discrimination in employment, the OCRC was granted discretionary authority to study, advise, and issue statements regarding all civil rights matters. The original 1959 statute received several amendments expanding its scope, including protecting equal opportunity in places of public accommodations (1961), housing (1965), credit (1976) and in institutions of higher education (1984) without regard to race, color, religion, sex, national origin, disability, ancestry, age or familial status (housing only) (Ohio Civil Rights Commission 2010). Following the lead set by the state, local governments also began amending policies in response to citizen complaints.

As previously noted, one area in which African Americans faced pernicious and widespread discrimination was in housing. Lack of equal access to housing affected all aspects of racial minorities' lives, from the types of schools children attended to the opportunities for jobs available to adults. Through the mid-1960s, landlords in Ohio often refused to rent apartments or homes to African Americans. Homeowners also sometimes refused to sell their residences to black people. Numerous suburban neighborhoods included racially restricted covenants in their legal documents. At the federal level, passage of the Civil Rights Act of 1964 and the subsequent Voting Rights Act had shone a spotlight on the pervasiveness of race discrimination in America. Such measures provided an impetus for state and local governments to enact civil rights legislation within their own jurisdictions. In 1965, Ohio's state legislators passed the Ohio Fair Housing Act. The law prohibited racial discrimination in housing, albeit with certain provisos. An owner who also resided in the building or an owner of a house or apartment with only one or two rental units was not obligated to follow the law. Nevertheless, the legislation was sufficiently broad in scope to open a much wider range of housing opportunities to African Americans in Ohio (Ohio History Central 2005s).

The 1960s civil rights movement in Ohio also was built upon a slowly growing African American middle class, as well as the activism of preceding generations. Entrepreneurs formed the backbone of Ohio's nascent African American middle class. Precluded from participating fully in many aspects of mainstream commercial activity, African Americans established their own businesses to serve the needs of their communities. William S. Ward, a native of Columbus, ranks among Ohio's successful African American entrepreneurs. His moving company, the Ward Transfer Line, dates to 1881. Ward originally employed three people and had a single wagon to transport freight. In 1899, the company became known as the E.E. Ward Transfer & Storage Company. In 1914, the firm adopted the use of trucks for hauling, although it retains some horse-drawn wagons until 1921. Originally, Ward Transfer focused on transporting items from railroad stations to customers' homes and businesses. Services soon expanded to include contracts with local, regional, and even national firms. For instance, from 1903 to 1959, the Ward firm had a contract to deliver Steinway pianos in the Central Ohio area. The company moved approximately 900,000 pianos over the course of the

contract. The Ward Transfer Line is now recognized as the oldest, continuously-operating African-American business in the United States. It continues to be owned by the Ward family and now specializes in local moves for businesses (Ohio History Central 2005t).

Among the civil rights pioneers in Ohio was Clevelander John O. Holly, who formed the Future Outlook League in 1935 in the midst of the Great Depression. His goal was to aid African Americans in finding jobs. With unemployment rates well into the double digits and jobs of all types scarce, African Americans seeking work also were hobbled by racially biased employers who often hired only white workers. In its fight against discrimination, the Future Outlook League used boycotts and pickets, both of which would be used successfully during civil rights struggles of the 1950s and 1960s. The organization also reached out to labor unions to aid efforts to organize working-class African Americans. Although many labor unions had low minority membership rates, many union organizers shared a belief in class solidarity that superseded divisions based on race and other factors. Finally, the Future Outlook League began using the court system to challenge discrimination, another tactic that would find widespread use in later decades. The organization continued its work through World War II when, at its peak, it had more than 27,000 members (Ohio History Central 2005u).

An Ohioan who continued the tradition of organizing African American workers was Geraldine Roberts. A Cleveland native, in 1965, she began organizing African American women who worked as domestic servants. The service sector long had been one of the few employment avenues open to minority women, as race and sex discrimination foreclosed the majority of educational and employment opportunities. Racial discrimination and social mores meant that domestic workers had little control over their working conditions and little room to negotiate for better pay. Due to entrenched sexism, male-dominated unions rarely supported women workers in any field. As a result of Roberts's efforts, the Domestic Workers of America union was chartered in 1966. The organization provided an important, early source of financial support for the Congress on Racial Equality (CORE). The union's officers also concentrated their efforts on creating a registry for domestic servants, providing training and educational opportunities, and assisting with job placement (Ohio History Central 2005v).

African-American Ohioans made significant contributions in scientific and intellectual fields as well. For example, Frederick McKinley Jones (1892-1961), a native of Cincinnati and an experienced mechanic, developed a self-starting gas engine and a series of devices for movie projectors. His most important work came in the field of refrigeration. In 1935, he invented the first automatic refrigeration system for long-haul trucks, making it possible to ship fresh meat, produce, eggs, and dairy products via truck. Within a decade, freed from having to use refrigerated railroad cars, the commercial food production industry was transformed at all levels. Farmers' ability to have their products reach distant markets became almost unlimited. Distributors and wholesalers had greater flexibility in their daily operations. Supermarkets and grocery stores could expand the range of foods they offered for sale. Consumers had access to a greater range of products from a wider geographic area than ever before. Over the course of his career, Jones was awarded more than 40 patents in the field of refrigeration (Imbornoni 2007).

Finally, African Americans gained prestige, economic opportunity, and autonomy through professional and amateur sports. Both individually and collectively, African-American players and teams played important roles in African American culture. They served as role models, as heroic figures, and as proof of the levels of accomplishment, skill, and talent that African Americans achieved even when encumbered by discrimination. William (Bill) Karnet Willis, a native of Columbus, became the first African American to play in the All-America Football Conference. He played football on scholarship at Ohio State University from 1941 to 1945, as well as participating in track and field. Upon graduation, Willis became the head football coach of Kentucky State College, a historically black college in Frankfort, Kentucky. The next year, Willis tried out for the Cleveland Browns, where his former coach at Ohio State, Paul Brown, now served as head coach. Brown immediately hired Willis to play on offense, although he came to be best known for his role as middle guard on defense. For seven of the eight seasons Willis played for the Cleveland Browns, he was a first-team All-League selection. In 1950, the Browns joined the National Football League (NFL), after which Willis was elected to the NFL Pro Bowl three times. He also is commonly credited with helping the Browns win the 1950 NFL championship by making a touchdown-saving tackle against the New York Giants. Willis retired after the 1953 season and was inducted into the Pro Football Hall of Fame in 1977 (Ohio History Central 2005w).

In baseball, the Negro American League came to occupy a hallowed place in African American culture. Ohio's participation in the league came in 1942, when the Cleveland Buckeyes franchise was first organized. The first year, most of the team's games were placed in Cincinnati, but in 1943, the team moved permanently to Cleveland. Six years later, the team moved to Louisville for a season, then returned to Cleveland in 1950 for its final season. During the team's eight-year history, it won a Negro American League pennant in 1945, finishing with an overall 53-16 record, a .768 winning percentage, and a sweep of the Homestead Grays in the Negro World Series. The team captured the pennant again in 1947 with a 54-23 record, but lost the World Series to the New York Cubans in five games (Negro League Baseball Museum 2010). Leroy "Satchel" Paige, a veteran of the Negro League, joined the Cleveland Indians in 1948, just a year after Jackie Robinson broke the color barrier in Major League Baseball. A legendary pitcher known for his speed and accuracy, Paige also played for St. Louis and Kansas City (Satchel Paige Enterprises 2010).

On the amateur level, bowling occupied an especially important place in many African Americans' lives, in spite of the fact that many white-owned bowling alleys limited or excluded African Americans from using their facilities. Two major league associations, American Bowling Congress and the Women's International Bowling Congress, also refused membership to African Americans. Bowling thus became a case study of African Americans' long tradition of forming their own associations and establishing their own businesses to serve their needs. The National Negro Bowling Association (NNBA) formed in 1939 in Detroit, Michigan. The same year, the NNBA held its first tournament in Cleveland. The organization's team members were from Detroit, Cleveland, Cincinnati, Columbus, Toledo, Indianapolis, Chicago, and Racine, Wisconsin. Teams from other parts of the United States later joined the association as well. In 1940 in Cleveland, William Pierson opened the first African-American owned and operated bowling alley in the United States. In 1944, the

NNBA changed its name to the National Bowling Association. Over the course of its history, it oversaw more than 500 bowling leagues. Although persons of all races could join, its membership remained predominately African American. During the 1950s, William DeHart Hubbard, a Cincinnati, served as the organization's president. In 1951, two other major bowling organizations, the American Bowling Congress and the Women's International Bowling Congress, eliminated race-based membership exclusions, in part due to legal pressure from the National Association for the Advancement of Colored People and from the National Bowling Association. The National Bowling Association has remained active through today, and, as of 2007, had thirty thousand members (Ohio History Central 2005x; Ohio History Central 2005y).

Finally, in 1946, William Powell designed and built the Clearview Golf Course in East Canton, making him the first African American to design and construct a professional golf course in America. Born in 1917, Powell spent much of his youth in Minerva, Ohio, where he earned thirty-five cents per round as a golf caddie. He later enrolled in Wilberforce University, where he played football, then enlisted in the United States armed services during World War II. After the war ended, Powell decided to build a golf course, as numerous courses prohibited African Americans from playing. He worked as a security guard while also building the course. By 1948, he had completed nine holes and opened the course to the public. Thirty years later, he expanded the course to eighteen holes. Today, Clearview is the only golf course in the United States known to have been designed, constructed, owned, and managed by an African American. In 2001, the property was listed in the NRHP; Powell passed away in 2010 (Brown 2001).

Thus, during the 1960s, as African American leaders stepped forward in Ohio to assume increasingly visible leadership roles in national, state, and local affairs, they were adding to a rich heritage of such leadership in the state. Prominent individuals emerged especially in locales that had a comparatively high percentage of African American residents, such as Cleveland, Columbus, and Cincinnati (Figure A6). In 1966, Robert C. Henry became the first African American to serve as mayor of a city (Springfield) in Ohio. An alumnus of the Cleveland College of Mortuary Science and World War II veteran, he operated the Robert C. Henry Funeral Home in Springfield for many years. An active participant in local political affairs, he was elected and served for ten years on the Springfield City Commission, then held the office of mayor from 1966 to 1968 (Ohio History Central 2005aa). In 1971, Ellen Walker Craig-Jones, a native of Franklin County, became the first African American woman in both Ohio and the United States to be elected mayor of a municipality. Her civic and political career began in 1960 and, over the years, she was involved with the Urbancrest Volunteer Civic Improvement Association, Buckeye Boys Ranch, Urbancrest Youth Council, and the Mid-Ohio Regional Planning Commission, among others. She served as mayor of Urbancrest until 1975. During her administration, she focused on modernizing the community, administering a three-million-dollar public housing project, improving street lighting, installing signage, and repairing the city's streets (Ohio History Central 2005bb). Also among the ranks of firsts in Ohio were Carl B. Stokes, elected in 1967 to become Cleveland's first African American mayor, and the first African American mayor of a major American city; William O. Walker, the first African American to serve in an Ohio governor's cabinet; Arthur C. Elliott, a federal marshal; Lillian Burke, who sat on the Ohio Industrial

Commission, and Mae Stewart, president of the City Commission of East Cleveland (Knepper 2003:392-393).

As African Americans gained access to greater educational opportunities, and therefore better jobs, a growing cadre of middle class professionals and entrepreneurs emerged. With growing economic and political clout, African Americans wielded the influence necessary to enact social change and take their rightful place in the political process (Knepper 2003:392–393). Today, the National Afro-American Museum and Cultural Center near Dayton is dedicated to educating the public about African-American history and culture in Ohio from African origins to the present through museum exhibits, research and publications, visiting scholars, and other educational activities for adults and children (Ohio Historical Society 2010a).

3.3.4.2 *The Antiwar Movement in Ohio*

Another wave of social unrest swept through 1960s Ohio in the form of the antiwar and student protest movement. The Baby Boom generation, now reaching college age, employed the strength of its numbers, as well as its level of affluence to begin demanding a voice in political and social affairs. In addition to advocating for civil rights, their activism coalesced around opposition to the Vietnam War. Ohio's many large cities and burgeoning college campuses provided gathering points for protesters. Small, private colleges such as Wilmington College in Clinton County saw vigils, teach-ins, and demonstrations, just as did larger public campuses at Ohio State University, the University of Cincinnati, and Kent State University. By the late 1960s, student demonstrations became more intense, as did administrators' and political leaders' attempts to quell them. Violence and vandalism occurred among demonstrators, leading to use of National Guard troops at several campuses to break up the protests (Knepper 2003:394–395).

The tragic climax of this trend occurred at Kent State University on May 4, 1970, when guardsmen confronted a group of unruly demonstrators, with uninvolved students looking on as well. The armed soldiers fired on the civilians, killing four and wounding nine. Extensive investigations and two trials never determined if the troops followed orders to fire or if some other event precipitated the action (Knepper 2003:395). It was a watershed moment in American history. As explained in a NRHP nomination of the shooting site, the shooting had

broad effects in causing the largest student strike in United States history, increasing recruitment for the movement against the Vietnam War and affecting public opinion about the war, creating a legal precedent established by the trials subsequent to the shootings, and for the symbolic status the event has attained as a result of a government confronting protesting citizens with unreasonable deadly force (Seeman et al. 2008:8/8).

The site where the shootings occurred has been preserved (Plate B57). Markers, commemorative memorials, and interpretive materials have been added to the campus to educate students and visitors alike about the significance of this event in Ohio's, and the nation's, history.

3.3.5 Expanding Missions for Education During the 1960s

The curricula and mission of Ohio's secondary and postsecondary schools expanded throughout the post-World War II period. In 1959, legislation allowed the formation of joint vocational school districts across school district and/or county lines. Vocational schools were intended to emphasize technical training to create an educated workforce equipped to take technical, industrial, and trades-related jobs. In heavily industrialized Ohio, such skills were considered vital. Six years later, creation of Ohio's first joint vocational schools came with the Penta County Joint Vocational School District, which combined seventeen districts near Toledo and the Lake County Joint Vocational School District, serving the entirety of the county (McCormick 2001:112, 249).

The Penta County facility was established at the former Rossford Arms Depot, a surplus federal government site in Wood County. The 55-acre property included a series of small structures and a three-story main building. The latter was converted to classrooms to serve approximately 1,000 juniors and seniors. Students attending the school completed basic educational requirements during their freshman and sophomore years in their own school districts. The first cohort of students arrived in September 1965. In keeping with the mission of vocational education, local industries were closely involved in the school's operation, providing equipment, instructors, and job placement services for graduates. Owen Technical College, a two-year postsecondary institution, later was established adjacent to the vocational school. In addition to providing further training opportunities to the vocational school graduates, adult workers could upgrade their skills at the college too (McCormick 2001:112, 114).

During the early 1960s, such two-year colleges began to proliferate to serve people who sought vocational training, those wanting to attend college close to home, and those who only needed two years of higher education to advance at a career. Throughout the 1950s, legislation was introduced in the Ohio General Assembly to create community colleges and technical schools. Debates soon arose about how these institutions would be financed and operated. Ultimately, Senate Bill 438 that would have established local two-year schools sponsored by school boards, municipalities, or counties passed in the Ohio Senate and House of Representatives in May and June 1959. However, then-Governor Michael V. DiSalle, vetoed the bill, saying that "no funds were provided for the state's share of the educational cost" (Lerner 1995:10). In the meantime, the National Defense Education Act, which partially funded postsecondary education, passed the U.S. Congress in 1958. Dr. Byrl Shoemaker, Director of the Division of Vocational Education in Ohio, used this funding to establish fulltime postsecondary technical education throughout the state. Since legislation had not been passed in the Ohio General Assembly, the schools could not be called institutions or community colleges and could not award associate degrees. Within a few years, schools were established in Barberton, Lorain, Salem, Cleveland, Canton, Mansfield, Ashtabula, Hamilton, Springfield, and Willoughby (Lerner 1995:11). After a few more failed bills, the General Assembly passed Senate Bills 518 and 519, which established technical institutes and expanded branch campuses, in June 1961 (Lerner 1995:18). In 1962, Ohio's first two-year community college, the Cuyahoga Community College, opened in Cleveland (Johannesen 1979:236). In 1963, Senate Bill 326 authorized the creation of technical institutes, which allowed these schools to award associate degrees. Community colleges and

technical intuitions, which were often coupled with vocational schools, soon opened throughout the state, and ultimately numbered 23, along with numerous off-campus centers. The architecture of the campuses reflects the trends of the period, with most featuring modern buildings of the International Style. Since these schools were meant to serve local communities, no dormitory buildings are present on campus; rather, large parking lots and garages met the needs of commuting students.

Ohio doubled its number of state universities from 6 to 12 schools during the 1960s. Prior to this period, Ohio's state government had provided comparatively little funding for state colleges and Ohio's state university students paid the third highest tuition rates in the nation. Governor James Rhodes sought to create more state schools not only to give Ohio students better opportunities to attend university, but also to create new jobs and economic advancement in the areas where the schools were located. By 1971, state universities were found in Akron, Athens, Bowling Green, Cincinnati, Cleveland, Columbus, Dayton, Kent, Oxford, Toledo, Wilberforce, and Youngstown. When Rhodes's second term ended in 1971, he had accomplished his goal of having a public college within 30 miles of every Ohioan (Knepper 2003:389). In all of these areas of new state universities, branch campuses, and community colleges, the local communities were enlarged to accommodate the housing, professional, and personal needs of students, faculty, and staff. Meanwhile, for students, all of the temporary postwar campus housing had finally been replaced with new collegiate housing and classroom buildings.

College-related expansion into surrounding communities was not always regarded favorably. From the late 1960s through the end of the twentieth century, the number of students living in university-provided housing declined. Many students chose to rent apartments that were less expensive than university room-and-board rates. They generally moved into older neighborhoods. While this saved many schools the expense of building new student dormitories, the effect on historic neighborhoods was less benign. Absentee landlords often failed to maintain their properties. Historic houses were subjected to unsympathetic alterations to create multiple apartments. Businesses that catered to students, such as restaurants and bars, replaced the more diversified commercial base that typically served established families. University employees and local residents often left these areas, regarding them as a nuisance or simply inadequate for their needs. Tensions arose between college administrations, local residents, and municipal leaders when student populations were blamed for rising crime rates or falling property values (Ellison 2009:332-333). Faculty members and displaced local residents joined those fleeing urban centers for the suburbs (Hollow 2003:276).

Also during the 1960s, Ohio's college campuses saw further enrollment increases due in part to the civil rights movement. Some schools implemented programs directed towards increasing the number of minority faculty and students on campus (Ellison 2009:328). Meanwhile, the emerging women's rights movement encouraged more women to seek higher educations. Since many of these women had children, some schools opened childcare centers on campus to meet demand not only of the students, but of the increased number of female faculty and staff.

Bowling Green State University, in particular, has been noted for its attempts to incorporate student concerns into the design of two important buildings on its campus. The 1965-1967 Jerome Library was designed by state architect Carl E. Bentz (Plate B58). The nine-story tower featured open stacks and subject matter groupings to make it more accessible to students. Curving entry terraces softened what would otherwise be a quite severe, rectilinear exterior which featured large expanses of pre-cast concrete curtain walls interspersed with narrow, vertical ribbons of windows. Along one side of the building, the sloping terraces and sidewalks combined with a series of reflecting pools to create an illusion of an edifice that floats above the flat Ohio landscape. On the east and west façades, a series of sandblasted, abstract figures designed by Akron artist Don Drumm are meant to illustrate the diversity of educational ideas (McCormick 2001:160,162).

Nearby, the ca. 1966-1968 Saddlemere Student Services Building was designed by Toledo architects Sanborn, Steketee, Otis & Evans (Plate B59). It housed the student bookstore, dean of students, student publications, student government, financial aid and placement offices, and other student-oriented functions. The building features a Miesian circular form intended to symbolize the individual student as the focus of the university's mission. On the interior, movable partition walls allowed flexibility in usage of space. On one side of the building, entry doors opened to an adjacent, concrete amphitheater. A mural, also by Drumm, circled the wall on this side of the building. Among its symbols was a modified version of the traditional American eagle; the quiver of arrows usually clutched in one talon was missing, and the Latin motto written across a ribbon in the bird's beak read "Mater et Placenta Maldrum," which translated to "mother and apple pie." The building's circular form, flexibility of interior space, function as a student services building, and intentional inclusion of pacific symbols were in keeping with the student peace, nonviolence, and civil rights movements of the 1960s (McCormick 2001:162).

The civil rights movement continued to influence the evolution of Ohio's public elementary and secondary schools as well. Efforts to end racial segregation gained momentum during the 1960s, but some Ohio school systems continued to struggle with desegregation well into the 1970s. In 1972, a federal district court ordered the Dayton school district to end *de facto* segregation. Similar decisions were issued to Columbus and Cleveland the following year (McCormick 2001:250). Other legal decisions in the 1960s and 1970s that affected school desegregation in Ohio included *Green v. County School Board* (1968); *Alexander v. Holmes County Board of Education* (1969); *Milliken v. Bradley* (1974); *Dayton Board of Education v. Brinkman* (1977); *Dayton Board of Education v. Brinkman* (1979); *Penick v. Columbus Board of Education* (1977); *Penick v. Columbus Board of Education* (1978); and *Columbus Board of Education v. Penick* (1979) (Jacobs 1998). Expanded desegregation programs, especially busing students, also led to more widespread resistance. Many students were not comfortable in their new schools and parents disliked seeing their children bussed long distances to schools outside of their neighborhood. In cities with large immigrant-descended populations, such as Cleveland, ethnic whites also strongly preferred neighborhood schools where traditional customs and languages were still taught (Knepper 2003:391; Ohio History Central 2005j). Ultimately, efforts to desegregate Ohio's schools achieved imperfect results. Divisions among student bodies based on race, ethnicity, religion, socioeconomic status have

persisted. Although no longer supported by legal codes, such divisions have endured due to cultural, social, and economic forces that are beyond the reach of the law.

The desegregation processes in Cleveland and Columbus offer important case studies of this aspect of Ohio's history. In 1963, 93 percent of Cleveland's elementary school students attended segregated schools. The percentage declined to 78 percent in middle schools, only to rise again, to 83 percent, in high school. To remedy the situation, the Cleveland school board implemented a busing plan by the mid-1960s but it proved to be ineffectual. In their new schools, African-American students often were placed in classes with other black students. This meant they also ate in the cafeterias at different times than white students. African Americans also frequently could not participate in extracurricular activities. To protest the ongoing segregation, the United Freedom Movement helped unite various civil rights organizations in Cleveland, including the National Association for the Advancement of Colored People (NAACP) and the Congress on Racial Equality (CORE). They sought to create a fully integrated school district. Their activism continued into the 1970s, and included picketing segregated schools and the Cleveland Board of Education and submitting petitions to city and school leaders. They also served as plaintiffs in a number of lawsuits. In 1973, city and school officials made a serious effort to end segregation after an African-American mother sued the Cleveland Board of Education. This lawsuit, known as *Reed v. Rhodes*, ended in federal district court in 1976, when Judge Frank J. Battisti ruled that Cleveland's schools remained segregated and that officials must implement programs designed to desegregate educational facilities in the city. School officials continued to rely on busing, but they also began to integrate classrooms and extra-curricular activities (Ohio History Central 2005cc).

Meanwhile, in 1977, the federal court case, *Penick v. Columbus Board of Education*, led to the desegregation of Columbus's public schools. In the decision, Circuit Court Judge Robert Duncan ruled the city's schools were segregated and, furthermore, that the Columbus Board of Education knowingly kept white and African-American students apart by creating school boundaries that sent black students to predominantly black schools and white students to predominantly white schools. Duncan cited evidence that this policy had existed since at least 1909. As a result of this ruling, the Columbus Board of Education implemented a busing program. By 1979, approximately one-third of public school students rode buses to school (Ohio History Central 2005dd).

School designs during the 1960s and early 1970s reflected evolving educational theories. During the early twentieth century, educators had advocated specialized spaces for different purposes, including gymnasiums, music rooms, libraries, and vocational training. By the 1960s, pedagogical theory emphasized flexibility in classroom and school layouts, as well as a "team teaching" approach with multiple teachers, each specializing in one or more subjects, assigned to a group of students. Some subject specialists, such as art and music teachers, would teach student groups from multiple classes and/or grades, while others specializing in elementary education would be assigned to a single class of students. Prior to the 1950s, technological and design capabilities were not sufficiently advanced to construct large open spaces uninterrupted by supporting walls or columns, making it difficult to change interior plans to suit new education philosophies. Government guidelines began recommending use

of non-load bearing interior partition walls to facilitate ease of future renovation and rehabilitation for changing educational uses. Many Ohio schools built during the 1960s reflected this edict (McCormick 2001:76, 114).

3.3.6 Agricultural Development Continues

Trends in Ohio's agricultural development during the 1960s largely continued along the trajectory established during the immediate post-World War II years. In a state where various industrial interests dominated economic development policies, however, Ohio's farmers had to emphasize the importance of their contributions. Under the direction of Leo Leavitt Rummell beginning in 1948, and Roy Milton Kottman in 1960, the OAES attempted to appeal to urban and suburban sectors to justify their budget requests. Both sought to demonstrate that the OAES had helped to keep food prices low by increasing harvests and had kept children healthy by testing new vitamins and antibiotics. Additionally, the OAES freed Ohioans from the land by assuring sufficient yields to provide enough food to keep citizens comfortable in suburbia (Cumo 1997:88). The OAES flourished under Rummell, with major building programs on the Wooster campus throughout the 1950s. Plant pathology played a major role in the Rummell administration, with new strands of tomatoes resistant to Fusarium Wilt and Tomato Mosaic virus, and soybeans resistant to nineteen different types of Phytophthora root rot (Cumo 1997:92-93).

Under the direction of Kottman during the 1960s, the OAES capitalized on the nascent environmental movement in the United States. Throughout the 1960s and 1970s, new agricultural substations were established in Fairfield, Noble, and Coshocton counties in order to study the effects of modern farming techniques on the land, reforestation, water run-off rates, and agricultural chemical contamination of groundwater under different farming techniques. All of these aims fit within the environmental movement's goals and received a groundswell of support from urban and rural Ohioans alike. Kottman's new substations resulted in an additional 7500 acres of research land throughout the state. Kottman also continued Rummell's direction of virus- and fungus-resistant crops, and another building campaign at the Wooster campus (Cumo 1997:106).

Since the 1950s, Congress had continued its attempts to regulate crops while ensuring fair prices for farmers. A variety of legislation was enacted during the 1950s and 1960s, with most centered on guaranteeing near 100 percent parity for farmers while removing certain surplus crops from the market. Nearly all of this legislation, however, was tailored to fit the needs of large-scale farmers with properties of 100 acres or more and mostly ignored smaller family farms, tenant farms, and sharecroppers. Efforts to contain crop surpluses often had unintended consequences that did little to remedy low prices. For example, the Agricultural Act of 1956 paid farmers not to grow certain crops that already were in surplus, such as corn, wheat, tobacco, peanuts, rice, and cotton. Payments were based on the amount of acreage removed from production. Free to choose the land that would lay fallow, farmers usually selected the poorest and least productive areas. Meanwhile, chemical fertilizers, herbicides, and pesticides allowed higher yields on other plots, thus creating even greater surpluses (Hurt 2002:113).

The factory-style farming methods that generated these results most often were employed by large growers. They also were better able to afford the expensive technology and equipment that lowered production prices. Rather than the diversified approach of past generations, large growers increasingly specialized, often growing only one or two crops, such as a rotation of corn and soybeans. Agricultural experts at all levels of government often came to regard the typical small family farm as inefficient and a nuisance to consolidation (Hurt 2002:116). Faced with rising costs, declining profits, and insufficient federal aid, small-scale farmers were forced to find part-time employment off the farm to supplement their income. By the mid-1950s, 37 percent of Ohio farmers worked off the farm for at least 100 days of the year. The time spent working off the farm cut into time available for agriculture, and many labor-intensive farmers, such as dairy farmers, had to switch to other practices, such as beef production (Hurt 1988:55).

Many small-scale farmers chose to sell their land to larger growers rather than eke out a living supplemented with off-farm employment. Few new farmers took their place, in part due to the start-up costs required for modern farming by the mid-1960s. A typical Northwestern Ohio crop farm required an initial investment of approximately \$75,000. Southwestern Ohio dairy and hog farms cost about \$45,000 for a start-up operation, and Southeastern Ohio beef producers required approximately \$50,000 (Hurt 1988:55). The result of the small-farmer exodus was a net decrease in the number of farms and farmers in Ohio, but an increase in average farm size and production, as large-scale food growers acquired smaller farms and incorporated them into their operations. One consequence of this consolidation pertained to the layout of typical farmsteads. More outbuildings were required to accommodate larger equipment, higher crop yields, and greater numbers of livestock. These typically were prefabricated, steel-framed structures such as those built by the Kansas-based Butler Manufacturing Company.

With more small-scale farmers selling off their operations to large growers, the farm population across the nation and in Ohio continued to decline. In 1940, over one million Ohioans lived on 233,783 farms, averaging 93.7 acres. By 1950, 853,088 Ohioans lived on 199,359 farms averaging 105.2 acres. A decade later, Ohio's 519,366 farm residents made up only 8 percent of Ohio's population as the average farm grew to 131.9 acres, a 25 percent increase from 1950. The steep decline continued through the 1960s, with just 370,946 Ohioans living on farms by 1970, making up 3 percent of the state's population. By this time, the average farm size had expanded to 153.7 acres (Hurt 1988:53, 57, 61).

While the increase in acreage of a typical Ohio farm is striking, it paled against the national average, which, by 1970, totaled 374 acres. The disparity owed largely to the higher land costs in Ohio as compared to much of the rest of the country. Industrial and suburban development affected land prices, especially in growing metropolitan areas. Moreover, as rural lands were converted to new uses, the total amount of farmland in Ohio declined throughout the post-World War II era. In spite of these trends, Ohio's overall agricultural production continued to rise through the 1960s. By 1975, Ohio ranked sixth in the nation in corn production, fourth in soybean production, seventh in dairy products, and third in specialty crops such as tomatoes, greenhouse vegetables, and nursery stock (Hurt 1988:63–64).

Another consequence of the trend toward mechanization and farm consolidation was growing reliance on migrant agricultural workers. This pattern sprang from several sources. First, farm families changed with the times. Parents increasingly valued education for children and recognized that numerous economic opportunities away from the farm were now within reach. Many rural residents no longer sought farm work as better job opportunities could be found in factories. Safety concerns about the heavy equipment and numerous chemicals that came to characterize farming also led many farm families to hire adult laborers. Second, the workload on large-scale farms outstripped the capacity of a typical family. Because the work was seasonal, however, growers could not afford to maintain a permanent labor force. In 1968, the Ohio Governor's Committee on Migrant Labor noted, "Ohio is a highly industrialized state, and there are not sufficient members of qualified local agricultural workers to meet the demands of the agricultural economy at various seasons of the year. Therefore, agricultural employers depend heavily upon the services of a large mobile force of migratory agricultural workers to help plant and harvest certain crops" (Ohio Governor's Committee on Migrant Labor 1968:115).

By the late 1960s, Ohio farmers employed 30,000 to 35,000 migrant workers during the peak season of mid-April to mid-October. Migrant workers included native-born American citizens as well as workers from other countries, primarily Latin America, who were permitted to enter the United States on temporary work visas. Such arrangements had become increasingly common since World War II period. Most of the workers were concentrated in Northwest Ohio to help with the labor-intensive sugar beet harvest. Some southern counties also had large numbers of migrant workers who aided in nursery and greenhouse activities as well as harvesting field crops. Because of Ohio's long growing season, many migrant workers could begin working in Ohio in mid-April, move on to Michigan for the middle of the growing season, and return to Ohio for the late-season harvests of tomatoes, grapes, and potatoes. Pay rates for migrant workers averaged \$2.25 per hour, higher than most surrounding states (Ohio Governor's Committee on Migrant Labor 1968:8-9).

As Ohio continued to move away from small-scale farms toward large-scale growers, agribusiness changed the ways that farmers conveyed their goods to consumers. Prior to World War II, Ohio's farmers often sold their agricultural goods directly to consumers or used a distributor to act as the middleman in shipping their produce to urban markets. Beginning in the 1950s, large-scale growers often incorporated to control all aspects of production and distribution. Contract farming came first, and involved agricultural corporations contracting with farmers to produce specific amounts of a particular crop for a specified price. The practice appealed to farmers, as they had a guaranteed income source and reduced their financial risk, but it limited their freedom to choose the crops they produced. As farm consolidation gained momentum through the 1960s, agribusiness firms increasingly achieved "vertical integration" in which the company directly controlled the product from planting through harvesting, processing, and marketing (Hurt 2002:117).

Perhaps emblematic of this period of transition, Ohio's most famous farmer emerged during the 1960s. Bob Evans, born on May 30, 1918, in Sugar Ridge, and his childhood sweetheart,

Jewell, raised their family on a farm near Rio Grande. During the 1940s, the Evanses entered the restaurant business with a small diner that served sausage produced from their own hogs. Eventually, the Bob Evans name became synonymous with both sausage and country-style restaurants. The first Bob Evans Restaurant opened its doors in Rio Grande during the 1960s. Eventually, the Evans family established Bob Evans Farms, Inc., and by 2004, the company operated more than 500 restaurants across the United States and saw total sales revenue of more than \$1 billion. The company continues to own and operate the original Evans farm, known as the Homestead, in Rio Grande. Now a tourist attraction as well, the farm hosts thousands of visitors each year and offers several special events, including an annual quilt show and a bluegrass festival. Bob Evans retired in 1986 but remained active in various agricultural activities, including encouraging local farmers to utilize sustainable livestock grazing techniques, promoting wildlife preservation, and supporting student groups such as the Future Farmers of America (FFA) and 4-H. He served for a number of years on the Ohio Board of Regents and was instrumental in the founding of the Ohio Appalachian Center for Higher Education in Portsmouth, Ohio. Evans died from pneumonia on June 21, 2007 (Ohio History Central 2005ee).

3.4 Ohio During the Early 1970s: Fundamental Transitions

Economic conditions in Ohio during the 1970s and 1980s evolved in a strikingly different direction than in the preceding two decades. The transitions were owed in part to a globalizing economy as well as substantial changes in the federal government's relationship to states, particularly in disbursements of federal dollars. Reflective of the social upheavals that emerged by the late 1960s, changing opportunities for women and minorities, and the winding down of the Vietnam War, Ohioans' social challenges and public expectations for state government took on a different character.

3.4.1 Industrial Development Begins to Stagnate

By the early 1970s, Ohio's industries were leaving the state in rapid succession. Right-to-work laws, cheap land deals, and tax abatements attracted many northern industries to the South. Ohio industries also left the north to escape outdated factories. Having remained in Ohio since the earliest days of the Industrial Revolution, many of the state's factories grew stagnant over time, content to reap profits without reinvestment in facilities. This approach remained viable during the boom years of the 1950s and early 1960s, but by the mid-1970s, over 25 percent of the steel mills in the Mahoning Valley had become obsolete. In Akron, old facilities made it difficult or impossible for the tire industry to install more modern, efficient production lines. Consequently, tire plants there that had produced nearly 60 percent of the nation's tires during the early 1930s produced only a few specialty tires by the late 1970s. Enticed by cheaper labor costs and faced with outdated facilities, the tire industry shifted to the southern and southwestern states by the 1980s. Ohio's coal industry also suffered, as the state's high quality coal deposits dwindled, leaving only low quality, high-sulfur content coal. During the 1960s, antipollution measures made such coal cost-prohibitive to burn, due to the expense of necessary pollution controls. In response, many industries switched from coal to oil and natural gas (Knepper 2003:438, 442).

Already suffering from competition posed by southern and western states, Ohio experienced a devastating blow in 1973, when the Organization of Petroleum Exporting Countries (OPEC) tripled the price of crude oil to \$30 per barrel. Relying heavily on imported oil, Ohio industries struggled to adapt (Knepper 2003:437). The state's most industrialized counties lost an average of 15 percent of their manufacturing jobs, while the counties of Montgomery, Mahoning, and Cuyahoga lost considerably more. The steel and rubber industries suffered the most. Hampered by antiquated facilities and technology, high labor costs, and competition from foreign imports, many plants closed their doors. One of the more dramatic examples of steel mill failures came with the closing of Youngstown Sheet and Tube in 1977. With little warning, the company furloughed 5000 employees in one day. By 1980, mill closures in Youngstown had left approximately 10,000 of the community's steel workers without jobs (Fuechtmann 1989:1-2). At Akron, the rubber industry felt the effects of the oil embargo as auto sales declined. Their problems worsened when the United Rubber Workers went on strike to avoid making concessions. Although the union succeeded in gaining wage and cost-of-living increases, the major tire manufacturers closed their doors within four years of the strike (Murdock & Darbee 2007:191-192).

Indeed, those industries with the highest labor costs suffered most. With union wages set as high as \$20 per hour, Ohio industries could no longer afford to negotiate with unions. In addition, negotiated union contracts had included clauses that forced companies to retain unnecessary jobs and hindered reassignment to other tasks. Compounded by restrictive federal, state, and local health and safety regulations, labor costs proved too cumbersome. Between 1972 and 1982, the state lost 246,553 manufacturing jobs, an 18.3 percent decline. With new job opportunities becoming scarce, the 10 percent population growth experienced during the 1960s trickled to a mere 1.4 percent by 1980. Ohio's share of the GNP declined from 6 percent in 1950 to less than 5 percent by 2000, despite an increase in value of goods (Knepper 2003:437).

The state's industrial woes translated to difficulties in its shipping industries, especially rail and water shipping. Throughout the 1960s and 1970s, rail lines suffered huge losses due to rising competition from trucking companies. Numerous consolidations and mergers occurred and redundant track along previously separate lines was decommissioned and often removed. Many Ohio businesses lost access to vital shipping lines as a result (Knepper 2003:443). In 1973, the former Erie Lackawanna diesel engine shop in Marion closed, leaving 1300 employees out of work (Grant 2000:105). To combat Ohio's diminishing rail shipping routes, the state government created the Ohio Rail Transportation Authority (ORTA) in 1975. ORTA was established to purchase discarded track and return it to a viable use by operating trains themselves or offering the trackage for sale to public or private entities that would use the lines for shipping. This policy helped to keep traditional industrial areas viable by retaining their existing shipping lines (Grant 2000:107). Although trackage losses were significant, Ohio's strategic location and concentration of agriculture, industry, commerce and mining meant that, as of 2000, the state's nearly 6000 miles of trackage was nearly two-thirds of its peak. Ohio still had the highest rail density in the nation (Knepper 2003:443).

With regard to water-based shipping, local governments worked to maintain their port status. For example, Cuyahoga County established the Cleveland-Cuyahoga Port Authority in 1968

and began upgrading Cleveland's port facilities and promoting the city internationally. Cleveland benefitted greatly from the iron ore trade on the Great Lakes, as well as from general cargo shipments. The coal trade also benefitted the ports at Toledo and Sandusky (Knepper 2003:443). Despite these efforts and the profitability that followed USACE's upgrades to the St. Lawrence Seaway during the late 1950s, shipping overall declined drastically during the 1970s and 1980s. The decline owed largely to difficulties the U.S. steel industry had with foreign competition. The size of the locks on the Seaway also limited trade as cargo carriers grew ever larger. High tolls lock maintenance, and a weather-shortened shipping season also took their toll as ships were unable to pass through the iced-over channel during the coldest months. By the 1990s, traffic on the St. Lawrence Seaway was only half its rate of the 1970s (Knepper 2003:443, Grant 2000:46–47). While its usage has declined, the St. Lawrence Seaway remains an important link in Ohio's transportation network. The direct link created between Ohio and international markets greatly transformed the waterfronts of major port cities, such as Cleveland, Toledo, and Ashtabula, and even smaller cities like Conneaut and Lorain. City leaders have taken opportunities to expand support facilities in these cities, such as boatbuilding operations and repair shops (Grant 2000:47–51).

The 1970s saw Ohio's participation in NASA's storied space exploration and research programs fall on difficult times as well. In 1973, after successfully completing the Apollo moon program, NASA had to defer many of its research and development programs due to congressionally imposed budget constraints. Operations ceased at several research facilities, including Ohio's Plum Brook, located near Sandusky. The major test facilities were placed in standby mode, capable of being reactivated for future use. Smaller facilities were not maintained, and some were dismantled. The Reactor Facility was shut down and all the nuclear fuel removed and shipped offsite for disposal or reuse. NASA placed the facility in a storage mode and conducted strict oversight and ongoing environmental monitoring around the reactor. NASA plans to completely decommission the Reactor Facility by 2010, enabling this area to be safely reused. On the other hand, in 1987, NASA, along with several other government agencies and the private sector, expressed a renewed interest in four of Plum Brook's unique test facilities: the Space Power Facility, the world's largest thermal vacuum chamber for testing large equipment in a simulated space environment; the Spacecraft Propulsion Research Facility, the world's only facility that simulates the actual flight conditions of space on full-size rocket vehicles; the Hypersonic Tunnel Facility, the United States' largest clean-air wind tunnel capable of performing tests up to 7 times the speed of sound; and the Cryogenic Test Complex, which tests cutting-edge technology for high-energy space propulsion systems.

3.4.2 Government Takes on New Responsibilities

Historically, Ohioans preferred a small state government and resisted approving revenue measures, especially tax increases, to fund public initiatives. The economic boom that followed World War II began a slow trend toward change. The Rhodes administration during the 1960s saw more investments in public services and infrastructure than at any other time in state history. This was partially due to major federal investments in highway transportation and to expansions at military facilities. Other sectors also saw new funding through the passage of a series of multi-million state-level capital improvements and highways bond

issues. Whereas at the start of the 1960s Ohio lagged in state-supported services, by the end of the decade investment in state-owned hospitals, prisons, and orphanages increased substantially (Knepper 2003:381, 433). Additionally state capital funds resulted in the construction of the forty-story state office tower now named for Governor Rhodes, new state college buildings and campuses, the Ohio Historical Center and improvements to several state historic sites, and expansion of lodges, cabins and recreational facilities at Ohio state parks.

The increasing complexity of modern life demanded expansions in state government as well. As Ohio's transportation network expanded and modernized, the state's Department of Highways, established in the early twentieth century, widened its mission accordingly. During the administration of Governor John J. Gilligan, the department was reorganized and named the Ohio Department of Transportation (ODOT) in 1972. The agency took on responsibilities previously spread among various agencies. In addition to highways, other modes of transportation, including rail, air, and water, now fell within ODOT's purview (Knepper 2003:398–399).

Additionally, new state agencies were created to address concerns that had not existed a century before, such as the Ohio Environmental Protection Agency (OEPA). On a national level, growing recognition of the need to protect natural resources from pollution led to major legislation, such as the National Environmental Policy Act, as well as creation of the U.S. Environmental Protection Agency. Given the state's lengthy and extensive industrial heritage, evidence of environmental problems were readily identifiable within Ohio. Along Ohio's northern border, Lake Erie had particularly suffered extensive degradation, as had the rivers that fed into it (Knepper 2003:399). The Ohio state government established the OEPA in 1972. Its mission is to "protect the environment and public health by ensuring compliance with environmental laws and demonstrating leadership in environmental stewardship." The agency's duties included setting standards for water and air, developing programs for waste management, and cleaning up contaminated sites that pose a hazard to human health and the natural environment (Ohio History Central 2005ff).

3.4.3 From Rural to Suburban – Changes Across the State

As previously noted, the move toward agribusiness that began in the 1950s adversely affected small, independent farmers. For example, by 1960, very few independent chicken farmers remained in the United States, while agricultural corporations such as Ralston Purina and Tyson controlled chicken production by direct ownership and contract farming (Hurt 2002:118). The large agribusinesses were able to produce goods much more efficiently than independent farmers. For example, by 1975, Ohio ranked fourth in the nation in soybean production, with a total value of \$905.8 million. Much of this was produced by monoculture on corporate-owned or contracted farms (Hurt 1988:63). The rise of agribusinesses directly resulted in a "closer integration with industrial, financial, and commercial capitals and the diminishing significance of farm production in the food and fiber system" (Goodman et al. 1987:163).

The farmer's role in the agribusiness system thus was reduced from the supplier of a final consumer product to a supplier of raw materials to industrial processors and marketers. On

the other hand, agribusiness created new job opportunities elsewhere. By 1979, only 3.4 million Americans were employed in agricultural production, but their jobs supported 20 million others in food processing, resource supplies, manufacturing, transportation, retailing, and eating establishments. In 1979, U.S. farms produced \$70 billion of raw food and fiber, while off-farm processing, distribution, and marketing of these materials produced an additional \$415 billion (Goodman et al. 1987:163).

The changes occurring within the farming system resulted in major changes to Ohio's rural landscape. As more and more Americans left their small-scale farms for more profitable employment in urban areas, farmsteads were abandoned or absorbed by large-scale growers and agribusiness operations. Studies of population density based on census data make this population shift readily apparent (Figure A11). The typical pre-war family farm became increasingly rare as the historic domestic complex, barns, fences, and pastures were replaced with a small cluster of metal buildings surrounding a suburban-style tract house. Large machine sheds and grain bins replaced traditional barns. Even small grain elevators found in rural towns within 5 to 10 miles of each other were torn down and replaced with large subterminals able to hold ten times more grain (Hudson 1994:208). Stockyards found nearby rail lines began to disappear as the Interstate Highway System reached farther into rural areas, and nearly all livestock was shipped by truck, rather than rail (Hudson 1994:174).

Finally, as Americans became more mobile and homeownership more accessible, large swaths of agricultural land were acquired for residential subdivisions and shopping centers. One of Ohio's most fertile agricultural areas, the Miami Valley, currently is surrounded by urban sprawl, and many rural areas along major transportation routes, such as I-75, have disappeared entirely. Over the course of the mid- to late twentieth century, Ohio lost a considerable amount of farmland, with a decrease of more than 7 million acres between 1950 and 2002 (Nikolic 2004:2). By the late 1990s, Ohio's 26.4 million acres included approximately 13.6 million acres of agricultural land, 7.1 million acres of forest land, 3.6 million acres of developed or urban areas, and 2.1 million acres of other categories, such as open water, wetlands, grasslands, mines, and quarries (Figure A12).

3.5 Land Use Planning

3.5.1 Beginnings of the Planning Profession, 1890-1930

The planning profession emerged during the turn of the twentieth century, as social reformers, architects and municipal officials sought to combat the lack of open space, squalid tenement conditions, and population density commonplace in cities like Cleveland and Cincinnati. Many municipalities at the time had little control over their pattern of growth, as it usually fell into the hands of the commercial elite who subsequently focused on the commercial heart of the city and generally ignored the residential areas (Levy 2003:15).

As architects, municipal officials, and reformers began to collaborate, the City Beautiful movement was born. The movement focused on municipal art, civic improvement, and landscape design. Typical plans that emerged during this period focused on aspects that municipal governments had clear control over, such as streets, municipal art, public buildings, and public spaces; these also usually had the support of the business community

(Levy 2003:30). The 1908 *Plan of the City of Columbus* was typical of the period as it focused on the importance of public buildings, parks, and parkways. These early plans dealt only with the city's physical elements and neglected socioeconomic issues related to housing, employment base, and public utilities (Hayden 2003:45).

As the City Beautiful movement matured, a series of laws and court cases began to establish the right of local governments to control the use of land without providing compensation for any loss of property value (now known as zoning) that it did not own, to protect the health, safety, and public welfare of citizens. The emergence of zoning was a response to the protection of business interests, as well as citizens' welfare, from overbuilding and overcrowding in New York City in 1916. The exercise of power that the city showed through the use of zoning paved the way for other municipalities around the country to enact their own ordinances. Zoning ordinances began to appear at a rapid pace, as communities sought to protect neighborhoods from congestion and incompatible uses (i.e. a factory in a residential neighborhood) (Levy 2003:45). Adoption of zoning ordinances, however, did not take place uniformly throughout the country. Residents in many areas resisted the introduction of zoning as an unwelcome intrusion on private property rights. Tensions between those in favor of and opposed to zoning have continued to the present day.

Many private entrepreneurs, however, saw the merits of community planning, thus leading to the emergence of the community builder. Such entrepreneurs typically purchased large tracts of land, usually encompassing hundreds of acres, and developed a master plan for its development. Provisions for schools, shopping centers, recreational facilities, churches, and civic centers were included in the master plan. The developer employed landscape architects, site planners, engineers, and architects to plan every aspect of the community's design and architecture (Ames and McClelland 2002:26-27). Established in 1921, Mariemont, outside of Cincinnati, is a classic example of a planned community. Mary Emery spearheaded the community's development; she was a member of the Emery family, who were responsible for some of Cincinnati's most important twentieth century developments (see Section 4.8.18.2). Mariemont's features included curvilinear streets with well spaced houses, a commercial center in the middle of the town, direct links to major metropolitan cities, and numerous green spaces for recreation. Heralded for its achievement in integrating a variety of land-uses into a well-unified community that featured parks and common areas, the village was listed in the NRHP in 1979 and designated a National Historic Landmark in 2007 and continues to be a popular community today. (Rogers 2003)

As community plans and zoning proliferated across the country, land owners and developers quickly asserted that zoning was causing them to lose value in their properties because they could not build to the "highest and best use" on their property due to items such as height restrictions and prohibitions against placing an industrial business in areas zoned residential. This argument came to a head in 1926, when the Supreme Court ruled in the case *The Village of Euclid (Ohio) v. Ambler Realty Co.* that zoning was constitutional. The justices also found that zoning did not impose an uncompensated loss upon a property owner by not allowing the "highest and best use" of a parcel. This ruling has subsequently helped to shape the built environment in many urban and suburban communities.

3.5.2 Planning During the Great Depression

The 1920s were marked by a tremendous period of economic growth. By the decade's end, however, an economic collapse that began on Wall Street became a nationwide crisis. Elected in 1932, President Franklin Roosevelt entered office with a plan for economic revitalization that he called the New Deal. Roosevelt worked with Congress to create a variety of federal relief programs. As noted previously, in 1934, Congress passed the National Housing Act and created the FHA. Such measures were used to restructure the collapsed private home financing system and stimulate private investment in housing (Ames and McClelland 2002:31). The overhaul set minimum housing standards, required a process for real estate appraisal, and established a comprehensive program of review for approving subdivisions for mortgage insurance. Developers who sought approval for FHA low-cost mortgage loans for prospective homeowners had to submit subdivision plans according to the standards that were supported by the FHA. Typical standards included suitable site location, accessibility by means of public transportation, installation of appropriate utilities and street improvements, location in an area with active demand for housing, and compliance with city, county, or regional plans and regulations. Other desirable standards included long blocks that eliminated unnecessary streets, incorporation of features that added to the privacy and attractiveness of the community, and adjustment of street plan and street widths and grades to best meet traffic needs (Ames and McClelland 2002:48–49).

In the name of efficiency, the FHA encouraged large-scale developments, in which the projects were financed and carried out under the direction of an operative builder, who arranged for the purchase of the land, the design of the subdivision plat, and the design and construction of the houses. These large-scale developments offered a broader, more profitable building scheme that resulted in savings in overhead, construction, and merchandising costs. The operative builder's plans were developed in a harmonious and consistent manner and were able to offer commercial services such as retail to the life of the new community. Such features typically were not within the scope of a small-scale community builder (Ames and McClelland 2002:31–32).

During this transformative period in home building and financing, the FHA's Land Planning Division director, Seward Mott, saw the FHA guidelines as an opportunity to redirect the design of suburban communities to create conditions that forced public officials and planners to adopt the planning measures already approved by the FHA (Ames and McClelland 2002:48). These standards were embraced on a widespread basis. The biggest change to the built environment came with the use of curvilinear layouts instead of the traditional grid pattern. The FHA preferred curvilinear roads because it provided greater privacy, could be adapted to the greater variations in topography, reduced the costs of utilities and road construction, and eliminated the need for dangerous four way intersections and, thus, provided a safer environment for domestic activities (Ames and McClelland 2002:49).

The FHA also managed a rental housing division during the 1930s. The agency approved designs and the creation of standards for large-scale rental housing communities under Section 207 of the National Housing Act of 1934. These projects were financed privately by insurance companies or others with large capital (i.e., public housing bonds) to offer low-cost rental housing to middle and low-income Americans in situations when the market for single-

family housing was still uncertain (Ames and McClelland 2002: 49-50). The appeal of these developments to the FHA included the large-scale production aspects and the use of standardized components. Common standards included the arrangement of housing units to afford privacy, sunlight, and fresh air; separation of internal pedestrian circulation from perimeter motor traffic; and provisions for landscaped gardens and grounds away from the noise and activity of major arterial streets (Ames and McClelland 2002:51).

Other housing initiatives undertaken during the Roosevelt administration included the Resettlement Administration in 1935 and the 1937 U.S. Housing Act. The Resettlement Administration's most high-profile projects consisted of model communities, called greenbelt towns, which were designed to showcase planning and design principles. In the Cincinnati area, the Greenhills community is an example of such a planned community. The U.S. Housing Act, meanwhile, established a federally financed public housing program (Hayden 2003:125).

3.5.3 Postwar Planning, 1945–1950

Prior to 1940, one-third of houses were built by owners and another one-third was built by small builders, who typically averaged five houses a year. The community builder emerged by the 1910s and took an increasing role in suburban housing construction. Development stagnated during the Great Depression, and as explicated in Sections 3.1.5 and 3.2.3, a critical housing shortage existed during and immediately after World War II. Builders and developers responded to the growing demand with a burst of sustained activity. From 1944 to 1946, the number of single-family housing starts increased eight-fold from 114,000 to 937,000 (Ames and McClelland 2002:45-46). The burst of construction activity led to concrete results, as Ohio's homeownership rate increased from 50 percent of households in 1940 to 61.1 percent in 1950; the state's homeownership rate grew to 67.4 percent by 1960, and has fluctuated by less than 2 percent since that time (U.S. Census Bureau 2010).

Such growth came as a result of builders' credits and liberalized terms for VA- and FHA-approved mortgages, coupled with the large-scale production of prefabricated construction methods and materials. Prefabricated construction methods had been increasingly used during the war years, as demonstrated by developments such as Colonial Hills in Worthington and the steel houses built by the Hobart Welded Steel Company in Troy. The profound impact of the New Deal-era FHA standards on subdivision design and construction became evident in post-World War II neighborhoods. Local municipalities adopted the FHA standards as their own subdivision regulations and soon enough, the curvilinear, low-density subdivision was a standardized practice for the building industry. As previously noted, these subdivisions commonly featured covenants and deed restrictions that limited some ethnic and racial groups from buying houses. The FHA standards also helped to contribute to racial segregation as neighborhoods that were deemed to be racially mixed or minority neighborhoods were regarded as poor investments (Ames and McClelland 2002:45–46).

The post-World War II period saw the emergence of large-scale builders and developers, due in large part to changes in residential financing as well as unprecedented levels of demand for housing. Liberalized financing practices made it possible for builders to undertake ambitious subdivisions that included hundreds, and sometimes thousands, of dwellings. The

“merchant builder” thus emerged during the late 1940s. Working to meet housing demand, and obeying FHA guidelines, these builders could quickly sell completed houses, use the proceeds to finance a new phase of construction and, as the subdivision neared completion, move on to a new location. Such builders quickly learned to accommodate changing tastes, economics, and consumer demand by adopting new, bigger, or otherwise improved house designs (Auman et al. 2004:3/4; Ames and McClelland 2002:28-29).

The postwar period also represented the maturation of automobile-centric development in residential suburbs. Automobiles made possible the development of land previously deemed marginal because of distance from city centers. Consequently, real estate developers and community planners of the early twentieth century included ample provisions for automobile traffic in their projects. Although their primary goal was to turn a profit from land development, these entrepreneurs abetted the proliferation of automobiles in modern American culture (Avdakov et al. 2010:102).

By the late 1950s, two-thirds of houses were being constructed by merchant builders, who could navigate the bureaucratic process, achieve economies of scale, and undersell small builders. Large tracts of rural land on city outskirts were readily available and provided a place for building new suburban communities. They only required a steady supply of customers to move from concept to reality. Construction firms used mass advertising to bring attention to their projects, publishing announcements in newspapers and magazines intended for general audiences. An advertisement placed by Columbus-based Betts Built Homes, Inc., emphasized the firm’s experience, reliability, and quality of work (Plate B60). Such builders generally did not plan the communities. Rather, they would follow government guidelines to construct the houses and infrastructure (the latter of which would be sold to the locality). The locality or state then would be left to decide where amenities such as churches, schools, and shopping centers would be placed. This approach strained many local communities, particularly those that did not have a community plan for accommodating rapid population growth.

As the housing booms took place in suburbs, the 1940 Census revealed that 62 of the country’s 274 major cities, such as Akron, Cleveland, and Toledo, had experienced declining population in the past decade, while surrounding communities experienced rapid growth. To help urban cores compete with suburbs, Congress enacted the Housing Act of 1949. The legislation established a mechanism that gave cities the authority to identify “blighted” areas. Properties marked as slums were acquired through eminent domain or direct sale from a private party by the locality with the use of large Federal subsidies, and then sold to private developers to redevelop. Redevelopment projects had to adhere to a general plan for the locality as a whole to gain approval; however, the act did not specifically define terms such as “locality” and “general plan” and did not mandate the plan be adopted by ordinance nor be enforceable by law. The Housing Act of 1949 sought to address the housing shortages by providing funding for FHA-backed mortgages to developers adhering to FHA standards for construction and financing of subdivisions.

Five years later with the Housing Act of 1954, Congress stipulated that a long-range, general plan would carry out programs of public improvements, a zoning ordinance, and subdivision

regulations. Many localities around Ohio soon revised their 1920s-era zoning codes and made them a part of county or city codes. Subsequently the codes became more complex as well as less ambiguous.

3.5.4 Rapid Expansion, 1950–1960

By 1951, every major city was working on arterial highway improvements, with 65 percent of the projects focusing on urban expressways. As previously noted, during the Eisenhower administration, the Federal Highway Act of 1956 provided substantial funding for the accelerated construction of a 41,000-mile national system of interstate and defense highways, including 5000 miles of urban freeways.

Interstate construction led to immediate growth along the highway corridors as subdivisions mushroomed. These new neighborhoods were connected to cities by arterials and highways, creating a suburban landscape dependent on the automobile for everyday needs. Retail facilities soon moved to the suburbs and clustered along commercial strips in community shopping centers, while traditional downtown commercial districts began to erode. Large regional shopping centers appeared first along arteries radiating from the center city and then along the new circumferential highways. By 1960, the construction of suburban industrial and office parks added further impetus to the decentralization of the American city and the expansion of the suburban landscape.

Among the greatest beneficiaries of the federal highway programs were developers of shopping malls and commercial strip shopping centers. In addition to taking advantage of the traffic flows being directed by new road construction, developers also received financial benefits from the federal government. In 1954, amendments to the federal tax code introduced the concept of accelerated depreciation, which allowed a building to depreciate faster in its early years than its later years. In effect, it became much more affordable to build a new building than to maintain an existing one, and up to 98 percent of such commercial building construction proved profitable for their investors. As a result, while commercial strips had been introduced into suburban communities during the mid-1920s, it was not until the mid-1950s that their growth exploded. These new developments often were located alongside highway interchanges, giving rise to the familiar cluster of commercial development now found at almost every such interchange in suburban areas. Between 1955 and 1979, 22,000 suburban shopping centers were built across the country. In addition to funneling business from downtown areas, these shopping centers often restricted public access due to minimal public transit or organized bus routes. Consequently, the commercial development of suburban areas reinforced market segmentation and racial segregation by race and class, in much the same way that housing policies had done (Hayden 2003:169–170).

In Ohio, formerly rural areas outside cities such as Cleveland, Akron, Cincinnati, and Dayton faced unprecedented rates of population growth and development by the end of the 1950s. Township governments often were inadequate to address the needs of these new communities. In some instances, new cities formed from a rapid cohesion of disparate suburban developments, such as Aurora in Portage County and Strongsville in Cuyahoga County. Each city's boundaries coincided with the township's boundaries, making the two

entities one and the same. Ohioans also saw cities develop around major industrial facilities, such as Lordstown in Trumbull County and Streetsboro in Portage County (Knepper 2002:383).

Municipal officials recognized that uncontrolled suburbanization threatened to box in Ohio's major cities and curtail possibilities for future growth. Some cities, such as Cleveland and Cincinnati, had witnessed extensive industrial development during the late nineteenth and early twentieth century and already were surrounded by older, incorporated communities. In contrast, the City of Columbus expanded tremendously during the post-World War II period. The city's mayor, Jack Sensenbrenner pursued an aggressive annexation policy that involved trading city services for land. Toledo took the same approach. As a result, a substantial amount of the suburban development that took place around Columbus and Toledo actually took place within their respective expanded city limits. Both of these cities flourished with growing populations, expanding tax bases, and burgeoning industrial and commercial activities. The older industrial cities, such as Cleveland, Akron, and Cincinnati, on the other hand, tended to suffer population loss, disinvestment in their urban cores, and eroding tax bases as businesses, industries, and residents followed the action to the suburbs (Knepper 2002:383).

3.5.5 Boom Times During the 1960s

As the suburbs were booming with both residential and commercial growth, new problems arose. Population growth continued, including the southern migration to industrial northern cities. The arrival of lower skilled, less educated workers and their families brought rising demand for public services, such as schools, medical care, and affordable housing. These social needs increased at the same time that the number of unskilled industrial jobs began to decline. Although skilled jobs became more numerous, they mostly were due to automation and advancing technologies. Consequently, workers encountered greater difficulties finding employment than in previous years. In many of Ohio's older industrial cities, a synergistic relationship developed in which suitable jobs became scarcer, leading to a greater need for social services, while tax revenues declined due to higher unemployment and leaving local governments with fewer funds to pay for services.

Municipal governments, however, continued to focus on "slum clearance" and urban renewal projects as well as undertaking public improvements to stimulate private redevelopment projects. As previously noted, such initiatives often had unexpected consequences. Urban renewal projects, especially those that included transportation components, began to be blamed for driving residents from cities to suburbs as they removed housing from urban areas and made available suburb-to-city links via freeways. Yet only urban residents with the means to afford suburban life left cities, leaving the urban centers with a growing population of poorer, less educated citizens. The concentration of poverty in urban areas created a new range of social concerns.

Hoping to solve these issues, the Kennedy Administration's 1961 Housing Bill promised to make the FHA a full partner in urban renewal programs for the first time. The agency could now authorize mortgages to finance rehabilitation of older houses. Additionally, the FHA could modify the mortgage insurance program for people displaced by urban renewal and

other governmental activities, thus serving a broader range of moderate-income families. At the same time, Urban Renewal Commissioner William L. Slayton emphasized that the program would also seek to re-house families in equal or better quarters, while highlighting conditions leading to poverty, unemployment, and inadequate education. In this fashion, the FHA hoped to lead communities to develop better techniques for dealing with these problems.

As the decade progressed, many cities used federal grants to finance numerous urban renewal projects. Approximately one in every three cities with a population between 250,000 and 1 million participated in urban renewal. Documentation of these projects has shown that, while the program had the power to change the overall landscape, they often had social repercussions more complex and extensive than expected.

To gain a better understanding of the complex forces at play in postwar suburbanization throughout Ohio, regional land use planning documents offer a means to determine a variety of issues that were considered when planning for new development. The planning documents cover a variety of issues, and most also include information such as soil characteristics, topography, water resources and use, and population statistics. Examining period documents aids researchers in identifying the important factors that went into planning for new developments, as well as the development history of specific regions. Furthermore, regional land use planning documents can offer valuable insight into the changing concerns of the time period, such as considerably attention devoted to social and economic issues during the 1960s, and a heavier focus on environmentalism in the following decade.

For example, in the 1963 document, *Regional Land Use Plan: Medina, Summit, Portage*, the Tri-County Regional Planning Commission outlined a new strategy for preventing problems in land use from occurring, rather than reacting as problems arose, as had been the trend in the past (Tri-County Regional Planning Commission 1963:ix). The document dealt with the physical factors of topography, soil, and water, but also cultural factors that affected the location of major land use areas, including transportation, utilities, population growth and economics. The commission outlined wasteful practices such as urban sprawl, widely spaced and uncoordinated developments, and strip development as policies to avoid in future growth plans (Tri-County Regional Planning Commission 1963:23). Comparing the physical features with cultural factors in the area, the commission also recommended the best land uses for specific areas within the region.

Similarly, the *Land Use, Land Resource Handbook*, developed by the Ohio Valley Regional Development Commission (OVRDC) in 1977, focused on the natural features of the hilly southeastern Ohio region, and the land uses that best capitalized on these features (OVRDC 1977:v). A discussion of soil properties, water properties, and mineral properties was followed by an analysis of the ability of the land to hold specific types of land uses, such as farming, industry, and housing. By identifying critical information sources relating to capital, land, and housing planning, the document attempted to provide a blueprint for the best land uses for the different areas within the region.

3.6 Conservation Movement in Ohio

3.6.1 Establishment of National Forests and Parks

The modern era of conservation and environmental regulations in the United States began during the early twentieth century. By this time, exploitation of lumber and mineral resources had caused catastrophic damage to the Appalachian Mountain region in the eastern United States. Southeastern Ohio is a part of this region. Rapid run-off and soil erosion led to increasing problems with floods, particularly after heavy rains and during quick melting of snow in the winter and spring seasons. Private organizations, including the Appalachian Mountain Club, Appalachian National Park Association, and American Forestry Association, lobbied for the establishment of forest reserves to combat problems associated with forest degradation. A 1902 study overseen by U.S. Secretary of Agriculture James Wilson and endorsed by President Theodore Roosevelt warned that continued stripping of Appalachian forests would create an economically and ecologically barren landscape. Their efforts met with resistance among both private interests and political leaders. In March 1907, however, a disastrous flood struck the Monongahela River basin, causing damages in excess of \$100 million. Pittsburgh alone suffered \$8 million in losses. An examination of the flood and its aftermath led engineers to conclude that it had been caused by the destruction of forests on the watersheds of the Allegheny and Monongahela rivers (U.S. Department of Agriculture [USDA], Forest Service, Eastern District 1930:2, 4–5; Pierce 2006:1625; Irwin 2006:123).

The Congressional response to the disaster led to passage of the Appalachian-White Mountains Forest Reservation Bill in 1911. The law is now colloquially known as the Weeks Act due to the efforts of Massachusetts Congressman John W. Weeks to secure its passage. This legislation allowed the federal government to purchase lands on the watersheds of navigable streams and to establish national forests for the purpose of regulating stream flow. It was the first legislation to permit federal acquisition of land for forests east of the Mississippi River. Almost all federal forest land in the Appalachian Mountains was purchased under the aegis of the Weeks Act (USDA, Forest Service, Eastern District 1930:2, 4–5; Pierce 2006:1625).

In Ohio, creation of the Wayne National Forest in southeastern Ohio came about directly as a result of these legislative initiatives. In November 1934, the state legislature passed a bill allowing for the purchase of land to create a national forest. Between 1934 and 1942, approximately 77,000 acres were acquired. A U.S. Forest Service tree nursery was established near Chillicothe to produce trees needed for reforestation projects; still extant, the nursery is now maintained by the Ohio Department of Natural Resources. Additional land acquisitions brought the forest's area to 97,000 acres in 1951, the same year it received official designation as a national forest. By the early 1980s, the forest's area expanded to 169,000 acres, and additional land purchases have continued to the present day (USDA Forest Service 2004).

Establishment of national forests reflected a growing awareness of the need to preserve and protect natural resources. Similarly, the first national parks were authorized by Congress during the late nineteenth century. John Muir, Robert Underwood Johnson, and William Colby founded the Sierra Club in 1892. A variety of efforts were undertaken to limit or

regulate environmental damage caused by industrial and agricultural practices. Wildlife protection laws also were enacted, such as the Lacey Act, which regulated interstate traffic in endangered bird species. Upon taking office in 1901, President Roosevelt made conservation one of his administration's priorities. Roosevelt created the first National Bird Preserve (the beginning of the Wildlife Refuge system) on Pelican Island, Florida. The Antiquities Act of 1906 granted presidents the power to designate national monuments on their own accord, giving them nearly the same protection as if Congress had declared them national parks or wilderness areas. In all, by 1909, the Roosevelt administration created 42 million acres of national forests, 53 national wildlife refuges and 18 areas of "special interest," including the Grand Canyon. The National Park Service (NPS) was created by the Organic Act of 1916, during Woodrow Wilson's administration (Kovarik 2010).

Ohio currently has nine units that are managed by the NPS: Cuyahoga Valley National Park; David Berger National Memorial; Dayton Aviation Heritage National Historical Park; First Ladies National Historic Site; Hopewell Cultural National Historical Park; James A. Garfield National Historic Site; North Country National Scenic Trail; Perry's Victory & International Peace Memorial; and William Howard Taft National Historic Site. Several are directly associated with historic trends and/or events occurring during the modern period. For example, established in 1974, the Cuyahoga Valley is Ohio's only national park; its designation came about after a protracted effort by activists to secure protection for a scenic and historic area in a rapidly urbanizing area. The David Berger site honors the memory of Ohio native David Berger, who along with 10 other Israeli athletes, was killed at the 1972 Olympic Games in Munich; the memorial itself was established in 2006 on the grounds of the Mandel Jewish Community Center in Cleveland Heights. The Dayton Aviation Heritage National Historical Park preserves sites associated with the development of aviation during the early twentieth century. Memorials within the park, however, predate the NPS's designation, including some from the mid-twentieth century. The Hopewell Cultural National Historical Park originally was designated as a national monument in 1923, expanded in 1982, and received its current designation in 1992. The First Ladies, Garfield, and Perry's Victory sites are associated with nineteenth century historic events and are associated with early twentieth century preservation efforts in Ohio, while the Taft site was the home of President Taft during his childhood and early adult years before his political career began. Designated in 1980, the North County National Scenic Trail was made possible by the National Trail System Act (NPS 2010).

3.6.2 Soil Conservation in Ohio

Meanwhile, in 1913, Ohio experienced its greatest natural disaster in modern history. All of the state's rivers experienced annual spring flooding, but exceptionally heavy rains in March 1913 caused flooding throughout the state. Statewide at least 428 people died in the floods and more than 20,000 houses were destroyed. The most severe flooding occurred on the Great Miami River, particularly in the Dayton area. Determined to prevent another disaster, Dayton's municipal government hired hydrological engineer Arthur Morgan to create a flood protection plan. Morgan recommended the construction of a series of earthen dams on the Great Miami River, as well as modifications to the river channel within the city. Governor James M. Cox supported the plan, and lobbied the legislature to pass the Vonderheide Act in 1914. Also known as the Ohio Conservancy Law, the legislation gave the state the authority

to establish watershed districts and to raise funds for improvements through taxes. The following year, the Miami Conservancy District was created, making it the first major watershed district in the nation. Over the next seven years, the district completed approximately \$39 million in improvements. The Miami Conservancy District served as a model for the creation of the Tennessee Valley Authority in 1933 (Ohio History Central 2005gg).

Although the deleterious effects of strip mining and clear cutting forests were understood by the 1920s, environmental degradation caused by poor farming practices received less attention. Scientific farming practices were introducing new methods for pest and disease control and fertilizing soil, but the potentially harmful effects of these chemicals had not been investigated. Meanwhile, decades of poor land management, especially lack of crop rotation and inappropriate plowing methods, were destroying the topsoil in many farming regions across the country. The issue reached a crisis point during the 1930s, when the Dust Bowl struck the Great Plains and destroyed the livelihoods of tens of thousands of farmers. Occurring at the same time as the Great Depression, the effects of the Dust Bowl were magnified by the economic plight that faced the entire country.

Elected in 1932, President Franklin D. Roosevelt included conservation and natural resources management as key components of his New Deal program. Combining work relief with conservation work, the Civilian Conservation Corps (CCC) is perhaps the best known of the 1930s-era agencies created during the Roosevelt administration. Ohio benefitted from CCC work, with approximately 14,000 Ohioans employed every year until the program ended in 1942. To remedy the Dust Bowl conditions, the United States Congress passed the Soil Conservation and Domestic Allotment Act in 1935. This legislation created the Soil Conservation Service within the Department of Agriculture. The new service's mission included conducting surveys and developing preventative measures to limit further soil erosion. It also provided compensation for farmers and other business owners who implemented soil conservation plans on their land (Ohio History Central 2005hh).

Ohioans took advantage of the New Deal by creating another conservancy district. Using the Miami Conservancy District as a model, legislators designated the Muskingum Conservancy District in 1933. It encompasses eighteen counties in eastern and southeastern Ohio, including Ashland, Belmont, Carroll, Coshocton, Guernsey, Harrison, Holmes, Knox, Licking, Morgan, Muskingum, Noble, Richland, Stark, Summit, Tuscarawas, Washington, and Wayne. Headquartered in New Philadelphia, its original mission focused on flood control and conservation efforts for the Muskingum River and its tributaries. Between 1933 and 1938, workers built thirteen earthen dams and one concrete dam on the Muskingum River and its tributaries. Along with flood control, these dams created a number of reservoirs that are still used today for recreational purposes; funds generated from recreational facilities, such as boat docks and campgrounds, are used for operational expenses. In 1939, the U.S. Army Corps of Engineers assumed responsibility for flood control projects, and the Muskingum Watershed Conservancy District shifted its focus to conservation activities and recreational facilities (Ohio History Central 2005ii).

Ohio's legislature passed its own Soil Conservation Act in 1941. Based on the federal law, it divided Ohio into a series of soil conservation districts. Farmers in these various districts could seek financial and technical support from the state and federal governments to implement soil conservation measures (Ohio History Central 2005hh). In addition to soil conservation, the CCC and other New Deal programs performed extensive work in hundreds of state parks and forests throughout the United States. Their projects included reforestation, recreational development, flood control, and reintroduction of wildlife species. New Deal agencies also engaged in educational programs to teach farmers new plowing methods and methods for erosion and runoff prevention. As the country entered World War II, the New Deal agencies were abolished.

3.6.3 Evolution of Ohio's State Forest and State Park System

Ohioans today enjoy access to a wide array of state forests and parks that offer a range of recreational activities and preserve important scenic, ecological, and natural resources (Figures A13-14). The system's origins lay in the 1920s, when the first state forests were established, including Shawnee Forest, Pike Lake, Scioto Trail, Nelson Ledges, John Bryan, Hocking Hills, and Hueston Woods. Development of state forest and park systems often went hand in hand with the establishment of the period's first soil conservation districts. At the same time, a national movement toward outdoor recreation was under way. Nature was regarded as healthful and wholesome, and social reformers, in particular, advocated that everyone should have access to natural settings. Many states, including Ohio, developed policies of coupling soil conservation and state forests and parks with development of outdoor recreational facilities. Visitor amenities, such as comfort stations and picnic areas, began to be added to state forests by the 1920s. With the Roosevelt administration's emphasis on conservation during the 1930s, many states, including Ohio, gained access to funds for expanding existing state forests and well as acquiring land to create new forests and parks. These lands were subjected to considerable remediation, replanting, and improvement throughout the 1930s and early 1940s through the Civilian Conservation Corps (CCC) and the Works Progress Administration (WPA).

After the war years, growing numbers of Ohioans began to frequent the existing state's parks, recreation reserves, and fishing lakes. By the late 1940s, it was apparent that a new government entity was required to manage the state park system more efficiently (ODNR-DPR 1999a). In 1949, the state legislature created the Ohio Department of Natural Resources (ODNR). The department was charged with formulating and executing a long-term, comprehensive plan for the development and wise use of the state's natural resources for the health, happiness, and enjoyment of Ohioans. The same year, state lawmakers approved the creation of the Division of Parks (later the Division of Parks and Recreation) within ODNR. Through its various divisions, ODNR ultimately became responsible for managing more than 590,000 acres of Ohio land that encompasses 74 state parks, 20 state forests, 134 state nature preserves, and 138 wildlife areas. The department also was given jurisdiction over more than 120,000 acres of inland waters; 7,000 miles of streams; 481 miles of Ohio River; and 2.25 million acres of Lake Erie. Over the course of its history, ODNR combined resource management and protection with economic development, providing recreational opportunities, and enforcing health and safety regulations by identifying and responding to environmental hazards (Ohio Department of Natural Resources 2010b).

The Division of Parks was established with the mandate to “create, supervise, operate, protect, and maintain a system of state parks and to promote their use by the public.” In 1949, its first year of operation, the Division of Parks hired park managers and began to improve the existing facilities and to add new ones. During that year, the Ohio state park system received 3.5 million visitors. The level of use overwhelmed the existing facilities at some parks. Prisoner “honor camps” were established in 1950 at Hueston Woods, Lake Hope, and Hocking Hills; inmates at these camps helped with construction projects and building trails (ODNR-DPR 1999a).

By the time of its fifth anniversary in 1954, the Division of Parks had constructed 162 boat docks, 16 boat ramps, 70 cottages, 20 concession stands, 73 latrines, one lodge, nine campgrounds, and 5,500 parking spaces within Ohio’s state parks. Additionally, the acquisition of the Lake Erie Island Parks, Forked Run, Rocky Fork, and Burr Oak enlarged the state park system. Despite the rate of growth, however, financial and labor resources in the 1950s and early 1960s were limited to a few select parks in each geographic region of the state. The system in place was designed to encourage maximum use by spreading out facilities and improvements by geographic region, but concentrating the improvements in select parks within these regions.

The National Park Service’s “Mission 66” modernization program began in 1956 as a 10-year plan to modernize and improve the deteriorating conditions in the national park system that had been brought about by a massive increase in visitation following World War II. New mid-century modern visitors’ centers were built in many parks across the country. In Ohio, the Hopewell Culture National Historic Park near Chillicothe received one of the new visitors’ centers. Built in 1959-1960 from a design by William Cramp Scheetz, Jr. of Philadelphia, the visitors’ center is still extant, although it has been altered over the years (Allaback 2000:Appendix I).

Encouraged by the National Park Service’s “Mission 66” modernization program, ODNR’s Division of Parks and Recreation adopted the nation’s first recreation plan for a state park system in 1964, thus allowing that state to receive federal funding for new facilities. In addition to this revenue source, Ohio voters approved bond measures in 1963 and 1965. The infusion of funding to the state’s parks set off a building boom and long-term planning that encompassed 12 new parks, 27 marinas, and eight lakes, among other improvements. Additionally, 13 parks began offering naturalist programs by the end of the decade. The expansion effort was warranted as, by 1969, the Ohio park system received 30 million visitors annually. The 1960s also saw the Division of Parks and Recreation set off on one of the largest building campaigns in its history. The Division building campaign for lodges and conference centers at seven parks lasted into the 1970s. All of these facilities were designed according to modernist idioms and were distributed throughout Ohio’s geographic regions in order to serve all parts of the state. The Burr Oak Lodge and Conference Center was built in the 1960s to serve Southeastern Ohio. The A-Frame Hueston Woods Lodge and Conference Center was built in 1967 to serve Southwestern Ohio. The largest lodge in the park system was built at Salt Fork, containing 148 guest rooms and 54 furnished cottages. Other lodges and conference centers were built at Mohican, Shawnee, and Deer Creek through the 1970s,

with Maumee Bay Lodge and Conference Center opening in 1981 (ODNR-DPR 1999a; ODNR-DPR 1999b).

The 1970s marked the beginning of a transformation toward multi-use facilities at the state parks and forests in order to provide a variety of recreation activities for all visitors. The building boom and increased acquisitions of the 1970s can be attributed to the new funding sources and influence of the “Mission 66” program mentioned above, but was also driven by ever-growing usage of the park system by Ohio visitors. The national gasoline crisis during the early and mid-1970s, in particular, prompted Ohioans to turn to local venues for family vacations (ODNR-DPR 1999a).

The majority of ODNR’s acquisitions during the 1970s focused on recreation, with eight new parks formed around U.S. Army Corps of Engineers flood-control lakes. For the first time, boating became the major attraction of Ohio’s state parks, with new launch ramps, marinas, docks, beaches, and concessions constructed. New campsites were created in the lake parks to provide services to the increasing number of campers frequenting the parks. Accommodations also began to be specifically planned for an increasing number of trailers and recreation vehicles. Another facet of growth came with Ohio’s state parks capitalizing on the environmental movement by offering naturalist and interpretive programs. New nature centers and self-guided tours were established in existing parks, and park specialists took traveling programs to local schools, hospitals, nursing homes, and civic organizations (ODNR-DPR 1999a).

Many of Ohio’s municipal park systems followed a path toward modernization similar to that of the state park system. The Cincinnati city park system offers a useful case study, as it underwent numerous changes throughout the twentieth century. The present Cincinnati Park Board was established in 1907 through an act of the State Legislature approved by voters. Through the first half of the twentieth century, however, the board’s concerns focused on land acquisition and moderate improvements, such as park shelters and walking trails. As park visitation increased during the post-World War II period, the board turned its attention to acquiring large areas of parkland. During the 1960s and 1970s, a number of prominent citizens donated land to the Park Board. With citizens becoming more aware of environmental issues in the 1970s, several existing parks were designated as nature preserves, and new parks also were acquired for this purpose (Moore 1988).

3.6.4 Continuing Legacy of Conservation in Ohio

The effects of these various programs shaped Ohioans’ lives for the remainder of the twentieth century. One of the most vital influences was on the relationship people had with the environment itself. In his Ph.D. dissertation, *Planting More Than Trees: The Civilian Conservation Corps and the Roots of the American Environmental Movement, 1929-1942* (Maher 2001), Cornelius M. Maher places the CCC within the broader context of the conservation movement and suggests the CCC facilitated the emergence of modern environmentalism. Anderson et al. (2003) summarized Maher’s findings in *Rabideau Civilian Conservation Corps (CCC) Camp National Historic Landmarks Nomination*. Arguing that the CCC altered American thinking about the natural world, Maher found the CCC played an instrumental role in bridging the transition from Progressive Era

conservation, which emphasized the most efficient uses of natural resources, to post-World War II environmentalism, which took a more holistic approach to include entire ecosystems and advocated wilderness preservation for its own sake outside the needs of humans. The transition came about because the CCC popularized conservation among the general public and broadened the notion of conservation itself to include wilderness preservation, ecological balance, and outdoor recreation (Anderson et al. 2003). CCC work in Ohio resulted in the creation of enduring recreational and natural resources of the state's residents. For example, located in Scioto County, Shawnee State Park and Shawnee State Forest had six CCC camps working in their environs during the 1930s (Ohio Department of Natural Resources 2010a). The 12,000-acre Pike State Forest in western Pike and eastern Highland counties also was developed by CCC workers (ODNR Division of Forestry 2010). CCC enrollees also completed projects at the aforementioned Wayne National Forest.

In addition to the Civilian Conservation Corps (CCC), the Federal Emergency Relief Administration (FERA), the Civil Works Administration (CWA), the Public Works Administration (PWA) and the Works Progress Administration (WPA) were major sources of funding and workers to develop parks in Ohio urban centers too. In 1935 an African-American Civilian Conservation Corps (CCC) camp was established in Mount Airy Forest in Cincinnati, one of the earliest (if not the first) urban reforestation projects in the nation. In addition to the construction of park structures and parkways, the Cincinnati parks benefited from the CCC, which planted millions of trees and built trails, walls and buildings in Mount Airy Forest. (Recchie, *The Historic Resources of the Cincinnati Park and Parkway System, 1817-1959*, pp 37-42; Recchie, *Mount Airy Forest Historic District*, p.9)

A native Ohioan who contributed to the emerging environmental movement was Louis Bromfield, a successful author and strong advocate of scientific agriculture and soil conservation. Bromfield was born on December 27, 1896, near Mansfield, Ohio. After attending both Cornell Agricultural College and Columbia University in 1914–1916, he joined the American Ambulance Corps with the French Army during World War I and served until 1919. After the war, he embarked on a career in journalism. In 1924, Bromfield wrote his first novel, *The Green Bay Tree*. Soon after, he moved to France, where he associated with luminaries such as Gertrude Stein, Pablo Picasso, Edith Wharton, Ernest Hemingway, and Sinclair Lewis. In 1926, Bromfield won the Pulitzer Prize for his novel *Early Autumn*. Continuing to write fiction through the 1930s, Bromfield returned to Ohio and purchased Malabar Farm, near Mansfield, in 1939. From this point, he dedicated his life to agriculture and sought to create a farm that promoted soil conservation. His later books, including *Pleasant Valley*, focused on soil conservation and other farming issues. He continued to socialize with prominent artists, including Lauren Bacall and Humphrey Bogart, who were married at Malabar Farm in 1945. Bromfield died on March 18, 1956. Famous by this time for his conservation efforts, he was posthumously elected to the Ohio Agricultural Hall of Fame. One of his daughters, Ellen Bromfield Geld, continued her father's conservation efforts, while Malabar Farm became a state park (Ohio History Central 2005jj).

Although Ohio made great strides during the mid-twentieth century toward conserving natural resources, its extensive industrial activity caused pollution on an increasing scale. Perhaps the most notorious evidence of the scale of the state's industrial pollution came on June 22, 1969. On that date, an oil slick and floating debris in the Cuyahoga River caught fire

in Cleveland. The novelty of a river in flames drew national attention to environmental problems caused by unchecked industrial pollution, not only in Ohio but throughout the United States. The 1969 event actually was not the first time the river had caught on fire; other recorded incidents occurred in 1868, 1883, 1887, 1912, 1922, 1936, 1941, 1948, and 1952. The 1952 fire was actually more destructive in monetary terms, causing over \$1.5 million in damage compared to the \$50 thousand in 1969 (Ohio History Central 2005kk).

Since the days of the Industrial Revolution, industrial accidents and environmental pollution had been regarded as simply the price of progress. Times had changed by the late 1960s, however, and public tolerance for such incidents had decreased. On August 1, 1969, *Time* magazine reported on the fire and on the condition of the Cuyahoga River. The magazine stated,

“Some river! Chocolate-brown, oily, bubbling with subsurface gases, it oozes rather than flows. . . The Federal Water Pollution Control Administration dryly notes: ‘The lower Cuyahoga has no visible signs of life, not even low forms such as leeches and sludge worms that usually thrive on wastes.’ It is also – literally – a fire hazard” (Ohio History Central 2005kk).

In the aftermath of the Cuyahoga River fire, Cleveland businesses became infamous for their pollution, while the city and its residents became the butt of jokes, despite the fact that city officials had authorized \$100 million for river improvements before the fire occurred. The negative publicity affected the city’s public image for years to come.

Notorious incidents such as the Cuyahoga River fire, however, provided momentum to efforts to create national regulations for environmental protection. From the late 1960s through the mid-1970s, Congress passed landmark legislation that included the National Environmental Policy Act of 1969, the Clean Air Act of 1970, the Water Pollution Control Act of 1972, and the Endangered Species Act of 1973. Individual pollutants, such as DDT, that were responsible for grave environmental damage, also began to be banned. The country’s first Earth Day was declared on April 22, 1970, and has continued to be recognized annually (Kovarik 2010). Other legislation, such as the National Historic Preservation Act and the Department of Transportation Act, both passed in 1966, came to be important environmental planning and regulatory tools requiring coordinated environmental review for all types of federal undertakings than had been completed in the past.

Finally, over the course of the late twentieth century, Ohioans began designating areas worthy of protection for their natural, environmental, and/or historic value. These efforts owed, in part, demolition of tens of thousands of historic buildings to make way for transportation, urban renewal, and other major construction projects. Communities, both in Ohio and across the country, expressed growing concern over the ramifications of such destruction. In response, Congress passed the National Historic Preservation Act (NHPA) in 1966. The law recognized the importance of the country’s historic and cultural resources by establishing a national policy for protecting historic buildings and archeological sites that could be affected by federal government activities, such as major highway construction. The NHPA created the National Register of Historic Places, which is a list of sites, districts,

buildings, structures, and objects of national, state or local significance in American history, architecture, archaeology, and culture. The NEPA created a NPS Department of the Interior program to allocate fifty percent grants-in-aid to states to purchase and rehabilitate historic properties. In order to be eligible for these grants each state was required to prepare statewide historic preservation plans. Through section 106 of the NEPA federal agencies are required to review their proposed activities to determine the effect on historic resources. The Advisory Council on Historic Preservation, an independent agency of the federal government was created to advise the president and Congress on matters of historic preservation (Pfister 1991). Each state's SHPO is funded, in part, by an annual grant from the U.S. Department of the Interior's Historic Preservation Fund.

Even before the passage of the NEPA activities in Ohio were exploring the question of "what to do with the significant buildings, sites, and artifacts we have inherited from the past in view of the needs of the present." (Pfister 1991: 14). A key figure in developing Ohio's early historic preservation program was Daniel R. Porter, the Director of the Ohio Historical Society. In 1965 Porter sponsored Ohio's first historic preservation conference inviting nearby states to discuss the need for historic preservation legislation. Also in 1965 state Senator Clara E. Weisenborn of Dayton chaired a legislative commission to study the need and feasibility of the preservation of historical sites. Released in November, 1966, the final Ohio Legislative Service Commission report, *Preservation of Historic Sites*, called for the expansion of duties and authority of the Ohio Historical Society to conduct a statewide inventory of historic properties and to assume historic preservation responsibilities for the state. These recommendations eventually resulted in the amendments to the Ohio Revised Code addressing the role of the Ohio Historical Society in state historic preservation activities and the creation of the Ohio Historic Preservation Office (OHPO), which is a part of the Ohio Historical Society (OHS) with Daniel Porter serving as Ohio's first State Historic Preservation Officer. OHPO was established in 1967 and charged with managing responsibilities delegated to the state by Congress in the NHPA. The office works to identify, evaluate and protect historic places throughout Ohio. A top priority initiated by Porter was an aggressive approach to nominating properties to the National Register of Historic Places; responding to the concept that historic properties cannot be effectively preserved unless you know where they are. These early efforts resulted in Ohio being a leading state nationally in number of National Register listings (Pfister 1991).

As Ohio's historic preservation program developed the OHPO's activities grew to include preparation of distribution of a state historic preservation plan; identification of places and archaeological sites within the state; nomination of eligible properties to the NRHP; review of significance of and rehabilitation work on historic buildings for federal and state tax credits; consultation on federally-assisted projects for effects on historic, architectural, and archaeological resources; qualifying communities for the Certified Local Government program and administering a competitive grant program for such communities; advising on the conservation of buildings and sites; and offering educational programs and publications to the public. OHPO maintains a staff of archaeologists, historians, architectural historians, a historical architect, and others with professional expertise in preservation-related fields (Ohio Historical Society 2010b).

Two of the most powerful provisions of NHPA are found in Section 106 and Section 110. Section 106 of the NHPA requires consideration of NRHP-listed and/or -eligible historic properties that might be affected by any project over which federal agencies have direct or indirect jurisdiction through funding, licensing, permitting, or other means. Section 110 of the Act directs the heads of all federal agencies to assume responsibility for the preservation of NRHP-listed or -eligible historic properties owned or controlled by their agency. This section of the law covers historic properties ranging from U.S. courthouses and post offices, to hydroelectric dams and military installations, to national parks and forests. Federal agencies are directed to locate, inventory and nominate properties to the NRHP, to exercise caution to protect such properties, and to use them to the maximum extent feasible. Agencies employ staff members trained in historic preservation practices to oversee these efforts.

In addition to government activities, private development affected Ohio's historic and cultural heritage. Rapid development in metropolitan areas (a phenomenon now dubbed "urban sprawl") became especially worrisome for its potential consequences. Poorly planned or uncontrolled growth could lead to a host of problems, ranging from traffic gridlock to pollution of air, soil, and water, from loss of farmland and green space to loss of important rural and historic properties. Ohio's rate of sprawl development increased markedly between 1960 and 2000 (Figures A11, A15). Ohioans responded with initiatives to preserve natural, cultural, and historic resources. For example, during the 1960s and 1970s, as urban expansion threatened rural areas in northeastern Ohio, especially between Cleveland and Akron, local citizens and conservation groups advocated to establish a natural preserve. In 1974, the United States Congress and President Gerald Ford established the Cuyahoga Valley National Recreation Area. United States House of Representatives members Ralph Regula and John Seiberling, both from Ohio, played a major role in the recreation area's creation. The NPS assumed management of the area, and worked jointly with Cleveland Metroparks and Summit County Metroparks to preserve the site. In 2000, the federal government converted the Cuyahoga Valley National Recreation Area into the Cuyahoga Valley National Park. It now consists of 33,000 acres of land between Cleveland and Akron, and 22 miles of the Cuyahoga River's 90-mile length flow through the protected area. Over three million people visit the park each year to hike along portions of the abandoned Ohio and Erie Canal, as well as to swim, picnic, golf, canoe, and kayak (Ohio History Central 2005).

