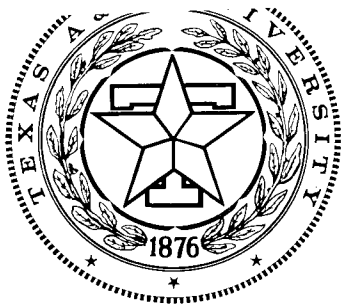

TEXAS TRANSPORTATION INSTITUTE

TEXAS HIGHWAY DEPARTMENT

COOPERATIVE RESEARCH

LAND USE STUDIES
2-8-54-1

in cooperation with the
Department of Commerce
Bureau of Public Roads

BIBLIOGRAPHY(63-14)
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LAND USE STUDIES

Compiled by
Texas Transportation Institute
December 1963

1. Aguar, C.E., "Subdivision standards-weapon to halt uncontrolled growth." Am City 68: n 4, Apr 1953, p 100-2.

   Examples of cities in Tennessee which, due to rapid growth, necessitated large expenditures for sewers, rights of way, water mains, ets; most of problems are due to shortsighted subdivision development; to avoid this, Tennessee State Planning Commission has recently published model set of subdivision standards some of which are described in present paper.

2. Babcock, W.F.,"City-State highway planning." Traffic Quarterly (The Eno Foundation for Highway Traffic Control, Saugatuck, Conn.), Vol. 12, No. 4, pp 559-566, October 1958.

   North Carolina's rapidly growing cities are primarily in the 10,000 to 100,000 population class. Sound cooperative planning between the states and cities will, therefore, make it possible to develope street systems for highway and local use, constructed at a reasonable cost, in a manner to insure the prosperous growth of the area.

   In the past, the lack of cooperation state and city planning has brought about premature highway obsolescence.

   Obviously, it is not possible to know where these new highways should be and how they should connect with other major urban streets unless some finely detailed form of planning has taken place.

   Actually, the planning of highways in the urban area is even more desirable and necessary from the cities' point of view than from that of the highway commission. The location of highways in urban areas--in fact, the very existence of highways--can profoundly effect the cities' development. It should be insured that the impact on cities is beneficial, not detrimental.

   Development of the interstate highway system, bringing changes in the transportation pattern, will accelerate the shifts in population more rapidly than in the past. Similarly, major primary route improvements will also have a profound effect on the urban development pattern. A well conceived city plan, if followed, can help the cities attain greater advantages from highway construction.

   Although the highway commission has not the power to undertake complete planning programs in cities, it realizes that the best results in thoroughfare planning

can be achieved through such programs and it will strongly urge communities to undertake them.

The North Carolina State Highway Commission has developed an advance planning unit within the planning department. The advance planning department includes project engineers who make the preliminary planning and layout studies for all rural highways. and urban highways. Within this advance planning unit are specialists in regional planning, in urban planning, and specialists in urban transportation problems. This section of the department is charged with the responsibility of developing an over-all master highway plan for the state as well as working on local planning and transportation problems.

Where there are no planning programs in progress, cooperative studies with the municipalities of the state take several forms. One instance is a major study being undertaken with the City of Charlotte, making use of federal-aid planning funds and the employment of a consultant to make an over-all thoroughfare planfor the greater Charlotte area. The activities on this area are coordinated by the planning department of the state highway commission.

As a second instance one or two of the smaller communities are making use of the federal-aid planning funds for the development of land use and other plane. As these are completed, the advance planning department of the highway commission will work cooperatively with the local planning assistance program in developing the long range thoroughfare plans based upon the data as developed by the community planning program.

These cooperative thoroughfare planning studies will save the state and the city large sums of money, if cities will work toward the development of adequate planning controls to insure adequate rights-of-way and land development in an economic manner, and if the state highway commission will work realistically with these long-range plans developed over many years.

3. Baghose, Ramsis W.,"Prepared by, graduate student in city planning, Georgia Institute of Technology." "Central business district study, Augusta, Georgia." Augusta Richmond Co., Ga., Augusta 1962, 29p.

Study of the location, existing conditions, composite land use building height and condition, parking, traffic volumes, trade area, property values, and proposals and recommendations.

4. Ball, C.,"Milwaukee land use and zoning." Traffic Quarterly 13: n 4, Oct 1959, p 579-601.

Study to evaluate general degree to which purpose of zoning are being successfully realized, to isolate and evaluate specific areas of deficiency, and to reach conclusions as to degree and manner in which present political, legal, administrative, and technical mechanisms and prodecures are functioning; study methods; rationale of zoning; land-use distributions; industrial zoning and municipal boundary problems; commercial and residential zoning.

5. "A basic concept for rapid transit planning in the New Orleans metropolitan area." New Orleans Public Service Inc., Rev. New Orleans 1962, 45 p.

Assistance provided by the Louisiana Dept. of highways. Concept based on all -highway type rapid transit system utilizing free-wheeling vehicles operating over a combination of expressways and reserved surface roadways, providing maximun integration with existing local transit systems and maximum coordination with the private automobile.

6. Bauer, K.W., "How to replat old subdivisions." Am City 72: n 1, Jan 1957, p 99-101.

Problem of adjusting old street plans and subdivision layouts to urban needs; two examples of successful community efforts in correcting defects; official action in vacating streets and alleys, platting new streets plus upgrading minimum lot sizes improved old subdivision in South Milwaukee, Wis; citizen initiative plus official guidance resulted in larger lots in village of Bayside,Wis.

7. Becket, W.,"Architect and traffic engineer." Traffic Quarterly 12: n 4, Oct 1958, p 577-88.

Collaboration between architect and traffic engineers for effective city planning and traffic control discussed; interrelationship of buildings and external circulation patterns; circulation principles in shopping centers in several cities; use of master plans for present and future traffic needs.

8. Ben, Constantine,Richard J. Bouchard and Clyde E. Sweet, Jr, 'An evaluation of simplified procedures for determining travel patterns in small urban areas." Nat'l Research Council--Highway Research Board Abstracts 33: n 12, December 1963, p 63.

This report presents the results of research aimed at calibrating and testing the gravity model for a small urban area. The first of two parts of the report deals with application of the gravity model theory to travel patterns in Sioux Falls, S.D. (population 62,000). A gravity model trip distribution formula was calibrated from comprehensive information on the area's travel patterns and related characteristics. The ability of this calibrated gravity model to simulate the trip distribution patterns was investigated by comparing the gravity model movements against movements obtained from a standard origin-destination survey.

In addition, investigations were made to check the effects of balancing trip attractions (as is customary in all traffic forecasting procedures) and to determine how many purpose categories are required in a small city to adequately similate the existing travel patterns

with a gravity model.

The second part of the report deals with investigation into the minimum amount of data required to calibrate a gravity model in a small urban area. For the past three years there has been shown a considerable interest in, and an increasing use of, small sample home interview data for calibrating traffic madels in urban areas. Small sample sizes ranging from 0.1 to 1 percent have been used in several transportation studies. Users of these small samples feel that the data collected provide sufficient information about the area's travel patterns for calibrating traffic models. They feel that these data can be used to develop the total universe of trips in the area, as well as the percentage of trips for each of the several trip purpose and travel mode categories. Furthermore they feel that these data yield sufficient information concerning the lengths of urban trips, which is an important parameter in the develpoment of traffic models.

However, in developing a traffic model, specific information on the numbers and types of trips beginning and ending in each zone of the study area must also be known. This information cannot be obtained from a small sample home interview. Consequently, some assumption must be made as to how the total universe of trip productions and trip attractions distribute themselves on a zonal basis. The research reported investigates the validity of these various assumptions. The ability of several sample sizes(as low as the often mentioned 200 home interviews) to provide the needed parameters for calibrating traffic models is investigated and the minimum sample size required is calibrated. The ability of simplified procedures to establish zonal productions and attraction values from areawide trip production values obtained from the small sample surveys is also investigated. The paper then reports the results of using the minimum sample size and the estimated production and attraction values to calibrate a gravity model for Sioux Falls, S. Dak. All validity tests are made using comprehensive home interview survey data of large sample size.

9. Bendtsen, P.H.,"Town and traffic in the motor age." Copenhagen, 1961, Danish Technical Press, 173p.

This book, translated by E. Rockwell, examines the problem of increasing traffic and congestion in town centres. It is based on information obtained mainly from the surveys in America, but some information available from European towns is also included. Future development in European towns is estimated and it is concluded that: (1) as the number of cars increase, the speed of peak hour traffic in the central area will be reduced to a minimum workable speed of 8 to 10 km/h but there will

generally be no actual breakdown in commuter traffic; (2) the proportion of commuter traffic will always reach and remain at a level corresponding to the minimum workable speed with a corresponding variation in the use made of public transport; (3) the demand for parking space in multi-level and underground garages will always be considerably less than that for ground-level parking space; (4) Although the total amount of traffic with a destination in the central area is unlikely to increase as the total number of motor vehicles increases, there is likely to be a slight increase in the total number of private cars and a corresponding decline in public transport; (5) American businessmen still find it profitable to erect office buildings in the centre of towns with 100,000 people or more, and those with a population of about 250,000 can absorb the greatest rate of office expansion; (6) certain types of organization still need to be in the town centre and a number of shops will wish to remain to serve employees of these organizations. These factors must be taken into account in all attempts to improve traffic conditions. It is suggested that (1) the number of cars entering the central area during the peak period should be limited, possibly by controlling the number of parking spaces, and priority should be given to goods vehicles delivering to shops; (2) use should be made of one-way streets, progressively linked traffic signals, channelization, prohibition of kerb parking; (3) an overalll parking plan should be drawn up, based on, say, 200 to 300 cars per 1000 inhabitants, which would allow parking accomodation for all who want to park for a relatively short time (2 or 3 h); an d possible also for those who make their own provision for long off-street parking; (4) the total number of parking spaces occupied (including those in garages) should be calculated and the total number of vehicles released during the peak period can then be obtained; this total together with the total volume of through traffic can be used as a design criterion for the aggregate outlet capacity of the radial arteries. It is considered that except in very large towns the construction of new office blocks need not cause concern provided that the number of parking spaces created in conjunction with these offices does not increase to total number of parking spaces above that allowed in the overall parking plan.

10. Bevis, H.W.,"Forecasting zonal traffic volumes." Traffic Quarterly 10: n 2, Apr 1956, p 207-22.
Principles of origin and destination survey made by Detroit Metropolitan Area Traffic Study, which provides inventory of current traffic in area and also basis for comparison of inventoried traffic volumes with other variables so that method can be developed for predicting future traffic volumes; calculating prodecures; notes on other survey methods.

11. Black, R.V., "Steel plant's effect on regional planning and development." Am Soc Civ Engrs--Proc 80: Separate n 507, Sept 1954, 9p.
New plant of U.S. Steel Corp below Trenton, NJ, occupies gross area of 6 sq mi; County Commission began

2-yr planning program; industrial employment in area increased from 20.330 in 1940 to 53,251 in 1953; largest of new residential developments are new towns of Fairless Hills and Levittown--one approaching its planned size with population of around 6200 and other, planned for population of 60,000 to 70,000.

12. Blessing, C.A., "Evolving city." SAE--Paper 266B for meeting Jan 9-13, 12 p.

Problem of rationalizing urban development in United States during next generation and planning to shape city of future; responsibility of automobile industry in establishing urban space research center of study solutions to transportation and related land use patterns of urban regions; study of transportation systems should take into account environment which transportation serves and in which it function; steps required for substancial research goal in transportation field.

13. Borton, Thomas, "Trip generation characteristics of retail commercial land use." C.A.T.S. Research News (Chicago Area Transportation Study) S 27, 1963, p 10-16.

Retail commercial land use selected for intensive analysis because this category attracts more trips than any other of CATS one-digit nonresidential land use catagories.

14. Brokke, G.E., W.L. Mertz, " Evaluating trip forecasting methods with electronic computer." Pub Roads 30: n 4, Oct 1958, p 77-87.

Use of average factor method, Detroit method, and Frater method in forecasting trip distribution; maximum accuracy obtained through successive iterations; results indicate majority of trips within metropolitan area consist of large number of zone-to-zone movements, where zones are normal size; additional research will derive statistical formulas relating small volume movements into volumes associated with ramps, streets and expressways.

15. Buchanan, C.,"Towns and Traffic." J Roy Inst Brit Archit 69: n 8, 1962, p 290-9.

The essence of urban traffic problem is to contrive the efficient distribution (accessibility) of large numbers of vehicles to large numbers of building without causing serious injury to the "good environment")defined as an extra free from the dangers and nuisances of traffic). A solution is proposed

with the basic idea that the urban area is divided into a series of sub-areas (termed environmental areas), each comprising a substantial block of development, served by an interlacing network for the primary distribution of traffic. Urban traffic has three variables, the standard of environment, the level of amount of accessibility to vehicles, and the cost of physical alterations. The variables may be expressed in the following law: for any urban area the fixing of environmental standards automatically defines the traffic capacity, but the latter may be increased according to the amount of money that can be spent on physical alterations. The paper then discusses traffic capacity limits, network patterns, the role of public transports,parking, the importance of comprehensive redevelopment, and segregation of pedestrians. In discussing the cost, it is suggested that society will sooner or later need to match its apparently unlimited ability to invest in motor vehicles with an equal readiness to invest in accomodation for them. The conclusion restates the part to be played in urban redevelopment by the architect. The paper was presented at the 1962 Conference of the Royal Institute of British Architects at Coventry; the theme was "Building and Planning in the Motor Age."

16. Bucher and Willis,"Hutchinson transportation study." Prepared for Kansas Highway Commission in cooperation with U.S. Bureau of Public Roads, Salina, Kansas, 1962, 1 v(various pagings)

Includes current origin-destination survey, land use, population economic characteristics, motoe vehicle registration, automobile use of the area, and traffic forecast and assignment projected to 1970 and 1980.

17 By 1976 what city pattern?" Arch Forum 105: n 3, Sept 1956, p 103-37

Inquiry into question as to what 56 million more people using 50 million more automobiles may demand in new and renewed cities; First job: Control New-City Sprawl, C. Bauer; Reply by Forum's editors: central city, fringetown, roadtown, Proposed Solution, V. Gruen; Where to find out more about planning; selected directory of public and private agencies.

18. Cape Cod 1980:"A sector of the Massachusetts state plan" College Hill Press, 36 Exchange Place, Providence, Rhode Island, August 1963, 120 p with illustrations.

Cape Cod 1980 is a plan for controlling the development of the four hundred square miles of Barnstable County, Massachusetts, for the next two decades. Initiated by the

local citizens to solve problems raised by the opening of the new Cape Cod National Seashore, the plan is a model of colloboration among the state and private techinal specialists. The impact of a projected daytime population of over 500,000 on the economic structure and on the use of land, waterfront and highways is evaluated and results in proposals to maintain Cape Cod as a quality resort area. Proposals are shown on a series of fifteen sectional maps. They call for action at four governmental levels--Federal, state, county, and town. Against detailed economic projections, development principles are laid out for historic village centers, resort zones and conservation areas. These are then applied in sketch development patterns to provide a coordinated framework for cooperation among the fifteen towns. The result is a most helpful guide for other communities and regions facing questions of controlling growth.

N. Carter, John P., "The urban traffic problems." Traffic Quarterly XVI: n 2, April 1962, p 260-270.

The urban traffic problem is the subject of seemingly endless discussion. The discussion takes place in the calm of seminar rooms, and with considerably more warmth if less light on the freeways, parkways and city streets. The parking problem is always a good conversational gambit, whether it be in Berkeley, Hong Kong or Genoa. One reason for the continuing discussion, and continuing lack of resolution to the problem or problems, is the general lack of agreement on limits. For example, present traffic flows may be accepted and engineers' energies may be concentrated on improving the phydical facilities for carrying that traffic. Depending on the resources available, that improvement may take the form of simple signaling and channeling, or it may extend to new freeway and parkway construction with complete separation of conflicting traffic movements.

A step beyond may be the orginazation of traffic studies, especially those involving analyses of origins and destinations, implying not the improvement of existing routes but the construction of new channels of flow. To date, most action has not gone beyond these steps, although many proposals of a more drastic nature have been made. This seemingly cautious approach is almost surely justified by the general lag in highway investment. Our under-investment in highways comes from our reliance, except for the few states with toll facilities, on what would be, in corporate accounting, retained earnings as the source of new investment funds. Most enterprises be they transport or other, and including turnpikes and toll bridges, accept the concept that investment funds are borrowed in advance and repaid from the cash flow of the facility once it has come into production. But highway

construction is typically financed by the current receipts from the gasoline and other motor vehicle taxes rather than the pledge of future tax revenues to servicing and amortization of a bond issue. It is curious that bonding seems acceptable in cases where there is a cash collection at the facilities' gates, but unacceptable when collection is by means of the fuel tax, however richly productive it may be.

20. Cass, S. , R. Desjardine,"Co-ordinated transportation." Traffic Quarterly 10: n 3, July 1956, p 338-56, 1 plate.

Provision of facilities for Toronto, Ont; area to be served covers 240 sq mi, had population of more than 1,300,000 people, and vehicle registration of more than 400,000; road system passes through 13 municipalities that comprise metropolitan area; transit system includes buses, street cars and subway; plans for improvement and/ or construction of roads, expressways.

21. Catlin, R.,"Density control zoning." Am City 74: n 9, Sept 1959, p 195, 197, 199.

Density control zoning requires minimum lot area per dwelling or permits maximum number of family units per area; new tendency is to provide public parks or preserve open space; paper deals with zoning in Rockaway Township, NJ; owner of 342 acres planned subdivision into 543 lots of 20,000 sq ft each; revised layout provides 535 lots slightly smaller to make room for school and park sites.

22. "Central business districts." Council of Planning Librarians, Eugene Oregon, 1963, 116 p.Exchange bibliography No. 23.

General references to design, open spaces, landuse and values,impact of decentralization, transportation, transit, parking, traffic, urban redevelopment, new towns, and geographic references by city.

23. "Chicago unfolds big redevelopment plan." Eng News-Rec 152: n 12, Mar 25, 1954, p 23-4.

Fort Dearborn project in Chicago provides for reconstruction of 151 acres of sub-standard property with government administration center, city campus for University of Illinois, 5000 apartment units, parking place for 600 automobiles, and auxiliary facilities; estimated cost $400 million.

24. Claire, W.H., "Urban renewal and transportation." Traffic Quarterly 13: n 3, July 1959, p 414-22.

Requirements of general land use plan and urban transportation plan are discussed from viewpoint of combining both and using it as basis for capital improvements program; methods for obtaining better urban transportation through freeway or expressway renewal; neighborhood planning; freeway impact on land economics; pertinence to Los Angeles urban renewal problems.

25. Cleveland, Donald E and Edward A. Mueller,"Traffic characteristics at regional shopping centers." Bureau of Highway Traffic, Yale University (Strathcona Hall, New Haven, Conn.) 1961, 28 pp, 49 figs.

The regional shopping center is a relatively new development and little was known about the traffic characteristics at such centers at the time this study was initiated.

This study based on up to fourteen regional shopping centers in the United States, shows a remarkable consistency in traffic characteristics. The direct correlation between sales magnitude and traffic volume found at those few centers where this information was available, leads to a fairly accurate means of estimating traffic demands based on a market analysis for proposed regional centers. The representative fluctuation in traffic and parking indicated in this study may also lead to the intelligent selection of traffic design criteria in terms of peak traffic demands. This information should be helpful to planners, engineers and shopping center managers who are concerned with the level of volumes to be accomodated without congestion and the times when these volumes occur.

26. Cookingham, L.P.,"Kansas City story." Am City 73: n 9, Sept 1958, p 170-1, 173-4.

Five major urban renewal projects are underway; construction of apartment houses; clearance of seven block area; 14 story parking and office building erected with planned parking for 1800 vehicles; 700 garden type dwelling units; new airport runways to accomodate jet aircraft; expressway loop leads traffic into downtown by avoiding congested streets; 1200 car underground garage for central shopping area; integrated park and boulevard system.

27. "The core of the city: a pilot study of changing land uses in central business districts." 1956 xxix + 233 + (4)p tables charts maps. Columbia University. Inst for urban land use and housing studies. Pubns.

28. Bennett, T.," New town pattern emerging at Crawley." Surveyor 116: n 3389, Apr 6, 1957, p 313-4.

200 acres were under development for industry, with 63 factories in production and 15 more under construction; total factory space of 3 million sq ft and employment for about 12,230 people; six of residential areas are completed; 7450 dwellings have been completed by corporation and 800 by private developers.

29. Creighton , R.L.,"Comprehensive transportation planning." ASCE--Proc 84:(J Highway Div) n HW3, Oct 1958, pt 1, paper n 1803, 15p.

Example of Chicago Area Transportation Study to describe particular approach of "comprehensive transportation planning" system; systematic methods for analyzing data and preparing and testing plans for all types of transportation facilities in urban areas, based on forecasts of traffic as generated by future land uses; traffic flow forecasting model for predicting trip generation and distribution and for estimating traffic flow.

30. Creighton, Roger L., Paper 2048; The Highway Engineer and City Planner, John S. Tsaguris, Paper 2049; Work of Highway and Planning Agencies, Fred W. Tuemmler, Paper 2050. "Urban expressways,"joint Planning of Transportation and Land Use. American Society of Civil Engineers (33 West 39th St., New York 18, N.Y. Proc Vol. 85, No. CP1, Journal of the City Planning Division, pp 1-20, June 1959.

In Paper 2048, the author postulates that the movement of persons and vehicles on transportation systems and the activities of persons on land are both parts of human activity in cities. Consequently, planning for one means planning for the other. He then describes the procedure for joint planning of transportation and land use.

Paper 2049 emphasizes the need for closer cooperation between highway engineers and city planners regarding general character,extent and location of highway facilities through or near urban areas.

Fred W. Tuemmler proposes that highway and planning agencies: 1. Establish formally joint policy of continuous colloboration, settle disagreements at staff levels--not in the local press; 2. Accelerate urban planning programs in fringe areas to meet highway planning deadlines; and 3. Invoke acquisition of development rights in interchange and approach road areas as supplemental land use controls.

31. Daly, Rex F.,"Long-run economic projections: a review and appraisal." Agr Economics Research O 1963, p 113-121.

Paper has three major objectives; to outline general nature of economic projections, including methodology, limitations, and uses in policy appraisal; to review a recent projection published by Resources for the Future; to propose a general-purpose economic projection for use by Government agencies in resource development work.

32. Davies, E., "Transport in greater London." London School of Economics and Political Science, Greater London Papers, No. 6, London 1962 (London School of Economics and Political Science) 15p.

It is pointed out that responsibility for town planning and for the planning of roads and of traffic in Greater London is spread over a number of separate, unco-ordinated authorities and it is considered that the division of responsibility has resulted in inadequate attention being given to the transport system which has consequently deteriorated. The main transport requirements are considered to be: (1) a long-term overall regional plan relating all forms of transport to land use, based on scientifically collected and analysed data; this plan should include major road improvements and new construction; (2) a single executive authority should be responsible for planning, roads, and traffic over the whole of the Greater London Area; (3) the powers and responsibilities of the authority should be clearly defined ao as to avoid overlapping and delay. The proposals of the Royal Commission on Local Government in Greater London are examined and it is recommended that: (1) the proposed Greater London Council, provided it is the planning authority, should also be the roads and traffic authority for its whole area with full executive authority for all highways, road construction and improvements, and for traffic management and lighting; it should be responsible for co-ordinating all forms of transport, including public

transport, working in liaison with transport bodies; (2) the Council should have full power to delegate to the Boroughs such functions as are necessary for the protection of local needs;(3) the Minister should have supervisory powers but his function should be largely that of guidance; (4) the Minister should have power to order a public enquiry in matters where the local interest appeared to him to be greater than the national interest, but Boroughs would have no right of appeal to the Minister; (5) ministerial guidance should be given at the outset on the use of delegatory powers but the final decision as to whether or not to delagate should remain with the Council; (6) the Boroughs could act, at the discretion of the Council, as its agents for major road improvements, lighting, maintenance, etc.; (7) delegation of traffic management, also at the discretion of the Council, should be limited to essentially local roads, car parking for local needs, school crossings, and road safety; (8) the power of the police should be confined to enforcement, day-to-day regulation of traffic flow, emergencies and special occasions; (9)the Greater London Council should have within its Roads and Traffic Department a traffic engineering unit responsible for research and the collection of traffic data;(10) policy decisions should be taken at the highest level on the future role of public transport in London; the Ministry should also fulfil its responsibility for deciding on priorities for capital investment in different forms of transport.

33. "A decade of population change in Texas." Texas Agricultural Experiment Station & Texas Agricultural Extension Service, Texas A & M University B 1000, September 1963.

This publication analyzes some of the significant changes in Texas population, particularly from 1950 to 1960. It includes selected population projections to 1970 and points out some of their implications. Among the more significant findings are the following:
1. The total population of Texas on April 1, 1960, was 9,579,677, a figure representing 5.3 percent of the nation's population. The percentage increase was well above the national average during the last decade, with the increase in numbers larger than during the two previous decades combined. Projections indicate on April 1970 Texas population of 11, 712,000.

A rapidly growing populations means more customers for all types of goods and services.

Education, health and redreational facilities; religious and welfare seevices; and highways and communications facilities will have to be expanded to meet the needs of rapidly-growing numbers of people.
2. Population growth and losses are unevenly distributed in the State. Between 1950 and 1960, 143 Texas counties lost in population and 111 had increases. The urban portions of the State grew rapidly while most rural sections declined. Urban residents comprised 75 percent of the total population, while 25 percent were classified as rural residents in 1960. The trend toward concentration in metropolitan areas is accelerating, with 64 percent of the States' people residing in 21 standard metropolitan areas in 1960. By 1970, urban areas are expected to have approximately 80 percent of the States' people, with 70 percent of the total population living in standard metropolitan areas.

While the urban sections of Texas will need to plan for growing numbers, most rural areas will be faced with adjustments related to fewer persons in their schools and churches and a different use of community facilities. The political representation of rural dwellers is also likely to be reduced.
3. In 1960, for the first time in history, Texas had more females than males. The projected sex ratio is 96.7 males per 100 females in 1970.

34. "Digest report." Pittsburg Area Transportation Study, 1963, 6p.

1958 and 1980 comparion summary of future land needs, car registrations, population, freeway and transit recommendations, and cost of the transportation system.

35. Edwards, H.M., B.C.S. Harper,"Study of generation of person trips by areas in central business district." Queen's University--Dept Civ Eng Report 9, May 1960, 57p.

Investigation to determine if traffic flowing in and out of city's center is directly related to buildings and floor space in area, to develope relationship to be used in conjunction with economic forecasts of CBD space usage to predict future travel to center more accurately; results indicate well developed relationship between variables and that fairly accurate predictions can be made.

36. Ehlers, J.H.,"Highway planning and urban renewal." Traffic Eng 28: n 10, July 1958, p 23-6.

Scope of urban renewal program (Federal Housing Act of 1954) and its relationship to highway planning; detailing of phases of urban renewal abd how highway planning may be integrated to provide communities with highways that aid in their development; detailing of need for cooperation between city, state and federal agencies to accomplish this objective; specific problems and solutions in cities and states throughout United States.

37. "Existing land use: residential, commercial, industrial, institutional open space, Suffolk County, N.Y. Planning Commission. 1963, 42p (processed) il tables maps spiral-Suffolk county department of planning - Veterans Memorial Highway, Hauppauge.

38. Faustman, D. Jackson, " Transit study, Daly City, California, 1963. Sacramento, Calif., 1963, 13p.

Reviews operations of existing transit system;suggests standards, warrants, objectives for a completely modern transit system, and recommends a plan to meet these standards. Also analyzes financial feasibility of modernized transit.

39. "Federal aids to local governments." American Municipal Association, Washington 1963? 52p.

Includes area development; community development; urban renewal; community facilities; open space land; airports; urban mass transportation; highways; education; public health; air pollution; flood control; beach erosion control; land for recreation and public purposes; civil defense.

40. Fisher, Ernest M., "Changing land use in the central city." SRIJ 4: 138-43, Fourth Quarter 1960, table.

41. "Fitting cities to future." Eng News Rec 165: n 15, Oct 13, 1960, p 41-56, 59-60.

Renewal project in Philadelphia, including construction of new center of city, housing developments , slum clearance, traffic regulation streets, transit lines, and transportation; paper is divided into three chapters; Philadelphia Rebuilds to 21st Cantury Plan, 42-52, Mobilizing City's Resources for Redevelopment,52-6, and Pioneering in Precast Concrete, 56,59-60.

42. Follin, J.W.,"Urban renewal progress report." Am City 71: n 6, June 1956, p 128-30.

On Apr 1 1956, Urban Renewal Administration was administering federal assistance for almost 360 separate projects, 70 more than last year; 101,000 families are involved in well advanced projects; most important communities are New York, Chicago, Philadelphia with 16, 14, and 8 project respectively, but over one-third of projects are in communities of less than 50,000 inhabitants.

43. "Forecasting highway trips." Nat'l Research Council-Highway Research Board Bulletin 297, 1961,145p.

This bulletin contains twelve papers presented to the 40th Annual Meeting of the Highway Research Board as follows:
Integrating Land Use and Traffic Forecasting.
Traffic Interactance Between Cities.
Forecasting Transit Use.
Results of Pre-Interview Contacts in Philadelphia.
Results of Use Of Pre-Interview Contacts in Pittsburg.
Cartographic and Design Work for a Comprehensive Origin-Destination Survey.
Holiday and Summer Weekend Traffic Survey.
Forecasting Traffic with a Modified Growth Factor Procedure.
Review and Evaluation of Elecfronic Computer Traffic Assignment Programs.
Developing a Traffic Model with a small Sample.
Capacity Restraint in Assignment Programs.
A Simplified Method for Forecasting Urban Traffic.

44. Foster, W.S. "Soviet cities." Am City 73: n 10, Oct 1958, p 110-13, 169, 171.

Survey of city planning and construction in Russia; workmanship on new buildings is poor; city planning to be based on classic "garden city" concept, providing 32 sq ft of living space per person; extensive use of precast concrete, with load bearing walls and without use of steel frames; water, sewage, and refuse disposal are rather neglected.

45. "Framework for urban studies." Nat'l Research Council-Highway Research Board--Special Report 52, Oct 1959, 29p.

Program which inquires into nature, function and

inter-relationships of economic, governmental, physical and social aspects of urban life and examines urban phenomena, evaluates policies and measures, and estimates costs and consequences of theoretical arrangements, or urban facilities and agencies; object is to provide highway authorities, etc, with understanding of urban growth and change, aid in public and private formulation and, have some bearing on movement of goods and people in urban -metropolitan areas.

46. "General plan. Guide for future development." Anaheim, Calif. City Council, Anaheim 1963, 1 folder, map.

Indicates the relationships of all types of land use and public facilities for the ultimate development of the entire city and its environs; anticipates growth establishes general locations and approximate sizes of the Plan's elements.

47. Gilmour, O.W.,"Outline of engineering work at Harlow New Town." Civ Eng (Lond) 51: n 595, Jan 1956, p 59-61 Feb p 193-5.

New Town of 6380 acres and 80,000 inhabitants planned; account of initial survey works and work of site investigation organization. Feb: Account of drainage systems and brief report on sewage, roads, street lighting and transport services.

48. Goldstein, Sidney and Kurt B. Mayer,"Population projections Rhode Island cities and towns,1970 and 1980." Rhode Island Development Council, Providence 1963? 19p. State Planning SEction Pub. No. 5.

Includes estimated natural increases, not migration, and population.

49. Greeley, R.B., "Transportation essential part of any comprehensive planning." Traffic Quarterly 12: n 1, Jan 1958, p 5-16.

Transportation facilities, especially highways have been planned with toolittle regard for [illegible] comprehensive plans for environment;relationship of highways to land use, transit, and to parking; expressway interchanges; highway research.

50. Grimm, S.N.,"Some aspects of urban planning." ASCE--Proc 84: (J City Planning Div) n CP1 Apr 1958, Paper n 1620, 25 p.

Notes on discussion at Urban Planning Seminar at Syracuse University covering urban planning in general, urban land planning, relation between land and transportation planning, industrial land planning and regulation, planning residential areas and local community facilities, regulatory devices to guide land use and development in urban communities and positive means of effective land development.

51. Hagevik, George H., "Locational tendencies and space requirements of retail business in surburban King County.' King Co., Washington, Planning Dept 1963, 75 p.

Includes classification of retail areas and centers; total retail land use pattern; central place theory and land costs; special highway study; sales average.

52. Hall, E.M.,"Traffic generator studies in San Diego." Traffic Eng 30: n 5, Feb 1960, p 13-16.

San Diego Metropolitan Area Transportation Study undertaken together with Calif Div of Highway, six other cities, and San Diego Transit System; results of 1952-53 Origin Destination Survey were used to discover traffic generating characteristics of CBD and commercial developemnt; Origin -Destination surveys, conducted in two developments were used to derive basic residential factors; table of factors developed for week-day origins; estimate of future (Horizon year) auto-truck origins; summary and comparisons of estimates.

53. Hall, E.M., "San Diego transportation planning studies." ASCE--Proc 85: (J City Planning Div) n CP2, Dec 1959, Paper n 2306, p 11-27.

Concepts and administrative organization of San Diego , Calif continuing urban transportation planning program; examples demonstrate approches to coordinated solution of transportation problems; necessity for cooperation between all levels of government and agencies concerned is emphasized.

54. Hamburg, John R. and Robert Sharkey, "Chicago's changing land use and population structures." Journal of the American Institute of Planners(Mt Royal and Guilford Ave., Baltimore 2, Md.,), Vol 26, No. 4, pp 317-323, November 1960.

The completion of the land use and population

inventories of the Chicago Area Transportation Study in 1956 creates a unique opportunity for examining some of the changes that have taken place in land use and population since the Chicago Land Use Survey of 1941.

A comparion of trends demonstrates the impact that site accessibility has had on the kind of land use the location of land use, and the intensity of land use. In general, the closer land is to the CBD (1) the larger the proportion of developed land, (2) the higher the proportion of developed land which will be in nonresidential use, and (3) the more intensive the use of the site.

The trendin transportation between 1940 and 1956 has been marked by increasing use of the automobile for intracity travel. This trend has increased the accessibility of land in the periphery of the city and in the suburbs with a consequent lowering of net residential densities. The nonwhite population, however, has not been able to take full advantage of this increasing supply of residential land. Consequently, densities in the central region of Chicago have increased as a result of growth.

If all of the residential land available as of 1956 were put into use at 1956 densities, an additional population of about 300,000 persons could be accommodated in the city. However, if the density-declines that were observed during the period from 1940 to 1956 were to continue for the next 16 years, the population would decline to 3,500,000 or lower; depending on how much of the 1956 vacant residential land was put in use. Preliminary returns from the 1960 census tend to confirm the expectation of moderate decline since 1950. Factors such as rising rates of automobile ownership and the lessening of racial restrictions in housing will tend to offset gains resulting from development of presently vacant residential land. As a result of these opposing trends, the total population of the city is likely to remain relatively stable with a probability of moderate losses.

These comparisons of trends in land use, population, and net residential density have provided a basisfor measuring some of the relationships and changes within the urban structure of Chicago. They are generally indicative of the future course of land use development and population growth in the city.

55. Hamburg, John R. and Robert Sharkey,"Chicago Ill.'s changing land use and population structures: some of the changes that have taken place in land use and population since the Chicago land use survey of 1941,11 tables, charts, map. Am Inst Planners J 25: p 317-23, Nov 1960.

56. Hamburg, J.R.,"Land use projections for predicting future traffic." Nat'l Research Council--Highway Research Board Bulletin n 224, 1959, p 72-84.

Factors, governing use of land use survey in transportation planning to provide analysis of traffic generation and to establish base from which to estimate future land use structure of areas, which include classification system, scaling land use, geographic collection units and identification and processing; example illustrations method; survey provides basic data from which current patterns emerge.

57. Hansen, G.B. Sharpe, L.B. Hammer," Factors affecting trip generation of residential land-use areas." Pub Roads 30: n 4, Oct 1958, p 88-9.

Major factors are population and automobile ownership; with data normally developed from home-interview type origin and destination survey it is possible either to up-date trip information or to forecast trips for some future date; findings based on analysis of data from two surveys made in Washington,DC in 1948 and 1955; certain aspects of findings and methodology will be applicable elswhere.

58. "Handbook of federal aids to communities, 1963." U.S. Area Redevelopment Administration, Washington, U.S. Govt. Printing Office,1963, 63p.

Includes beach erosion control programs, air pollution assistance, Federal-aid highway program, Federal urban area-highway planning fund pools, tourism, mass transportation, airport development,housing and urban renewal, open-space land program, and public domain lands for public use.

59. Herring, F.W.,"Metropolitan growth and metropolitan travel patterns." Nat Research Council--Highway Research Board Bulletin No. 293, 1961, p 9-20.

Nature of growth of New York metropolitan region, particularly dispersing tendencies and forces behind them; central businessdistrict employment is relatively stable, population growth is taking place in outlying area and at low land-use density; growth in journey-to-work travel is no longer focused on local business district; changes in traffic behavior during recent years are primarily responses to metropolitan growth patterns.

60. Hitchcock, S.T., Continuous origin and destination traffic surveys." ASCE--Proc 84: (J Highway Div) n HW2, May 1958, Paper n 1625, 9 p.

Trip origin and destination data necessary for realistic

highway location and design; system of collecting information on continuing basis using permanent trained interviewing staff and more exact statistical methods already adopted in continuous traffic counting programs.

61. "Historical data and the design of the study." Hawaii Highways Division, Honolulu Metropolitan Area Traffic Survey, 1960, 1: 1962, 278 p.

Includes land classification, districts and uses; streets and highways; highway and street income and expenditures; dwelling unit, truck and taxi, U-drive vehicle survey; tables of vehicular and passenger movements.

62. Hoch, I., "Forecasting economic activity for the Chicago region" Nat'l Research Council--Highway Research Board Proc 38: 1959, p 9-25.

An economic forecast for the years up to 1980 has been made by the Chicago Area Transportation Study with a view to forecasting employment, predicting numbers of vehicles registered and gaining someinsight into the effects of an expanded highway programme on the economy. An electonic computer was used for most of the calculations, account being taken of increase in population and real incomes and of shifts in location of industry. A regional input-output model was imployed.

63. Holford, W., "Traffic and land use." Traff. Engn & Control 2: n 2, 1960, p78-80.

Problems of planning control arising from traffic generated in and between cities are considered in relation to changes in land values, reduction and avoidance of concentration of traffic, and the maintenance of a balanced allocation of space for vehicles and for the various functions of urban life.

64. "Huge study seeks answers to transportation problems." Better Roads 27: n 10, Oct 1957, p27-9, 54, 58.

Chicago Area Transportation Study costing approximately $2,350,000 will be completed in 1958 and is expected to result in logical plan for moving people and goods with minimum of friction in area of 1400 sq mi; modern techniques of gathering and analysis used; objective is to make accurate predictions concerning flow and distribution of all traffic throughout day over networkd of all types, capacities and locations.

65. Isaak, E.B., "Trip frequencies and travel distances of traffic on main highways." Traffic Eng 22: n 5, Feb 1952 p 176-9.

Extensive studyfor New York State Thruway completed; analysis of trip frequencies, trips by individual vehicles, distribution of vehicle runs, commuter traffic trip frequencies of commercial vehicles, travel distance, and relation of travel distances to trip frequencies.

66. Jacobs, J.,"New heart for Baltimore." Arch Forum 108: n 6, June 1958, p 88-92.

Proposed Charles Center scheme is 22-acre $127 million private enterprise project planned for deteriorated area at core of downtown Baltimore; plan includes three public parks to be constructed and owned by city, retention of five buildings,and construction of office buildings, retail buildings, hotel,transportation terminal, television studio and theater, and 4000-car underground garage.

67. Johnson, Walter K.,"Wisconsin's state planning program." Land Econ Ag 1963, p 213-218.

State planning an interdisciplinary effort; economic analysis; land use analysis; recreation study; transportation analysis; comprehensive plan.

68. Kask, Mart, "The estimated effects of four proposed shopping centers on metropolitan Lafayette." Joint Highway Research Project, Purdue University, July 1957, n 25, 119p.

This report includes an economic appraisal of the Metropolitan Lafayette area and an evaluation of the effect of the proposed shopping centers on traffic, economic conditions, tax rates, and land use. Since all of the proposed shopping centers are located adjacent to State Highways the traffic findings and recommendations should be of immediate value to the State Highway Department.

69. Keith, R.A.,"Long-range mass transit plan for national capital region." Traffic Quarterly 14: n 1, Jan 1960, p5-25.

Transportation plan for Washington DC, includes design for future land use development, estimate of future traffic movements, and long range programs of highways and mass transit for region; plan features network of freeways and express parkways, new kind of fast, comfortable transit service from suburbs through city into downtown arterial streets and highways extensively improved, and expanded and improved local transit service on arterial and local streets; finances and organization.

70. Killin, E.L.,"Highway traffic estimation by linear programming.' ASCE--Proc 85: (J Highway Div) n HW1, Jan 1959, pt. 1, Paper n 1900, p 17-33.

Method by which linear programming may be applied to traffic estimation relating to interchange design; use of map, showing area of 50 mi radium with circles at 5, 10,20,30,40, 2nd 50 mi radii, divided into four radial sectors; estimating ability of population of each sector to draw and originate traffic; results obtained by new method are not significantly different from these obtained by existing procedures.

71. "Kitimat workers will have planned town." Eng News Rec 153: n 8, Aug 19,1954, p 40-3.

Planning and construction of town for 6000 people and 50,000 ultimately; population density is from three to five families per acre; construction of utilities and homes.

72. "Land use controls in Rhode Island; a comparative study of municipal zoning ordinances and their effect on future development." Rhode Island Development Council, State Planning Section Pub. No. 6, 1963, 68p.

73. "A land use reconnaissance in Nepal by aerofield techniques and photog raphy." Pradyumna Prasad Karan, il maps. Am Philosophical Soc Proc 104: 172-87, April 19, 1960.

74. Lebaron, A.D.,"Prediction methods in relation to integrated traffic grwoth studies." Roads and Road Construction 38: n 449, May 1960, p 149-56.

Review of techniques and method used in United States as part of planning of major national highway program to accomodate expected future traffic volumes; predicting methods as follows: average daily traffic (ADT) method origin-destination method; integrated traffic study problems.

75. Leibbrand, K,"Koordination von Staedtebau und Verkehr." Ingenieur 73, n 6, Feb 10, 1961, p V1 -10.

Coordination of city planning and traffic engineering close relations between them are demonstrated by examples; latest developments and differences between European and American methods and solutions are discussed. (In German).

76. Lewis, Harold Maclean,"City planning and expressways." Traffic Quarterly (The Eno Foundation for Highway

for Highway Traffic Control, Saugatuck, Conn.), Vol. 12, No. 4, pp485-502, October 1958.

Construction of the interstate expressways is creating both opportunities and problems for urban and rural planning and zoning agencies.

While city planning has been in operation in many municipalities, few have adopted thoroughfare plans that will supply a positive answer as to the best location, or as to arterial connections to enable traffic to move freely between expressways and urban centers. Even where these exist, they will need to be restudied to prevent haphazard development along the new highways.

The only way existing city plans can be effectively brought to bear upon theproblem is by effective cooperation between the local planning agencies and the state highway departments that handle the design contracts. This is not likely to happen unless the planning commissions take the initiative and unless they are broad-minded enough to look at the problem from a regional rather than local point of view. Too often their attitude may be: put the highway somewhere else so long as you don't come through our community.

The problem is thus one of stepped-up city planning and zoning, close cooperation between planning agencies and state highway department, and a broad and unselfish viewpoint for everyone concerned. In the necessary studies there are many factors to be considered, several of which are (a) relation to urban street systems, (b) parking problems, (c) upsetting of land use patterns, (d) relationto zoning, (e) effect on recreation plan, (f) effect on the tax structure, (g) displaced families, and (h) typical procedure followed.

Under procedures established by the urban renewal agency for its approval of urban projects calling for clearance and rebuilding of blighted areas, reference to and approval by the local city planning commission is made a prerequisite of federal approval for any loan and grant contracts. Could such a requirement have been written into the 1956 highway act?

Because of the lack of any active planning agencies throughout much of the area traversed by the routes and the fact that, where there are active agencies, they generally are not well enough financed to undertake promptly the necessary studies, the writer believes that such a requirement would have resulted in delays that would [illegible] the program.

Examples of the relationship of planning and zoning to the location of expressways are provided by the writer's experience in the district of Columbia and in Wilmington, Delaware.

77. Lewis, H.M.,"City planning and expressways." Trafffic Quarterly 12: n 4, Oct 1958, p 485-502.

Discussion of factors of highway needs in city planning; cooperation between planning agencies and state highway departments stressed; typical procedure for selection, planning, and execution of federal interstate highway route outlined; examples of relationship of planning and zoning to location of expressways in District of Columbia and Wilmington, Del, described.

78. Liepmann, Kate,"Land-use, location, and transport(effect of increase ease of transportation upon land use and industrial location, Great Britian). Manchester School 23:p97-93, Jan 1955.

79. Lovelace, Robert,"Tennessee begins the fight against urban sprawl." Nation's Cities, Summmer 1963, p 9-12.

Tennessee's general approach has been to vest control of entire urban areas in hands of a single government which has full power to achieve optimum uses of land.

80. "Master plan of land use: city of Bridgeport, Connecticut." Bridgeport, Conn. City Planning Commission D 1962, 55+(27)p il tables maps spiral pa.
Prepared by Candeub, Fleissig and associates.

81. Mealand, H.A., J.L. Martin, "Residential development in city of London." Suveyor 115: n 3345, June 2, 1956, p371-2.

Architects' report on plan for "non-commercial" part of Barbican area proposes residential development to high density for housing of 6000 to 7000 people; layout of proposed developemnt showing access by road to garages and service areas; in total of 17 blocks, three of them 31 stories in height, total of 2355 residential apartments with 1840 lock-up garages proposed.

82. Mende, J.,"Highway planning for small town-maps are first essentials."Pub Works 88: n 1, 8 Jan 1957, p 120-2, Aug p 128-9, 198, 200.

Two basic map series which are essential to planning of highway system in built-up areas; first dealing with people, population density shows areas which generate heaviest traffic volumes and vacant or sparsely settled areas; second shows where people in community go to work , to shop and to relax, solution of design problems by means of peak hour volume map; study of future traffic pattern; origin and destination survey.

83. Mertz, W.L.,"Study of traffic characteristics in suburban residential areas." Pub Roads 29: n 9, Aug 1957, p 208-12.

Traffic generation resulting from suburban residential development is discussed; two typical housing facilities, located within metropolitan area of Washington, DC were selected; it was discovered that two typical housing facilities added as much as 0.8 vehicle per dwelling unit per hour to adjacent highways during peak period.

84. Mertz, W.L.,"Use of electronic computers." Traffic Eng 30: no 8, May 1960, p 23-7,54.

Source of basic data in origin and destination traffic survey, and basis for forecasting desired traffic volumes between zones to some future design year; forecasting procedure; planning for programming traffic analysis problem for electronic computation; analysis developed for traffic forecasting using Fratar Method as example; computational procedure; general logic flow chart.

85. Mitchell, Robert B.,"Metropolitan planning for land use and transportation , a study." The Office of Public Works Planning, The White House, December 1959, 47p.

The sharpely accelerated highway program authorized by the Federal aid Highway Act of 1956 brought into focus the need for more effective means of harmonizing the various existing and future Federal, state and local programs in Metropolitan Areas.Such means are found only in comprehensive, long range planning.

Ideas and suggestions are set forth herein for more effective planning in metropolitan areas. Primary attention is given to the relationship of the highway plan to the plans for transportation and land use, and to the roles of various levels of government in the development of such plans.

This paper was prepared in 1959 under the direction of the President's Special Assistant for Public Works Planning as part of the basic research undertaken for a study, requested by the President, of the Federal-aid Highway Program. It is being made available at this time for the general inf information of planners, engineers, political scientists, State and local officials, and educators. Its publication, however, does not imply that its conclusions and recommendations rrpresent the views of the Administration.

86. Mukherjee, Chittapriya,"Land utilization planning in metropolitan Calcutta (India), Planning and Civic Comment 28: 1-9 Dec 1962.

87. Murphy, R.E.,"Central business districtand its implications for highway planning." Nat'l Research Council--Highway Research Board Bulletin n 221, 1959, p 29-32.

88. "Offices and parks--keys to San Francisco's downtown redevelopment." Am City 72: n 11, Nov 1957, p 124-5.

Combined business residential-industrial redevelopment scheme calls for almost $172 million to be spent by private developers on 77.7 acre site; dominant feature ofplan is large open Central Mall running east and west providing broad pedestrian open space that separates office buildings from apartment buildings; some 1600 dwelling units provided; 14 office buildings providing 2,300,000 net sq ft of office space are planned.

89. "Philadelphia development."Arc Forum 101: n 3, Aug 1954, p 140-3.

Redevelopemnt program for Eastwick, Pa., planned for population of 35,000 with 4679 dwelling units; area covering 3000 acres, partially swamp land will have four residential units, parks and wild life preserves, schools and shopping center; arterial roads will not penetrate residential district.

90. "Plan for downtown Toronto." Toronto City Planning Board 1963, 60p.

Summary of the general improvement plan for businees and government offices, retail stores, entertainment, hotels, institutional buildings, industry and warehousing, transportation, parking, pedestrian traffic, and public open space/

91. "A plan to combat congestion in Central London." London County Council, London, 1957, 22p+map, ill.

This booklet explains the L.C.C's new planning policy for Central London. The main principles are: (1) to reduce the area in which large office buildings are permitted in Central London; (2) to encourage office development closer to residential districts; (3) to encourage"mixed" development on many sites where the maximum limits to office development are reduced so that more people will be able to live near their work in the centre;

(4) to preserve the character of Central London. The 1948 plat ratio zones (plot ratio is defined as the relationship between the area of the site and the gross floor area of the buildings) and the proposed revised plot ratio zones are discussed. Diagrams are included which give details of where office workers live (mainly within the Greater London Planning Region) and of thier journey to work; there are tabluated data on population 1911-1956, journays by public transport into Central Area, post-war office development in the Central Area, and changesin population and employment in the Greater London Planning Region. The folding map at the end shows the revised plot ratio for the Central Area.

92. "Planning for 50 years of city growth." Commonwealth Engr 41: n 6, Jan 1954, p 215-8.

Planning scheme prepared on basis of 2, 500,000 people to be accommodated in area of 265 sq mi in Melbourne, Australia provides for better distribution of industrial areas, development of business centers, and improvement and development of suburban shopping centers; road system provides for city ring road, inter-suburban roads and radial roads.

93. "Planning for traffic and land use must go hand in hand." The Contract Journal No 4, 406, Thursday, December 5, 1963, p 598.

The planning of traffic and the planning of land use must go together, said Mr. Ernest Marples, Minister of Transport, in the Commons last week.

He stated that the Government accepted the basic approach of Professor Buchanan in his report on Traffic in Towns that a balance must be struck between the growing need of traffic and the quality of urban life. The Government's long-term planning would be shaped accordingly.

Using the principles laid down in the Buchanan report the next step was to translate them into practice in each area. Local authorities would require help and guidance, but each area had its own distinctive problems and would have to make its own decisions.

Mr. Marples said spending on urban roads was rapidly increasing. This year it was 50,000,000 (pounds) and this would rise to 140,000,000 (pounds) by 1970.

But, said the Minister, the right time to make decisions about resources and cash for the rebuilding of town centres, and other substantial expenditure involved, was after the method of development in relation to the motor car had been determined.

94. "Practical use of land value economic studies in right-of-way litigation." Ninth Pan-American Highway Congress (Organization of American States, Washington, D.C.), May 6-18. 1963 (unpublished technical papers).

This paper reports information revealed by a questionnaire survey conducted among State highway department legal council throughout the United States, District of Columbia, and Puerto Rico to determine the uses being made of land economic studies in connection with the determination of compensation in highway condemnation cases.

Presently the main use of land economic studies appears to be in the education of appraisers and other professionals who may be used as expert witnesses in formal condemnation proceedings. To a lesser, but still important, extent these studies are used as an actual basis for appraisal work by providing a sorce of comparable sales reflecting on "after value" and benefits. Trial council may also draw on this source for material with which to cross-examine expert witnesses' testimony regarding the value or effects of benefits and detriments to property damage by a partial taking.

Introduction of land economic study data into evidence as a direct measure of land value is precluded by the rules of evidence in the laws of the States, but it is suggested that the availability of more and better studies, and the increase of trial counsel's skill in presenting these studies may induse courts to broaden their rules on the admissibility of this data as evidence and accept this form of data as more persuasive.

This paper also contains a concensus of suggestions for the improvement of land economic studies from the lawyer'a viewpoint, various comments and opinions of lawyers as to their usefulness in litigation aimed at acquisition of land for right-of-way purposes.

95. Professional responsibility of city planners and traffic engineers in urban transportation, Joint Policy Statement of the American Institute of Planners and the Institute of Traffic Engineers. Journal of the American Institute of Planners (Suite 410, 2400 16th St.,N.W. Washington 9, D.C.) Vol. 27, No. 1, pp70-73, February 1961.

This statement covers those phases of urban transportation in which the city planner and traffic engineer have common interests, such as, highways, transit, and termianl facilities and services. It recommends the establishment of certain interprofessional relationships that normally should be followed to foster sound community development and to insure safe and efficient transportation services.

The governing body of the American Institute of Planners and the Institute of Traffic Engineers have adopted this as their interprofessional policy statement.

Close cooperation of various professional groups is indispensable in any urban transportation program. This certainly applies to the city planner and to the traffic engineer. However, many others are directly involved, such as the public works director, city engineer, police official , transit official, and utility manager, as well as the county, state, and Federal highway officials. All must participate since urban transportation has so many facets--planning, design, construction, operation, and maintenance.

For his part, the city planner is assigned the responsibility of developing and guiding the implementation of the comprehensive community plan. Transportation is one of the most important elements in such a plan. Therefore, the city planner of necessity, must see that transportation facilities are integrated with other key elements of the community plan. This, of course, can be achieved only by coordinating his efforts with those of otherprofessionals who are responsible for building and operating these facilities. The city planner must weigh with the other groups the interrelationship between elements of the comprehensive plan.

The traffic engineer's responsibility is to see that the transportation system in a community is operated safely and efficiently. In this task he is interested in the planning and designing of the transportation facilities as they will ultimately affect the operation of the system. He is also interested in the operational control measures such as traffic signals, signs, and markings, as well as the necessary laws regulating traffic required for safety and efficiency. In fact, he is concerned with any plans that will affect desires and needs relating to the movement of people and goods.

The outline indicates the general responsibility of the city planner and the traffic engineer in various phases of the transportation program. In carrying out these responsibilities the type of cooperation will naturally depend upon the status of transportation and other community plans. While the transportation plan and land use plan are under development, cities will undoubtedly move ahead with various types of projects which will call for collective action. In this event it is essential that the city planners and traffic engineer get together as early as possible in the development of sound projects.

Basic to any sound transportation plan is a continuing fact-gathering program.

When the facts have been collected and analyzed, appropriate standards and objectives should be adopted

to guide the development of the plan and to measure transportation and terminal deficiencies, present and future.

In carrying out the plan, a close working relationship between the various professional groups can help to insure the logical development of the transportation program, while at the same time minimizing disruption of normal community activities.

Division of responsibility at this stage would be as follows:

Joint Responsibility

1. Determining the exact location of proposed transportation facilities.
2. Establishing transportation improvement priorities.
3. Keeping the data and plans up to date.

City Planners Responsibility

1. Establishing the necessary planning program(off-street parking and load requirements in zoning ordinances, requirements that subdivisions conform to the transportation plan, etc.) to foster the development of the transportation plan.

Traffic Engineer's Responsibility

1. Establishing the necessary operational and control measures to assure smooth traffic operation during construction of facilities.
2. Determination of operational measures necessary to effectuate the transportation proposals.
3. Review with the city planner proposed major traffic operational changes like one-way street and through-street program.

96. "Progress with redevelopment of Stepney." Surveyor 116: n 3387, Mar 23, 1957, p 261-3.

Total area of London community is 487 acres and ultimate population of 27,000 is proposed; develppment plan envisages large residential precint without any major through roads except forlong term proposal for new northern approach road; capital cost of acquisition, compensation to traders and others ans of clearance and demolition amounts to some 450,000 pounds; description of sections of scheme.

97. Rainville, W.S.Jr., 'Trends in public transit improvement program." ASCE--Proc 85:)J City Planning Div) n CP2, Dec 1959, Paper n 2272,p 1-9.

Recent programs are classified into appropriate groupings andspecific examples of each type of improvement is given; efficiency of transit in utilization

of street space as means of moving persons in congested areas is cited as reason for its inclusion by public officials in long range urban transportation plan and program.

98. Richards, Glenn C.,"Integration of land-use and highway planning." Purdue University Extension Department Bulletin,Proceedings of the 44th annual Road School, April 7-10, 1958, p 52.

The lack of integration of land-use and highway planning is shown by the horrible examples of inefficient, dangerous, obsolete highways in every part of this country. While it is easy to criticize the highway engineer for not having visioned some of today's problems, we must all share in the mistakes of the past.

Highway administrators, highway engineers, planners and even engineering schools must admit that little thought was given to future land use when past highways were located and planned. Unlimited access, narrow right-of-way and no zoning or restrictions were common practice. Only recently have we recognized the importance of the land-use planner or traffic engineer in the location and the design of our highways.

99. Row, A.T.,"Approach to O-D data analysis." Traffic Quarterly 9: n 1, Jan 1955, p 105-22.

Origin-destination survey worked out by Detroit Metropolitan Area Traffic Study; plan calls for inventories of travel occurrence, land use and population distribution, and of facilities for traffic movement.

100. Sargent, Webster, Crenshaw and Folley,"City of Cortland, New York master plan. Syracuse, N.Y. 1963, 161p.

Includes population and housing, land use, urban renewal recommendations, streets, highways and parking plan, community facilitiesplan, public utilities plan, and capital improvements program.

101. Schsechterle, K.H.," Verkehrsprognosen fuer neue Baugebiete--gezeigt am Beispiel der Stadt Utrecht." Strasse u Autobahn 10: n 1, Jan 1959, p 13-25.

Traffic survey for new city settlement areas--example of city of Utrecht; how city planning and traffic planning were coordinated; comparisons with similar development in United States.

102. Schlums, J.,"German general traffic plan." Traffic Quarterly 14: n 1, Jan 1960, p 95-101.

Need of close collaboration between town planning and traffic engineers to assure future viability of towns id emphasized; zoning plan is recommended in which development of each town for next 30 yr is projected, together with general traffic plan; private and public local needs; private traffic volume should be carefully ascertained and distinction should be made between moving, on-and-off loading, and parking traffic; mistakes made in zoning plan.

103. Seyfried, Warren R.," The centrality of urban land values." Land Econ Ag 1963, p 275-284.

What urban renewal means and requires.

104. Sibert, E.G., "Traffic generation by different land uses." Journal of Town Planning Institute (18 Ashley Pl., London, S.W. 1),1960, 46,(9) 238-240.

The various factors which influence the generation of traffic including land use and special conditions which effect the use of private and commercial vehicles, are briefly examined. It is considered that planning should aim at controlling the position and bulk of new buildings and the amount of parking space so that generated traffic will not exceed the capacity of the road system designed for an area. Future disposition of land should aim at spreading traffic generation over as wide an area as possible and over different periods of the day.

105. Silver, J.,"Trends in travel to central business district by residents of Washington, D.C., Metropolltan Area, 1948 and 1955." Pub Roads 30: n 7, Apr 1959, p 153-76.

Study to develop travel data to central area and determine effects of distance as well as direction upon peron's travel to Central Business District (CBD); analysis of distance and direction factors, trip purposes and modes of travel; most important travel characteristic in economic character of CBD, in study period, was decreasing proportion of trips to CBD in relation to total travel; tabular data.

106. Smeed, R.J.,"The traffic problem in towns." Paper read before the Society, February 8, 1961, Manchester Statistical Society (A.C. Wild, Secretary, 6 St. James Sq., Manchester, England.) 59pp.

The percentage of people living in urban areas is increasing in all countries for which information is available. In Great Britian, one-third of the mileage of roads with side developemnts for shops, garages, factories, etc.,

occurs in areas officially classified as rural . The number of motor vehicles per head of population is increasing in every country for which information is easily available. The minimum rate of increase is 3.7 percent per year in the United States, the maximum 27 percent per year in Spain where there are only 0.024 motor vehicles per head of population .

Comprehensive studies of journey speed are only available for a few towns. The mean journey speed in the centers of some of these towns during normal working hours is between 8 and 10 mph and is decreasing. The rate of decrease in London is 1.9 percent per year. This may be compared with a rate of increase of 8.7 percent per year in the traffic in Great Britian as a whole. There are indications that thepercentage rate of decrease of journey speed is greatest on roads where the journey speed is greatest on roads where thejournay speed is lowest.

The number of journeys by public transport in urban areas is decreasing. Between 1950 and 1958, the rate of decrease in the United States has been 7 percent per year. During the same period in Britain, the rate of decrease has been 3.6 percent per year in London and 2.3 percent per year outside London. In Detroit, a city which has an especially low density of population, the rate of decrease between 1945 and 1959 was 8.2 percent per year. To throw light on the ground space requirements of a town for the journey to work, a theoretical model of a town has been considered. It is supposed that except in the area required for roads the places at which people work are uniformly distributed in a circle outside the central area. It is found that the road space required per person using the central area increases with the size of the town. If the private car is used for travel the area required per person for roads and parking in the central area increases especially rapidly. In the cases considered, when the number of persons traveling in the central area increased one hundredfold from 10,000 to 1 million, the area required forroadway space increased more than a thousandfold.

If travel is by private car, the amount of spcae required for parking is greater than that for roadway space in the smaller towns. The use of multi-story parking garages considerably reduced the need for roadway space as well as for parking space.

Towards the center of a town equal amount of radial and tangential road space and required. AT the outskirts of the central area the space required for radial roads is 60 percent higher than for tangenital ones.

The over-all radius of the town depends almost entirely on the number of inhabitants and the density of population in the residential area. Neither the density of workers in the central area, nor the requirements for roadway space affect the over-all area greatly.

107. Smith, W.S.,"Analyzing and projecting travel data." ASCE--Proc 86: (J Highway Div) n HW2 June 1960, pt. 1, Paper n 2513, p 1-14.

Projections of travel trends and desires are essential for good transportation planning; use of new method for determining proper projections in Washington, DC, metropolitan area; aspects of city planning, sociology, economics, and civil engineering have been coordinated with traffic engineering technology in this study to evaluate several possible transportation plans.

108. Smith, Wilbur and Associates,"Future highways and urban growth." New Haven, Conn., 1961, 376 p.

The investigation of Interstate highways was carried out under commission from the Automobile Manufactures Association, with the object of(1) det ermining the extent to which the interstate highway system will meet the freeway requirements of urban areasof the U.S.A. up to the year 1980, and also the extent of requirements for rail and express bus services in large metropolitan areas, (2) predicting the future use of urban and rural Interstate highways and appraising their effects on traffic growth and the relief to other roads, and (3) assesing the direct benefits to motorists in the form of fewer accidents and lower vehicle operating costs resulting from the completion of the Interstate system by 1972, as well as the general benefits to the national economy, land values and public services. The report is presented under the following chapter headings: (1) Growth of urbanization and travel, (2) Transportation and urban development. (3) Characteristics of urban travel. (4) Public transportation in the over-all plan. (5) Freeway system use in city studies. (6) Future travel and Interstate system use. (7) Complements to urban Interstate highways. (8) Traffic generation and land use impacts of selected highways. (9) Direct benefits to road users. (10) General benefits of Interstate highways. Supplementary tabulated statistics and a list of 142 references are appended.

109. Smith, W.S., "Synthesized travel desires." Traff Quart 16: n 2, 1962, p 173-200.

A method is described for estimating future traffic based on a consideration of changing land use patterns, travel patterns and statistics of vehicle ownership population, employment,comparative economic levels recreation, etc. A series of tests was conducted in a

number of cities in the U.S.A. The validity of the method was confirmed by comparison with the results of origin-and-destination studies in the same cities.

110. Smock, Robert and James Simmons. "The 1963 Detroit experiment in traffic forecasting." Nat'l Research Council--Highway Research Board Abstracts 33: n 12, December 1963, p 81.

The Detroit experiment (a) updated an O-D Survey trip table from 1953 to 1963. (b) assigned the 1963 trip table to the arterial street network, and (c) compared the assigned volumes to traffic counts. The research began with an inventory of 1963 population and land use, in comparison with 1953 data, by traffic analysis zone . Because of growth in the area it was found necessary to subdivide the outer ring of zones, and to use individual external stations rather than group stations. Zonal growth factors and computers iteration then produced a 1963 vehicle trip table.

The trip table was assigned to the arterial street network (of about 2,000 links) in four passes with a capacity restrained computer program, and assigned volumes were compared to traffic counts on all links. The two principal conclusions were (a) it appears that even in this age of regional shoppingcenters, urban renewal, etc., an O-D survey can be effectiv ly updated with existing techniques, because there was no geographic pattern of errors found in the assignment-count compariosn, and (2) capacity restrained assignment is highly effective, the average difference betwwen assigned volume and traffic count being 86 percent after the first pass (or desire assignment) and 37 percent after the fourth pass.

A table is presented illustrating counts and first pass and fourth pass assigned volumes on the links of a freeway and a parallel surface street. The assignment program is described, with special reference to recent improvement in the handling of origin-and-destination points of trips, treecomputation, and assignment.

111. Solberg, Erling D.,"Planning and zoning to Prevent Land and Water Problems in Suburbia." Washington, U.S. Dept. of Agriculture, 1962, 21 p. Address to the Urban Extension Agents Conference, Farmingdale, Long Island, N.Y.

Discussion of benefits from zoning; problems and conflicts; protecting residential areas; space for business and industry; farm zoning districts.

112. Spowart, T, G. Fraser,"Municipal engineering in Kirkcaldy." Instn Mun Engrs--J 81: n 11, May 1955, p 134-66.

Development plan for Kirkcaldy, Scotland with population of just over 50,000; planning proposals in regard to land for housing development, industry, new roads, and public open space; 5-year program; housing site preparation, sewerage.

113. Steel, R. and A.G. McCulloch, "Principles and practice of town development. The Basingstoke scheme. J. Tn Plann. Inst. Lond 49: n 1, 1963, p 4-13.

This paper includes information on roads and parking schemes in the final plan, which provides for (a) four principal town roads for peripheral traffic between residential and industrial areas, (b) a road giving access to the town centre from the eastern and western tengential roads, (c) a relief road to the western radial road, (d) car parking for 6000 vehicles, mostly underneath the general shopping area. The location of residential and industrial areas and of open spaces is described in relation to the proposed London-Southampton motorway (M3).

114. Stegmaier, J.T., F.B. Curran, "Travel patterns in 50 cities." Pub Roads, Washington, DC, 30: n 5, Dec 1958, p 105-21.

Statistical analysis based on origin and destination traffic survey of residents in 50 urban areas regarding purpose and mode of travel; data also included pertaining to basic household characteristics of area; results show that mass transit is most prevalent mode of travel in largest cities; in most cases volume of daily trips of urban residents are directly related to number of persons, dwelling units, and automobiles registered in area.

115. "Stuart origin and destination traffic study." Iowa Highway Commission, Ames Iowa, 1963, 59p. In cooperation with U.S. Bureau of Public Roads.

Traffic data obtained by interview and recorders in Sept 1959 and Aug 1961, before and after completion of Interstate Highway no. 80.

116. Sutermeister, O., "Zoning related to general programs for parking relief." Traffic Quarterly 13: n 2, Apr 1959, p 247-59.

Study conducted in and by District of Columbia is presented as possible source of ideas for future development and refinement; most important function of zoning is maintenance of reasonable balance between land use and transportation facilities; methods are outlined for parking relief existing and new individual buildings; and better use of existing street pavements.

117. "Town expansion scheme at Thetford." Surveyor 116: n 3415 Oct 5, 1957, p 1023-4.

Expandion plan for Thetford, Great Britian, provides for 1500 houses and 40 acres industrial estate, schools and public services; main residential area, with industrial estate will occupy about 210 acres of land; housing development will have some 203 acres of open space.

118. "Traffic summary." Delaware State Highway Department, 1962, 93p. In cooperation with U.S. Bureau of Public Roads.

Average daily traffic volumes on all State maintained highways and streets, detailed reports on certain information obtained at permanent stations, a summary of pertinent statistics from annual truck weighing survey, and other local statistics related directly or indirectly to highway travel.

119. "Trans-Hudson Riber vehicular origin and destination survey." Pub Roads 31: n 4, Oct 1960, p 86-99.

Development by Port of New York Authority of continuous sampling technique, based on probability samples, which spreads interviews over long period of time and thus obtains full variety of daily, weekly and seasonal traffic patterns; method is efficient, economical and permits periodic analysis and provides up-to-date information; results of 1958 trafffic survey.

120. "Travel characteristics in urban areas." Nat'l Research Council--Highway Research Board Bulletin 203, 1958, 130p.

This bulletin contains seven papers given in a session sponsored by the Committee on Origin and Destination Surveys at the 37th Annual Meeting of the Highway Research Board, as follows:

Travel Characteristics of Two San Diego Subdivision Developments.

Factors Affecting Trip Generation of Residential Land-Use Areas.

Forecasting Peak Hours of Travel.

Transportation Usage Study.

Evaluating Trip Forecasting Methods with an Electonic Computer.

Center City Good Movement; An Aspect of Congestion.

Travel Patterns in 50 Cities.

121. "Trip characteristics and traffic assignment. Nat'l Research Council--Highway Research Board Bulletin 224, 1959,135p.

This bulletin contains thirteen papers presented to the 38th Annual Meeting of the Highway Research Board. They are:

Trends in Travel to the Central Business District by Residents of the Wahington,DC., Metropolitan Area, 1948 and 1955.

Continuous Sampling Method of Conducting Origin-Destination Surveys.

Report on Analysis of Urban Work Trips.

A Method of Traffic Assignment to an Urban Network.

Land Use Projection for Predicting Future Traffic.

Home-Interview Surveys and Related REsearch Activities.

Program for Assigning Traffic to a Highway Network.

Use of IBM Port-A-Punch in Origin-Destination Surveys.

Novel Traffic Survey Method Utilizes Vehicle Lights.

Estimating and Forecasting Travel for Baltimore by Use of a Mathematical Model.

Application of O-D Data in the Baltomore Region.

Median Strip Mass Transit and Related Traffic Characteristics on Congress Expressway.

Land Use in Traffic Generation.

122. "Vehicle Travel Time and Delays, Fresno-Clovis Metropolitan Area." Fresno-Clovis Metropolitan Area Project, Fresno, Calif., 1963, 163p, Processed. Prepared by the Planning and Public Works Departments of the City and County of Fresno, Californai.

Includes a long range plan of land use and needed transportation facilities, description of methods used in field studies, travel time contours, and vehicle minutes of delay.

123. Vernon, Raymond,"Metropolis 1985" .

This volume is an interpretation of the principle findings of a series of books on the forces that shape metropolitan area. In particular, the series has to do with the forces that shape the largest and most complex area in the United States, a 22 county expanse which takes in parts of three states but which, for convenience, we term the New York Metropolitan Area.

In 1956, the Regional Plan Association, a nonprofit research and planning agency whose purpose is to promote the coordinated development of these 22 counties, requested the Graduate School of Public Administration of Harvard University to undertake a three-year study of the region. The challenging task was to analyze the key economic and demographic features of the region and to protect them to 1965, 1975, and 1985/

124. Voorhees, A.M., "Development patterns in American cities." Nat'l Research Council--Highway Research Board Bulletin 223, 1961, p 1-8.

During past year new techniques have been used to analyze growth characteristics of urban areas; exact pattern of growth that materializes in community is result of many individual decisions; for example as to location of plant, store, office or home; studies undertaken in several cities to measure importance people place in such factors in making their decisions; population and employmnet patterns analyzed.

125. Voorhees, A.M.,"Estimating and forecasting travel for Baltimore by use of mathematical model."Nat'l Research Council--Highway Research Board Bulletin n 224, 1959, p 105-14.

Based on factors such as number of people living and working in various zones, car ownership, and travel time between zones; model was used to estimate origin and des destination of travel; model predicts future traffic volumes of proposed highways and volumes to be expected if specific mass transit improvements were made; model tests show its reliability and versatility; it is economical method of conducting comprehensive transportation study for region.

126. Wachter, W.A.,"Stamford plans balanced growth." Am City 70: n 9, Sept 1955, p 156-7, 204.

Stamford, Conn, has focused its planning and redevelopment program on "predesign" of residential subdivisions and uss of slum clearance to produce new commercial and industrial sites; master plan adopted in 1953 outlines development pattern to accomodate additional 45,000 people by 1980.

127. Wagner, Robert R.,"Using airphotos to measure changes in land use around highway interchanges." Photogrammetric Engineering (44 Leesburg Pike, Falls Church, Va.), Vol. 29, No. 4, pp645-649,July 1963.

The task of studying changes in land use of urban, suburban, and rural areas can be extremely expensive, requiring personal interviews with local inhabitants, thorough searching of public records,and preparation of a map showing the past and present types of land use. Further, field methods are often inadequate in determining past land use changes. A method of airphoto comparison analysis may be used to interpret and measure changes in land use. This method was employed in order to measure land use changes in areas around highway interchanges and proved to be fairly efficient, cheap, and accurate.

128. Williams, Sir O., "Motorways and landuse." Chart Surveyor 90: n 8, 1958, p431-3. Contract J 168: n 4103, 1958, 76970. Rd & Rd Constr 36: n 422, 1958, p36-8. Surveyor, Lond. 117: n 3432, 1958,p101-2.

Motorway design and land requirements are outlined. The land acquisition problem is discussed with reference to severance of properties, drainage and access right, the comparative cost of retaining walls and embankments, and severance of flood plains. It is pointed out that minimizing dislocation to industries, agriculture, traffic and drainage is an intricate and lengthy process, particularly in a built-up country like Great Britian. Time of building is considered in two phases: (a) up to the date at which the route and land requirements are finally defined for the acquiaition of land and property and (b) the actual construction. It is suggested that some procedure is required whereby the first phase may be carried out years ahead of actual construction without involving the Government in the immediate purchase of the property and with compensation for tenants for loss of unfettered tenure.

129. Wright, H.M.,"The motor vehicle and civic design." J. Roy. Inst. Brit. Archit64: n 3, 1957, p 90-7; Discussion 97-100.

This paper considers the motor vehicle's probable influence on future town planning and building development. It is assumed that there will be a great increase in the number of motor vehicles and it is thought that they will influence the location and form of new building development much more radically than most official plans assume. It is also contended that a great deal can be foreseen about the detailed forms of lay-out and new building which greater numbers of motor vehicles will tend to bring into existence. In illustration of the subject matter,reference is made to existing and planned motor roads in rural and urban areas in the U.S.A. and diagrams are included of schemes for cities in Great Britian. It is thought that, for large provincial cities in Great Britian the aim should be a very great improvement of vehicular access to the centres, and some fully"motorized" towns not too far away, the whole to form a balanced city on the regional scale. There would be one set of advantages in the centre (including car parking space for every five or seven people) and other advantages in the fully "motorized" satellites.