
Methods of Studying Ribbon Development in Urban Areas
Study Area: The Oklahoma City - Norman Area

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The study of urban ribbon development presents a unique area of geographic analysis. It is an attempt to determine the origin, elements and significance of the sprawl extending outward from the urban centers. Mayer (1954) stated that urban growth along the highway "is a new phenomena, and one which reflects another of the fundamental changes in the way of living of the people in the United States, who, more than any other people in the world, have adopted the automobile as an essential part of their culture." He further pointed out that they are "neither completely urban nor completely rural; they are completely highway oriented and have no effect on the settlement patterns or land uses more than a few hundred feet away from the road."

The problem arises as to what methods can be employed to study such conditions, utilizing geographical analysis. In order to conduct a study

¹ Presented at Weatherford, Dec. 11, 1959.

of ribbon development properly, it is necessary to construct a base map of the area at a workable scale. Due to the linear nature of the usual study area, a scale must be selected that is adequate, but does not produce a bulky map. The roads under study should be purposely emphasized, while it is best to deemphasize the minor roads. The map should be kept as simple as possible to avoid clutter.

The survey basically should contain three major areas of analysis. The first part of the survey, is concerned with the land use pattern of the existing development adjacent to and fronting on the study roads. Consideration of traffic flow embraces the second part, and the appearance and condition of roadside development forms the final part.

For purposes of illustration, the techniques employed in a particular study of ribbon development will be used. The area studied included the major roads connecting Oklahoma City with Norman. These include U.S. Highway No. 77, Western Avenue (SH 74), Sunnyslane (SH 77H), and old U.S. Highway No. 77. The roads follow a nearly direct north-south route along section lines. The northern base line was established at 29th street on the south edge of Oklahoma City; the southern terminus was set at Robinson Street on the north edge of Norman.

United States Highway No. 77 is the dominant road connecting Oklahoma City and Norman and is also the latest expressway built. This highway will be supplemented in the very near future by two new and improved connections. One connection north of Moore, the Oklahoma City bypass, will tie U.S. No. 77 with the eastern section of Oklahoma City and eventually will connect with the Turner Turnpike. Near its southern end, three and one-half miles north of Norman, the highway will have an improved connection with State Highway No. 74F and will bypass west of Norman.

The westernmost road in the study, Western Avenue (State Highway No. 74) is commonly referred to as the "old football road." Originally a dirt road, it was improved to facilitate movement of traffic to and from the University of Oklahoma football games in Norman.

At the eastern extreme Sunnyslane Road (State Highway No. 77H) connects Norman with Del City and the Tinker Field-Midwest City Area.

Old 77 runs from Hollywood Corners, three miles north of Norman on Sunnyslane, to a point about one-half mile north of the Moore City limits where it connects with United States Highway No. 77. This road was, until 1953, the major route between Oklahoma City and Norman. It also serves as the major business street for Moore.

The cities involved in the study, or the parts thereof, are Oklahoma City, Norman, Moore, and Del City. Oklahoma City, the state's capital and largest city, (population, 1950 census: 243,504) exerts the greatest pressure on the ribbon development. Norman (population, 1950 census: 27,006), the second largest representative city in the study area and satellite to Oklahoma City, is located in the southeastern corner of the study area with only a small portion of the city extending into it. Also, a small portion of the northeast corner of the study area is occupied by part of Del City (population, 1950 census: 2,504). At the geographic center of the area is Moore (population, 1950 census: 942). All the rest of the land is controlled by Cleveland County and Oklahoma County. The county line extends east-west four miles south of the northern base line.

In order to obtain the necessary information several field survey techniques were employed. The first was the running of a strip land use survey of the area along with a count of the billboards and buildings adjacent to the roads. The land use data was collected on the base map through the use of a windshield survey. The uses that were recorded were

those actually having frontage on the road. The classes of land use included residential, commercial, manufacturing, schools, churches, parks, public, quasi-public, and land not having an urbanized development.

Residential uses included all structures whose primary use was as a dwelling place. Number of families per dwelling unit were not a factor since all were put under this general category.

All commercial establishments were grouped together.

Manufacturing was divided into two parts: light and heavy. Light manufacturing included storage yards, small repair shops, junk yards, and similar uses, while heavy manufacturing included all major industrial operations.

All other use groups were all inclusive.

Using as a sample the percentages of frontage for groups of land uses, certain relations were determined. The percentages were obtained by direct measurement from the land use map. These groupings consisted of residential, commercial, manufacturing, and other uses. Of the total developed land on the roads studied, 43.4 percent was devoted to some sort of residential use. The next highest use was commercial with 29.2 percent (Table I). Often patterns on individual roads presented sharp contrasts. The southern section of Western Avenue had the highest percentage of developed land devoted to residential uses. The high rate of residential uses in this section of Western Avenue is a result of the predominance of residential farm units. On the other hand, the northern section of U.S. 77 had the highest percentage of commercial uses.

TABLE I. LAND USE PERCENT OF DEVELOPED LAND FRONTING ON RIGHT-OF-WAY

		A.	B.	C.	D.	Total
Western:	North	61.5	29.4	.7	8.4	100.0
	South	96.4	3.6	—	—	100.0
	Total	67.3	25.1	.6	7.0	100.0
U.S. 77:	North	42.3	43.9	.6	5.5	100.0
	South	11.9	13.4	8.3	71.7	100.0
	Total	34.0	35.6	3.0	23.5	100.0
Sunnyside:	North	59.4	17.7	6.9	14.6	100.0
	South	54.9	28.0	7.3	16.1	100.0
	Total	57.2	22.7	1.0	15.3	100.0
Old 77		69.0	20.7	1.7	8.3	100.0
29th Street		13.9	40.5	24.5	21.1	100.0
State Highway 37		83.8	8.1	—	8.1	100.0
Robinson Street		37.0	17.0	—	46.0	100.0
Total all roads		43.4	29.2	8.3	19.1	100.0

A. Residential, B. Commercial, C. Manufacturing, D. Other

Billboards were given special consideration in this study. A census of the structures was taken and they were spotted on the land use map. Totals were tabulated and set up in a manner similar to the land use data (Table II).

Billboards are also a consideration of the esthetic quality of the highway. They help to impart a feeling to the person moving along the highway. The construction of signs along the highways must be considered a legitimate business. However, control over these signs should be exercised by governmental agencies through marginal land acquisition, purchases of development rights, or a combination of outdoor advertising regulations

and a zoning ordinance. Only through proper control can the clutter of billboards be avoided. A complete banning is not suggested, for a few well designed and properly placed signs add variety and interest to the natural landscape.

The next phase of the field work consisted of taking photographs of the various elements. The purpose was to permanently record the types and conditions of development. Approximately three hundred photographs were taken with only a representative sample being included in the final report. Since photographs taken on the ground gave only a one-point perspective of conditions, a series of aerial photographs were taken. These

TABLE II. LAND USE — BILLBOARDS

		Number of Major Billboards	
Western:	North	10	
	South	1	
	Total		11
U.S. 77:	North	38	
	South	67	
	Total		105
Sunnylane:	North	3	
	South	10	
	Total		13
Old 77:			1
29th Street:			17
Robinson Street			4
Total all roads			151

photographs were taken on three separate flights over the area south of Moore. Air traffic regulations did not allow flights north of Moore. The major portion of the pictures obtained were obliques taken at altitudes ranging from 200 to 1,000 feet. These gave an overall view of the areas of development.

Traffic flow data were obtained from the Oklahoma State Highway Department for selected points along the routes. Figures were traced back to 1947 in order to see what trends in volume have occurred that might have affected the ribbon development. The appearance and condition analysis was accomplished by visual survey of roadside development — the more striking examples were recorded on film for presentation in the final report.

The approach thus far described was supplemented by comparisons with similar surveys. It is felt that the methodology employed here represents an approach that Mayer (1954) would call an experiment "with new techniques in field study in order to bring urban ribbons under the lens of geographic analysis."

LITERATURE CITED

- Mayer, Harold M. 1954. Urban geography, p. 142-163. In Preston E. James and Clarence F. Jones [ed.], American geography inventory and prospect. Syracuse Univ. Press.