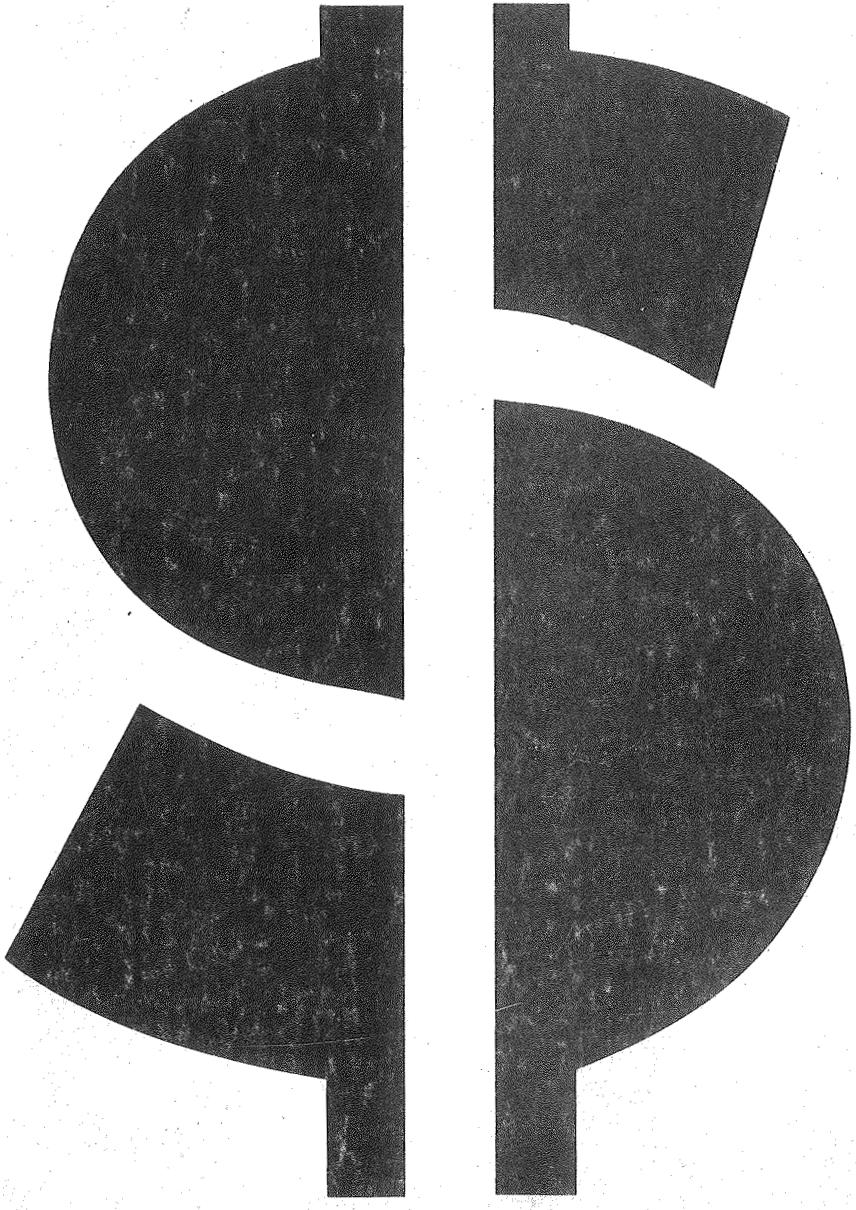
visual communication through signage

By Drs. R. James and Karen Claus

volume 2, sign evaluation



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CONTENTS

FORWARD

This book is the second in a series of softbound books which the authors have undertaken to cover the depths of signage communication from concept to functional application. Volume 1, *Perception of the Message*, deals with the technical considerations in achieving legibility, information processing from the viewers standpoint, and facts concerned with signage and highway safety.

In this second volume, the authors dwell on the commuications value of both on and off-premise signs and their replacement costs. With its factual approach to sign evaluation, this text will indeed prove valuable to sign companies, municipal officials, and state and federal agencies alike as a viable source reference.

A third publication, dealing with the subjects of design, will become the next major undertaking of this series. It will examine the topic from many objectives with heavy emphasis on the direct and subtle influences of color and color perception. A fourth volume will explore financial concerns and manufacturing methodology within the sign industry today.

The authors, with graduate backgrounds in research psychology and planning respectively, merge a unique knowledge in approaching a study of this communications industry subject. Within this series of publications is an outpouring of resource information never before gathered or applied to the sign market.

The sign and outdoor advertising industriesare a visible segment of the environment, though their status and function on the landscape are seldom acknowledged or understood. It is, in part, a purpose of this series to impart the contribution of this commuications medium and what can be done to improve its effectiveness and compatibility with the environment.

Chapter 1

IMPORTANCE OF SIGNAGE TO AUTOMOBILE-ORIENTED BUSINESSES: THE CASE OF MOTELS

In the present age of expanding personal mobility, advanced transportational systems, increasing amounts of leisure time, and a growing emphasis on travel and vacations, motel owners can no longer rely only upon old, proven methods of attracting customers, such as word of mouth recommendation among customers, or repeated visits by the same clientele. It is important that motel owners perceive and respond to the needs and desires of the types of travelers which they want primarily to attract. This involves having a profile of motel guests in general and of having an idea of what different types of travelers find important in a motel. A motel in an urban center, one in a vacation resort area, one along a major highway, or one which combines some of these characteristics will each be trying to attract a different type of guest, be it a vacation motorist, a businessman, or a resort vacationer. Perhaps the most important way in which a motel owner can seek to attract certain customers and achieve financial success is through the use of well-designed and informative highway signs and on-premise signs.

A comprehensive study (Morgan, 1965) involving interviews with 2000 motel guests throughout the country found that of the information sources which people use to select motels, some sort of personal knowledge, either having stayed there before (46%) or the recommendation of friends or relatives (45%), was still, by a slight margin, the most frequently used source by travelers.

The second most frequently mentioned source of information, however, almost as important as personal knowledge, was the use of signs. Forty-two per cent of the respondents considered highway signs, and 41% considered on-premise signs to be important information sources. No other source was rated nearly so important — guidebooks (25%), yellow pages (3%), newspapers (2%), and radio (1%). The conclusion to be drawn from this is that attractive and informative signs are by far the *most important tools* a motel owner has in attracting customers.

Providing reliable and hospitable service, though vital in the attempt to have people make repeat visits and recommend the motel to friends, is not enough, by itself, to attain financial success. Special attempts must be made to attract the growing number of itinerant businessmen, travelers, and vacationers who choose motels on the basis of appearance and signs.

As the following chart indicates, the information sources used vary according to the income level of the guests and the purpose of their trip. For example, it can be seen that low income guests tended to rely more on on-premise signs than did high-income guests, whereas the latter more often based their selection on some sort of personal knowledge than did the former. In other words, high-income guests appear to do more pre-planning than low-income guests; low-income guests prefer, as their reliance on on-premise rather than on highway signs indicates, to be more flexible and spontaneous in their choices and to "shop the street." Thus they are more influenced by signs that are high-income travelers. We can also see that

business travelers rely less on signs than do pleasure-oriented travelers, and correspondingly much more on previous visits and recommendations.

RELATIONSHIP OF SIGN USAGE TO FINANCIAL SUCCESS

The appearance and visibility of highway and on-premise signs are important not only to the traveler; as such, the extent to which a motel emphasizes sign usage is an accurate index to its financial success. Research has shown that the greater the size, height, visibility, and appearance of a motel's signs, the higher is its average sales per room and sales per dollar of market value. Furthermore, these sales figures show an increase which is proportional to the amount of expenditures for signs, especially for highway signs. Those motels which spent $800 or more for signs in one year show sales per room as unusually high. Although high expenditures for highway and on-premise signs may seem like an unnecessary expense to some motel owners, the facts show that it pays off in the end in terms of increased amount of sales.

Table 1.1. ADVERTISING MEDIA AND OTHER INFORMATION SOURCES USED BY GUEST IN CHOOSING A MOTEL: BY GUEST INCOME AND TRIP PURPOSE UNITED STATES, SUMMER 1960

	Number of Guests	Percent of Guests Reporting Use of One or More of the Following Advertising Media or Other Information Sources in Choosing a Motel							
		Highway Signs (Outside Town)	On-Location Signs (In Front of Motel)	Radio	Yellow Pages	Newspaper	Stayed Before	Recommended by Friends or Associates	Guidebook
Growth Income (S/yr.)									
Not reported	258	40	39	NS	2	2	36	37	15
Less than 3,000	51	35	59	2	2	4	45	35	10
3,000-5,999	402	42	49	2	4	3	45	44	24
6,000-9,999	662	43	41	1	3	1	47	48	25
10,000-14,999	356	42	38	2	4	1	48	46	33
15,000 and over	226	44	31	1	3	1	54	50	35
All guests	1,995	42	41	1	3	2	46	45	26
Purpose of Trips:									
Not reported	52	12	15				12	13	12
Pleasure	1,151	44	43	1	2	2	43	41	30
Business	497	41	36	1	7	1	60	59	17
Business and pleasure	216	46	44	1	4	2	44	43	26
Other	75	35	44		4	1	27	35	19
All guests	1,991	42	41	1	3	2	46	45	25

NS Less than one percent.

Source: Morgan, H. E., "The motel industry in the United States: Small business in transition." Tucson, Ariz.: The Bureau of Business and Public Research, 1965.

Table 1.2. EXPENDITURES ON ADVERTISING SIGNS AND FINANCIAL RESULTS OF MOTEL OPERATION SAMPLE MOTELS, UNITED STATES, 1960

Advertising Sign Expenditures in 1959 (dollars)	Number of Motels	Average Per Motel		Sales Per Room	Sales Per Dollar of Market Value
		Sales	Market Value		
Highway Signs:*					
Less than 100	144	$15,902	$ 94,409	$1,032	$.164
100-199	44	23,863	138,977	1,175	.176
200-299	37	24,729	135,000	1,362	.185
300-399	18	23,888	111,666	1,328	.221
400-499	8	28,750	150,000	1,670	.194
500-599	14	25,714	144,285	1,070	.170
600-699	8	18,750	127,500	1,318	.158
700-799	8	76,250	462,500	1,846	.186
800 and over	51	92,843	511,274	1,845	.205
On-Location Signs:**					
Less than 100	310	17,419	107,838	1,110	.177
100-199	74	31,081	160,945	1,272	.199
200-299	32	25,000	169,531	1,199	.186
300-399	18	27,222	156,944	1,113	.153
400-499	10	70,000	601,500	1,694	.173
500-599	6	21,666	140,000	967	.161
600-699	4	150,000	606,250	2,247	.242
700-799	4	32,500	175,000	1,573	.185
800 and over	37	52,837	263,513	1,609	.198
All motels	1,308	$23,249	$136,529	$1,186	$.183

*Includes 976 motels not reporting highway sign expenditures and 813 motels not reporting on-location sign expenditures in 1959. Also includes motels which spent nothing for signs in 1959.

**Highway signs are those along highway at some distance from motel in contrast with on-location signs which are located in front of the motel.

A very recent study by Mayo (1973) further indicates the important role highway signs play in providing people with information and influencing their travel plans. Mayo found that next to recommendations from friends and relatives and the use of maps and brochures, highway signs were the most important information source that influenced unplanned travel excursions. Thirty-five per cent of the people interviewed said they had relied upon highway signs to provide them with the information that induced them to travel where they did on unplanned side-trips.

The table shown below summarizes nine studies that have been done to determine the effect of highway signs upon people's choice of a motel. It should be noted that only three of these studies were sponsored by

the sign industry; in other words, the other six were not out to "prove anything," as some people accuse sign industry studies. Overall an average of 45% of the people interviewed said they used highway signs to choose their motel.

The evidence is rather conclusive — highway signs are of great importance to travelers when it comes to choosing a motel.

Table 1.3. HOW DID YOU FIND THIS MOTEL/HOTEL?

Study	Highway Sign Response
California	43%
Fresno	55%
Memphis State	56%
Randolph House	47%
University of Arizona	42%
University of Washington	29%
University of Wyoming	38%
Valdosta	31%
Wilbur Smith	61%
AVERAGE	45% used highway signs (Outdoor Advertising)

Source: **Public Attitude and Responses toward Highway Travel Service Outdoor Advertising.** 3-M National Research. 1970, Director of Research Ray T. Anderson. Note: This applies only to finding the established or travel service and not product advertising.

PROFILE OF MOTEL GUESTS

In order to be able to adapt to travelers' needs and desires, it is necessary to obtain some more information about who these travelers are. It is convenient, first of all, to define some different groups of people. The vacation motorist is one who takes overnight pleasure trips by car, traveling from place to place. The resort vacationer also makes overnight pleasure trips, but stays for the duration in one particular commercial lodging. The business traveler makes trips for business purposes (although often business and pleasure trips are combined), and generally stays in commercial lodging. The non-user of commercial lodging makes overnight pleasure trips, but does not stay at commercial lodgings; instead, he stays with friends, or in a cabin, or goes camping, etc. The non-traveler is, of course, one who has not made any overnight trips in the past year.

Our data indicates that most people prefer a vacation that involves travel, rather than one which involves staying in one place, such as camping, renting a vacation cottage, or staying at a resort. The attitudes of non-travelers are generally similar to those of travelers. They are not opposed to travel, would in fact like to travel, and most often do not travel either because of financial problems, young children, or other circumstances. And of the non-commercial lodgers, most also had no objection to staying in commercial lodgings except for cost. Thus we can see that although a large market already exists for motels, a considerable untapped potential also exists. Most people want to travel and enjoy staying at commercial lodgings — this means primarily business for motels.

The travel industry in this country is huge and is ever expanding. Projections based on survey data indicate that of the approximately 130 million Americans over the age of 17, 56% or 72 million, took at least one overnight trip in this country last year. A total of 1.1 billion nights were spent away from home last year. Of these 130 million adults over 17, about 50 million, 31% used paid lodgings last year at least once, for a total of 404.3 million lodging nights. Yet 44% of the travelers, 32 million adults, did not stay at a commercial lodging last year. That is, of the total 1.1 billion travel nights, 62% were not spent in commercial lodgings. It is apparent that the lodging industry is attracting only about one third of the travelers, and that a potentially much greater market exists.

The prime prospect for lodging generally looks something like this: either male or female; 35-44 years of age with an income of over $10,000. This typical traveler has at least some college education; is employed in a professional, managerial, white collar occupation; is from a small household; is living in the West or North Central regions; and is coming from a large city. This group is more likely to stay in commercial lodging than is any other single group. This is not to say, however, that a substantial paid lodging market does not exist for those with an income under $10,000. Of the 33.5 million adults with an income under $10,000, who took an overnight trip, about half stayed in paid lodgings. Thus, even though proportionately fewer people with incomes under $10,000 paid for lodging, they still account for 44% of all lodgers and 34% of all lodging nights.

One quarter of the adult population are included in the non-commercial lodgings category. Such travelers characteristically have slightly larger families, are less affluent, have less formal education, prefer to camp, and enjoy the services of paid lodgings less. A limited opportunity does exist to attract these people to motels, though their tendency to stay with friends or relatives restricts this market somewhat.

Business travelers, though only a small proportion of the adult population (10%), account for a much larger proportion of the lodgers (32%) and lodging nights (48%). Furthermore, business travelers on the average take twice as many trips as do pleasure travelers and stay at commercial lodgings almost all the time, unlike pleasure travelers. Business travelers tend to take a considerable amount of pleasure trips, too; half the trips taken by business travelers last year were for business exclusively, while the other half were for business and pleasure combined or for pleasure alone.

Although most pleasure-oriented travelers do not, on the average take as many trips as do businessmen, they far outnumber business travelers, comprising 68% of the lodgers and a bit more than half of the total lodging nights. And since over half of them did not stay at commercial lodgings last year, the potential for additional business is present among pleasure travelers.

Two age groups seem to have a greater proportion of travelers than average. Among adults under 25, 75% had taken an overnight trip, and of those between 35 and 54 years of age, about 63% had taken at least one. The proportion also seems to increase with income; only 44% of those with an income under $8,000, in comparison to 68% of those with an income of $15,000 or more, traveled. Professional and white collar workers have the highest incidence of travel, and farmers and retired people have the lowest. People with a college education travel more than those without one. Single

people travel more (64%) than married people (56%) or widowed or divorced people (42%). Differences also exist for people from different parts of the country; Westerners travel most (67%), followed by Central Northerners (63%), Southerners (52%), and Northeasterners (45%).

The following chart gives a more complete picture of the distribution of motel lodgers.

ADAPTING TO CHANGING NEEDS

It is not only important today that motel owners know who their customers are and their personal needs, but that they also have an idea of the social and technological changes which have changed the nature of the motel business. The number of motels in this country has quadrupled over the past several decades. This incredible boom has resulted from the increasing number of people who are traveling on business or pleasure.

Motels have taken over much of the business previously served by hotels. Hotels are still slightly dominant in the Northeastern and North Central parts of the country, but motels are more numerous and account for more sales in the South and West. This expansion in motel construction also has created heightened competition among motels. Since location and facilities are often very similar among competing motels, advertising and signage become very important.

The motel business is very much dependent upon the prevalent mode of transportation. Hotels still rely primarily upon automobile travel, although the use of airplanes is becoming increasingly popular. But even with travel by car, the expansion of high speed freeway systems has made the traditional roadside somewhat unnecessary, as terminal locations in urban areas become increasingly more convenient.

Yet as airplane travel becomes more widespread, especially among business travelers and those who are traveling a long distance, motels must adapt accordingly. Location, modes of advertising, and facilities may have to be changed to accommodate the new needs of these travelers. Whereas ten years ago, it was reported that 94% of motel guests traveled by car, more recent data indicates that these figures have changed. Among business travelers, 86% mentioned the use of cars for short trips, and 32% mentioned planes. For longer trips, 70% mentioned cars, and 48% mentioned planes. To respond to this changing situation, motel owners should, for example, perhaps supplement highway signs by signs between the airport and the motel. Thus it is clear that motel management must be able to distinguish among the different groups of travelers and modify their motel's services and facilities in an effort to attract and respond to the needs of these travelers. Special sales promotion is important in inducing them to utilize the facilities which the motel offers.

As the Morgan ('65) study of the motel industry showed many businessmen are nowadays relying upon the airplane for long-distance trips. In fact, the figures show that more and more the long-distance business traveler is synonymous with the frequent multi-airplane traveler. Nonetheless, this trend has not significantly affected the role the car plays in American life. Even for these businessmen, the car retains immense popularity and is used extensively for pleasure-oriented trips of which businessmen take more than any other group.

Table 1.4. DISTRIBUTION OF LODGERS

Total Adults 18 and over (000)	Total Population (130,419)	Total Lodgers (40,591)	Business Lodgers (13,012)	Pleasure Lodgers (27,579)	Non-Lodgers (32,049)
Age					
18-24 years	14%	14%	12%	15%	18%
25-34	22	21	24	20	21
35-44	16	21	24	20	13
45-54	19	20	19	20	23
55 and over	29	24	21	25	25
Total Family Income					
Under $8,000	40	26	21	28	35
$8,000-$9,999	15	16	13	17	17
$10,000-$14,999	24	30	28	30	23
$15,000 and over	15	22	31	19	14
No answer	6	6	7	6	11
Education					
Some high school or less	37	22	16	26	40
Graduated high school	39	40	33	41	34
Some college	13	19	23	18	19
Graduated college	11	19	28	15	7
Occupation of Head of Household					
Professional	10	14	20	11	9
Managers/Proprietors	16	18	22	16	9
Clerical workers	9	12	13	12	7
Craftsmen/Foremen	17	17	15	18	23
Operatives/Service	17	14	10	16	24
Laborers	5	2	2	3	7
Farmers	3	3	2	3	1
Retired/Students	18	15	12	15	15
No answer	5	5	4	6	5
Marital Status					
Married	75	78	80	78	74
Widowed/Divorced/Sep.	12	8	6	8	10
Single	13	14	14	14	16
Sex					
Men	46	49	62	43	47
Women	54	51	38	57	53
Census Division					
Northeast	25	21	13	25	18
North Central	29	31	30	30	36
South	30	28	35	25	28
West	16	20	22	20	18
Total Number in Household					
1-2 members	36	39	34	41	36
3-4	39	38	35	39	34
5 and over	25	23	31	20	30
Population Size					
Under 10,000	39	37	39	34	47
10,000-99,999	24	23	23	24	26
100,000-999,999	18	21	27	19	12
One million and over	19	19	11	23	15

The car represents for these businessmen the chance to spend a lot of time with their families. In this respect, the automobile may be far more than an economical way to travel — the automobile is in fact a predominant feature of the American life style.

WHAT MOTEL GUESTS FIND IMPORTANT IN A MOTEL

Of the features which a traveler considers when selecting a motel, appearance is the most frequently cited factor. Morgan found that appearance was rated slightly higher than location by guests. Factors which affect the appearance of a motel are the surroundings, the physical plant of the motel and its upkeep, and the motel's signage.

The on-premise sign is generally the first thing a traveler sees when arriving at a motel and no doubt plays an important role in determining a visitor's first impression. It was found that pleasure guests placed more (62%) emphasis on appearance than did business guests (50%). The latter considered the location of the motel to be as important as its appearance. Similarly, high-income guests considered appearance more important (66%) than did low-income guests (54%); low income guests rated location higher (68%) than did higher-income guests (49%). Other auxiliary factors were rated much lower than appearance and location.

Table 1.5. IMPORTANCE OF SELECTED EXTERNAL AND AUXILIARY FEATURES TO GUESTS WHEN CHOOSING A MOTEL: BY GUEST INCOME AND TRIP PURPOSE UNITED STATES, SUMMER 1960

Percent of Guests Who Indicated Specified Importance to Them of Following Features in the Choice of a Motel*

Guest Income ($/yr.):	Number of Guests**	Location			Appearance			Restaurant			Cocktail Lounge			Pool			Carport/Garage		
		Great	Some	None	Great	Some	None	Great	Some	None	Great	Some	None	Great	Some	None	Great	Some	None
Not reported	183	60	35	5	61	38	1	46	40	14	7	18	75	21	28	51	14	29	57
Less than 3,000	38	68	21	11	54	39	7	43	35	22	12	15	73	26	20	54	17	26	57
3,000-5,999	367	57	38	5	57	41	2	47	45	18	4	11	85	15	30	55	10	30	60
6,000-9,999	610	55	40	5	55	43	2	41	39	20	4	18	78	18	37	45	9	24	68
10,000-14,999	331	57	40	3	61	38	1	44	41	16	4	23	73	20	43	37	11	24	65
15,000 and over	210	49	44	7	66	32	2	50	34	16	7	21	72	29	40	31	10	22	67
All guests	1,739	56	39	5	59	39	2	42	40	18	5	18	77	20	36	44	10	25	64
Purpose of Trip:																			
Not reported	20	70	30	-	50	50	-	55	35	20	28	6	67	38	31	31	6	39	56
Pleasure	1,032	59	37	4	62	37	1	41	40	19	3	14	83	20	34	46	9	24	67
Business	458	50	45	5	50	48	2	55	39	16	7	25	68	17	41	42	11	26	63
Business and pleasure	191	51	41	8	60	36	4	44	39	17	7	23	70	23	36	41	11	28	61
Other	64	61	31	8	61	33	6	55	33	22	4	21	75	15	32	53	18	36	45
All guests	1,765	56	39	5	59	39	2	42	40	18	5	18	77	20	36	44	10	26	64

*Percentages add horizontally to 100 for each feature.

**Number of guests who gave opinion on location and reported income and trip purpose.

Low income guests mentioned price as their *first* criterion 9% of the time, as compared to only 1% of the time for high income guests. Both pleasure and business guests gave it as their first reason 3% of the time. Yet when asked if the price was an important feature, 75% of the low income guests, as compared with 25% of the high income guests said it had great importance.

The presence of a restaurant also rated highly, though not as highly as appearance or location. A large majority of motel guests eat breakfast at their own motel when possible. A restaurant seems to be more important to the business traveler (45%) than to the pleasure traveler (41%), and to high (50%) than to low income guests (43%). A pool was considered to be of great importance to about 20-25% of the guests, with high income guests rating it somewhat higher than low income guests. This raises some doubts about the necessity of having a pool for every motel.

From this information we can make some generalizations about the specific needs and desires of different types of travelers. Travelers' preferences vary according to their income and the purpose of their trip. Low-income guests gave more weight to location and price as influential factors, while high-income guests said that recommendations, appearance, and membership in a chain were important factors. A restaurant and pool are more desirable factors to high than to low-income guests. By keeping in mind all these variations, and by knowing what type of traveler it wants

to attract, the motel management can act in a concrete and purposeful way to attract new customers.

IMPLICATIONS FOR MOTEL SIGNAGE

Travelers have specific desires and preferences in mind when they choose motels. They will give their business to that motel which seems most likely to be able to fulfill these desires. As the data has indicated, signs are by far the most important sources used by travelers to choose a motel if they do not already have a specific one in mind. As far as other measures to attract customers are concerned — newspaper or radio advertising, direct mailing, yellow pages advertising, etc. — they are all of minor importance in comparison to the use of highway and on-premise signs.

It is first of all important that the signs be attractive, interesting to look at, and highly legible, even aside from their informational content. As travelers consider the external appearance of the motel to be of primary importance, the on-premise signs play a major role in creating a "first impression" for the prospective guest. Secondedly, it is important that the motel signs indicate the presence of those facilities which are important to various travelers.

To attract business trade, a motel would do better to promote the convenience of its location, availability of television, and phones in each room. If the motel, on the other hand, wants to appeal to pleasure-oriented travelers, it should emphasize the swimming pool, restaurant, etc. Such signs, especially as highway signs, can be crucial for motels which are not situated directly on a major thoroughfare, but rely on travelers leaving the highway to reach its location.

Signs also are important to motels which are members of chains or of voluntary membership associations. The standardization of their signs is necessary in getting travelers to recognize the sign and associate with an established standard of quality. These signs create for such groups of motels the "public image" which is necessary, if travelers are to attribute any meaning to such memberships or chains.

Hotel managers sometimes have a mistaken impression of the value of signs and of other influential factors. In fact, the manager's conception of what features are important to its guests often does not correspond with those perferences expressed by the guests themselves. As the accompanying chart indicates, motel operators rated the value of direct mailing as equal to the value of on-premise signs and more valuable than highway signs. Yet the opinions of guests mentioned earlier revealed that both highway and on-premise signs were of paramount importance, while direct mail and local newspaper ads (also rated quite high by the motel operators) had only marginal influence on motel selection. Furthermore, although almost as many motel operators considered highway signs to be as valuable as on-premise signs, the number of motels having highway signs was only half as great as the number having on-premise signs. And yet guests rated highway signs as slightly more influential even than on-premise signs. The figures show that those motel operators who considered appearance and advertising to be the primary drawing features of the motel (which corresponds to the guests' stated impressions) were financially more successful in terms of the sales per room than were operators who considered location, facilities, or method of operation to be the main drawing features of their motel.

THE GENERAL EFFECTS OF SIGNAGE

An analysis of the importance of signs to the motel industry also should include an analysis of the effects of the motel's signs upon the rest of the business community. Many people who take a stand against outdoor advertising do not realize that they are not only harming the motel business, but also all the businesses in that community.

A crucial concept in this regard is the *multiplier effect* — the highway sign that directs people from a highway to a motel in a small downtown area is in effect creating business that would not otherwise come into the downtown area. People staying at a motel have a variety of other needs

Table 1.6. OPINION OF MOTEL OPERATORS REGARDING VALUE RELATIVE TO COST OF VARIOUS ADVERTISING MEDIA USED SAMPLE MOTELS, UNITED STATES, 1960

Media	Total Number Using	Percent of Motel Operators Giving Specified Opinion Regarding Value of Media Relative to Cost: Total	High	Same	Low	No Value	No Opinion
Signs in Front	1,730	100.0	45.0	19.5	6.2	3.2	26.1
Highway Signs	883	100.0	40.9	27.1	7.7	4.3	20.0
Telephone Classified	668	100.0	10.2	24.4	21.4	19.9	24.1
Direct Mail	351	100.0	44.4	21.1	9.4	1.7	23.4
Local Newspaper	242	100.0	28.1	29.7	8.7	6.2	27.3
Miscellaneous	1,102	100.0	20.0	33.0	16.6	4.4	26.0

OPINION OF MOTEL OPERATOR REGARDING FEATURES DRAWING GUESTS AND FINANCIAL RESULTS OF MOTEL OPERATION SAMPLE MOTELS, UNITED STATES, 1960

Features which Draw Guests in the Opinion of Operator	Number of Motels	Average Per Motel: Sales	Market Value	Sales Per Room	Sales Per Dollar of Market Value
Location	324	$20,401	$122,114	$1,182	$.190
Method of operation*	287	25,766	159,843	1,184	.172
Facilities**	178	20,449	127,134	1,159	.178
Appearance	169	27,130	146,508	1,330	.176
Advertising	137	33,102	177,700	1,324	.184
Room Rates	77	16,038	106,623	916	.203
All motels***	1,308	$23,249	$136,529	$1,186	$.183

*Includes 136 motels whose operators gave no opinion.
**Includes auxiliary features (TV, phones, pool).
***"Management" and "service" included here.
(Morgan, 1965)

that can be fulfilled by other sectors of the business community — restaurants, service stations, grocery stores, etc. This creates both income for the businesses and tax revenues for the community.

A motel association has made the following estimates as to the multiplier effect of motel business upon the rest of the community:

According to research conducted by the U. S. Department of Commerce and leading accounting firms, a 40-room motel/hotel operating at 60% occupancy will have an impact on the local economy equivalent to that of an industrial plant with a $400,000 annual payroll, assuming an average room rent of $12.00 per day. For every $27.00 the average guest spends on room, he will spend $73.00 on other things, meaning that the property will generate $105,000 in room sales plus $284,000 in sales made by restaurants, retail stores, transportation companies, etc., representing a total of $400,000 which that property will be attracting into the community annually. This money will generate new waves of purchasing power (by creating more jobs, more tax revenues, etc.) amounting to 3.6 times that amount, meaning that a 40-room property can increase the local property activities by as much as $1.4 million annually.

A 300-room hotel operating at 60% occupancy with a $12 average room rate, will generate $788,400 in annual room sales plus $2.2 million in other sales, enabling it to have an economic impact on the community comparable to that of an industrial plant with a $3 million payroll. The new waves of purchasing power this money creates (3.6 x $400,000) will enable it to generate $10.5 million worth of new business for the community. (Motel/Hotel Newsletter, 10/16/72, IV., (4) 2-3.)

A favorable feature of this new revenue is that not only does it result in increased income for local citizens, but that also the tax money that derives from this revenue is nearly cost-free tax money. In other words, whereas most local property tax revenues are funneled into paying for such expenses as schools and municipal services, the tax revenue deriving from tourist business attracted by highway signs does not have to be spent supporting those people who are spending the money, since the tourists merely come into an area, spend their money, and quickly leave.

An examination of the payroll and property taxes in resort areas makes it clear why tourist spending is encouraged so much in these communities. It is a clean dollar, i.e., industrially a highly desirable dollar, that does not bring with it any form of pollutions other than the normal pollution associated with human life. Without presenting any unpleasant side effects, this type of dollar has tremendous benefits as a tax dollar and income revenue dollar to a community.

IMPORTANCE OF SIGNS TO OTHER AUTOMOBILE-ORIENTED BUSINESSES

Although this case study has confined itself to examining the importance of signs to only one type of business — the motel industry — its implications can be extended to many automobile-oriented retail businesses, such as service stations and restaurants, which rely upon an impulse decision by the motorist for their business. The majority of the American public seems to feel that outdoor advertising signs furnish them with essential information and ideas when they are on a trip. The chart below is a composite of seven different studies which were made to determine public attitudes toward highway advertising.

Table 1.7. RESPONSE AND OPINION TO HIGHWAY ADVERTISING

Study	For	Against
Arthur D. Little	73%	27%
National Interstate Survey	78%	22%
Oregon Referendum	65%	35%
Sindlinger	80%	16%
Starch	79%	12%
Virginia Dept. of Highways	70%	30%
Western Oil and Gas	81%	17%
Average of 75% For.		

Source: **Public Attitude and Responses toward Highway Travel Service Outdoor Advertising.** 3-M National Research. 1970, Director of Research Ray T. Anderson.

These different studies used differing methods to achieve their data; but their results are quite similar. The average response for all seven studies, in the face of many negatives, is 75% in favor of allowing highway advertising.

Concrete data can be cited to indicate the extent to which American travelers rely upon highway advertising signs to choose a specific type of highway service. Service stations are an obvious case in point. Although there are about 350,000 service stations in operation in the U.S. (1970

Table 1.8. HOW DID YOU FIND THIS SERVICE STATION?

Study	Site	Highway Sign Response
California	Fresno-Cal. 99	29%
	Fresno-Cal. 99	21%
	Tulare-Cal. 99	46%
	Tulare-Cal. 99	67%
California	Fresno-Cal. 99	44%
	Tulare-Cal. 99	47%
Iowa	Grinnel I-80	33%
	Grinnel I-80	33%
Louisiana	Shreveport I-20	37%
Nebraska	Seward I-80	42%
Wisconsin	Janesville I-90	34%
Wisconsin	Janesville I-90	50%
Wyoming	Rock Springs I-80	70%
Average of 43% used highway signs.		

Source: **Public Attitude and Responses toward Highway Travel Service Outdoor Advertising.** 3-M National Research. 1970, Director of Research Ray T. Anderson.

figures of National Petroleum News), only 8% of these stations are adjacent to interstate and controlled access highways. And even of this 8%, many are not visible from the highway. Repeated surveys conducted at service stations have shown that as many as two-thirds of a station's patrons have never utilized that station before. It is thus obvious why the traveling public considers highway advertising announcing a "station ahead" to be vital information. The studies shown in Table 1.8 asked a total of 7,618 respondents how they found the service station at which they were interviewed. On an unaided recall basis, 43% said that they made their decision on the basis of a highway sign.

Similar results can be found for the traveler's reliance upon highway signs in choosing restaurants at which to eat. The interstate highway system now accounts for about $30 billion per year in tourism income, $8.7 billion of which is for food products and services alone. The interstate traveler usually acts on an impulse basis when choosing where and when to eat his three daily meals. Since he usually has no familiarity with the area in which he is traveling, he must rely to a large degree upon highway advertising signs to provide him with the information on the basis of which he can choose. The four studies shown below (Table 1.9) indicate that on the average 53% of the travelers interviewed used highway signs to find the restaurant at which they were interviewed.

Table 1.9. HOW DID YOU FIND THIS RESTAURANT?

Study	Highway Sign Response
Dutch Pantry	51%
Morrison Cafeteria	28%
U. of Wyoming	76%
Wilbur Smith	56%

Average—53% used highway signs

Source: **Public Attitude and Responses toward Highway Travel Service Outdoor Advertising.** 3-M National Research. 1970, Director of Research, Ray T. Anderson.

The conclusions to be drawn from this data are that highway advertising signs are of crucial importance to the economic existence of many of the retail chains and small businesses that serve the expanding interstate highway system. Such signs serve a function that goes beyond mere advertising; they are important information sources used by travelers to fulfill their needs and desires.

CONCLUSIONS

We can see, then, that as far highway and on-premise signs are concerned, advertising definitely pays off in the end. We have seen that the financial success of a motel is to a large extent directly proportional to the amount which it spends on signs. An attractive, visible, and informative sign can be a major asset for a motel which is trying to expand its business by attracting new customers. In order to do this, however, the motel operator must know what type of traveler he wants to attract and advertise accordingly. The proper use of highway and on-premise signs can be an invaluable asset in obtaining additional business for motels.

Yet despite the proven importance of off-premise advertising signs to many of the automobile-oriented businesses in this country, state highway departments in many parts of the country have tried either to eradicate such commercial signs altogether or to severely restrict their proximity to the highway and their size, shape, and lighting. In many cases the explicit, informative signs that provided the motorist with needed information about service station facilities, restaurants, and lodging facilities have been replaced on interstate highways with signs situated before an exit which merely state, "Food-Gas-Lodging."

The roadside business associations in many states have been fighting these unreasonable and impractical policies on signs. Such a policy does not just severely affect the sales of these roadside businesses; it also does a great disservice to the motorist who is anxiously searching for a service station as the needle on his fuel gauge registers empty or who is looking for a nearby motel as he finds it harder and harder to keep his eyes open during a night haul. In many cases there may be just such a service within a close proximity of the motorist; but many state roadside sign policies frustrate the driver in finding what he seeks and harm the roadside business which relies on the patronage of passing motorists.

Also the Gas-Food-Lodging signs that are placed before an interstate exit are poor substitutes for the eye catching and informational commercial signs which they have replaced. In many cases they do not provide the motorist with adequate information to decide whether to pull off at the intersection. For the motorist who has a credit card for a certain brand of gasoline or who prefers to patronize only certain reliable nationally known brands, a sign that says merely "Gas" is not very helpful.

The roadside businesses that depend on passing highway motorists for their survival generally feel that such restrictive policies on roadside signs severely hamper their business — be it a restaurant, motel, service station, etc. — and prevent them from providing the motorist with the good service he desires. In fact, such a sign policy often seems to discourage services to the motorist and leaves the tourist who is not familiar with the area in which he is traveling with a sense of being completely isolated in a hostile countryside.

It is clear that either the highway department must erect adequate signs to replace the off-premise signs that have been ordered removed by their policies or it must allow roadside business to do its own job under some reasonable controls.

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Chapter 2
SITE LOCATION VARIABLES

Numerous and diverse factors determine the effectiveness of a sign. On the one hand, there are those essential components of design that have been discussed in previous chapters, such as brevity and incisiveness of copy, striking illustrations, appropriate lettering, and bold coloring. But excellence of design is not sufficient to guarantee the effectiveness of a sign. If a sign is inaccessible to large numbers of viewers, or if it is not located on a visible site, it will be of little value regardless of its other merits.

A number of geographic variables in site location influence a sign's effectiveness. These factors include the environment in which the sign is located, and macro-locational factors such as trade area and trapping point concepts that we shall discuss later in the chapter. Other variables such as its position in relation to the street and internal macro-locational factors such as sign placement and visibility must be considered. Geographical parameters constitute significant criteria for judging sign effectiveness.

A brief explanation is necessary to clarify the term *site*. For several decades this concept has played an important role in urban geography. The French geographer Blanchard introduced the term in 1922, and differentiated between the general elements of situation and the specific characteristics of site. He defined *site factors* as "purely local traits of the landscape."[1] From the inception of this definition of site, it has been generally assumed that "situation" somehow involves the human context whereas "site" involves the purely physical elements.

An *individual site*, as we use the term, means the smallest operating land unit. In contemporary urban studies this term is generally used in reference to land areas of much smaller size than for instance, a municipality. Most studies dealing with urban economics and retail location construe the term site to include not only a lot or plot of land of specific dimensions, but also the structures erected on that land.[2] Although the concept of site has been extended to include humanly constructed additions to previously undeveloped land, the term still retains something of its original denotation of specific physical attributes.

SITE CHARACTERISTICS

To compare site location variables, we must first define some general characteristics of sites that can serve as bases for comparison. Although each site is unique in some ways, three categories of characteristics are common to all signs: quality, type, and network.

QUALITY

An important characteristic of any kind of site whether of a retail

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[1]B. J. L. Berry and F. E. Horton. *Geographic Perspectives on Urban Systems*. Englewood Cliffs, New Jersey: Prentice-Hall, 1970, 15.

[2]B. J. L. Berry. *Commercial Structure and Commercial Blight*. Chicago: University of Chicago Press, 1963.
W. Alonso. *Location and land use: Toward a General Theory of Land Rent*. Cambridge: Harvard University Press, 1964.
R. E. Murphy. *The American City*. New York: McGraw-Hill, 1966.

business or a sign is *quality*. The quality of a site can be assessed in comparing it to other sites with respect to circulation (number of viewers passing by), the nature of the automobile traffic (fast-moving freeway traffic, stop-and-go city traffic, etc.), and related factors. A popular instrument for evaluating the qualitative features of a sign site is the *gravity model.* This model helps determine the optimal location within a commercial area for a sign by evaluating the various business districts in that area.

CIRCULATION

Circulation, or the number of viewer exposure opportunities, is perhaps the most important site variable influencing a sign's effectiveness. This circulation is based on the type and volume of traffic (pedestrian, automotive, or mass transit) that passes any given poster panel or painted bulletin. Standard, systematized methods of determining circulation have been established by the Traffic Audit Bureau (TAB), an independent, non-profit organization whose primary purpose is to set standards for and regulate the evaluation of outdoor advertising structures. The circulation for a sign is calculated by counting the number of people passing it at significant times.[3]

While the TAB methods of determining circulation and site effectiveness apply specifically to 24-sheet poster panels and painted bulletins, much of the concept is relevant to on-premise identification signs as well.

Aside from the external features of a site, internal variables also affect its quality. These variables ultimately concern the effectiveness of a sign's location in helping it reach a specified target market. Thus the angle of sign placement, its visibility, the grade of arteries and streets, the elevation of the sign, and the surrounding environment all must be considered. A high quality site will enhance the possibility of the sign reaching a large number of people, thereby communicating the advertiser's message.

TYPE OR SPATIAL CLASSIFICATION OF SITE

Sites also may be classified and compared according to their type. Extensive search has focused on the relationship of the success of a retail business to the type of site on which it is located. Relatively little work has been done, however, on classifying sign sites according to type. We can extrapolate from guidelines set down for urban retail sites by various studies in this field which have generally classified sites according to the mode of transportation used to reach them.

Sign sites can be further classified in terms of transportation. The speed of the automobile and the nature and purpose of the trip are characteristics that can be used to classify signs into each of the following areas: (1) neighborhood sites; (2) downtown sites; (3) main street sitse; (4) shopping center sites; and (5) freeway sites. Each of these sites will appeal to a different group of people with predictably common interests, whether travelers, businessmen or housewives.

1. *Neighborhood* sign sites have access to perhaps the broadest potential market, because they are located in residential areas that abound with

[3]Traffic Audit Bureau. *Standard Procedure for the Circulation Evaluation of Outdoor Advertising.* (7th ed.) New York: Author, 1972.

children, housewives, and working people. However, traffic is not normally as heavy in neighborhoods. In most residential settings there are few signs or similar visual stimuli competing for the viewer's attention; therefore, a sign in a neighborhood site is generally assured a high degree of viewer perception and recall. In many residential areas, however, ordinances exist which either prohibit signs or restrict their use considerably. Neighborhood sites are usually located on property that is used for some other dominant purpose, often on the side or top of a small commercial building.

2. *Downtown* sites can be extremely effective in reaching a limited market within a specified area. For example, a sign in the financial district of a city will likely be seen primarily by people employed in finance-related offices in the downtown area. Such a sign can be appropriate for advertising a product that is meant to appeal to an adult, educated person holding a white-collar job. Advertisements for services such as banks, airlines, and restaurants, which would have limited appeal in a broad neighborhood environment, can be very effective in a downtown area.

The typical viewer of a sign in a downtown area is probably either traveling by foot, in a bus, or in a slow-moving car, which increases his opportunity for seeing and reading a particular sign. At the same time, however, downtown sign sites may suffer from limited visibility, since they tend to be accessory land uses often situated on top of tall buildings, and obscured by nearby buildings. Moreover, such sites can tend to be expensive, since they occupy prime areas and enjoy exposure to a high circulation (number of potential viewers) of both pedestrian and vehicular traffic. It should be kept in mind, however, that the effective operating time of downtown sites is limited: during weekdays between 8:00 a.m. and 6:00 p.m. when the traffic is at its heaviest. At other times relatively few people travel in downtown areas.

3. *Main street* sites are those sign sites located on major traffic arteries. Such a site reaches both a steady commuter market and a transient market. Many people who are on these main streets travel from one store to another to fulfill their shopping needs or are traveling in stop-and-go automobile traffic. Main street sign sites have come under heavy criticism for being a blatant example of urban blight; arteries that are lined with a myriad of signs of assorted purposes, sizes, and illumination. Such criticism often overlooks the fact that motorists cruising along a main street or major artery often rely upon these signs for needed information, such as identification of gas stations, restaurants, and other business establishments. It is irrefutable that these signs serve a variety of important functions.

4. *Shopping center* sites are located in decentralized shopping and business areas that have resulted from increased city traffic, heavy downtown congestion, and the difficulties of parking in the downtown area. These shopping centers generally have spacious parking areas and are often located on the perimeter of an existing community, between communities, or in large, newly developed residential areas. Since most of the people who frequent shopping centers are consumers intending to satisfy their needs, a sign site in a shopping center can be a highly effective advertising device. Because of the orderly and relaxed atmosphere of most shopping centers, a sign will likely be seen and read more easily than it would in an area of intense visual competition and a pressured pace.

While an automobile may be necessary to reach the shopping center's

facilities, the greater portion of a shopper's time may be spent in walking from one store to another. It is important that these sign sites can appeal to the individual as he or she strolls within the shopping center as well as to the motorist entering or passing by the shopping center.

5. *Freeway* sites for signs have steadily become more popular as freeways have become increasingly widespread and, therefore, convenient. In such areas as California where the freeway system is widely used for commuting, a freeway site can be a prime means of communicating to vast numbers of people. Although less than 2% of the total United States road mileage is comprised of the interstate highway system, 24% of all motor vehicle traffic uses this system. Almost 40% of all motor vehicle owners in this country make daily use of the system. Roughly one-third of annual national travel is centered on the interstate or limited access highway system.

Freeway sign sites represent an ever growing portion of the outdoor advertising sign sites in the industry. They have access to a potentially broad market; they face little competition from other visual attractions, and are often desired as focal points for travelers looking for an interesting view. Freeway sign viewers are, of course, exclusively automobile travelers.

Certain freeway sites are ideally suited to reach a vast market. Signs at entrances to bridges or other thoroughfares that funnel traffic into a city are examples of sites that will be seen by almost everyone in a metropolitan area at one time or another. Similarly, where one or more crosstown or heavy traffic bearing arteries interchange with the interstate highway, there is a large concentration of traffic both leaving and entering the traffic separation point. Provided visibility and other internal factors are good, such a focal point is the perfect site for a sign.

The characteristics of a site, its spatial classification and type of environment can be important indications of a sign's potential effectiveness and of the type of viewer it will reach.

NETWORK

Geographical research on the network of sites for a single retail establishment has generally taken the form of appraisal of the spatial dispersion of competitive retail outlets. Competition is considered one of the most important factors, after traffic density, in a motorist's choice of a retail outlet.[4]

These same considerations apply to sign sites. Competition, in terms of nearby signs vying for the attention of the passersby, plays an important role in determining whether a particular sign is first seen and understood, and then recorded in the viewer's mind. Traffic density is an additional influence upon the viewer's perception, since the time a driver has to focus attention upon signs depends upon the traffic situation around him.[5]

In addition, spatial distribution is as important for signs at it is for retail sites. A sign showing that covers a large and heterogeneous area will, of course, be much more effective than a single sign at a particular site.

[4]H. G. Canoyer. *Selecting a Store Location.* Washington D. C. U. S. Government Printing Office, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, Economic Series 56, 1946.

[5]J. A. Prince, "Speed in conveying message becomes more vital each year." *Signs of the Times,* October, 1957, p. 40.

Indeed the rationale for extensive sign showings is to expose as many people as possible to the advertiser or user's message.

CLASSIFICATION OF SITE BY POSITION ON A STREET

Sites can generally be divided into two major categories according to their position on a street. *A zone of conflux* site is located at the intersection of two major traffic-bearing arteries, each accounting for not less than 25% of the total traffic volume at that intersection. A *linear* site, on the other hand, is located in a place where at least 75% of the traffic volume is generated from one street. The distinction between zone of conflux sites and linear sites is not always clear; a site that is classified as linear may also be a corner site at the junction of two arteries, so long as one of these roads generates more than 75% of the total traffic volume. The significant factor in classification of a site at an intersection is the relative importance of traffic flow on the secondary street.

ZONE OF CONFLUX SITES

A number of problems arise when one attempts to rate a sign site by its position on the street and to determine what constitutes its actual circulation. The Traffic Audit Bureau (TAB) has established criteria for determining whether a certain site is in a zone of conflux or "important intersection," to use their term. The problem is to count the traffic so that it "properly reflects the circulation to be credited," that is without any inflationary duplications.[6]

An important intersection site will usually have a higher circulation rating than a linear site. TAB defines an important intersection as the intersection of two or more "important streets." Such an important intersecting street is one identified by any or all of the following characteristics:

1. It has traffic signals or traffic officers.
2. It has a "through street," "stop," or "yield right of way" sign, showing cross-traffic seeking to enter or cross it.
3. It is a numbered U. S. or state highway.

At such an intersection, traffic counts should be made of both streets, if the sign is visible to both streets.

Certain distinctions can be made between a "normal" and an "abnormal" important intersection, which take into account factors that will affect the site value of a sign. A normal important intersection is one in which both streets have an approximately equal volume of traffic. Certain corrections and special consideration must be given to abnormal important intersections, which TAB defines as being caused by one of the following circumstances:[7]

1. The street beyond the intersection being in a residential rather than a business area.
2. The widening or narrowing of the street on one side of the intersection.
3. The street becoming a dead-end after the intersection.
4. The street becoming a one-way street after the intersection.
5. A U. S. or state highway which turns at the intersection rather than continuing across it.

[6]Traffic Audit Bureau. *Standard Procedure for the Circulation Evaluation of Outdoor Advertising.* (7th ed.) New York: Author, 1972.

[7]Traffic Audit Bureau, appendix.

6. Diagonal streets forming part of the intersection.

All of these conditions will adversely affect circulation and consequently value.

A sign located at a zone of conflux site is usually more valuable than one located on a linear site, since it can be viewed by motorists traveling on two roads rather than on just one. However, a heavy flow of traffic past a particular linear site can compensate for the fact that it is visible to traffic from only one street. A sign located on a linear site can only be seen by traffic moving in one direction, unless it is placed parallel to the street, which compromises its visibility from both directions. A zone of conflux site, on the other hand, will be visible to traffic moving in at least two directions.

Usually the value of a particular tract of land is directly related to its proximity to a zone of conflux. The model of concentric rings of decreasing land value around a central point has long been used by academics and realtors to deal with the urban environment. A closer examination, however, reveals the inadequacy of this concept. Each corner in fact exhibits a unique combination of traffic flow, pedestrian flow, visibility, and other factors.

The site's position in relation to the dominant traffic pattern is ultimately as important as the site's position within the concentric ring. Indeed a sign might be located at the heart of an intersection, but if it is not visible to the direction of heaviest traffic flow, its value is diminished.

NEAR CORNER SITES

A near-corner site is one that is located before the intersection crossing of a conventional right-angle intersection. The position of the site within the intersection, whether a near or far corner site, implies certain advantages and disadvantages. The principal advantage of a near-corner sign site is that it is the first sign which the motorist perceives as he enters the intersection.

In view of the usually cluttered concentration of signs and other visual attractions at most intersections, this advantage can be important. It provides the sign on the near-corner site with a certain historical acceptance by the motorist. The viewer is more likely to read the first sign he sees than to select one from an array of signs given a hypothetical situation in which other factors, such as design and visibility, are equal. The primary disadvantage of a near corner site is the danger of reduced visibility due to buildings and other structures located in front of it.

FAR CORNER SITES

When a sign is situated across an intersection from on-coming traffic, it is said to occupy a far-corner site. The main advantage of such a site is its enhanced visibility because of the added width of the cross street, which makes the sign visible from a greater distance. At the same time it suffers the danger of not being seen because it is usually one of a host of visual distractions located around an intersection, such as traffic signals, stop signs, other commercial messages, and directional signs.

LINEAR SITES

The best linear sites are those which are located along a commercial main street or "retail ribbon," as it is sometimes called. Such ribbon arteries are generally frequented by a large number of consumer motorists. Other than freeway sites, these linear or main street sites are in some ways the most truly automobile-oriented urban sites. Land values for linear sites are usually lower than for the zone of conflux sites, which tend to be in high demand. Yet if there is a high volume of traffic passing a sign in a linear site, the sign can still reach a vast number of people.

There are some visibility problems associated with linear sites, but adequate compensations can be made for most of these. To begin with, a sign on a linear site should be visible from a greater distance than if it were on a zone of conflux site, since traffic flows at a constant speed on main streets and a car will approach the sign at a much higher speed than it would if the sign were in a zone of conflux. The faster the rate of travel, the more limited the visibility and viewing time.[8]

One way of dealing with the problem of fast-moving vehicles is to choose a linear site in a place where traffic is forced to slow down. A good general rule is that the linear site for a sign should be placed immediately *after* the obstruction and not at the place of stopping or slowing down, since at the point of obstruction the driver's and passenger's attention will be distracted by the cause of the slow-down. Thus a good location for a sign would be on the far side of a traffic light or after a curve has been negotiated.

Another way of increasing sign visibility on a linear site is to increase the size and height of the signs. At 60 miles per hour a car moves 88 feet per second, which gives the motorist eleven seconds to read a sign at 1000 feet. On freeways, use of taller and larger signs has been a popular practice. One desirable method of increasing visibility is to contruct the sign at the top of a grade or at the extreme point on a curve. With the sign in such a location, the motorist will have extra opportunity to see and read it.

Two special considerations for signs on linear sites need to be elaborated: inside properties and one-way streets. An *inside property* is one which is located between intersections. Such sites encounter the problems of all linear sites as mentioned above, with a few additions. For instance, visibility can be inhibited when the sign appears to blend into or is blocked by adjacent structures. It is important that the sign be of a color or colors that distinguish it from its immediate neighbors.

Inside sites have advantages in open areas on highways or streets whose visibility can be very good. Such sites are usually priced lower than comparable square footage at corner sites.

When located on a one-way street, the prime advantage of a sign is that visibility can be quite high, particularly if the sign is located on a curve or a high point. Since the driver does not have to worry about on-coming traffic, there are fewer distractions. However, since traffic generally moves more rapidly and steadily on one-way streets, visibility and viewing distance remain important factors.

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[8]See: J. A. Prince. "Speed in Conveying Message Becomes More Vital Each Year." *Signs of the Times*. October, 1957, pages 40-41.

INTERNAL AND EXTERNAL SITE VARIABLES

There are four basic classes of variables that determine the effectiveness of a sign: (1) psychophysical; (2) socio-psychological; (3) transportational and (4) economic.

Psychophysical variables have to do with the purely mechanical process of vision and with the eye's ability to distinguish colors, shapes, and the like, as well as such psychological factors as reactions to basic shapes and symbols. This set of variables constitutes an important concern for areas such as sign design, visibility, and color coordination.

The *socio-psychological* variables are learned characteristics which people acquire through their social and educational environment and which determine the way they perceive and understand the information which the eye transmits to the brain. The income and life style of the person to whom the sign is directed are indicative of the way in which he will interpret the information.

Transportation variables include such factors as travel patterns, range, accessibility, and the dominant means of transportation.

Economic factors involve locational criteria such as cost of land, profitability, and availability of capital.

Any sign consists of a combination of these factors; it is the interaction of the variables that determines the value of the sign. If a site is inadequate with respect to one of these sets of variables, careful manipulation of the other can be used to offset this deficiency. Thus, a site with poor visibility may have a high circulation of viewers as a compensation.

In the beginning of this chapter we discussed the difference between "site" and "situation," as developed by earlier geographers. Site entailed the purely physical, landscape elements of a particular location, whereas situation involved a human context and socio-economic considerations. We can extend that discussion here to talk about *internal* and *external* site variables. Internal site variables, or "micro-locational" factors, as they have been called, refer to the intrinsic, physical variables of a site which influences its effectiveness.[9] External site variables, or "micro-locational" factors, refer to the variables associated with the human environment, such as the socio-economic climate of the surrounding area and its traffic patterns — factors which determine the economic viability of a certain site.

INTERNAL SITE VARIABLES

Internal site variables are those physical factors involved in site location which have to do with the relation of the site to its physical surroundings, to the flow of traffic, and to other advertising structures in the vicinity. Such factors as viewing distance, sign placement, the grade of streets, visibility, and layout are all internal site variables which influence the advertising effectiveness of a sign. These features affect the viewer in both a conscious and subconscious way.

SPACE POSITION VALUE (SPV)

One way to evaluate the composite value of internal site variables for a sign is to determine its Space Position Value (SPV), a concept de-

[9] R. J. Claus.

Table 2.1. SPACE POSITION VALUATION TABLE
Code and Scale of Values for Poster Panels

APPROACH			TYPES OF PANELS											
			Angled Single (AS) Angled nearest the Line of Travel (AE)		All Other Angled (A)				Parallel Single (PS) Parallel End of a Group (PE)		All Other Parallel (P)	
					In a Two Panel Facing		In a Facing With More Than Two Panels					
PEDESTRIAN	VEHICULAR Fast Travel	VEHICULAR Slow Travel	CODE	VALUE	CODE	VALUE	CODE	VALUE	CODE	VALUE	CODE	VALUE
Over 125 ft.	Long Approach Over 350 ft.	Over 250 ft.	1AS 1AE	10	1A	10	1A	9	1PS 1PE	8	1P	7
75 to 125 ft.	Medium Approach 200 to 350 ft.	150 to 250 ft.	2AS 2AE	8	2A	7	2A	7	2PS 2PE	6	2P	5
40 to 75 ft.	Short Approach 100 to 200 ft.	75 to 150 ft.	3AS 3AE	6	3A	5	3A	6	3PS 3PE	4	3P	3
Under 40 ft.	Flash Approach Under 100 ft.	Under 75 ft.	AF	4 3 2 1 0	AF	3 2 1 0	AF	3 2 1 0	PF	2 1 0	PF	1 0

Space Position Values in shaded areas are below A.A.A.A. Standards
Source: Traffic Audit Bureau, Inc. Standard Procedure for Evaluation of Outdoor Advertising (8th ed.) N.Y., 1974.

veloped by the Traffic Audit Bureau.[10] The SPV is a measure of the relative visibility of an outdoor advertising panel to the effective circulation to which it is exposed. This criterion is an indication of the efficiency with which a given panel utilizes its effective circulation. The calculation of a sign's SPV is based on a combination of four factors: (1) length of approach; (2) speed of travel; (3) angle of the panel to its circulation; and (4) the relation of the panel to adjacent panels or other display units.

The underlying assumption of SPV is that the greater the distance (within certain limits) during which a panel is totally visible to approaching traffic, the more effective the panel is in exposing the advertising message to people in the traffic stream. Although the length of approach is the basic variable in this concept, the other three factors can play an important role in determining the relative value of a given sign structure. There are numerous special circumstances that can affect a sign's SPV rating including: streets with one-way traffic; traffic counted in only one direction, as on a boulevard or parkway; near-side or far-side only exposure to a given traffic stream, either vehicular or pedestrian; setbacks; road closed to traffic as of a specific date.

The measurement of the approach distance of a panel is always from the vantage point of the driver's seat of a closed car. As the Space Position Value table (Table 2.1) indicates, the approach distance for the panel is rated as long, medium, short, or flash. This rating system does not consider panels which have an approach distance for vehicles of less than 50 feet or for pedestrians of less than 25 feet. Five hundred feet is considered the maximum possible viewing distance for a standard-sized poster panel.

The approach distance should always be measured along the line of travel on the street to which the panel is exposed, not along the line from the eye to the panel, unless the panel is "head-on" at the end of a street. In addition, if some material obstruction blocks a view of the panel over a certain distance, that interval must be subtracted from the total approach

Table 2.2. SETBACK REDUCTIONS FOR POSTER PANELS:
SPV should be reduced by the following points:

	Reduce Value of Poster Panel by:		
Setback Distance	Long Approach	Medium Approach	Short Approach
150-200	1	2	3
200-250	3	4	no rating allowed
250-300	5	no rating allowed	no rating allowed

distance. We shall discuss the problems presented by material obstructions later in this chapter.

Panels that are set back more than 150 feet are also subject to reductions in SPV. Any panel that is set back more than 400 feet from the roadway does not receive a SPV rating, according to TAB rules. The chart is shown in Table 2.2.

[10]Traffic Audit Bureau. *Standard Procedure for the Circulation Evaluation of Outdoor Advertising*. (7th ed.) New York: Author, 1972.

ANGLED AND PARALLEL PANELS

Distinctions also must be made between panels that are parallel to the flow of traffic and those that are placed at an angle to on-coming traffic. A panel is considered to be angled if one end is removed by 6 feet or more from the line of travel than is the other end. Although an angled panel is usually visible from a greater distance, its visibility is increasingly narrowed or foreshortened as one approaches the panel. This is especially true for panels of perpendicular angles.

The foreshortening effect is reversed for parallel panels, which become more visible as one moves closer. To compensate for foreshortening of angled panels, TAB indicates that a figure which is half the distance from the center of the panel to the line of travel should be deducted from the approach distance of the panel. The approach distance for a parallel panel should be no more than twice the distance from the center of the panel to the center of the roadway from which it is being rated. Although this is quite a short distance, it must be remembered that since parallel panels are visible to both directions of traffic, the approach distances should be doubled.

For most situations, especially on fast-moving freeways, angled panels will be visible over a far longer distance than parallel panels. One rule for determining panel angle is to place the panel at a right angle to a line from the center of the panel to a point on the line of travel approximately halfway between the beginning and the end of the approach.

OBSTRUCTIONS

Fixed or temporary obstructions to the visibility of the sign detract from the value of the site. Most signs and outdoor advertising displays in congested or urban areas are, of course, subject to some degree of obstruction by other buildings and structures. In order to determine the approach distance of a sign that is partially or totally blocked over some distance, one must, according to TAB guidelines, measure only from the point at which the entire face of the panel becomes visible. Besides buildings, canopies, balconies, tall trees, or other signs may be permanent obstructions which limit the visibility of a given panel. The most common of permanent obstructions is a building which at first conceals a panel completely and then gradually reveals the panel as one moves toward it.

Moving or sliding obstructions are those which appear to move across the face of the sign as a car or pedestrian approaches it. Trees, telephone poles, street signs, stop signs, and the like constitute moving obstructions which hinder visibility. Generally, if these obstructions are less than 2 feet in diameter, they are not considered material obstructions. A combination of small moving obstructions can, however, constitute a material obstruction that must be taken into account.

One often unavoidable obstruction is created by the foliage of trees in spring and summer. Although this may not constitute an obstruction for most of the year, it can substantially reduce visibility and approach during the summer and late spring months.

Besides the factors considered in determining the Space Position Value of a sign, a number of other features constitute the internal site variables for a given sign site.

GRADE OF ARTERIES AND STREETS

Since cities are rarely built on completely level terrain, many streets have some degree of grade. The grade of the street on which the sign is located can affect the sign's visibility appreciably. A site that is located at the top of a long hill or grade is usually quite striking and will attract most motorists' eyes. Similarly, a sign that is located at the bottom of a hill must compensate for this position by additional height, or run the risk of not being seen until the viewer is on a level with the sign.

Elevated freeways sometimes present problems because the signs that are to communicate to travelers on the freeway must be built on ground level. Thus they must be unusually tall; this involves additional costs and engineering considerations.

SIGN PLACEMENT

The placement of the sign in relation to the road and to its surroundings is of crucial importance. This includes sign placement angle, which should be approximately 30 degrees from a line perpendicular to the highway. The distance of the sign from the highway also must be considered. The further from the road the sign is, the bigger and more striking it must be if travelers are to see it. Generally, sign sites that are not directly off the freeway, but are set back several hundred feet, are less costly than prime advertising space abutting to the traveled way.

A large sign is of no use if it blends into the surrounding buildings. On bright sunny days in particular, an inconspicuous design will be overlooked by motorists traveling at moderate speeds. Signs should be placed so as not to reflect the sun especially during the return-from-work rush hours.

Directional signs on freeways should be placed one or two miles from the turn-off to the advertised business or service when possible. Distances greater than three miles limit the sign's effectiveness for some businesses while for certain motels 20 miles is not excessive.

NUMBER OF PANELS

The number of panels situated together will affect each sign's visibility. There should be a minimal number of panels in any one location to insure that they do not compete with one another for the viewer's attention. A small number of panels per facing also will reduce visual clutter and enhance the appearance of the site. Most outdoor advertisers agree that it is best to use only single panels except when special conditions warrant multiple use.

The number of panels that may be effectively used in any single facing depends upon internal and external variables such as length of approach, traffic speed, angle of placement, and relation to other panels in that facing.

Layouts must be carefully planned if they are to take maximum advantage of the site location variables for any particular site. Modern and efficient methods have been developed to determine the best layout of poster panels or bulletins for maximum impression. Suppose that two angled panels have been built on one lot, one with an approach of 220 feet in one direction, the other with a 200-foot approach in the opposite direction.

For a street of ordinary width, a frontage of about 80 feet is necessary to provide a medium approach of 200 feet for the first panel. If the street is wider or the traffic speed lower, two panels could be built in this manner on a lot as small as 65 or 70 feet. The best layouts are those with no more than two panels to a facing, angled and with a long approach. Poor layouts are the result of overcrowding, short approaches, and other detrimental factors.

EXTERNAL SITE VARIABLES

The external variables that determine the value of a particular site are those factors related to its social characteristics and environment such as business potential, area stability, population, income, and various competitive factors. Such concepts as threshold, traffic density, trade area, and trapping point are especially relevant in this regard.

TRAFFIC DENSITY

Whereas the threshold for a retail business such as a gasoline service station is related to the amount of gas pumped and services and repairs performed, for sign sites it is primarily a function of the circulation of viewers passing the sign. Traffic density, or the volume of traffic passing the site at any particular time, is a crucial indication of the number of people who will see the sign. This volume of traffic can be computed from a basic traffic count. Usually this is done by counting the traffic at certain representative hours and extrapolating from these figures an estimated traffic count for a certain period of time, either a day, week, or month.

The Traffic Audit Bureau did a survey which shows the percentage volume of passenger car traffic according to the time of day. As is to be expected, traffic is heaviest at the rush hours, light at noon and drops off towards evening. From 6 to 8 a.m. total passages showed 15.6%, 9 to 11 a.m. began a decrease with 15.2% while the drop at noon was to 5.7% and a sharp increase to 17.9% followed from 1 to 3 p.m. The high from 4 to 5 p.m. was 19.7% and the decrease began again at 6 p.m. to 8 p.m. with 15.5% between 9 and 11 p.m.

For a linear site, traffic flows in only two directions, and this can be counted by a single person. For any zone-of-conflux site, however, unless one or both arteries are one-way streets, 12 possible traffic patterns exist. This complicates the matter of traffic counts.[11]

Most city traffic engineering departments have traffic count data which can be used in estimating traffic flows for given sites. Table 2.3 is a typical Traffic Flow Chart for the City of Vancouver, British Columbia. Such counts may either be automatic counts taken by mechanical means or manual counts performed by the traffic department staff. The data collected must be re-evaluated if it is to be used for circulation estimates, since it is usually collected for totally different purposes, such as determining peak traffic hours.

Many attempts to rate the effectiveness of a sign based solely on an evaluation of traffic data may fail to provide an adequate and accurate

[11] For a discussion of methods of executing a 12-way traffic count, see E. W. Campbell. Traffic counting studies. In D. E. Cleveland (ed.) *Manual of Traffic Engineering Studies*. Washington, D.C.: Institute of Traffic Engineers, 1964.

idea of who the sign viewers are. Careful surveys and detailed research must be conducted to obtain a fairly reliable profile of the types of travelers, cars, and amount of traffic that utilizes a certain highway at a specific time. A detailed study of the Detroit freeway system by the 3M National Advertising Company in 1971 is an example of such an in-depth study.

The purpose of the Detroit study was to determine the relationship of freeway usage to the effectiveness of outdoor advertising, or more specifically, to determine the reach and frequency of expressway advertising

Table 2.3. TRAFFIC FLOW CHART

Time	Point A:		Point B:		Point C:		Point D:	
A.M.	N.	S.	N.	S.	N.	S.	N.	S.
1:00	251	447	265	534	220	596	261	261
2:00	157	346	160	350	50	168	94	133
3:00	215	220	95	205	35	87	35	59
4:00	167	88	60	93	21	60	9	20
5:00	84	1	37	51	24	30	18	22
6:00	84	28	75	99	57	104	30	60
7:00	135	109	276	313	249	305	196	241
8:00	340	308	1250	552	1145	574	957	589
9:00	568	475	1407	854	1407	730	1078	652
10:00	475	349	381	842	774	552	647	541
11:00	451	292	735	853	684	726	486	582
12:00	535	667	884	927	777	836	601	651
P.M.								
1:00	556	639	846	997	710	931	571	671
2:00	570	570	825	1075	850	889	612	686
3:00	564	663	855	1149	788	982	578	688
4.00	539	717	778	1229	779	1157	668	848
5:00	468	860	832	1605	818	1609	816	1100
6:00	405	880	665	1482	620	1740	651	1424
7:00	384	499	641	1009	529	867	589	777
8:00	506	541	803	799	766	700	666	580
9:00	573	672	728	819	607	620	448	618
10:00	547	749	672	951	505	706	429	607
11:00	435	656	478	752	474	637	406	530
12:00	423	581	454	770	333	613	292	468
Total	9438	11358	14640	18318	13262	16029	11139	12868

GRANVILLE STREET, VANCOUVER: Point A: Granville and Nelson St., Wednesday, August 12th, 1970; Point B: Granville and 6th Ave., Thursday, July 30th, 1970; Point C: Granville and 32nd Ave., Monday, July 22nd, 1970; Point D: Granville and 57th Ave., Thursday, March 19th, 1970.

signs and to provide a demographic description of the outdoor audience. The study used a random telephone sample of 1500 adult respondents. For the Detroit freeway system, the standard measurement techniques found that expressways alone can provide the opportunity for 85% market coverage and a repetition of over 25 times per month. A demographic

analysis of the traffic stream revealed that 40% of the population makes up nearly 85% of the traffic flow. This 40% can be best characterized in the following categories: younger, better educated, holding better jobs, having higher incomes, bigger families, and owning more late model cars than the audience of any general coverage medium.[12]

TRADE AREA

The relationship of site location to the trade area in which it is situated also is an important consideration. The trade area is that area from which most of the site's viewers are generated. The size of the trade area varies greatly with the function of the site. A main street shopping center may draw half of its customers from within a half-mile radius, whereas a large, regional shopping center may have a customer market of 30 miles.

The concept of trade areas is a dynamic one, not a static locational phenomenon. The trade area changes with consumer preferences and traffic patterns, a fact which may endanger the value of a site that was formerly in the heart of the trading area. There can be an overlap of trade areas depending upon the nature of retail activities and the changes described above.

Some people distinguish between primary and secondary trade areas. The primary trade area includes regular shoppers for all types of retail goods and services, while the secondary trade area is used by comparison shoppers, those who are seeking particular goods but who are willing to shop at several stores to compare quality and prices. These people are willing to travel a longer distance and spend more time traveling than shoppers in the primary trade area.

According to statistics taken from the U.S. Bureau of Public Roads, "Highway Transportation," *Institute of Outdoor Advertising Fact Book,* 1967, page 7. The distribution of car trips by miles traveled broke down as follows:

100 miles or more	0.8%
40 - 99 miles	2.1%
20 - 39 miles	5.3%
10 - 19 miles	12.3%
5 - 9 miles	19.9%
Under 5 miles	59.6%

Six of every ten trips are of less than five miles distance; eight of every ten are less than ten miles. In other words, the vast majority of all automobile trips take place within a short distance of the passenger's home or neighborhood.

According to "Automobile Facts and Figures," 90.4% of all automobile trips in the United States are *in market,* that is, either entirely within a city or partially within a city and partially rural. The average one-way trip is 8 miles, and the average shopping trip is 3.8 miles. On the average trip there are 1.7 occupants per car.

The trade area concept has been a central tenet of the advertising programs of many non-standardized advertising companies. The population of a small town can be viewed as a unified group together with the

[12]R. J. Claus and W. G. Hardwick. *The Mobile Consumer.* Don Mills, Ontario: Collier-Macmillan Canada, Ltd., 1972. 89-130.

population of the surrounding area which depends upon the small town for its goods and services. With this orientation, one can conceive of an effective advertising campaign to expose a vast percentage of those people who drive in the area to the advertising message. It has been found that these small trading areas are most suitable for an intensive outdoor advertising effort.

A survey conducted by the 3M National for the Hartford Insurance Company illustrates the effectiveness of outdoor advertising in local trade areas.[13] The purpose of the study was to determine how much the use of outdoor advertising signs picturing individual local Hartford agents contributed to an increased awareness of both the local agent and the Hartford Company among the local populace of the trade area. This longitudinal study was conducted three times over a 4-year period in three typical towns. It was first found that 11 signs erected in the three towns resulted

Table 2.4. CHANGES IN AWARENESS OF HARTFORD GENERAL ADVERTISING

Media	1962	1964	1966
Radio	7%	4%	6%
Newspaper	9%	8%	10%
Television	12%	15%	21%
Magazines	30%	30%	28%
Yellow pages	6%	3%	8%
Highway Signs	8%	18%	35%

in an average trade area coverage of about 95% which remained fairly constant over the 3 years, and an average frequency of 15 to 18 exposures per month. Thus, nearly all the able-bodied adults in the trading area were exposed to the sign program.

When residents of test areas were asked to name all the insurance agents in the area, their awareness of the local Hartford agent increased nearly 100% over the 4-year span during which the signs were used. In

Table 2.5. INCREASE IN NUMBER OF PEOPLE INSURING WITH HARTFORD

Type of Insurance	1962	1964	1966
Auto	3%	4%	5%
Home/Contents	3%	6%	6%
Life	1%	1%	1%
Business	0%	1%	2%
Total	7%	12%	14%

addition, their awareness of the Hartford Company itself increased more than fourfold as a result of the outdoor campaign (see Table 2.4). Most importantly, the number of people insuring with Hartford increased signifi-

[13] 3M National Advertising Co. "A Survey for the Hartford Insurance Group." Argo, Illinois: Author, 1967.

cantly. In 1962, 7% of the people in the trading area bought some form of Hartford insurance; in 1966 this figure had increased to 14% (see Table 2.5). Findings were highly instructive in comparing highway advertising to other media (see Table 2.6).

Table 2.6 illustrates the unique coverage and advertising exposure which highway signs deliver in small trade areas. The figures in the table represent the responses of the people asked to name those kinds of advertising where they had seen or heard about the Hartford recently.

THE TRAPPING POINT

Perhaps the single most important of external site variables is location at a trapping point. By definition, a trapping point is the entrance to a

Table 2.6. COMPARISON OF THIS AVERAGE AWARENESS OF FIVE MEDIA TO HIGHWAY ADVERTISING

Media	1962	1964	1966
Average 5 Media	13%	12%	15%
Highway Signs	8%	18%	35%

place at which the obstacles to the entrance of a particular site are minimal and the inducements to enter the site are maximized. Although this concept is especially useful to retail establishments which are interested in attracting customers from the highway, it also is valuable in evaluating sign sites: a point where a large number of motorists exist from a highway is a prime site for a sign.

A high volume traffic artery may or may not provide a large number of prospective customers, depending on the presence of an obvious and simple exit from that artery.

The concept of trapping point is related to that of the zone-of-conflux, but emphasizes the dynamic and variable aspect of retail consumer behavior. The zone of conflux may, in fact, not always be the best trapping point. Also, just as trade areas may overlap, there may be more than one trapping point in a given trade area.

The primary variables for evaluating a trapping point are: (1) traffic volume; (2) type of artery; (3) speed of traffic; (4) type of traveler; and (5) intersection characteristics.

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Chapter 3
SIGNAGE APPRAISAL

The appraisal of outdoor advertising structures and on-premise signs has traditionally been treated as an adjunct of real estate appraisal largely because of the relatively infrequent and generally uncomplicated transactions involving outdoor signs. With the advent of the U. S. Highway Beautification Act in 1965, which attempted to drastically restrict the usage of standardized and non-standardized outdoor advertising signs along federal highways and major arteries, more precise, varied and comprehensive methods of appraising signs have been greatly needed.

Under the guidelines developed by the State-Bureau of Public Roads Agreements in conjunction with the Beautification Act, the only permissible signs along interstate highways are: (1) official signs and notices; (2) signs advertising the sale or lease of property on which they are located; (3) signs advertising activities conducted on the property on which they are located; (4) directional signs, and (5) signs in areas that are zoned industrial or commercial as well as in unzoned areas in those districts. This law has necessitated the removal of many outdoor advertising structures, both standardized billboards owned by sign companies, and non-standardized informational or directional signs owned by private individuals. The serious and often disastrous consequences of this law, especially upon many small businesses which rely on highway advertising for their existence, are discussed in other chapters. This chapter will concentrate on the methods and problems involved in determining the actual value of these signs to their owners.

There are two important aspects of signage appraisal: valuation of the site upon which it is located and valuation of the sign itself. In the past appraisal methods have tended to concentrate upon land use rather than upon actual sign value. This may be due, on the one hand, to the fact that professional appraisers by the very nature of the type of assignments they have usually had, emphasize the land use portion of sign value; for the most part, appraisers have been hired by government agencies to appraise situations where the sign interest is a very minor part of the overall land properties taken. On the other hand, under highway construction, urban renewal, etc., the sign interest and the land have been taken together. Since few signs were involved in such projects, there has been very little challenge by sign owners to the inadequate appraisal values developed in the past.

Since the Highway Beautification Act involves the taking of the signs themselves without also taking the land on which the signs are located, the old appraisal methods have proven unsatisfactory. Formerly, the sign interest was overshadowed by the greater value of the land. Often, very low, or no compensation at all was paid to the sign owner, especially in rural areas. Some states classified signs as personal property, thereby putting signs in the same category as farm machinery. The owner was simply told to pull "the machinery" off the newly acquired government right of way. Threatened by the massive takings planned by the Beautification Act, sign

owners are now getting appraisers to measure the true value of their outdoor advertising structures.

MARKET VALUE

The appraisal of outdoor advertising signs and on-premise signs is an important and problematic concern for sign companies, real estate appraisers, and government agencies. We can define appraisal as an estimate of value of real estate or other items at a given time. Yet right from the start, the difficulties are apparent when we deal with the meaning of the word "value." First of all, this term varies in meaning according to the context in which it is being used. That is, the mortgage value, insurance value, and the value involved in the taking of property under eminent domain must all be treated differently. Secondly, problems arise when we try to determine what constitutes value: is the value of a sign merely the cost of the sign's construction and the land on which it is located, or is it the price that the sign would bring on the open market, or is it the amount of income that the sign contributes to the respective business, or is its value in allowing a merchant to communicate and hence enter the otherwise closed marketplace? As can be seen, signage appraisal involves many questions; this chapter will be an attempt to outline these problems and indicate some possible solutions.

In one sense, one can speak of the market value of any property as that price which the owner of the property can receive for it on the open market. The starting point for determining property value is to ascertain the relative strength of the demand in the market place for a particular item, and the supply of that item available. Demand in this case is the willingness of people to pay for the item, and supply is the willingness of the seller to part with that item. Generally speaking, as the demand increases price increases, as the supply increases price will decrease. Considerable amounts of work have been done by economists on the theory of price and demand, but such considerations go beyond the scope of this particular work.

A number of assorted factors are usually associated with the demand of any particular item in the market place, whether it is signage or any other item. Other sections of this book elaborate on these factors in greater detail. They include, however:

1. the demographics of the population involved, i.e., age, income, etc.
2. life style
3. transportation
4. governmental policies
5. technological development
6. interest rates
7. level of competition

Similarly, a number of factors often influence the supply of an item:

1. technological advances
2. increasing and decreasing consumers' income
3. governmental policies
4. zoning and other code requirements
5. construction costs

Let us take, as an example, the effect of municipal or local ordinances concerning signs in certain areas. Outdoor advertising signs are, to begin with, almost universally limited in residential areas, since they are often not compatible with local (areal characteristics) amenities of the area. In commercial areas, signs are often permitted in some zones and not in others, or permitted on one street and not on another, or even sometimes, permitted on one side of a street and not on the other. In some cases these controls limit the period of use for existing signs or dictate the supply of sites for new signs within their jurisdiction. It is thus important that the sign appraiser be acquainted with the local ordinances of the area in which the particular sign is located, in order to know if the sign will be more strictly regulated in the near future or has a specified time limit, etc.

PROBLEM AREAS IN SIGNAGE APPRAISAL

One of the major factors to consider when appraising signs is the value of the sign in relation to its site or location, and to the best economic use of the land. For example, the sign may have an *interim use* value if it is located on land which can be of greater value when used in another way, say the construction of an apartment building, but for the present is being used as a sign site to reduce costs while the property is in this transitional phase. Signs that are not considered an interim use are intended for permanent usage and, as such, they are divided into two categories, *ancillary use* and *dominant use.*

A sign has ancillary use when it is located on a property whose primary use in industrial or commercial or agricultural; in this case the presence of a sign in no way affects the principal operation of the land, but merely provides additional income for the landowner. A sign may be the dominant use value of a property when it is on a very small or poorly situated piece of land which can have no other more productive economic use.

At this point, it is useful to introduce the term *highest and best use.* When real estate is said to represent the highest and best use of a particular site, the inference is that the land has reached its greatest possible income or its greatest value creating potential. A specific land use program can be determined for any property which will result in a higher property value or higher net return than any other alternative land use. This means that the land has been developed with the financially most profitable structure or building. The concept of highest and best use, as with many terms, has not retained the same definition over periods of time. The following discussion may help to clarify the present meaning ascribed to this word.

Cities are usually divided into different zones of land use — residential, commercial, or industrial. If, for instance, one went into a heavy industrial area, purchased a lot and erected a detached, single family house (assuming it was a permitted use), this would generally be a poor use of the property and clearly not be developing the site to its highest and best use. In other words, one should go into a zone and build the type of structure or business most compatible with the characteristics of that zone. Next, the landowner would seek to improve his property in a suitable manner for the zone. For instance, if one took a high class industrial area and found a lot whose highest and best use was for a sign board, then put in a wooden signage structure of 4 x 4s heavily braced with 2 x 4s, this would not be improving the site to the best use.

The question is often raised, whether a sign can be the highest and best use of a particular piece of land. As we have mentioned above, this depends on the nature of the area, but it is possible that an outdoor advertising display may be the highest and best use. Due to either poor access, limited size, or some other physical restriction, such sites might be unsuitable for any other land use. Strips of land near bridges, steep hillsides, or small islands surrounded by streets are prime examples of sites that are virtually unusable for any other productive purpose, but are in fact excellent sites for signs, due to their access to passerbys, unique location, or special visibility or attention-getting qualities. As such, they can generate an income out of proportion to their mere physical characteristics.

In connection with the concept of highest and best use, we should mention a popular academic model that has been used for some time in an attempt to find optimum locations for outdoor advertising displays — the *gravity model.* A gravity model attempts to find the place in a given trade area that is the cheapest to which to travel, or so to speak, a trapping point to obtain the most business. It is the minimum distance from the maximum number of places within the trade area. Theoretically this is what creates property value. A large part of most theoretical models and certainly the concentric land use model, are based on this gravity model concept of ancillary use.

The preceding discussion of the different uses of a sign in relation to its site is crucial to the appraiser who must determine the value of the sign to the property. If a sign is just an interim use of a property, the removal of the sign will have only a limited effect upon the property value of that site, since the site is intended for different, more productive use. But if the sign is a permanent feature of the property, the removal of the sign will involve the permanent loss of income and thus of property value for that site. This is especially true for sites whose highest and best use is as a site for an advertising sign. If this sign must be removed, this action is destroying a significant part of the property value of the land. Thus it is clear that the contribution that a sign makes to the property value is a major consideration for the appraiser.

Even if we are dealing just with signs that represent an interim use of a particular piece of land, there are some complications in ascertaining the sign's value. On the one hand, many such signs can have a very short economic life, often no more than five years since maintaining a property without developing it towards its highest and best use for longer than five years becomes unprofitable. Most off-premise sign companies cannot accept a short term use of vacant land without a built-in amortization in the lease arrangement. Such an interim use is not productive in the usual sense that it is developing the site towards its highest and best use. Yet on the other hand, from the landlord's standpoint, any rental from a sign user or sign company is all net gain that he would not have overwise enjoyed, until such time as the property is developed. Compared to an old, unused building on the same spot, a sign is an excellent interim use, as it is easier to remove and the tenant is usually reliable.

Like a sign serving as an interim use, a sign serving as an ancillary land use also tends usually to contribute only a small part to the overall property value. But the difference is that a sign which is an ancillary use probably has a much longer economic life and may represent an additional

source of income which accounts for a certain part of the property value. Although the contribution of the sign income to land in general is relatively minor, the income attributable to the actual land occupied by the sign structure would be more than commensurate with the return on the remainder of the property. It also can influence the economic rent of the dominant use of the property. For example, a commercial building may have a large advertising sign on top, and because of the income produced by the rental of this sign, the owner of the business may not have to pay as much to the landowner. Thus, the appraiser must consider when viewing such a sign, not only the amount of additional income which it provided to the property as economic rental, but also its influence on the economic rent of dominant use of that property.

An ancillary use also affects the land use in another way which an interim use does not. An ancillary use occupies a certain portion of the land, which therefore cannot be devoted to the dominant use. For example, a service station may have rented a certain portion of its property to a sign company. However, because both the land on which the sign is located and a certain amount of adjoining land must remain unobstructed in order to assure the visibility of the sign, the dominant use of that property is limited. An interim use of the land does not have to deal with this problem, since there is no other dominant land use. But in determining the additional value contributed by an outdoor advertising display, one must keep in mind the ways in which the sign can off-set the maximum utilization of the dominant use.

THE LARGER PARCEL CONCEPT

Another problem which often arises in sign appraisal has to do with what is called "the larger parcel." This concept is a legal definition of all the land under one ownership, contiguous, and used for the same purpose as a larger parcel. This concept has evolved to deal with partial takings of large properties in order to determine a more equitable severance damage settlement.

The concept of severance damage is that if the taking of a certain part of a property has injurious effects or devaluates the worth of the remaining property, then compensation must be made for these damages. For example, the larger parcel of a property on which a sign is situated may be 200 acres of farmland, and the sign may occupy only a fraction of one acre of that land. Yet, that one acre on which the sign is located is clearly more valuable in terms of producing income than any other comparable acre of the property. If one were to appraise the value of that one acre as equal to the average value of any one acre on a 200 acre property, only a marginal value would accrue to that land. Since it is clear that this one specific area which is being taken has a higher unit value than the average of the whole, the appraiser can more properly determine the real value of this small portion.

In other words, we can talk about the various *zones of value* within the larger parcel, and these various zones can be appraised individually. In California these zones of value are legally recognized, and appraisal can deal with these special zones almost as if they were separate parcels themselves. Thus logically, whenever the taking of a sign will eliminate

just a small portion of land from the larger parcel, all of the sign's rental contribution to the value of the property should be allocated to the severance damages.

The question of severance damages is one that frequently arises when the government takes a certain number of a sign company's signs. The problem of determining severance damages is primarily legal in nature, and thus not for the appraiser to resolve. However, the appraiser must be advised of the proper premise under which he is to work.

The latest government guidelines indicate that "federal participation will not be allowed in the payment of damages to remaining signs or other property of a sign company alleged to be due to the taking of some of the company's signs."[1] The only time that severance damages are allowable is when "unity of use of the separate properties" can be shown, as required by applicable principles of eminent domain law. While unity of use has been difficult to prove, each year is making it more applicable.

A related matter is the effect of sign removal on a business and whether the government should be obligated to compensate a business for profits lost. Such a loss of business is only now becoming compensable. This is because the severe consequences for the small sign company or for the small merchant who is forced to remove his on-premise sign is now being more clearly recognized. This problem will be discussed in more detail later.

OTHER PROBLEMATIC AREAS IN SIGNAGE APPRAISAL

The preceding areas, dealing mainly with determining the contribution which the sign makes toward the value of the property on which it is situated, constitute one major concern in sign appraising. Other difficulties arise when trying to evaluate the sign's location and the actual value of the sign itself.

In regard to a sign's location, a number of factors must be considered when fixing a certain value of the sign. In areas which are undergoing some marked changes in development, the location of an outdoor advertising structure can be almost a high risk element due to the changing conditions around the sign area. Blockage of view due to construction on an adjacent site presents one of the most obvious risks, especially to signs into which considerable investment has gone, such as long-term ancillary signs. In determining the value which the sign contributes to the land site, the appraiser must consider the potential duration of this source of income. If, due to the rapid development of a certain neighborhood, it is probable that the sign will be blocked by new construction in the near future, the stream of income from the sign must be valued only for a specified period of time. At the same time, the sites which are protected from blockage by virtue of their particular position, have an asset which should be kept in mind. Also competition and brightness from other signs constitute a form of blockage if the sign in question somehow gets obscured by these competing elements.

Changes in traffic patterns or the construction of new highway systems also can detrimentally and seriously affect the economic life of an outdoor

[1]United States Department of Transportation. Policy and Procedure Memorandum: PM 80-5.2, Washington, Author, 1972, paragraph 11d.

advertising display. Improvements in local road and freeway systems often alter the flow of traffic to such an extent that signs which previously may have enjoyed a high circulation of motorists, now are bypassed. The appraiser must keep in mind such developments as well as proposed road changes which might improve the quality of a site.

Varying construction costs are another factor in the appraisal considerations. Both building codes and practical foresight in attempting to insure the physical life of an outdoor advertising display for a certain number of years dictate that the advertising structure be well built and braced and able to withstand high wind loads. In fact, all signs today must be engineered to withstand the environmental forces they will encounter. The larger and more spectacular the sign, the greater the structural requirements will be, and thus the higher the construction costs involved. Signs such as road signs demand special engineering techniques, which is an additional cost. Naturally the larger and more conspicuous the sign structure, the more income the advertiser can expect to derive from the sign, and the more he should be willing to pay for the construction of the structure.

One of the most important criteria in determining the value of a sign, and in most cases a determining factor in determining the economic rent paid to the landowner, is the *effective circulation* (number of potential viewers). The effective circulation, in terms of the numbers of private vehicles, pedestrians, and mass transportation vehicles that have the opportunity to observe the sign, in many ways contributes to the market value of the sign. A systemized method of computing the effective circulation has been developed and a special auditing agency, Traffic Audit Bureau, (see Site Location Variables) has been set up by the national organizations of plant operators, advertisers, and advertising agencies to make studies of the effective circulation for different signs.

In itself, however, the mere effective circulation is not a complete indication of the efficiency of an outdoor advertising display. The make-up of traffic circulating past different locations is often widely different and thus varies in quality for the advertiser. For example, a sign advertising a certain brand of alcoholic beverage might be as valuable to an advertiser if it were in an area of night clubs and bars as the same sign on a major highway, even if the highway sign had a greater effective circulation. Similarly, it is clear that an advertiser would be prone to prefer to have a sign in an attractive neighborhood than in a deteriorated neighborhood, which might shed a bad light on his product.

Determining the value of the sign itself, aside from the value it contributes to the property, also involves certain difficulties. For one thing, on-premise signs are not often resold, which makes it difficult to get some idea of their relative market value. Only occasionally are certain areas or the facings of the signs taken out and redone. Furthermore, appraisal of a sign is complicated by the argument that signs are not merely a simple communication device, but are often semi-art forms, which, as such, often facilitate the communication of the message. Trying to judge the value of a sign as an art form is a touchy matter indeed.

In addition, when one seeks to analyze billboards, it becomes evident that there has been little turnover in outdoor advertising plants primarily because there are seldom more than two standardized billboard companies

in any metropolitan area. In recent months, however, there has been more sale of plants than in previous history. This makes it difficult for the appraiser to obtain figures for the value of a similar sign. Also if a large number of signs are being taken from one outdoor advertising plant, which causes the overall efficiency of the plant to be impaired, the plant should be compensated for damages. If the number of signs being lost to a large plant is small, it is doubtful that there is any real damage to the overall plant, since a certain mortality rate among signs is to be expected. The best method for obtaining replacement costs, if possible is to audit billboard plants. One can also secure bids from local contractors or refer to national companies which supply cost information.

Appraisal of on-premise signs involves further complications in that each of these signs differs to a degree in its importance to its particular business. Certainly, generalizations can be made about the importance of a sign to a type of business but absolute generalizations are difficult. One would have to look at each sign separately if the exact value contributed to the business in terms of income were to be computed. In some cases, the taking of a sign might mean the death of the business, especially when it is a question of on-premise signs.

A current, well-publicized example of this situation is the confrontation in the North Beach area of San Francisco, where the proprietors of nightclubs having spectacular on-premise signs advertising nude dancers have been ordered by municipal officials to remove these signs. The owners have rightfully claimed that these signs are the major source of their business' income, and the removal of these signs would signal the failure of the nightclubs. Obviously, then, the amount of income which a sign is responsible for producing for its advertiser is an important criterion in appraising its value.

APPRAISAL TECHNIQUES

Many signs to be acquired are owned by outdoor advertising companies and in certain instances a substantial number of signs owned by one individual or company are scheduled for removal. The question has been raised as to the effect of sign removal on a business and whether or not a measurable loss to the business is a question for an appraiser to consider. Another problem area is the question of severance damages to the plant and/or the remaining signs. Severance damages are a special case and must be fully documented both from appraisal and legal standpoints. If a large percentage of the signs owned by an individual or company are to be taken then the condemning agency has the obligation to analyze the question of severance damages to see if it has occurred in the first place, and if so, if it is compensable under state law.

Generally speaking, appraisals are usually of individual structures and this means that the appraiser must be furnished the proper information so that he can locate and inspect the sign in order to ascertain the type of sign, height above the ground, dimensions, type of construction, type of illumination, distance from power sources, soil conditions, etc. Once the physical data have been obtained and the sign has been photographed, the appraiser must determine which appraisal approach to value should be utilized.

DONALD SUTTE'S APPRAISAL APPROACH

The appraiser looks at real property and attempts to establish its value; he is looking at a group of associated factors and trying to correlate them in some sense with the notion of "value." While oftentimes the factors the appraiser will look at are directly related to value, more often it is difficult to ascertain a cause and effect relationship.

The basic question is what factors do contribute to value and how can their contributions be evaluated. While considerable difference in opinion exists among experts as to what factors should be included in an appraiser's report, Donald Sutte's formulation sums up some of the most important elements.[2] He says the appraisal report for the valuation of a sign should contain the following items:

1. Location of the property
2. Type of property
3. Description of the whole property
4. Description of the part taken
5. Legal description
6. Method of valuation and various rights appraised
7. Present owner
8. Present tenants
9. Terms of the lease
10. Present use
11. Zoning
12. Highest and best use before and after the taking
13. Property sales records (history)
14. General description of the area
15. Comparable sales data
16. Methods of adjustments
17. Applicable approaches to value
18. Correlation
19. Limiting conditions
20. Relocation and reconstruction costs (if applicable)

There are three standard techniques used in determining value: (1) the market approach or comparison method; (2) the cost method; and (3) the income approach. We will attempt to deal with each of these methods in detail, discussing both their strong points and their weaknesses.

MARKET APPROACH TO VALUE

The market approach to value is an effective and accepted method of appraisal, especially for standardized billboard showings, for which the appraiser can usually find comparable data for similar poster panels. This measurement is obtained by gathering comparable sale details in the same market area. Obviously, the information should closely parallel the value of the item or items being appraised. There isn't plentiful data on individual signs, but on the other hand, there have been sufficient amounts of sales of entire billboard plant facilities throughout the United States.

[2]D. Sutte. *The Appraisal of Roadside Advertising Signs.* Chicago: American Institute of Real Estate Appraisers, June 1972.

Digressing for a moment, we should further analyze this sales information. In the State of Texas alone more than $20 million were spent within 24 months to purchase outdoor advertising facilities within that state. In addition, several million were spent in California in 30 months. These are just a few examples of numerous amounts of outdoor advertising assets which are being bought and sold at a rapid rate. It isn't too difficult for a good appraiser to be able to value the average outdoor advertising structure within one of these markets when the entire financial picture is made available.

In addition to this kind of information, three to eight comparable signs should be investigated; and it is best if these signs have been sold or rented within the past 18 months. The following information should be obtained from the plant operators of these similar signs:

1. effective circulation of the display
2. its space position value (SPV) rating
3. its sales condition
4. its location and services
5. construction and maintenance costs
6. the ease or difficulty of replacing the sign
7. its age and appearance
8. estimated economic rent
9. indicated value of sales
10. other adjustments

This data should be obtained for each of the signs and an adjustment should be made for each of the items mentioned above. A total value should be determined for that sign in relation to the sign being appraised. If the determined values for each comparable sign are then added together, and this number is divided by the number of units used, a fair value of the subject property will result.

In addition to getting this information from the plant operator, an interview with the owner of the property also can reveal useful, comparative information. It is important to find out from the owner whether the property was acquired with the sign structure already on the site, or if a lease was negotiated with the sign company or advertiser after the acquisition of the property. The appraiser should find out what the dominant use of the land is, whether the income from the billboard was a factor included in the calculations for the sales price of the property, the terms of the lease with the sign company, etc.

To illustrate this market approach, let's look at an oversimplified example of two similar non-standardized billboards (directional and information signs) operated by two motels, both national franchisers and both located on a similar highway in a stretch where the behavior pattern or the profile of the highway travelers is relatively similar.

First, one must carefully establish how active the marketplace is in order to see if a sale is relevant. Then, in order to establish the similarities of the type of signs, the type and functions of the two signs must be compared.

Next, the different locations must be evaluated. One must determine the potential market each sign is appealing to, that is its trade area, or market segment. Are the signs relatively similar in terms of the type and volume of customers viewing them?

The legal and governmental aspects of the two signs also must be compared. For example, taxes and relative governmental services must be considered because of all the problems in this area that can adversely affect the income level of the sign. The title conditions must be considered, that is, how the title passes on or whether the property was leased or not. For instance, if the fee simply and absolutely passes, then there is one value; if the terms of the sale are less than fee simple, then value must be deducted. The precise terms of the sale are important, obviously if there was a long term contract of sale with low interest rates, it would affect whether or not the terms were actually similar. A small down payment and low interest rate usually, in effect, establish a higher value than an all cash sale at the same purchase price.

The construction and maintenance costs of the two signs must be analyzed. First of all, are the two structures (supports and foundations) similar, and are the designs of the two structures similar? With the non-standardized, on-premise signs or the standardized billboard in a similar location with similar exposure, one would in this case only have to ask about the structural characteristics. If dealing with a customized on-premise sign, the design could present serious problems. Furthermore, the appraiser must compare the maintenance and the condition of both structures, the construction to structural and electrical material specifications, and the extras or equipment that go with the sign such as lighting, etc.

Some of the actual information for such a comparison can be obtained from the county recorder's office, the deeds on the transaction record. County revenue stamps can help determine the price paid for a property; the county tax records are an additionally useful source. The problem often encountered in appraising the market value of a property is that the relevant information is often not readily available. Purchase or lease prices are not generally listed in any of the standard real estate sources. One cannot go to the listing books of brokers and find recorded sales on commercial and industrial properties.

A few other possible sources of information should be mentioned. Among these are local, state, or regional sign associations, which often have information about sales, and the trade magazine, *SIGNS of the Times*.

The rental or leasing price also can be a factor which is difficult to gauge. Sign companies keep records on the amount of money that can be produced by some individual signs and this can serve as an indication of the value of a sign.

Signage pricing has a low market competitive factor for two reasons: First, the purchase and sale of outdoor structures is at a low level due to the limited supply of signs; and secondly, in on-premise signage the custom design elements limit initial bidding somewhat and serve as prohibitive factors in the re-sale of on-premise signs.

Clearly the market approach to value has certain advantages and disadvantages. Its principal advantage over other appraisal methods is that it is not abstract, nor does it demand conceptualization of the problem. It is not essentially merely the manipulation of numbers through a formula or model; the market place has created the numbers. Its major disadvantage is the difficulty in obtaining the necessary information, since signage as such does not often enter into the market place in a buying and selling situation.

In summary, the market data approach as it applies to outdoor advertising can be realistic information for valuing outdoor advertising signs. It would seem reasonable in the future application of appraisal techniques to establish specific values for outdoor advertising structures using the market data theory.

COST APPROACH

Under certain conditions the cost approach to value might be the fairest and most accurate method of signage appraisal. This is especially the case when either the conditions of the market place are not stable or when there is a low frequency of sales, or when a large number of new units are competing in the market place against other units under construction. The cost approach has in the past been the predominant approach to the appraisal of signs; it has been the method most often adopted by the federal government's appraisal of outdoor advertising locations. It usually gives the lowest value to signage and assumes no mass taking and an immediate availability of other sites for signage construction.

The basic feature of the cost approach is to establish today's value (cost to reproduce) of the advertising structure and then build applicable depreciation. In determining this value, the cost of improvement includes all the construction and design elements that make up the sign as a whole —building, landscaping, fencing, the foundations, lighting, etc. This figure would include the items that would be incurred by a contractor if he were to build the same structure to obtain its current condition. This cost of improvement factor must, of course, take into account an allowance for depreciation of the structure since it was built.

The major objection to cost to reproduce, less depreciation, theory can be summed up as follows: Often this approach to value, although commensurate with its physical "nuts and bolts" evaluation, is not representative of the value of the sign in an arm's length sales transaction. In effect, a sign or group of signs well-placed and well-maintained are often worth more to another party than the mere "nuts and bolts" evaluation. In conventional appraisal work, the theory of the three appraisal approaches generally is accepted. (While with constantly increasing government regulations this is even more true.) However, when measuring the value of outdoor advertising structures these three approaches often do vary, with the income approach generally indicating a much higher evaluation than the cost approach.

This cost approach, then, deals with two components—the value of the site in terms of the cost of clearing it or preparing it for the erection of a sign and the cost of the improvements. The appraisal consists of establishing the contribution of each component to the total value of the sign.

When we talk about the *site value*, we mean the value of the land if it was cleared of all buildings or structures. We cannot talk about the "cost" of land, because land is merely a given entity, it cannot be manufactured. Alterations in the contour or appearance of a site are considered improvements. The value of a piece of land is essentially related to its immediate environment, the use of the surrounding land, and its location. In order to determine the value of the land site, the comparative method already discussed should be used.

Cost of Improvements generally refers to the cost of the structures built on the land. In signage this refers to the main structure itself, including the structural supports, the background and the actual signage or copy area of the particular sign.

Several difficulties must be initially dealt with before we can actually talk about computing the costs of improvements. First, we must decide whether we are talking about the original costs of constructing the sign or the current costs that would be involved in constructing the sign today. Figures on the original costs are generally not available, and are really not relevant for an appraisal today because of variations in the value of the dollar, changes in construction costs, etc. Obviously then, we must deal with estimated current costs.

An interesting consideration for the appraiser when considering the actual reproduction of an older structure is the current cost to reproduce an obsolete structure. As an example, if a modern-day outdoor advertising company set about to reconstruct an old wood A-frame type of sign, the cost would undoubtedly exceed that which would be expended to reproduce a modern steel structure. The reason for this is that the cost of wood has had such an extensive increase and the hand labor involved in that old type of construction would exceed many-fold the labor construction costs involved in a current structure.

Then we must ask, does this mean the current costs necessary to build the same structure that was built some time ago (reproduction costs), or the cost necessary to build a structure that would be the modern equivalent of the older one, but meeting the demands and conditions of the present day (replacement costs)? It is clear that reproduction costs are no longer viable figures, because the materials and equipment used in the past are often not readily available today, and even if they are, they are not usually as functional or durable as modern equivalents. With changing material and structural technology, the replacement costs and not the reproduction costs, provide the basis for a modern appraisal.

An abundance of cost data, pertaining to almost every type of sign, can usually be obtained by personally contacting a number of sign companies and suppliers of sign materials. National suppliers that handle a complete line of outdoor advertising materials have information, and costs can usually be collected locally for such items as illumination, steel "I" beams, lumber, treated posts, etc. The direct costs involved in replacing a sign include labor, material, materials handling, permits, equipment, and outside engineering. To these direct costs must be added those indirect costs which are integral parts of sign construction, and are considered overhead or burden.

Studies made throughout the country indicate that the overhead or burden factor is in the vicinity of 25 to 55% of labor, direct and indirect, and material costs. Outdoor advertising plants, both large and small, have had extensive state and Federal audits over the last several years. These audits have revealed the burden factor with a range from a low of 36.35% to a high of 52%. These indirect costs include (1) shop overhead; (2) management; (3) salaries; (4) insurance; (5) taxes; (6) utilities; (7) business licenses; (8) site procurement; and (9) general office expenses. Simply put, the burden factor can be estimated for any outdoor advertising operation by analysis of the jobs, equipment, and property that could be

dispensed with should the company make a decision never again to rebuild or build a new advertising structure.

An additional method of estimating replacement cost is an audit of company records to ascertain actual cost, both direct and indirect. To accomplish this, a necessary prerequisite is the cooperation of the company. In the case of a larger company that employs full-time accounting personnel, an audit could be very meaningful, whereas an audit of a small company or individual might prove fruitless because of less sophisticated bookkeeping techniques. In large urban markets, it is sometimes possible to obtain information from general sign contractors. When adequate sign cost data has been collected from a sufficient investigation, the data should be analyzed to determine the cost of variables such as height, lighting, addition of a second face, reflectorization, and quality and type of construction.

COST SCHEDULES

During the course of the last few years, officials of the Federal Highway Administration and of state highway departments, as well as experts from the sign industry, have met to attempt to agree upon an accurate and equitable method of determining the fair market value of outdoor advertising structures. The outcome of these meetings has been the adoption of a schedule approach for the valuation of signage. The main reason for the adoption of schedules was the excessive cost involved in appraising each sign separately and to minimize the administrative and legal expenses necessarily involved in determining just compensation by individual appraisals and litigation.

All schedules developed by the government to date have been based on the cost approach. By negating the necessity of individually appraising signs, the schedules would admittedly make the administration an easy task. In general, however, the standardized sign industry has not considered the announced schedules to be just compensation or fair market value for their signs. The very concept of a schedule means an average settlement and often this average in a major metropolitan area is substantially below what is considered to be just compensation.

The Policy and Procedure Memorandum (PPM 80-5.2) previously discussed, issued by the Federal Highway Administration, set up guidelines for cost schedules to be used by individual states in computing their own specific cost schedules. These schedules were to include the direct and indirect costs mentioned above. Below (Table 3.1) are a set of payment schedules for poster panels, painted bulletins, rotating bulletins and payments to land owners developed by the State of California in 1974 and submitted for approval to the Federal Highway Administration. These schedules establish a standard, fixed value for varying types of signs. These schedules are based on similar ones developed in 1970 and 1972, but which due to increased labor and material costs were no longer accurate.

Rotating bulletins are painted bulletins that are fully illuminated and which include advertising facing sections in modular form, designed and constructed to be moved from one structure to another on a periodic basis.

Table 3.1. SCHEDULE A: PAYMENT SCHEDULE FOR POSTER PANEL REMOVAL

	Unilluminated	Illuminated
Straight Single Poster Panel	$3205	$3480
Offset Single Poster Panel	3475	3755
Straight Double Poster Panel	3895	4320
Offset Double Poster Panel	4165	4595
Roof Top Poster Panel		4665

Adjustments:
1. For single signs on wood structures deduct $320.
2. For back-to-back signs on wood structures deduct $390.

Table 3.2. SCHEDULE C: POSTER PANEL RELOCATION RATES

	Unilluminated	Illuminated
Straight Single Poster Panel	$2240	$2435
Offset Single Poster Panel	2435	2630
Straight Double Poster Panel	2725	3025
Offset Double Poster Panel	2915	3215
Roof Top Poster Panel		3265

Table 3.3. SCHEDULE D: PAYMENT SCHEDULE FOR URBAN "ROTATE" BULLETINS

Height to Base of Advertising Panel	Under 30 Feet	30 Feet and Over
Single Face	$11,220	$14,160
Double Face	16,680	21,060

Usually having dimensions of 14 x 48 feet, they often have special embellishments and lighting effects. Generally found in urban areas in the more desirable locations at points of maximum exposure, their advertising messages are most often for a national product or of regional interest.

ADJUSTMENTS

Wood Structures: If the sign is constructed of wood, deduct 10% from the scheduled amount.

Poster Panel Back-ups: For each standard 12 x 25 foot poster panel reverse facing, add $1,605 if unilluminated or $1,740 if illuminated.

Painted Bulletin Back-ups: For painted bulletin reverse facings that are less than the standard size of the front facing, multiply the square foot area of the back-up by 50% of the appropriate square foot figure shown in the "Good" category from Schedule "E."

Embellishments: No adjustments in payment will be made for embellishing features, special lighting effects, freestanding letters, or space extensions over the standard advertising panel.

Table 3.4 pertains to painted bulletins that are not rotated, but are fairly permanent. These signs are not standardized urban bulletins, but *generally privately owned signs, often in rural areas.*

DEPRECIATION

In appraising a new structure built in the currently most acceptable or fashionable architectural style, the cost of replacement and the cost of reproduction remain the same; however, when one deals with any structure that is more than several years old, a depreciation allowance should be determined. Depreciation is the loss of value from any cause. It can be either past or future—accrued or to be accrued. Past or accrued depreciation is the difference between the value of an improvement today and the cost new to replace it. Future depreciation is the anitcipated loss in value of an improvement from the present to the end of its useful life.

There are two kinds of depreciation—*physical* and *functional.* For both types of depreciation we can talk about curable or incurable depreciation. For on-premise signs, functional depreciation or obsolescence takes on a more important meaning than physical depreciation.

Physical depreciation refers to the loss of value of the sign since it was built, due to normal wear and tear caused by weathering and age. Curable physical depreciation is damage which can be repaired easily without really affecting the structure of the sign, such as lighting problems, broken fittings, replacing signs, maintenance work, or repainting. Incurable physical depreciation is much more serious and has to do with inadequacies in the structural members, the foundation, or the electrical system. The incurable physical depreciation of a sign is an indication of the amount of economic life it has left, for at a certain point, the sign will no longer meet electrical or structural requirements and will have to be torn down. Whereas curable depreciation can be computed as the costs necessary to repair certain features of the sign, incurable depreciation is more difficult to determine, because a figure must be deducted which takes into account the remaining life span of the sign and its fundamental physical condition.

Functional depreciation (obsolescence) usually refers to inadequate or outmoded design of the sign. This is more of a factor for on-premise signs, where designs and styles change periodically, than for billboards, where copy is usually the only important variable factor, especially in the case of standardized units.

It should be noted that in the case of highway beautification sign removals, the cost to reproduce evaluation applicable to standard cost information for the loss of these types of structures involves the necessity of evaluating the urban type signs on a cost to reproduce, less depreciation basis. The reason is two-fold: first because of the Highway Beautification Act of 1965, there are no new sites available in some highway areas. Therefore it is impossible to compute current-day costs, and secondly, for reasons raised above, not only are those types of signs more costly to produce because of the obsolete type of construction, but also to be considered is the cost of travel from the plant headquarters, which is generally maintained in urban areas, to the suburban site.

Billboards are unique insofar as their income producing ability does not generally diminish with age. As an example, in a given 24-sheet poster

Table 3.4. SCHEDULE E: PAYMENT SCHEDULE FOR PAINTED BULLETINS

Structure	Wood Construction						Metal Construction					
	Unilluminated			Illuminated			Unilluminated			Illuminated		
Category*	Area in Sq. Ft.	1 to 100	101 to 300	301 and Larger	1 to 100	101 to 300	301 and Larger	1 to 100	101 to 300	301 and Larger	1 to 100	101 to 300	301 and Larger
Good	$ per sq. ft.	11.45	10.30	9.50	14.20	13.15	12.40	14.25	12.75	11.55	16.70	15.15	14.00
Fair	of sign face	8.90	8.00	7.40	11.05	10.20	9.65	11.10	9.90	9.00	13.00	11.80	10.90
Poor		5.10	4.60	4.20	6.30	5.85	5.50	6.35	5.65	5.15	7.40	6.75	6.20

Adjustments:

1. Reflectorized Material: To that portion of the sign that is reflectorized
   Category*
   Good—Add $1.60/SF to the unilluminated square foot figure.
   Fair —Add $1.25/SF to the unilluminated square foot figure.
   Poor —Add $0.70/SF to the unilluminated square foot figure.
2. For 12'x25' Poster Panel Back-up on Wood Structures:

Category*	Unilluminated	Illuminated
Good—Add	$1445	$1565
Fair —Add	1125	1220
Poor —Add	645	695

3. For 12'x25' Poster Panel Back-up on Steel Structures:

Category*	Unilluminated	Illuminated
Good—Add	$1605	$1740
Fair —Add	1250	1355
Poor —Add	715	775

4. For Painted Bulletin Back-up: Multiply SF area of back-up by 50% of appropriate SF figure shown above.

May 1974.

*See Depreciation Schedule.

showing there may be a group of location panels, varying in age from nearly new to 30-years-old, and yet, unlike a commercial establishment, there is no difference in the amount of income these boards contribute to the showing.

Curable functional depreciation refers to certain aspects of a sign that can be corrected without affecting the sign as a whole, such as changes in copy area. On the other hand, incurable functional depreciation might mean a change in architectural or structural style to such an extent that the replacement of the entire sign structure is the only remedy.

This is often the case for on-premise signs. As such, incurable functional depreciation cannot be arithmetically computed, but in effect, depends upon the judgment of the appraiser. A helpful guide in understanding depreciation as a whole is the Underwriter's Specifications for Electrical Wiring in the Uniform Building Codes publications for structural and material specifications.

Common examples of functional obsolescence include outdated sign components such as a considerable amount of lattice work that adds measurably to the new cost, but tends to detract from the overall appeal of the structure and, in fact, brands the sign as outdated. Depreciation in such cases would be measured by the amount of excess cost less the percentage of phsyical deterioration already charged. Although functional depreciation may not be a major factor in sign depreciation, it should be recognized when it exists.

Outdoor advertising companies which have very good maintenance programs; consequently have their signs usually in good to excellent condition regardless of the actual age of the structure. This concept of actual age versus effective age is often applicable in the appraisal of outdoor advertising structures, since often little or no depreciation is applicable due to careful maintenance. If the appraiser has been thorough in obtaining the basic data and has made a careful inspection of the site as well as the sign, then the reproduction cost minus the accrued depreciation should provide a reasonable estimate of value by the cost approach.

One element of depreciation related to functional depreciation that must be considered is *economic depreciation.* This has to do with economic transitions in the surrounding area which may threaten the sign and necessitate the abandonment or removal of the structure. Such economic depreciation includes view obstruction that reduces a sign's effectiveness or threatens to make it ineffective in the future. Thereby it will no longer be compatible to a sign use.

The Federal Highway Administration, in its Policy and Procedure Memorandum (PPM 80-5.2), developed depreciation schedules for poster panels and painted bulletins, which indicate what percentage of the value of the sign should be deducted for different degrees of depreciation.

The following guidelines, drawn up by the Highway Department of Arizona, give a cursory idea of allowances that should be made for the effects of depreciation. For each specified condition, the value of the sign should be determined by deducting the determined amount from the value of the sign if it were new as follows:

Poor Condition: Deduct 45 to 60%
Fair Condition: Deduct 25 to 40%
Good Condition: Deduct 5 to 20%

Excellent Condition: No deduction

The cost approach can be very useful in appraising standardized billboards. When dealing with non-standardized and customized on-premise signs, this method has severe limitations, because of the heavy emphasis on design in the custom on-premise sign. To a certain extent, the on-premise sign is a communication art form. By the use of properly spaced words, the use of optimal color schemes and other features to enhance readability and legibility, the sign can possess hidden, effective communication factors. Also, as cultural tastes shift and business interests and demand for goods change, the price that would be paid for such a customized sign on the market drops quickly. The on-premise sign has little market value to anyone but the individual owner involved.

This problem of determining the value of customized, on-premise signs is one that neither the market approach nor the cost approach adequately deals with. In a unique, one-of-a-kind sign, the design component is going to be difficult to calculate, because it can be claimed that the additional business or income which attractive signs provide is an intangible factor that cannot be calculated. As an accessory land use, on-premise signs can be considered an inherent right to communicate, a visual communication component connected with the land. Setting aside any subtle legal questions as to whether it is real property or personal property, we can ask what portion of the income of a property can be attributed to the on-premise sign.

The taking of an on-premise sign can have the effect of virtually eliminating the property as a commercial retail use. That is, the on-premise sign and even the identification directional billboard may be the very factors allowing the business to generate a profit. If a business has a high transient or impulse clientele, the sign may be the only means to communicate to prospective customers. The taking of a sign can imply the defacto elimination of a business from certain zones. In a real sense the taking of the signs is a case for inverse condemnation and should be often considered as such.

In short, it is apparent that a more equitable method is needed to determine the appraisal value of on-premise signs and non-standardized highway signs. Both the market approach and the cost approach to value are in some ways insufficient to deal with these aspects of signage appraisal. The *income approach,* on the other hand, while not being as easily computable as the other two methods, does provide a system for taking these intangible factors into account.

THE INCOME APPROACH

The classical example in determining an income approach for an improvement other than billboards is a simple determination of the valuation attributable to the land by the existence of the improvement. As an example, if on a commercial lot a drug store is constructed by a long term tenant and the owner of the drug store and that tenant agree to pay $10,000 a year, then the valuation of the land using the income approach, would be $10,000 times the term of the lease (commonly called capitalization of income). The summation of this equation would be tomorrow's money today. In this example, we are assuming that the owner of the improvement pays all taxes and utilities.

Figure 3.1. DETERMINING CAPITALIZATION RATE

Sales price attributable to a sign plant, excluding real property, equipment, etc.		$50,000
Gross Income	$20,000	
*Less Vacancy and Collection Loss (25%)	—5,000	
Effective Gross Income	$15,000	
*Less Expenses:		
Taxes		
Insurance		
Management		
Labor		
Maintenance		
Utilities		
Site Rental	—6,000	
Net Income, including interest on the investment and return of the capital	$9,000	

$$\text{Capitalization Rate} \quad \frac{\$\ 9{,}000}{\$50{,}000} = 18\%$$

*Proper charges for these items would be obtained from the market.

Figure 3.2. PART 1. MEANS FOR CALCULATING THE RECAPTURE RATE

Net Income, including interest on the investment and return of the capital	$9,000
Provision for recapture*, assuming average remaining economic life of the signs included in the sale to be 10 years and using straight-line depreciation (10% depreciation annually). $50,000 x 10%	—5,000
Net income after providing for recapture	$4,000

$$\text{Interest Rate} \quad \frac{\$\ 4{,}000}{\$50{,}000} = .08 \text{ or } 8\%$$

*The capital invested in a depreciable improvement must be recovered during the average remaining economic life of the improvement. Once the remaining life has been estimated, the recapture rate is calculated as follows:

$$\frac{100\% \text{ (recapture of improvement)}}{\text{Rem. Econ. Life (Years)}} = \text{recapture rate}$$

Digressing from this theory, let us now take the example of a billboard which was constructed by the outdoor plant with the lease arrangements with the owner of the property. If one used the controversial theory outlined above, you could determine the income approach attributable to the land; but it does not estimate the income valuation to the sign owner. The valuation to the sign owner can be determined, and an income approach can be substantiated by establishing the gross income, deducting all the costs involved in selling and maintaining the billboard. The profit residual after all expenses can be capitalized and reduced to today's valuation.

Admittedly, selecting the capitalization rate using this approach is a ticklish job for the appraiser. However, the condition of the structure and the term of the lease of the past sales history should provide specific information to estimate the capitalization rate.

The following are a few definitions of common language used by the appraisers in formulating the income approach:

1. Capitalization rate—the relationship between the value of a property and the net income it produces (more precisely, the net income as percentage of the purchase price of the property). This rate includes both an interest rate and a recapture rate.
2. Interest rate — the rate of return on an investment.
3. Recapture rate — the rate of return of an investment, an allowance for future depreciation of a wasting asset.
4. Remaining economic life — the estimated remaining profitable life of a wasting asset.

A capitalization rate can be developed by the band of investment and summation methods or from the "market" by analyzing comparable sales of sign plants, groups of signs, or individual signs. The purpose here is to describe how capitalization rates may be derived from the market.

The first problem is to find a sale where the sales price, income details, and a breakdown of what was included in the sale are available to the appraiser. Once found, the analysis of a comparable sale to develop a capitalization rate begins with the gross income. Buildings or signs cannot be expected to be rented continuously, so a reduction from the gross income must be made for vacancies and collection losses. That remaining is the effective gross income.

The capitalization rate may be found by dividing this net income by the sales price of the property as shown in Figure 3.1. This could be used for a group of billboards or a large specialized sign. This capitalization rate includes both an interest rate and a recapture rate, and may be used directly when the average remaining economic life of the sale signs is the same as the signs being appraised.

Finding a recent sale or sales of like properties with the same average remaining economic life is difficult, if not impossible. For this reason, it usually is not practical to use this combined rate.

It is usually necessary to deduct an allowance for recapture from the net income shown in the example so the interest rate may be determined. A recapture rate that reflects the estimated remaining economic life of the sign or signs being appraised may then be added to the interest rate to provide a proper capitalization rate.

Assuming the average remaining economic life of the signs being appraised is five years, the capitalization rate would be as follows:

Figure 3.3. PART 2. MEANS FOR CALCULATING THE RECAPTURE RATE

$\frac{100\%}{5 \text{ years}}$ =	.20 or	20%
Interest rate from comparable sale in example		8%
Capitalization rate =		28%

As mentioned, it is possible to estimate an income approach for an entire outdoor advertising plant using the above method. More often than not, the billboard operator will lose one or two signs and the question immediately becomes whether the billboard company has a particular way to replace the billboards to be taken.

One way of computing the value of an individual sign which is part of a large showing is to determine what part of the net income of the showing that particular sign is responsible for. Sutte has developed just such a method whereby the net income of a particular showing is established, and then each sign in that showing can be rated as to its income-producing value in terms of the showing as a whole.[3] For example, for a certain Chicago showing, Sutte determines what he calls the effective gross income which takes into account such factors as vacancy and collection losses. Then using five categories—zoning, exposure, circulation, space position value, and lighting—he can determine a rating, which is an indication of the percentage of the net income which each board contributes.

Each category is rated on a one-to-five scale. For the zoning category, a five factor is used for an area in which a board could not be replaced, and zero for an area in which there would be little problem in replacing the panel. The exposure category gives a high rating to a sign which is exposed to two or more streets, and a low rating to one which is exposed to only one street. The circulation category refers to the number of potential viewers who are exposed to the sign daily (we have discussed this factor earlier in this chapter, explaining how it is computed by the Traffic Audit Bureau). The space position value (SPV), also discussed previously, is based on how quickly and for what length of time a panel can be seen, the position of the board, and whether it is alone or placed with other units. The fifth category rates the sign for either illumination or non-illumination. The total amount of points for each sign can then be calculated, and thus its value as a percentage of the effective gross income of the entire showing.

This method developed by Sutte is a step in the right direction for the appraisal of standardized outdoor structures but a close analysis reveals certain problems with it. For one thing, it deals with quite a limited number of factors and leaves out certain factors influencing the income-producing potential of a sign. Also one can question the equitable treatment of certain factors on a one-to-five scale.

[3]D. Sutte. *The Appraisal of Roadside Advertising Signs.* Chicago: American Institute of Real Estate Appraisers, June 1972.

PAYMENT SCHEDULES

The Federal Highway Administration, in its Policy and Procedure Memorandum PPM 80-5.2, indicates that individual states may draw up payment schedules for the valuation of sign sites, using the income approach as a basis, such as estimating the present worth of a future income stream. In developing such a schedule, consideration should be given to (1) the terms of the lease or agreement, (2) annual rent received for the site, (3) an interest rate which reflects the durability and quality of the income stream, and (4) factors affecting the remaining life of the sign on the site.

According to this method of determinig site value on an income basis, a present worth factor or multiplier would have to be determined by the individual states to determine the amount of the payment to the site owner.

The PPM 80-5.2 memorandum indicates that the following factors should be considered in developing an appropriate multiplier:

1. The maximum duration of the income stream may not exceed the remaining economic life of the sign on the site.
2. Existing or proposed local ordinances.
3. Neighborhood trends and quality.
4. The effect of the existing sign(s) on the property's dominant use.
5. Potential changes in the use of the property.
6. Potential development of adjacent property that might block the view of existing signs.
7. Present and future traffic flow.
8. Existent as well as potential zoning.
9. Deed restrictions.
10. The effect of cancellation clauses and/or rental options in the lease.
11. The tenant's ability to pay.

Such a schedule would apply only to sites having a remaining economic life of not more than 10 years. Sites producing substantial income or having long remaining economic lives (such as signs in rural areas) should be valued using accepted appraisal procedure. Although the Federal Highway Administration has printed the above information, it should be noted in writing that they had not at the time of publication of this book approved in any state an income approach for billboard valuation.

An illustration of the application of the income method to draw up a payment schedule to remunerate land owners whose property is taken is the California State Highway Department's Payment Schedule F.[4] This schedule, shown here, determines the value of the lease income that is lost due to the removal of billboards, by discounting the future income to its present worth or cash value by use of present worth multipliers.

In determining the appropriate multipliers the prime considerations of this schedule were the duration and quality of the income stream. The duration of the income stream, which is a reflection of a sign's remaining economic life, was based on the probability of physical blockage from view and the effect of policy powers upon outdoor advertising signs. Thus the schedule considers two alternatives: a short life duration for signs that would probably remain in place for less than four years, and a longer life

[4]California State Highway Department, *Payment Schedules for Outdoor Advertising Displays in California.* Sacramento: Author, 1972.

Table 3.5. SCHEDULE F: LAND OWNERS SITE PAYMENT SCHEDULE

Remaining Economic Life	Sign	Highest & Best Use or Compatible Use (No substantial interference with dominant use)	Compatible Use (Substantial Interference with dominant use)
Extended Term 5 or more years		6.0	4.0
Interim 1-4 Years		3.0	2.0
$		$	
Avg. Yrly. rental (Past 2 years)	x Factor =	Value to Site Owner (Min. site payment—$100)	

duration for signs that would not probably be affected by physical or political actions and would thus remain in place for five years or more.

The quality of the income stream was based on the sign's compatibility with the rest of the property. A sign which constitutes the highest and best use of the land or a compatible land use (i.e., no substantial interference with the land's dominant use) has a higher value than a sign which is an ancillary use, and as such substantially interferes with the property's dominant use. The use of this California schedule should be recognized as an arbitrary schedule. Granted, it is accepted by the Federal Highway Administration; but certainly there is no justification in the beautification act. The beautification act merely states that just compensation shall be paid.

Gross multipliers are sometimes used in the appraisal of real estate properties which are part of a larger parcel. A gross multiplier is a figure that represents a certain unit value of a single sign as a fraction of the total number of signs. Gross multipliers have limited relevance to sign appraisal as such. One of the sole examples of the use of this device is when a particular company has developed a standard type of sign and then manufactures a great number of them. The company can figure in its fixed and variable costs including depreciation for building and equipment. A certain rate per hour can be computed which represents the total cost, including profit, as a function of the number of hours that go into the production of the sign. This method, however, cannot always be applied to the income approach. In the income method, the appraiser, strictly speaking, takes the net income through the various steps, and having once established it, then works to a favorable capitalization rate as to what the purchase price should be.

When dealing with the non-standardized identification-directional sign, we run into different difficulties. In this case the sign contributes income to both the sign company which is leasing the sign, and the individual or firm which is advertising by means of the sign. The ground lease is in effect establishing the value of the actual site upon which the sign is located. If the sign company is renting the ground, paying the lease, and then

renting out the sign, the income method can be used in terms of the value of that particular site. But if the individual advertiser owns the site, severe difficulties crop up because the income generated from the sign is far greater than the mere rental value of the sign, if it were to be leased from a sign company. The loss of a sign can thus often severely cripple the owner's business by taking away a major source of his income.

LEASE RENTALS

Most signs, whether they are on-premise or non-standardized or standardized billboards, are usually leased out by the sign company, so it is generally not difficult to establish a renewal rate for a sign. When one does try to establish a leasing rate, though, particularly for on-premise signs, it should be noted that the total costs of the sign, that is, manufacturing, maintenance, and various other costs, are usually discounted in the first five years. The rate of renewal for custom signs for some sign companies is considerably more than 50%; this certainly affects the value of a sign. In fact, one large sign company that makes the new electronic type message centers, can boast of at least a 90% renewal rate on its standard leases. This is an area of leasing that only recently has been receiving any attention.

On-premise signs and custom signs, when leased, are usually developed and built very quickly and do not have any real problem with vacancy. However, the vacancy factor becomes critical when billboards are under consideration. Signs that are vacant, that is, are not being leased, either have no message or may have non-profit public service messages. It is often difficult to determine the rate of vacancy in a certain area because instead of leaving a sign vacant, the sign company often employs the structure for public service advertising.

There are several differences between rural sign leases and urban area sign leases that merit some discussion. For one thing, the ownership and use of land in low population density areas is much more stable than in and around cities and towns. This greatly increases the life expectancy of a sign location in the rural areas.

Secondly, although sign locations in rural areas are almost always ancillary land uses (usually located on farm land), they also represent the highest and best use of the land. Even in the richest agricultural areas, it is not possible to put land to a farm use which can render a greater income per unit of area than the ground rent from a sign. Due to the high income yield per unit area, as compared to even the most expensive crops, and the weatherproof nature of the income, the right to use agricultural property for signs is a highly valued property right by owners.

These two factors, along with the fact that the sign owner and property owner are often personal friends in rural areas, combine to make the rate of renewal for rural leases exceptionally high—over 90%. The physical condition of the sign becomes almost the sole factor in determining depreciation, since functional or economic factors play a minor, or almost non-existent, role. In other words, in measuring the life of any given rural sign site, the lease itself is less important than other factors. Hence, in those cases where leasehold value or the value of advertising rights must be

determined, stability of property ownership-owner relationships are the key items for consideration.

Another advantage of rural sign sites over metropolitan area sites is that rural sites generally have a much higher leasehold value to the sign owner, due to the absence of many of the hazards characterizing metropolitan locations such as build outs, one-way streets, zoning changes, land developments, ownership changes, and high incidences of interim land uses.

LEASEHOLD VALUE

This value is the differential between contract rent and economic rent multiplied by the number of years the sign owner can expect to keep the sign on the site. For instance, if the contract rent is $100 per year, but the economic rent is $150 per year, with a life expectancy of the site of 25 years, the leasehold value would be $50 x 25 years, or $1250.00. In urban areas, on the other hand, life expectancy of the site today is approximately 18 to 25 years. This is a major increase in tenure for standardized outdoor advertising structures. This is attributable to outdoor advertising structures being placed as ancillary use. In the past, the predominant use of vacant properties for billboard sites often resulted in a short life expectancy.

OTHER FACTORS

Other factors come into play when the appraiser attempts to establish the net income of a sign. Taxes, for one thing, must be considered; one must be careful to differentiate property taxes on the one hand, and licensing fees and annual inspection fees on the other hand. As far as utilities are concerned, unless there has been some kind of landscaping, the only real costs that will be involved usually are for the electricity for the illumination of the sign.

Major costs are incurred, however, for maintenance and repair. Often these costs are written into the contract; maintenance costs vary considerably, especially for on-premise signs. The lamps, ballasts and transformers have particularly standard life periods; this information can be obtained by consulting the ballast and transformer manufacturers.

COMPARISON OF THE THREE APPROACHES

The appraisal of signs as a specialized science is still in its infant stage, since only in the past ten years have such valuations become necessary on a large scale. The need for developing an acceptable basis for sign compensation, as required by the Highway Beautification Act, has recently brought new emphasis to this area. Although all three of the discussed methods have been used to a certain extent in signage appraisal, none has proven to be without serious shortcomings.

The market approach is potentially the best of the three appraisal approaches for the valuation of billboards, either on a sign-by-sign basis or for an entire plant. In the last five years, there has been a significant amount of sales, both of large and small plants throughout the country. At this writing, unfortunately there has been no concerted effort to proceed, gather and evaluate all of this market data. If and when a capable appraiser sets about this task of a national review of the sale of plants, a distinctive

factor favoring the market data approach can be established. This information properly reviewed and supported by established appraisal techniques can pave the way for a common gross income multiplier. This then would provide the most simple means of valuation for individual signs or entire outdoor plants.

The cost approach to sign value has been the most widely used approach in recent years, especially in conjunction with the drawing up of government payment schedules to sign owners and land owners. The flexible formulas developed by the Federal Highway Administration, based on the cost approach, are intended to facilitate and reduce the expenses involved in appraising signs individually. In the long run, however, there has been considerable dissatisfaction with the federal schedules, especially from the outdoor advertising industry itself, which often feels that these schedules are not realistic in gauging the value of signs in the present economy.

The cost approach, as it relates to Federally approved schedules and more specifically as it relates to the so-called former national FHWA schedule, does not adequately provide for good cost valuation for urban type signs. In concept, the beautification act was intended to remove non-conforming signs in non-commercial and industrial areas. Although the preponderance of these signs are located in the country side, the act itself was inclusive of the entire interstate and primary system. The problem at hand is that the Federal Highway Administration only chooses to recognize the existence of the rural signs and therefore, most cost approach schedules relate to this type of sign. Thus, the urban sign operators are faced with accepting cost payments from schedules which are often 15% to 40% below actual replacement costs.

Although there have been some beautification takings throughout the country, the number of these losses is miniscule compared to the number of billboards which have been removed in the urban areas for new highway construction. It is true that some states have recognized this urban versus rural problem, but the preponderance of the states have not chosen to properly deal with this issue. It is interesting to note that the Federal Highway Administration and the Department of Transportation have repeatedly taken a position that there will be only one national concept for sign valuation. At this writing, the Federal Highway Administration still refuses to deal realistically with this urban versus rural sign cost valuation issue. The sign on a well-traveled interstate highway clearly has more value than a sign located on a farm-to-market highway.

The income approach, although in the long run it may offer the most accurate measure of a sign's value, runs into serious problems due to the fact that it has never been well developed. The net income and capitalization theories, which are the bases for establishing value in this approach, are seldom understood. This has resulted in the lack of acceptance of the income approach. Also, operating expenses and capitalization rates require strong support from the market. This support is not available in many areas.

One proposed method of overcoming the deficiencies of both the income and the cost approaches has been to try to combine them into one formula. This formula is a sample income, cost, and profit formula which can be stated as I — C = P. I represents income, C cost and P operating profit

before taxes. Income, or the selling price of a sign, can be expressed as the cost plus the profit. Stated as a formula, I = C + P. For instance, if a sign costs $800 to construct, and the net income for the business is 20%, I = $800 + $200 = $1,000. The income, or the selling price of the structure, in this case is $1000 — the true value of the structure in the market place.

Such an approach that combines the strong points of several different approaches probably offers the best possibilities for coming up with a method for appraising signs that is equitable and accurate. The increasing concern for developing such an approach will, in the next few years hopefully, result in an appraisal approach that both the government and the sign industry will find acceptable.

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Chapter 4
MARKETING FACTORS

To arrive at an accurate assessment of the effectiveness and reach of an individual non-standardized outdoor sign or even of a large scale standardized outdoor advertising campaign, it is necessary to understand those marketing factors that can be applied to calculate the number of people exposed to the sign or signs, the degree of coverage of the market, and similar revealing information.

Many people outside the advertising industry conceive of advertising as an intangible, unmeasurable endeavor that is an intuitive, hit-and-miss business that blindly attempts to induce people to buy some product or another. It is a fact, however, that outdoor advertising and the other communication media used for advertising are measurable efforts whose effectiveness can be calculated so that cross-media comparisons can be made.

Marketing research has become a scientific and intensive component of the sales efforts of most large companies; an average of approximately 1% of a company's sales dollar is spent on marketing research. Based on past figures, it is estimated that the total investment in marketing research in the 1970's will probably exceed $700 million.[1] When compared with the estimated $50 million spent on marketing research in this country in 1947, this figure reflects a growing appreciation of the importance of research in developing effective and successful sales campaigns.

In gauging the extent to which a single panel or an outdoor advertising showing reaches its potential market, several measurable factors have been developed in the discipline or urban geography. These factors are now basic tools used in the successful marketing of a product or service and in determining the proper deployment and number of sign panels used to advertise this product or service. The most important of these factors are: (1) circulation; (2) market penetration; (3) reach and frequency; (4) nature of traffic; and (5) market segmentation.

CIRCULATION

Circulation refers to the total number of people, without regard to duplication, who are exposed to an advertising message in a certain market. Circulation is a measure of the number of exposure opportunities; technically, it is unrelated to whether the sign is read and understood. (Design, visibility, legibility, and the letter determine that.) The circulation of an advertising campaign is a function of the number of locations at which a message is presented and the number of people exposed to it.

Circulation is, if not the most important, at least a fundamental requirement for the effectiveness of a sign. If only a small number of people pass by the sign that sign is obviously ineffectual, even if it has brilliant design and visibility. A sign should ideally be situated on an artery or freeway on which a large number of vehicles travel. An on-premise sign or a non-standardized billboard, both of which have one fixed

[1] "Putting a Measure on the Market." *Business Week,* January 25, 1969. 104.

location, usually are situated on a road with a large and steady flow of traffic; if the sign is not itself on such a road, it should be elevated or placed so as to be exposed to motorists traveling on a nearby freeway or artery.

For a sales campaign employing a number of standardized billboards at different locations within a given market, it is not so essential that each sign be located on a road with the highest possible traffic flow, but that the advertising message be situated on panels that are located in key places within the market, such that as many different people as possible will be exposed to one or more of the signs in different parts of the market. As a result of systematic geographic and socio-economic studies, most outdoor advertising plants have mapped out the market in which they are operating and have constructed panels in enough key spots to insure that a large scale poster showing will reach a very large percentage of the people in that market.

The circulation that can be achieved through other advertising media is always limited to the number of people who are exposed to that medium. Thus the circulation of an advertisement in a newspaper can be no higher than the circulation of the newspaper itself. Even then, it is unlikely that most readers will notice an ad located on a part of one page of a large newspaper. Similarly, the circulation of an advertisement on radio or television is restricted to the number of people who are listening to or watching the medium at the particular time at which the advertisement is aired. The circulation of outdoor advertising, on the other hand, is limited only by the number of people who go outdoors, which includes of course nearly everyone. Especially in the sprawling cities of the West in which the vast majority of the residents travel by automobile, a well-placed and systematic poster showing can be considered, with a fair degree of certitude, as being exposed to almost all of the population.

The size of the circulation for an outdoor advertising showing is a decisive factor influencing such other factors as market penetration or reach and frequency. See the discussion of Space Position Value (SPV), Chapter 2. As the vice president of the Outdoor Advertising Association of Canada remarked, "An outdoor campaign will accumulate target audience reach and frequency that is directly proportional to the daily circulation."[2]

A major asset of the outdoor advertising industry—an asset that makes circulation such a decisive factor in outdoor advertising effectiveness—is the importance of the automobile in the American society. Each day 50 million workers in this country commute to work. Of this number, 41 million or 82% use the automobile as driver or passenger. The fact that such an enormous number of people are on the road at least twice a day means that the circulation of any sign that is on any major artery will be very high. In a survey taken from the Bureau of Census 1963, it was found that 82% of people used automobiles to get to work, 14% used public transportation and 4% used other means.[3]

A high circulation does not in itself guarantee that an advertisement will be read and remembered by everyone who sees it. This principle

[2]Outdoor Advertising Association of Canada. *Inside Outdoor*. Toronto: Author, 1970.
[3]Bureau of the Census 1963. "Home-To-Work Travel Survey," Institute of Outdoor Advertising. *Outdoor Advertising Fact Book*. New York: 1967, 66-202.

applies to signs, newspapers, or broadcast media. Readership is closely related to circulation; the term refers to the percentage of people exposed to an advertising message who actually read and remember it. In Chapter 3, where readership is fully discussed, we saw that on the average, a one-quarter page advertisement will be read and remembered by 20% of the people who look at the newspaper. It has been found that in metropolitan areas of a million population and over, that on an average day, about half the adult male population does not even read the largest daily newspaper.

Of those that do read a newspaper not all will see every advertisement. The term "reader traffic" is used to determine the success of a particular newspaper message. The reader traffic may vary from 1% to 100% of the circulation of the paper, depending upon such things as the size and extent of price-copy, the layout, and the ability to compete with other ads.

We noted also in Chapter 3 that from the readership surveys of highway advertising that have been conducted, readership, is known to be about 54% or 30-50% by other estimates, depending on copy. Outdoor advertising has an exposure potential to the mobile audience. When considering the increasing mobility of our society, including the fact that 82% of workers who drive twice daily past outdoor locations, we can see that outdoor advertising offers opportunities for higher readership and circulation than other media.

The circumstances of the message exposure are a crucial factor in determining whether people see and read any type of advertising message. For instance, in a newspaper, an advertisement on a page facing the comic strips will have much better exposure than if it were placed facing the obituaries. Likewise, a radio commercial that is broadcast before the news is much better than one after the news. The disparity between the circumstances of exposure for different advertising media is equally obvious. For example, a reflectorized sign on the highway leading to a trading center is directly in the line of view of the driver and cannot be ignored. The same message in a little-read section of a newspaper will be seen only by a small proportion of its readers simply because the majority have skipped that page.

DETERMINING CIRCULATION

A distinction should be made between *gross* circulation, or the number of people who pass by a particular sign, and *effective* circulation, or the "least number of persons in the gross circulation who have a reasonable physical opportunity to see an outdoor display location."[4]

The Traffic Audit Bureau has developed a method of determining effective circulation by means of a standardized counting procedure.[5] In the block nearest the display location that is to be measured a counting station is set up, one on each street on which traffic is exposed to the display. For a half-hour period in the morning and then again in the afternoon on

[4]Traffic Audit Bureau. *Standard Procedures for the Circulation Evaluation of Outdoor Advertising*. (5th ed.) New York: Author, 1952.
[5]Traffic Audit Bureau. *Standard Procedures for the Circulation Evalution of Outdoor Advertising*. (7th ed.) New York: Author, 1972.

any weekday all the vehicles and pedestrians traveling in both directions are counted. No counts are made during unusual conditions such as very heavy rainfalls, strikes, detours, street repairs, and street closings, since final computations are estimated on the assumption that the half-hour counts represent *normal* traffic. The counts also exclude unusual pedestrian traffic, such as wedding guests, office workers leaving or arriving for shifts, or children going to and from school.

Mass transport is included in a traffic count only when it is considered a significant and consistent portion of the traffic flow past the sign, and only when data can be obtained from the transit authorities as to the number of daily passengers per route. The gross daily circulation provided by the mass transportation system is then computed to be 70% of the number of passengers traveling between 6:00 a.m. and midnight.

Most outdoor advertising in major markets is illuminated in some way at night, usually limited to the hours between dusk and midnight. Consequently, circulation figures are computed for an 18-hour day, excluding that period between midnight and 6:00 a.m. Circulation for non-illuminated panels is calculated on the basis of 12 hours—6:00 a.m. to 6:00 p.m. with other adjustments including multiplying by 19. For motor vehicles, this figure is obtained by multiplying the sum of the morning and evening vehicle counts by 27.

The sum of the morning and evening counts would represent one hour, one would assume; but the circulation figure for this one hour is multiplied by 27 rather than by 18 to compensate for variations throughout the day and for the number of passengers per vehicle. This conversion of vehicle units into passenger number is based on a standard national average load of 1.75 persons per vehicle. The circulation estimate for pedestrians is, of course, obtained by multiplying the sum of the morning and evening counts by the 18 hours of the standard circulation day. The total *gross* circulation for an 18-hour day is thus the sum of the circulation estimate for motor vehicles and the circulation estimate for pedestrians.

To obtain the *effective* circulation of a two-way street, which is the most important figure in this calculation, we add together the gross motor vehicle and the gross pedestrian circulation and divide by two; the mass transit circulation divided by four, to count only the window passengers on the viewing side, is then added.

The simple formula for this process would read:

$$\text{EC} = \frac{\text{gross motor vehicle} + \text{gross pedestrian}}{2} + \frac{\text{gross mass transit}}{4}$$

For one way traffic, this formula is modified in the following way:

$$\text{EC} = \text{gross motor vehicle} + \frac{\text{gross pedestrian} + \text{gross mass transit}}{2}$$

This method has been found reliable on the basis of periodic tests conducted by the Traffic Audit Bureau, but makes no claim to being the only accurate method of estimating effective circulation. Other, similarly accurate methods can and have been devised. For instance, the Canadian Outdoor Advertising Measurement Bureau bases its circulation figures on six-minute counts of the number of pedestrians and passengers in vehicles every hour for 18 hours, and does not include mass transit figures.

Counts are made on weekdays and include only traffic traveling on the primary street on the side facing a display.[6]

MARKET PENETRATION

The number of panels necessary to generate a total circulation proportional to the population of the market is known as a "showing." In the United States, showings are expressed in degrees of coverage intensity, or No. 100, No. 50, and No. 25 showings. A No. 100 showing theoretically delivers a daily circulation equal to the entire population of a given market. A No. 50 showing delivers a circulation equal to half the people in the market, and a No. 25 showing one quarter. The number of panels in a showing will vary with the size of the market.[7]

Although this method of rating the reach of an outdoor advertising campaign in terms of showings has been a standard procedure in this country for many years, recently the standardized outdoor medium in the United States has been following the example set by the Canadian industry in converting from "showings" to "gross rating points." Gross rating points are the method initiated by the television medium and now used by most advertising media as a standard measure of circulation. Advertising agencies who advise companies interested in using media have prepared all relevant quantifiable data for input into a computer to be able to choose scientifically and systematically the most advantageous medium to use. The agencies are interested in having all media conform to the same "lowest common denominator" requirements of the computer. Thus, in order to compete with other advertising media, the outdoor advertising industry has begun to rate its showings in terms of the common denominator, gross rating points.

In time one will discover whether the outdoor advertising industry's conversion to gross rating points is successful in increasing sales through better recommendations from advertising agencies. There are problems with such a conversion, however; for one thing, outdoor advertising is in some ways qualitatively different from other advertising media in that its audience circulates around it, whereas most other media circulate to the target audience.

It is not enough to quantify the number of viewers into merely the number of people exposed to the message. Since a different audience circulates around each sign, a thorough study of the profile of the actual market of any given sign would establish a sound basis to the GRP system. In other words, the travel patterns of the people living in the market must be established in order to determine with accuracy who actually sees the sign, and how often.

In outdoor advertising, circulation is not in itself adequate for determining the effectiveness of a sign; the frequency with which people view a sign also contributes significantly to a sign's high level of readership.

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[6]R. J. Claus and K. E. Claus. *Visual Environment: Sight, Sign, and By-Law*. Don Mills, Ontario: Collier-Macmillan Canada, Ltd., 1971, 43.

[7]According to W. R. Simmons and Associates, *A Study of the Reach and Frequency of Outdoor Posters*, conducted for Institute of Outdoor Advertising, New York: Author, 1966, the "reach" of a No. 50 showing is 87.3%; of a No. 100 showing, 89.2%. Reach is not exactly proportional in outdoor showings. Frequency is more so.

This is illustrated by a report that the Mennonites in Lancaster County, Pennsylvania, who do not drink alcoholic beverages, evidenced a very high readership level for some signs advertising beer, because these signs were on their regularly traveled route. They inevitably read and remembered these signs to a considerable degree, even though they opposed the message being communicated. This point can be generalized: when motorists pass a sign regularly on the way to work or shopping, their readership level for that sign will likely be high.

Surveys by the A. C. Nielsen and Company give an excellent basis for establishing traffic patterns for people.[8] In fact, these were used by the Outdoor Advertising Association of Canada in establishing its model. The only apparent weakness of this research is that studies are needed in smaller markets. Using these studies, GRPs can be converted to reach and unduplicated frequency with a fair degree of accuracy.

The reliance of the GRP system upon circulation figures alone is problematic; in many instances it gives an inaccurate picture of a sign's viewing audience. Furthermore, a market profile will vary somewhat from city to city. It would be almost impossible to make any reliable generalizations about a Los Angeles market, based on a New York study. The basic problem is not that so few studies exist but that more are needed in cities of different sizes.[9]

It is not any visible measure of effectiveness, but the ready media compatability of the gross rating point encourages the sign companies' customers.

A method has been developed by the Outdoor Advertising Association of Canada to determine the market penetration of an outdoor advertising campaign in terms of Gross Rating Points (GRP). They use GRPs to refer to the number of exposures of a particular showing in one day.[10] This method has in some ways proven a more accurate measure of circulation, especially in regard to the large discrepancies existing between the same size showing in different cities.

There are three major showings offered in most markets, 100, 50, and 25 GRPs. The 50 GRP showing is intended to reach about 9% of car-using households in a given market area, on an average of 43 times in a 13-week period. A 100 GRP showing is intended to reach as much of the market as possible, with almost double the ratio of frequency, and may consist of 100% or more panels than the full showing. The 25 GRP showing generally consists of half the number of panels of the full or 50 GRP showing.

Studies have shown the extent to which 50 GRP showings reach the great majority of the intended market over a period of time. A showing of posters in an urban market may even build up an exposure equivalent to 50% of the population in a single day. The Traffic Audit Bureau found that a No. 50 showing over a 30-day period was exposed to 93.1% of all

[8]A. C. Nielsen and Company conducted a series of reach and frequency studies for the Foster & Kleiser Division of Metromedia on the West Coast, titled "A. C. Nielsen Survey of Outdoor Advertising Coverage." The surveys were conducted in Los Angeles in 1960; San Francisco in 1961; Seattle in 1962; and Los Angeles/Orange Counties in 1964. For a partial review of the results, see: National Outdoor Advertising Bureau. "Highlights of Outdoor Advertising Research." *Background Report*. New York: Author, 1967, 10-12.

[9]One good study of motorists' profile is: Traffic Audit Bureau. *Five-Market Audience Composition Study*. New York: Author, 1963.

[10]Outdoor Advertising Association of Canada. *Inside Outdoor*. Toronto: Author, 1970, 4.

residents in a certain urban market over ten years of age.[11] In Canada these figures have sometimes been as high as 95%; the frequency of exposure in Canada also was found to be slightly higher than in the United States.

A study by Gruneau Research Limited of Toronto reveals the readership rate for different types of sign showings.[12] Readership, as we mentioned above, refers to the number of people who read and remember the advertised message on the sign. The results of this survey (Table 4.1) show the percentage of the potential audience who recalled the poster, and the type of showing. This study was conducted in Canada and represents a summary of 37 campaigns in Montreal.

Table 4.1. OUTDOOR POSTER READERSHIP STUDY

Size of Showing	% of Potential Audience Recalling Poster		
	Lowest Score	Highest Score	Average Score
Minimum	14.5	51.9	32.6
Full	18.6	85.6	43.8
Intensive	41.2	75.8	54.8

Source: Outdoor Advertising Association of Canada. **Outdoor Advertising in Canada: The Modern Marketing Force.** Toronto: Author, 1966, 28.

For 100 GRP showing an average of 50% of the potential viewers actually read and recalled the poster. Since a 100 GRP showing reaches almost the entire market, it is fairly certain that such a showing will make an impression upon at least half of the residents in a market.

Table 4.2 shows the determination of the number of ads required in two different market areas to achieve 50, and 100 daily GRPs respectively.

Table 4.2. NUMBER OF PANELS REQUIRED TO ACHIEVE 50 AND 100 DAILY GRP'S IN TWO CANADIAN MARKETS

	Market A	Market B
Population	50,000	250,000
Average daily circulation of one ad	10,000	12,500
Number of ads for 50 GRP's Daily	3	10
Number of ads for 100 GRP's Daily	5	20

Source: Outdoor Advertising Association of Canada. **Inside Outdoor.** Toronto: Author, 1960, 4.

REACH AND FREQUENCY

Reach can be defined as the number of different people, in terms of percentage of total market, who are exposed to a poster showing. *Frequency* refers to the number of times a single person is exposed to an advertising

[11]Traffic Audit Bureau, 1930.

[12]Gruneau Research Ltd. *Starch Readership Surveys*. Toronto: Author, 1958-59.

message over a certain period of time. Both of these concepts are crucial in gauging the effectiveness of an outdoor advertising campaign.

A method of estimating reach and frequency based on Gross Rating Points Daily has been devised by the Outdoor Advertising Association of Canada.[13] This method has been modified somewhat from the one used in the United Kingdom, in order to better represent North American markets. The results of the Canadian model show a considerable similarity to the average results obtained from A. C. Nielsen's studies of four United States markets (Table 4.3)

Table 4.3. COMPARISON OF U.S. AND CANADIAN POSTER READERSHIP STUDIES

	A.C. Nielsen* 4-week		Canadian Model 4-week	
Campaign Size	r	f	r	f
25 GRP's Daily	77	8	76	8
50 GRP's Daily	88	14	86	15
75 GRP's Daily	91	20	91	21
100 GRP's Daily	93	27	93	27

*For four U.S. Markets

Source: Outdoor Advertising Association of Canada. **Inside Outdoor.** Toronto: Author, 1970.

The formulas shown below indicate how the reach and frequency of an advertisement can be computed from the GRPs of the showing. If r is the reach and f the frequency, then:

$$f = \frac{0.9 \text{ GRPs}}{100} + 2.0 \qquad \text{and } r = \frac{0.9 \text{ GRPs}}{f}$$

Gross Rating points as used in this formula are equal to Gross Rating Points Daily (D) multiplied by time in days (t). Thus:

$$f = \frac{0.9 \text{ Dt}}{100} + 2.0 \qquad \text{and } r = \frac{0.9 \text{ Dt}}{f}$$

This formula has been used below as an illustration, to compute the reach and frequency of a poster campaign with 50 GRPs daily lasting for 13 weeks:

$$f = \frac{0.9 \times 50 \times 7 \times 13}{100} + 2.0 = 43 \text{ times}$$

$$r = \frac{0.9 \times 50 \times 7 \times 13}{43} = \frac{4095}{43} = .95 \text{ or } 95\%$$

Thus the reach for this campaign is 95% of the population and the average frequency of exposure for each viewer is 43 times.

[13]Outdoor Advertising Association of Canada. *Inside Outdoor.* Toronto: Author, 1970.

This model also can be used to estimate the reach and frequency of any given segment of a market by socio-economic level, age, sex, or other basis. The Traffic Audit Bureau has computed weightings for these estimates.[14] For example, its study showed that the average daily circulation audience of a poster showing is composed of 59% male adults, 31% female adults, 10% children (Table 4.4).

Table 4.4. OUTDOOR AUDIENCE COMPOSITION STUDY

	Men	Women	Children
5 weekdays (average)	63	30	7
1 Saturday	55	32	13
1 Sunday	47	36	7
7 days (average)	59	31	10

Source: Traffic Audit Bureau. **Five-Market Audience Composition Study.** New York: Author, 1963.

This Canadian model provides an accurate estimate of the reach and frequency of an advertising campaign and eliminates many of the problems inherent in previous models involving selection of test areas for individual market studies and the risk of sampling errors. Using the Canadian model, Table 4.5 provides an estimate of the reach and frequency of a four-week campaign for different market segments and showings.

Table 4.5. REACH/FREQUENCY OF AN OUTDOOR ADVERTISING CAMPAIGN DURING A 4-WEEK PERIOD

	25 GRP's Daily		50 GRP's Daily		75 GRP's Daily		100 GRP's Daily	
	Reach	Freq.	Reach	Freq.	Reach	Freq.	Reach	Freq.
Total adults	77	8	88	14	91	20	93	27
Total men	82	10	90	19	93	28	95	36
Men 18-30	86	10	95	19	97	28	98	37
Men 31-45	81	10	92	20	95	30	97	37
Men over 45	77	9	83	17	86	25	90	34
Total women	73	6	86	10	89	15	92	19
Women 18-30	74	5	85	10	90	14	93	17
Women 31-45	82	6	91	10	93	15	95	20
Women over 45	62	6	81	12	85	16	87	22

Source: Outdoor Advertising Association of Canada. **Inside Outdoor:** Toronto: Author, 1970.

A comprehensive study done by W. R. Simmons dealing with the reach and frequency of outdoor advertising provides some important data about the effectiveness of outdoor advertising.[15] A #50 showing will reach from 80 to 92% of the population, with a frequency ranging from about 14 to

[14]Traffic Audit Bureau. *Five-Market Audience Composition Study.* New York: Author, 1963.
[15]W. R. Simmons & Associates. Outdoor study 1967. In Institute of Outdoor Advertising. *Outdoor Advertising Factbook.* New York: Author, 1967.

18%, according to age. This study also found that reach and frequency were highest among well educated and high income people.

This same study also showed the extent to which reach and frequency increase over the four-week duration of a #50 showing. After four weeks is was found that 90% of all men and 84.7% of all women had been exposed to the message, and that the frequency with which they viewed it was 16.9 and 14.4 respectively.

SIGN PLACEMENT AS A FUNCTION OF REACH AND FREQUENCY

All of these concepts — circulation, reach, frequency, GRPs, etc. — remain abstract marketing factors until one understands their relation to sign positioning. A showing of five well-placed poster panels can have a greater reach and circulation than a poorly planned showing of 50 signs. It is important that signs be situated at important arteries and that all sections of the market area be covered. Three signs in the downtown area of a city will be less effective than one sign in the downtown area, one in a shopping area, and one in a residential area.

The application of these principles is not limited to large metropolitan areas, but extends to towns and smaller trading areas. Highway advertising exploits the fact that the residents of small towns and central trading areas are highly mobile and heavily dependent on their automobiles for traveling to and from work, shopping, social activities, and leisurely trips. For such markets it is important that the signs in a showing be situated for repeated exposure to the numerous people living outside the principle municipal area. Normally the people living outside a small town account for at least half of the buying power in that market.

A study of the Fort Dodge, Iowa, trading area, conducted by the 3M Company contains important implications for the positioning of signs for maximum reach and frequency to be achieved.

Table 4.6 indicates the household populations and total population of the Fort Dodge trading area.

Table 4.6. HOUSEHOLD AND TOTAL POPULATIONS OF FORT DODGE, IOWA

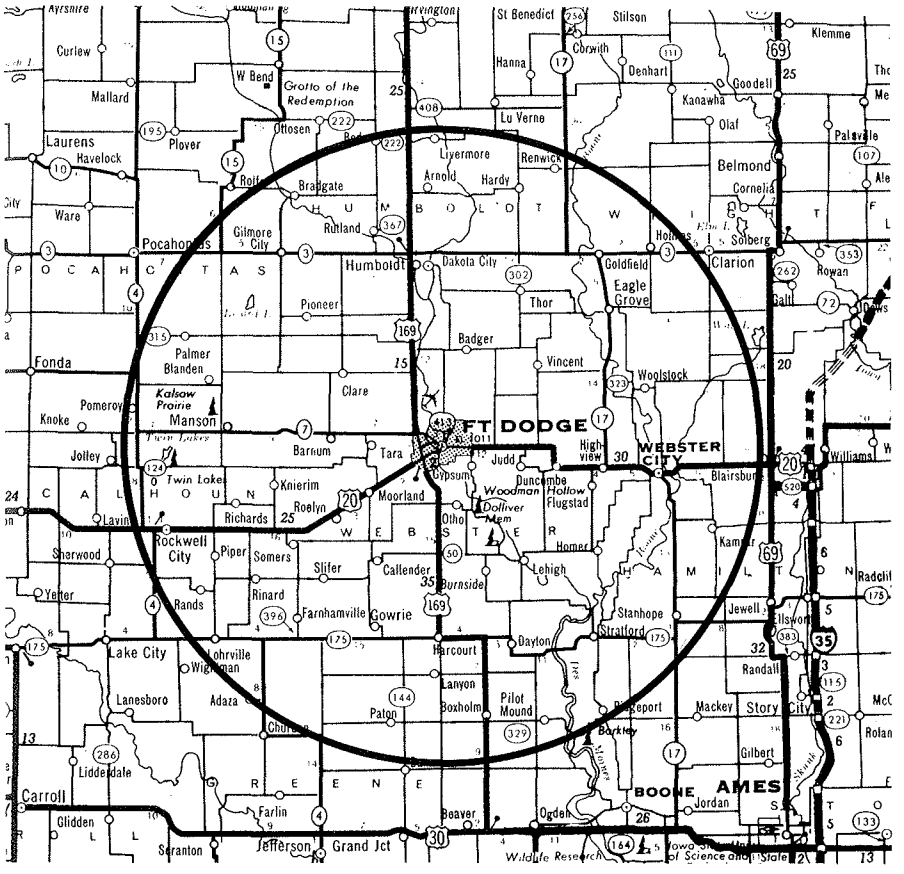
Area	Household population	Total population
Trading center	9,950	30,275
Outer trading area	25,475	87,375
Total trading area	35,425	117,650

Source: ABC estimates for 1969.

The highway map reproduced in Figure 4.1 shows the geographic structure of the Fort Dodge market. There are five primary routes by which the outer trading area residents come into the town and by which Fort Dodge residents leave the city for numerous automobile trips into the outer area and beyond. U.S. 196 North and South, U.S. 20 East and West, and local Route 5. Clearly signs placed on these five arteries will be seen by a vast majority of the inhabitants of the trading area over

a period of one month. To obtain the essential marketing data, one needs additional information about the circulation, reach and frequency of sign sites on these roads.

Figure 4.1. GEOGRAPHIC STRUCTURE OF FORT DODGE, IOWA



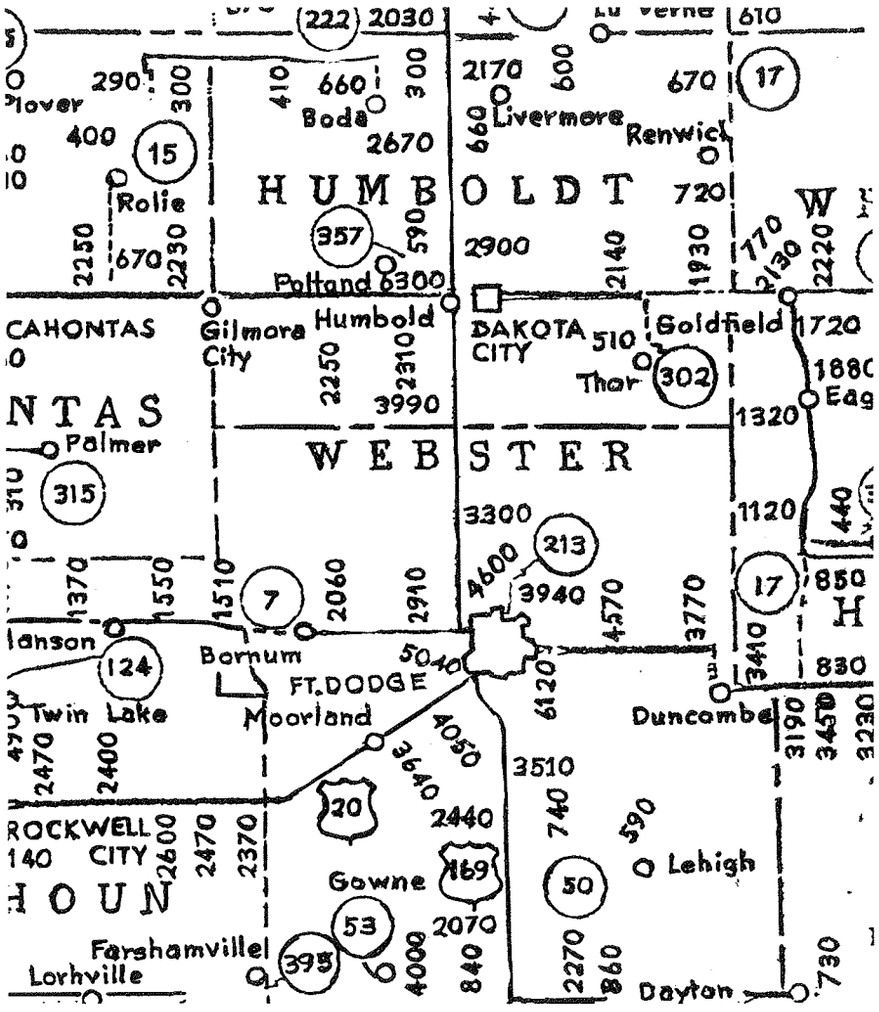
Circulation is the first important figure. We must know the total estimated traffic that travels on these highways coming into Fort Dodge. This estimate can be obtained through the counting procedure outlined in the previous section, which consists of stationing people to count traffic flow at specified times and places. Such a count may prove if the state or city already has computed its own figures (usually for the sake of traffic regulation). In the case of Fort Dodge, the Iowa highway department has already published a traffic flow map of the area. (Most states publish such maps.) The map, in Figure 4.2 gives data about the estimated traffic flow at many points throughout the trading area.

In an average 24-hour period the number of vehicles on these five roads totals 22,170. Since every highway trip is assumed to be a round trip, and since this figure includes traffic in both directions, we must divide this

figure in half to determine the total number of different vehicles using these roads daily.

State highway department studies have found that for a market the size of Fort Dodge, an average of 81% of the total traffic traveling on these

Figure 4.2. SECTION OF TRAFFIC FLOW MAP



five arteries will be composed of residents of the Fort Dodge trading area.[16] Thus, we can estimate that 8,979 different vehicles use these highways each day. For the sake of marketing convenience, we equate the driver of each vehicle to a household. This amounts to 26% of the 35,425 household heads living in Fort Dodge.

[16]3M National Advertising Company. Argo, Illinois: Author, no date.

An analysis of population and traffic data reveals the percentage of the market that will be reached on a single day by signs placed on each of these five major arteries. We must next extend this information to cover a 30-day period to find out how many *different* household heads will travel on these highways, and how often they will make the trip to and from Fort Dodge.

A telephone survey by the 3M National Advertising Company representatives who were conducting this study found that 82% of all trading area household heads made at least one weekly trip outside of Fort Dodge, and that 95% made at least one such trip a month. The result was an average of eight round trips per month in and out of Fort Dodge, fairly evenly spaced at the rate of two trips per week.

Thus an outdoor advertising campaign using signs on each of these five arteries, with a single facing on each sign, would expose each of these viewers to eight exposures per month. If a sign facing on both sides of the sign structure were used, the viewer would be exposed to the message 16 times a month.

Other studies by the 3M National Advertising Company have shown results that are relatively similar to the previous findings.[17] This information suggests that by using careful and scientific marketing studies, an advertiser can plan a sign showing that will insure his reaching the vast majority of the population numerous times in one month. Using such factors as circulation, reach, frequency, and traffic flow data, the advertiser can conduct an effective and relatively cheap advertising campaign.

THE NATURE OF TRAFFIC

Another important factor to consider in determining the most effectual location or the type of sign for a particular situation is the nature of traffic and the mode of transportation in the site location area. Different types of signs and different locations should be used for pedestrian, mass transit, or automobile-oriented areas; similarly, signs located on high-speed, nonstop freeways demand different considerations than do signs in slow moving, urban traffic. Thus the location and type of advertising signs used should be directly related to the mode of transportation that is dominant in the segment of the market to which the advertising is meant to appeal.

At one time railway and bus depots were considered prime locations for advertising, but they no longer provide such a larger audience except in large cities that have exceptionally heavy commuter traffic. Today the automobile is by far the most prevalent mode of transportation. It has been estimated that 75% of the urban population over ten years of age spends at least one half-hour per day in a car; pedestrians make up less than 15%[18] of the average traffic past any given point on a city street.

[17]3M National Advertising Company. Argo, Illinois, no date: *A Survey for the Hartford Insurance Group A Four Year Study of Highway Advertising in Three Markets*, completed in or after 1966. *A Study of Highway Identification*, and *Directional Signs for Dutch Pantry Family Restaurants; Nashville Metro Traffic Study* and others.

[18]3M National Advertising Company. Argo, Illinois, no dates given: *A Survey for the Hartford Insurance Group A Four Year Study of Highway Advertising in Three Markets*, completed in or after 1966. *A Study of Highway Family Restaurants; Nashville Metro Traffic Study*, and others.

MARKET SEGMENTATION

One last consideration that we should mention is market segmentation. This term refers to an advertising campaign that is intended not to reach as many people in a certain market as possible, but to appeal to a specific group. A sign showing that is intended for this purpose must be designed and located in such a way as to be exposed to its intended market.

Market segmentation can occur on several different levels. The most basic segmentation is that between urban and rural markets. Within any urban market there are always a number of segments. Such divisions can be based on demographic factors such as income level or ethnic profile. Accordingly, it has become increasingly popular to illustrate painted bulletins with black characters in predominantly Negro neighborhoods, and to letter signs in Spanish for Spanish speaking areas; it is felt that such signs will have enhanced appeal to the audiences for which they are intended.

Careful research must be done for such a sign to determine who and where the particular market is, and to avoid wasting signage advertising for a particular segment of the market in an area in which that segment exists only in small numbers. Another classic example of market segmentation is the bulletin that appeals exclusively to one sex similar to a technique used in magazines. This may be combined with locational variables: food advertising may appear in the vicinity of supermarkets, in hopes of reaching women. Seven-Up might ask for locations near schools to reach the youth market of both sexes.

This segmentation need not only exist for already established segments of a market. An advertising campaign can seek to define its own segment by picking out a group of people with certain characteristics to whom the product to be advertised will especially appeal. The differentiation of a market in this way has been termed "differential advantage" by Engle *et al*, who point out:

Rarely can a product be designed exclusively for the tastes of one individual, however. For reasons of technical efficiency, groups of consumers must be found whose tastes are sufficiently similar that they can be grouped together as 'market segments.' When products are developed or modified especially to meet the desires of a particular group, the policy is called market segmentation, and it is sometimes contrasted to a policy of trying to satisfy the whole market, called market aggregation.[19]

[19]J. F. Engle, D. T. Kollat and R. D. Blackwell. *Consumer Behavior*. New York: Holt, Rinehart, and Winston, Inc., 1968, 13.

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Chapter 5
THE COSTS OF VARIOUS FORMS OF SIGNAGE

Costs of different types of signage are difficult to compare with the realization that the sign industry today is so complex and diverse that it is difficult to obtain or estimate approximate figures for the different areas of signage. The costs of materials, construction, labor, maintenance, and leasing vary from city to city and from sign company to sign company. It is often the case that when two companies in the same area are asked for an estimate for the construction of a particular sign, the estimate of one company may be twice or three times as high as its competitor's bid.

Therefore, the figures mentioned in this chapter must be considered average amounts, representative of the major companies in the sign industry. In addition, these figures will vary not only from one company to another, but will also fluctuate with the economic condition of the country as a whole. The soaring inflation in recent years has caused steady cost increases in all sectors of the economy, including the sign industry. The costs of certain materials, e.g., have become so prohibitively high that use of them has become increasingly uneconomical and infrequent. Most of the figures given here will, however, represent 1972 and 1973 prices and thus will provide a fairly accurate indication of the cost of various forms of signage at that time.

COST EVALUATION

Although an advertiser may possess a detailed report outlining the costs of different types of sign showings and outdoor advertising campaigns, this information will seem confusing and mystifying to him unless he has some way to relate these costs to those of other advertising media. To make these costs understandable to advertisers, it is necessary to break these figures down into comprehensible concepts and show the advertisers how they can get more for their money through the use of outdoor advertising than through other media such as television and newspapers. Also, since the cost of outdoor advertising is far below that of other methods of disseminating information, it can be profitably combined with other media approaches in a campaign and result in a much higher reach and frequency for the same investment.

The key concepts in evaluating the cost effectiveness of different advertising media are *circulation* and *cost-per-thousand.* Circulation, discussed more fully in Chapter 4 refers to the number of prospective customers who are exposed to the advertisement over a specified period of time. The circulation of an advertisement on television equates the number of people who are watching it at the time that the ad is aired. The circulation of an advertising sign is the total number of people who drive or walk by the sign each day.

The unique feature of outdoor advertising is that unlike all other media which circulate to their audiences, the outdoor advertising audience circulates to the signs. Since people move past the sign site in their normal everyday activities, they are often exposed to the same signs and their messages numerous times. Outdoor advertising's circulation figures are

achieved by the natural travel habits of people, which creates numerous exposure opportunities for the advertiser's message. Circulation figures include both motorists and pedestrians, as counted using the standardized procedures developed by the Traffic Audit Bureau. The resulting estimate, called "effective circulation," includes only those people who are traveling in such a manner and direction as to have an opportunity to see the message. In other words, if a sign faces only one direction of traffic on a two-way street, only those motorists and pedestrians who are moving toward the sign are included in the effective circulation figure. Knowing the number of people who are exposed to the advertising message is thus one of the most important indices to cost effectiveness of the outdoor advertising medium.

Knowing the daily effective circulation of an outdoor sign, we can then determine the cost-per-thousand-exposures. This figure relates the total advertising expenditure to the number of people who are exposed to the advertising message. Outdoor advertising is the only advertising medium that does not view its audience in terms of households, i.e., cost per household. Although many people think that it is impossible to relate the effectiveness of different types of media advertising campaigns, the cost per thousand figure can in fact provide a fairly indicative basis for comparison.

To arrive at the cost-per-thousand figure, we start with the daily effective circulation, as determined above. Using some average figures, let us assume that a full showing achieves a daily effective circulation of 200,000. Multiplying this by 30, we determine the monthly effective circulation, or six million. If this monthly circulation is then divided into the monthly rate of that full showing, e.g., $1500, the resulting figure is the cost-per-thousand, in this case 25¢ per thousand. This "pennies-per-thousand" figure represents the cost of exposure opportunities for the advertising message on the sign, and includes a very high frequency factor. When cost-per-thousand-exposures is used as the index for comparison of different advertising media, outdoor advertising is found to be extremely economical in relation to other advertising media.

One way of taking advantage of outdoor advertising's low cost-per-thousand is by using it in conjunction with other media, such as television or newspaper. A study done by Gallop (1971) compared the effectiveness of a solely television-oriented advertising campaign to a combined television-outdoor advertising campaign. It was found that a television campaign using 20 commercial spots reaches about 80% of the audience five times (a frequency of five). If the advertiser used only 15 spots, which would reach 75% of the audience four times, and used the other 25% of his budget on an outdoor advertising campaign of 50 GRPs daily, this latter campaign would develop an 87% reach and a frequency of 15.5. The two campaigns combined would thus provide a total reach of 96% and a frequency of 17. This is considerably more effective than the television campaign by itself.

RATES FOR OUTDOOR ADVERTISING — POSTERS

There are two basic types of signs used in the outdoor advertising industry — poster displays and painted bulletins. A poster is paper on which an advertising message has been either silk screened, lithographed or hand painted. Once the basic design has been worked out, any number of copies can be printed. Poster panels are usually used as part of a larger

showing of signs situated at different locations in an area. Although poster sizes vary slightly in regard to press dimensions, their dimensions are usually around 8 ft. 8 in. x 19 ft. 6 in. for a 24-sheet poster and 9 ft. 7 in. x 21 ft. 7 in. for a 30-sheet. The two standard sizes, 24-sheet and 30-sheet are terms that date back to the origins of the poster advertising industry, when posters were turned out in 24 separate sheets. Today the terms 24-sheet and 30-sheet are still used to designate poster sizes, even though larger modern press sizes permit use of from 10 to 15 sheets for a poster. Posters utilizing all of the display area measure 9 ft. 7 in. x 21 ft. 7 in. and are called "bleed" posters.

Poster advertising space is generally sold in market "showings." These consist of a specified number of panels, the actual number varying from market to market. In the past these showings have been called either #100 showings, #50 showings, or #25 showings, or intensive full, and minimum showings. The #100 or intensive showing was designed to develop maximum market reach and frequency and usually consisted of 50% to 100% more panels than the basic full showing. The #50, or full showing, is the basic campaign showing; surveys have found that this showing will expose the message to 94% of car-owning, car-using households, an average of 21 times in a 30-day period. The #25 or minimum showing is less expensive and has less reach than the full showing, usually consisting of about half as many panels as in the full showing.

Although the concept of a market "showing" has been the standard measurement of outdoor advertising campaigns in the past, in the last few years many outdoor advertising companies have started converting to the Gross Rating Point (GRP) system used by other media in order to be able to compete with these media for the advertiser's dollar on a more comparable basis. According to this new system, one Gross Rating Point Daily (1 GRP Daily) is equal to 1% of the population of the market served. Thus a 100 GRP showing, which used to be called an intensive showing, is supposedly exposed to 100% of the population daily. The monthly price usually charged by an outdoor advertising company for a particular showing is not usually a function of the number of signs used, but rather of the effective circulation that the showing can achieve. The larger the showing, of course, the more expensive it is. Generally, though, a 50 GRP showing has about half as many signs and costs about half as much as a 100 GRP showing.

A poster showing will normally consist of a combination of illuminated and non-illuminated panels. Rural areas, which have a relatively low amount of night traffic, have showings that are predominantly non-illuminated, whereas urban areas, in which a large percentage of the traffic moves at night, rely more upon illuminated displays. Illuminated poster panels are flooded with light from dusk to midnight; in the early morning hours, when little traffic travels, it is uneconomical to have the display illuminated.

The number of posters and the total cost of a #100 showing will obviously vary from one area to another. The number of posters constituting a showing is determined by the plant operator, and usually depends on the population and area of the city, the arrangement or layout of the industrial, commercial, and shopping areas within the city, the pattern of streets and highways and the traffic flow on those arteries, the network of

public transportation, and other factors. Thus, the number of posters in a #100 showing may vary from several hundred in a large city to only one in a small town. Normally a number of #100 showings are available in a market, each equal to the other not only in the number of posters (illuminated and non-illuminated), but also situated such that equal amounts of traffic will pass them during any given period of time.

Table 5.1 gives a brief summary of the number of panels and the costs of showings in Chicago, one of the nation's largest markets.

Table 5.1. NUMBER OF PANELS AND COST OF POSTER SHOWINGS IN THE CHICAGO METROPOLITAN MARKET

Size	Unill. Panels	Illum. Panels	Total Panels	Cost Per Month	Daily GRP
150	102	336	438	$68,850	50
100	68	224	292	45,900	75
95	64	212	276	43,400	
90	62	202	264	41,470	
85	58	190	248	38,970	
80	54	180	234	36,810	
75	52	168	220	34,540	
70	48	156	204	32,040	
65	44	146	190	29,880	50
60	40	134	174	27,380	
55	38	124	162	25,450	
50	34	112	146	22,950	
45	30	100	130	20,450	
40	28	90	118	18,520	
35	24	78	102	16,020	25
30	20	68	88	13,860	
25	18	56	74	11,590	
20	14	44	58	9,090	
15	10	34	44	6,930	
10	6	22	28	4,430	

Source: Foster & Kleiser, Oct. 1, 1974.

The costs of a poster showing will vary considerably from area to area and from company to company. It is difficult to talk about consistent or "typical" rates, because each showing is different. However, in order to give some idea of the cost of various types of showings, Table 5.2 represents the range of prices charged by the Eller Outdoor Adv. Co. of California (Combined Communications Corp.) in 1975. These prices are fairly indicative of the cost of showings in various-sized markets, ranging from highly populated urban markets such as San Francisco/Oakland to less populated areas such as Vallejo/Napa Metro.

The monthly prices quoted here represent the basic figures. Some companies, however, offer discount rates for showings that are longer in duration and maintain a high GRP level. Eller, for example, states that along with these given prices, any company which uses Eller panels for 12 consecutive months in markets where a minimum intensity of 25 GRPs

is maintained qualifies for a 20% continuity discount. A quantity discount also is offered for companies that expend stipulated amounts in the several markets over a one-year period.

Such discount programs vary from company to company. For instance, the Eller Company in Michigan has a plan that differs from the California one, in that the percentage of discount depends upon the consistent size of the showing. Twelve consecutive months of a 100 GRP showing will earn a 20% discount, whereas 12 consecutive months of a 25 GRP showing will earn only a 10% discount.

Special considerations also must be taken for special displays, which either because of their high-intensity illumination, their special effects, or higher-than-average circulation merit individual treatment. To compute the costs of such specialized displays, the Eller Outdoor Advertising Co. in all its markets uses a standardized formula:

$$\text{monthly cost of special display} = \text{cost of 1 GRP for one month} \times \frac{\text{panel(s) circulation}}{\text{daily circulation of 1 GRP}}$$

It is, of course, very difficult to compare the rates of different companies, because they have different numbers of panels, achieve different circulation figures, and have different proportions of illuminated and non-illuminated displays.

The monthly space price includes one posting per month. If additional changes of copy or some fraction of the copy are required, Eller of Northern California charges $15 to replace any part of a poster and $25 to completely repost it.

Poster displays of one, two, or three weeks duration may usually be purchased, subject to space availability. For a one-week display, 45% of the monthly price is required; for a two-week display, 65% of the monthly price; and for a three-week display, 85% of the monthly price. Also a per panel service charge is often included.

Table 5.3 shows the 1975 poster rates and allotments for the various Eller Outdoor Adv. Cos. in major markets throughout the country. This table is just a summary of the major markets in each state, and should not be viewed as a complete set of prices. In addition, this listing includes only poster showings; painted bulletins will be dealt with separately.

PAINTED BULLETINS

Painted bulletins, which are outdoor painted displays, are usually hand painted on sections in the outdoor plant's own facilities. These sections are then transported to the bulletin locations and locked into place in the structure. The size of the message space varies, but is usually about 48 ft. x 14 ft. Most outdoor advertising companies also usually offer junior-sized bulletins, as small as 25 ft. in length. Structures are offered with or without any frame or trim.

Unlike poster displays, which are normally mass-produced and employed in large showings, painted bulletins are generally one-of-a-kind ventures in places with very high circulation and visibility. In certain cases, several copies of a bulletin may be sold, each painted separately. Also, occasionally the bulletins may be painted or printed on plastic or paper, rather than painted on metal or plywood sections. They offer opportunity

for an almost infinite variety of embellishment — special-shape flat cut-outs, 3-D cut-outs, unique lighting patterns, and moving ("animated") devices. Such embellishments are usually custom-designed for the individual advertiser at a premium price over the basic rate.

A large painted bulletin can cost ten times as much as a poster panel to build, but bulletins are usually contracted for at least 12-month periods, and repainted after six months. When special embellishments are added, the contract may be extended up to 36 months to amortize the extra cost over a greater length of time.

The primary problem of the individual painted bulletins is that being on only one site, they get exposed largely to only one audience. "Rotary plan" bulletins are offered by most sign companies to remedy the problem. Under this plan the advertiser's message does not remain in one place but is moved at regular intervals to new locations within the market. The result is to extend the reach of the advertising campaign by exposing the message to a greater percentage of the market's households. As part of this rotating plan, the bulletins are rotated monthly and three painting or design changes can be made per year at no additional cost. This rotary plan also applies to individual printed bulletins, which can be rotated monthly, along with a monthly posting of new copy.

The rotary plan can be especially advantageous for areas that experience rapid shifts in traffic patterns or a change in the highway system. In such an area a prime site may lose some of its circulation and frequency over a few months' period. Its reach may be similarly lowered. In itself, however, a bulletin with limited reach or coverage is not necessarily an ineffective display. Sometimes the advertiser who wants to direct a message toward a specified segment of the market will use a sign that has lowered circulation and reach, but whose viewing audience is more homogeneous. This ability to concentrate on a particular market segment, such as the financial district of a city or a certain ethnic group district, is more possible with outdoor advertising than with other advertising media, because outdoor can be more selective.

Most companies offer set prices for painted bulletins, depending upon

Table 5.2. COST OF POSTER SHOWINGS IN VARIOUS SIZES OF NORTHERN CALIFORNIA MARKETS

MARKET	Population (000s)	100 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	75 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost
Bay Area Metro	4,365,400	49	195	244	$38,298	38	148	186	$29,162
San Francisco/Oakland Metro	2,944,300	28	150	178	28,326	21	113	134	21,328
Oakland Metro	1,709,900	28	80	108	16,636	21	60	81	12,477
San Francisco Metro	1,234,400	-	70	70	11,690	-	53	53	8,851
San Jose Metro	1,150,400	21	45	66	9,972	17	35	52	7,834
Sacramento Metro	864,600	18	36	54	8,118	14	27	41	6,147
Fresno Metro	438,500	24	20	44	5,176	18	15	33	3,882
Bakersfield Metro	345,700	20	20	40	4,780	15	15	30	3,585
Vallejo/Napa Metro	270,700	18	7	25	3,275	14	6	20	2,640

One Gross Rating Point Daily (1 GRP Daily) is equal to 1% of the population of the market served.
Allotments have been computed in accordance with the formula devised and approved by the Outdoor Advertising Association of America.

their location. For example, the Eller Outdoor Advertising Company of Northern California (whose poster rates are shown in Table 5.3) reports the following 1975 prices (see Table 5.4) for painted bulletins in different areas.

Similarly, the Table 5.5 below indicates the unit monthly costs for a rotating painted bulletin from Foster and Kleiser, in a number of different important markets.

Different companies offer different rates for painted and printed bulletins that are purchased on an individual basis, and the length of the contract also varies somewhat from plant to plant. Table 5.6 shows a comparison of prices for both types of bulletins, as well as the standard contract terms, for Eller in different markets.

Additional posting or painting of bulletins beyond the terms of the contract entails, of course, an extra charge. Eller of Northern California requires a $750 charge for additional design or copy changes on painted bulletins, and $130 for posting additional full printed bulletins.

Most outdoor advertising companies also offer plaques or cut-out extensions that extend beyond the frame of the sign itself. These embellishments, which can be very effective in catching viewers' attention, usually cost about $4.50 or $5 per square foot. All cut-out extensions are limited to 5½ feet above, 1 foot below, and 2 feet beyond the edges of the display surface.

Additional charges also are required for the rotation of three-dimensional letters on bulletins. The rotation and maintenance of neon letters generally costs about $20-$25 a month per letter for an average-sized letter and up to $30.00 a month per jumbo letter. Wooden letters are a bit cheaper, running about $10 to $15 for the monthly rotation and maintenance of a letter.

Permanent locations also are usually available for painted bulletins, in addition to rotary programs. These strategic, permanent locations are ideal for companies which want to construct high-cost electric spectaculars that would be uneconomical on a short-term basis. These spectaculars, which are custom-designed and custom-built, vary widely in price. Long-

60 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	50 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	40 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	25 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost
30	117	147	$23,049	25	98	123	$19,291	20	78	98	$15,366	13	50	63	$ 9,871
17	90	107	17,019	14	75	89	14,163	12	60	72	11,424	7	38	45	7,165
17	48	65	10,005	14	40	54	8,318	12	32	44	6,748	7	20	27	4,159
-	42	42	7,014	-	35	35	5,845	-	28	28	4,676	-	18	18	3,006
13	27	40	6,030	11	23	34	5,128	8	18	26	3,942	6	12	18	2,706
11	22	33	4,961	9	18	27	4,059	7	14	21	3,157	5	9	14	2,088
15	12	27	3,165	12	10	22	2,588	10	8	18	2,110	6	5	11	1,294
12	12	24	2,868	10	10	20	2,390	8	8	16	1,912	5	5	10	1,195
11	5	16	2,122	9	4	13	1,721	7	3	10	1,320	5	2	7	919

Table 5.3. COSTS OF POSTER SHOWINGS IN VARIOUS MAJOR U.S. MARKETS

MARKET	100 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	75 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	50 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost	25 GRP DAILY PANELS Reg.	Ill.	Total	Monthly Cost
ARIZONA																
Phoenix Metro	32	40	72	$10,000	24	30	54	$ 7,500	16	20	36	$ 5,000	8	10	18	$ 2,500
Tucson Metro	12	16	28	3,800	9	12	21	2,850	6	8	14	1,900	3	4	7	950
CALIFORNIA(NORTHERN)																
Bay Area Metro	49	195	244	38,298	38	148	186	29,162	25	98	123	19,291	13	50	63	9,871
San Francisco/Oakland Metro	28	150	178	28,326	21	113	134	21,328	14	75	89	14,163	7	38	45	7,165
Oakland Metro	28	80	108	16,636	21	60	81	12,477	14	40	54	8,318	7	20	27	4,159
San Francisco Metro	-	70	70	11,690	-	53	53	8,851	-	35	35	5,845	-	18	18	3,006
San Jose Metro	21	45	66	9,972	17	35	52	7,834	11	23	34	5,128	6	12	18	2,706
Sacramento Metro	18	36	54	8,118	14	27	41	6,147	9	18	27	4,059	5	9	14	2,088
Fresno Metro	24	20	44	5,176	18	15	33	3,882	12	10	22	2,588	6	5	11	1,294
Bakersfield Metro	20	20	40	4,780	15	15	30	3,585	10	10	20	2,390	5	5	10	1,195
Vallejo/Napa Metro	18	7	25	3,275	14	6	20	2,640	9	4	13	1,721	5	2	7	919
CALIFORNIA (SOUTHERN)																
Southern California Metro	118	458	576	89,598	90	346	436	67,786	59	229	288	44,799	31	117	148	22,987
Los Angeles Metro	90	408	498	78,078	69	308	377	59,063	45	204	249	39,039	24	104	128	20,024
Greater San Diego Metro	34	50	84	12,210	25	38	63	9,183	17	25	42	6,105	8	13	21	3,078
COLORADO																
Denver Metro	16	62	78	10,920	10	47	57	7,980	8	31	39	5,460	6	15	21	2,940
KANSAS CITY																
Kansas City Metro	-	90	90	13,410	-	68	68	10,132	-	45	45	6,705	-	23	23	3,427
Kansas City, Mo.	-	62	62	9,238	-	47	47	7,003	-	31	31	4,619	-	16	16	2,384
Kansas City, Kansas	-	28	28	4,172	-	21	21	3,129	-	14	14	2,086	-	7	7	1,043
MEMPHIS																
Memphis Metro	22	48	70	7,630	16	36	52	5,668	11	24	35	3,815	6	12	18	1,962
MICHIGAN																
Detroit Metro	-	200	200	37,600	-	150	150	28,200	-	100	100	18,800	-	50	50	9,400
Detroit	-	136	136	25,568	-	102	102	19,176	-	68	68	12,784	-	34	34	6,392
Dearborn/Wyandotte	-	36	36	6,768	-	27	27	5,076	-	18	18	3,384	-	9	9	1,692
Pontiac	-	20	20	3,760	-	15	15	2,820	-	10	10	1,880	-	5	5	940
ST. LOUIS																
St. Louis Greater Urban	30	130	160	22,400	12	108	120	16,800	8	72	80	11,200	4	36	40	5,600
St. Louis Urban	10	100	110	16,170	7	75	82	12,054	5	50	55	8,085	2	26	28	4,116
East St. Louis Greater Urban	25	25	50	6,250	19	19	38	*4,750*	12	13	25	*3,125*	6	7	*13*	*1,625*
East St. Louis Urban	3	19	22	2,860	2	15	17	*2,210*	2	9	*11*	*1,430*	*1*	*6*	7	*910*

term contracts of 36 months to 60 months also can be obtained for these displays. Other such special displays as jumbo, tri-vision, and "high spot" bulletins also are offered; the prices for these are a function of the particular specifications of the display itself. Sample rates for a tri-vision bulletin,

Table 5.4. PAINTED BULLETIN RATES FOR VARIOUS NORTHERN CALIFORNIA CITIES OF DIFFERENT SIZES

Market or Plan	Painted Bulletin Monthly Rate*
San Francisco Bay Area Plan (Includes inter-city rotation between San Francisco, Oakland-East Bay and San Jose Markets.)	$1,050.00
San Francisco Metropolitan Market	1,050.00
Oakland-East Bay Metropolitan Market	1,050.00
San Jose Metropolitan Market	1,050.00
Sacramento Metropolitan Market	650.00
Fresno Metropolitan Market	600.00
Bakersfield Metropolitan Market	500.00

*Rates shown are based upon 4 month contracts, 1973.

one which has three sided louvres which rotate three sets of copy, are shown below, as reported by the Eller Co. of Michigan. These prices include rotation, maintenance, and painting of all three sides of louvres semi-annually:

16 louver..... $500 additional per month
21 louver..... $590 additional per month
45 louver.....$1500 additional per month

SIGN CONSTRUCTION COSTS

Up to this point, the whole question of the costs of various forms of signage has been viewed only from the point of view of the advertiser which wants to buy outdoor advertising space. Some advertisers complain, however, about the "exorbitant" costs of leasing outdoor advertising space. A brief look at the costs which an outdoor advertising company normally encounters in constructing either poster panels or painted bulletins will perhaps make this situation a little clearer.

The cost involved in constructing a poster panel includes site selection and leasing, drawing up blueprints, obtaining permits, on-site preparations, laying foundations, installing the posts, prefabricating the panel, and installing the electrical system. The procedure for a painted bulletin is nearly the same; instead of poster panel fabrication and pasting, the sign sections are fabricated and pre-painted. As can be seen, the construction of an outdoor advertising structure is a complicated matter. Furthermore, the abovementioned process applies only to sign structures built on the land table. Numerous outdoor displays are constructed on roofs, walls, etc. This dis-

cussion, however, will concentrate primarily on structures constructed on land surfaces, which constitute the majority of units in the U.S.

The figures given here, provided by the Foster and Kleiser Co., are representative of the customary costs involved in construction and should not be interpreted as rigid cost guidelines. Numerous factors may influence the cost of any particular structure, such as steeply sloping land, poor soil requiring extra foundations, a need for unusual height, etc.

Table 5.5. ROTATING PAINTED BULLETIN RATES FOR VARIOUS MAJOR U.S. MARKETS

Market	Unit Cost Per Month Painted*	Unit Cost Per Month Print*
SOUTHERN CALIFORNIA		
Los Angeles	$1150	$1093
Los Angeles Airport	$1350	$1283
Los Angeles Freeway	$1350	$1283
San Diego	$1000	$ 950
NORTHERN CALIFORNIA		
San Francisco Bay Area	$1075	$1021
Sacramento	$ 800	$ 760
CHICAGO		
Chicago	$1250	$1188
Expressway (18′ x 61′)	$2000	NA
NEW YORK		
New York	$1800	$1710
PACIFIC NORTHWEST		
Seattle—Tacoma	$ 850	$ 808
Seattle—Tacoma Airport	$1050	$ 998
Portland—Salem	$ 850	$ 808
OHIO		
Cleveland	$1025	$ 974
Cleveland Airport	$1275	$1211
Cincinnati	$ 850	$ 808
HOUSTON		
Houston	$ 650	$ 650
DALLAS		
Dallas—Ft. Worth	$ 700	$ 700
Dallas—Ft. Worth Airport	$ 900	$ 900

*Prices are based on continuous 12-month contracts.

COSTS OF POSTER PANELS

The standard, surface-built poster panel, which usually has dimensions of 12 x 25 feet, is constructed with one or more posts imbedded in the ground. This structure supports a flat surface display area of about 300 square feet, on which printed advertising messages are pasted.

The first step in building a poster panel is finding a location which

fits the criteria that have been developed by the outdoor advertising industry. A suitable site must comply with zoning regulations, have advertising appeal, have adequate circulation and strategic space positioning, and be reasonably priced. When such a site has been found, a lease is negotiated with the owner of the property. This entire process, carried out by the outdoor advertising company itself, is not usually included in price considerations, since it does not constitute costs paid out by the company. Nonetheless, considerable time and expense are involved on this crucial stage.

The second step is developing blueprints for the poster panel or bulletin structure and obtaining building permits. Exemplary costs of these two procedures are $44 and $15 respectively.

Next, there is the on-site preparation, which includes boring holes at the site to the depth and circumference required by the individual building

Table 5.6. COMPARATIVE RATES FOR PRINTED AND PAINTED BULLETINS FOR VARIOUS MAJOR U.S. MARKETS

City	Printed Bulletin Monthly Charge	Painted Bulletin Monthly Charge	Contract Terms
Tucson, Ariz.	$625	$625	6 month minimum, 2 paints per year, posting on rotation, bi-monthly rotation
Phoenix	$750	$750	same
Colorado Market	$825*	$825	3 paints per year *minimum 2 months
Memphis	$600	$600	4 month minimum 3 paints per year
Michigan Market	$1150*	$1275	4 months minimum, 3 paints per year. *posting on rotation, minimum 2 months
St. Louis	$925*	$1000 and $925	basic rates, 3 and 2 paints/yr. *6 copy changes per year posting on rotation
Houston	$575	$600	

codes. The galvanized steel posts are then installed and anchored with poured concrete. The installation of the cross members and platforms which form the foundation of the actual poster surface follows. This installation process consumes about 13½-man hours of labor, at about $70; material costs are $545.

Unitized poster panels, fabricated at the company's plant, are transported to the site, raised by cranes, and installed. This takes approximately 18 man-hours of labor, costing about $94. Material costs average $670.

If a "back up" poster panel, i.e., a poster panel on both sides of the structure, is to be built, this involves additional costs.

For illuminated displays, which constitute the large majority of poster panels in this country, electrical installations must then be performed. This includes the fluorescent tubing and the solar-sensitized time clocks, which automatically control the on-off function at the location site. Price estimates for this work include the electrical contractor's fee of approximately $100 and electrical materials that cost about $150.

Additional costs, which are not included in the expenses an outdoor plant reports in the construction of a poster panel or painted bulletin, include the high cost of specialized equipment that has been adapted to the unique and specific functions that are demanded in outdoor advertising construction, and the safety features that are introduced to reduce the dangers inherent in some of the hazardous aspects of sign construction.

The total labor and material costs estimated for the construction of a poster panel, as reported by Foster and Kleiser in 1973 (1975 costs are, of course, substantially higher) are recorded in Table 5.7. Included is a standard overhead or "burden" percentage figure of 36.35%, which internal and external audits have shown to be applicable to the construction of outdoor advertising structures. This burden figure is considered fairly con-

Table 5.7. TOTAL LABOR AND MATERIALS COSTS FOR SINGLE AND DOUBLE POSTER PANEL

Original Surface Built Panel			
Construction and electrical mtls.	$1,352.84		
Material handling	67.91		
Construction labor	211.02		
Engineering cost	44.00		
Building permit	15.40		
Electrical contractor's cost	89.10		
Equipment cost	159.50		
Sub Total		$1,939.77	
Burden 36.35%		705.11	
Total			$2,644.88
Back Up Panel			
Construction and electrical mtls.	$ 702.08		
Material handling	35.24		
Construction labor	31.26		
Electrical contractor's cost	40.70		
Sub Total		$ 809.28	
Burden 36.35%		294.17	
Total			$1,103.45
Total production costs for dual-facing single structure			$3,748.33

stant, even from region to region. This includes administrative costs, marketing research costs, etc.

COSTS OF PAINTED BULLETINS

The standard painted bulletin is somewhat larger than the poster panel, usually measuring approximately 14 x 48 feet. It also is considerably more expensive than a poster panel to construct. This additional expense is compensated for by the fact that it is the largest of all display media, offers greater opportunities for creative design and construction, and, being unique, it is more eye-catching than a poster panel and can be seen from a greater distance.

Many of the steps involved in the construction of a painted bulletin are the same as those in the construction of a poster panel. The site selection and leasing procedure, for instance, follows the same criteria and course. The next step is again drawing up blueprints and obtaining building

Table 5.8. TOTAL LABOR AND MATERIALS COST FOR SINGLE AND BACK-UP BULLETIN STRUCTURE

Surface Built Bulletin	
Construction and electrical materials	$6,842.20
Material handling	343.48
Construction labor	1,417.12
Engineering cost	225.00
Building permit	60.00
Electrical contractor's cost	556.75
Equipment cost	145.00
Painting cost	
Rotating cost	
Outside contractor's cost	720.00
Sub-Total	$10,309.55
Burden 36.35%	3,747.52
Total	$14,057.07
"Back Up" Bulletin	
Construction and electrical materials	$ 4,633.09
Material handling	232.58
Construction handling	395.96
Electrical contractor's cost	190.38
Equipment cost	225.00
Sub Total	$ 5,677.01
Burden 36.35%	2,063.59
Total	$ 7,740.60
Total production costs for a dual-facing single structure	$21,797.67

permits. However, since this type of sign is larger and more elaborate, both of these costs are higher than for a poster panel. Engineering blueprints cost on the average about $225, and permits about $60.

The site preparation procedures are basically the same, consisting of boring the proper-sized holes. This takes about 32-man hours of labor, costing about $166, plus the cost of the hole digger and crew.

A similar steel installation procedure follows, except that each step in this procedure is far more complex. An estimated 228-man hours, at a cost of $1187, is required, along with material costs of $5611. Again, additional costs must be included if a back up bulletin is to be built too.

Electrical expenses also are proportionally higher; far more fluorescent lamps are required, for one thing. Electrical contractor fees run to $386 and materials cost $1,050.

The advertising message is painted on metal or plywood sections, based on enlarged photographs of the design. The painted sections are transported to the sign site and erected.

Foster and Kleiser's total estimates for the construction of a single-faced painted bulletin and for a back-to-back bulletin are shown in Table 5.8. Once again, the overhead, or "burden," percentage of 36.35% has been added in, to offset the unspecified costs. (These costs also were reported in 1973, and costs would obviously be substantially higher now).

COSTS OF REFLECTORIZED BULLETINS

Reflectorized bulletins are a very common feature of rural areas, offering numerous advantages over non-illuminated painted bulletins. Such bulletins are used almost entirely outside of cities and towns, away from all competing illumination. The purpose of reflectorization is to provide 24-hour visibility to displays along rural routes, where electrical power sources are either not available or uneconomical. Reflectorized bulletins differ from painted bulletins in that they are used mainly to identify and give directional information about a specific business such as a motel, gas station, or restaurant. The copy is usually permanent, remaining unchanged for five years or longer. Unless the business changes its name or moves, there is no need to change copy.

Because reflectorized bulletins are such a common phenomenon in certain parts of the country, it is useful to discuss the costs involved in reflectorization. There are no established rates for reflectorized sign construction. Prices are related to the cost of construction and the traffic count of the highway from which it is to be viewed. Such a bulletin is custom-built to fit highway conditions and customer needs. Therefore sizes and shapes may vary considerably. A highway with wide right of ways and high speed traffic, such as interstate highways, requires larger bulletins than the usual rural road. Also, unusual shapes are often necessary to duplicate the logos of special designs to individualize and increase the effectiveness of expression.

An audit by the U. S. Department of Transportation of one of the largest outdoor advertising companies in this country provides one of the most reliable and informative studies on the reproduction cost (new) of reflectorized bulletins and other types of rural signs. The audit was based

on the company's 1971 costs and the results are expressed in Table 5.9 in terms of cost per square foot. A subsequent study showed that costs had increased 12.5% as of May 1, 1973. There have, of course, been substantial increases in costs since 1973.

To illustrate the costs of a typical reflectorized bulletin, we can determine the construction costs of a reflectorized 8 x 20 foot, with 1973 costs of $8.94 per sq. ft., yielding a 20% profit.

1) $8.94 .80 = $11.18 per sq. ft.
2) 8 x 20 ft. = 160 sq. ft.
3) 160 sq. ft. x $11.18 per sq. ft. = $1788.80.

COSTS OF PLASTIC SIGNS

Few general rules can be made about the costs of customized, plastic signs for several reasons. First of all, unlike poster panels or painted bulletins, there is no uniform, standard size for custom signs; in fact, the opportunities made possible by the development of pliable, easy-to-form plastics

Table 5.9. GUIDELINES FOR DETERMINING REPLACEMENT COSTS FOR A TYPICAL REFLECTORIZED BULLETIN, BASED ON COST PER SQUARE FOOT

Direct Costs:	**1971 Costs**	**1973 Costs**
Material	$ .59	$ .664
Labor	.43	.484
Material handling	.34	.383
Permits	.03	.034
Equipment	.27	.304
Payroll Benefits & Subsistence	.20	.225
Panel Costs	1.29	1.451
Total Direct Costs	$3.15	$3.545
Indirect Costs:	**1971 Costs**	**1973 Costs**
Art, design, sales & leasing	$2.62	$2.948
General administration	1.22	1.373
Total Indirect Costs	$3.84	$4.321
Total cost of enamel bulletin expressed in cost per square foot	6.99	7.88
Cost of Reflectorization for area covered (Reflective Sheeting)	1.34	1.51
Total cost of Reflectorized Bulletin with 70% of area covered:		
Cost of Enamel Bulletin	6.99	7.88
Add for Reflectorization (1.34x70%) (1.51x70%)	.94	1.06
Cost of Reflectorized Bulletin expressed in cost per square foot	$ 7.93	$8.94

like acrylics or polycarbonates have resulted in an incredible diversity of sign shapes and designs. The costs of most custom signs will thus depend entirely upon the individual sign company, the complexity of the sign, and the cost of materials in that region.

Plastic sheet is sometimes more expensive than other sign materials. The ease with which plastics can be formed and shaped, however, reduces the labor costs involved in working with them and thus makes them quite economical in the long run.

Most acrylic plastics cost about $.75 per square foot for a 1/8-inch thick sheet, as of 1972. Polycarbonate, a plastic which is much more impact resistant than traditional sign plastics, is somewhat more expensive, about $1.10 per square foot. Over the past few years, the price of acrylic plastics has been increasing slowly; the cost of polycarbonate which is being further perfected, has dropped in price. Nevertheless, it still remains between 40 to 90% more expensive than acrylic dependent on sheet types. Its usage, however, can be justified for signs that need extra protection against vandalism or other threats of breakage. The prices for colored sheets of both acrylics and polycarbonates are a bit higher than those of the standard transparent sheets.

Plastic sheet is only half the story when it comes to plastic signs. A framing system also is necessary to hold the plastic in place. Most sign frames today are either aluminum or steel. Aluminum, which is light and easy to work with, needs little finishing or maintenance and can be extruded into different shapes, is rapidly becoming the most popular material for framing.

It is difficult to make a cost comparison for different types of framing systems, because they differ widely in design, complexity, amount of metal required, labor costs, and maintenance costs.

COST STUDIES FOR DIFFERENT TYPES OF SIGNS

Given the incredible diversity of non-standardized billboards and of custom on-premise signs, it becomes very difficult to hazard any definitive estimates about the costs of these types of signs in general. Due to rising prices and increasing wages, building and installing signs is becoming ever more expensive. Nevertheless, one of the most interesting and informative indices to the costs of particular types of signs is provided by the cost studies series conducted by *Signs of the Times* magazine in the past few years. Over the years *Signs of the Times* has reported each month a compilation of estimates for a particular hypothetical sign job, elicited from a wide variety of sign companies. These sets of estimates furnish perhaps the most telling evidence of the disparity in both price estimates and labor estimates among sign companies.

The results of these cost studies contradict some of the accepted notions about sign company pricing. For example, the size of the market does not seem to have much effect on the price structure; firms in small communities often price their work higher than firms in medium or large markets. Similarly, although many people assume that sign prices increase the further west one goes, evidence indicates that the highest price estimates sometimes come from companies in the east.

The use of a few representative cost studies will perhaps make more clear the range of prices one can expect for the common types of signs and some of the problems that arise when estimates are made and compared. Sample estimates for two different illuminated plastic sign jobs will be presented and briefly discussed in the following section.

ELECTRIC ON-PREMISE SIGNS

Since electric on-premise signs are a major concern for many businesses, it is appropriate to discuss several different types of installations. Two of these comparative cost studies are for storefront signs, and one deals with a high-rise sign.

A number of sign companies were requested by *Signs of the Times* to submit price estimates for the design, fabrication, and installation of a sign for its June, 1971 issue. The sign, which includes both a wheel replica and a letter identification to be made of paint grip steel sprayed black, with two-foot tall channel letters. The letters on the name plate are to be illuminated with incandescent bulbs. The wheel should have a diameter of 9 feet

Figure 5.1. accompanies Table 5.10.

4 inches, and will be illuminated by both incandescent bulbs and fluorescent tubing.

Because of the complexity of this task, only a limited number of companies responded with estimates. Nonetheless, the figures compiled present an interesting look into the fabrication and installation of this particular type of signage. The estimated selling price varied enormously, from $1604 to $6131 (Table 5.10).

Another study, published in August, 1972 by *Signs of the Times,* deals exclusively with the installation costs of three electric on-premise signs (Table 5.11). These three signs, which exemplify the customary electric

plastic sign, must be attached in sequence to a brick wall of a building by bolts and the electrical connections must be installed. The sign companies would receive the three single-face fascia signs complete and ready for installation. For this relatively simple job, the cost estimates ranged from $128 to $580, as reported by 28 companies. These estimates reflect how much variation can result from differences in the visualization of labor time, hourly rates, and other factors.

The lowest estimate figures on only four hours installation time, which is a rather bold statement, since such common but unforeseeable delays such as weather conditions, traffic problems, etc., might cause a profit-eating slowdown.

The variations in the estimates of handling costs and time may reflect not only differences in the facilities available for handling signs, but also the organization and efficiency with which handling procedures are carried out. Also, the higher estimates in this category are more realistic in regard to time required and cost of facilities than are some of the lower estimates. No generalizations can be made, however, about the relationship and handling costs to overall price, since some of the more expensive handling fees come from companies whose final estimates are quite low.

A third study (Table 5.12) also deals with illuminated, plastic on-premise signs; but in this case companies were requested to give estimates for the design, fabrication, and installation of four signs.

These signs are each to be made of white plastic, with 12-inch tall black plastic letters. Two of the signs are 10 feet, 8 inches long, and two are 11 feet, 4 inches. Each sign is to be illuminated by high output fluorescent lamps and is to have one ballast. The idea behind the design of these signs was to provide a harmonious identification to several retail establishments housed in the same building.

Table 5.10. ESTIMATING THE COSTS OF MANUFACTURING AND ERECTING AN INTRICATE ILLUMINATED ON-PREMISE SIGN

	DESIGNING & SELLING		MATERIALS				PATTERNS	NEON TUBE BENDING & PUMPING		
No.	Amt.	Permit Fee*	Tubing	Trans-formers	Metal	Wire & Other Materials	Amt.	Hrs.	Rate	Amt.
1	$ 72.00	$25.00	$ 28.00	$ 20.00	$ 65.00	$278.00	$ 24.00	2	$ 5.00	$ 10.00
2	30.00	25.00	150.50	185.00	378.00	86.00	25.00			
3	75.00	25.00	317.50	240.00	50.00		30.00			
4	120.00	25.00	19.50	276.00	200.00	194.00	240.00	6	15.00	90.00
5	128.00	25.00	167.00		810.00	140.00	6.00	19	7.00	133.00
6	80.00	25.00	308.00	⟶	1798.00	830.00				
7		25.00								
8	240.00	25.00	100.00	175.00	75.00	90.00	90.00	10	9.00	90.00
9	130.00	25.00	634.00		2408.00		104.00			
10		25.00	118.75	100.00	90.00	100.00				
11	50.00	25.00	510.00	45.00	780.00	1335.00				
12	60.00	25.00	285.00	165.00			18.00			
13		25.00								

*A $25.00 permit fee was established for uniformity in estimating and a 4 per cent state sales tax was also stipulated.

Despite the considerable calculations involved in this estimate, the selling prices put forth by the 39 reporting companies all ranged between $899.16 and $2944. One factor that no doubt accounts for the variation in cost estimates for this project as well as for other projects in which a wide range of estimates are given is the endless variation in the estimating methods used. Most sign companies generally seem to have their own peculiar estimating systems, very few of which are actually identical. One might infer from this situation that if all companies were to use a more standardized method of computing costs, perhaps these estimates would not differ as much as they do. Of course, there would still be considerable variations due to differences in labor and handling costs, equipment costs, etc.

In other examples, sign companies were requested to submit price estimates for the installation of the same electric sign; but the studies were conducted at two different times (July, 1968 and August, 1971). Thus the estimates reveal not only some idea of the costs of installing a high-rise electric sign, but also the increase in these costs over a three-year period.

The plastic sign, complete with rotating unit, is to be supplied to the sign company. The company would have to supply the sign pole and all other construction materials, and erect the sign. The response to the 1968 study was enormous, as the figures indicate — 89 companies responded. The estimated price range was once again very large, from $250 to $1304, with an average of $632. Such local conditions as the types of equipment used, the skill of the workmen, the soil conditions, and the amount of work sub-contracted can, to some, account for this wide range of prices. But, once again, poor accounting practices as well as the lack of a standardized estimating system no doubt accounts for a large part of this

METAL FABRICATION	ASSEMBLY & WIRING	INSTALLING SIGN			Installation Materials					
Amt.	Amt.	Hrs.	Rate	Amt.	& Equip.	Overhead	Profit	Total	4% Tax*	Price
$180.00	$ 80.00	16	$ 6.00	$ 96.00	$110.00	$198.80	$ 350.00	$1542.80	$ 16.71	$1604.51
40.00	60.00	14	12.00	168.00	160.00		750.00	2057.50	82.30	2139.80
30.00	60.00	6	5.00	30.00	40.00	200.00	1000.00	2097.50	81.90	2179.40
720.00	480.00	12	42.00	504.00	15.00			2883.50	115.34	2998.84
478.00	350.00	8	22.00	176.00	80.00		508.00	3055.00	122.20	3177.20
		7	35.00	245.00	50.00			3336.00	133.44	3469.44
										3600.00
256.00	96.00	24	10.00	240.00	75.00	232.80	1784.80	3569.60	142.78	3712.38
		8	32.00	256.00	30.00			3587.00	143.48	3730.48
		6	20.00	120.00	270.00		1860.75	3721.50		3746.50
		8	30.00	240.00		267.50	401.25	3653.75	146.15	3799.90
		16	9.00	144.00	144.00	543.00	814.00	4072.00	163.00	4235.00
								5896.00	235.80	6131.80
									Average	$3710.43

variation. For instance, some firms include overhead and profit in their hourly rates, while others estimate the actual time required for various operations and the prices at actual rates, and add on overhead and profit on some percentage basis. And even this percentage seems to vary considerably. When overhead and profit are estimated separately, the figures show an incredible range, from a low of $15 to a high of $432.

The results of the same study in 1971, as submitted by 45 companies, reflect the rapidly rising costs of labor and materials over the past few years. The average price estimate increased by an overall 40%, from $632 in 1968 to $889 in 1971. Though some increase is to be expected, this comparison reveals how steeply costs are climbing these days.

An examination of the estimated costs showed that part of the 40% increase can be attributed to the increase in labor rates for the erection of

Figure 5.2. accompanies Table 5.11.

the pole and sign. Although the required time estimates were approximately the same in 1968 and 1971, the total labor costs increase 35%, from $76 to $117. Similarly, the labor wages for setting rods, anchoring bolts and conduits, and pouring concrete more than doubled over this time span.

At the same time, the costs of materials jumped considerably too. The cost of concrete increased from $68 to $95, and the cost of template and form material rose from an estimated $12.28 in 1968 to $28.91 in 1971. This increase might seem incidental at first; but a closer look reveals this figure spread to be a hefty 56% jump.

Geographic market areas and market sizes produce excellent pictures for viewing price trends. The small and medium markets show average 1971 total estimates of $832.69 and $834.41, only two dollars apart. The big gap lies between the small/medium and large market areas. More promi-

Table 5.11. ESTIMATING COSTS OF MANUFACTURING AND ERECTING PLASTIC ILLUMINATED SIGNAGE

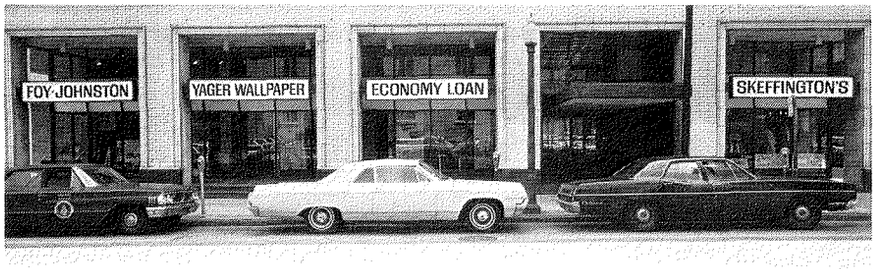
No.	Selling Expense	RECEIVING AND HANDLING Hrs.	RECEIVING AND HANDLING Rate	RECEIVING AND HANDLING Amt.	Local Permit	INSTALLATION Hrs.	INSTALLATION Rate	INSTALLATION Amt.	Overhead and Profit	Total Price	State	Size of Market	No.
1	$30.00	2	$10.00	$20.00	$10.00	4	$15.00	$ 60.00	←	$128.00*	Neb.	M	1
2	20.00	2	5.75	11.50	10.00	6	22.50	135.00	←	176.50	Kan.	S	2
3	20.00	1	12.00	12.00	10.00	10	6.00	60.00	$ 90.00	192.00	Minn.	S	3
4	25.00	2	7.50	15.00	10.00	10	10.00	100.00	50.00	200.00	Mich.	L	4
5	5.00	1	9.00	9.00	10.00	8	20.00	160.00	40.00	224.00	Wis.	S	5
6	15.00	3	8.00	24.00	10.00	16	8.00	128.00	50.00	227.00	Ill.	S	6
7	10.00	2	8.00	16.00	10.00	6	25.00	150.00	50.00	236.00	Neb.	M	7
8	20.00	1	8.00	8.00	18.00	8	20.00	160.00	40.00	246.00	Mo.	S	8
9	15.00			25.00	25.00			210.00	←	275.00	Ind.	S	9
10	20.00	1	30.00	30.00*	20.00	7	30.00	210.00	←	280.00	Ind.	S	10
11	10.00	4	10.00	40.00	12.00	20	10.00	200.00	←	286.00*	Mich.	S	11
12	15.00	½	16.00	8.00	10.00	8	32.00	256.00	←	289.00	Mo.	L	12
13		1	14.00	14.00	20.00	8	32.00	256.00	←	290.00	Ohio	L	13
14	18.75	1	25.00	25.00	10.00	8	27.50	220.00	23.75	297.50	Mo.	M	14
15	25.00	3	10.00	30.00	10.00	24	10.00	240.00	←	305.00	N.D.	M	15
16	25.00	1	8.50	8.50	10.00	15	8.50	127.50	136.00	307.00*	Mo.	L	16
17					15.00	9	29.00	261.00	←	311.00	Ohio	L	17
18		2	16.00	32.00	10.00	8	35.00	280.00	←	322.00	Iowa	M	18
19	25.00	6	12.00	72.00	10.00	18	12.00	216.00	←	323.00	Kan.	S	19
20	12.00	1	24.00	24.00	10.00	8	32.00	256.00	45.00	347.00	Ill.	S	20
21	53.00*	2	4.50	9.00	10.00	24	4.00	96.00	182.00	350.00	Ill.	S	21
22	5.00	2½	14.00	35.00	15.00	7	28.00	196.00	80.00	357.00*	Wis.	L	22
23	25.00	2	16.50	33.00	10.00	7	42.00	294.00	←	362.00	Minn.	M	23
24	25.00	4	10.00	40.00	10.00	12	18.00	216.00	87.30	378.30	Ill.	M	24
25	30.00	6	12.00	72.00	10.00	7	32.00	224.00	84.00	420.00	Mont.	M	25
26	30.00	4	12.00	48.00	10.00	12	20.00	240.00	100.00	428.00	Mo.	M	26
27	60.00	2	15.00	30.00	10.00	7	20.00	140.00	200.00	440.00	Ind.	S	27
28	30.00	4	10.00	40.00	120.00	16	10.00	160.00	230.00	580.00*	N.Y.	L	28
										306.33	Average Price		

*1) Plus $8.00 for hardware; 10) Price of crane; 11) Plus 6 hours boom at $4.00 per hour=$24.00; 16) Plus $15.00 to obtain permit and $20.00 for erection material; 21) Includes in selling expense materials: bolts, wire, etc.; 22) Includes sales tax and travel time; 28) Plus tax.

nently than in the 1968 study, the inflated estimates of large market companies result in an average total estimate of $1254.48, almost 50% higher than the average estimate of the sign companies in small markets.

One thing that did not vary between 1968 and 1971, however, was the amount of calculation errors made in the estimates of all the sign companies. In both studies, more than half the responses contained incorrect figures, usually in the computation of hourly rates and percentages. This could be another explanation of the usual wide variation in cost estimates among sign companies.

Figure 5.3. accompanies Table 5.12.



NON-ILLUMINATED ON-PREMISE SIGNS

On-premise signs that need no illumination are generally cheaper and easier to build and install than electric signs for several reasons. First, no electrical work has to be done. Second, the signs can be of much simpler construction. Third, all the design work on such a sign can be painted. The two types of signs illustrated by the following cost studies show simple, painted wooden signs used for small retail outlets.

In this cost study (Table 5.13) a number of sign companies were asked to submit estimates for the design and production of a 4 x 8 foot prestwood sign with the various parts of the design painted in different colors. A large number of replies indicated that they would expect the lumber company to supply the wood for the sign, which would reduce the cost. Several companies indicated that they would prefer a more resistant and permanent material than wood, such as aluminum. One signman, for instance, suggested that a thin sheet of aluminum be used as the surface of the sign, which could then be attached onto the wood.

The price estimates for this sign ranged from $74 to $420, with an average of about $188. The most decisive variable influencing this price range seems to be the time and labor rate required for the lettering of the sign, both of which differed greatly from estimate to estimate. The required times ranged from 2 to 14 hours and the rates from $3 to $20; furthermore, low rates did not often correspond with the longest time, which raises questions as to the speed and efficiency of the highly paid painters.

Despite the considerable variation in prices, it should be noted that almost half of the estimates are within $30 of the average. From this one can get a fairly accurate idea as to what such a sign should cost.

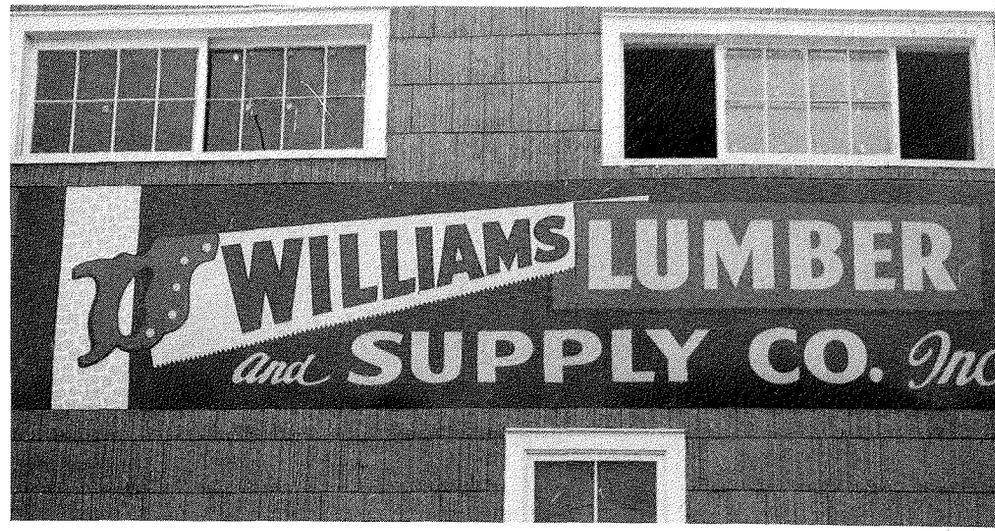
Another cost study involved merely the designing and production of a display for a customer who would install the sign himself. It was to be a

double-faced piece of ½-inch overlaid plywood, cut to 32 x 42 inches overall. The panel was to be primed with two coats of paint, and then painted brown on the bottom, cream on the top with black and white letters.

Once again, we ran into a large gap between the lowest ($40) and highest ($234) estimates. Interestingly enough, however, both of these estimates come from the same type of market in the same state; this just attests to the extent of disparity in sign pricing that occurs even within the same market. This condition reinforces the need for equitable pricing guidelines.

One factor which might explain the variation in prices is the method of estimating. A number of the responding sign companies indicated that

Figure 5.4. accompanies Table 5.13.



they would charge for the fabrication of this sign on a price per square foot basis. Thus the signman who submitted that lowest estimate, $40, explained that for such odd jobs as this sign, he figures to the nearest square foot, in this case 12 (3′ x 4′), or $3.50 per square foot. On the other end of the scale, another respondent figured the job similarly, but with a standard price of $11 per square foot.

It should again be noted that a majority of the estimates in this particular study fell within $30 of the average price of $98.22. This indicates that the disparity between high and low estimates is not so meaningful as it might seem.

Table 5.12. ESTIMATING THE COST OF MANUFACTURING AND INSTALLING A SERIES OF ILLUMINATED STOREFRONT SIGNS

esigning & Selling	Plastic	Metal	Lamps	Ballasts	Paints	Total Material	Patterns	Cutting Plastic
$ 22.00	$105.50	$ 46.00	$ 25.76	$ 60.80	$ 20.60	$258.66	$ 11.00	$ 16.50
30.00	60.00	65.00	30.00	40.00		195.00	6.00	18.00
	134.40	55.80	14.96	52.00	48.00	305.16	21.20	26.50
42.00	135.00	85.00	18.00	48.00	15.00	301.00	16.00	16.00
105.00	228.00	105.60	40.00	111.00	80.60	565.20	30.00	80.00
80.00	220.00	150.75	54.00	135.80	25.00	585.55	32.00	48.00
25.00	220.00	75.00	60.00	100.00	73.00	528.00	36.00	54.00
30.00	211.00	65.00	64.00	100.00	10.00	450.00	60.00	120.00
16.00								
	300.00	100.00	10.00	120.00	35.00	565.00	50.00	48.00
30.00	485.28	109.32	43.00	117.50	88.00	843.10	48.00	48.00
	348.00	95.00	48.00	140.00	30.00	661.00	144.00	80.00
14.38	180.44	90.64	48.00	66.00	10.00	395.08	10.00	40.00
125.00						650.00	75.00	75.00
40.00	162.00	140.00	45.00	140.00	50.00	537.00	40.00	80.00
24.00	376.00	210.00	80.00	120.00	25.00	811.00	96.00	144.00
84.00	405.00	566.00	336.00	⟵	90.00	1397.00		
15.00	232.00	112.00	30.00	72.00	56.00	502.00	20.00	60.00
						1760.00	40.00	201.00
176.00						1760.00		
80.00								
337.15	154.40	185.24	50.24	169.10	32.24	591.22	10.50	32.00
30.00	166.40	115.00	44.00	72.00	50.00	447.40	30.00	37.60
72.00	300.00	163.60	384.00	⟵	28.00	875.60	60.00	42.50
	400.00	100.80	43.00	138.20	50.00	732.00	32.00	80.00
120.00	328.00	160.00	448.00	⟵	56.00	992.00	80.00	320.00
72.00	175.00	96.00	48.00	80.00	25.00	424.00	40.00	64.00
22.50	172.80	103.00	23.20	89.90	40.00	428.90	120.00	15.00
95.00	308.00	47.36	40.00	114.00	28.00	537.36	47.50	13.00
24.00	150.00	150.00	60.00	125.00	100.00	585.00	48.00	96.00
40.00	520.00	416.00	192.00	160.00	10.00	1298.00	64.00	64.00
64.00								

Adhering Letters	Metal Fabrication	Assembly	Total Production-Labor	Installation Materials & Equipment	Installation	Overhead	Profit	Selling Price
$ 6.00	$ 55.00	$ 24.00	$112.50	$136.00	⟵	$130.00	$240.00	$ 899.16
6.00	256.00	24.00	310.00	8.00	32.00		420.00	1020.00[1]
10.60	21.20	63.60	143.10	60.00	69.60	276.51	238.31	1092.68
16.00	192.00	48.00	288.00	60.00	64.00	226.50	294.45	1275.95
40.00	120.00	40.00	310.00	53.00	114.00	104.28		1308.83[4]
32.00	240.00	128.00	480.00	65.00	128.00	40.00		1378.55
36.00	108.00	54.00	288.00	24.00	160.00	300.00	150.00	1500.00[1]
60.00	208.00	104.00	552.00		130.00	96.00	317.88	1600.88[1]
			1440.00		160.00			1616.00
18.00	420.00	87.50	623.50	100.00	148.00	250.00		1686.50
24.00	288.00	288.00	696.00	8.16	135.00			1712.26
80.00	288.00	40.00	632.00	45.00	400.00			1738.00
								1761.00
								1817.00
20.00	160.00	8.64	238.64	93.70	139.20	222.93	739.63	1843.56
125.00	250.00	350.00	875.00		232.00			1882.00
								1983.00
30.00	200.00	200.00	550.00	30.00	240.00	419.10	181.10	1997.20
48.00	312.00	312.00	912.00	10.00	249.00			2006.00
					448.00			2008.00[1]
20.00	280.00	40.00	420.00		90.00	131.00	868.00	2026.00
			241.00		36.00			2037.00
								2043.00
				30.00	120.00			2086.00
					90.00	150.00	850.00	2170.00[3]
48.00	64.00	64.00	218.50	25.00	120.00	232.75	652.54	2177.16
								2200.00
29.40	235.70	39.20	371.90	10.00	90.00	369.12	882.00	2200.42
42.50	576.00		721.00	32.00	238.50			2221.15[2] [5]
								2500.00
40.00	400.00	360.00	912.00	25.00	216.00	400.00	300.00	2585.00
80.00	480.00	80.00	1040.00		440.00			2592.00
								2617.00
128.00	768.00	144.00	1144.00	20.00	396.00	200.00	400.00	2656.00
45.00	512.00	64.00	756.00	45.00	540.00	627.35	242.00	2661.75
26.00	114.00	114.00	314.50	32.00	128.00	1062.40	663.94	2833.20
72.00	384.00	192.00	792.00	125.00	216.00	647.00	500.00	2889.00
32.00	512.00	128.00	800.00	153.00	320.00		260.60	2871.60
				168.00	276.00	584.40	411.60	2944.00[3]
							Average	$2010.95

ncludes permit fee: No. 2—$25; No. 7—$25; No. 8—$25; No. 20—$79. (2) No. 29 includes $72 for lates. (3) Includes prefabrication: No. 25—$1,000; No. 39—$1440. (4) Includes tax: No. 5—$57.35. ncludes sales commission: No. 29—$210.05.

Table 5.13. ESTIMATING COST OF EXECUTING A 4x18-FOOT PAINTED WOOD SIGN

No.	Selling Expense	Designing	Materials	Painting Wood Amt.	Lettering Amt.	Total	Selling Price
1	$ 6.00	$ 4.00	$26.00	$ 8.00	$ 12.00	$ 56.00	$ 73.95
2							75.00
3	2.00		25.00	10.50	30.00	67.50	85.00
4	15.00		25.00	15.00	30.00	85.00	85.00
5							90.00
6	5.00		16.00	20.00	30.00	91.00	91.00
7	2.00	6.00	29.10	9.60	48.00	94.70	95.58
8		25.00	20.00	18.00	36.00	99.00	99.00
9	8.00	12.00	18.00	18.00	48.00	104.00	104.00
10	15.00	10.00	25.00	6.00	48.00	104.00	104.00
11	10.00	12.00	8.00	16.00	60.00	106.00	106.00
12	5.00	5.00	25.00	15.00	50.00	100.00	109.50
13		12.00	30.00	28.00	40.00	110.00	110.00
14	10.00	10.00	15.00	10.00	56.00	101.00	121.00
15	10.00	27.00	12.25	36.00	40.50	125.75	125.75
16		6.00	50.00	12.00	48.00	116.00	127.00
17	15.00	25.00	25.00	24.00	24.00	113.00	135.00
18	10.00	10.00	25.00	20.00	65.00	130.00	140.00
19							144.00
20	⟶	20.00		25.00	100.00	145.00	145.00
21	5.00		20.00	⟶	120.00	145.00	145.00
22	8.00	16.00	25.00	24.00	68.00	141.00	150.00
23	10.00	10.00	30.00	20.00	80.00	150.00	150.00
49	10.00	40.00	40.00	20.00	96.00	206.00	*206.00
50	20.00	25.00	36.00	37.50	75.00	193.50	216.00
51	43.20	15.00	30.00	20.00	60.00	*216.00	216.00
52	15.00	45.00	13.50	72.00	72.00	217.50	217.50
53	12.00	25.00	16.00	32.00	24.00	109.00	218.00
54	20.00	40.00	60.00	20.00	80.00	220.00	220.00
55	15.00	15.00	75.00	18.00	88.00	211.00	225.00
56	10.00	50.00	48.00	45.00	60.00	213.00	250.00
57	10.00	15.00	21.00			210.00	256.00
58							275.00
59	10.00	40.00	40.00	40.00	120.00	250.00	300.00
60						288.00	*308.16
61	30.00	40.00	65.00	16.00	63.00	214.00	314.00
62	10.00	30.00	20.00	45.00	210.00	315.00	350.00
63	6.00	48.00	50.00	18.00	190.00	312.00	350.00
64			50.00			360.00	360.00
65							378.00
66	20.00	40.00	30.00	20.00	60.00	170.00	420.00
						Average	$188.12

*6) Plus $1 for layout and patterns and $10 for building the sign. 49) Plus sales tax. 51) Plus $47.80 markup. 60) Plus $20.16 tax.

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