Autos, Transit, and the Sprawl of Los Angeles: The 1920s
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Martin Wachs presents a historical analysis of Los Angeles to show how critical decisions made sixty and seventy years ago about land-use and transportation systems have shaped the city's current fabric. Well before the construction of its freeways, Los Angeles showed a preference for the low density development that has become the sprawl of today. The article offers important insights into the relationships among land use, politics, cultural values, and transportation planning.

Throughout the world, Los Angeles is known for its unique urban form and distinctive lifestyle. Some consider it glamorous and others find it sterile, but the name generally evokes images of freeways, sprawling low-density communities of single-family homes, and dependence on the automobile. Although many share these images, it proves difficult to explain how or why Los Angeles got to be the way it is. In the popular press, its decentralization is often attributed to the freeway building program and the suburban housing boom that followed the Second World War; yet historical evidence shows that the familiar Los Angeles pattern existed well before 1930 and that freeways were as much a response to decentralization as its cause.

The characteristic low density of Los Angeles was recognizable before 1900 and well established by 1930. It was the product of many interacting influences. The automobile was a critical ingredient, but so were street railways, attitudes of real estate speculators, the nature of the city's economy, and the timing of the region's most rapid growth. The decade between the end of World War I and the start of the Great Depression was probably the single most important period in the determination of Los Angeles' lifestyle and its accommodation to the automobile. Today's most complex decisions about land use, highways, and transit all have their roots in the twenties.

The automobile was being adopted widely during the 1920s, precisely when Los Angeles was experiencing its most explosive growth. At the same time, the city planning movement was attempting to establish its influence over the growth and form of the city. By studying the ideas, plans, and politics of that period, we learn that the decentralization of Los Angeles and the growth of the planning profession there had common roots. Los Angeles in the 1920s provides another lesson to students of urban form and planning. Many portray public transit investments as ways to create urban areas of...
greater concentration and higher densities, while automobiles and highways are
seen as countervailing influences leading inevitably to lower densities and sprawl
that during the formative decade of the twenties, highways and rail lines were not
ary elements of regional plans, contributing to urban form. They were portrayed as com-
materials at a time when low-density development was being vigorously pur-

THE FIRST GREAT BOOM

Los Angeles was first settled in 1781, and it remained a sleepy and relatively unim-
portant town for nearly its first hundred years; its population was about six thou-
and in 1870 when the Southern Pacific completed a line between Los Angeles and San
and the east, and in 1885 the Santa Fe opened its competing railroad. By 1900, the
100,000. While the European immigrants to New York, Boston, and Philadelphia
in Los Angeles were of a very different background (Broady 1981, 63; Fegelson 1967, 54–55).

Most of the new arrivals to Los Angeles were American-born, many came from
the Middle West, and a large proportion were people of some means. Prosperous
middle- western farmers turned their holdings over to their children and moved
west to try their hands at citrus growing. Wealthy invalids sought a warmer climate
speculation. Thus one observer described the new residents of Los Angeles as
American people,” and a San Francisco newspaper noted that “the outstanding
observer described the new settlers as “immigrants coming in in cars instead of
of prairie schooners,” and building fine houses instead of log shanties, and plant-
ing flowers and small lawns before they planted potatoes or corn” (Fegelson 1967).

With rural American backgrounds and the means to implement their ideals, the
immigrants to Los Angeles pursued, even in those early years, an ideal of low-den-
sty, family living, well before the automobile placed that lifestyle within this
vision as follows:

Americans came to Los Angeles with a conception of the good community which was
embodied in single-family houses, located on large lots, surrounded by landscaped
lawns, and isolated from business activities. Not for them multi-family dwellings,
and industry. Their vision was epitomized by the residential suburb—spacious, affluent,
clean, decent, permanent, predictable, and homogeneous—and violated by the great

PHOTO 1A In eastern cities like New York, new transit technology was added to densely devel-
York. From the collection of E. B. Watson. Used by permission.)

PHOTO 1B In Los Angeles, the Pacific Electric was used to develop low-density, outlying areas. (From Los Angeles: An
Illustrated History, by Bruce Hennessy, New York, Alfred A. Knopf, 1980. Used by permission.)

PHOTO 1A
city—congested, impoverished, filthy, immoral, transient, malarial, crowded, and heterogeneous. The late nineteenth- and early twentieth-century metropolis, as the newcomer in Los Angeles perceived it, was the receptacle for all European evils and the source of all American sins. It contradicted their long cherished notions about the proper environment and compelled them to retreat to outskirts unconaminated by urban vice and conducive to rural virtues. And though native [born] Americans everywhere shared these sentiments, they formed a larger portion of the populace in Los Angeles than in other great metropolises. Here then was the basis for the extraordinary dispersal of Los Angeles.

THE ROLE OF EARLY TRANSIT SYSTEMS

Between 1870 and 1910, the technology of urban transportation was advancing substantially. Entrepreneurs were replacing horse car lines with cable, steam, and electric traction street railways in Boston, Chicago, New York, and Philadelphia. Similar technology was introduced in Los Angeles, but there it had different effects on the city. The eastern and midwest metropolises already had become mature cities before extensive street railway networks were developed, and they were characterized by high residential densities, with living quarters in proximity to industrial and commercial districts. The street railways enabled those cities to add new residential districts beyond their older cores, through processes described by Sun Bass Warner in his classic book, Streetcar Suburbs (1962). Los Angeles, however, was just growing to maturity as a city when street railways were introduced, and it had never developed a significant commercial and industrial core. Its first period of rapid growth, from a population of five thousand in 1870 to nearly 320,000 in 1910, coincided with the introduction of street railways and interurban electric lines. These made residential growth possible at relatively long distances from the industrial and commercial center, even when the region's population was quite small. While new industries and businesses concentrated near the downtown railroad in the days before motor trucks and telephones, the street railways made it possible for real estate speculators to develop low-density residential estates in outlying sections catering to the obvious preferences of the newcomers. Since denser, congested, eastern cities were regarded as sources of illness and vice, the low-density, outlying suburban growth of newer cities was regarded as an advance that contributed to substantial improvement in the quality of life. Charles Howard Cooley, who was one of the early leaders of the emerging discipline of sociology and whose doctoral dissertation was titled A Theory of Transportation (1891), illustrated the common view of the benefits of decentralization made by the street railways when he wrote this in 1891:

"Humanity demands that man should have sunlight, fresh air, the sight of grass and trees. It demands these things for the man himself, and it demands them still more urgently for his wife and children. No city has a fair chance in the world who is condemned to grow up in the dirt and coal-black, the dreariness, skin-feel, and vice of the poor quarter, a great city. . . . There is then, a permanent conflict between the needs of industry and the needs of humanity. Industry says men must aggregate. Humanity says they must be

or if they must, let it be only during working hours and let the necessity not extend to their wives and children. It is the office of the city railways to reconcile these conflicting requirements. (Cooley 1891)"

With preferences for single-family, low-density living so prevalent, and a population of relatively greater economic means, it was inevitable that technological advances in transit would be coupled with ventures in real estate speculation. Between 1880 and 1910, cable car and electric trolley lines were built by holders of large tracks of vacant land with the specific intention of subdividing that land and profiting from the sale of lots made accessible to downtown by transit (Foster 1971). Often mechanically unreliable, and even more often on unsound financial footing, the street railways rarely turned profits as transportation businesses, though they often contributed to huge speculative profits in real estate. Despite many failures and bankruptcies of smaller transit companies, the period from 1901 to 1911 saw the development in Los Angeles of the largest system of interurban electric lines in the country. The Pacific Electric System, assembled and extended by Henry Huntington from seventy-two separate companies, by 1923 offered service over 1,164 miles of single track and a network that extended more than 100 miles from one end to the other. The Pacific Electric offered interurban service from Los Angeles to outlying towns and villages, while the Los Angeles Railway opened local service on an additional 316 miles of single track within the
city. Many people of the sprawling Los Angeles metropolis in terms of the automobile and freeways, but Spencer Crump (1962, 96) is more accurate when he observes that "unquestionably it was the electric interurbans which distributed the population over the countryside during the century's first decade and patterned Southern California as a horizontal city rather than one of skyscrapers and slums." By 1910, largely because of the Pacific Electric System, Los Angeles was functionally integrated with Long Beach, Santa Monica, and San Bernardino. The extent of the metropolitan region has grown substantially since then, and most of the modern metropolis has consisted of filling in the spaces between outlying centers associated with important stations on the Pacific Electric.

THE ARRIVAL OF THE AUTOMOBILE

During the very years of consolidation and expansion of the public transportation system, which made dispersed residential development possible in Southern California, the automobile was being introduced and perfected. At first it was available only to the wealthy. In addition, before 1920, almost all automobiles were open to the elements, and therefore extremely unattractive in the cold, rainy, or snowy conditions. Early cars were difficult to operate where there were few paved roads, especially when winter weather turned dirt roads into quagmires. No wonder, then, that the auto was adopted early in Southern California. The mild and dry climate made driving in open cars relatively comfortable and kept early roads reasonably poor.

A greater proportion of Los Angeles' relatively affluent citizenry had the economic means to buy automobiles than was the case in eastern cities, and lower-density, single-family neighborhoods provided ample space to store and maintain cars, in comparison with eastern tenement communities. Thus by the end of 1919, an article in Scientific American describing automobile ownership patterns in the United States expressed amazement that California led the nation in per capita automobile ownership:

"If we had any idea that states would follow along in the approximate order of their population we would be quickly disillusioned to learn that California has 2,000 more vehicles than Pennsylvania, and leads seven other states which are credited with greater populations, by its impact on society, on the tourist industry, and her wonderful roads.

When that article was written, Los Angeles already had the highest ratio of automobiles per capita of any large city in the United States—about one auto per nine people. Yet Los Angeles was poised on the edge of its second and greatest boom. Between 1910 and 1920, the great aeduduct was completed from the Owens Valley, providing the city with a reliable supply of water and relief from the problem of periodic drought. Before 1910, voters in Los Angeles approved the development of a harbor at San Pedro and Wilmington, and a series of improvements to that harbor continued into the twenties, allowing Los Angeles to compete successfully to
become the largest west coast port by 1930. The decade after the First World War was the city's period of most rapid growth, decentralization, and automobile acquisition, and the low-density, single-family lifestyle that has come to be identified with this city was solidified during that period of dramatic growth.

THE GREAT BOOM OF THE TWENTIES AND THE DISPERSION OF ECONOMIC ACTIVITY

Between 1920 and 1930, the population of the City of Los Angeles grew from 577,000 to 1,240,000, while the population of the county increased from 1,238,000 to 2,200,000. This phenomenal rate of increase was described by one scholar of the period as "the largest single influx in the history of the American people" (Thorndike 1934, 18). By 1930, only 20 percent of the residents of Los Angeles had been born in California, while by contrast more than two-thirds of all Americans resided in the states where they were born (Findley 1958, 24). The population distribution for Los Angeles showed that it had a larger proportion of middle-aged and older residents than did the country as a whole. And median income was relatively high, at least partly because the growth rate in employed workers exceeded the growth rate in population. While manufacturing industries grew, the proportion of employed workers engaged in manufacturing declined from 28 percent in 1920 to 22 percent in 1930, and Los Angeles was increasingly described as a "white collar" town, real estate, finance, and tourism expanded most prominently (Findley 1958).

The rapid growth of Los Angeles was, of course, not accidental. Like earlier booms, it was fostered by speculators, bankers, and businessmen who derived profits from the great boom of the twenties. And from the beginning the city's location and especially its climate, to promote tourism, in the belief that a substantial proportion of those who vacationed in Southern California would "be sold" on the idea of staying permanently (Foster 1971, 26).

During the first wave of Los Angeles' dispersal, between 1890 and 1910, residential subcenters grew up in outlying areas in response to accessibility provided by street railways. Most businesses, with the exception of local services, remained downtown. The boom of the twenties, however, was accompanied by decentralization of much business and commercial activity as well as the continuation of residential dispersal. By the end of the First World War, the motor truck was available to free some businesses of their dependence on proximity to rail lines, and the availability of the telephone made it possible for business executives to communicate with one another without face-to-face contact. In addition, three factors unique to Los Angeles contributed directly to the dispersion of growth during the boom of the twenties: the central role of the petroleum industry in the local economy, the development of a port located far from the downtown area, and the adoption of a height limitation on buildings because of the danger of earthquakes.

With little coal except what was imported from great distances, local oil production fueled industrial growth and provided gasoline to operate the region's growing auto and truck fleet. As the twenties began, low petroleum prices and stable production gave way to tremendous fluctuations in prices and in the flow of capital into this industry. In 1920 there was a shortage of gasoline and a public outcry over rising gasoline pump prices. That, in turn, spurred increased investments in oil exploration, and several large, new fields were discovered in the early twenties. Later their collective production glutted the market and caused prices to plummet. Because some of the oil fields were located more than twenty miles from the central city, in places like Seal Beach, Signal Hill, and Fullerton, capital investments made in those outlying areas were another force for the spatial decentralization of Los Angeles during the twenties. Coupled with this investment was the growth of refining and storage facilities near the port. The petroleum industry was dispersed, and that certainly contributed to the sprawl of the metropolis during this decade. To a lesser extent, the arrival of the movie industry in the twenties had a similar effect. Seeking large lots and a variety of settings for movie production, the film industry also developed a dispersed pattern of investments as it took an important place in local economic growth.

The harbors of many eastern cities were the sources of their early commercial growth and determined the locations of their central business districts, but the Los Angeles Harbor played a small role in the early development of the town. When the seaport did begin to develop as a significant part of the local economy, between 1920 and 1930, its growth took place about twenty miles from the business center of the city. The harbor was an important element in the economic boom of the twenties, in part because of the growth in exports of the region's petroleum. The distance of the harbor from downtown meant that its growth fostered the decentralization of economic activity. In fiscal year 1920, 2,886 ships entered Los Angeles Harbor, carrying 3.5 million tons of cargo valued at $154 million. In the fiscal year ending in June 1930, the number of vessels entering the port had grown to 8,633, carrying 26 million tons of cargo valued at more than a billion dollars. In total commerce and second in export tonnage (Findley 1958, 110). By that time, the port of Los Angeles ranked third nationally in total commerce and second in export tonnage (Findley 1958, 111), and the associated growth in warehousing and commercial activity took place along forty miles of waterfront in the Long Beach, San Pedro, and Wilmington areas, quite distant from the traditional central business core of the city. In response, new residential communities sprang up on previously undeveloped land between the downtown and port areas.

In 1906, after the disastrous San Francisco earthquake, the Los Angeles City Council passed an ordinance limiting the height of buildings in the city to 150 feet. This ordinance remained in effect until the mid-1950s; the only exception was the construction of the 28-story Los Angeles City Hall, completed in 1928. The limit on building height reduced the attractiveness of the central business district to office developers, thus contributing to the decentralization of economic activity. Certainly, after the elimination of the height limitation at about the same time that the downtown area (Scott 1971, 189-190).
AUTOS AND TRAFFIC IN THE BOOM OF THE TWENTIES

The extensive network of interurban and local street railways at first benefited from the dispersed growth of the twenties. Because the system had been "overbuilt" in pursuit of earlier real estate profits, it had the capacity to carry more and more passengers as suburban growth accelerated after the First World War. While the Pacific Electric System had carried about 74 million passengers in 1919, in 1924 it carried its highest annual passenger total of more than 109 million, an increase of 47 percent in only six years (Crump 1962, 231). This growth, however, was much smaller than the growth in automobile ownership during the same period, and interurban patronage fell off after 1924 as reliance on the automobile increased.

The growth of Los Angeles, which peaked in the early twenties, was accompanied by the public's greater financial access to automobiles, which followed the introduction of assembly line techniques and installment buying. Expansion of the automobile industry was simultaneous with the cause and the result of a decline in the price of cars. Whereas the Ford Model T sold for $950 in 1909 and a Ford runabout sold for $390 in 1916, by 1925 a Ford runabout cost $260 and a Model T carried a price tag of $1,250. In 1926, moreover, the price tag was attached to a car that protected its occupants better from rain, dust, and direct sun (Berger 1979, 44).

A 1933 study of traffic in ten major United States cities revealed that two or more vehicles invaded downtown Los Angeles in a twelve-hour period as a result of the city's business district. Of cities with roughly equal-sized central business districts, Chicago was visited by 113,000 automobiles in the same time period, Boston by 66,000, and St. Louis by only 49,000.

A census count revealed that in 1924, 48 percent of all those entering the central business district of Los Angeles came by car; by 1933, another census count showed that the proportion had risen to 62 percent (Foster 1971, 144). Amazingly, the passage of fifty years and the construction of hundreds of miles of freeways have not really changed the basic pattern, for a 1980 census count showed that about two-thirds of those entering the Los Angeles CBD on a typical workday are in autos, vans, and trucks (Los Angeles Department of Transportation 1980).

The rapid growth in automobile ownership and use during the early twenties had two important effects on Los Angeles. First, it increased congestion on the streets could cope with. Second, the growth in automobile traffic had a devastating effect on street railway operations, which already had been in financial difficulty before the widespread adoption of the automobile. The automobile first deprived the street railways of their weekend excursion traffic to beaches and mountain resorts, as people began to substitute Sunday drives for muley car outings. For the financially strapped public transit systems, the withdrawal of that traffic was quite damaging. Their rush-hour commuting patronage remained stable at first, but profit margins disappeared because of lost revenue from recreational traffic. The loss forced a reduction in maintenance and a decrease in the frequency with which old vehicles were replaced. Some marginal routes were abandoned and frequencies of service were decreased. Repeated requests for fare increases were denied by the city council, leading to further reductions in levels of service.
As transit service declined, more and more people took to automobiles for work trips, further crowding the streets that autos shared with transit cars. That, in turn, slowed transit service, increased operating costs, and caused even larger numbers of commuters to abandon the trolley in favor of auto commuting. In spite of continued population growth, the number of revenue passengers on the Pacific Electric declined from 109 million in 1923 to 100 million in 1931 (Crum 622, 251). The slow speeds and declining quality of transit service caused citizens to be outraged whenever proposals for fare increases were made, and the deterioration of service accelerated as traffic congestion grew. Even before 1920, the Automobile Club, the Business Men's Cooperative Association, officers of the Pacific Electric Railway, and members of the city council all had addressed the problem with a variety of proposals for potential solutions. They all widely publicized the idea that Los Angeles had a severe congestion problem primarily because it had an inadequate street system. They pointed out that Washington, D.C., at the time devoted 44 percent of its central city area to streets, and San Diego's CBD had 41 percent of its area devoted to streets, while Los Angeles' central area had narrow and discontinuous streets amounting to a mere 21.5 percent of its total downtown area. Street widenings and extensions would help automobile and transit commuters, since both modes shared the streets. In addition, proposals were made to initiate a system of traffic controls, including stop signs and traffic signals, and limitations on parking on the streets (Los Angeles Traffic Commission 1922).

From January through April 1920, the city council considered instituting a ban on curb parking in the central business district, an action that proved controversial. Some business groups supported the ban, while others opposed it vehemently, fearing that it would lead to a decline in central city sales, and an abandonment of the central district by many smaller businesses (Beriles 1983). The Board of Railway Commissioners argued that the ban was needed to reduce interference of auto traffic with the operations of the street railways and to avoid fare increases. The ban on parking was finally approved, but within days of its implementation it sparked protest meetings where hundreds of businessmen reported dramatic losses of trade. The newspapers joined in criticizing the parking ban, and the city council was finally forced to amend the ordinance, allowing 45-minute parking on the streets between the hours of 10 a.m. and 4 p.m. and keeping the no-parking rule in effect from 4 p.m. until 6:45 p.m. In the same year, the Automobile Club installed the first traffic signal as an "experiment." Despite confusion and early violations, this innovation in traffic control took hold, and in time it was widely accepted and obeyed.

THE ROLE OF CITY AND REGIONAL PLANNING

The twin explosions of population growth and automobile use occurred in the early 1920s in Los Angeles, just as the city planning movement was gaining momentum. Foster (1979) has argued that city planners were so busy establishing the legitimacy of their undertakings that they were forced to accept and adapt to the automobile rather than control it. If that occurred in eastern cities, where population growth had peaked decades earlier and urban cores of higher density were long established, it was even more obviously true in southern California, where a commitment to decentralization was stronger.

The nascent "city planning" movement of the first decade of the century had resulted in the creation of several "city beautiful" organizations, whose members feared that growth would lead to congestion and a decline in the quality of life; but accommodation was reached, over time, between boosters of growth and promoters of what should be avoided in Los Angeles, and both identified high-density and dispersed growth as the greatest dangers facing their city. Promotion of low-density and dispersed growth, they finally agreed, could serve the interests of both boosters and reformers. The city of Los Angeles established a planning commission-style skyscrapers. The most tangible manifestation of their commitment to decentralization was their leadership in the creation in 1923 of the nation's first planning commission, the Los Angeles County Planning Commission, which was eventually absorbed into the Metropolitan County Plan Commission in 1930. The planners assumed that the great city was no longer the most efficient location for living or the most efficient location for working. They proposed, as an alternative, residential dispersal and business decentralization.
the appointment of real estate agents, bankers, and land developers to the two new planning commissions. While advocating orderly decentralized growth, the commissions, for all practical purposes, focused their everyday staff activities on two principal tasks: the rationalization of land subdivision activity in the county, and the provision of adequate streets and highways, primarily through negotiated agreements with the land developers.

Against the backdrop of growing traffic congestion and increasing political salience of the traffic issue, Los Angeles in the early twenties considered two different regional transportation plans that would determine the directions of transportation policy in that city for decades to come. The first dealt primarily with highways and the second primarily with transit.

**THE MAJOR TRAFFIC STREET PLAN**

The Automobile Club and a voluntary association of civic leaders calling itself the Los Angeles Traffic Commission both surveyed traffic conditions and called on the city council in the early twenties to develop a single comprehensive highway and street plan for Los Angeles, to include street widenings, straightenings, and extensions in accordance with a set of principles for improved traffic flow throughout the city. At the time, individual subdivisions were platted with little reference to the pattern or capacity of the overall street network, and street widenings were considered only when petitions were received from property owners along the streets. Petitions were reviewed, on a case-by-case basis, by the city engineer. If the proposals were approved, property owners would be assessed the cost of improvements and a contractor retained to do the work. There was no master plan for such actions, and the individual projects were uncoordinated. After several independent proposals and plans for the improvement of traffic in Los Angeles, twenty-three members of the Traffic Commission were appointed and constituted as a "Major Highways Committee," and each donated $1,000 toward financing and drafting a comprehensive traffic plan. They retained Frederick Law Olmsted, Jr., Harland Bartholomew, and Charles H. Cheney; the three considered the many independent proposals and distilled from them the influential Major Traffic Street Plan for Los Angeles of 1924. The plan argued for the widening, extension, and straightening of many streets and the provision of a network of major streets. It proposed the first continuous grade-separated freeway, similar to those under development at the time in the New York area. The proposed Arroyo Seco Parkway would connect Pasadena to the central business district and later would be incorporated into the freeway system as the Pasadena Freeway. Several principles were proposed that in retrospect can be seen as the rudiments of the huge regional freeway network.

A strong case was made, for example, for the separation of different classes of traffic. Through traffic should not mix with local traffic, and streetcars should be separated, to the extent feasible, from automobiles. Underpasses and viaducts were proposed at the busiest intersections to separate traffic moving in different directions, and the concept of an elevated highway was introduced to separate automobiles from streetcars. While some of these more exotic concepts were adopted in later years, the immediate effect of the plan was a general consensus for its two hundred specific proposed widenings, extensions, and straightenings of streets, and for the concept of an integrated regional road network. The plan was quickly supported by the major newspapers, business associations, the Automobile Club, and the planning commission. Foster (1971, 209) reports that even before its adoption, employees of the planning commission were referring to the plan as a comprehensive guide to the street system as they negotiated with real estate developers over individual subdivisions.

Transit executives also joined in support of the plan, believing that street improvements were an important step toward more efficient transit operations. The plan was presented to the city council in July 1924, and the Major Highways Committee of the Traffic Commission urged that a measure approving the plan be placed on the ballot at the next election to enable the citizenry to voice its support of the plan. The council voted unanimously to put the street plan on the ballot, and also to put on the ballot a $5 million bond issue to begin implementation of the plan. A combination of general revenues, bond issues, and local assessments of affected property owners was advocated as a fair and balanced way of implementing the plan over the coming years.

Support for the two ballot measures was widespread, though there was some opposition, primarily related to the high cost of the project and its financing mechanisms (Foster 1971, 158–160). Some homeowner groups thought special assessments were unfair, in that property owners abutting the improved roads would bear...
much of the cost, while many nonresident users would benefit. The bond issue also was opposed by some who argued that the growing population had greater need for schools and health care facilities than for roads. In fact, the proposed bond issue would raise an amount of money that could only provide a modest start toward implementing a street program expected to cost hundreds of millions. Yet a modest start was advocated precisely because the city council feared public opposition to larger spending programs. Both propositions were approved by wide margins, and the Major Traffic Street Plan had been adopted.

By the end of the twenties, only a small proportion of the projects included in the street plan had been implemented, but progress was under way. Significantly, the consensus that these projects were important remained strong throughout the Depression years, and nearly every subsequent plan for highway or freeway improvements resembled the initial one in many ways. As new subdivisions were opened in later years, streets were extended and widened after the 1924 plan, and its influence can be seen today throughout Los Angeles.

A COMPREHENSIVE RAPID TRANSIT PLAN

Everyone agreed the automobile was critical to the future prosperity of Los Angeles, yet few in the early twenties believed that rapid transit would not also be a critical element in the city’s transportation system. Support for the highway plan and parking controls were both predicated, in part, on the improvements they would engender in transit service as well as their benefits to auto commuters. Yet the public and the press were extremely critical of the Los Angeles Railway and the Pacific Electric, complaining about the quality of service and opposing every effort to raise fares. After a series of critical articles in the local press, and outraged testimony before the city council, in 1923 the council and the Board of Public Utilities agreed to work with the railways to improve service (Bottles 1983). Although there had been many proposals for rapid rail transit projects dating back to 1906, local planners urged that transit improvements should be undertaken only in accordance with a metropolitan comprehensive plan for transit improvements. Although construction was underway on a streetcar project, which would permit streetcars to travel underground through one of the most congested central city areas to a downtown terminal building of the Pacific Electric, the city charter revisions of 1924 included a provision that no rapid transit construction could be undertaken until a citywide plan was completed and approved (Foster 1971, 112).

In 1924 the city council and the county board of supervisors agreed to share the cost of hiring a firm of transit experts to prepare a comprehensive transit plan for Los Angeles. The Chicago firm of Kelker, DeLeuw, and Company was chosen, and in 1925 they submitted the Report and Recommendations on a Comprehensive Rapid Transit Plan for the City of Los Angeles. The plan called for the construction of 26.1 miles of subways and 85.3 miles of elevated railways during the next ten years and proposed many miles of feeder bus lines and bus routes in outlying areas. The report estimated the total capital cost of the transit system to be $133.4 million. The authors acknowledged that Los Angeles would continue to be a low-density metropolis of single-family homes and that rapid transit could not be financed solely from operating revenues in such an environment. It recommended that the city make special assessments in the vicinity of the stations and participate in the real estate gains that would flow from the investment by acquiring vacant property along the route, rental income in later years would go to pay off bonds in default, and that would be used to cover construction costs. Finally, it acknowledged that an increase in transit fares would be required, probably from the 1925 level of five cents to a new level of eight cents, to make the project a reality (Kelker, DeLeuw, and Co. 1925, 163–181).

While many central city business groups supported the transit plan, and eventually some suburban chambers of commerce also endorsed it, the transit plan met from the start with much greater opposition than did the highway plan. Many questioned the wisdom of spending so much public money to benefit the privately owned Pacific Electric and Los Angeles Railway, especially considering their poor record of service. Others decried the fare increase that likely would be required. While an eight-cent fare may seem tolerable looking back on these events from the perspective of the eighties, it actually constituted a 60 percent increase in fares and was greeted by the public as an unacceptable proposal. Although there was also damage opposition to the proposal that the majority of the proposed transit routes be elevated, and many homeowner groups decried elevated transit lines as dirty, noisy, and blighting. Reports appeared in the local press of depressed property values in New York, Chicago, and Philadelphia where elevated railways already had been built. The consultants pointed out, however, that four miles of elevated line could be built for a cost equivalent to that of one mile of subway.

At the time the Kelker-DeLeuw recommendations were made, the City of Los Angeles for years had been attempting to force the major railways serving Los Angeles to abandon their separate downtown terminals and to jointly finance a “union station,” located west of the plaza marking the point where the city was supposedly founded. The railroads preferred to maintain their independent terminals for a number of reasons, one of which was that they would be forced to permit intercity service by new competing carriers from the union station. At the time they could effectively exclude new rail carriers from serving Los Angeles because the Santa Fe, Union Pacific, and Southern Pacific controlled the downtown terminals and the most economic rights-of-way providing access to downtown. The Los Angeles Times favored a union station at the plaza site, while several other newspapers favored the railroads’ position. The railroads offered to elevate the tracks serving their existing downtown terminals, thus eliminating many grade crossings, reducing safety hazards, and easing the flow of downtown traffic. They also agreed to allow the Pacific Electric to use the proposed elevated right-of-way, providing convenient access between the intercity railroad terminals and the public transit system. The issue became heated, and the debate lasted for years. Charges were made that crooked real estate deals were really behind the different positions, and several public commissions studied the issue without resolution. Finally, the controversy led in 1926 to two ballot propositions. The first asked vot-
er to approve or disapprove of a union station; and the second asked them to approve or disapprove of the proposed plaza site. The battle peaked as the election neared, and the opposition to the railroads' position, articulated by the Taxpayers Anti-Elevated League, was based in large part upon the environmental damage elevated lines would have done.

Consideration of the Kelker-DeLue plan was deferred until the union station issue was resolved, but the implications were clear. A defeat of the railroads' proposal would severely damage prospects for implementation of the transit plan, since the acceptance of elevated railways was central to the debate over the terminal. The voters approved the concept of a union station by a margin of 61 percent to 39 percent and also chose the plaza site, though by a smaller margin. In reaching that decision, the voters had overwhelmingly rejected elevated transit. The city council could no longer consider the Kelker-DeLue proposal, and as the Depression arrived it had not adopted that plan or acted to implement a rapid transit system for Los Angeles.

THE LEGACY OF THE TWENTIES

City planners and businessmen agreed that dispersal of Los Angeles was desirable and recognized that pursuit of this objective required large capital investments in capacity to move people between many activity centers. They agreed that investments in highways and transit would be necessary to support decentralization. Yet there were several practical reasons the highway plan was implemented while the rail transit plan was not. It appears, in retrospect, that these circumstances, rather than a clear preference for automobiles, governed decisions in the twenties. The highway plan consisted of hundreds of individual, functional improvements that could be implemented in piecemeal fashion over many years, while the transit plan would require more "lumpy" capital investments, each quite expensive and concentrated in space and time. The tiny staff of the city planning commission, numbering about fourteen in 1925 and seventeen in 1931 (Foster 1971, 215), could address specific street dedications and widenings as it went about its primary activity of reviewing subdivision applications. The planners could use their subdivision approval authority to gain compliance from the developers, who, in the end, realized that successful marketing of their subdivisions depended on adequate street access. The financial burden of implementing the street and highway improvements was imposed on particular property owners, who recovered their costs from the sale of the subdivided lots.

The transit plan was more difficult to implement for several reasons. Because particular elements of the plan were of much larger scale and greater cost than most of the highway projects, regional tax assessments and fare increases would be required to implement them. Yet the public was already critical of the private transit companies and did not welcome the prospect of paying for improvements to services that would yield private profits. In addition (though today it seems ironic in a city internationally known for its air pollution), the elevated transit lines were viewed in the twenties as environmentally damaging. They would bring noise and shadows to a city in which sunlight and views were highly valued. The transit plan also suffered because it was closely associated with the dispute over the union station, which tended to identify the rail plan with crooked politicians, kickbacks, and land grabs. City planners were too busy implementing the highway plan and too vulnerable to political criticism to adopt a high profile in support of the rail transit plan.

As the citizens of Los Angeles debated the highway and transit plans, real estate speculators, building on widespread preferences for single-family living and the availability of autos, continued their practice of opening new subdivisions, often using fraudulent promotional tactics. By July 1925, there were nearly half a million vacant but subdivided residential lots in Los Angeles county, meaning that more than 55 percent of the subdivided lots were as yet undeveloped (Foster 1971, 183). Although the real estate speculators experienced a substantial decline in volume of transactions during the late twenties, their earlier activity ensured the continuation of the decentralized pattern that had been established in the days of the street railways.

By 1930, Los Angeles led the nation's cities in the proportion of its dwelling units that were single-family homes, at an astounding 93.7 percent. The same census showed, by comparison, that New York, Boston, and Chicago all had housing stocks of which less than 53 percent of the dwellings were single-family units (U.S. Bureau of the Census 1930, 450-51). In 1930 the Census Bureau reported that Los Angeles had a population density of only 2,812 people per square mile. That figure may be somewhat misleading, since it is based on a land area that includes the large and then-sparingly developed San Fernando Valley, annexed to the city after completion of the Owens Valley aqueduct project. Excluding that portion of the city, the density was about six thousand people per square mile, still dramatically lower than the reported figure of more than 23,000 residents per square
mile in New York, nearly 18,000 per square mile in Boston, and nearly 17,000 per square mile for Chicago (U.S. Bureau of the Census 1930, 77).

By 1930 it was also clear that business, services, and commercial activities had dispersed to a far greater extent in the twenties than they had in the previous four decades. For example, whereas 55 percent of all the city’s banks were located downtown in 1920, only ten years later that proportion had declined to 11 percent, as hundreds of branch banks opened throughout the area. The proportion of dentists’ offices outside the central city increased from 16 percent in 1920 to 55 percent in 1930; and the proportion of the city’s theaters that were in the central city declined from 73 percent in 1920 to just 20 percent in 1930. Whereas fewer than half of the city’s delicatessens were in outlying locations in 1920, 53 percent were located outside the central city by 1930 (Reeves 1932, 19). By all accounts, then, the dispersed pattern typical of Los Angeles was clearly established during the twenties, long before the start of construction on the region’s freeways.

The great boom of the twenties ended with a dramatic slowing of economic growth, bankruptcies of many real estate agents and speculators, and a slowing of the pace at which citizens of Los Angeles bought more automobiles. The pattern of the twenties persisted—the street railways slowly declined during the thirties and prospered briefly during the war years in response to gasoline rationing and military production in Los Angeles. Each year, bus routes were expanded and street railway lines abandoned. Buses could serve a large, low-density metropolitan area more economically, and that pattern had been well established before 1930. There were many proposals for transit improvements, but they all failed to capture the imagination of the public and its political leadership.

After the Second World War, when suburban growth again boomed in Los Angeles, the freeway-building program began. In the early 1960s, the last rail transit line was replaced by buses, and since then at least half a dozen major rapid transit plans have been considered as hundreds of miles of freeways were built. Los Angeles now has the largest all-bus transit fleet in the United States, and it appears that, after sixty years, a start will be made soon on a rail rapid transit system. The arguments for and against the most recent subway proposals for the city have been substantially identical to those offered in the 1920s, and the major stumbling block continues to be failure to secure the necessary funding for a rail transit system in a growing and vital but decentralized metropolitan area.

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REFERENCES


Causes of Recent Increases in Traffic Congestion

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Suck in Traffic examines the causes and possible remedies for the continuing increase in traffic congestion in American communities. Traffic congestion is not only an exasperating condition for citizens, but also causes economic inefficiency in terms of the opportunity cost of lost time. In this chapter, Anthony Downs analyzes several important reasons for the increase in congestion, including the intensified use of the automobile, the desire for low-density residential development, and our failure to require drivers to pay the full marginal cost of their behavior.

The goal of reducing traffic congestion has caused several communities to enact growth management legislation. This chapter should help the reader understand the causes of congestion. For reasons, the reader is encouraged to refer to the remainder of Downs' book, which discusses many imaginative strategies for reducing congestion.

The main causes of peak-hour traffic congestion are deeply rooted in American desires and behavior patterns. Some are even built into the basic physical and social structures of U.S. metropolitan areas. Policymakers hoping to reduce congestion therefore must persuade millions of Americans to alter some of their most cherished social goals and comfortable personal conduct.

The causes of rising congestion can be divided into two basic categories: immediate and long term. At least four immediate causes have been identified, each of which tends to reinforce the impact of the others and thereby heighten congestion.

Rapid Population and Job Growth

Rapid growth in the number of households and jobs in an area inevitably increases the daily flow of traffic through it. Growth can be rapid because it is either absolutely large or occurs at a high rate or both. Absolutely large growth recently occurred concerning jobs, though not always population, in the twenty-one metropolitan areas with 1990 populations exceeding 2 million. All experienced substantial absolute gains in the number and use of vehicles during the 1980s, even if their total populations remained stationary. Absolutely large population growth—defined as a gain of 250,000 persons or more from 1980 to 1990—took place in thirteen of these large metropolitan areas and in eight others with populations less than 2 million. Rapid rates of population growth—defined as percentage gains more than four times greater than the 1980-90 average for all U.S. metropolitan areas—happened in eighteen metropolitan areas with population increases of 45 percent or more.

These changes occurred in thirty-six American metropolitan areas, which were therefore most likely to have experienced rising traffic congestion in the past decade (table 1-1). Their combined population increase in the 1980s was 15.3 percent, in comparison with 9.8 percent for the United States as a whole. If one excludes New York, Pittsburgh, Nassau-Suffolk, Chicago, Detroit, Philadelphia, St. Louis, and Boston—included because of their large size but having low growth rates (or actual contractions)—the remaining twenty-eight grew 27.3 percent in the past decade. Yet all thirty-six combined contained only about 35 percent of the total U.S. population.

Employment growth in the 1980s, which reached 14.4 percent, perhaps had an even greater impact in causing congestion than population growth. For every 1 percent increase in population, there was a 1.53 percent increase in jobs outside the home. This meant that areas with relatively low rates of population growth nevertheless had more workers commuting daily. The Detroit metropolitan area, for instance, experienced an increase in employment between 1980 and 1990 despite a 2.4 percent decrease in population.

Congestion is thus not growing at an alarming rate throughout the nation but primarily in areas experiencing rapid population or job growth. That is probably why the first congestion remedy tried by most local governments is to slow their own growth. Not only is rapid growth the most visible cause, but local officials believe—correctly—that they have more control over local growth than over any other cause. Also, for reasons discussed later, they feel they are less likely to upset voters by adopting growth-slowing policies than by using other congestion remedies.

More Intensive Use of Automotive Vehicles

During the past fifteen years, the intensity with which Americans have used automotive vehicles has risen sharply. This has compounded the increase in vehicle travel resulting from population growth alone. Thus the number of cars and trucks in use increased nearly 50 percent, and the number of miles driven per vehicle increased 14.2 percent (table 1-2). Hence the total number of miles traveled by all motor vehicles annually soared 61.9 percent. The number of cars and light trucks available for personal driving during peak periods rose twice as fast as the number