"The Whole City Is Our Laboratory": Harland Bartholomew and the Production of Urban Knowledge

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This article examines the stages by which Harland Bartholomew, one of the leading planners of the twentieth century, consolidated a professional identity by producing a corpus of specialized knowledge about the city. Between 1915, when he arrived in St. Louis, and 1950, when he retired from civil service to run his private firm, Bartholomew cultivated a professional practice through activities of widely varied scope. He grounded these activities in an urban knowledge system that disciplined the ways in which planning interventions were imagined, organized, and implemented. At the core of this system was a conception of the city as an amalgam of parts, the functions of which could be studied through the derivation of land use ratios. Using St. Louis as a laboratory, Bartholomew assembled a vision of the city and a planning methodology that paved the way for dramatic urban reconstruction after World War II.

Keywords: city planning; urban knowledge; land use; St. Louis

Harland Bartholomew consolidated a professional identity for city planners within and against the laboratory of twentieth century St. Louis. From the moment he arrived in St. Louis in 1915, Bartholomew cultivated a professional practice through activities of widely varied scope, all culminating in the production of a system of knowledge about the city. This urban knowledge base disciplined the ways in which planning interventions were imagined, organized, and implemented, as well as the very conception of the city itself. For Bartholomew, one of the leading city planners of the twentieth century, the St. Louis assignment provided the opportunity to imagine both the profession and the forms of knowledge that constituted the profession.

Across the breadth of his long career, Bartholomew left a massive corpus of plans for hundreds of cities around the world. He lectured and wrote

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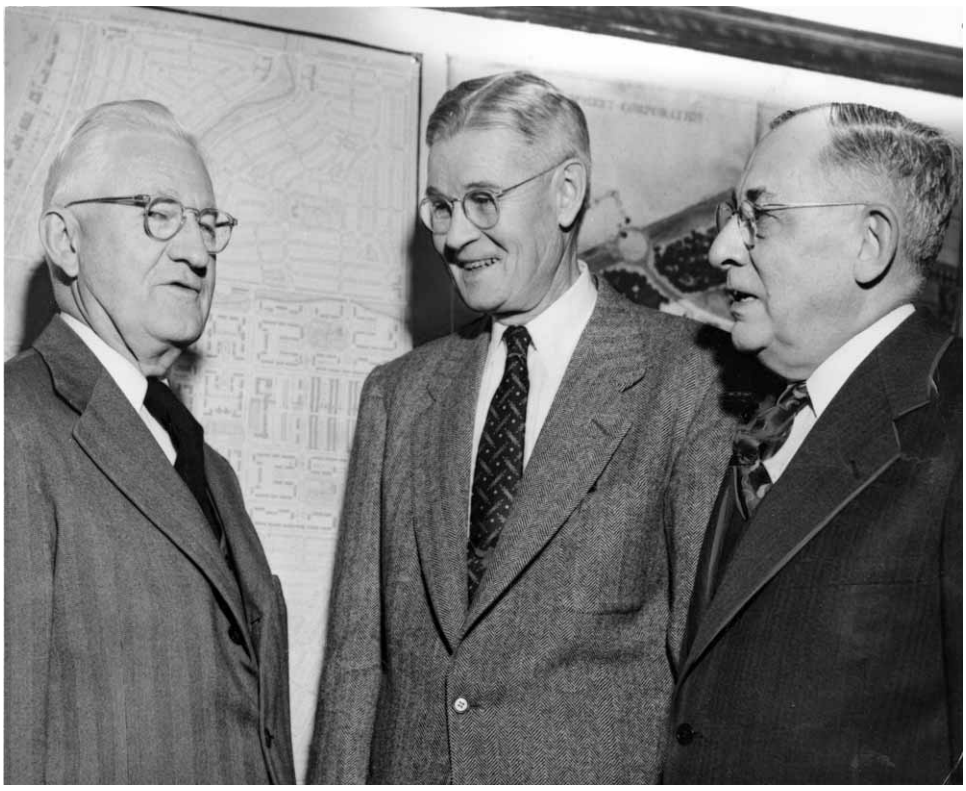


Figure 1: Harland Bartholomew at the University of Illinois (1954)
Source: Courtesy of the St. Louis Mercantile Library.
Note: When this photograph was taken, Bartholomew (left) was the longest-serving city planner in the nation to be employed full time by a municipal government. He is shown here with his colleagues at the University of Illinois, Otto Schaffer (center) and Karl Lohmann (right).

extensively, publishing technical papers in City Planning Conference *Proceedings* and in journals such as *American City*, *American Civic Annual*, *City Planning*, and the National Conference on City Planning *Bulletin*. He wrote an influential book on urban land use and taught courses on city planning for three decades at the University of Illinois (Figure 1). He wrote on topics such as the theory and practice of zoning, street widening, cost distribution, placement of railroads, easements, federal buildings in cities, growth controls, economic disintegration, subdivision layout, slum clearance, metropolitan and regional planning, and the role of neighborhoods in the plan process.

Bartholomew was instrumental in forging a national professional culture grounded in a system of urban knowledge production that governed city-planning practice through much of the twentieth century. His career both mirrored and contributed to the rise to dominance of the civil engineer in American city planning. Working within a "realist" or "city-efficient" tradition, he refined and promoted an approach to city planning that historian

John Fairfield has described as "the scientific management of urban space."[1] However, the mantle of rationality and objectivity that suffused Bartholomew's quest for urban knowledge obscures commitments to a particular moral vision of city life. His approach to city planning reveals not the real, actual city but rather a technique of knowledge production as well as a set of discourses on urbanism that in turn, discipline urban spatial practices.[2]

Scholars have identified four arenas where Bartholomew's impact was most profound on planning. First, he emerged very early as a leader in the effort to consolidate planning as a profession through support of governing associations and norms of training and development. Second, he developed deep connections to Washington politics through service to a range of national commissions and through frequent appearances to provide expert testimony before congressional bodies.[3] Third, he authored influential studies such as *Urban Land Uses* and coauthored major urban plans such as the 1930 *Plan for the Los Angeles Region* that defined the contours of planning discourse and practice.[4] And, fourth, through the auspices of his consulting firm, Harland Bartholomew and Associates, he seeded cities and towns across the country with his trained apprentices, who more often than not would be hired on eventually as a city's full-time planner.[5]

Few scholars, however, have examined the development of Bartholomew's ideas and methods within the frame of the urban "laboratory" that was at his constant disposal. Eric Sandweiss and Mark Abbott provide the only studies of Bartholomew's work in St. Louis during the formative years of his career. For Sandweiss, Bartholomew and twentieth century city planning emerge as a weak counterpoise to the far more powerful forces that drive the city-building process, such as real-estate speculation, small-time home building, and the jumbled regulatory framework. Abbott demonstrates that Bartholomew's concept of the "comprehensive plan" was a dead letter, achieving prominence at the very moment when cities were abandoning long-term planning approaches in favor of major blockbusting projects such as urban renewal and public housing. In each case, the picture that emerges of Bartholomew's work in St. Louis is one of continual frustration, setback, and disappointment.[6]

This study builds on the work done by Sandweiss and Abbott to examine how Bartholomew assembled a national professional practice within and often against the frustrating landscape of St. Louis politics. It examines Bartholomew's career from his arrival in St. Louis through World War II, as he cultivated the profession and formulated many of the methods that would dominate the practice of city planning for decades. In the context of rapid metropolitan growth and expansion, he consolidated the legitimacy and authority to plan, however limited it was in nature and scope, and he delineated arguments about the optimal tools for shaping urban land use. He devised a nationally influential urban research method based primarily on the systematic inventory of land and physical plant, the organization of this plant into taxonomies of land use, and the discernment of ratios of parts

to wholes that he believed would yield the best environmental relationships and, thus, the common civic good.

As the city reeled from constant cycles of boom and bust, Bartholomew and his staff mobilized the rationale and legal instruments of planning to reimagine the city as a place of stable and predictable land uses and functions, to define the social parameters of property through zoning, to raise huge capital sums through municipal debt instruments, to knit the region together with road building, to consolidate property into large contiguous parcels of land, and to transform whole neighborhoods through redevelopment projects of unprecedented scale. In the teeming, often inchoate streets of St. Louis, Bartholomew derived a systematic approach to the production of urban knowledge, that is, knowledge about the city that he deemed sufficiently objective to map an urban future. Through the first half of the twentieth century, Harland Bartholomew forged a local civic culture of planning in the gritty crucible of St. Louis politics, which he then translated into a national professional culture.

Bartholomew and the World of the Professions

Harland Bartholomew began his career in an age of great ferment and change in the nature of work in industrial society. In all fields of enterprise, men and women labored to consolidate control over what constituted knowledge and authority. To do this, practitioners of disparate crafts and pursuits transformed their endeavors into professions, with rigors of training, standards of application, fundamentals of ethics and service, and control over access. The professions, in effect, emerged as a gatekeeping force, a way to introduce scarcity into markets for information through the consolidation of a knowledge core.[7] The more that industrial capitalism expanded and penetrated work and social life, the more demand grew for professionals, who busily carved out new arenas for the application of their expertise. Ultimately, this professional stratum came to occupy a complicated place in the class structure of American society. While clearly indebted to the wealth creation and endowments of capital, professionals also developed their own sets of interests, with the survival of the professions themselves being among the principal objectives.

Bartholomew's career unfolded within these broader developments. Yet, as member number 0001 of the American Planning Institute, Bartholomew also shaped and amplified the trend of professionalization in city planning. He was born in 1889 in Stoneham, Massachusetts, into a stolid farm family. The death of his mother and grandmother when he was young brought some profound life changes. He was raised by his older sister first on their grandfather's farm in New Hampshire, then in Gloucester, Massachusetts, and finally, in Brooklyn, New York, where he attended Erasmus High School and worked as a drugstore clerk and delivery boy. A teacher at Erasmus

took notice of Bartholomew's intellect and sent him to meet with the president of Rutgers University, who offered him a scholarship and part-time work in the library to pursue a degree in civil engineering. Lack of funds and exhaustion forced Bartholomew to leave Rutgers after only two years, however. Although he took night classes in engineering at Columbia University, he never completed the degree.[8]

After Rutgers, Bartholomew secured an entry-level position with the U.S. District Engineers, first as a landsman and later as an inspector on various river-channel widening, navigation, and dredging projects. In 1912, he landed a position with the prestigious engineering firm of E. P. Goodrich, and there, he worked on a range of projects in the construction and modification of terminals, docks, channels, bridges, and railroads. Within a very short time, the precocious young engineer had absorbed substantial experience and skills, and rose quickly in the esteem of the firm's principals.

In the same year that Bartholomew joined Goodrich, the firm landed a contract in concert with the firm of George Ford to prepare a comprehensive plan for the city of Newark, New Jersey. They placed Bartholomew in charge of this assignment and ordered him to reside in Newark for the duration of the project. While Bartholomew regarded the assignment as a disappointing diversion from his chosen career path in civil engineering, it proved transformative. In Newark, Bartholomew oversaw a staff of two dozen fieldworkers gathering data and conducting analyses of population distribution, traffic flow, transportation systems, parks use, and revenue streams. The Newark plan commission terminated Ford's contract in 1913, and Goodrich remained engaged for only one more year, preoccupied with one of the largest civil-engineering projects of the moment, the reorganization of the Los Angeles harbor. In 1914, the Newark plan commission retained Bartholomew as the first full-time, public-sector city planner in America, and by 1915, he had completed the city's first comprehensive plan.[9]

For Bartholomew, the experience galvanized his career trajectory and his conceptualization of the work of the city planner. From George Ford, he derived a pivotal professional lesson: "In the science of city planning," Ford wrote in 1915, "the whole city is our laboratory. All its facts and symptoms are more or less under observation, but the expert city planner soon sifts the significant from the less important."[10] This quest for total, objective data as a means of land-use control would epitomize Bartholomew's conceptualization of the planning scope and method. The Newark project resulted in more than a comprehensive city plan; it organized, in its tables, charts, graphs, maps, and prose, a basic argument for the nature of city planning and the quality of urban knowledge itself.

In 1915, on the recommendation of George Ford, architect Henry Wright and prominent urban reform lawyer Luther Ely Smith recruited Bartholomew to St. Louis to translate the vision of the city's 1907 plan into reality.[11] The St. Louis plan grew out of the momentum and administrative

networks formed around the 1904 World's Fair and was reconstituted afterwards in the Civic League of St. Louis. The majority of Civic League committee members that worked on the plan had also served on committees for the Louisiana Purchase Company that had organized the 1904 fair.[12] The 1907 plan unfolded a City Beautiful agenda through a series of sketches for the treatment of urban forms such as public building groups, civic centers, parkways, and the riverfront (Figure 2).[13]

Yet the plan incorporated little in the way of action steps, strategies, finance, or measures to translate sketches into material form. Despite the fact that the Civic League committees brimmed with talented managers capable of organizing an enormous and successful World's Fair, they faltered before the far more complex task of managing the city itself. Indeed, one of the first major City Beautiful initiatives after the World's Fair, the Central Traffic Parkway bond issue, was soundly defeated in a referendum just two months before Bartholomew arrived.[14]

In Bartholomew, St. Louis advocates for the planned city gained an accomplished civil engineer willing to come to work on a half-time basis. Although just twenty-six years old, he was one of the most promising figures in the nascent profession of city planning by the time his train rolled into Union Station. What most League members did not know, however, was that Bartholomew came equipped with his own agenda: a zealous commitment not just to serve St. Louis but, more important, to broadcast a model of city planning that would take root regardless of the particular location. He saw himself less as the benefactor of a particular group's patronage and more as a provider of disinterested expertise. Dedicated to a client model of professional service, the specific identity of the client was less important in the long run than the application of proven principles in service to the client. St. Louis would be his staging ground, his laboratory. His passion was the planning process itself.

Although Bartholomew deliberately personified the technocratic planner, he also exhibited a modernist aesthetic sensibility, locating beauty in the elegant, matter-of-fact functionality of urban improvements. Like many young planners of the early twentieth century influenced by R. S. Peabody and Benjamin Marsh, he regarded the end result of his endeavors not solely or even primarily in terms of beauty but in terms of efficiency, rationality, and practicality in service of a transcendent common good. "I believe the most practical result to be attained," wrote R. S. Peabody of city-planning practice, "is not the beauty of the city, but the consequent elevation of the standard of citizenship."[15] "Beauty," Bartholomew wrote, "should be an inexpensive adjunct to the primary mode of efficiency in an improvement project."[16] In this light, the baroque, airy, beaux-arts aesthetics of the 1907 city plan, coupled with the lack of implementation strategies, probably amused but did not inspire the no-nonsense Bartholomew, who imported to St. Louis a vision of the city made modern and livable through practical solutions.[17]

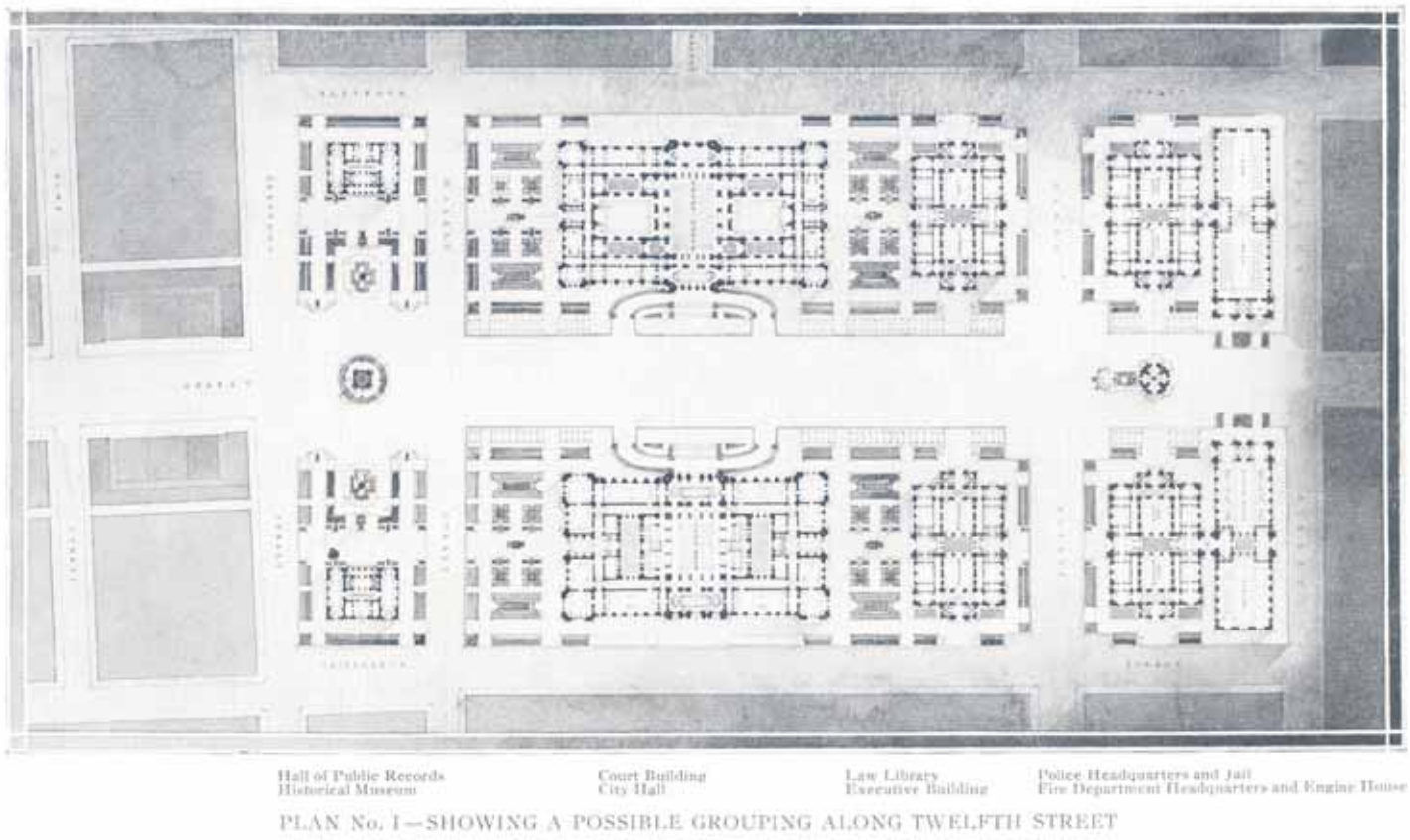


Figure 2: Bartholomew and the beautiful city
Source: From Civic League of St. Louis, *A City Plan for St. Louis. Reports of the Several Committees Appointed by the Executive Board of the Civic League to Draft a City Plan* (1907).
Note: As a young professional, Bartholomew inherited his patrons' plans for beaux-arts, city-beautification projects. He would downplay such aestheticized landscape improvements in favor of a systematic program of land-use controls.

Bartholomew's New England Protestant and agrarian origins must surely have placed him at odds with his rich, urbane patrons—many of whom were Catholic and harbored a living memory of slave owning.[18] As a group, they were dedicated to the most bizarre origin myths to account for their supremacy. The yearly rite of the Veiled Prophet Ball, with its lavish cotillion of sons and daughters of the ruling families, could only have appeared fantastically self-indulgent to the Yankee engineer.[19] Bartholomew, moreover, was a lifelong Republican working for an elite dominated by genteel Southern Democrats. His commitments, then, were less to serve the interests of this peculiar elite than to implement a program of urban management while advancing his new profession. If he was able to realize the interests of this local elite while accomplishing his broader objectives, so much the better for the ambitious young planner.[20] But, for Bartholomew, these "leaders of civic thought and captains of finance" were more often than not a primary obstacle to the realization of his middle-class, managerial approach to planning the ideal, efficient city.[21]

The Industrial City as a Progressive Laboratory

One area where Bartholomew's professional interests clearly overlapped with the needs of his elite patrons was in their conception of the city itself. At the heart of the 1907 plan was a planning agenda that transcended ward politics and bossism, worker and immigrant agitation, the interests of small-time landlords, and the disarticulated efforts of property speculators.[22] Civic League members conceived the city as a great business establishment—not a collection of liberal, republican shopkeepers—a vast corporate entity that required strong central management of the various public assets and pools of capital.[23] "The city," wrote Bartholomew in one of his first major reports on St. Louis, "is an organism whose life and health depend on the successful performance by each part of its necessary function."[24] For Bartholomew, many parts with disparate functions comprised the whole, which, in turn, constituted a total, knowable, organic system—a corporate body, a whole.

This reconceptualization of the city mirrored many of the larger transformations of business and the economy in America toward consolidation and the unified resources of the corporate body.[25] To be sure, planning advocates saw a common set of interests and destinies for all of the city's neighborhoods, or at least they imagined that the interests of the "Central Corridor" elite were roughly coterminous with the interests of the city as a whole. The challenge was to link developments throughout the city into a comprehensive endeavor, to discipline diverse social groups and geographies through the extension of the basic Progressive bargain—acquiescence in return for public amenities and services.[26] The attempt to establish

a strong civic core through monumental public building projects was linked to reform developments in the immigrant neighborhoods. These linkages would not only foster the common good but, in fact, would constitute the very physical evidence of the common good. Not incidentally for Bartholomew, this reimagined city required professional expertise to make wholes out of the disparate parts.[27]

Bartholomew's guiding moral commitment was to a healthy and civil city, peopled by literate and educated nuclear families living in stately detached townhouses displayed along wide, paved, and efficiently organized streets.[28] Planning for Bartholomew was an endeavor to protect and sustain the good community, composed of law-abiding, middle-class families. But, for Bartholomew, this moral vision was continually undermined by the vagaries of industrial nuisance, land speculation, property devaluation, and most notably, in the context of St. Louis, bossism and municipal corruption. Good communities had to be sheltered from the noise, pollution, and social disintegration of the unplanned city, with its tenements, shops, saloons, and factories all jumbled together on an urban terrain run by ward bosses, committeemen, and political operatives.

One strategy for evading this chaos was to relocate at a distance from the densest, most crowded districts into new residential communities. This practice was already underway when Bartholomew arrived in St. Louis, as wealthy and middle-class families steadily relocated westward from the river, first along streetcar lines and then along newly developed roads, highways, and expressways. Bartholomew noted this westward trend in relocation with great alarm, arguing that the flight to the suburbs only extended the worst aspects of cities while bringing higher infrastructure costs and diminished returns from ratable property. Compactness in city development, he argued, was the precondition for the rational and efficient extension of services across the plat—insofar as these could be managed without graft and corruption.[29]

To accomplish his aims, Bartholomew argued that urban property had to contain use restrictions to keep the various functions of land separate, regulated, and predictable. As a reformer and Progressive civil servant, Bartholomew viewed land as part of a broader moral order not as infinitely partible and autonomous. Thus, Bartholomew translated the corporatist conception of the city that he shared with his elite patrons into a land-use practice that sought to challenge the laissez-faire real-estate economy. For Bartholomew and other planners, a landowner was sovereign in the dispensation of his estate but not sovereign in the determination of its uses. Capital investments and physical improvements, Bartholomew felt, had to proceed according to some sense of central management to forestall the decay and confusion of the city and to effect the good orderly community. Since cities exist to confer mutual advantages, according to Bartholomew, community interests of health, safety, and general welfare "supercede the rights of the individual."[30]

Factories in residence districts not only cause decline of property values, but often render adjacent buildings almost uninhabitable by curtailing the supply of light and air.

Figure 3: The visual "evidence" for zoning
Source: From Harland Bartholomew, *Zoning for St. Louis: A Fundamental Part of the City Plan* (St. Louis, MO: City Plan Commission, 1918).
Note: Bartholomew promoted zoning as a land-use control in service of the common good. While zoning pitted the interests of homeowners against those of industrial and commercial operators, planners imagined that the separation of land uses would lead to a more rational, orderly, and valuable landscape.

This, in effect, was the principle behind the incipient practice of zoning.[31] With the application of zoning, no longer would the mansion of a wealthy citizen have to endure the nuisance of a factory, warehouse, or animal depot (Figure 3). No longer would the single family in the detached bungalow have to suffer from proximity to tenements and flophouses. Through zoning, the city could use its police powers to shape and control uses, values, human experience, and presumably, the wider social good. Bartholomew soon became one of the chief proponents of zoning, and St. Louis, among the earliest cities to enact zoning laws.[32]

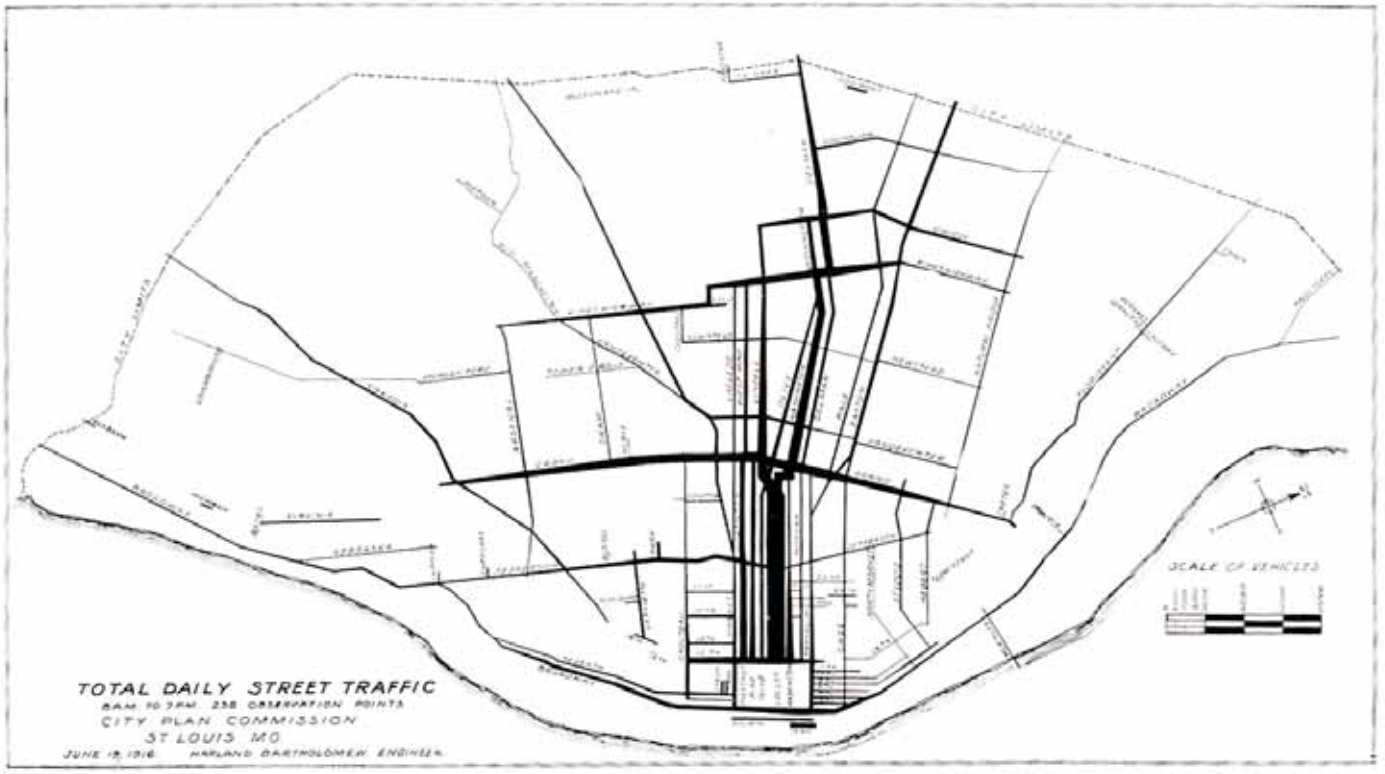
Yet Bartholomew realized that zoning alone could not pull the fragmented city together. The system of public works envisioned by the 1907 plan promised to renew the downtown, but it lacked the coherence necessary to knit the disparate neighborhoods into a corporate city. For Bartholomew, this coherence could be achieved only through systematic applications and improvements; to this end, he set to work on a street plan for St. Louis.[33] Indeed, very soon after his arrival in the city, he commenced

conducting traffic studies like he had done in Newark. This included deriving the volume of traffic along specific routes by counting numbers of vehicles against the vector of time (Figure 4). This produced a particular form of knowledge about urban streets that eschewed concerns for monumental beauty, multimodality, or the vernacular of daily use in favor of the calculus of vehicular movement through space.

Bartholomew's street plan focused less on the signatures of beauty such as circuses, fountains, and promenades (though these elements were present) and more on the functional-material aspects of road construction and automobile circulation. Its purpose was less about beauty than about a centrally planned and integrative transportation network. His road system served as a template to lay atop the riotous old city, bringing it together through an elegant choreography of motion. If ward politics kept St. Louis fractious and divided, Bartholomew would apply his knowledge in transport engineering to knit the city together through professionally planned and expertly delineated motive arteries.[34] Rational circulation would liberate the city of its congestive points, assemble parts into a whole, and not incidentally, distribute the benefits of city planning to all corners of the city.

The capstone in the development of Progressive planning in St. Louis was the passage of the 1923 Bond Issue, the city's $87 million improvement package and, until then, the largest single municipal debt commitment in the nation.[35] In one of the greatest gifts a city ever gave to itself, St. Louis appropriated enormous sums for street improvements, sewer construction, river channeling, parks and playgrounds, public hospitals, fire houses and equipment, rail and auto bridges, public markets, waterworks upgrade, power plant, and the municipal auditorium and downtown plaza and memorial.[36] The line items of the Bond Issue reflected a closely negotiated pact between the elite and the activist elements in the city's Progressive planning coalition. Bartholomew's primary interest was to secure funds for his transportation overhaul. But he realized that his patrons and sponsors—those who effected his employment with the city in the first place—would have to be appeased. To this end, he lent his considerable organization skill to the Bond Issue campaign and, specifically, to the inclusion of line items for grand civic projects for the downtown.[37] To overcome working-class resistance to the enormous levy for Central Corridor improvements, Bartholomew, supported by an activist mayor, Henry Kiel, orchestrated a sophisticated public-relations campaign, complete with a propaganda reel to play in all of the city's movie houses and nickelodeons.[38]

Yet despite the hoopla over the Bond Issue, for most of the 1920s, Bartholomew and his staff had their hands full chasing after rapid development in the western rim of the city.[39] As early as 1900, St. Louis's white, middle-class families began their march westward through the city, out of old neighborhoods like Soulard and Carr Square. Large numbers of them moved out through the 1910s and 1920s, first settling west of Jefferson Avenue and then—with more savings or the passing of a new generation—shift-



Plan No. 4.—The concentration of traffic on certain streets empha sizes the need for developing other streets now existing but not used because of improper width or poor conditions. This is especially true n orth and south from the business district.

Figure 4: Measuring modern motility

Source: From Harland Bartholomew, *The Problems of St. Louis, Being a Description, from the City Planning Standpoint, of Past and Present Tendencies of Growth, with General Suggestions for Impending Issues and Necessary Future Improvements* (St. Louis: Nixon-Jones Printing, 1917).

Note: At heart, Bartholomew was a civil engineer with a passion for traffic. He viewed streets not as multimodal theaters of daily life but as circulatory volumes for moving vehicles rapidly through space.

ing west of Grand Avenue. These families found themselves drawn by the rapidly expanding housing opportunities at the western edges of the city.[40] Meanwhile, inventories conducted by Bartholomew and his staff indicated a rapid rise of multiple-family dwellings. The four-family flat, for example, cropped up in every corner of the city, and multiunit apartment buildings proliferated in new developments throughout the 1920s.[41] In fact, the number of building permits for the four-family flat rose as sharply as all other permits in the city from 1921 to 1925, the period of greatest residential building in the city's history. During that time, some 7,500 permits were issued for four-family flats. Nevertheless, most common were the residential tracts of bungalows and cottages that filled in the city's western margins. In 1921, the city issued 1,500 permits for single-family homes; just four years later, the city issued 8,000, nearly all of which were for developments in western subdivisions.[42]

This was an era of feverish urban growth in St. Louis, as tract after tract of residential and commercial buildings opened up, sometimes to accommodate demand, other times ahead of demand. Bartholomew kept his planners, drafters, and clerks busy monitoring developments, devising service-extension schemes, and negotiating the bewildering pace of growth. Whatever heady gains were made over the past decades in establishing the vestiges of city planning in St. Louis, it was clear to Bartholomew that the driving force of development remained the haphazard, uncoordinated, and barely bridled speculative-real-estate market. "The marvelous urban development witnessed in this country in recent years," Bartholomew noted with a tinge of irony, "has produced serious economic problems." Taking a breather toward the end of 1924 to write a major essay on city planning for the inaugural issue of the *Journal of Land and Public Utility Economics*, Bartholomew declared that "city growth is at once spectacular and amazingly wasteful." Urban planning was the "science and art of properly directing city growth" that would, through its rational application, mediate the chaos of the metropolis.[43]

Nevertheless, the authority and legitimacy of city planning had been legitimized by the late 1920s. Moreover, most of the presumptions that would govern the exercise of planning and redevelopment in the city for the rest of the twentieth century trace their origins to this early phase of Bartholomew's tenure in St. Louis. First and foremost was the presumption of a unitary urban order, a whole that required managed unification of the disparate parts. Planners believed that the city's parts, its neighborhoods, its downtown, its industrial districts, and its waterfront, could be knitted together by disinterested experts who bargained amenities for industrial and social peace. Of course, this bargain was never complete and was never able to transcend the particular class and racial biases of the planners and their patrons in executive government and business.[44] Second, planners and other urban reformers evinced a profound ambivalence toward the plight of the urban poor. In casting a gaze over the tenements, planners

were acutely aware of the role of small-time slumlords and real-estate interests in fostering decline in the housing stock.[45] At the same time, they harbored suspicions of the alien, heterogeneous social universe of immigrant and Southern black enclaves and often supported segregation as a method to check blight. Third, in maneuvering for various reforms, professionals and their patrons realized the importance of controlling debate by shaping the contours of public discourse. To that end, they employed techniques in public relations to foster a shared language of "progress," with varying degrees of success.

Finally, in zoning, planners reconceptualized land as a bundle of rights, shared between owners and the public domain. In practice, however, zoning lacked teeth in many jurisdictions. From Bartholomew's perspective, zoning in St. Louis was nearly a dead-letter ordinance, as planners retained very limited powers of enforcement. Bartholomew joined other planners nationally in a continual koan about the weak and uneven application of the tools available to him, pointing out that "parochial" real-estate interests continued to govern land-use patterns through variances, spot zoning, and other political favors. Zoning, then, was merely a tool and subject to the graces of the political regime in power. It meant little without a transformation (and strong centralization) of municipal government.

But zoning as a planning tool was less important for what it accomplished on the ground (the map was never the territory) than for what it represented as an intellectual development. It was a dramatic departure from liberal concepts of land, which saw the greatest civic good emerging from the autonomous participation of every plot of land in market transaction. The zoned city sought to capture value and to enhance markets through planned, systematized, and restricted exchange of property. Indeed, zoning had its corollary in corporate capitalism and Taylorist management, in that it sought to save the city from the chaos of a strictly liberal and competitive plat through strong central organization.[46] In the same way that a corporation mobilizes disarticulated interests into a single legal body to pool resources and reduce risk, zoning organized individual plots of land into an urban body—a corporate city with common civic purpose. And just as the corporation required central oversight realized through Taylorist principles, zoning and its enforcement required a professional knowledge core, extensive research, and continual monitoring for adjustment. Through zoning, planners came to imagine that land uses could be homogenized along predetermined taxonomies such as "residential," "commercial," and "industrial."

If planners could use the police power to place restrictions on property and to yield homogeneous land uses, it was no large leap to imagine other interventions. Zoning created the context in which planners could begin to view the city as inherently malleable—both spatially and socially. If property was no longer seen in strictly autonomous terms, then property could be assembled into larger contiguities that transcended the speculative plat.

Large assemblies of land could be redeveloped to support any number of uses, all in aid of a planned and managed urban landscape.

The Great Depression and the Production of Planning Knowledge

Bartholomew and his staff demonstrated that private investment needs the support of public planning to achieve efficiencies and to direct resources in such a way as to overcome cycles of boom and bust. The Great Depression of the 1930s elegantly underscored that point. In the context of a largely unregulated and speculative economy, dramatic shifts in consumer demand by the growing middle class led to a rapid, uneven, and ill-timed restructuring of investment, production, and employment through the 1920s. Meanwhile, shifts in the distribution of incomes did not occur rapidly enough to absorb the overstimulated output of big-ticket leisure items. At the same time, significant sectors of the American economy had matured, unable to expand without exogenous sources of investment, resources, or markets. When the speculative bubble in high-end consumer durables collapsed with the 1929 stock market crash, vulnerable sectors of the economy were poorly positioned to generate a recovery, and the crisis spread through consumer goods, to finance and credit, and finally, to basic production.[47]

In St. Louis, much speculation had occurred in the housing stock, which had expanded rapidly through the 1920s with little coordination, far outstripping the capacities of the small plan department to determine zoning and infrastructure requirements. The result, at least as Bartholomew and his staff viewed it, was an overproduction of housing in the western periphery of the city, a stagnation of building in the urban core, and a gap-thoothed and uneven population spread. As the Depression deepened through the early 1930s, the sight of homeless families and beggars, once confined to skid row, appeared everywhere, and the occupied city lapsed into crisis.[48]

While the stock market crash and the decade of misery that followed took a serious toll on American cities and their working- and middle-class residents, planners must have breathed a silent sigh of relief. Although Bartholomew's private practice fell on hard times until 1936, the crisis unleashed by economic depression actually gave him a state of pause after the boom years of the previous decade, freeing up time for revisiting issues of land use and infrastructure development.[49] With housing starts plummeting after 1929, Bartholomew and his staff observed a cessation of the chaotic growth of the southwest and northwest regions of the city. Armed with Bond Issue capital, federal largesse, and broad political support, the St. Louis plan commission kept alive the city's public building program, even while the old neighborhoods to the south and north of downtown fell into

physical decline. "There is an opportunity now," Bartholomew wrote to his colleagues in 1932, "to consider and study fundamental problems which were ignored in the rush of individual planning movements."[50]

While the Depression brought on a stasis in the national economy, it was a period of intellectual ferment for professionals such as social workers, economists, industrial engineers, actors, graphic artists, screenwriters, and city planners.[51] Not only did the National Recovery Act provide funds to keep tens of thousands of professionals employed through the worst of times, the very nature of the national political response favored the role of experts in the coordination of economic reconstruction.[52]

This national recovery apparatus would prove to be a training ground for planners from varied disciplinary and professional backgrounds, who streamed in and out of Washington over the course of a decade.[53] In 1932, for example, Bartholomew joined other prominent planners such as James Ford and Morris Knowles and landscape architect Josephine Morgan on an advisory committee chaired by President Roosevelt's uncle Frederic Delano, head of the National Resources Planning Board.[54] The committee's charge was to establish planning and design guidelines for New Deal residential developments such as Greenbelt Towns. The Delano and Bartholomew association went back to the work both men did in the 1920s on the Regional Plan of New York and Its Environs.[55] Bartholomew and other prominent city planners such Alfred Bettman of Cincinnati purveyed their already deep and long-standing Washington connections into frequent consulting junkets for agencies from the National Capital and Parks Planning Commission to the Department of the Interior.[56]

With few prospects in sight for immediate recovery, economists, resource analysts, and city planners began to assume slow growth and steady-state systems in their models for development. Much like the work of John Maynard Keynes in the field of economics, Bartholomew and other city-planning professionals foresaw a not-too-distant future in which development proceeded in lockstep with a fully managed urbanism.[57] City planners across the country began to argue that the building boom of the 1920s rested on the fiction that land and services were cheaper in the suburbs—which proved to be true only in the very short term. In the longer term, however, the costs were tremendous: new suburban areas exploded in advance of infrastructure and at the expense of the inner core of cities. Planners worked overtime in the 1930s to convince real-estate companies and lending institutions that the deepening crisis of the urban built environment would have a disastrous effect on the economy. As neighborhoods reeled from disinvestment, planners argued, assessments fell and properties lapsed into tax delinquency. Such neighborhoods became a net drain on city services, returning far less in taxes than they required for municipal upkeep. As a result, the tax burdens for better-off neighborhoods in the city increased, with potentially deleterious long-term effects for mortgage holders and lenders with a vested interest in increasing property values. Ram-

pant and uncontrolled growth in housing markets, like consumer markets generally in the 1920s, had resulted in a highly unstable and untenable political economy. Capitalism had produced, in effect, its own best argument for managerial, coordinated, and regulated planning.[58]

Within this intellectual context, Bartholomew produced one of the most influential books on urban planning of its day, *Urban Land Uses*. It was one in a line of important monographs that served as planning primers and anchored the profession to a literary core.[59] Published in 1932 as part of the Harvard City Planning Series, with a preface by series editor Theodora Hubbard and Harvard School of Planning Chair Henry Hubbard, *Urban Land Uses* gathered and organized over a decade of research into a single volume.[60] The study provided the proverbial textbook approach to the systematic evaluation of land use for the purposes of zoning and comprehensive planning.[61] At the same time, Bartholomew seized the opportunity to focus his ongoing attack on unregulated urban development. "Too often," he began, "the American city is considered as a vast unlimited speculation in real estate." Speculation, he argued, had led to vastly inefficient distribution of land uses, with the overall effect of overproduction on the periphery, decay in the core, and an overburdened system of urban services.[62]

Bartholomew proposed to correct deficiencies in land use not through the application of a blanket solution for all cities but rather through the exertion of a common methodology adapted to the particular case of each city. "This research," he wrote, "neither attempts to show nor to imply that each city should be made an exact counterpart of every other. It deals with quantities of land absorbed for various purposes," which is different for every location.[63] Planning, he declared, is the "definite science" of proportions and relationships, which can be determined only through specialized research by professionals trained in the application of methods to concrete, material, and specific cases.[64] Thus, Bartholomew outlined not only a methodology of planning but also the rationale for the reproduction of the profession.

While sparse and turgid in prose, the book's matter-of-fact tone belies a powerful set of ideas rooted in a firm moral and ideological conception of the proper urban order. As historian Eric Sandweiss points out, Bartholomew had come to envision the city as a natural outcome of "definite laws," akin to an ecological system, rather than a site of political and economic contest or an arena shaped by the exertion of the planner's will.[65] Confident in the existence of underlying laws, Bartholomew did not bother to conduct his study through random sampling or other scientific means, nor was he worried as to whether the aggregation of data sets into averages and ratios could reasonably be described as "laws" or norms of urban land use.[66] Despite its conceptual flaws, the book provided a model of specific methods for the inventory of every square foot of urban land in cities and a variety of tools for analyzing those land uses in the conduct of urban policy (Figure 5).

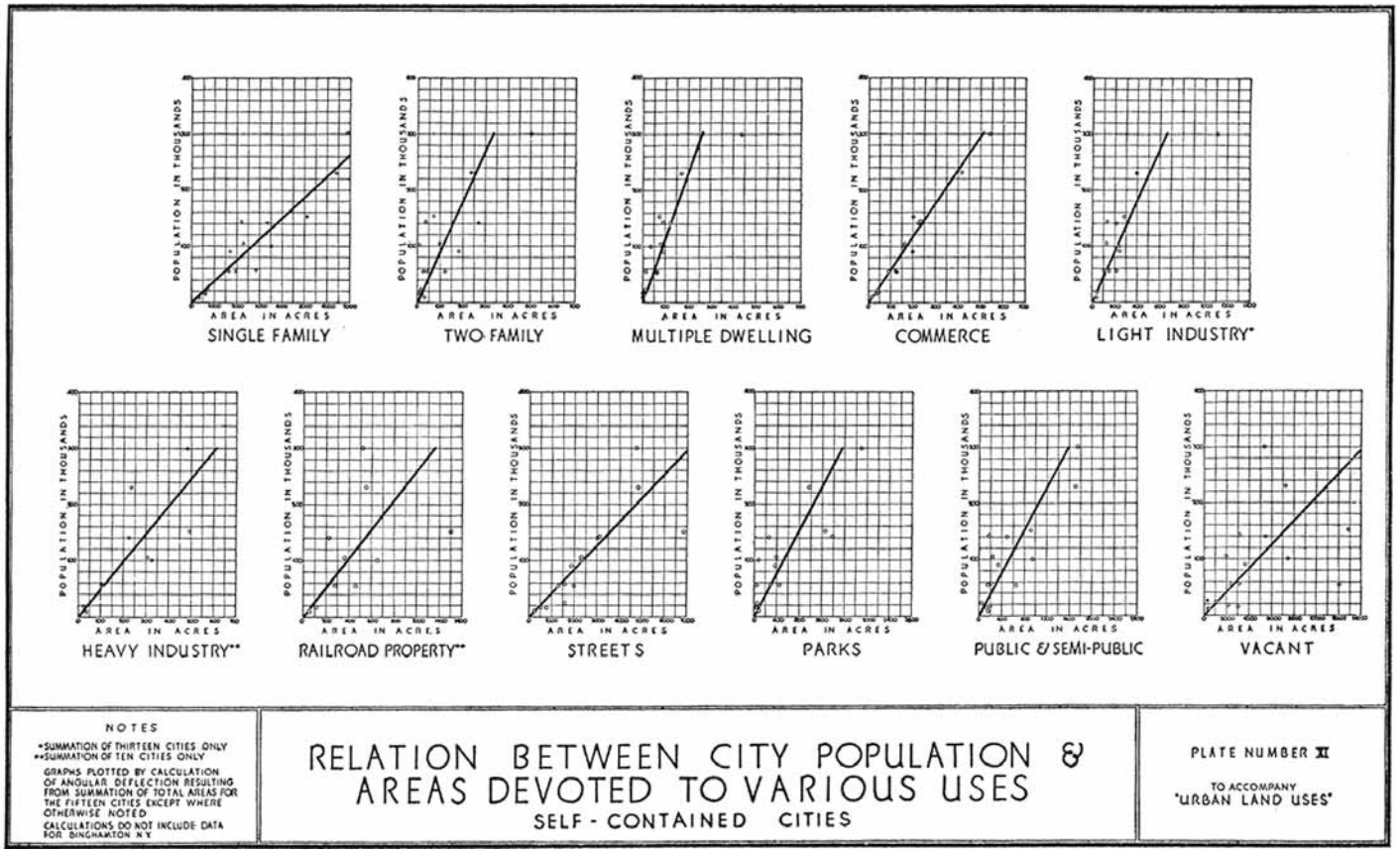


Figure 5: Land uses as spatial ratios

Source: From Harland Bartholomew, *Urban Land Uses. Amounts of Land Used and Needed for Various Purposes by Typical American Cities. An Aid to Scientific Zoning Practice*, vol. 4 (Cambridge, MA: Harvard City Planning Studies Series, Harvard University Press, 1932).

Note: Bartholomew used the publication of his first book to announce the "discovery" of constant ratios of land uses in cities, but the highly selective nature of his sampling method underscores the descriptive nature of his research.

The New Deal and Applied Planning Research

As city planners around the country clamored for funds and tools to keep their cities afloat, both the Great Depression and the subsequent world war brought federal and city governments into a new, problem-solving partnership.[67] Prior to the 1930s, and despite the emergence of federal trust-busting and social reform legislation, most areas of economic growth and development proceeded with little national coordination or oversight. Local governments, creatures of conservative state legislatures, held little authority or resources to direct the engines of recovery. The 1930s Depression, however, provided the context within which policy makers and planners organized national coordination efforts, as well as innovative experiments in federal-city cooperation. The Urbanism Committee of the National Resources Planning Board not only promoted the idea of city planning to municipalities around the country but also authored the first significant study of national urban trends.[68] Many future city planners cut their teeth in the alphabet soup of agencies enabled by Title II of the National Industrial Recovery Act of 1933, in particular the Civic Works Administration, the Public Works Administration, and the Works Progress Administration (WPA).[69]

While these efforts never amounted to a national urban policy, cities received a number of short-term and long-term benefits from the fiscal largesse of the New Deal state. In the short term, millions of urban workers left the relief rolls for civil works projects launched through federal underwriting and municipal funds. In January 1940 alone, ongoing relief projects sponsored by the St. Louis city government provided temporary work for 11,000 men and women.[70] In the long run, cities around the country gained enormous benefit from civil engineering and public building projects, such as levees, dams, sewers, bridges, auditoriums, schools, playgrounds, swimming pools, government buildings, libraries, park improvements, and proximate state recreation areas.[71] As war loomed in the late 1930s and early 1940s, the need to work with federal, military, and state officials on civil defense and war production gave city planners still further experience in mobilizing land and personnel into a public purpose.[72] Finally, the housing crisis created by the drop in housing production during the Depression, and amplified by overcrowding in war production centers, resulted in the eventual development of a federally backed, locally administered public housing program.

Nationwide recovery programs launched under the New Deal provided money and personnel to the St. Louis planning department for a variety of projects over the course of a decade. St. Louis citizens gained the Kiel Opera House and the Jewel Box in Forest Park, the local airport and waterworks projects, and the clearance of the riverfront for the creation of the Jefferson National Expansion Memorial. Between 1932 and 1936 alone, $68 million flowed into New Deal works projects in St. Louis.[73]

For Bartholomew, the promise of the New Deal to underwrite infrastructure and public building projects was alluring enough, but the availability of unprecedented sums for basic research and analysis must have seemed a godsend. With newly available time and resources, bolstered by a national mandate to plan and regulate American economic life, Bartholomew converted his small municipal appendage into St. Louis's first great urban research institution. Much of this research was conceived and undertaken to establish a baseline system of measurements against which planners could determine the social and physical elements of city neighborhoods and track their fate over time. With WPA funds, Bartholomew's planning department launched the largest land-use research project undertaken in the city's history—an exact accounting of every square foot of land in St. Louis. In so doing, the planning department could document the "total amount of land used for all of the various purposes . . . [affording] the only scientific basis upon which a revision of the zoning ordinance can be predicated."[74]

In 1932, Bartholomew authored the first application from the city of St. Louis for federal research funds, secured in 1933 under the inauspicious title of Federal Emergency Relief Administration Project no. 72. Project no. 72 provided eleven employees working through 4,908 "man-hours" to conduct property-use surveys and to draft baseline city maps, over which any number of subsequent maps could be traced to represent demographic data. St. Louis Relief Committee Works Division Project no. 128 provided material and travel costs to undertake surveys and mapping throughout the city. Drafters and architects hired under these projects devised both blue-line and black-line maps at a scale of 1,000 feet to the inch.[75] For Bartholomew, the graphic representations and the data collected through "the courtesy of the Works Progress Administration" and other agencies would be of "incalculable value in years to come for approaching problems of housing and zoning."[76] By 1938, St. Louis had received nearly $2 million in WPA funds for research, ranking seventh among all cities in New Deal expenditures.[77]

Bartholomew's staff increased and shrank with a periodicity related to the length and terms of New Deal funding contracts. When a new contract would commence, the skeletal staff of the planning department would swell with the likes of interviewers, clerical supporters, transcribers, drafters, surveyors, engineers, and architects. Many came from academic units in the metropolitan region, such as the School of Engineering at Washington University and the Department of Social Service at St. Louis University. The projects that these temporary professionals labored on were large and involved. For example, in 1935, the plan commission landed a one-year contract from the WPA (Project no. 1443) to support ongoing projects and to undertake a range of new studies. Project 1443 included a municipal cost study reckoned by district, city-block maps showing baseline land uses, property-absorption surveys, fine-grained property-use maps (200′ = 1″),

building line maps for future street-widening programs, and miscellaneous drafting and data-crunching projects.[78] Project 1443 provided $9,322 for salary costs in support of twenty-six employees working through 14,456 man-hours. In 1935 alone, the plan commission was able to authorize and complete fifty-two specific drafting studies, which yielded demographic maps of a wide range of social and economic indicators by district, from juvenile delinquency and city workhouse rates to infant mortality, tuberculosis morbidity, syphilis cases, and asylum admissions.[79]

Perhaps most ambitious of all was the Property Use Survey, conducted from 1931 to 1935 to support the creation of a general urban land policy for St. Louis. Organized under a grant from the Public Works Division, the survey reckoned "the total amount of land used for all of the various urban purposes," providing a baseline for future measurements of change in the city's residential, commercial, and industrial mix. For Bartholomew, the survey had to be exhaustive and total, not statistical; analyses could later derive from the data set created by the survey. The survey began with an inventory sheet to be filled in by the surveyor, the information from which would then be transferred onto 8.5″ × 11″ city-block maps. These maps would be bound together according to twenty-six (later fifty-two) statistical districts, to be known as "neighborhood units" after Clarence Perry's work.[80] These so-called neighborhoods would, in turn, provide the basis of data gathering, analysis, and knowledge production in support of the application of land-use controls. Planners could then geocode their conceptions of social pathology, mapping social data into space by calibrating indices such as race, disease, and crime to their distribution across the neighborhood units (Figure 6).

Plan staff would update information for the units periodically through annotations made from Sanborn Fire Insurance Atlases and Building Permits. The Property Absorption Survey was similar and provided a composite set of figures for total amounts and values of land given over to various preselected purposes: residential (single-family vs. multifamily), commercial, industrial, and infrastructure.[81]

Bartholomew's urban research enterprise was not simply basic research for its own sake; the project, completed and published in 1936, served the production of an urban land policy for the city of St. Louis.[82] The policy drew on the extensive land-use information gathered through the property inventories and absorption surveys. To illustrate the need for a policy, Bartholomew spatialized the city's revenue-expenditure data. He directed his staff to gather figures for tax revenues produced by every neighborhood unit of the city and for the amount of services absorbed by every unit. Through this work, he presented a picture of tax-gobbling slum districts draining revenues from middle-class and wealthy neighborhoods for the subsidization of the slumlords. He constructed a picture of the whole of the city as an interrelation of fiscally unequal parts, united through a system of credits and debits (Figure 7).

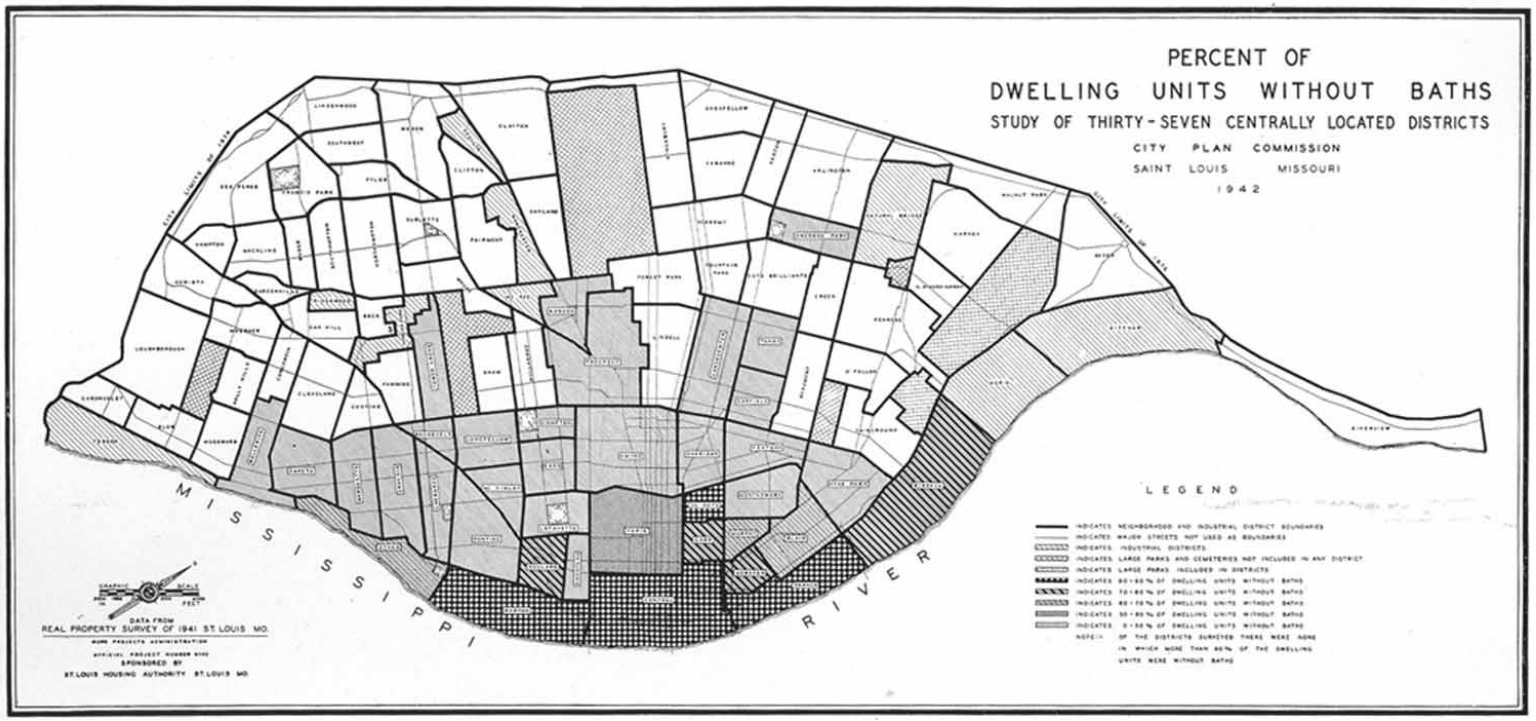


Figure 6: The pathology of urban space
Source: From City Plan Commission, *St. Louis after World War II* (City of St. Louis, 1942).
Note: The division of the city into "neighborhood units" provided a template for the selection and mapping of pathologies such as syphilis incidence, workhouse cases, juvenile crimes, pestilence reports, and dwelling conditions. These spatially located pathologies, in turn, justified planning interventions.

TABLE NUMBER ONE

WORKS PROGRESS ADMINISTRATION
OFFICIAL PROJECT NUMBER
1443

COMPARISON OF AVERAGE ANNUAL COST OF MUNICIPAL SERVICES AND INCOME RECEIVED FROM SELECTED DISTRICTS
APRIL 1930 TO APRIL 1935

CITY PLAN COMMISSION
ST. LOUIS, MISSOURI
AUGUST, 1936

		Entire City	Downtown Residence			Mid-town Residence		Apartment Hotel Residence	Newer Residence	Downtown Business	River Front	Industrial			
			N.Market-Tyler Blair Tenth	7th-18th Chouteau-Park	14th-20th Franklin-O'Fallon	Mor'ford-Grand Utah-Arsenal	Fair-Marg'tta-Newstead Carter	K'way-DeB'viere Lindell-Delmar	Holly H'ls-Bates Grand-Mor'ford	12th-B'dway Clark-Franklin	Third-River Wash'ton-Poplar	Barton-Dorcas B'dway River	T. Grove-39th McRee-Chouteau	K'way-Bircher N. Bridge-City L'ts	River-9th Branch-Sal'bury
POPULATION NET AREA—ACRES		821,960 31,033	3,452 37.13	8,365 101.22	7,235 66.45	9,269 183.17	5,032 87.93	8,965 271.85	4,925 226.39	3,886 127.74	667 77.02	2,811 116.58	3,079 180.86	559 641.20	935 141.57
Yearly Cost Of Government	Total	40,945,527	139,835	469,470	384,201	293,198	152,920	407,622	232,523	1,761,956	176,215	181,267	204,863	207,849	112,679
	% Of Income	.....	231	231	251	73	100	52	82	41	80	140	85	59	71
	Per Capita	49.81	40.50	56.12	53.10	31.64	30.39	45.48	47.21	453.39	264.19	64.48	66.54	371.81	120.51
	Per Net Acre	1,319	3,766	4,638	5,782	1,601	1,739	1,499	1,027	13,793	2,288	1,555	1,133	324	796
Yearly Income In Taxes	Total	40,679,007	60,605	203,510	152,980	399,385	152,519	786,999	284,857	4,343,539	219,453	129,124	241,801	354,036	159,755
	% Of Cost	.....	43	43	40	136	100	193	123	247	125	71	118	170	142
	Per Capita	49.50	17.56	24.33	21.14	43.09	30.31	87.79	57.84	1,117.74	329.02	45.94	78.53	633.33	170.85
	Per Net Acre	1,311	1,632	2,011	2,302	2,180	1,735	2,895	1,258	34,003	2,849	1,108	1,337	552	1,128
Yearly Excess In Tax Collections	Total	.....	.....	.....	.....	106,187	.....	379,377	52,334	2,581,583	43,248	.....	36,938	146,187	47,076
	% Of Cost	.....	.....	.....	.....	36	.....	93	23	146	25	.....	18	70	42
	Per Capita	.....	.....	.....	.....	11.46	.....	42.32	10.63	664.32	64.84	.....	12.00	261.51	50.35
	Per Net Acre	.....	.....	.....	.....	580	.....	1,396	231	20,210	562	.....	204	228	333
Yearly Deficit In Tax Collections	Total	.....	79,230	265,960	231,221	.....	401	.....	.....	.....	.....	52,143	.....	.....	.....
	% Of Cost	.....	57	57	60	.....	.....	.....	.....	.....	.....	29	.....	.....	.....
	Per Capita	.....	22.95	31.79	31.96	.....	0.08	.....	.....	.....	.....	18.55	.....	.....	.....
	Per Net Acre	.....	2,134	2,627	3,480	.....	4	.....	.....	.....	.....	447	.....	.....	.....

Figure 7: The city as a relationship of credits and debits
Source: From City Plan Commission, *Urban Land Policy* (City of St. Louis, 1936).
Note: Viewing the interrelation of the city's neighborhoods within a calculus of credits and debits disposed planners to devalue entire swaths of the city.

To forestall what Bartholomew concluded would be an inevitable decline, the policy recommended that the city be carved into neighborhood units, roughly contained by bordering major thoroughfares. In each neighborhood, unit planners would bring a concerted program to bear. The tools of this program would include enforcement of zoning laws and codes, smoke abatement, a minimum housing standards ordinance, property rehabilitation, and where applicable, slum clearance and reconstruction with public housing.[83]

In practical terms, the *Urban Land Policy* achieved little on the ground, at least in the short run. But it did prepare the city for the slum-clearance program that would unfold over the next two decades. Toward that end, the St. Louis slum-clearance agenda received a boost with two national events that came in close succession. The first was passage of the 1937 Housing Act. The act collapsed all federally backed public housing initiatives into the newly created United States Housing Authority headed by prominent New Dealer and city-planning advocate Nathan Strauss.[84] Though the act was an outcome of compromises that weakened its scope as an instrument of social change, it was a boon to city planners in that it required localities

to demonstrate that public housing allotments would be integral to an overall master plan. The second major boost to St. Louis planning came with the dedication of funds to move ahead with the city's first major slum-clearance project, the Jefferson National Expansion Memorial. The national park required clearance of the city's old riverfront blocks and provided a dramatic example of Bartholomew's conception of the city as a corporate entity to be planned and manipulated on a grand scale. In this project, local planners gained tremendous experience as they worked with federal officials in exercising eminent domain, condemning properties through the courts, planning infrastructure changes, organizing contractors to proceed with demolition, and grading and preparing the land for a new, singular use as a monumental footprint.[85]

The Commencement of War and the Planning Mandate

In 1939, for the first time since the launching of the WPA studies, the St. Louis plan commission received notice from Washington that funds would be temporarily halted. For a period of six weeks, the city was forced to lay off many employees whose salaries depended on the flow of federal money. Even Bartholomew's half-time position as city engineer came under scrutiny as the city faced an ever-deepening fiscal crisis.[86] While congressional wrangling and deal making eventually restored funds to the WPA, the era of free-flowing funds for research was clearly on the wane.[87] Moreover, as the United States mobilized for war in 1940 and 1941, the plan commission was forced to compete with defense industries for qualified professional and blue-collar workers.[88] Finally, on July 1, 1942, an act of Congress eliminated the WPA as a line item in the federal budget. The St. Louis plan department finished out the last of its WPA contracts on July 20, 1942, at which time Bartholomew terminated the remainder of the WPA staff in the employ of the commission.

Nevertheless, by 1940, the contours of a modern professional planning practice were fully consolidated in St. Louis. Much had been done through the 1930s to organize the exhaustive inventories of knowledge about St. Louis upon which future plans would depend. Despite the fact that the loss of funding "greatly curtailed" the research and analysis program of the plan department, only fifteen residential and eight industrial districts out of ninety-nine total districts remained unsurveyed.[89] By 1940, the St. Louis planning staff had completed enough work to support the overhaul of the zoning law and the development of a comprehensive plan.[90]

Moreover, even while the loss of federal funds and personnel brought the bulk of research efforts to a halt by 1942, a concerted public-relations campaign kept professional planners and their work in the spotlight. Bartholomew and his staff devised numerous symposia, exhibits, and conferences through the late 1930s and early 1940s, all designed to showcase

the efforts of planners and the necessity for coordinated action to save St. Louis from the "creeping blight" of the slums. In November 1937, for example, the plan commission mounted an exhibit at O'Fallon Public School to display work completed with WPA funding, highlighting in particular the maps drawn to represent social and physical decay in the city's inner core. In May 1940, the city organized a weeklong series of events dubbed "This Work Pays Your Community Week," held in the Municipal Auditorium.

That same year, planners and citizen housing advocates organized the first "Forum on Reconstruction and Rehabilitation of Central Urban Areas." Structured around a core exhibit and speakers, the forum showcased the "many phases of city planning work prepared by the Commission since it started functioning in 1916." Forum participants viewed displays of the WPA planning studies mounted in the meeting-hall lobby and attended afternoon and evening sessions. In the afternoon, Plan Commission Chair G. J. Nooney presided over a panel on the "Reconstruction of Obsolete Areas," which included speakers with experience in slum clearance. Charles Ingham, secretary of the American Institute of Architects, presented on "The Lessons of Chatham Village" in Pittsburgh, while Thomas Holden, vice president of F. W. Dodge Corporation, discussed "The Proposed Urban Redevelopment Corporation Law of New York City." Bartholomew presided over the evening session on neighborhood rehabilitation, which included an opening speech by Mayor Dickmann, a presentation by a representative from the Home Owners Loan Corporation in Washington, D.C., and a talk by Massachusetts Institute of Technology Dean of Architecture Walter MacCormack on "A Long Range Rehabilitation Program for the East End of Cleveland, Based on White and Colored Cooperation."[91]

Even as the city mobilized for war, organized people and materials for production, and sent troops abroad to fight in Europe and in the Pacific, local reform advocates continued their fight against the slums. In 1944, they received a big public boost for their efforts when the American Planning and Civic Association held its Citizens Conference on Postwar Planning in St. Louis. Organized to commemorate the fortieth anniversary of the founding of the American Civic Association in St. Louis during the 1904 World's Fair, the conference featured two days of exhibits, talks, and panel discussions. Attended by representatives of some fifty agencies and civic groups around the nation, the conference was also open to the general public, and many St. Louisans came specifically to view the sixteen-panel, 500-square-foot exhibit on "Our Postwar Cities." The conference provided a national forum for planners, architects, engineers, federal officials, and civic interests to discuss a broad range of urban problems and solutions. Topics at the forefront included reconstruction laws, zoning, housing standards, postwar employment, metropolitan growth policies, highways and mass transportation, and national resource coordination. Bartholomew capped the conference with a large Saturday tour of St. Louis, highlighting

many of the major civic improvements undertaken over the previous two decades.[92]

Community interest in planning had grown substantially during the Depression and increased during World War II, partly as a result of national recovery and mobilization efforts and partly from intensified local public relations, exhibits, and conferences. "While the war has caused reduction of staff," Bartholomew wrote in his 1944 report to the plan commission, "the general tempo of planning has been increased considerably." Moreover, he suggested, "there is now widespread interest in planning as a means of developing worthwhile projects for postwar employment."[93] Requests for information and speakers from the St. Louis plan department increased dramatically in the 1930s, coming from locally based groups as well as organizations around the nation. By 1940, St. Louis planners were receiving requests from government agencies around the world, including Australia, Brazil, Canada, China, England, Hawaii, Japan, the Philippines, and Uruguay.[94] At home, representatives of the plan commission and its department staff addressed organizations as diverse as the Advertising Club, the YMCA, the Junior League, various high schools and colleges, Washington University School of Architecture, and the League of Women Voters. Requests for information rose from 307 in 1935 to 1,100 in 1945 and reached such a peak in 1946 that the city created a new position for the plan department in neighborhood organization and public relations.[95] By the end of the war, planning staff met regularly with high-profile civic groups to bolster the city's agenda for dramatic intervention to combat the slums.[96]

A decade of New Deal recovery efforts, as well as the more immediate requirements of war mobilization, had normalized planning as a function of both federal and city government. The stresses and strains on urban, rail, industrial, and waterway infrastructure led to heightened awareness of planning among ordinary citizens. As St. Louis emerged as a key inland war production center, hundreds of military and civilian planners, engineers, accountants, scientists, and specialists flooded the city and surrounding towns and bases.[97] Industrial planners oversaw the retooling of factories to produce ordinances and ammunition. The Army Corps of Engineers worked furiously to rechannel waterways for increased shipping, to improve flood protection to protect war production facilities, and to mobilize barge transportation for materials, parts, and fuel resources.[98]

Bartholomew and the Future of City Planning

By the end of the war, St. Louis and the nation had grown accustomed to the value of macro-scale coordination and planning bolstered by the technical research of trained professionals. In this context, city planning emerged from the war as an established feature of municipal government in St. Louis, one with broad support among civic groups and organizations. In

1946, for example, a planning exhibit at Famous-Barr department store in downtown St. Louis drew "many thousands of persons" to view maps, charts, and drawings detailing postwar urban reconstruction.[99] The plan commission and its staff had become increasingly integrated into a range of city departments and public projects, including the newly formed Metropolitan Planning Association, the Mayor's Reconstruction Committee (later the Anti-Slum Commission and, still later, the Land Clearance for Redevelopment Authority), the Inter-Racial Relations Commission, the St. Louis Air Traffic Board, and the Jefferson Memorial Coordinating Committee.[100] While still politically hamstrung by a lack of enabling legislation and funds to undertake large-scale projects, the plan commission remained a high-profile element of municipal government, and Bartholomew's slum-clearance agenda gained important allies. The commencement of the "postwar reconstruction job" he had so carefully described only awaited passage of the 1949 Housing Act. The modern city planner had arrived on the national stage.

But the quality of urban knowledge and the technocratic identity that governed the profession of city planning by the end of World War II contained serious defects. Bartholomew was by no means responsible alone for these shortcomings, but he had played a major role in developing and broadcasting the methods, techniques, and persona of the modern city planner. Although wrapped in the mantle of scientific disinterest, Bartholomew's modernist approach to city planning was rooted in a moral vision, which, in turn, conditioned the urban knowledge that he deemed valuable for the purposes of city planning. In St. Louis, he had found the proving ground he needed to test this vision. For Bartholomew, the city existed to provide for the common good; however, the common good that was revealed in his plans betrayed a commitment not to a universal mien or pluralist democracy. Rather, Bartholomew's plans envision a world of white, middle-class citizens in single-family detached homes and working-class families beneficently accommodated in mass housing on curvilinear streets. In each case, the civic good came from expert-driven physical interventions. The quality of the urban knowledge that he gathered reflected these commitments; he coded social pathologies and environmental decay against the city's political geography, mapping an agenda for large-scale reorganization of the very terms of twentieth-century city life.

Like most planners of his day, Bartholomew held as an article of faith that the city was essentially knowable and that knowledge of the whole would come through a study of all of its disparate parts. To this end, he developed a method, "total knowledge," through land taxonomy, inventory, and analysis. This supposedly "total" comprehension would support the derivation of land-use ratios that would, in turn, support a system of land-use designations and controls. From this, a view emerged of the city as an amalgam of manipulable parts to be assembled and disassembled as per the requirements of land-use analysis. For Bartholomew, the connecting thread of the

Figure 8: Urban knowledge and the malleable city
Source: From the *Comprehensive Plan for St. Louis*, 1947.
Note: Bartholomew imagined the reshaping of land uses on a vast scale. Here, the city plan argues for the reconstruction of the DeSoto and Carr neighborhoods. By the mid-1950s, this area would contain the bulk of public housing in St. Louis.

knowable city was not some shared value of urbanism but rather an artifact of civil engineering—the infrastructure, particularly the system of streets and roads that the planner lays atop the landscape as a template. Between these points of connection lay the vast and jumbled residential, industrial, and commercial developments, bounded by major thoroughfares. For Bartholomew, these inchoate districts became intelligible as "neighborhoods," framed by the arbitrary web of roads and imposed atop vernacular associations and understandings of place. Finally, if infrastructure provides the connectivity, then the neighborhoods themselves can be assembled and disassembled, erased, cleared, and reorganized (Figure 8).

In St. Louis, much of this planning vision unfolded in the scrape of bulldozers and the billows of plaster dust. In the postwar era, Bartholomew's urban laboratory, St. Louis, would see its fabric rent apart by one of the largest slum-clearance programs in the nation. The city would clear some 1,000 acres of tenements, taverns, shops, churches, synagogues, dance halls, cinemas, factories, and warehouses. Replacing these "slums" were regiments of housing projects, expansive industrial parks, new university campus plans, and modernist middle-class residential towers. The knowable city had become the malleable city, formed and delineated and clarified using the public purse.

In the end, Bartholomew's urban laboratory was more complex and elusive than he ever imagined. While the modernist planning practice he

helped to create gained substantial ground in the postwar decades, the city itself grew ever more politically convoluted, racially divided, and desperate. Bartholomew had labored for decades to develop the concepts, tools, and means to execute plans, but in the end, his plan department still lacked political power. The Housing Acts of 1937 and 1949 provided stronger authority to carry out plans, but this authority would be vested not in the city's plan commission but in the municipal corporations chartered by the state to undertake slum clearance. In a very short time, the center of gravity of planning shifted from Bartholomew's purview to the Housing Authority and the Redevelopment Authority. Ironically, these authorities consolidated new powers at the very moment that the city began its long decline through population loss and systematic disinvestment. In the end, the quest for total knowledge was an illusory one, and the planning strategies derived from this quest proved mute in the face of the massive transformations that shook postwar St. Louis to the core. Bartholomew had achieved his long-sought power to manipulate the city's parts, but the whole remained beyond his grasp.

Notes

1. John Fairfield, *The Mysteries of the Great City: The Politics of Urban Design, 1877-1937* (Columbus: Ohio State University Press, 1993), 147-152.

2. This is consistent with the interpretation of planning in M. Christine Boyer, *Dreaming the Rational City: The Myth of American City Planning* (Cambridge, MA: MIT Press, 1983).

3. David A. Johnson, "Regional Planning for the Great American Metropolis: New York Between the World Wars," in *Two Centuries of American Planning*, ed. Daniel Schaffer (Baltimore: Johns Hopkins University Press, 1988). See also Eldridge Lovelace's professional vitae, *Harland Bartholomew: His Contributions to American Urban Planning* (Urbana: Department of Urban and Regional Planning, University of Illinois, 1993), 21-26.

4. Greg Hise and William Deverell, *Eden by Design: The 1930 Olmsted-Bartholomew Plan for the Los Angeles Region* (Berkeley: University of California Press, 2000); and Blaine Brownell, "The Commercial-Civic Elite and City Planning in Atlanta, Memphis, and New Orleans in the 1920s," *Journal of Southern History* 41, no. 3 (August 1975): 339-68.

5. Norman J. Johnston, "Harland Bartholomew: His Comprehensive Plans and Science of Planning" (Ph.D. diss., University of Pennsylvania, 1964), 15-19; Alan Lessoff, "Harland Bartholomew and Corpus Christi: The Faltering Pursuit of Comprehensive Planning in South Texas," *Planning Perspectives* 18, no. 2 (April 2003): 197-232; and Daniel Serda, "Planning Community and Renewal: Harland Bartholomew Associates and the 1951 Armordale Redevelopment Plan" (Master's thesis, MIT, 1996).

6. Eric Sandweiss, *St. Louis: The Evolution of an American Urban Landscape* (Philadelphia: Temple University Press, 2001); and Mark Abbott, "The Master Plan: The Life and Death of an Idea" (Ph.D. diss., Purdue University, 1985).

7. On the class implications of the rise of professions from 1870 to 1930, see Daniel Walkowitz, *Working with Class: Social Workers and the Politics of Middle-class Identity* (Chapel Hill: University of North Carolina Press, 1999), 57-85, 115-140. On the complicated class and social position of urban professionals in the early twentieth century, see Don Kirschner, *The Paradox of Professionalism: Reform and Public Service in Urban America, 1900-1940* (New York: Greenwood, 1986). For a detailed, though rather uncritical account, see Kenneth Fox, *Better City Government: Innovation in American Urban Politics, 1850-1937* (Philadelphia: Temple University Press, 1977).

8. Johnson, "Regional Planning," 87-89; and Lovelace, *Harland Bartholomew*, 5-6.

9. Johnson, "Regional Planning," 97-105.

10. George Ford, "The City Scientific," *Engineering Record* 67 (May 17, 1913): 551-52.

11. Notes from a meeting held regarding the status of Mr. Harland Bartholomew, engineer of the City Plan Commission, December 15, 1937, file 1336, Records of the League of Women Voters, Collection Number 530, Western History Manuscript Collection, University of Missouri–St. Louis [hereafter LWV Records, WHMC 530].

12. Sandweiss, *St. Louis*, 192-204.

13. Civic League of St. Louis, *A City Plan for St. Louis. Reports of the Several Committees Appointed by the Executive Board of the Civic League to Draft a City Plan*, 1907. On the 1907 city plan, see Sandweiss, *St. Louis*, 197-204.

14. On the defeat of the parkway bond issue, see Elizabeth Noel Schmidt, "Civic Pride and Prejudice: St. Louis Progressive Reform, 1900-1916" (Master's thesis, University of Missouri–St. Louis, 1986).

15. R. S. Peabody, "Notes for Three Lectures on Municipal Improvements," *The Architectural Quarterly of Harvard University* 1 (September 1912): 84-104. Peabody attributes the idea to Arthur Brunner. See also Benjamin Clarke Marsh, "An Introduction to City Planning: Democracy's Challenge to the American City, Chapter VII" (Publisher unknown, 1909).

16. Harland Bartholomew, "Publicity and the City Plan," *American City* 11, no. 5 (November 1914): 380.

17. For example, in his first major study *The Problems of St. Louis*, Bartholomew devoted nearly half the book to transportation, and the smallest chapter to physical beautification. Harland Bartholomew, *The Problems of St. Louis, Being a Description, from the City Planning Standpoint, of Past and Present Tendencies of Growth, with General Suggestions for Impending Issues and Necessary Future Improvements* (St. Louis: Nixon-Jones Printing, 1917). For more on Bartholomew's aesthetic sense, see E. F. Porter, *Harland Bartholomew* (St. Louis, MO: Saint Louis Public Library and Landmarks Association of St. Louis, 1990), 7-8.

18. The principal study of the St. Louis elite at the turn of the century remains Alexander Scot McConachie, "The Big Cinch: A Business Elite in the Life of a City, Saint Louis, 1895-1915" (Ph.D. diss., Washington University, 1976). To view the connection between the city's large business and institutional interests and the push for city planning, see the Civic League *Yearbook*, yearly volumes for 1903, 1904, and 1906 to 1917. The Civic League reads like a who's who of major downtown businessmen, including industrialists such as J. Charles Cabanne, Adolphus Busch, and W. K. Bixby; merchants Charles Stix, William Fuller, and Murray Carleton; real-estate barons W. P. H. Turner, Frederick Zeibig, and Pierre Chouteau; and professionals such as the World's Fair landscape architect George Kessler, the Washington University president Robert Brookings, and the engineering chair Calvin Woodward.

19. For a detailed history of the Veiled Prophet fair, and the class and cultural politics of the event, see Thomas Spencer's excellent book, *The St. Louis Veiled Prophet Celebration: Power on Parade, 1877-1995* (Columbia: University of Missouri Press, 2000).

20. Porter, *Harland Bartholomew*, 6-10; and Sandweiss, *St. Louis*, 215-16.

21. Harland Bartholomew, "The Prevention of Economic Waste by City Planning," *Journal of Land and Pubic Utility Economics* 1, no. 1 (January 1925): 84.

22. The St. Louis plan, the first of its kind in the nation, garnered significant national attention. See C. M. R., "The City Plan Report of St. Louis," *Charities and Commons* XIX (February 1, 1908): 1542-45.

23. Eric Sandweiss, "Construction and Community in South St. Louis, 1850-1910" (Ph.D. diss., University of California, Berkeley), 85.

24. Bartholomew, *Problems of St. Louis*, preface.

25. Maury Klein, *The Flowering of the Third America: The Making of an Organizational Society, 1850-1920* (Chicago: Ivan Dee, 1993), 42-56; and Alan Trachtenberg, *The Incorporation of America: Culture and Society in the Gilded Age* (New York: Hill and Wang, 1982), 82-84 and, on Standard Oil as an example, 85-86.

26. St. Louis Progressive reformers were by no means unique, and they shared a common political language both nationally and across the Atlantic. See John D. Beunker, *Urban Liberalism and Progressive Reform* (New York, 1978); and Michael Ebner and Eugene M. Tobin, eds., *The Age of Urban Reform: New Perspectives on the Progressive Era* (Port Washington, NY: Kennikat Press, 1977). On the ambivalence of Progressive reform with respect to race, class, and immigration, see Marilyn Thornton Williams, *Washing the Great Unwashed: Public Baths in Urban America, 1840-1920* (Columbus: Ohio State University, 1991); K. Austin Kerr, *Organized for Prohibition: A New History of the Anti-Saloon League* (New Haven, CT: Yale University Press, 1985); Dominick Cavallo, *Muscles and Morals: Organized Playgrounds and Urban Reform, 1880-1920* (Philadelphia: University of Pennsylvania Press, 1981); Mark

Connelly, *The Response to Prostitution in the Progressive Era* (Chapel Hill: University of North Carolina Press, 1980); and Paul Boyer, *Urban Masses and Moral Order in America, 1820-1920* (Cambridge, MA: Harvard University Press, 1978).

27. Sandweiss, *St. Louis*, 204-12.

28. Harland Bartholomew, "Reduction of Street Traffic Congestion by Proper Street Design: How St. Louis is Meeting Its Problem," *Annals of the American Academy of Social and Political Science* 116 (November 1924): 244-46. In addition to Bartholomew's plans for St. Louis streets, see his work on plans for Memphis and New Orleans, examined thoroughly by Brownell, "The Commercial-Civic Elite," 339-68.

29. Harland Bartholomew, "The Prevention of Economic Waste by City Planning," *Journal of Land and Public Utility Economics*, January 1925; and Harland Bartholomew, "Non-Conforming Uses Destroy the Neighborhood," *Journal of Land and Public Utility Economics*, February 1939, 96-97.

30. Bartholomew, *Problems of St. Louis*, iii, xv.

31. Harland Bartholomew, *Zoning for St. Louis: A Fundamental Part of the City Plan* (St. Louis, MO: City Plan Commission, 1918). It is worth noting here that the zone ordinance subsequently adopted by the Board of Aldermen was struck down by the State Supreme Court as unconstitutional. A new ordinance, with much the same language, passed muster in 1926, though in the meantime, eight years of uncontrolled building left some districts "ruined" in the eyes of planners. See notes from a meeting held regarding the status of Mr. Harland Bartholomew, engineer of the City Plan Commission, December 15, 1937, file 1336, LWV Records, WHMC 530.

32. For example, see Lawson Purdy, Harland Bartholomew, Edward M. Bassett, Andrew Wright Crawford, and Herbert S. Swan, *Zoning as an Element in City Planning, and for Protection of Property Values, Public Safety, and Public Health* (Washington, DC: American Civic Association, 1920).

33. City Plan Commission, *A Major Street Plan for St. Louis* (St. Louis, MO: Nixon-Jones Printing, 1917).

34. Sandweiss, *St. Louis*, 217-20.

35. One explanation of the heavy reliance on bonds to capitalize public improvements derives from the peculiar tax structure of St. Louis municipal government. St. Louis received no revenue from St. Louis County, which was an entirely separate entity, and endured antiquated state-imposed limits of property-tax rates and deficit spending. The Earnings Tax, approved in 1956, would ease the city's overreliance on long-term bond indebtedness. See Stanley R. Suchat, "Sinking Fund and Bonded Debt of the City of St. Louis" (AM thesis, Washington University, 1937).

36. General Council on Civic Needs, "The St. Louis General Improvement Bond Issue, and Why You Vote for It," pamphlet, February 1923, MHS Collections; *St. Louis Star: Civic and Industrial Progress Edition*, "$40,000,000 of City's Bond Issue Funds Spent," October 31, 1928; St. Louis Politics Clipping File, MHS Collections; City Plan Commission, *Plan Commission Annual Report, 1944-1945* (City of St. Louis, 1946), 24 [hereafter *PCAR*]; "Bond Issue Election Results, 1923-1955," file 850, LWV Records, WHMC 530.

37. See City Plan Commission, *A Public Building Group Plan for St. Louis* (St. Louis: Nixon-Jones Printing, 1919).

38. Primm, 421-24; and William Leckie, "Moral Reform in the Burckhardtian City," *Journal of Urban History* 27 (March 2001).

39. Johnson, "Regional Planning," 136-39.

40. City Plan Commission, *Urban Land Policy* (City of St. Louis, 1936), plate 2.

41. See City Plan Commission, *Urban Land Policy*, 12-16.

42. See City Plan Commission, *St. Louis after World War II* (City of St. Louis, 1942), plate 4.

43. Bartholomew, "The Prevention of Economic Waste," 83-88.

44. Indeed, as Eric Sandweiss argues, the apparent broadcast of road improvements proposed by the 1917 transportation plan masked a basic priority for developments within the east-west Central Corridor; Sandweiss, "Construction and Community," 92-93.

45. City Plan Commission, *Problems of St. Louis*, 65-66.

46. Much of the literature on the origins and development of zoning focuses on issues of race and class as constituted in zoning practice, for example, Christopher Silver, "The Racial Origins of Zoning: Southern Cities from 1910-1940," *Planning Perspectives* 6 (May 1991): 189-205; and Barbara Flint, "Zoning and Residential Segregation: A Social and Physical History, 1910-1940" (Ph.D. thesis, University of Chicago, 1977). Zoning as an ideology goes well beyond both race and class to include such factors as a preference for the heterosexual single family, biases against mixed-use neighborhoods, antipathy toward small-scale landlords, and desire for singular uses of singular spaces.

47. Michael Bernstein, "Why the Great Depression Was Great: Toward a New Understanding of the Interwar Economic Crisis in the United States," in *The Rise and Fall of the New Deal Order, 1930-1980*, ed. Steve Fraser and Gary Gerstle (Princeton, NJ: Princeton University Press, 1989), 32-54; and Robert S. McElvaine, *The Great Depression: America, 1929-1941* (New York: Random House, 1984), 25-50.

48. Bureau for Homeless Men, *Street Begging in St. Louis, Including a Report of a Fact-finding Survey of Street Begging Made during November and December, 1936* (St. Louis, MO: Author, 1937).

49. Johnson, "Regional Planning," 188-89.

50. Harland Bartholomew, "The Trend of Modern City Planning," *American Civic Annual* 4 (1932): 180.

51. Bonnie Fox Schwartz, *The Civil Works Administration: The Business of Emergency Employment in the New Deal* (Princeton, NJ: Princeton University Press, 1986); Elizabeth Seaton, "Federal Prints and Democratic Culture: The Graphic Arts Division of the Works Progress Administration Federal Art Project, 1935-1943" (Ph.D. thesis, Northwestern University, 2000); Bruce Bustard, *A New Deal for the Arts* (Washington, DC: National Archives and Records Administration, 1997); William Bremer, *Depression Winters: New York Social Workers and the New Deal* (Philadelphia: Temple University Press, 1984); and Jerre Mangione, *The Dream and the Deal: The Federal Writers' Project, 1935-1943* (New York: Avon, 1972).

52. Fairfield, *Mysteries of the Great City*, 228-231.

53. John Hancock, "The New Deal and American Planning in the 1930s," in *Two Centuries of American Planning*, ed. Daniel Schaffer (Baltimore: Johns Hopkins University Press, 1988), 198-206. See also Greg Hise's excellent first chapter on "Modern Community Planning," in *Magnetic Los Angeles: Planning the Twentieth Century Metropolis* (Baltimore: Johns Hopkins University Press, 1997), 14-56.

54. President's Conference on Home Building and Home Ownership, *Planning for Residential Districts* (Washington DC: U.S. Government Publications Office, 1932). Edited by John Gries and James Ford, the document includes reports from the city planning committee on zoning, subdivision layout, utilities provision, and landscape design.

55. Johnson, "Regional Planning," 176.

56. Letter from Frederic A. Delano to Miss Jeanne Blythe, president of the League of Women Voters of St. Louis, December 17, 1937, file 1336, LWV Records, WHMC 530.

57. Many economists—particularly working in applied sectors—took their inspiration from a series of lectures delivered by a young Keynes at Oxford and Berlin between 1924 and 1927. See John Maynard Keynes, *The End of Laissez-Faire* (Dubuque, IA: William C. Brown Reprint Library, 1927). For Keynes's influence on major economic thinkers, see George Soule, *A Planned Society* (New York, 1932); Stuart Chase, *The Economy of Abundance* (New York: Macmillan, 1934); Rexford Tugwell, *The Industrial Discipline and the Governmental Arts* (New York: Columbia University Press, 1933); and Lewis Corey, *The Decline of American Capitalism* (New York: Covici-Friede, 1934).

58. Boyer, 244-248.

59. Richard Hurd, *Principles of City Land Values* (New York: The Record and Guide, 1903); Nelson P. Lewis, *The Planning of the Modern City: A Review of the Principles Governing City Planning* (New York: John Wiley, 1916); Walter D. Moody, *What of the City? America's Greatest Issue—City Planning, What It Is and How to Go About It to Achieve Success* (Chicago: A. C. McClurg, 1919); and Robert Murray Haig, *Some Probable Effects of the Exemption of Improvements from Taxation in the City of New York* (New York: C. S. Nathan, 1915). Also influential was Robert Murray Haig's contribution to the New York regional plan, *Major Economic Factors in Metropolitan Growth and Arrangement; A Study of Trends and Tendencies in the Economic Activities within the Region of New York and Its Environs* (New York: Regional Plan of New York, 1927).

60. Indeed, Bartholomew's work in St. Louis generated arguments about the need for planned and managed capitalism well in advance of the building boom of the 1920s and the national crisis brought on by its collapse. His understanding of the problems associated with uncoordinated growth emerged from research on St. Louis's particular cycle of boom and bust in the decade following the 1904 World's Fair. See City Plan Commission, *Problems of St. Louis*; and City Plan Commission, *St. Louis after the War.*

61. Harland Bartholomew, *Urban Land Uses. Amounts of Land Used and Needed for Various Purposes by Typical American Cities. An Aid to Scientific Zoning Practice*, vol. 4 (Cambridge, MA: Harvard City Planning Studies Series, Harvard University Press, 1932), preface.

62. Bartholomew, *Urban Land Uses*, 77-78.

63. Ibid., 8.

64. Ibid., 152.

65. Sandweiss, *St. Louis*, 216-17.

66. See the scathing criticism of a later release of Bartholomew's book, with updated tables and charts, published under the title *Land Uses in American Cities* (Cambridge, MA: Harvard University Press, 1955). In particular, see the review by Amos Hawley of the University of Michigan, *American Sociological Review* 21, no. 1 (February 1956): 106-7.

67. Charles H. Trout, "The New Deal and the Cities," in *Fifty Years Later: The New Deal Evaluated*, ed. Harvard Sitkoff (New York: Knopf, 1985), 133-53; Joseph Arnold, *The New Deal and the Suburbs: A History of the Greenbelt Town Program, 1935-1954* (Columbus: Ohio State University Press, 1971); Mark Gelfand, *A Nation of Cities: The Federal Government and Urban America, 1933-1965* (New York: Oxford University Press, 1975); Raymond Mohl, "Shifting Patterns of American Urban Policy Since 1900," in *Urban Policy in Twentieth Century America*, ed. Arnold Hirsch and Raymond Mohl (New Brunswick, NJ: Rutgers University Press, 1993), 8-10; and Lawrence Friedman, *Government and Slum Housing: A Century of Frustration* (Chicago: Rand McNally, 1968), 88-90, 94-116.

68. Urbanism Committee of the National Resource Planning Board, *Our Cities: Their Role in the National Economy* (Washington, DC: U.S. Government Printing Office, 1937).

69. Schwartz, *Civil Works Administration*; and Hancock, "New Deal and American Planning," 206-8.

70. Letter from Arthur Meyers to Mrs. Ralph Thayer, January 17, 1940, file 752, LWV Records, WHMC 530. Arthur Meyer was the city's budget director at the time. He explained to League of Women Voters member Mrs. Thayer that the city received funds not only to pay workers but also to engage equipment.

71. Richard Leningher, "The Cultural Legacy of the New Deal," *Journal of Architectural Education*.

72. Philip Funigiello, *The Challenge to Urban Liberalism: Federal-City Relations During World War II* (Knoxville: University of Tennessee Press, 1978); and Philip Funigiello, "City Planning in World War II: The Experience of the National Resources Planning Board," *Social Science Quarterly* 53 (June 1972): 91-104.

73. Primm, 443-445.

74. *PCAR, 1934-1935*, 9.

75. Ibid., 3-4.

76. *PCAR, 1935-1936*, 6.

77. Exhibit B, WPA [Works Progress Administration] Expenditures in the 15 Largest U.S. Cities, July 1938, file 752, LWV Records, WHMC 530.

78. "Accomplishments: WPA official project no. 1443," *PCAR, 1935-1936*, 31-43.

79. *PCAR, 1935-1936*, 41-45.

80. Clarence Arthur Perry, *The Neighborhood Unit* (New York: Regional Plan of New York and Its Environs, 1929); and Clarence Arthur Perry, *The Rebuilding of Blighted Areas: A Study of the Neighborhood Unit in Replanning and Plot Assemblage* (New York: Regional Plan Association, 1933). On Bartholomew's intellectual debt to Perry, see Lovelace, *Harland Bartholomew*, 108-9.

81. *PCAR, 1934-1935*, Project no. 128 summary, 3-4; and *PCAR, 1935-1936*, 41-45.

82. City Plan Commission, *Urban Land Policy*.

83. Ibid., 21-23.

84. Lawrence M. Friedman, *Government and Slum Housing* (New York: Arno Press, 1978), 104-8.

85. *PCAR, 1937-1938*, 35-36; *PCAR, 1939-1940*, 29-31; and *PCAR, 1940-1941*, 30-31. On the local purposes and impact of the JNEM and the Gateway Arch, see Joseph Heathcott and Maire Murphy, "Corridors of Flight, Zones of Renewal: Industry, Planning, and Policy in the Making of Metropolitan St. Louis, 1940-1980," *Journal of Urban History* 31 (January 2005): 157-89; and W. Arthur Mehrhoff, *The Gateway Arch: Fact and Symbol* (Bowling Green, OH: Bowling Green University Popular Press, 1992), 65-81.

86. The move to terminate Bartholomew's half-time position and to retain him in future on a consulting basis provoked something of a minor scandal among reformers, planning advocates, and housing activists in the city. Then, Mayor Bernard Dickmann assured opponents that the move did not signal the end of the plan commission's work but rather the potential insolvency of the department (and therefore of staff salaries) should relief measures fail the citywide referendum. However, Dean of Washington University School of Architecture A. S. Langsford, who had served for twenty years on the plan commission from 1915 to 1935, warned in a letter to the League of Women Voters that there had been numerous politically motivated attempts over the years to remove Bartholomew. See series of correspondence in file 1336, LWV Records, WHMC 530.

87. *PCAR, 1939-1940*, 35.

88. See personnel rolls in *PCAR, 1940-1941*, 36, *PCAR, 1942-1943*, 24. Once engaged in the war, the WPA rolls and regular staff of the plan department were decimated by military leaves. For example, draftsman Eugene Cissell obtained a two-year leave in September of 1942 to complete service in the

Naval Reserve, while architect Vernon D. Irish left in November of that year to accept a position with the Army Corps of Engineers.

89. "Summary of Achievements under WPA Project No. 69," unpublished manuscript transmitted from Bartholomew to Mayor Darst, City Plan Commission file, 1949-1951, Series One—Box 23, Records of the Mayoral Administrations of St. Louis, Raymond Tucker Papers, Washington University Special Collections.

90. "Summary of Achievements under WPA Project No. 69"; and *PCAR, 1942-1943*, 28.

91. *PCAR, 1937-1938*, 101; and *PCAR, 1940-1941*, 31-32, 42.

92. *PCAR, 1944-1945*, 21-23.

93. *PCAR, 1943-1944*, 5.

94. *PCAR, 1939-1940*, 31.

95. *PCAR, 1939-1940*, 31; *PCAR, 1941-1942*, 32; and *PCAR, 1944-1945*, 5.

96. See Meeting Minutes in file 1337, LWV Records, WHMC 530.

97. Betty Burnette, *St. Louis at War: The Story of a City, 1941-1945* (St. Louis, MO: Patrice Press, 1987), 8-54.

98. T. Michael Ruddy, *Mobilizing for War: St. Louis and the Middle Mississippi during World War II* (St. Louis, MO: U.S. Army Corps of Engineers, 1983).

99. *PCAR, 1946-1947*, 5.

100. *PCAR, 1943-1944*, 5.

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