December 8, 1966

To the Graduate Council:

I am submitting herewith a thesis written by Lewis S. Pipkin entitled "An Estimate of the Value of Advertising Rights to Landowners from Billboard Site Rentals." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

Vice President for
Graduate Studies and Research

AN ESTIMATE OF THE VALUE OF ADVERTISING RIGHTS TO LANDOWNERS FROM BILLBOARD SITE RENTALS

A Thesis

Presented to

The Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

---

by

Lewis S. Pipkin

December 1966

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CHAPTER I

INTRODUCTION

On October 22, 1965, President Lyndon B. Johnson signed the Highway Beautification Act of 1965 as Public Law 89-285. This law provides for the scenic development and roadside beautification of the Federal Aid Highway System. The Act provides not only for the control of outdoor advertising and junkyards along the National System of Interstate and Defense Highways but also along the primary highway system. This Act is the culmination of a prolonged attempt to impose some degree of Federal regulation on outdoor advertising.

President Johnson said upon signing this Bill:

> Now this Bill does more than control advertising and junkyards along the billions of dollars of highways that people have built with their money--public money, not private money. It does more than give us the tools just to landscape some of those highways.
>
> This Bill will bring the wonders of nature back into our daily lives.
>
> This Bill will enrich our spirits and restore a small measure of our natural greatness. . . .
>
> And unless I miss my guess, history will remember on its honor roll those of you in this room today, who stood up and were counted when that roll was called that said we are going to preserve at least a part of what God gave us.[1]

---

[1]"President Signs Beautification Bill," American Road Builder, XLII (December, 1965), 2.

Much the same sentiment has been expressed by the late President John Kennedy in his special message to the 87th Congress when speaking of the Interstate Highway System he said:

> The System was not intended to provide a large and unreimbursed measure of benefits to the billboard industry, whose structures tend to detract from both the beauty and safety on the routes they line. Their messages are not, as so often claimed, primarily for the convenience of the motorist whose view they block. Some two-thirds of such advertising is for national products, and is dominated by a handful of large advertisers to whom the Interstate System has provided a great windfall.[2]

Garden clubs, civic organizations, and various individuals have long favored such legislation. However, there have also been powerful voices of dissent and opposition raised to any measure of Federal control of outdoor advertising.[3]

Some of the basic objections to such legislation were forcefully defined by Mr. Roy Davis, National Secretary-Treasurer of the National Caves Association, when he stated:

> I should like to present my objections--and my Association's objections. . . .
>
> Now we are told that our highways are going to be much more beautiful than in the past. Indeed, it appears that folk like us are going to be "beautified" into lovely corpses.

---

[2]Highway Research Board, Control of Roadside Advertising Along the Interstate System, Bulletin 337, (Washington: National Academy of Sciences--National Research Council, 1962), p. 5.

[3]United States Congress, Senate Committee on Public Works, Control of Advertising on Interstate Highways, Hearing before Subcommittee, 85th Congress on S. 963, S. 3041, and S. 3218, March 10, 1958, (Washington: Government Printing Office, 1958), pp. 43-84.

> To us--and others like us, billboards are our life blood. 80 % of our business comes from billboard advertising. It's the IMPULSE produced by repetition that does the job. We are told to find other means of advertising--but there is no other means!
>
> This is America. . .not Russia. . .not Europe. We don't tell people what they can do with their own property.
>
> As an American I don't understand how other Americans, no matter how influential their husbands might be, can so misdirect federal legislation as to destroy me and my business simply because they do not like my advertising program.
>
> Surely in America we cannot justify the destruction of thousands of businesses in the name of beautification. What a farce![4]

In this setting of widely diverging opinions, the individual states are charged with the task of implementing the Highway Beautification Act of 1965.

I. STATEMENT OF THE PROBLEM

The purpose of this study is to estimate the value of advertising rights of the owners of property fronting on the Interstate and Federal Aid Primary Highway Systems in Tennessee. This estimate will be made assuming that the law will be implemented in compliance with the Draft Standards issued by the Bureau of Public Roads for the public hearing held in each state. Specifically, the problem will be to: (1) determine the number and location of existing billboards; (2) determine the income

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[4]Statement by Roy Davis, National Secretary-Treasurer National Caves Association, at Public Hearings on Highway Beautification Act, Nashville, March 22, 1966.

produced from rentals of existing billboard sites in selected sample areas; (3) estimate the total cost of acquiring advertising rights on the entire highway net; and (4) to investigate the proper method of determining the value of advertising rights to the landowner.

II. IMPORTANCE OF THE STUDY

Within the United States the outdoor advertising industry has a revenue in excess of $200 million annually. The industry employs about 12,000 persons and pays site rentals to over 200,000 landowners.[5]

The cost of enforcing the provisions of the Highway Beautification Bill, particularly in respect to the control of outdoor advertising, has been roughly estimated at $180 million for 265,000 miles of highway. This estimate is based on an assumption of an average per mile cost of $670 and assuming that all rights would be acquired by eminent domain instead of any exercise of police power by the states.[6]

Tennessee has approximately 6,950 miles of interstate and primary routes and would, at the estimated rate, have a cost of approximately $4.6 million in acquiring the advertising rights.

III. SCOPE OF THE STUDY

This study is an examination of Section 101 of the Highway Beautification Act of 1965, and of the effects of the implementation of

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[5]Charles U. Vaughan, "Legislative Considerations of Controlling Outdoor Advertising Along the Interstate Highway System," (unpublished Master's thesis, The University of Tennessee, Knoxville, 1962), p. 4.

[6]"The Secretary of Commerce Testifies," American Road Builder, XLII (September, 1965), 5.

this legislation on the amount of rental income received by landowners for existing billboard sites in Tennessee. The writer proposes to analyze the number, type, and location of billboards and to investigate the amount of rental income derived from these sites by landowners. The writer also proposes to estimate from projections from the sample areas the probable cost of acquiring statewide advertising rights.

IV. METHODS OF PROCEDURE AND SOURCES OF DATA

The primary source of data for this study is an inventory of outdoor advertising signs and displays made by the Tennessee Department of Highways. This inventory includes all signs along the Interstate and Federal Aid Primary systems which are within 660 feet of the nearest edge of the right-of-way and visible from the main traveled-way of the system. Directional and other official signs located on the right-of-way are excluded. Also excluded are signs advertising the sale or lease of property upon which they are located, signs advertising the activities conducted on the property on which they are located, and temporary signs. This inventory was based upon the methods and controls used by state highway departments to inventory bridge record data for highway defense requirements. Location control is established by following the road section numbering on the bridge index map prepared by the Research and Planning Division of the Tennessee Department of Highways.

Data from this inventory have been key punched and are available for analysis by the writer. In addition to inventory data prepared by

the Tennessee Department of Highways, data will be acquired by in-depth interviews with sign owners and landowners along selected sample areas of each highway system. These data will be supplemented by material in studies published by individual state highway departments, advertising associations, and related trade organizations. Material from the public hearings held in the Metropolitan Courthouse in Nashville is also available and will be used when applicable.

V. ORGANIZATION OF THE STUDY

There are seven chapters in this study. Chapter II discusses the background of the Highway Beautification Act and the present status of billboard control in Tennessee. Chapter III discusses the data from the highway billboard inventory conducted by the Tennessee Highway Department. Chapter IV analyzes the data from the sample areas for an estimate of the value of advertising rights. Chapter V is a projection of the income produced by billboard site rentals on a statewide basis. Chapter VI analyzes and discusses the theoretical approaches to the determination of the value of advertising rights to the landowner. Chapter VII summarizes and concludes the study.

CHAPTER II

BACKGROUND OF THE HIGHWAY BEAUTIFICATION ACT AND STATUS OF BILLBOARD CONTROL IN TENNESSEE

I. INTRODUCTION

Commercialized outdoor advertising in the United States dates from the 1880's. Legislation, usually in the form of municipal ordinances, dating back to the 1890's, is evidence that the need for some control of outdoor advertising has been recognized for almost the same period of time.[1] In early cases testing these ordinances, the courts were generally opposed to efforts to control billboard advertising. Numerous municipal ordinances were declared unconstitutional, primarily on the basis that aesthetic considerations were a matter of luxury and not a matter of necessity. However, in the case of St. Louis Gunning Advertising Company v. St. Louis in 1911, the court upheld a municipal ordinance regulating the size, height, and location of billboards on the grounds of public safety and amenity.[2] This method of regulation proved popular and numerous ordinances were upheld on the grounds of public safety.

About thirty-five years after the decision in the St. Louis Gunning case, the United States Supreme Court gave its approval to the use of

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[1]Ross D. Netherton, Roadside Development and Beautification, (Washington: National Academy of Sciences--National Research Council, 1966), p. 39.

[2]Ibid., p. 40.

aesthetic considerations as a goal of governmental action in Berman v. Parker when the Court said:

> public safety, public health, morality, peace and quiet, law and order--these are some of the more conspicuous examples of the traditional applications of the police power in municipal affairs. Yet they primarily illustrate the scope of the power and do not delimit it. . . . The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary.[3]

Efforts to regulate outdoor advertising by special ordinances, or as a part of local comprehensive zoning law have shown slow but steady growth. By 1958 all of the states had in effect some form of legislation designed to control outdoor advertising.[4]

With each state having individual statutes and with numerous municipal and special ordinances, little uniformity was present in efforts to control outdoor advertising. Much of the municipal law dated from a quater of a century ago and offered minimal protection to present day highway and roadside values even with strict enforcement.

Model ordinances for county and municipal regulations of billboards and legislation for statewide roadside zoning have been prepared and proposed by various private and professional organizations. None, however, has become a prototype for widespread adoption.[5] Thus, pressure continues for action and Federal legislation on this subject.

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[3]Ibid., p. 42.

[4]Highway Research Board, Outdoor Advertising Along Highways, Special Report 41 (Washington: National Academy of Sciences--National Research Council, 1958), p. 1.

[5]Netherton, op. cit., p. 48.

Additional action in this area is advocated by writers such as Peter Blake when he stated:

> When people talk about the flood of ugliness engulfing America, they first think of billboards--and, more specifically, of the billboards that line our highways and dot our landscape.

The problem was stated rather succinctly by Ogden Nash:

> I think that I shall never see
> A billboard lovely as a tree.
> Perhaps, unless the billboards fall,
> I'll never see a tree at all.[6]

II. BACKGROUND OF HIGHWAY BEAUTIFICATION ACT OF 1965

The first legislative attempt to develop effective and uniform control or regulation of roadside advertising occurred in 1955 when Senator Richard Neuberger introduced an amendment to the Federal Aid Highway Bill. This amendment was deleted from the Highway Bill. In 1957 Senator Neuberger again submitted legislation to Congress designed to control outdoor advertising along the Interstate Highway System. This bill was killed in committee. In 1958 several billboard control bills were introduced before Congress. One of these bills was a revised version of Senator Neuberger's bill. A similar bill was also introduced by Senator Prescott Bush. All of these bills were considered at a common hearing on March 10, 1958. The bills offered by Senator Neuberger and Senator Thomas Kuchel were combined to form a bill acceptable

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[6]Peter Blake, God's Own Junkyard, (New York: Holt, Rinehart, and Winston, 1964), p. 11.

to the majority of the committee. This bill passed the full committee and was approved by both houses and signed into law by President Eisenhower on April 16, 1958.[7]

The pertinent provisions of this bill are contained in Section 131 of Title 23, U. S. Code, "Highways" which provided that the erection and maintenance of outdoor advertising signs, displays, or devices within 660 feet of the nearest edge of right-of-way of the Interstate Highway System acquired subsequent to July 1, 1956, should be regulated consistent with the national standards to be prepared and promulgated by the Secretary of Commerce. These standards were published on November 13, 1958, in the Federal Register and provide that certain classes of signs may be permitted in protected areas. Signs that were to be permitted were official or directional signs, on premise signs or signs within twelve miles distance of advertised activities, signs giving information in the specific interest of the traveling public, and signs for sale or lease of property.[8]

Neither the Act nor the national standards made any provision for the removal of existing signs. Thus, this problem was left entirely to the State's jurisdiction. The responsibility for enacting control legislation was left to the individual state legislatures. The role of

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[7]Charles U. Vaughan, Legislative Considerations of Controlling Outdoor Advertising Along the Interstate Highway System, (unpublished Master's thesis, University of Tennessee, Knoxville, 1962), pp. 11-14.

[8]United States National Archives, Federal Register, Vol. XXIII, (Washington: Government Printing Office, 1958), pp. 8793-8795.

Federal government was to encourage state participation by increasing financial participation by one-half of one per cent of the cost of any project which the states agreed to regulate in accordance with the minimum standards.

This section of the Federal law and the accompanying national standards promulgated by the Secretary of Commerce have not had the effects initially expected. The incentive of one-half of one per cent bonus, in addition to the 90 per cent Federal share payable to the states for the Interstate Highway System, has proved inadequate to induce a majority of the states to meet the requirements sufficiently to comply with national standards. As of August 1965, only twenty of the fifty states had indicated any interest in the Federal bonus payment for the control of outdoor advertising; and of these twenty only eight had become eligible for payment.[9] With this limited endorsement of the National Standards by the individual states, consideration was again given to the subject of billboard control. After a White House conference in May 1965, the President submitted to Congress his recommendation for a new bill.[10] The Senate acted on the proposed Highway Beautification Bill on September 16 and the House of Representatives, in a record session of more than twelve hours on October 7, debated

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[9]"The Highway Beautification Program," American Road Builder, XLII (August, 1965), 10.

[10]Randolph Russell, American Road Builders Association Newsletter, IX (October, 1965), 1.

and passed its version of the Bill. The Senate concurred on October 13, 1965; and President Johnson signed the Bill into law on October 22, 1965.[11]

The Highway Beautification Act of 1965 covers three fields: control of outdoor advertising, the control of junkyards, and the scenic enhancement of roadside beauty. For purposes of this study we are concerned only with the provisions for the control of outdoor advertising along Interstate and Federal Primary Highway systems. The Act provides in part that:

> (a) The Congress hereby finds and declares that the erection and maintenance of outdoor advertising signs, displays, and devices in areas adjacent to the interstate system and the primary system should be controlled in order to protect the public investment in such highways to promote the safety and recreational value of public travel and to preserve natural beauty. . . .
>
> (c) Effective control means that after January 1, 1968, such signs, displays, and devices shall, persuant to this section, be limited to (1) directional and other official signs and notices, which signs and notices shall include, but not be limited to, signs and notices pertaining to natural wonders, scenic and historical attractions, which are required or authorized by law, which shall conform to national standards hereby authorized to be promulgated by the Secretary hereunder, which standards shall contain provisions concerning the lighting, size, number, and spacing of signs, and such other requirements as may be appropriate to implement this section, (2) signs, displays, and device advertising the sale or lease of property upon which they are located; and (3) signs, displays, and devices advertising activities conducted on the property on which they are located.
>
> (d) In order to promote the reasonable, orderly, and effective display of outdoor advertising while remaining consistent with the purposes of this section, signs, displays, and devices whose size, lighting, and spacing, consistent with customary use

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[11]Randolph Russell, American Road Builders Association Newsletter, IX, (October, 1965), 1.

> is to be determined by agreement between the several States and the Secretary may be erected and maintained within 660 feet of the nearest edge of the right-of-way within areas adjacent to the Interstate and primary systems which are zoned industrial or commercial under authority of State law, or in unzoned industrial and commercial areas as may be determined by agreement between the several States and the Secretary.[12]

The Act also provides that any sign, display, or device lawfully in existence along the Interstate or other primary highway system which does not conform to this section shall not be required to be removed until July 1, 1970. The Act provides under Section G that:

> Just compensation shall be paid upon the removal of the following outdoor advertising signs, displays, and devices: (1) those lawfully in existence on the date of enactment of this subsection, (2) those lawfully on any highway made a part of the Interstate and primary system on or after the date of enactment of this subsection and before January 1, 1968, and (3) those lawfully erected on or after January 1, 1968.[13]

III. PRESENT BILLBOARD CONTROL IN TENNESSEE

Outdoor advertising in Tennessee is subject to regulations as set out in Public Chapter No. 359, Senate 386. This law was enacted by the General Assembly of the State of Tennessee in 1965. This Act provides that no person shall engage in the business of outdoor advertising without obtaining a license from the state Commissioner of Revenue. The fee for such a license is twenty-five dollars per year for operation in

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[12]United States Department of Commerce, Bureau of Public Roads, The 1967 Estimate of the Cost of Carrying Out the Provisions of the Highway Beautification Act of 1965, (Washington: n.n., n.d.), p. 1-1.

[13]Ibid., p. 1-2.

one county, seventy-five dollars per year for operation in two to eight counties, and two hundred dollars per year for those operating in more than eight counties. In addition to this payment of fifteen dollars per year is made to each county within the state in which the licensee engages in business. The law also provides that a permit must be obtained from the Commissioner of Revenues for the erection of any outdoor advertising structure outside any incorporated town or city within the state. The Act provides that the Commissioner of Revenues will issue serially numbered metal permit tags to be attached to the sign or to the face of the advertising structure.

The other pertinent regulatory provision of the Act is that no advertising signs shall be erected or constructed within fifteen feet of the outside boundary of any Federal or state highway or within one hundred feet of any school, church, cemetery, park, public reservation, public playground, or state or national forests. The Act further provides that signs and displays which use intermittent lights or any rotating or flashing lights cannot be within one hundred feet of state-owned right-of-way; that the use of the word "stop" or "danger" implying the existence of danger is prohibited; that signs placed on the inside of a curve in such a manner as to obstruct the view of approaching vehicles is prohibited.

Excepted from provisions of the Act are signs constructed by the owner or lessee of the business located on premises or within one hundred feet of the business or residence, signs displayed on the property

indicating the property is for sale or rent, and official notices or advertisements posted by direction of any public or court officer. Various other types of signs primarily under the public interest or historical interest category are also exempted from the provisions of the Act.[14]

IV. SUMMARY

Efforts to exercise some degree of control over outdoor advertising have been made dating back almost to the beginning of the outdoor advertising industry. The first attempts at regulatory control were primarily through special municipal ordinances or comprehensive zoning laws. The number of special ordinances or zoning laws on this subject has shown steady growth.[15] However, the numerous individual ordinances and zoning laws have led to wide diversity in the degree of control of the industry in various states.

With the advent of the Interstate Highway System in 1955, renewed emphasis was placed on the need for some uniform and effective nationwide control. This led to the enactment of the Federal Law of 1958 which basically consisted: (1) of a delcaration of national policy declaring it in the public interest to encourage and assist the states to control roadside advertising adjacent to the Interstate System

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[14]Tennessee Code Annodated, Section 62-1114-1132, 1965 cummulative supplement, Vol. II, p. 52.

[15]Netherton, op. cit., p. 47.

in areas within 660 feet of the edge of the right-of-way, and (2) the delegation of the authority to the Secretary of Commerce to promulgate national standards, and (3) to enter into agreements with individual state highway departments for increasing financial participation by one-half of one per cent of the cost of any project where the state agreed to meet the minimum standards.[16]

The Act attempted to control outdoor advertising with individual state implementation by offering a Federal monetary incentive as a means of securing compliance by the States. This Act received only limited endorsement by the states. Thus, with renewed pressure from various groups Congress proposed and enacted the Highway Beautification Act of 1965 which provides for control of outdoor advertising not only along the Interstate Highway System but also along the Primary system. This Act provides for the removal by 1970 of all billboards that are not located within either industrial or commercial zoned or unzoned areas, with the exception of directional and other offical signs, displays advertising on premise activity, and signs advertising the sale or lease of property. The Act also provides that signs that are permitted within zoned or unzoned commercial and industrial areas will be subject to regulation as to size, lighting, and spacing consistent with customary use, as determined between the Secretary of Commerce and the States,

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[16]Netherton, op. cit., p. 50.

if located within 660 feet of the nearest edge of the right-of-way. The Highway Beautification Act of 1965 as written is more inclusive than the 1958 act or than the Tennessee act which presently regulates outdoor advertising in the State of Tennessee. The implementation of the provisions of this bill in Tennessee will certainly have important effects upon the outdoor advertising industry and upon the citizens of the state. This study proposes to consider some of these effects in the following chapters.

CHAPTER III

INVENTORY OF BILLBOARDS

I. INTRODUCTION

In order to implement the Highway Beautification Act of 1965, the Tennessee Department of Highways inventoried all outdoor advertising signs, displays, and devices along the main traveled way of the Interstate and the Federal Aid Primary systems within the state. The inventory was conducted by the Department of Research and Planning of the Tennessee Department of Highways and was performed with eight survey parties consisting of personnel of the Department of Research and Planning. The inventory covered a time period of December 15, 1965, through February 28, 1966. Approximately 6,043 miles of highway frontage were surveyed in order to list and describe all existing outdoor advertising signs, displays, and devices. The routes included are shown in Figure 1 and include all of the interstate and Federal Aid Primary systems. Signs reported in the inventory included all signs along the Interstate and Federal Aid Primary systems which were within 660 feet of the nearest edge of the right-of-way and visible from the main traveled way of the system. The only signs excluded from the inventory are (1) directional and other offical signs or notices which are authorized or required by law and located on the right-of-way, (2) signs advertising the sale or lease of property upon which they are

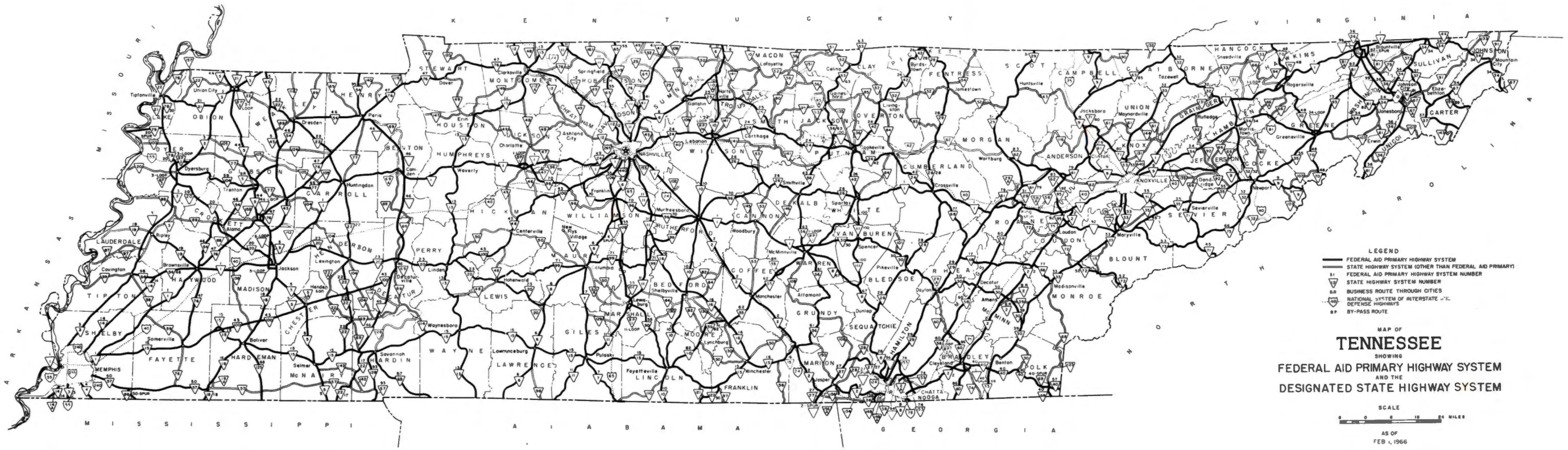


Figure 1. Routes inventoried.

located, (3) signs advertising activities conducted on the property on which they are located, and (4) temporary signs.[1]

The routes inventoried, classified by road sections as established to inventory bridge record data for highway defense requirements, are shown in Figure 2. This is a skeletonized map and does not include all roads within the state. The mileage of highway inventoried, classified by land use, and highway system is shown in Table I.

Before beginning the inventory, copies of all available zoning and land use maps were acquired from state or local planning agencies. This information was used to establish land use categories in the zoned areas. In unzoned areas a field evaluation of the land use activity was made to distinguish commercial, industrial, and other uses. Where industrial or commercial activities were carried on in an unzoned area, the land for a distance of 200 feet along the right-of-way from the structure of the commercial installation or 400 feet from the structure of an industrial installation were considered as unzoned commercial or industrial land uses.[2]

A sample copy of the sign inventory form used is shown as Figure 3. The form has a total of 21 columns and provides for the following information: (1) the highway route, (2) county, (3) city, (4) the

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[1]Statement by F. W. McMichael, Department of Research and Planning, Department of Highways, Nashville, Tennessee, personal interview.

[2]U. S. Department of Commerce, Bureau of Public Roads, Manual for Inventory of Outdoor Advertising Signs, Displays, and Devices and of Junkyards, (Washington: n. n., December, 1965), pp. 5-7.

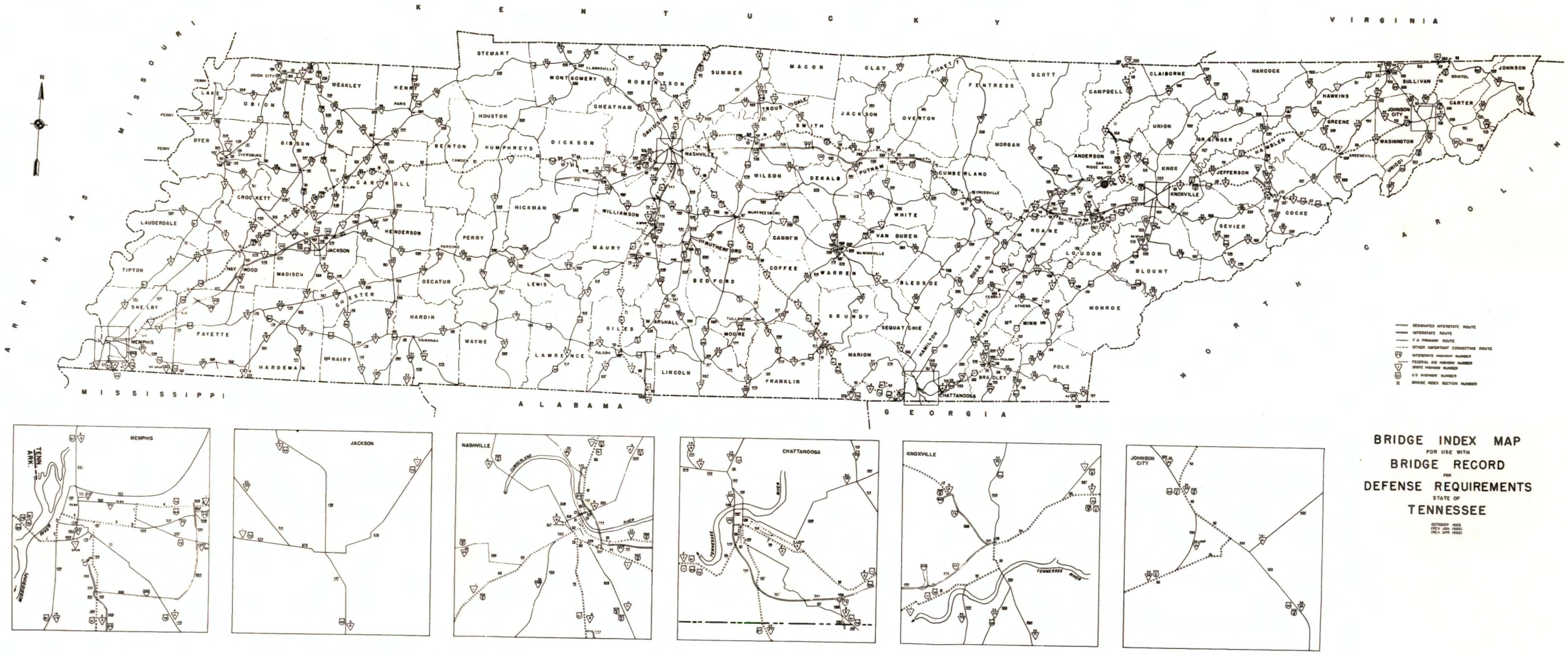


Figure 2. Routes inventoried by road section.

TABLE I

MILEAGE OF ROAD INVENTORIED BY LAND USE AND HIGHWAY SYSTEM

Land Use	Highway System		Total
	Interstate	FAP[a]	
Industrial--Zoned	24.0	202.0	226.0
Industrial--Unzoned	2.5	75.0	77.5
Commercial--Zoned	4.0	488.5	492.5
Commercial--Unzoned	3.5	314.5	318.0
Other	341.0	4,587.5	4,928.5
Total	375.0	5,667.5	6,042.5

[a]Federal Aid Primary System.

State SAMPLE
Date Nov 30, 1965

SIGN INVENTORY RECORD FORM

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Highway route number	County	City	Direction of inventory	Road section number	Sign number	Mileage from beginning of section	I & HP route classification	ADT (hundreds)	Land use	Distance from right-of-way (estimated feet)	Sign illuminated	Bor. Sign size	Vert.	Height overall	Sign shape	Sign material	Condition	Owner	Sign legend	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		19	20
US 20	CLAYTON		N	18	37	1.24	5	141	5	50-R	N	7x7	15	S	W	G	-		VALLEY NURSING HOME	
"	"		"	"	38	1.43	"	152	5	40-R	N	12x8	10	R	C	F	-		LAKE SCOTT RESORT	
"	"	BARTON	"	"	-	1.56	"	-	-	-	-	-	-	-	-	-	-		-	SOUTH CITY LIMITS
"	"	"	"	"	39	1.63	"	183	5	20-L	N	10x4	12	R	W	G	-		SHADY GROVE FAIR	
"	"	"	"	"	40	2.24	"	183	3	25-L	N	20x12	16	R	W	G	BROWN		WINDSOR TOWN HOUSES	
"	"	"	"	"	-	2.46	"	-	-	-	-	-	-	-	-	-	-		-	NORTH CITY LIMITS
"	"		"	"	41	3.30	"	136	1	200-R	N	20x4	20	R	P	G	-		USE HARPER SYSTEMS	ON BRICK BLDG
"	"		"	"	42	3.47	"	94	3	40-R	Y	20x12	20	O	C	G	-		SUBURBAN TRUST	GENERAL RECTANGLE WITH IRREGULAR TOP EDGE
"	"		"	"	-	4.62	"	-	-	-	-	-	-	-	-	-	-		-	END SECTION 18
"	"		E	19	-	0.00	"	-	-	-	-	-	-	-	-	-	-		-	BEGIN SECTION 19
"	STERLING		"	"	-	2.15	"	-	-	-	-	-	-	-	-	-	-		-	CLAYTON-STERLING Co LINE
"	"		"	"	1	2.62	"	64	5	10-L	N	20x6	16	R	W	G	-		LEWIS BEAUTY	
"	"		"	"	2	2.74	"	58	5	15-R	N	18x12	18	R	M	G	NAYLOR		SMOOTHIE ICE CREAM	
"	"		"	"	3	3.15	"	56	5	O-R	N	2x2	6	S	M	G	-		CONNIE'S GIRLS CAMP	
"	"		"	"	4	3.26	"	56	6	ROW-R	N	3x2	6	R	M	G	-		BARTON CIVIC ASSOC	
"	"		"	"	5	3.40	"	56	5	40-R	N	5x5	10	C	W	G	-		CIRCLE DRUGS	

Figure 3. Sample copy of inventory form.

direction of travel, (5) the road section number, (6) sign number, (7) mileage from the beginning of the section, (8) interstate and primary route classification, (9) average daily traffic, (10) zoning or land use, (11) distance of sign from right-of-way, (12) sign illuminated, (13) sign size, (14) height, (15) sign shape, (16) sign material, (17) condition, (18) ownership of the sign, (19) sign legend, (20) remarks or comments, and (21) permit. Column 21 provided for noting whether or not a permit as required by the Tennessee statute was attached to the sign.

The data from this inventory have been coded, entered on punch cards, and a print-out of this data is used for the following analysis.

II. NUMBER OF BILLBOARDS BY LOCATION

The inventory located a total of 24,366 signs adjacent to the 6,043 miles of highway included in this survey or an average of 4.03 signs per mile. The number of signs classified by land usage, rural and urban, and type of highway system is shown in Table II. Over 25 per cent of the signs are located in areas that are classified as industrial or commercial areas and would be permitted to remain in place provided they meet the criteria for size, lighting, and spacing consistent with customary use. Eight hundred sixteen signs or about 3 per cent were located on highway right-of-way. The remaining 71 per cent were located in areas that would be controlled and signs permitted to remain limited to the four classifications discussed in Chapter II.

TABLE II

NUMBER OF SIGNS CLASSIFIED BY LAND USE, RURAL AND URBAN, AND HIGHWAY SYSTEM

Land Use	Completed Interstate	Interstate Traveled Way	Other FAP	Total
Industrial (zoned and unzoned)				
Rural	0	0	48	48
Urban	25	0	227	252
Commercial (zoned and unzoned)				
Rural	4	44	1,356	1,404
Urban	52	107	4,277	4,436
Other Activities				
Rural	324	126	14,783	15,233
Urban	43	7	2,127	2,177
Signs on Right-of-Way				
Rural	0	11	645	656
Urban	0	22	138	160
All Land Uses				
Rural	328	181	16,832	17,341
Urban	120	136	6,769	7,025

The number and location of signs has been classified by counties as shown in Table III. Table III illustrates that signs are widely dispersed over the geographical divisions of the state but tend to be concentrated near the urban centers in each division.

The number of signs per county ranges from three in Hancock County, with five miles of road inventoried, to 1,709 in Hamilton County, with 149.6 miles of road inventoried. The counties with the largest number of signs are Hamilton, Davidson, Shelby, Knox, and Marion respectively. When the counties are ranked by number of signs per mile of road inventoried, the leading counties are Hamilton, Marion, Marshall, Bradley, and Knox. Using either method of ranking, Hamilton, Knox, and Marion are in the top five counties.

The counties with urban centers have the largest proportion of signs presently located in commercial or industrial land use areas. Hamilton County has 1,081 signs of a total of 1,709 signs located in industrial or commercial areas. In Shelby County over 67 per cent and in Davidson County over 66 per cent of the signs are in commercial or industrial areas. These signs would be permitted to remain in place provided they meet the requirements for size, spacing, and lighting.

The relationship between the number of signs and the average daily traffic passing a site is shown in Figure 4 and Table IV. Almost 50 per cent of the signs are located on routes having an average daily traffic count of from 1,000 to 4,999 vehicles. Over 58 per cent of the road mileage inventoried is within this traffic volume group while routes

TABLE III

NUMBER OF SIGNS PER COUNTY AND PER MILE

County	No. of Signs	No. in Commercial or Industrial Area	Inventoried Miles	No. of Signs Per Mile
Anderson	332	5	56.60	5.86
Bedford	259	38	53.98	4.80
Benton	53	9	22.08	2.40
Bledsoe	66	4	47.64	1.58
Blount	490	43	67.16	7.30
Bradley	462	190	51.80	8.00
Campbell	342	53	49.57	6.90
Cannon	37	1	19.19	1.90
Carroll	179	27	52.70	3.40
Carter	242	61	55.83	4.33
Cheatham	186	6	46.08	4.04
Chester	203	30	81.68	2.48
Claiborne	270	25	55.44	4.87
Clay	36	14	23.64	1.52
Cocke	203	34	74.42	2.73
Coffee	440	121	62.71	7.02
Crockett	79	2	43.30	1.82
Cumberland	298	69	97.90	3.04
Davidson	1,315	881	223.36	5.89
Decatur	19	---	15.59	1.22
Dekalb	151	16	51.65	2.92
Dickson	83	46	53.05	1.56
Dyer	121	46	46.61	2.60
Fayette	241	19	119.72	2.01
Fentress	71	26	33.80	2.10
Franklin	198	54	39.77	4.98
Gibson	528	65	120.68	4.37
Giles	250	29	94.71	2.64
Grainger	168	6	46.84	3.59
Greene	359	52	110.73	3.24
Grundy	151	42	61.22	2.47
Hamblen	316	102	25.33	2.48
Hamilton	1,709	1,081	149.69	11.42
Hancock	3	---	5.43	0.55

TABLE III (continued)

County	No. of Signs	No. of Commercial or Industrial Area	Inventoried Miles	No. of Signs Per Mile
Hardeman	190	33	100.63	1.89
Hardin	175	13	85.89	2.04
Hawkins	277	46	84.38	3.28
Haywood	165	15	120.30	1.77
Henderson	83	1	75.50	1.10
Henry	474	20	72.34	6.55
Hickman	71	---	45.43	1.56
Houston	6	---	23.09	0.26
Humphreys	72	5	57.55	1.25
Jackson	18	6	19.40	0.93
Jefferson	299	54	62.66	4.77
Johnson	92	6	43.66	2.10
Knox	1,037	650	135.85	7.63
Lake	59	---	25.80	2.29
Lauderdale	127	13	51.86	2.45
Lawrence	200	26	51.34	3.49
Lewis	18	3	35.42	0.50
Lincoln	313	56	87.87	2.56
Loudon	276	18	42.60	6.48
McMinn	299	1	67.42	4.43
McNairy	240	31	67.74	3.54
Macon	--	---	-----	----
Madison	472	53	126.11	3.74
Marion	741	110	73.98	10.02
Marshall	116	17	12.28	9.45
Maury	258	51	97.58	2.64
Meigs	80	26	47.40	1.69
Monroe	256	12	39.48	6.48
Montgomery	414	58	61.79	6.70
Moore	37	---	16.14	2.29
Morgan	167	18	43.02	3.88
Obion	334	9	78.59	4.25
Overton	36	---	20.99	1.71
Perry	58	3	50.32	1.15
Pickett	39	16	22.55	1.73
Polk	275	4	57.87	4.75
Putnam	356	112	97.14	3.66

TABLE III (continued)

County	No. of Signs	No. of Commercial or Industrial Area	Inventoried Miles	No. of Signs Per Mile
Rhea	306	69	67.44	4.54
Roane	288	80	84.47	3.41
Robertson	239	37	63.54	3.76
Rutherford	560	118	126.05	4.44
Scott	171	25	41.81	4.09
Sequatchie	48	24	42.72	1.12
Sevier	460	83	87.05	5.28
Shelby	1,129	764	203.65	5.54
Smith	68	39	70.97	0.96
Stewart	180	15	37.95	4.74
Sullivan	583	169	96.60	6.03
Sumner	162	9	74.78	2.17
Tipton	107	4	33.44	3.20
Trousdale	56	12	19.14	2.92
Unicoi	127	22	30.32	4.19
Union	58	---	15.43	3.73
Van Buren	27	12	28.80	0.94
Warren	215	46	80.92	2.66
Washington	380	151	56.99	6.67
Wayne	110	14	77.57	1.42
Weakley	244	13	66.35	3.68
White	173	52	48.12	3.59
Williamson	210	18	155.34	1.35
Wilson	348	34	104.64	3.32
Total	24,239	6,493	6,095.96	336.79

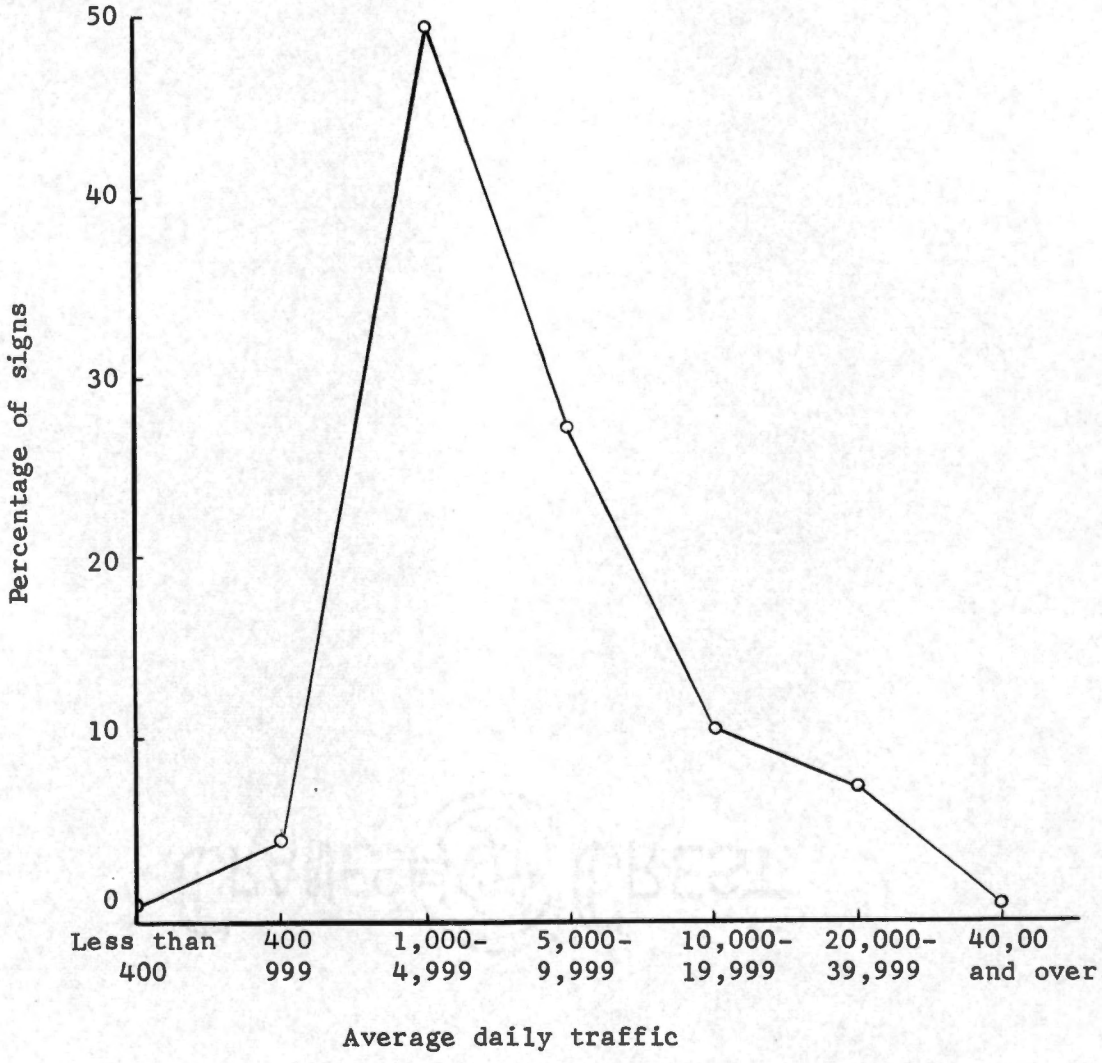


Figure 4. Percentage of signs classified by traffic volume groups.

TABLE IV

NUMBER OF SIGNS BY LAND USE AND TRAFFIC VOLUME GROUPS

Land Use	Traffic Volume Groups							
	0-400	400-999	1,000-4,999	5,000-9,999	10,000-19,999	20,000-39,999	40,000 and over	Totals
Industrial	0	0	73	100	46	81	0	300
Commercial	10	122	1,299	1,370	1,482	1,556	1	5,840
Other Activities	125	856	10,298	5,015	930	172	14	17,410
Signs on Right-of-Way	18	73	487	157	37	44	0	816
All Land Uses	153	1,051	12,157	6,642	2,495	1,853	15	24,366

having an average daily traffic count of over 5,000 vehicles comprise only 19.3 per cent of the total road mileage inventoried. The routes having over 5,000 A. D. T. are lined with over 45 per cent of the total number of signs.

III. NUMBER OF BILLBOARDS BY SIZE

The casual observer may note that billboards appear in an almost endless variety of shapes, sizes, and designs; however, some conformity in size and shape, especially in billboards owned by the members of the Outdoor Advertising Association, is evident. The sign panel with a twelve foot vertical and twenty-four or twenty-five foot horizontal dimension is considered a standard size panel. This size panel is widely used by outdoor advertising firms, but many of the unleased business proprietor-owned signs are smaller and vary more in both shape and design.

The Draft Standards as printed in the Federal Register appear to reflect concern primarily in restricting the maximum size of billboards. No restriction on minimum size or shape are given. The Standards provide for a maximum area of 300 square feet, a maximum length of 30 feet, and a maximum height of 15 feet for signs located within 150 feet of the nearest edge of the traveled way. Signs located over 150 feet from the nearest edge of the traveled way would be permitted to a maximum area of 400 square feet, a maximum length of 40 feet, and a maximum

height of 20 feet.[3]

If the Highway Beautification Act is enforced under the criteria as stated in the Draft Standards, the size of signs will affect the number of signs that will be allowed to remain in commercial or industrial areas. The signs inventoried have been classified by horizontal size of panel and by square foot area of the panel in order to estimate the number of signs that exceed the criteria either in length or in square footage of the panel. It may be observed from Table V that over 91 per cent of the signs have horizontal dimensions of less than 30 feet. These signs would not be affected by the restrictions on length of the sign panel. Of the remaining 9 per cent, 711 signs or 2.9 per cent are located within 150 feet of the main traveled way; thus, restriction on the size or length of signs would require the removal of an additional 711 signs. The signs classified by overall height and area of sign are classified in Table VI. This method of classification gives almost an identical percentage as that shown in Table V. Ninety-one per cent of the signs have an area under 300 square feet. Of the remaining 9 per cent which exceed 300 square feet in area, 754 are located in either industrial or commercial areas.

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[3]United States National Archives, Federal Register, Vol. XXXI, No. 19 (Washington: Government Printing Office, January, 1966), p. 1163.

TABLE V

NUMBER OF SIGNS BY LAND USE AND HORIZONTAL SIZE OF PANEL

Land Use	Sign Size Groups Horizontal Dimension of Sign Panel in Feet (Estimated) 0-2	3-9	10-19	20-23	24-29	30-39	40 and over	Total
Industrial	7	32	50	8	141	13	39	300
Commercial	291	945	959	184	2,802	236	423	5,840
Other Activities	1,140	7,317	3,829	693	3,084	826	521	17,410
All Land Uses	1,521	8,861	4,966	894	6,050	1,079	995	24,366

TABLE VI

NUMBER OF SIGNS BY LAND USE, OVERALL HEIGHT, AND BY AREA OF SIGNS

Land Use and Overall Height	Sign Area (Sq. Ft.) 25 and Under	26-120	121-300	301-400	401-600	601-900	901 and larger	Totals
Industrial								
Under 30	31	55	105	5	8	8	0	212
Over 31	0	1	56	0	9	21	1	88
Commercial								
Under 30	823	1,213	2,421	124	215	97	14	4,907
Over 31	1	8	667	12	126	100	14	933
Other								
Under 30	5,575	6,096	4,288	414	530	177	89	17,169
Over 31	2	5	90	10	54	21	59	241
All Land Uses								
Under 30	6,429	7,364	6,814	543	753	282	103	22,288
Over 31	3	14	813	22	189	147	74	1,262

IV. NUMBER OF BILLBOARDS BY OWNERSHIP AND TYPE OF ADVERTISER

Much of the discussion of the Highway Beautification Act and billboard control has centered around the effects on the outdoor advertising industry and upon the businesses that utilize this media of advertising. Those in favor of more stringent billboard control have suggested that billboards are in a large measure forced upon a captive audience, the traveling public, and that this media is, in fact, dominated by a few large advertisers who take advantage of this media as a windfall to their advertising program. Those opposed to billboard control have suggested that for certain types of businesses billboard advertising is the only effective and available means of informing potential customers of the availability of a product or service.

Signs inventoried have been classified by type of product advertised as illustrated in Table VII. Over 7,000 of the 24,366 signs inventoried or approximately 29 per cent advertise local businesses. In addition to this number, over 4,000 of the signs advertise motels, and 1,500 of the signs advertise restaurants. In classifying motels and restaurants no distinction was made between chain and locally owned motels or restaurants. If motels and restaurants are also considered as a part of the local business structure, over 41 per cent of the signs inventoried were used to advertise local businesses. These data do not support the contention that over two-thirds of such advertising is for national products. Approximately 29 per cent of the signs advertise

TABLE VII

NUMBER OF SIGNS BY TYPE OF PRODUCT ADVERTISED

Product Advertised	Number of Signs	Per Cent of Total
Restaurants	1,505	6.2
Motels	4,127	16.9
Scenic Attractions	2,405	9.9
National Products (Food)	1,083	4.4
National Products (Drink)	1,262	5.2
National Products (Liquor)	896	3.7
National Products (Miscellaneous)	2,115	8.7
Public Service	1,195	4.9
Local Business	7,015	28.8
National Product (Auto)	730	3.0
National Product (Gas)	1,219	5.0
Official Signs	814	3.3
Total	24,366	100.0

national products with the two leading products advertised being beverages and gasoline. Two thousand four hundred five of the signs advertise scenic attractions or points of historical interest. One thousand one hundred ninety-five or approximately 4 per cent of the signs were devoted to public service advertisement and 814 or 3.3 per cent were classified as official signs. Of the 24,366 signs inventoried, 8,267 had identification indicating that they were owned by an outdoor advertising company; thus, considerably over 50 per cent of the total number of signs were owned by local businessmen or by landowners.

CHAPTER IV

AN ANALYSIS OF THE NUMBER AND TYPE OF BILLBOARDS AND RENTAL INCOME PRODUCED IN THE SAMPLE AREAS

I. INTRODUCTION

The primary information necessary for an estimate of the value of advertising rights to landowners is the amount of the income produced by existing site rentals. The billboard inventory conducted by the Tennessee Department of Highways contained detailed information on the location, type construction, and number of billboards within Tennessee, but did not contain any information on site or billboard space rentals. Therefore, a sample representative of the highway system was selected to estimate the total income received by landowners from site rentals.

II. DESCRIPTION OF METHOD OF SELECTION OF THE SAMPLE AREA

The sample drawn from the universe of 24,366 signs was randomly selected by two methods. Rental information supplied by the Tennessee Department of Highways was compiled from a completely random sample selected by arranging all inventory cards into two groups, Interstate and Federal Aid Primary routes. After the removal of all cards for signs within the right-of-way, signs under construction, or signs along toll roads, these two groups were then divided into two sub-groups

composed of those signs in zoned or unzoned commercial and industrial areas and those on land used for other activities. The cards within each of these sub-groups were then arranged in an ascending or descending order of sign size based on the horizontal length or width of the sign.

A random start less than or equal to the sampling rate was determined and then that card and every hundredth card for any classification that contained 3,000 or more signs was selected. If a group contained fewer than 3,000 signs, a random start was again determined and that card and every card at the rate of 1 to k to yield a minimum 30 signs was selected. These cards were then pulled and assigned to the divisions or regions for collection of rental information. This method of sample selection assured a sample of at least 240 billboards.

An additional sample was selected by the writer for information to validate and supplement this data. The billboard inventory was divided into Interstate and other Federal Aid Primary road sections. The total number of road sections inventoried was 556 with 47 Interstate and 510 Federal Aid Primary sections. It was decided to initially select a 5 per cent sample from the total number of road sections inventoried. This size sample gave twenty-five Federal Aid Primary sections and three Interstate sections. After the road sections were assigned consecutive numbers, a table of random numbers was used to

select the road section.[1] The table of random numbers was entered by having an associate close his eyes and place a pencil on one page of the table. The digit under the pencil point was entered as the first section number and then all other digits within this group was selected. Since the numbers in the universe exceeded 500, it was necessary to use three columns in the table. Thus, if the number in the table was 510 or less it was taken; if the number exceeded 510, it was skipped. If a number came up twice, it was also skipped the second time. The numbers were continually read in this manner until the desired number of items, twenty-five in this case, had been selected for the other Federal Aid Primary group. The forty-seven Interstate sections were also assigned numbers and the sample drawn in an identical manner except that two columns of digits were used in drawing the sample. The sample, as drawn by this method, consisted of sections located in eight East Tennessee counties, five middle Tennessee counties, and five West Tennessee counties. Eleven of the highway sections are located in East Tennessee, nine of the sections are located in Middle Tennessee, and eight of the sections are located in West Tennessee. Thus, the random sample produced a good geographic distribution of the sample area. The road sections selected by geographic state division and by county are shown in Table VIII.

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[1]Wilfrid J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis, (New York, 1957), pp. 366-371.

TABLE VIII

SAMPLE ROAD SECTIONS BY GEOGRAPHIC DIVISION AND BY COUNTY

Geographic Division	County	Road Section Number	Sample Number
East Tennessee	Bradley	101	1
	Bradley	343	2
	Blount	201	3
	Campbell	316	4
	Cocke	123	5
	Cocke	259	6
	Hamilton	98	7
	Hamilton	162	8
	Jefferson	118	9
	Meigs	391	10
	McMinn	388	11
Middle Tennessee	Davidson	27	12
	Davidson	365	13
	Davidson	434	14
	Putnam	498	15
	Putnam	499	16
	Sumner	83	17
	Warren	288	18
	Williamson	75	19
	Wilson	270	20
West Tennessee	Hardeman	355	21
	Hardin	472	22
	Haywood	413	23
	Madison	313	24
	Madison	479	25
	Shelby	9	26
	Shelby	124	27
	Shelby	125	28

III. NUMBER AND TYPE OF BILLBOARDS IN THE SAMPLE AREA

The number of billboards in the sample area varied widely per section from no signs in a 0.26 mile section in Warren County to 307 signs on a 25.43 mile section in Hamilton and Rhea County. The number of signs per mile of road included within the sample highway sections also varied widely ranging from a high of 34.78 signs per mile in Bradley County to no signs in Warren County. This range in the distribution of signs in each highway section is shown in Table IX. Of the total of 1,234 signs located within the sample area 451 signs were identified as being owned by outdoor advertising companies.

The billboards within the sample area were classified by size of the panel to determine the similarity between the size of billboards in the sample area and within the universe. Over 91 per cent of the billboards in the sample area have a panel area of 300 square feet or less. The number of billboards in the sample area have been classified by size of panel as shown in Table X.

The distribution of billboards by size in the sample area is very similar to the distribution by size in the statewide universe of 24,366 billboards. The percentage difference in distribution within each class between the sample and universe is less than 4 per cent as illustrated in Table X.

TABLE IX

NUMBER OF SIGNS AND MILEAGE IN SAMPLE AREA

Sample No.	No. Signs	Miles
1	22	0.69
2	18	10.41
3	13	2.39
4	1	10.32
5	68	18.97
6	1	11.14
7	40	2.82
8	307	25.43
9	84	30.33
10	33	17.96
11	53	10.94
12	18	7.27
13	5	2.66
14	20	25.08
15	19	10.97
16	6	2.91
17	81	23.04
18	0	0.26
19	147	18.12
20	115	25.91
21	19	4.86
22	54	25.98
23	4	3.74
24	14	11.75
25	3	13.04
26	63	4.55
27	16	4.52
28	10	0.57

TABLE X

NUMBER AND PERCENTAGE OF SIGNS BY AREA OF PANEL IN THE SAMPLE AREA AND IN THE STATE

Size-- Square Feet	State		Sample Area	
	No.	Percentage	No.	Percentage
0-25	6,432	27.3	354	28.8
26-120	7,378	31.3	344	27.9
121-300	7,627	32.4	431	34.7
301-400	565	2.4	42	3.6
401-600	942	4.0	42	3.3
601-900	429	1.8	16	1.4
901-larger	177	0.8	5	0.4

IV. INCOME PRODUCED FROM BILLBOARD SITE RENATALS IN SAMPLE AREA

Rental information was collected by personal interview with the owner or manager of the outdoor advertising company or by mail questionnaire to obtain rental information for all signs owned by an outdoor advertising company. Rental information for signs that were individually owned or that were owned by a firm with a limited number of signs was collected by interviewing either the owner of the business advertised on the billboard, or by interviewing the owner of the land upon which the sign was located. After initial interviews were conducted, it was determined that information would be collected on all signs on any sample section having less than fifty billboards. On sections having over fifty billboards information was collected until the average rental for billboards within each classification did not change appreciably upon the addition of more data.

The number of billboards on which site rental information was obtained and the average rental by area of billboard panel is shown in Table XI.

The average rental given is a simple average computed by adding the annual rentals paid within each size classification and dividing these totals by the number investigated within each size classification.

The low average site rental of $0.83 for billboards of twenty-five square feet or less as shown in Table XI is due to lack of payment for site rental for many billboards of this size. In many cases only a small token payment was made at the installation of the billboard and no annual

TABLE XI

NUMBER OF SIGNS, NUMBER ON WHICH RENTAL INFORMATION WAS OBTAINED, AND AVERAGE SITE RENTAL BY SIZE OF PANEL IN SAMPLE AREA

Size of Panel Square Feet	No. of Signs	Number Investigated	Average Site Rental
0-25	363	179	$ 0.83
26-120	351	132	14.18
121-300	437	171	30.00
301-400	45	18	61.50
401-600	42	14	58.75
601-900	17	7	68.50
900-over	6	2	100.00
Total	1,261*	523	

*Total number of signs includes 27 signs with data supplied by Tennessee Department of Highways.

payment made thereafter. In cases where an annual rental was paid this payment usually ranged from $3.00 to $5.00 per year. Of the 179 billboards in this size classification investigated a site rental payment was made on only 49 sites. In the 26-120 square foot classification 45 of the 132 investigated made no site rental payment. In the remaining classifications some cases were encountered where no site rental payment was made; however, these cases were far less frequent and usually involved special circumstance such as friendship or family relationship between the landowner and sign owner. Cases of no rental payment for billboard sites for panels above 121 square feet did not occur frequently enough to substantially change the average site rental computed. However, an analysis of the sample data by road sections for billboards in the 121-300 square foot classification indicates a substantial difference between the site rental paid in urban and rural areas. Thus, the average rental for this classification was also adjusted for rural or urban location based on the percentage of billboards in rural and urban locations as shown in Table II, page 25.

V. SUMMARY

A sample area consisting of twenty-five Primary and three Interstate road sections was selected for collection of billboard site rental information. The area selected gave good geographic coverage of the state and included road sections in eighteen counties. A total of 1,234 billboards are located in the sample area. Thus, 5.06 per cent

of the total number of billboards in the state are located in the sample area. When the billboards in the sample area were classified by size of panel, the percentage distribution between classifications was found to be very similar to the percentage distribution by size in the state-wide total of 24,366 billboards.

Site rental information was collected by interviews and mail questionnaires on 523 billboard sites in the sample area. An average site rental by area of panel was computed and adjustments made for urban and rural locations in the sign classifications customarily used by outdoor advertising companies. The average site rentals computed from this data are as shown in Table XII.

TABLE XII

AVERAGE SITE RENTAL BY SIZE OF PANEL IN SAMPLE AREA

Size in Square Feet	Average Rental
0-25	$ 0.83
26-120	14.18
121-300 Urban	70.00
121-300 Rural	30.00
301-400	61.50
401-600	58.75
601-900	68.50
900-larger	100.00

CHAPTER V

PROJECTIONS OF ESTIMATED INCOME RECEIVED FROM BILLBOARD SITE RENTALS IN TENNESSEE

I. INTRODUCTION

The inventory of billboards conducted by the Department of Research and Planning of the Tennessee Department of Highways has compiled a substantial body of data on outdoor advertising in Tennessee. This inventory has provided information on location, size, shape, and type of material for each billboard located adjacent to a Federal Aid Primary or Interstate highway in Tennessee. However, no income or site rental information was included in the data collected during this inventory. In order to provide this information a sample area was selected and site rental information obtained for billboards classified by area of the panel.

In this chapter the inventory data on number and size of billboards discussed in Chapter III are combined with the average site rental information discussed in Chapter IV to estimate the income produced by billboard site rentals for the entire state.

II. ESTIMATE OF INCOME FROM BILLBOARD SITE RENTALS IN TENNESSEE

The estimate of income from billboard site rentals is based on the average site rental computed in Chapter IV times the number of

billboards in the state classified by size of billboard panel.

The rental rates computed are believed to be accurate average site rentals. However, the site rental paid is obviously influenced by other factors in addition to the size of the billboard. The location of the site and the rate charged for the billboard advertising space appear to be important factors in determining the site rental. Some adjustment has been made for the location factor in the size classification of 121-300 square feet. This size classification includes the standard size panel and will include most of the billboards owned by outdoor advertising companies which are members of the Outdoor Advertising Association or "standardized industry."[1] No adjustment has been made for the variation in rates charged for the billboard advertising space. The rate charged is customarily based on a market showing which includes several billboards and is not based on a rate per billboard. In addition the advertising space charge is generally used only as a guide in determining site rentals.[2]

The average site rentals include numerous sites on which no rental is paid as well as very desirable sites on which a high rental is paid. Thus, the site rentals used in this chapter are believed accurate for estimating gross income but are of limited value for any particular or individual site.

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[1]John O'Neall, Jr., John O'Neall Advertising Company, personal interview.

[2]Ibid.

The estimate of income from site rentals is computed for billboards located on land used for purposes other than commercial and industrial usage as shown in Table XIII. The total estimated income from site rentals on land not used for commercial or industrial purposes is $337,510.09.

The estimate of income from site rentals on land used for commercial and industrial locations is shown in Table XIV. The total estimated income from site rentals on land used for industrial or commercial purposes is $275,155.01. The total estimated annual income from billboard site rentals in Tennessee is $612,665.00.

TABLE XIII

ESTIMATE OF INCOME FOR BILLBOARD SITE RENTAL BY SIZE OF BILLBOARD ON LAND NOT USED FOR COMMERCIAL OR INDUSTRIAL PURPOSES

Size--Sq. Ft.	No. Signs	Average Rental	Income
0-25	5,577	$ 0.83	$ 4,628.91
26-120	6,101	14.18	86,512.18
121-300	3,721 Rural	30.00	111,630.00
121-300	657 Urban	70.00	45,990.00
301-400	424	61.50	26,076.00
401-600	584	58.75	34,310.00
601-900	198	68.50	13,563.00
901-Over	148	100.00	14,800.00
Total	17,410		$337,510.09

TABLE XIV

ESTIMATE OF INCOME FOR BILLBOARD SITE RENTALS BY SIZE OF BILLBOARD ON LAND USED FOR COMMERCIAL AND INDUSTRIAL PURPOSES

Size--Sq. Ft.	No. Signs	Average Rental	Income
0-25	855	$ 0.83	$ 709.65
26-120	1,277	14.18	18,107.86
121-300	488 Rural	30.00	14,640.00
121-300	2,761 Urban	70.00	193,270.00
301-400	141	61.50	8,671.50
401-600	358	58.75	21,032.50
601-900	231	68.50	15,823.50
901-Over	29	100.00	2,900.00
Total	6,140		$275,155.01

CHAPTER VI

APPLICATION OF EXISTING APPRAISAL TECHNIQUES TO THE VALUATION OF ADVERTISING RIGHTS

I. INTRODUCTION

In any program where the state or other govenmental unit must acquire private property for public benefit, the state or governmental unit is charged with the responsibility of making fair compensation for the property right taken.[1] However, determination of what is fair and just is obviously no easy problem. In the United States our value determination is basically left to the function of a free market; thus, the states or governmental units are faced with a difficult problem. They are charged by public necessity with acquiring property rights from private landowners for public needs and with determining the fair market value of these rights without being able to directly use the main forum for value determination--the market. Thus, the acquiring agency must estimate market value. This estimate of value is generally based on a real estate appraisal which estimates the fair market value of the property rights to be acquired. However, the appraisal of real estate is not an exact science. It is an observational one based on facts, judgement, and experience. Facts are objective, but the subjective application of these facts is a difficult and intangible

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[1] Tennessee Code Annotated, 1958, Vol. I Constitutions, p. 134.

process; therefore, appraisers can only estimate value.[2] Real estate value is influenced by social, economic, and political forces. These forces are inseparable in determining property value.[3] Sociological changes, such as the huge urban exodus, must be considered by the appraiser. Political influences are exerted not only through the local level but also on a national and international scale. Changes in per capita income, gross national product, and the balance of international trade, as well as changes in the local economy, affect the value of real estate.

A list of the pertinent economic, political, and sociological forces as they directly or indirectly affect real estate values would include many variables. All of these forces, either local, national, or international, must somehow be considered in the property evaluation.

It may be said that the fundamental difficulty in appraisal is the inherent involvement of the human element. Property value is affected by whatever affects people.[4] It is subject to the varieties of human nature. Value is nebulous and to a great extent subjectively determined. But to admit these apparent drawbacks does not invalidate appraisal techniques or disavow attempts to make these techniques more disciplined and exact.

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[2]Frank R. Shugrue, "The Nature of Real Estate Appraisal," Encyclopedia of Real Estate Appraising (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959), p. 3.

[3]Ibid., p. 4.

[4]Ibid., p. 5.

Regardless of the problem there exists a theoretical process or method for appraising any property. The theoretical process is basically three approaches to the estimate of value.

1. The value indicated by summation--the cost theory which espouses the principle that value tends to be set and established by the depreciated cost of reproducing the property.

2. The market approach--the value indicated by comparison with sales of like property or worth by trial in the market.

3. The income approach--the value indication by ability of the property to earn a net income on money invested in it.[5]

II. THEORETICAL APPROACHES TO VALUE

The Cost Approach

Cost as used in appraisal terminology refers to replacement cost of an asset. Replacement cost is generally regarded as the monetary outlay required to purchase a reasonably similar substitute for the asset under appraisal. This concept differs from accounting cost concepts in that replacement cost does not necessarily equal the actual cost or original cost of the asset. Cost in this sense may be more rigorously defined as the actual monetary expenditures for labor, material, services, and interest on borrowed and invested capital necessary for the production of an economic good.[6]

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[5]Wilbur J. Falloon, "Appraisal Fundamentals and Appraisal Terms," Selected Readings in Real Estate Appraisal (Chicago: American Institute of Real Estate Appraisers, 1953), p. 3.

[6]John R. White, "Relationship of Real Estate Cost and Value," Selected Readings in Real Estate Appraisal (Chicago: American Institute of Real Estate Appraisers, 1953), p. 141.

The cost approach is not only an appraisal technique but also basically a theory of value. Cost as the determining force in value has been actively debated since the beginning or organized economic thought. Many economic theorists such as Marx, Smith, and others incorporated or even based their value theories on cost, but over the years the vehemence once displayed in advocating a cost-based value theory has been tempered. Cost is discussed more as a long run rather than a short run determinate of value. More emphasis is often given in the short run to the Marshallian "other edge of the scissors" demand.

In the cost approach the value of an asset can be more or less objectively determined. It is the cost of the new structure minus depreciation plus the land or site value.[7] Theoretically cost tends to set the upper limit of value since no good can ever be worth more than it would cost to replace it with a good of like utility. Thus, an investor would construct realty of the same character on an equally well-located lot before he would pay an amount above the cost of this construction for existing realty.[8] However, the acceptance of the cost approach as a complete theory of value must be based on important assumptions. The primary assumption is perfect competition. Often this competition does not exist. In the real estate market there may

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[7]Robert L. Free, David L. Montonna, and Herman O. Walther, The Appraisal of Real Estate (Chicago: American Institute of Real Estate Appraisers, 1962), p. 225.

[8]White, op. cit., p. 143.

be vast differences between value and cost because of market imperfections.

The cost approach as an indication of the value of real estate is one of the basic steps in the valuation process. The cost approach logically has three sequential steps: estimating land value from comparison with sales of vacant land similar to the property under appraisal, estimating the reproduction cost of the improvement, estimating accrued depreciation to the improvement.[9]

The Market Data Approach

The market data approach is not only an appraisal technique but also a basic theory of value. The theory simply stated is that in the short run prices are demand oriented. This is not to say that market determined prices represent "fair" value. It only means that, since in the short run supply is limited, market prices reflect the immediate wants and the available means to acquire these wants at a specific moment of time. Market value, thus, can be looked at in two distinct ways: one as a theory of value; and secondly, as a market price in fact.[10]

The market data approach is a process of comparing prices paid for similar properties, prices asked by owners, and offers made by prospective purchasers. The approach basically depends on the actions

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[9]Free, op. cit., p. 225.

[10]W. Harrison Carter and William P. Snavely, Intermediate Economic Analysis (New York: McGraw-Hill, Inc., 1961), pp. 151-153.

of buyers and sellers in the market. Application of the market data approach requires the comparing of similar properties which have sold with the property being appraised. Demand is by its very nature subjective and thus, the market data approach is possibly the most non-objective of the three approaches to value.

It is important to remember that the legal concept of market value does not necessarily coincide with market price. A comprehensive definition of market value is given by Adrian F. McDonald as:

> Market value is the price which a willing buyer would be justified in paying and a willing seller would be warranted in accepting if each is well informed or well-advised, motivated by reaction of typical users, free of undue stimulus, financially capable of ownership, occupancy or use, and allowed a reasonable time in which to test the market.[11]

Sales on the market are made for many reasons and may not include one or more of the characteristics necessary to meet the definition of market value. However, in the long run and with a large number of sales, market price will gravitate toward market value.

The Income Approach

The income produced by a property is an indication of value of the property. It is not value and income capitalization does not give value; but it is a method by which we may achieve some estimate of worth.

In using the income approach, the appraiser is concerned with the present worth of the future potential benefits of a property. This is

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[11]Adrian F. McDonald, "The Meaning of Value," Encyclopedia of Real Estate Appraising (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959), pp. 22-24.

generally measured by the net income which a fully informed person is warranted in assuming the property will produce during its remaining useful life.[12]

The income approach to estimating value is commonly utilized in the appraisal of investment types of real estate. Usually these types of properties are important to the owner only because of their present and prospective ability to produce net monetary income and have little amenity value.[13]

Basically this approach is an attempt to estimate the price that a prudent purchaser would pay for the right to receive a future benefit or net income produced by a property or a property right. This estimate must of necessity involve many uncertainties such as the periodic amounts received and the length of time we may reasonably expect such returns to continue. An estimate of value from the income produced by a property may be arrived at by several different treatments; namely, the gross income multiple, the land residual method, the building residual method, or the property reversion method.

III. APPLICATION OF THE THEORETICAL APPROACHES TO THE VALUATION OF ADVERTISING RIGHTS

The determination of the value of advertising rights from rentals produced by billboard sites is a difficult problem from both the theoretical and practical standpoint. The theoretical approaches to value

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[12]Free, op. cit., p. 71.

[13]Ibid., p. 72.

discussed in this chapter are primarily designed to estimate the fair market value of real property; however, the acquisition of advertising rights along the highway system does not involve the purchase of a fee interest in the property but only the acquisition of a sufficient interest in the land to prohibit the property owner or his lessee from erecting outdoor advertising devices. The desired effect is to remove one of the possible uses of a tract of land adjacent to the highway.

The extent of the interests acquired in the property will affect the estimate of the amount due the landowner as just compensation. Presumably, the use of any given parcel of property for a billboard site is only one of several uses for which the property could be utilized. Thus, the restriction of the property against this particular use would not mean a total diminution of value, but only a diminution representing the value of the property for that use exceeding the value of the property for the next highest and best use.[14] Thus, if a property had two alternative uses, one for billboard site rentals and another for an equally attractive use which would produce an equal income, the restriction of the property against billboard use would not, per se, reduce the value of the property. Due to the problem of estimating the taking of only one property right from the entire bundle of property rights, the market and cost approaches are of limited value. Tennessee has had little or no experience with easements

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[14]Walter E. Gunning, "Valuation of Restrictive Easements," The Appraisal Journal, XXXI (January, 1963), 29-33.

limiting the erection of billboards and thus there are no market sales of property so encumbered. Market data on comparable property is not available. The nature of the easement and the extent of the right granted is lacking in precedence as a guide to value. The cost approach is of little value since the estimate is of the value of income produced from site rentals only. Thus, the estimate of the value of advertising rights to landowners is based on the capitalization of expected income from billboard site rentals.

In this method of estimating value the capitalization rate used and the expected duration of the income stream are critical factors. A variation in the rate used can produce a wide variation in the value estimate. A variation of 1 per cent in the rate used can produce an increase or decrease of as much as 14 per cent in the value estimate.[15]

The reliability and stability of the billboard site rental income is usually good. The rental paid the landowner is a very small percentage of the total expense of the advertising company or business owner. The effort to obtain the site lease is usually made by the advertising company or business owner. The rental to the landowner is in effect a net rental usually mailed to the landowner who has no management or maintenance expense. After consideration of these factors, a capitalization rate of 7.5 per cent was selected.

The estimate of the normal duration of the income stream received by the landowner is based on information from both outdoor

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[15]Free, op. cit., p. 276.

advertising firms and landowners. Thirteen outdoor advertising firms provided information on the average length of time billboards owned by the firm had been in their present location. The weighted average length of time for billboards on present sites computed from these data is fifteen years. Landowners in the sample area were asked how long they had received site rentals for billboards in their present locations. The average length of time computed from these data is eight years. The estimate of the value of advertising rights to landowners from billboard site rentals is computed using an estimated location period of both eight and fifteen years. The computation is made by multiplying the present worth of one per annum factor for eight years at 7.5 per cent by the total estimated annual income from billboard site rentals as follows:

Present worth of one per annum factor is 5.857[16]

Estimated annual income is $612,665

$612,665 x 5.857 = $3,588,378

The same computation is made using the present worth of one per annum factor for fifteen years at 7.5 per cent as follows:

Present worth of one per annum factor is 8.827[17]

$612,665 x 8.827 = $5,407,994

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[16]Free, op. cit., p. 442.

[17]Ibid., p. 442.

The accuracy of the estimates of approximately $3,590,000 and $5,400,000 depends upon the validity of the capitalization rate and the expected life of the income stream used. The capitalization rate used is a judgement selection based on a subjective analysis of the risk, liquidity, and management characteristics of this type investment. Both estimates of expected duration of the income stream are based on data collected in this study. There is no apparent explanation for the difference in length of time for existing billboards in their present locations as given by the outdoor advertising companies and landowners. However, since there is no evidence of a decreasing demand for this media of advertising, and the desirability of a particular site is not subject to rapid change, the estimate of a fifteen year duration of income from one location is believed to be reasonable.

The above estimates are the indicated total value of advertising rights to landowners from existing billboard sites. However, the cost of acquiring these rights in the implementation of the Highway Beautification Act should be less than the total estimated value. In making evaluations of advertising rights for acquisition purposes in some cases the income approach may not be the proper appraisal technique. The study has given no consideration to legal questions of compensability that may arise in individual cases. In addition some billboards presently located in zoned or unzoned commercial or industrial areas will be allowed to remain in place.

The inventory data discussed in Chapter III indicated that 6,140 billboards are located in either commercial or industrial areas.

The estimated annual income from site rental for these locations was $275,155. It was concluded in Chapter III that size restrictions would be of only minor importance in determining the number of billboards that would have to be removed in these areas. From the available data no analysis of the number that would have to be removed due to spacing requirements could be made. However, interviews with outdoor advertising company officials indicate that a substantial number of billboards located in industrial or commercial areas will be affected by the spacing requirements. In order to develop some estimate of the probable cost of acquiring advertising rights, a projected loss of 60 per cent of the billboards currently located in commercial or industrial areas is used. The computations are given below:

Present worth of one annum factor for fifteen years at 7.5 per cent is 8.827.

The estimated annual income for areas other than commercial or industrial is $337,510.

$$\$337,510 \times 8.827 = \$2,979,200$$

Sixty per cent of the income produced from sites in commercial areas is $165,093.

$$\$165,093 \times 8.827 = \$1,457,276$$

The total estimate of the cost of acquiring advertising rights of landowners for existing billboard sites with the stated assumptions is $4,436,476.

CHAPTER VII

SUMMARY AND CONCLUSIONS

I. INTRODUCTION

The purpose of this study was to estimate the value of advertising rights to landowners from existing billboard site rentals. To accomplish this purpose the writer: (1) discussed the background of the Highway Beautification Act; (2) analyzed the number and location of existing billboards as indicated by the Department of Highways inventory; (3) selected a sample area and collected rental information; and (4) discussed the application of existing appraisal techniques to the valuation of advertising rights.

II. SUMMARY

The Highway Beautification Act of 1965 provides for the control of outdoor advertising and junkyards along the National System of Interstate and Defense Highways and along the Federal Aid Primary Highway System. The implementation of this Act by the various states will result in the removal of billboards along many miles of highway frontage. This removal will affect outdoor advertising companies, private businesses utilizing this media of advertising, and landowners who are currently receiving rental income from billboard sites.

This study has considered the value of existing billboard sites in Tennessee by estimating the amount of site rental income received annually and capitalizing this income stream into an estimate of value.

In order to compute this estimate, it was necessary to collect information concerning the number of billboards and amount of rental income received.

An inventory of existing billboards conducted by the Tennessee Department of Highways located and classified 24,366 billboards in Tennessee located along 6,042.5 miles of highway frontage. The counties with urban centers were found to have the largest proportion of billboards. The counties with the largest number of billboards are Hamilton, Davidson, Shelby, Knox, and Marion respectively.

When billboards were classified by land usage as shown in Table II, page 25, it was found that 71 per cent were located in areas other than commercial and industrial areas and would not be permitted to remain under provisions of the suggested draft standards issued by the U. S. Bureau of Public Roads.

Rental income information was collected on 523 billboard sites from within a sample area composed of twenty-five Primary and three Interstate road sections. An average site rental by size of billboard was computed and used to estimate the annual income received by landowners in Tennessee from billboard site rentals. The estimated annual income was then capitalized using a 7.5 per cent interest rate for an eight and fifteen-year period to develop an estimate of the value of advertising rights of landowners as indicated from existing billboard sites.

III. CONCLUSIONS

It is concluded that the value of advertising rights to landowners from billboard site rentals in Tennessee is in excess of $3,500,000 and could possibly exceed $5,400,000. It is further concluded that the annual income from billboard site rentals in Tennessee is in excess of $600,000. The total value of advertising rights will depend not only on the amount of income received but also upon the stability and duration of the income stream.

Based upon an assumed loss of 60 per cent of billboards presently located in industrial or commercial areas, the estimated cost of acquiring advertising rights for existing billboard sites is $4,436,476.

It is suggested that additional data is needed on the normal length of time a site may be expected to be used for a billboard location. The accuracy of the estimates developed in this study is to some extent limited by this lack of data but is believed to be reasonable under the stated assumptions.

The study has not considered the question of compensability of certain items of loss, but has been concerned with the proper method of estimating or measuring total value. It is concluded that the valuation of advertising rights is a difficult problem due to the nature of the property interest acquired. It is also concluded that the traditional cost and market approaches of real estate appraisal are of limited value in estimating the value of advertising rights. Thus, the income approach has been utilized in this study.

The author has been unable to develop an accurate estimate of the number of billboards that would be removed in commercial or industrial areas due to size or spacing requirements. Thus, the accuracy of the estimate of the cost of acquiring advertising rights from landowners depends upon the number of billboards affected by spacing requirements. Certainly billboards will be permitted to remain in some areas even with very strict enforcement of the suggested standards.

It is concluded with equal certainty that with implementation of the Highway Beautification Act of 1965, the reduction in income from billboard site rentals will be substantial.

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