CHAPTER IX
PRINCIPLES FOR THE LOCATION OF INTERSTATE HIGHWAYS

BACKGROUND OF THE "HIGHWAY PROBLEM"

The automobile transformed life in the United States. The automobile changed the shape and character of the American city. Harland Bartholomew was able, to some degree, to affect this transformation.

In 1891 there were two automobiles registered in the City of St. Louis. (A local tale relates that the two collided at the intersection of Eleventh and Locust Streets.) By the time Harland Bartholomew arrived in 1916 there were many, many more, and this was only the beginning. I was born in 1913 and do not remember my family ever being without a car (except for the two years we lived in London), and as a small child remember trips into the countryside on Sundays and occasional longer excursions to visit relatives in Colorado. My wife's parents mortgaged their home to buy their car. They took extensive motor trips from Kansas City over much of the east in the 1920's.

City streets were paved for the horse-and-buggy. Cities were built tightly, and many people would be served by a fairly small amount of paving. This was not true outside the city. In the country "dirt" roads prevailed, "mud" roads when wet, which could be often. The incredible mobility afforded by the family car at first was not used to go from home to work, but for social affairs and for recreation, for picnics, for rides in the country, and over to see grandma. Rural roads were dreadful; an early imperative was to pave them to get the state "out-of-the-mud."

In the cities traffic was slow. Original streets were narrow and discontinuous. Early American city planning addressed this issue through the "major street plan" which designated a network of key arterials for improvement for the great majority of the traffic, leaving most (about three-quarters) of the street system in its narrow and discontinuous condition to be used solely for access to the abutting property. Major streets were opened up; others were widened; others connected. Every comprehensive plan prepared by Harland Bartholomew and Associates included a Major Street Plan. Most of the 1923 bond issue of St. Louis was for the improvement of the major street system. St. Louis was not unique; every city was working on its major streets to accommodate the increasing volumes of auto and truck traffic. This was understood to be an absolute imperative if

74 *An Iowa Department of Transportation photograph depicting the early traveler's plight when encountering Iowa mud. From Drake Hokanson's book, "The Lincoln Highway."*

the city was to survive economically and to function efficiently.

Rural roads, while some became the concern of townships and counties, by and large became the responsibility of the states. By 1917 every state had a state highway department; by 1921 there was federal aid to the states and a federal requirement that a coordinated system of seven percent of the roads be designated for this federal aid. By 1925 the federal aid system was numbered (even numbers east-west; odd numbers north-south), and we had such elements of national folk-lore as Highway 66 from Chicago to St. Louis to Los Angeles.

The objective was to pave as many miles as possible and not to spend money on such niceties as easy gradients, wide curvatures or good sight distances. The demand far exceeded the resources. The roads have never been adequate. There was always more to do than there was money to do it with. When the state highway department's improvement (paving) of a highway came to a city, a connection was made to the handiest paved street and the state's work was started again over at the other side of the city where the city's paved street system ended and the unpaved rural road began.

The states and the federal government funded their work with gasoline taxes, a logical source as the user paid for the road. In contrast the cities financed their major street systems with special assessments (levied against fronting properties) and with bond issues (paid by the property owners).

The principle that a city exists only by serving needs outside the community was

well understood. People in St. Louis knew that Chicago was so big only because they had been slow in building a railroad bridge over the Mississippi River. Dallas grew rapidly because its pioneers had raised the money and built a twenty mile railroad to intercept the Cottonbelt line which had been planned to go from St. Louis to Ft. Worth but went to Dallas instead when the intercepting line, already built, was given to it. A city's trade area and the number of its customers depended upon the highway system; not the eventual system, but the system that got there first. Trade patterns, once made, were difficult to modify.

Local politicians, state representatives, congressmen all liked the state control of highway building, the deals and the trade-offs. Enough federal control to enable the main roads to meet at state lines seemed sensible also. The state highway engineers got together. The American Association of State Highway Officials (AASHO) became influential. Automobile manufacturers, truckers and truck companies, oil companies, and automobile clubs formed formidable alliances with the highway agencies. No one dared say "no" to a state highway department.

The state highway departments were aware that most people were living in cities; that most traffic was in the city as well as most traffic problems. Some started to help the city build highway routes through and sometimes around the city. When I was resident engineer for Harland Bartholomew and Associates in the revision of the Des Moines, Iowa city plan in 1938, I observed with interest how John McVickers, the Commissioner of Public Works, would take a copy of the Major Street Plan, mark on it the ten or so most needed projects, take the map around town and go over it with the important civic organizations, get their approval, and then take it up to Ames, where the State Highway Department would be asked to approve and fund the projects. This they would do because they knew the proposals had community support, which they would receive in return, and because previously their planning people had participated in the preparation of the major street plan, which had taken the federal aid highway system into account. Harland Bartholomew always insisted that all of our major street plans be reviewed by the state highway departments. Visits to the state capitals for this purpose were a part of our work.

The extraordinary decentralization of this system of highway design and building made it cumbersome in its response to wars and economic trends. Obviously it was subject to political influence and inefficiencies, if not corruption. It became entrenched, difficult to change or influence.

Social critics...have churned out the bulk of analysis and opinion. Highway construction, as they explain it, represented the success of legislative intrigue. An unsavory alliance of politicians and lobbyists, according to this drama, imposed unneeded roads on a foolish and gullible public, in the process ruining mass transit, creating useless jobs, and destroying rustic charm. The popular view of road building appears more jaundiced. Americans, while they have always welcomed new highways, believe that road legislation served as license for realtors and contractors to raid the United States Treasury. (1)

No matter how hard it tried, the highway (and major street) delivery system could not keep up with the needs brought about by the increasing numbers of trucks and automobiles. The more important federal aid routes had the poorest standard of pavement width, alignment, and grade because they were improved first. Secondary routes with lighter traffic and more recent

design were better. Traffic in cities was slow. Every intersection was a hazard; it was difficult to park. There were limits to how much traffic an ordinary city street could carry; there were more severe limits to how fast the traffic could go. Strangely enough the basic failure of the system to do its job insured its success and made it even more powerful. State highway departments were quick to spend money where their supporters were. Any disagreement meant that money went elsewhere. A poorly located or designed highway was better than no highway at all.

TRAFFIC ENGINEERS APPEAR

While the trucks and cars had been increasing so rapidly, some order had to be applied to them, as so many tried to use so little street and road space at the same time. Speed limits, stop and go lights, signs and signals appeared. A new profession, the "traffic engineer" came into being to assist. Soon this profession was going beyond such mundane matters as regulation. It was investigating where traffic was coming from and where it was going. It was measuring capacity of various types of streets to see how many vehicles a lane could carry per hour under various conditions. Highways were classified by condition and carrying capacity by the traffic engineers. This was a scientific approach that appealed to Harland Bartholomew. At his firm we retained traffic experts to advise us. Urban planners acquired the essential rudiments of this new branch of engineering. (2)

TOLL ROADS

Competition appeared. In the early 1930's the Public Works Administration as a depression-fighting, make-work program financed in part the Pennsylvania Turnpike, the remainder of the cost to be paid by tolls. The road followed an abandoned railroad through mountains; it was completely limited-access. It was a smashing success. You could sail along at seventy or seventy-five miles an hour for hundreds of miles. No stop lights. Great. So you paid a toll. It was worth it.

It scared the dickens out of the AASHO people and their allies. The President asked the Public Roads Administration to study a national system of toll roads. This they did, and the President sent their report on "Toll Roads and Free Roads" to Congress in 1939. This study investigated a 14,300 mile system of toll roads - three routes east-west and three north-south but concluded that it would be better to build a 26,700 mile system of limited access roads (like toll roads but without tolls - i.e. "free").

At the same time, Robert Moses was building limited access parkways in New York. New York and other cities such as Detroit and St. Louis were experimenting with sections of "freeways", limited access routes carried above or below the surface streets. General Motors' Futurama exhibit at the New York World's Fair of 1939 demonstrated to visitors how you would be able to drive at fifty to seventy-five miles an hour right into the very heart of the city from out in the countryside. The exhibit was brought to the White House and shown to President Roosevelt and bemused federal officials, who heretofore had thought of highways as nothing more than a potential means for reducing unemployment.

The vision was a heady one. We could

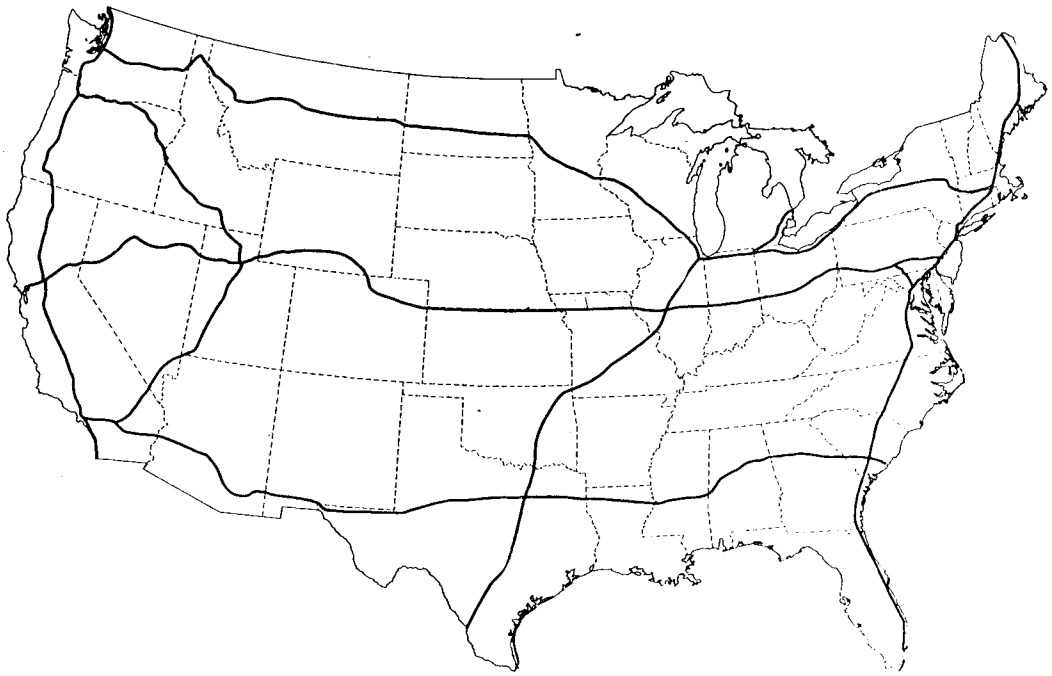


FIGURE 1.—The 14,300-mile system investigated by the Public Roads Administration in connection with the report, Toll Roads and Free Roads, sent to Congress by the President in 1939.

75 What started it all - the proposal for a national toll road system.

have an entire national system of these roads. In rural areas they would be like the Pennsylvania Turnpike (or like the German Autobahns), and then they would go right on into the heart of the city just like the roads in General Motor's Futurama. General Motors liked the idea. Franklin Roosevelt liked it. So did the Public Roads Administration. What about the state highway departments, AASHO, and their allies the truckers, the oil companies, and the auto clubs. They "might" like it, depending upon who did it and who paid for it. This is where Harland Bartholomew came into this picture.

THE NATIONAL INTERREGIONAL HIGHWAY COMMITTEE

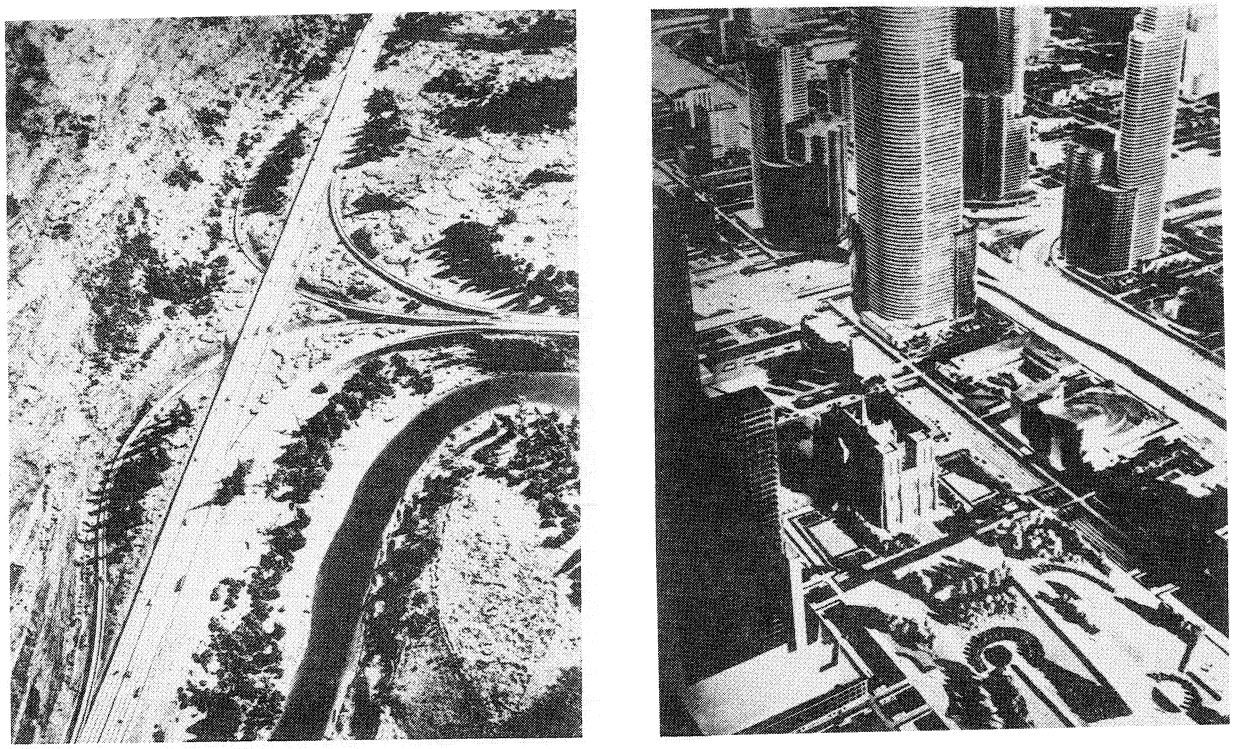
On April 14, 1941, President Roosevelt appointed a "National Interregional Highway Committee" and charged it with reviewing existing data and surveys (including presumably the report "Toll Roads and Free Roads") and reporting to him "not later than October outlining and recommending a limited system of national highways designed to provide a basis for improved regional transportation." The committee consisted of seven persons:

Thomas H. MacDonald,
Commissioner of Public Roads,
Federal Works Agency

G. Donald Kennedy
State Highway Commissioner of Michigan (According to the White House, Michigan road officials were "politically powerful and control the state government.")

Bibb Graves
Former Governor of Alabama

C.H. Purcell
State Highway Engineer of California



76 *Photos of the General Motors "Futurama" showing freeways integrated with urban development, and a directional interchange between two routes.*

Frederic A. Delano
Chairman, National Resources Planning Board (and the president's uncle)
Rexford Guy Tugwell
Chairman, New York City Planning Commission
Harland Bartholomew

Staff assistance was to be provided by the Bureau of Public Roads.

The members of the committee represented the unrecognized dichotomy of the national approach to solving the highway and traffic problem. The first approach might be called "traffic first." The theory here was that the trucker and motorist paid for the highway (from the gas tax mostly), and that the highway authority was to serve their interests. Thus, if the traffic wanted to go from Point A to Point B, the road should be as direct as possible and as cheap as possible. To find where the traffic wanted to go was not too difficult; to analyze and choose the cheapest alternative was the engineers' responsibility. If the result was messed-up cities or spoiled countrysides, that was regrettable but necessary, because the overriding consideration was to do the best for the traffic. Traffic was king in the "traffic first" approach.

The second approach might be called "society first." This was best exemplified by the Norman Bel Geddes "Futurama" that Franklin Roosevelt looked at. This was based on the highways' serving the greater good of society as a whole. In cities, they would be designed as an integral part of the urban pattern, creating viable

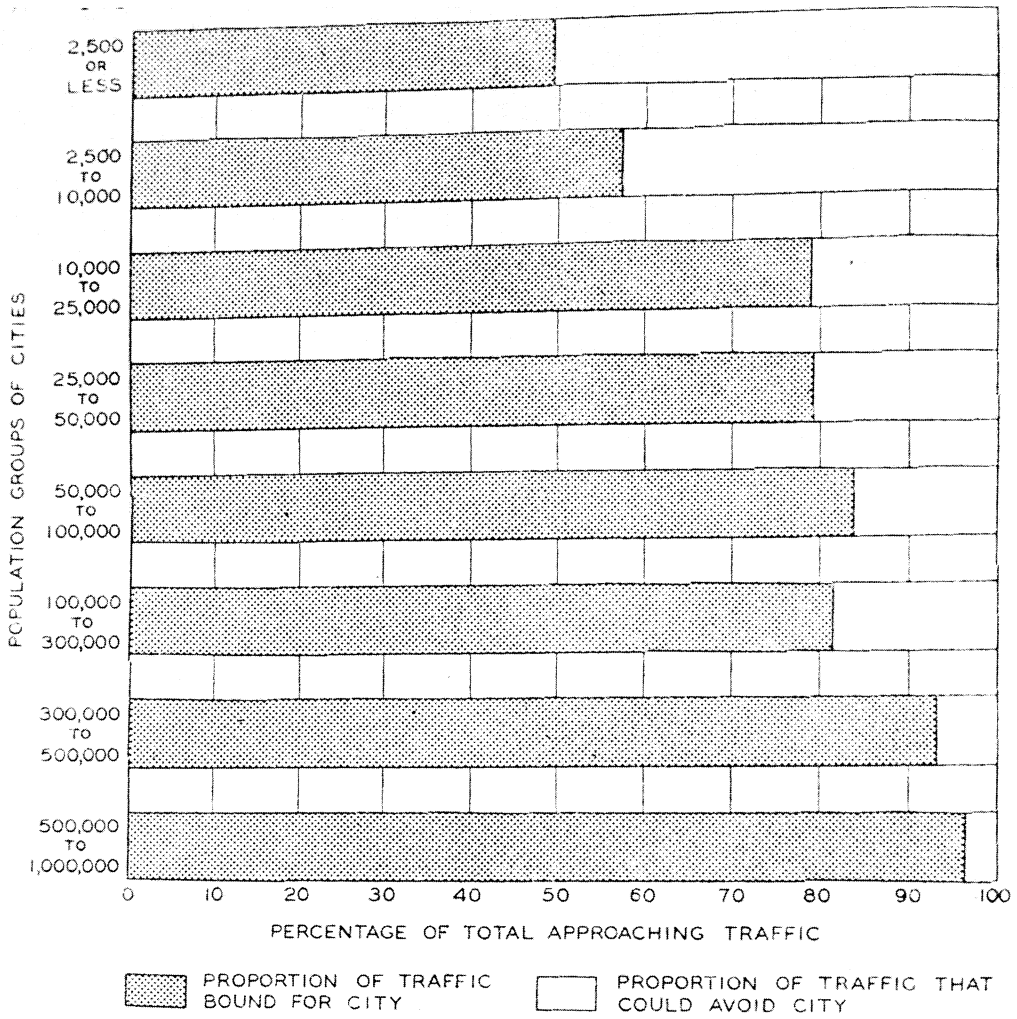


FIGURE 29.—Graph showing two divisions of the total traffic on roads approaching representative cities of various population groups: (1) The average percentage city bound, and (2) the average percentage which could have bypassed the cities.

TABLE 14.—*Proportions of traffic bound to and beyond cities of various populations, as shown by origin-and-destination surveys on highways approaching 27 cities*

Population group	Number of cities	Traffic bound to the city	Traffic bound beyond the city
		Percent	*Percent*
Less than 2,500	6	49.3	50.7
2,500 to 10,000	6	56.7	43.3
10,000 to 25,000	3	78.1	21.9
25,000 to 50,000	5	79.0	21.0
50,000 to 100,000	2	83.8	16.2
100,000 to 300,000	2	81.6	18.4
300,000 to 500,000	2	92.8	7.2
500,000 to 1,000,000	1	95.8	4.2

77 *Not much traffic wanted to by-pass a city - even a small city. The city was where the traffic wanted to go.*

FIGURE 1.– The general location of routes of the recommended interregional highway system. Total length of the system is 33,920 miles.

..... Major additions since 1944

78 *The 1944 system has all been built - and more, much more.*

neighborhoods, for example; would be related carefully to other transportation forms such as rapid transit, railroads, and airports and would foster a balanced total urban pattern, making the downtown equally convenient to all sections of the community. Highways would also be related to the parking facilities needed at shopping centers, downtowns, and office complexes, for example. Highways would respect the traditions and amenities and not pre-empt parks or require demolition of historic structures. Under this approach highway construction could be used to speed up or slow down the national economy.

The "traffic first" approach characterized the highway engineer and the state highway departments. It was the approach the nation was accustomed to, one where the federal government provided money, some guidance, a little coordination, but wherein the real control, the real power was in the state capital. The "society first" approach characterized that of the city planner. The Interregional Highway Committee, attesting to Roosevelt's acute political judgment, contained representatives of both approaches.

How did Harland Bartholomew get appointed to so influential a group? Probably for two reasons. First was his work for the National Capital Park and Planning Commission. The Bureau of Public Roads was located in the District of Columbia. All Washington residents were sensitive to planning and development issues in their

RECOMMENDED SYSTEM

TABLE 13.—*Estimated urban, rural, and total mileage, total rural vehicle mileage, and average daily traffic volume on rural sections, for all systems studied, including the recommended system*

Mileage of systems		Total rural vehicle mileage	Average daily traffic, rural sections
Total mileage	Mileage of rural sections		
Systems previously investigated:	*Miles*	*Vehicle-miles*	*Vehicles*
14,300 miles	12,600	32,000,000	2,540
26,700 miles	23,300	59,200,000	2,540
29,300 miles	25,350	66,100,000	2,590
48,300 miles	42,380	104,900,000	2,480
78,800 miles	70,230	150,200,000	2,140
Additional system tentatively investigated:			
36,000 miles	31,350	80,981,000	2,580
Recommended system:			
33,920 miles	29,450	78,208,000	2,660

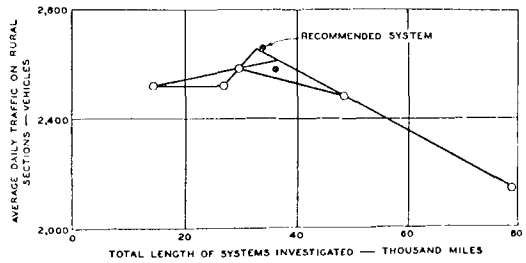


FIGURE 24.—Graph employed in refining Committee's selection of the interregional system.

79 *The key element in the selection of the system.*

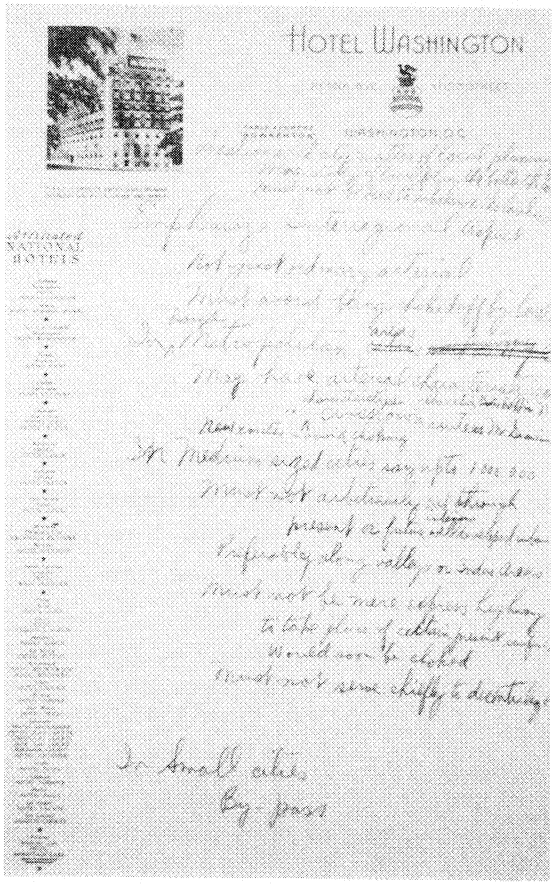
"home town." Harland Bartholomew also knew Thomas H. MacDonald, Commissioner of Public Roads. Then, in our city planning work, we had reviewed many major street plans with various state highway departments, and while all "planners" were suspect, we were thought to be reasonable and practical. Further, Harland Bartholomew and many of our staff were engineers and prominent in the work of the professional engineering societies.

The Committee's first meetings were September 8 and 9 of 1941. The report was not made October 1, 1941 but on January 1, 1944. Actually MacDonald (and his staff), Purcell, Kennedy, and Bartholomew were active in the work of the Committee and contributed to the final report. Delano withdrew from active participation. Graves died. Tugwell became Governor of Puerto Rico and could not attend most committee meetings. Thus the Committee lost the contributions of three of the four members who could be expected to emphasize a "society first" solution. Harland Bartholomew was left as the only proponent of this point of view.

While Roosevelt had appointed a National Resources Planning Board (also known as the National Resources Committee), and this committee had made broad nationwide studies of such matters as urbanization, national planning was not accepted by the American people and such activities had no approval by Congress. The only thing that we had in the way of a national plan was the Federal Aid Highway System of 1921, and this was generated by the individual states and coordinated by the Bureau of Public Roads. The Interregional Highway System was to be the second element of a national plan. While the National Resources Committee encouraged the preparation of state plans and many of these were made, few included a highway plan, and even fewer received the public participation or political blessing required to make them of other than academic interest. When we went to prepare a comprehensive city plan there was nothing to relate to - no national plan, no accepted state plan, nothing. This changed with the publication and congressional approval of the plan for a national system of Interregional Highways. The report of the Committee was extensive, almost 200 pages long, and appropriately illustrated. (2)

THE REPORT OF THE COMMITTEE

The first section of the report was devoted to a determination of the system. This utilized a "traffic first" approach. The Committee considered existing traffic and existing conditions and devised the optimum highway system to serve these without regard to how these had changed in the past or might change in the future. The Committee looked into the "toll road"



80 *Harland Bartholomew's notes for the Chapter on "Routes in Urban Areas"*

system of 14,300 miles and the "free road" system of 26,700 miles MacDonald had investigated two years before. Then 29,300, 48,300, and 78,800 mile systems were investigated. The Bureau of Public Roads staff plotted traffic on each system's rural mileage. The recommended system of 33,920 miles had the highest average daily traffic on its rural sections: 2,660 vehicles per mile. Thus, it was recommended by the Committee and approved by Congress later that year.

The remainder of the first part of the Committee report was devoted to a demonstration of the equitable manner by which the system served the population, the industry, the defense installations, and the various regions and components of the nation. The first part designed the system; the second was a sales talk demonstrating how good it was. The interregional system connected all American cities of more than 300,000 populations, 59 of the 62 cities of between 100,000 and 300,000, and 82 of the 107 cities of between 50,000 and 100,000. Others were added with extensions to the system, made tempting when ninety percent federal financing was approved.

Of the recommended system of 33,920 miles, 29,450 were rural, and the remainder of 4,470 were urban. The total rural miles were estimated to cost the same as the total urban miles. Thus the cost for an urban mile was about seven times as much as a rural mile. The central message of the report emphasized that we should thrust these great highways into, through, and out of the hearts of all of our biggest cities and that we should do so in the national interest. The reaction was positive. Everyone thought this was a really great idea; at least, most everyone.

ROUTE LOCATION IN CITIES

The Committee met with the Bureau of Public Roads staff and discussed the plans and report. The staff submitted drafts of the various parts of the report for review. In the fall of 1941 Harland Bartholomew called me into his office. He had with him the draft of the second part of the report dealing with "Some Principles of Route Selection in Cities" (3) He asked me to read it and talk to him about it the next day. He said that he did not believe it dealt adequately with the problem.

The chapter had to deal with a most complex subject. Almost all of the

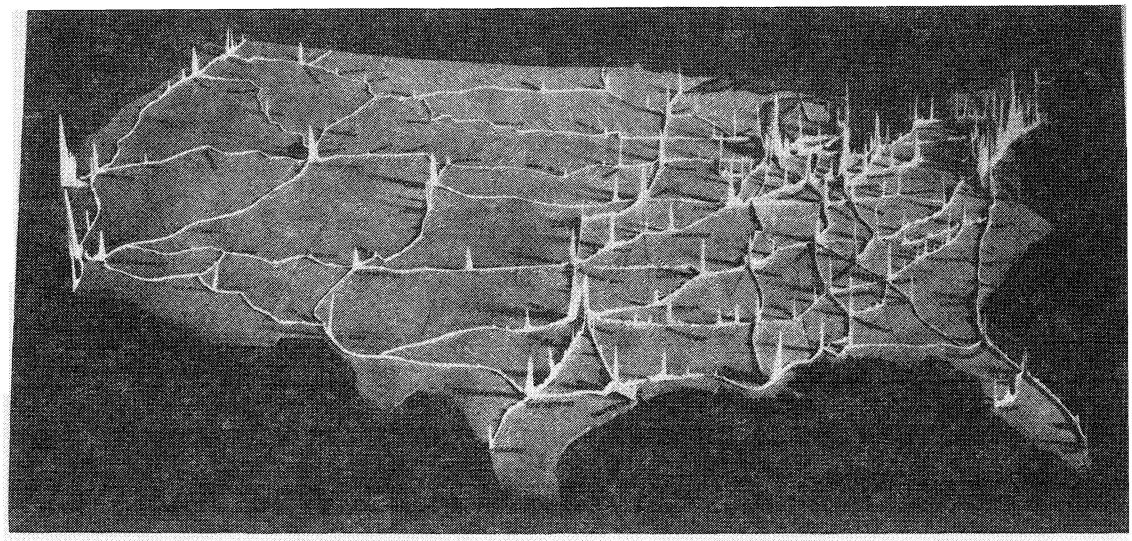


FIGURE 22.—Relief traffic map of the recommended interregional system. The height of the traffic bands indicates approximately the average density of traffic to be expected at all points on the system. The mounting spires at the principal cities picture the great increases of traffic to be expected on sections of the routes traversing the cities.

81 *The routes were through the centers of cities because that is where the traffic wanted to go.*

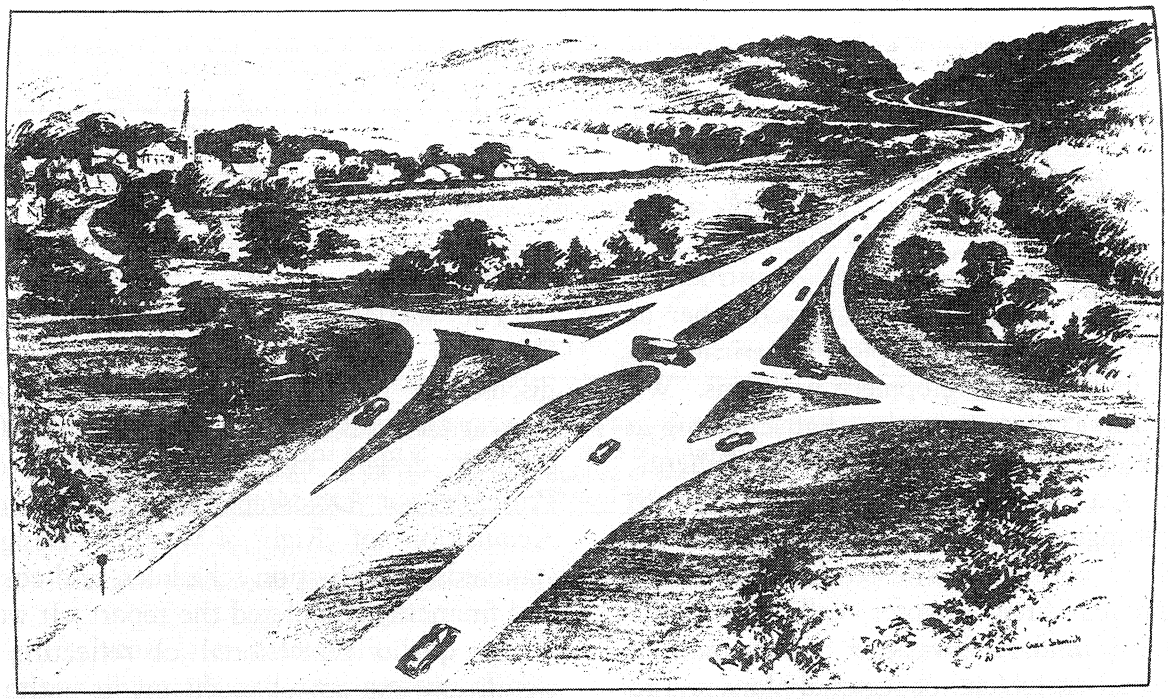


PLATE VII.—A grade crossing on a four-lane rural section of the interregional system as it would be designed in conformity with the standards proposed. Note widening of the median strip on approach to the intersection, tapered acceleration and deceleration space and left-turning deceleration and standing areas adjacent to the median strip. In the distance the two roadways appear on different levels where the alignment follows the side of a steep hill.

82 *The original concept did not call for separated grades in rural areas where traffic was expected to be light. This standard was changed.*

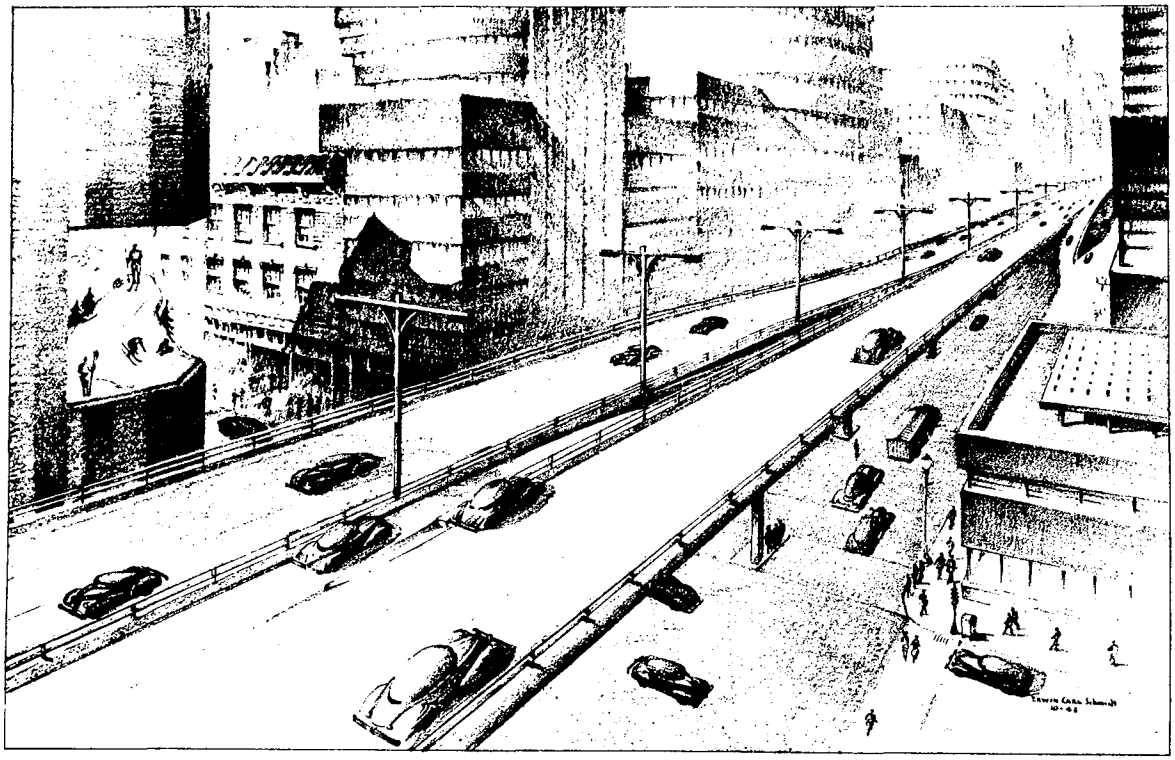


PLATE VIII.—An elevated section of the interregional system as it might be built according to the standards proposed, with central exit ramps and lateral entrance ramps. The sketch suggests the manner in which new properties might conform to curving lines of the expressway in widened sections at access points, and a show window at the elevated level dressed appropriately with the kind of large display that would be needed for comprehension by express traffic.

83 Interstate 81 through Syracuse, New York's central area looks much like this today.

statements in the draft were constructive. They just did not relate to each other as they should or to the typical American city and its (1941) development problems. We put some time into the draft, making a limited reorganization, a few supplements, and some rewording sending it back to Washington for Mr. MacDonald and his staff to consider. The result was a much improved final chapter calling for the Interregional Highways to become part of comprehensive city or regional plans and to be integrated with the urban development process. The revised chapter sent a "society first" message, in fact even stating (page 71) that "observations of the existing traffic flow may not be an infallible guide to the best locations."

The section on "Principles of Route Selection in Cities" was followed by discussions of Mid-City Terminals (i.e. parking facilities) and of Limiting Access (a difficult design and legal problem), of Principles of Landscape Design, and of Acquisition of Right-of-Way). Design standards, construction schedules, and costs and financing completed the report. It was a high quality professional job reflecting a significant amount of credit on its authors and on the caliber of the staff at the Bureau of Public Roads.

The chapter on locating the routes in urban areas starts with a description of the American city as it was in 1940. To read

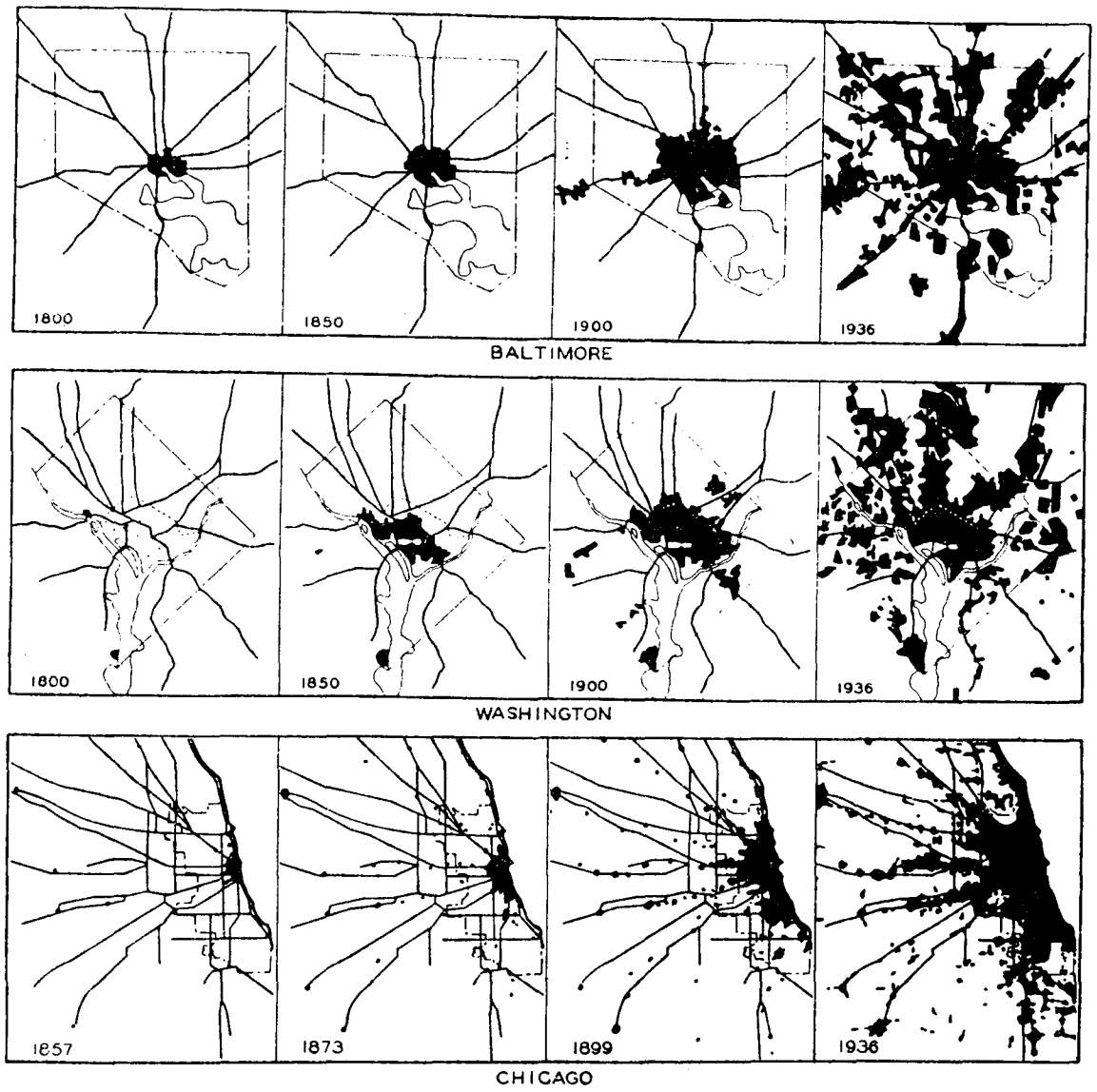


FIGURE 26.—Typical diagrams illustrating the manner of growth of the occupied area of cities. The main highways that appear in the series of diagrams for each city have been unchanged in location throughout the whole period covered. In all periods the influence of the highways upon the growth of occupied area is clearly depicted by the greater outward extension of the city in areas adjacent to these roads.

84 *The interstate routes could get close to the center of the city by traversing "wedges of open space."*

this fifty years later is to realize the extent that the character and arrangement of the city have changed since that time. The chapter describes how the urban area was dominated by its central business district and how these districts were losing value because of depreciation, poor original planning, and traffic congestion. The extensive deterioration of older residential areas (the slums and blight) were described, as well as the flight of the upper and middle income families to the outskirts, many times beyond the city limits. Interregional highways could revive central areas by

making them more accessible, enabling slums to be replaced more easily, enabling the city to decentralize even more rapidly and making it even easier for people to escape the increasing problems of the deteriorating central cities. Statements emphasized the multi-jurisdictional local governmental jungle of the typical large urban area and called for regional planning agencies to deal with this.

It was up to the state highway departments to locate the routes in rural areas, the report stated. However, "within and in the vicinity of cities [this] is properly a matter for local study and determination." "Selection should be made cooperatively by the State Highway Department and appropriate local planning and highway authorities and officials." (Report, p.56) The report then established the case for the routes penetrating to the center of the urban area, going through or by the center and then out the other side. This argument was based on traffic desires and included references to several traffic studies. "How near should they come to the center of the area, passing by through, and by what courses they should approach it, are matters for particular planning consideration in each city."

The report noted the recent tendency for American cities to grow in a star-like pattern with development going-out routes of transportation such as highways or commuter railroads leaving "wedges of open space" in between. New interregional highways could traverse these wedges, the report suggested, resulting in cheaper right-of-way, and more important, a more compact and efficient urban pattern, always one of Harland Bartholomew's concerns. Traffic was not in the open space but in the fingers of development. This was a "society first," not a "traffic first" principle.

The report talked of the circumferential and distributor routes, of the relation to other transportation foci and terminals such as stadiums, truck terminals, and airports, of the relation to and use by other transportationn modes, of the taking advantage of very large scale developments, of how to minimize crossings, and of the relation of the interregional highway system to urban planning generally. The thrust of the report was that the American city was in trouble because it had not had a planned development in the past. It would be in even more trouble if planning did not guide its future. The only way we could insure that long, continued usefulness of an inter-regional highway system, necessary to a full return on so great an investment, would be to make it an integral part of the planned growth of the urban community.

The report was full of sensible and practical suggestions, a "how to" book, similar to one of Harland Bartholomew's lectures at the University of Illinois. Look for lightly or poorly developed stream valleys, it said. Maybe you can run a highway down one. Go along a river or a railroad. There will not be so many crossings that you have to pay for. Where there is a gridiron street system, parallel one or the other direction, and minimize disruption to property by avoiding diagonal crossings. Where dimensions are appropriate, take out a whole row of blocks and use the streets as service roads.

These "principles" were illustrated with three diagrams and three sketches prepared by Erwin Carl Schmidt, St. Louis architect and delineator, who did many illustrations for Harland Bartholomew and Associates, and who made these drawings under Harland Bartholomew's supervision. These showed 1) an interregional highway by-passing, but conveniently connected to a

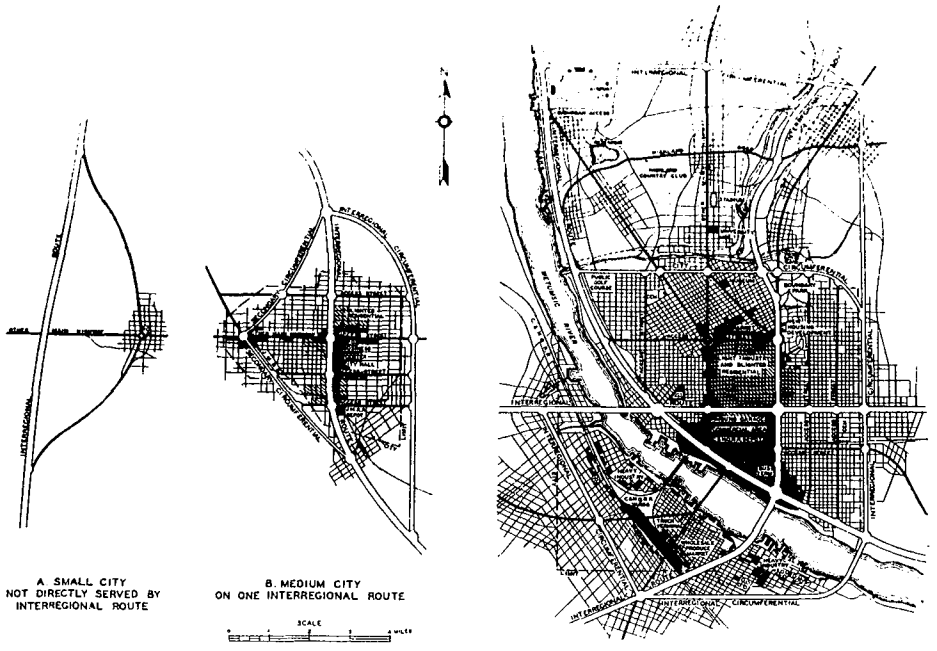


FIGURE 31.—Schematic lay-outs illustrating various combinations of main interregional routes required for the adequate service of traffic at cities of various sizes.

85 *The key diagram illustrating "Routes in Urban Areas."*

small city, (See 80) 2) an interregional highway both going through the center of a medium sized city on one route and by-passing on another with connections to other components of the highway system, (See 84) and 3) an entire system of through routes, circumferentials and by-passes for a large city (with a route along a river). Schmidt's sketches showed how the system would look.

WHAT HAPPENED AS A RESULT OF THE REPORT?

The report was approved by the President and sent to Congress January 12,1944. Congress approved the report and authorized inclusion of the new (and now interstate) highways in the federal aid system. MacDonald asked for review by the state highway departments, which resulted in some additions, and by August 2, 1947 had an approved interstate highway system of 37,700 miles.

The various elements could not agree on financing of the highway program, however. The agricultural interests were intent on paving more rural roads. The truckers wanted better highways but did not want to pay for them. President Truman put the brakes on highway construction because of the needs of the Korean War and the impact on inflation. President Eisenhower was more interested in the highway program than either of his predecessors. However, he did not think that a national system of interstate and defense highways should be built by the states. Instead there should be a national highway authority. The states and Congress did not agree. Highway funding continued but at a modest level. Finishing the interstate system would take two or three decades, several states estimated.

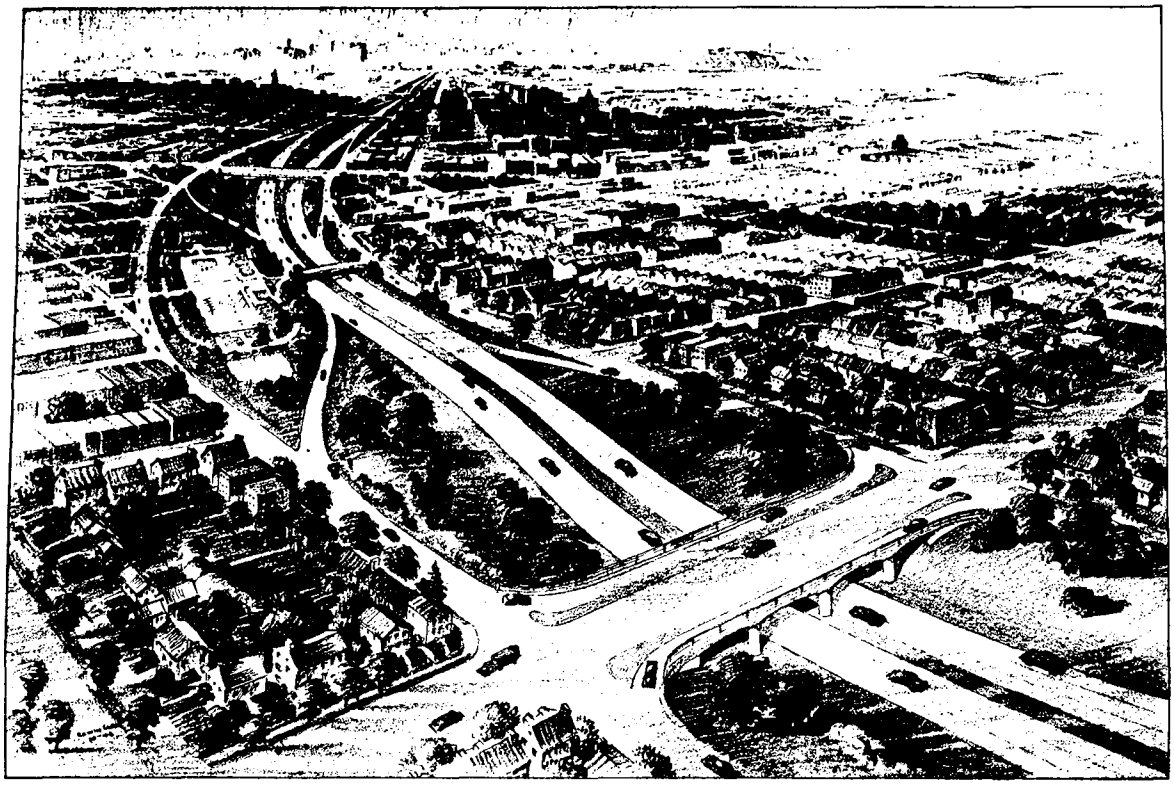


PLATE X.—Built within a block-wide right-of-way, on a gently rolling grade, depressed to pass under bridges at important cross streets and rising to normal ground level between, with varied median strip width and use of border areas for suitable neighborhood recreational purposes, a section of the interregional system traversing residential areas of a city, conforming in all respects to standards proposed by the committee, is shown in this sketch.

86 Fitting the route into the fabric of the city. Note the anticipated light traffic and the absence of trucks in the picture.

In the meantime city plans were modified to include the interstate routes. Committees were formed to promote construction of express highway networks such as that of Los Angeles in 1942. Other cities and counties passed bond issues for road improvements, and toll highways increased in popularity. By 1952 there were 600 miles of toll roads with another 1100 under construction.

The highway construction system had never been successful at delivering a product until long after it was needed. The toll road authorities could. Finally, after twelve years of differences of opinion and contention for leadership among the several elements--farm to market, truckers, auto clubs, and urban interests--the house of representatives approved 388 to 19 (April 27, 1956), a bill sponsored by Hale Boggs of Louisiana and George Fallon of Maryland. The size of the pie was increased by a tax increase (including some on the truckers), and everyone got a piece of the bigger pie. The interstate system got $25 billion distributed in accordance with local needs and with the federal government paying ninety percent. "Local needs" meant urban projects would get most of the money. No new level of federal authority was imposed. The same old game was to be played in the same old way and by the same old players. But the

interstate system was off the ground. After 1956 progress was rapid.

ROLE OF HARLAND BARTHOLOMEW

Harland Bartholomew was instrumental in writing those parts of the interregional highway report that dealt with urban areas. The report described general principles not hard and fast rules. In approving the plan and report, Congress did not ever say that to get federal money, you would have to follow the route selection guidelines of the report. And even if it had, no federal bureaucracy would have been able to stand up for long against the politically powerful state highway departments.

In 1949 Harland Bartholomew talked about "The Location of Interstate Highways in Cities" before the annual meeting of the American Planning and Civic Association at Oklahoma City, Oklahoma. In this address he repeated and re-emphasized the principles of the Interregional Highway Committee. (See Appendix G.)

INFLUENCE OF REPORT

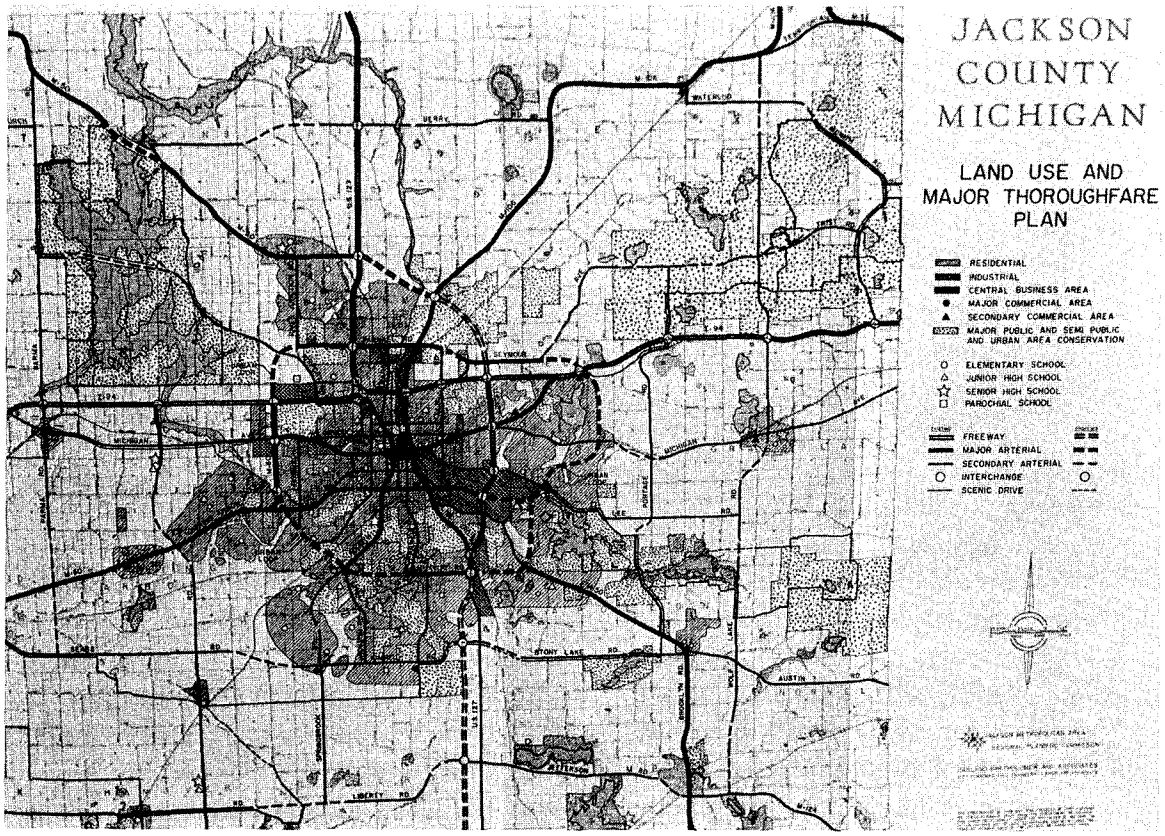
Many of the suggestions of the interregional report have been followed. Wedges of open space have been used such as at Montgomery, Alabama and Lincoln, Nebraska. Railroads and rivers have been followed such as at Philadelphia. Traffic has not always been a guide such as in the case of the Third Street Expressway in St. Louis. In many cases large central area urban renewal projects were integrated with the interstate system. As city planning departments became better staffed with more competent personnel, they were able to influence state highway engineers to choose more "society first" routes. They could, and did, frequently cite statements in the interregional report to help them with their cases.

The fact remained, however, that the state highway departments were in charge. They would "consult" and, later, would make environmental impact studies, but these seldom affected the choice of the cheapest alignment that would carry the most traffic. This resulted in the pre-emption of park land (Balboa Park in San Diego, Forest Park in St. Louis), division of neighborhoods, and destruction of the fabric of historic districts. (4)

APPRAISAL OF BARTHOLOMEW'S CONTRIBUTION

To Harland Bartholomew goes much of the credit for the good that came out of our country's biggest public works project. His constant emphasis that every part of the city be built as a part of an overall comprehensive city plan had no finer hour or did more good than it did here. We can look back now with a twenty-twenty vision sharpened by fifty years of hindsight. We cannot blame members of the Committee or Harland Bartholomew for not seeing the full extent of the dispersion and decentralizing of the American city brought about by the interstate system. Nor could they have foreseen the great volumes of trucks and automobiles using the system and the incredible amount of noise, dirt, and smog that these would create. They had no way to know or to anticipate what a truly bad neighbor an interstate highway would be. This by itself affected the arrangement of land uses along them. Nor was the Committee concerned with the relocation of so many people that would be displaced by the wide highways.

The numbers of cars and trucks had



87 *A major element in the 1968 Comprehensive Plan for Jackson County, Michigan was the location chosen for Interstate 94 by the State Highway Department.*

been increasing rapidly when they were writing their report in 1941. Post-war increases made these earlier increases seem nothing at all. The highway building system had never been able to keep up with need. The interregnum between 1941 and 1956 exacerbated this even more. The urban interstates were so expensive that they could never be built at once. A classic story is that of the Missouri Highway Department engineer whose wife conceived a child as a by-product of their celebration of his obtaining final approval of the plans for Interstate Highway 44 through the city of St. Louis. The child so conceived had had his driver's license for five years on the day the highway opened.

No matter how advanced your design techniques might be, it is difficult to create anything that takes fifteen to twenty years years to finish. Thus we are constantly using a transportation system with a built-in obsolescence. Before we can drive on it, it is out of date. Thus we have to modify, alter, widen, make-do, and sit and wait.

Through three presidents our highway system demonstrated its political power. The system has the money and the power. If your mayor does not like where the highway department is going to build a highway, it will take the money and spend it in a competing city where the mayor is not so foolish.

While almost all highway departments

are now called "transportation departments," they are still heavily oriented toward the motor vehicle. Sometimes coordination between forms of transportation does not mean much more than a highway sign directing you to the Amtrak station! Harland Bartholomew's experience with an alternate form of transportation is the subject of the next chapter.

FOOTNOTES

IX-1 Mark H. Rose *Interstate* Express Highway Politics 1941-1956. The Regent's Press of Kansas, Page IX.

IX-2 See *Interregional Highways*, Message from the President of the United States, transmitting a report of the National Interregional Highway Committee, United States Government Printing Office, Washington, D.C., 1944.

IX-3 *Interregional Highways* Draft of the Report and Recommendations of the National Interregional Highway Committee. Mimeographed and in five volumes. Harland Bartholomew's copy is in the library of the Harland Bartholomew and Associates, Inc. St. Louis office.

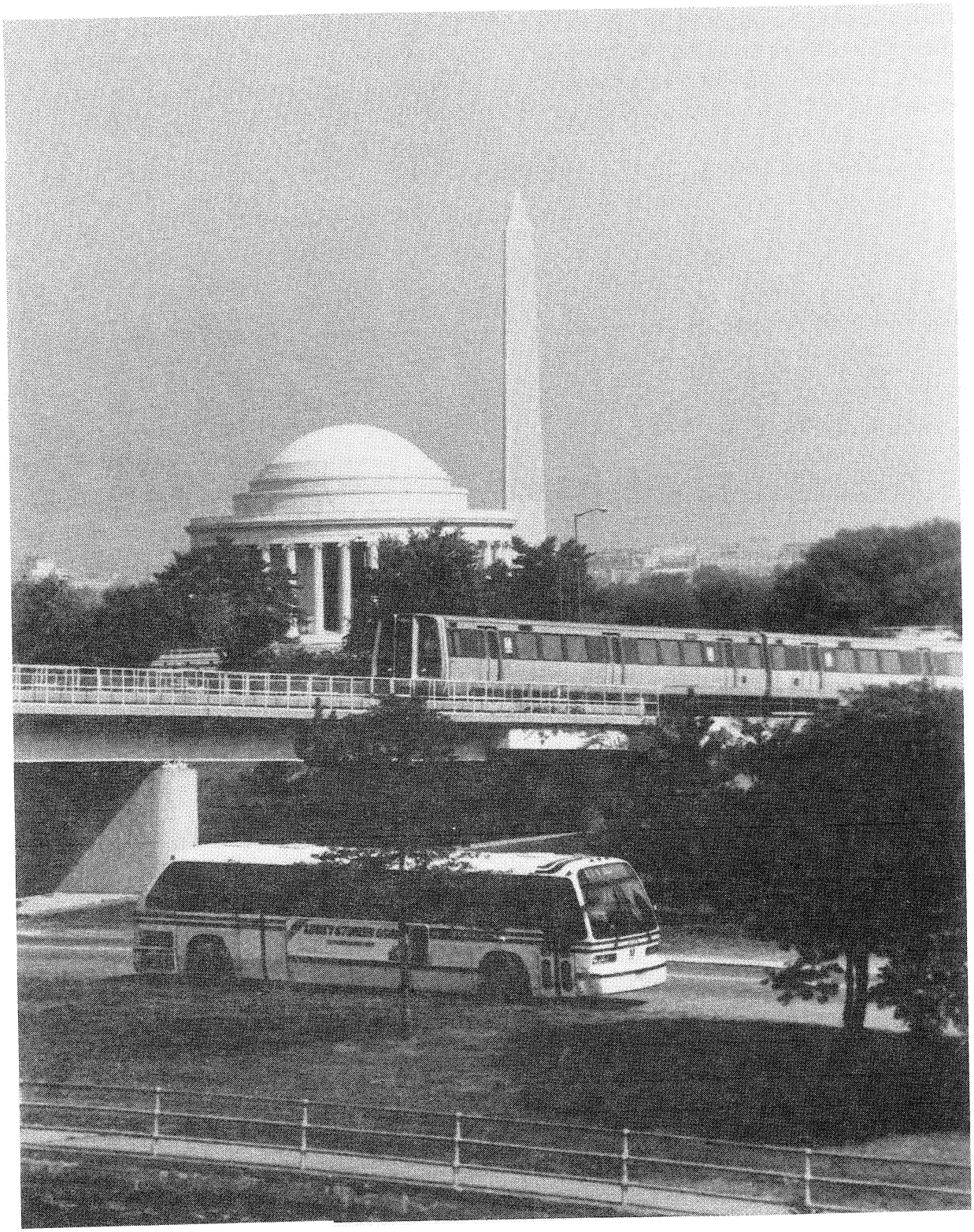
IX-4 See *American City Planning*, Mel Scott, University of California Press, 1969, pages 536-541.

If the advantages of good planning or the disadvantages of bad planning in the form of economic and social waste could be brought as directly to the attention of our municipal citizenship as is the case with crime, disease and fire, cities would be much more concerned with city planning than they are today.

- Pittsburgh, 1925

City planning is a long-time job - in fact, a continuous work of constructive effort. As such it cannot be approached as a fanciful fad nor as a political expedient. It is a science as well as an art that must rise above the plane of changing administrative policies.

- Pittsburgh, 1925



88 *Washington Metro. Train on "Yellow Line" heading south to Huntington.*