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Valuation of Retail Outparcels

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VALUATION

OF

RETAIL OUTPARCELS

BY

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CHAPTER I

INTRODUCTION

May Department Stores Company operates 199 department stores and discount department stores nationwide from coast to coast. Each store is located within a major metropolitan area on land that, in almost every case, would be considered prime commercial real estate.

Typically, the stores consist of a 100-200,000 square foot building on eight to twenty acres of land. Stores are usually located on the ends of a shopping center or mall, or, are freestanding on their own parcel. In either case, the building is normally located on the back or middle of the tract of land, with parking in front or parking surrounding the store. The most used and most valuable land to the department store is the parking area closest to the building.

The least used land for the department store is the parking area furthest from the building, which is usually out in front, adjacent to the roadway. This land is normally highly visible and easily accessible from the adjacent roadway, which is usually a well-

traveled major thoroughfare. Consequently, this land becomes very valuable prime land for development by smaller retail and restaurant users. This land, when divided into smaller lots and made available to potential retail and restaurant users, is commonly referred to as outlots or outparcels. Establishing the market value of May Department Stores' outlots for potential sale or lease is the subject of this report.

May has well over 200 outlots available throughout the nation. These outlots vary in size, location, visibility, topography, accessibility, etc. They are also located in areas which differ economically and demographically. Each outlot could certainly be appraised using conventional appraisal methods, but because each outparcel is unique, a separate appraisal report would be required for each, which would be a very expensive undertaking.

Although each outparcel has unique characters, one thing is common with each: every May outparcel is associated with an existing major department store. Each store generates known sales of retail merchandise per square foot of building, which is a measure of the success of each location and can be a measure of comparison. Each store also conducts customer surveys to determine statistics relating to the characteristics of the people within the trade area. Such statistics

relate to the number of people within the trade area, their income levels, their age, education levels, etc. which can all be measures of comparison.

This report will attempt to determine if this sales data and demographic data, which is readily available and comparable at each location, can be used to determine the market value of outlots.

CHAPTER II

LITERATURE REVIEW - EXISTING APPRAISAL METHODS

The appraisal of outparcels is certainly not a new concept to the appraisal industry. The valuation of outparcels has been the subject of many appraisals in the past and will continue to be in the future. The methods used in valuation can differ depending on the purpose of the appraisal, the availability of related information and the number of parcels to be appraised. However, once the purpose of the appraisal is determined, three main appraisal methods could be used: conventional methods, mass appraisal methods and regression analysis methods.

Appraisal Purpose

Appraisals are required for many different purposes. Some typical real estate appraisal assignments requiring different types of value are as follows:

Market value appraisals -

1. For establishing a selling price between buyer and seller
2. For determining financing and credit
3. For establishing rents and leases
4. For tax assessment purposes.

Insurable Value - To establish replacement costs for insurance.

Going Concern Value - To establish the total value of a business.

Condemnation Value - To establish value and damages in eminent domain cases.[1]

The outparcel values sought in this report are market values to be used in determining selling prices and/or rental values. This fair market value has been defined as follows:

> "The highest price in terms of money which a property will bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus."[2]

The purpose of this report is to establish the fair market value of each individual outparcel so proper asking prices can be determined in an overall marketing plan.

Conventional Appraisal Methods

The typical appraisal method used in determining fair market value of a property would utilize a specific appraisal process. This process, which is detailed in The Appraisal of Real Estate, the familiar text written by The American Institute of Real Estate Appraisers, is outlined as follows:[3]

Appraisal Process

Definition Of The Problem - The subject property to be appraised is identified, the objective of the appraisal is determined and value is defined.

Preliminary Survey And Appraisal Plan - The appraisal assignment is analyzed and a course of action is determined. This includes a list of data needed and its sources.

Data Collection And Analysis - General physical and economic data relating to the city, region and neighborhood of the subject property is collected and analyzed. Specific data relating to the physical and economic characteristics of the subject property and any properties that will be compared to the subject property are collected and analyzed.

Application Of The Three Approaches To Value -

Cost. The current cost of reproducing the property less physical, functional and economic depreciation yields value.

Market. The value of the subject property is determined by analyzing the sales of comparable properties.

Income. The current value of the subject property is determined by capitalizing the projected economic rents of the property.

Reconciliation Of Value Indications - The three approaches to value are analyzed and it is determined which approach (or approaches) is most meaningful in determining the value of the subject property.

Final Estimate Of Value - A conclusion is reached on the final value.

Valuation Of Outparcels

In valuing outparcels, which is basically the valuation of vacant commercial sites, an appraiser would typically follow the basic appraisal process outlined above. However, because there are no building improvements on vacant land, only the market approach and a land residual approach, which combines the use of an income and cost approach, would be applicable.

Market Approach - The market approach is generally preferred because it is the most direct approach when trying to determine fair market value. This approach compares the characteristics of the subject property with those of comparable properties that have sold. The comparable property sales are adjusted to fit the characteristics of the subject property and then a value is determined.

When using this approach to value outparcels, the appraiser must determine and

verify the selling prices of similar properties that have sold. This can sometimes be very difficult, either because of the lack of recent sales transactions or the lack of available information. Sales information can sometimes be obtained from the assessor's or recorder's office, title companies, brokers, or through interviews with the buyer or seller.[4] However, some states, such as Missouri, do not require the sales price to be disclosed when recording a deed. This can make it very difficult to obtain such sales data.

Once the sales prices of similar properties are obtained, the properties have to be compared to the subject property. Typically, comparisons are made as to location, date of sale, size and shape of lot, access, topography, and site improvements.[5] The comparable properties are analyzed with respect to the subject and to each other to determine what adjustments are necessary to convert the comparable selling prices to reflect what the subject would sell for.

For example, a comparable property that sold a year ago for $5.00 per square foot, might be adjusted +5% for time, -10% because its location was better than the subject and +15% because the comparable was larger than the site of

subject, yielding an indicated value for the subject of $5.43 per square foot.

After each comparable sale is compared and adjusted to the subject property, the adjusted values are analyzed and blended into one opinion of value for the subject. More weight may be placed on the sales that are most similar to the subject (less adjustments) or the most recent sales. This opinion of value using the market approach is then correlated with the other value that may be derived from the land residual method.

Land Residual Approach - The land residual approach is used to appraise vacant land when there is an absence of land sales or as a check against the Market Approach when the value indicated by the Market Approach is inconclusive. In the Land Residual Approach, the estimated income from the property, as if improved to its highest and best use, is estimated. The income attributed to the proposed building is deducted and the resulting net income attributable to the land is capitalized to yield an estimated land value.

This approach is more theoretical than the Market Approach because it requires various assumptions. First, the highest and best use

of the vacant land has to be determined. Various proposed uses of the land have to be analyzed to determine which would produce the greatest return to the land. Next, the projected net income from that particular use is estimated. Then, the net income attributable to the proposed building is determined from estimated building costs and subtracted from the total net income, leaving the income attributable to the land. A land capitalization rate is derived after analyzing various market interest rates, which includes bond rates, mortgage rates and security rates. The residual income attributable to the land is then capitalized into an indicated land value.[6]

This Land Residual Approach is based on the analysis of a hypothetical use and many assumptions are required. Each assumption can produce a different result, so each step must be analyzed very carefully. As previously stated, the Market Approach is preferred, but when comparable sales do not exist or are inconclusive, the Land Residual Method may have to be used.

The conventional appraisal methods described relate to the valuation of any piece of vacant land which would include outlots. In the

appraisal of many outlots, in many different locations, each site would have to be appraised individually with a detailed appraisal report on each. Each outparcel location has a different market area and each has unique physical and economic characteristics that would require a completely separate analysis.

If conventional appraisal methods were used, it is unlikely that one appraiser would have the resources available to do all of the appraisals. Several different fee appraisers, who specialize in specific regions, would have to be consulted and such an appraisal assignment would be very costly.

However, there are less expensive alternative appraisal methods available for appraising many parcels. Mass Appraisal Methods were designed to appraise great quantities of parcels at very low costs.

Mass Appraisal Methods

The mass appraisal business was created out of necessity to serve the needs of the tax assessor. Tax assessors are usually required to appraise every piece of real estate within their jurisdiction on a regular basis. The accuracy and equality of these appraisals are most important because they represent the basis

upon which property taxes are assessed. Mass appraisal methods are used to determine the market values of the properties, whether the work is performed by the assessor and his staff or by a private appraisal company specializing in mass appraisal.[7]

The mass appraisal system utilizes the same basic concepts and theories that were previously outlined in the conventional appraisal section. However, because of the volume of properties to be appraised, which can sometimes be in the hundreds of thousands, short cuts have to be taken. The different phases of the appraisal process are done on sort of an assembly line basis.[8]

An appraisal of a property using mass methods normally is contained on one two-sided property record card, whereas, a typical conventional appraisal of the same property might be twenty to thirty typed pages. Although there is a drastic difference in the form of the two appraisals, the mass appraisal contains most of the same pertinent information, but in an abbreviated form. The mass appraisal process can be summarized as follows:

Data Collection

Physical - Physical data relating to the land and building are collected at each site and written directly on the appraisal card. The buildings are measured and drawn on

the appraisal card to scale.

Economic - Income and expense information is obtained from each property that is leased. Information on rents, terms, utilities, etc. is written on the appraisal card.

Market - Sales information on each property that sold in the last three years is normally transferred to each property record card from the recorder's office. Sales information is verified and clarified during the property inspection.

Appraisal Analysis

Cost Approach - The physical data on the improvements are priced using a replacement cost schedule and depreciated according to physical, functional and economic condition.

Income Approach - The economic data is analyzed and net economic incomes are determined for income producing properties and capatalized into value.

Market Approach - The market sales data for vacant land is plotted on land maps and then analyzed and compared to determine all land values. Market sales data for improved properties

is also analyzed and compared to determine market values.

Correlation

After all of the above available data is collected and analyzed on each property record card, each property is visually inspected one more time and the appraisal approaches are reviewed and correlated into one opinion of value.

The Mass Appraisal Methods described work well when trying to achieve uniform appraised values for many properties, but would not work well when appraising selected outparcels. One of the main reasons this method is successful is that every piece of property within an entire county is usually appraised. With data being collected and compared on every property, the appraisal process becomes easier to apply and is, therefore, less time consuming and less expensive on a per parcel basis. Unfortunately, these same reasons explain why mass appraisal methods will not work well with the appraisal of selected outparcels.

Regression Appraisal Methods

Regression analysis is an appraisal method in which an unknown property value is estimated based on the relationship of various known independent variables which are thought to influence value. This method has been used as far back as 1924 to appraise

farm land, but, even today, regression analysis is still used only for very special appraisal assignments involving many properties, as in certain mass appraisal projects.[9]

In regression analysis, hundreds of sales may be analyzed to determine various known factors that influence value. For example, with residential home sales, size, number of bedrooms and baths, type of construction, etc. influence selling prices; while with land, size, front footage, topography, zoning, etc. influence selling prices. The appraiser analyzes all of these known independent variables and tries to isolate only those variables that best explain the sales prices.[10] Then, the known variables of the sale properties are compared with those of the subject property to estimate its value.

When each of the independent variables is related to the unknown dependent variable on a one-on-one basis, it is known as simple linear regression. However, more advanced statistical methods have been developed so that the combined relationships of several independent variables can be related to the dependent variable. This is known as multiple regression analysis. Multiple regression involves many complex repetitious calculations that require the programing capabilities of a computer to solve.

With either linear regression or multiple regression, the best results are achieved when a high number of sales are analyzed. Therefore, with either method, many calculations are necessary and a computer becomes a necessity.

When it comes to valuing outparcels, there are drawbacks and disadvantages with all of the present valuation methods mentioned. Conventional methods are very costly and time consuming, mass appraisal methods are only feasible if every parcel in an entire area is appraised and regression analysis requires the computer analysis of many sales. However, each method has underlying basic concepts and ideas that can perhaps be used to develop a new and different approach to valuing outparcels. To this date, no known author has addressed the valuation of retail outparcels in the following unique way, which utilizes only existing internal demographic and sales data.

CHAPTER III

THEORETICAL ORIENTATION

The values of outparcels, like all property, are created by the demand of potential buyers. In the case of commercial outparcels, the demand is dependent on what future economic benefits a potential buyer can anticipate from the use of the land. Although each potential buyer or user has specific criteria for predicting how his particular business will do economically at each location, basic means of judging and valuing a site are similar. These needs can generally be broken down into general demographic needs and specific site needs.

Demographic Needs

Commercial property users usually gear their business toward a particular customer. Whether they have been in business a number of years or are just starting a business, they usually are very aware of the type of person their typical customer is or will be. Although some businesses, such as restaurants, seem to be catering to all types of customers, they

usually have a particular customer profile that generates the majority of their business. As a result, most commercial users have various demographic needs that are required to meet their typical customer profile. Described below are typical demographic and customer criteria that are used by commercial users in analyzing an area under consideration for a potential site.

Population

The trade area population is very critical for any potential commercial user. There have to be enough potential customers within a specific trade area for any business to succeed. Usually, a commercial business requires a minimum amount of population within a certain distance or driving time from the site in order to predict success. This minimum varies with each business. For example, a large discount department store may require a minimum of 100,000 people within an eight minute driving time, while a fast food restaurant may require 30,000 people within a three mile radius. The criteria will vary from business to business, but the fact remains that the more dense the population, the greater the number of potential customers, the greater the potential of the business, all other things being equal.

Income

The mean household income level of a particular

area is also very important to any potential user. Businesses are usually designed around a certain type and quality of merchandise or product that is affordable to population segments within certain income levels. The minimum income levels required by various businesses obviously varies greatly. For example, the income levels required by a first class, sit down style, "Rusty Pelican" Restaurant would be higher than those of a fast food type, such as "McDonalds."

Age

The mean age of the population within an area can be very helpful to a potential user in predicting his success. For example, a health and racquetball club would certainly be looking for a relatively young area versus an area where many of the population are over sixty.

Male vs Female

A business is usually directed at either a male or female customer. For example, supermarkets, drug stores, department stores and many others are directed at the female shopper, while hardware stores and automotive supply stores have the male customer in mind. It can be very important for a business to locate with others that have the same male or female customer direction.

Married

The percentage of the population that is married can also be very important in determining if an area is well suited for a particular business. For example, a fast food restaurant is very family oriented, while a cocktail, entertainment type bar will be looking for areas of unmarried population.

Children

The percentage of households with children relates to the married statistic, but could be a critical factor for some businesses that are recreation or entertainment related. For example, a roller skating rink or a video machine oriented restaurant like "Showbiz Pizza" may not even consider an area unless a certain percentage of the households have children between the ages of nine and eighteen.

College

The percentage of adults within an area with some college education can be a very important factor in fitting a store's customer profile.

White Collar Professional

Most areas are populated with a mixture of blue collar and white collar employees. However, some businesses deal in products or services that would require high percentages of one or the other.

Ethnic Population

Many businesses service a particular ethnic segment of the population. So, this statistic can be critical.

Site Needs

Once the commercial property user determines what areas meet his needs with respect to customer demographics, he can then concentrate on specific needs required of the site. Usually, a particular business has very specific site requirements that are dictated by his past business practices and his customer's habits, and he is willing to pay more or less for property based on how many of his specific needs are met. The following are specific needs that must be considered for each site.

Size

The size of the outparcel is obviously very critical to every user. Each user has very specific minimum size requirements for his building and for his required parking. The "cheaper by the dozen" adage would also apply to the value of the outlots. That is, potential users would pay more, on a dollar per square foot basis, for a smaller outparcel than a larger comparable outparcel.

Location and Access

The location of the particular outparcel is

most important to many outparcel users. Many businesses are dependent on high visibility and will consider only locations with main street frontage. Some businesses will pay more for a property that is located on a corner with visibility on two streets. Other businesses are willing to locate in-line, adjacent to existing stores, set back from the road. Very few businesses are willing to locate on rear commercial land with limited or no visibility.

Interstate Visibility

Some businesses are interstate highway oriented. These businesses depend on the interstate related truck and traveler traffic and they are willing to pay more for sites with interstate visibility. Some examples are: gas stations, some restaurants, and motels.

Improved vs Unimproved

The amount of improvements on a particular site are very important value considerations. For example, a site with underground utilities, grading and paving is worth more than an unimproved site.

Topography

The topography of a site is also a critical value consideration for any prospective buyer. If unusual topography requires special construction, the value of the outlot is negatively affected.

Retail Sales Data

In addition to analyzing demographic needs and specific site needs, a potential buyer will normally try to obtain retail sales data from any business that currently exists on the adjacent property. The retail sales numbers from the adjacent business can usually be compared and related to the proposed use to give the potential buyer an indication of how his business will do economically.

The retail sales generated by an existing business represent a composite measurement of the numbers of people in the trade area, the income levels, the quality of the location, the degree of visibility, etc. for that particular site. Although such things as management, advertising, and quality of service are also reflected in the sales figures, the general level of sales of an existing operation is an excellent means of comparing and projecting what another business will do at an adjacent location.

The foregoing criteria represents many of the typical means of measuring the quality of a particular area. Most businesses would look to these means of evaluating an area, but some would also look at very specific demographic data relating to an area. For example, an automobile related business such as a tune-up garage or a muffler shop would certainly want to know how many motor vehicles are registered

within the projected trade area. A hardware or home improvement store would want to know how many single family owner occupied homes are within their projected trade area. However, the demographic data previously described is very representative of what a typical commercial business would use in evaluating potential sites.

Site Selection And Buying Process

Typically, the commercial property user uses the foregoing demographic and site data in his site selection and buying process as follows:

1. Specific cities are selected as potential markets.
2. Areas within the city are targeted based on population growth trends, competition analysis, general demographic information, etc.
3. Specific trade areas are selected based on how the area demographics match up with their customer demographic profile.
4. Individual sites are located within the trade area and compared as to specific site needs and characteristics.
5. The demographic and specific site data for each potential location is then

analyzed to make projections as to what volume of business can be done and the best site is determined.

6. Based on the sales projection, a proforma income and expense statement is calculated, based on a specific return on investment. The proforma will indicate what price can be paid for land.
7. The potential buyer then negotiates with the potential seller, trying to buy the property at his projected price or less.

CHAPTER IV

RESEARCH METHODS

The basic theory being explored in this report is that 1) there is a relationship between commercial outparcel property values and demographic and retail sales data, and 2) known demographic and retail sales data can be used to estimate unknown property values. In order to determine if this theory is true, demographic and retail sales data, specific site data and known property values of one division of May Department Stores were studied. Following is an analysis of that study.

Demographic And Retail Sales Data

May's market research department routinely does customer demographic surveys at each of their store locations. These surveys are used to determine their typical customer profile, so that each store can be merchandised to fit that profile. Since the surveys are done identically at each location, the data can also be used to make various comparisons between each store.

All of the subject outparcels are adjacent to existing retail operations that are all similar, so

the total retail sales generated at each location is another means of comparing each site. This information is readily obtained at each site and can be easily compared on a dollars per square foot basis.

The latest customer demographic information and retail sales data from the X, Y, and Z regions of one store division are shown on the following three tables. Each of the store locations listed, either has outparcels available for sale or lease, or has had outparcels that have been sold or leased in the last six years.

This demographic and retail sales data was then analyzed to determine which data seemed more relevant to property values from a potential buyer's viewpoint, as previously addressed in the demographic needs part of the Theoretical Orientation Section. It was concluded that the retail sales population, income, college, married and white collar data would potentially be the most meaningful to property values.

CUSTOMER DEMOGRAPHIC AND RETAIL SALES DATA

REGION X

Location	Sales S/F	Trade Area Population	Mean Household Income (000)	Mean Age	Pct. W/Collar	Pct. Ethnic	% Under $15,000	% Over $35,000	% Under $25,000	% Over 45	Pct. Married	% With Child 18	W/Collar Prof.
1	112	281,000	23.3	39.2	53	34	31	16	18	33	58	51	35
2	146	294,000	24.1	32.6	56	24	31	19	39	19	54	53	30
4	108	114,000	23.9	40.0	45	14	29	17	17	35	71	51	33
5	128	230,000	27.4	34.5	60	13	22	26	30	22	60	60	36
6	159	274,000	21.4	35.5	50	14	35	13	28	24	55	48	33
7	186	252,000	25.6	32.8	57	18	30	21	33	19	60	54	36
13	159	204,000	24.7	33.1	50	6	27	18	32	17	59	56	39
19	136	127,000	27.9	34.8	52	3	20	27	22	16	73	60	42
20	100	159,000	18.9	31.4	44	37	50	10	35	14	47	58	24
23	105	199,000	22.0	35.8	70	11	35	12	27	24	51	50	26
41	161	283,000	30.9	33.3	76	14	16	34	30	18	54	44	50
Selected Averages	136.4	219.7	24.6	-	55.7	-	-	-	-	-	58.4	-	34.9

CUSTOMER DEMOGRAPHIC AND RETAIL SALES DATA

REGION Y

Location	Sales S/F	Trade Area Population	Mean Household Income (000)	Mean Age	Pct. W/Collar	Pct. Ethnic	% Under $15,000	% Over $35,000	% Under $25,000	% Over 45	Pct. Married	% With Child 18	W/Collar Prof.
14	131	314,000	25.5	39.7	59	19	26	20	25	37	61	47	38
15	141	381,000	25.8	37.8	40	32	24	21	27	32	55	51	22
16	110	438,000	31.3	37.7	63	8	15	34	24	30	65	47	40
17	106	251,000	26.6	33.2	57	17	20	23	27	14	61	56	41
18	141	237,000	24.9	35.9	51	25	18	15	21	22	58	56	28
26	113	264,000	30.5	39.5	52	4	18	31	24	38	66	34	36
30	89	259,000	28.8	33.5	53	5	20	30	34	20	57	59	34
33	126	203,000	27.3	35.2	58	9	22	25	29	21	60	53	39
37	125	191,000	30.6	35.2	55	13	17	34	25	21	64	53	41
42	140	326,000	22.4	32.9	41	27	32	12	36	19	50	58	23
Selected Averages	122	286.4	27.4	-	52.9	-	-	-	-	-	59.7	-	34.2

CUSTOMER DEMOGRAPHIC AND RETAIL SALES DATA

REGION Z

Location	Sales S/F	Trade Area Population	Mean Household Income (000)	Mean Age	Pct. W/Collar	Pct. Ethnic	% Under $15,000	% Over $35,000	% Under $25,000	% Over 45	Pct. Married	% With Child 18	W/Collar Prof.
9	111	208,000	29.2	34.0	62	9	22	33	29	18	58	48	39
10	127	265,000	24.3	35.4	52	13	27	17	24	21	69	57	35
11	95	125,000	19.8	33.1	42	33	42	10	28	16	61	62	23
12	114	204,000	25.2	34.4	63	15	28	21	28	19	59	40	45
21	119	135,000	25.1	33.1	57	19	24	20	30	16	59	56	32
22	120	164,000	23.5	31.4	59	16	28	13	38	15	51	48	32
Selected Averages	114.3	183.5	24.5	-	55.8	-	-	-	-	-	59.5	-	34.3

Comparable Sales Data

In order to determine how accurately the demographic data relates to property values, the author had to compare the demographic data to the known sales data. Sixteen sales or leases of outparcels have occurred in these three regions in the past six years. However, in order to accurately compare these sales with the demographic data and with other outparcels, the sales and lease data had to be adjusted to the same basis. The most easily compared basis was sales dollars per square foot in today's dollars.

Each outparcel that was sold or leased had to be analyzed as to how each met a potential buyer's specific site needs as was previously addressed in the Site Needs Section of the Theoretical Orientation Section. The adjustments for those site variations (size, location and access, interstate visibility, improved vs unimproved and topography) as well as those for leases and time were analyzed as follows:

Lease

Leases were converted to sales value using a 10% capitalization rate. After consulting with other appraisers and various published alternative investment rates, it was concluded that 10% was a reasonable typical capitalization rate for commercial properties.

Time

Adjustments for time were based on city cost indexes published by Marshall Valuation Service.

Size

Outparcels for typical users are generally in the 30,000 - 70,000 square foot range. Based on my past appraisal and real estate experience, the following adjustments were made to the comparable sales to adjust them to the typical:

Under 30,000 square feet - sell at a 10% premium; 90% adjustment

70,000 - 90,000 square feet - sell at 10% less; 110% adjustment

Greater than 90,000 square feet - sell at 20% less; 120% adjustment

Location And Access

The typical outparcel was considered to have main road frontage with either a curb cut or direct access from an entrance drive. The following adjustments were made to the comparable sales:

Corners - sell at a 10% premium; 90% adjustment

In-Line - sell at 20% less; 120% adjustment

Rear Land - sell at 50% less; 150% adjustment.

Interstate Visibility

The typical outparcel does not have interstate visibility. If the comparable sale has interstate visibility, it was concluded that it would sell for

20% more, requiring an 80% adjustment.

Improved vs Unimproved

The typical outparcel is graded, paved and has underground utilities. If the comparable sale is unimproved, it would sell for 20% less, requiring 120% adjustment.

Topography

The typical outparcel is relatively level and without any topography problems. A comparable sale with a topography problem would sell for less, requiring an upward adjustment that would vary depending on the severity of the terrain problem.

The known sales and leases of outlots were analyzed and adjusted as follows:

Region X

Store No. 2

$21,500 Ground Rent; 1/1/82; 38,768 S.F.

$$\frac{\$21,500}{.10} \times \frac{1}{38,768 \text{ S.F.}} \times 1.055^{(\text{Time})} = \$5.85/\text{S.F.}$$

Store No. 5

$25,000 Ground Rent; 12/83; 40,000 S.F.

$$\frac{\$25,000}{.10} \times \frac{1}{40,000 \text{ S.F.}} = \$6.25/\text{S.F.}$$

Store No. 13

$15,000 Ground Rent; 8/78; 41,938 S.F.

$$\frac{\$15,000}{.10} \times \frac{1}{41,938 \text{ S.F.}} \times 1.364^{(\text{Time})} = \$4.90/\text{S.F.}$$

Store No. 19

$30,000 Ground Rent; 12/83; 42,500 S.F.
Interstate Visibility -20%

$$\frac{\$30,000}{.10} \times \frac{1}{42,500 \text{ S.F.}} \times 80\% = \$5.65/\text{S.F.}$$

Store No. 23

$200,000 Sale; 1/1/82; 44,431 S.F.

$$\frac{\$200,000}{44,000 \text{ S.F.}} \times 1.055^{(\text{Time})} = \$4.75/\text{S.F.}$$

Store No. 41

$43,000 Ground Rent; 1/84; 40,000 S.F.

$$\frac{\$43,000}{.10} \times \frac{1}{40,000 \text{ S.F.}} = \$10.80/\text{S.F.}$$

Region Y

Store No. 14

$35,000 Ground Rent; 1/84; 40,800 S.F.

$$\frac{\$35,000}{.10} \times \frac{1}{40,800 \text{ S.F.}} = \$8.60/\text{S.F.}$$

Store No. 15

$315,000 Sale; 7/81; 53,000 S.F.

$$\frac{\$315,000}{53,000 \text{ S.F.}} \times 1.08^{(\text{Time})} = \$6.40/\text{S.F.}$$

Store No. 16

$482,643 Sale; 1/84; 35,000 S.F.

$$\frac{\$482,643}{35,000 \text{ S.F.}} = \$13.80/\text{S.F.}$$

Store No. 17

$227,000 Sale; 8/79; 50,965 S.F.

$$\frac{\$227,000}{50,965 \text{ S.F.}} \times 1.25^{(\text{Time})} = \$5.55/\text{S.F.}$$

Store No. 26

$25,000 Ground Rent; 1/84; 40,000 S.F.

$$\frac{\$25,000}{.10} \times \frac{1}{40,000 \text{ S.F.}} = \$6.25/\text{S.F.}$$

Store No. 33

$20,000 Ground Lease; 1/80; 46,537 S.F.

$$\frac{\$20,000}{.10} \times \frac{1}{46,537 \text{ S.F.}} \times 1.185^{(\text{Time})} = \$5.10/\text{S.F.}$$

Region Z

Store No. 9

$40,000 Ground Rent; 1/84; 94,500 S.F.

Size +20%; In-Line +20%

$$\frac{\$40,000}{.10} \times \frac{1}{94,500 \text{ S.F.}} \times 1.20 \times 1.20 = \$6.10/\text{S.F.}$$

Store No. 10

$175,000 Sale; 1/78; 35,474 S.F.

$$\frac{\$175,000}{35,474 \text{ S.F.}} \times 1.43^{(\text{Time})} = \$7.10/\text{S.F.}$$

Store No. 11

$200,000 Sale; 1/78; 42,556 S.F.

Interstate -20%

$$\frac{\$200,000}{42,556 \text{ S.F.}} \times 1.43^{(\text{Time})} \times 80\% = \$5.40/\text{S.F.}$$

Store No. 12

$136,000 Sale; 6/78; 28,750 S.F.

$$\frac{\$136,000}{28,750 \text{ S.F.}} \times 1.358^{(\text{Time})} = \$6.40/\text{S.F.}$$

Relationship Of Known Outparcel Values To Demographic And Retail Sales Data

Now that the known comparable sales data has been analyzed and adjusted so that each sale represents the sale price per square foot in today's dollars of the typical outparcel, the values can be compared and related to the known demographic and retail sales data. In order to determine how well the known sales data related to each category of demographic data, the correlation coefficient was calculated.

Correlation Coefficient

The correlation coefficient is a statistical means of measuring the strength of a linear relationship. It is a measure of how well two sets of data, when plotted, will fit a straight line.[11] For example, part of the hypothesis of this report is that the larger the population in a particular area, the more a potential outparcel user will pay for an outlot. With known outparcel values and known populations, these knowns can be plotted to determine how well the two relate. The correlation coefficient measures how well two sets of data relate.

The correlation coefficient has been defined as,

$$r = \frac{nExy - (Ex)(Ey)}{\sqrt{\left[nEx^2 - (Ex)^2\right]\left[nEy^2 - (Ey)^2\right]}}$$

Where n is the number of sets of data, x is one set of data and y is the other. The r value ranges from +1 to -1. An r value of +1 would indicate a perfect positive fit, that is, the data represents a straight line and relates directly to each other. An r value of -1 would indicate a perfect negative fit, that is, the data represents a straight line but relates inversely to each other. An r value of 0 indicates that there is no linear relationship between x and y.[12]

Although the above equation is very complex, statistical calculators are capable of handling such a calculation. After the data is entered, the calculator can compute the r value in seconds. A Texas Instruments Business Analyst II calculator was used to compute the correlation coefficient for each set of data. For example, the known outlot values per square foot were entered with the corresponding retail sales per square foot for each location and then the correlation coefficient was calculated. This was done for each set of data for each region (i.e., known outlot value vs population, known outlot value vs mean income, etc.). The data entered and the resulting coefficients are shown as follows:

Location	Known Adjusted Outlot Value/S.F.	Sales/S.F.	Trade Area Population	Mean Income	% College	% Married	% W/Collar
Region X							
2	5.85	146	294	24.1	56	54	30
5	6.25	128	230	27.4	60	60	36
13	4.90	159	204	24.7	50	59	39
19	5.65	136	127	27.9	52	73	42
23	4.75	105	199	22.0	70	51	26
41	10.80	161	282	30.9	76	54	50
Correlation Coefficient		.52	.53	.83	.67	-.19	.75
Region Y							
14	8.60	131	314	25.5	59	61	38
15	6.40	141	381	25.8	40	55	22
16	13.80	110	438	31.3	63	65	40
17	5.55	106	251	26.6	57	61	41
26	6.25	113	264	30.5	52	66	36
33	5.10	126	203	27.3	58	60	39
Correlation Coefficient		-.24	.81	.54	.49	.43	.22
Region Z							
9	6.10	111	208	29.2	62	58	39
10	7.10	127	265	24.3	52	69	35
11	5.40	95	125	19.8	42	61	23
12	6.40	114	204	25.2	63	59	45
Correlation Coefficient		.99	.97	.40	.42	.66	.57

The results of the correlation coefficient calculations varied with each set of data and with each region. The correlation between value and percentage married in Region X and between value and sales per square foot in Region Y turned out to be poor and inverse. The correlation between value and sales per square foot and trade area population in Region Z proved to be the best at .99 and .97 respectively.

After analyzing all of the results, it was concluded that only the demographic data and sales per square foot data having a correlation coefficient of .5[13] and above would be used and the data should be "weighted" according to the quality of the correlation. The calculated correlation coefficients were used to weight the significance of the data as follows:

Region	Data	Coeff.	÷	Total	=	Weigh
X	Sales/S.F.	.52		3.3		.16
	Population	.53		3.3		.16
	Income	.83		3.3		.25
	College	.67		3.3		.20
	W/Collar	.75		3.3		.23
	Total	3.3				1.00
Y	Population	.81		1.35		.60
	Income	.54		1.35		.40
	Total	1.35				1.00
Z	Sales/S.F.	.99		3.19		.31
	Population	.97		3.19		.30
	Married	.66		3.19		.21
	W/Collar	.57		3.19		.18
	Total	3.19				1.00

Comparable Demographic and Sales Data Basis

Before the demographic and sales per square foot data could be used to relate to property values, the data had to be reduced to a common comparable basis. In the form in which the data existed, it was not comparable. For example, there was no way to relate population numbers with income levels or with percentage of white collar professional numbers.

So, each category of data that was to be used and compared to property values was converted to a common basis by relating each statistic to the average for each region. For example, the average sales per square foot for Region X was $136.4 (see original listing). So, for location No. 1, the sales per square foot of $112/S.F. were .821 of the average (112/136.4) and Location No. 2 had sales per square foot that were 1.070 times the average (146/136.4), and so on. All of the remaining demographic data to be used was compared to the average and converted to a ratio in a similar manner. The results are shown in the Table following the next section.

Weighting and Quantifying the Data

Now that 1) the significant demographic data and the proper weighting has been determined from correlation coefficients, and 2) the demographic data has been reduced to a comparable basis, the two can be combined

to reduce all of the data to a combined factor "X". This was done for each region as follows:

GION X

cation	Sales/S.F. Ratio/Avg.	X	Wt.	+	Population Ratio/Avg.	X	Wt.	+	Income Ratio/Avg.	X	Wt.	+	College Ratio/Avg.	X	Wt.	+	Professional Ratio/Avg.	X	Wt.	=	Combined Factor "X"
1	.821	X	.16	+	1.283	X	.16	+	.947	X	.25	+	.952	X	.20	+	1.003	X	.23	=	.994
2	1.070	X	.16	+	1.338	X	.16	+	.980	X	.25	+	1.005	X	.20	+	.860	X	.23	=	1.029
4	.792	X	.16	+	.519	X	.16	+	.972	X	.25	+	.808	X	.20	+	.946	X	.23	=	.832
5	.938	X	.16	+	1.047	X	.16	+	1.114	X	.25	+	1.077	X	.20	+	1.032	X	.23	=	1.049
6	1.166	X	.16	+	1.247	X	.16	+	.870	X	.25	+	.898	X	.20	+	.946	X	.23	=	1.001
7	1.364	X	.16	+	1.147	X	.16	+	1.041	X	.25	+	1.023	X	.20	+	1.032	X	.23	=	1.104
13	1.166	X	.16	+	.929	X	.16	+	1.004	X	.25	+	.898	X	.20	+	1.117	X	.23	=	1.023
19	.997	X	.16	+	.578	X	.16	+	1.134	X	.25	+	.934	X	.20	+	1.203	X	.23	=	.999
20	.733	X	.16	+	.724	X	.16	+	.768	X	.25	+	.790	X	.20	+	.688	X	.23	=	.741
23	.770	X	.16	+	.906	X	.16	+	1.118	X	.25	+	1.257	X	.20	+	.744	X	.23	=	.970
41	1.180	X	.16	+	1.288	X	.16	+	1.256	X	.25	+	1.364	X	.20	+	1.433	X	.23	=	1.311

REGION Y

Location	Population Ratio/Avg.	X	Wt.	+	Income Ratio/Avg.	X	Wt.	=	Combined Factor "X"
14	1.096	X	.60	+	.931	X	.40	=	1.030
15	1.330	X	.60	+	.942	X	.40	=	1.175
16	1.529	X	.60	+	1.142	X	.40	=	1.374
17	.876	X	.60	+	.971	X	.40	=	.914
18	.828	X	.60	+	.909	X	.40	=	.860
26	.927	X	.60	+	1.113	X	.40	=	1.001
30	.904	X	.60	+	1.051	X	.40	=	.963
33	.709	X	.60	+	.996	X	.40	=	.824
37	.667	X	.60	+	1.117	X	.40	=	.847
42	1.138	X	.60	+	.818	X	.40	=	1.010

REGION Z

Location	Sales/S.F. Ratio/Avg.	X	Wt.	+	Population Ratio/Avg.	X	Wt.	+	Married Ratio/Avg.	X	Wt.	+	Professional Ratio/Avg.	X	Wt.	=	Combined Factor "X"
9	.971	X	.31	+	1.133	X	.30	+	.975	X	.21	+	1.137	X	.18	=	1.050
10	1.111	X	.31	+	1.444	X	.30	+	1.160	X	.21	+	1.020	X	.18	=	1.205
11	.831	X	.31	+	.680	X	.30	+	1.025	X	.21	+	.671	X	.18	=	.798
12	.997	X	.31	+	1.112	X	.30	+	.992	X	.21	+	1.312	X	.18	=	1.087
21	1.041	X	.31	+	.736	X	.30	+	.992	X	.21	+	.933	X	.18	=	.920
22	1.050	X	.31	+	.894	X	.30	+	.857	X	.21	+	.933	X	.18	=	.942

Valuation

All of the significant demographic and sales per square foot data has been reduced to one combined factor which can now be used with the known comparable sales data to predict the unknown values of the remaining outlots.

When comparing the combined factors with the known property values, it was noted that the range in property values was greater than the range in combined factors. In order to compensate for this difference and to make the two comparisons "fit" better, the combined factors were squared before comparing and calculating the unknown values.

The known values were plotted with the corresponding square of the combined factor in the statistical calculator. From these known sets of points, the calculator determined a straight line that best fit the data points. Once the known points were entered, the calculator was used to recalculate the outlot values based on each corresponding combined factor squared. The outlot values in each region were calculated as follows:

Region X

Location	Combined Factor "X"	X^2	Known Values	Calculated Values
1	.994	.988	-	5.16
2	1.029	1.059	5.85	5.71
4	.832	.692	-	2.88
5	1.049	1.100	6.25	6.03
6	1.001	1.002	-	5.27
7	1.104	1.082	-	5.89
13	1.023	1.047	4.90	5.62
19	.999	.998	5.65	5.24
20	.741	.549	-	1.78
23	.970	.941	4.75	4.80
41	1.311	1.719	10.80	10.80
Correlation Coefficient		.98		

Region Y

Location	Combined Factor "X"	X^2	Known Values	Calculated Values
14	1.030	1.061	8.60	7.09
15	1.175	1.381	6.40	9.19
16	1.374	1.888	13.80	12.53
17	.914	.835	5.55	5.61
18	.860	.740	-	4.98
26	1.001	1.002	6.25	6.70
30	.963	.927	-	6.21
33	.824	.679	5.10	4.58
37	.847	.717	-	4.83
42	1.010	1.020	-	6.82
Correlation Coefficient		.88		

Region Z

Location	Combined Factor "X"	X^2	Known Values	Calculated Values
9	1.050	1.103	6.10	6.27
10	1.205	1.452	7.10	6.98
11	.798	.637	5.40	5.32
12	1.087	1.182	6.40	6.43
21	.920	.846	-	5.74
22	.942	.887	-	5.83
Correlation Coefficient		.98		

The "X^2" factors correlate very well with the known property values, as indicated by the high correlation coefficients. The calculated values also relate well to the known values.

The calculated values represent dollars per square foot of typical outlots at each location. In order to derive the value of each individual outlot, the calculated values must be adjusted for the site variations previously described in the comparable sales data section. Each individual site was valued using the calculated values and adjustments as follows:

Site Valuation

Region X

Location	Parcel No.	Size(S.F.)	Base Value Per S.F.	Adjustments	Adj. Value Per S.F.	Value
1	1	36,000	5.16	+20% (Interstate)	6.19	225,000
	2	105,000	5.16	-20% (In-Line)	4.13	435,000
2	1	40,000	5.71	-	5.71	230,000
	2	40,000	5.71	-	5.71	230,000
	3	40,000	5.71	-	5.71	230,000
4	1	26,000	2.88	+10% (Size)	3.17	85,000
	2	37,000	2.88	-10% (Secondary Road)	2.60	100,000
	2A	37,000	2.88	-10% (Secondary Road)	2.60	100,000
	3	107,000	2.88	-20% (Size); -20% (In-Line)	1.85	200,000
5	1	26,000	6.03	+10% (Size)	6.63	175,000
	2	40,000	6.03	-	6.03	240,000
	3	125,000	6.03	-20% (In-Line)	4.82	600,000
	4	105,000	6.03	-20% (In-Line)	4.82	500,000
6	2	30,000	5.27	-10% (Secondary Road)	4.75	150,000
	3	105,000	5.27	-20% (In-Line)	4.22	450,000
7	1	207,000	5.89	-20% (Size); -20% (In-Line) -20% (Unimproved)	3.02	625,000
13	1	200,000	5.62	-20% (In-Line)	4.50	900,000
	2	35,000	5.62	-	5.62	200,000
	3	22,000	5.62	+10% (Size)	6.18	140,000
19	1	42,000	5.24	+20% (Interstate)	6.29	270,000
	2	35,000	5.24	-20% (In-Line)	4.20	150,000
20	1	44,000	1.78	+20% (Interstate)	2.14	100,000
	2	44,000	1.78	+20% (Interstate); -20% (In-Line)	1.78	80,000
23	1	23,000	4.80	+10% (Size)	5.28	125,000
	3	35,000	4.80	-	4.80	170,000
41	1	44,000	10.80	-70% (Topography); -20% (Unimproved)	2.60	115,000
	2	44,000	10.80	-10% (Unimproved)	9.72	430,000

Region Y

Location	Parcel No.	Size(F.S.)	Base Value Per S.F.	Adjustments	Adj. Value Per S.F.	Value
14	1	40,000	7.09	-	7.09	290,000
15	2	40,000	9.19	-10% (Access)	8.27	330,000
	3	40,000	9.19	-	9.19	370,000
16	2	40,000	12.53	-	12.53	500,000
	3	25,000	12.53	-10% (Access)	11.27	285,000
17	1	156,000	5.61	-20% (In-Line) -20% (Size) +20% (Interstate)	4.49	880,000
	2	140,000	5.61	-20% (Size -20% (In-Line)	3.59	500,000
	3	44,000	5.61	-	5.61	250,000
	4	44,000	5.61	-20% (Access) +20% (Interstate)	5.61	250,000
	5	218,000	5.61	-50% (Rear); -20% (Size); -20% (Unimproved)	1.80	390,000
18	1	40,000	4.98	-	4.98	200,000
	2	50,000	4.98	-20% (In-Line); +10% (Size)	4.38	220,000
26	1	40,000	6.70	-	6.70	270,000
30	2	35,000	6.21	-20% (In-Line)	4.97	175,000
	3	105,000	6.21	-20% (In-Line); -20% (Size)	3.97	420,000
33	1	245,000	4.58	-20% (In-Line); -20% (Size)	2.93	720,000
	2A	33,000	4.58	-	4.58	150,000
	2B	33,000	4.58	-	4.58	150,000
	2C	33,000	4.58	-	4.58	150,000
	3	30,000	4.58	-	4.58	140,000
37	1	40,000	4.83	-	4.83	200,000
	2	90,000	4.83	-50% (Rear); -20% (Unimproved)	1.93	175,000
	3	40,000	4.83	-	4.83	200,000
42	2	25,000	6.82	-	6.82	175,000

Region Z

Location	Parcel No.	Size(S.F.)	Base Value Per S.F.	Adjustments	Adj. Value Per S.F.	Value
9	1	140,000	6.27	-20% (In-Line); -20% (Size)	4.01	560,000
	2	25,000	6.27	+10% (Size)	6.90	175,000
10	1	85,000	6.98	-20% (In-Line); -20% (Size)	4.46	380,000
11	1	190,000	5.32	-50% (Rear); -60% (Topography)	1.06	200,000
12	1	375,000	6.43	-50% (Rear); -50% (Topography)	1.60	600,000
	2	40,000	6.43	-	6.43	260,000
	3	35,000	6.43	-	6.43	225,000
21	1	35,000	5.74	-20% (In-Line)	4.60	160,000
	2	30,000	5.74	-	5.74	175,000
22	1	64,000	5.83	-	5.83	375,000
	2	80,000	5.83	-20% (In-Line); -50% (Topography); -10% (Unimproved)	2.10	170,000
	3	60,000	5.83	-50% (Rear); -10% (Unimproved)	2.62	160,000

CHAPTER V

CONCLUSIONS

The purpose of this report was to determine if a method of valuing retail outparcels could be developed using existing demographic and sales data that would be both effective and inexpensive. A method was developed which combined various concepts from conventional appraisal methods, mass appraisal methods and regression appraisal methods with the available demographic and sales data. This method was used to determine values for each of the outlots in a division of The May Department Stores Co. Although the method developed certainly has its limitations, it also has its advantages.

The valuation method developed has tremendous flexibility due to the fact that all of the data used to determine the values is readily available within May's real estate department or any similar retailer's real estate department. As new outparcels are developed, the demographic and sales data of the new location can be put into the system and new values can be computed. As more recent outparcel sales information becomes available, it can be plugged into the

method and values can be updated. The demographic and sales per square foot data can be updated each year to reflect the most recent changes in the area and consequently, any changes in value would also be reflected. All of these changes can be done very inexpensively while sitting at a desk. With conventional appraisals, such updates and changes would require site inspections, which would be much more expensive.

This valuation method was applied to three department store regions having outlots at six to eleven different locations. The same type of demographic and sales per square foot data is available at all of May's divisions and this method could be applied to any of those divisions.

The accuracy of this method, however, is limited by the number and quality of sale or lease transactions available. There have to be enough known sales available to compare with the demographic data in order to determine whether a good correlation exists. As with most statistical analyses, the larger the sample, or in this case, the larger the sample of known sales, the better the results. The valuations also depend on the quality of the sales data. The more recent sales require less adjustment for time and yield valuations that better reflect today's market values.

A limited number of sales transactions can also make it difficult to estimate values of properties having demographic data that is either on the high or low end of the spectrum. Regions Y and Z had known sales values that corresponded to demographic data that was much better than average and much worse than average. Region X, however, had sales value data that corresponded to average and much better than average demographic data. There were no sales to correlate with the below average demographic data at location numbers 4 and 20. Although the calculated values for these two locations seem to be reasonable, such data that falls outside the range of the known data can sometimes be very inaccurate.

This report was successful in developing an inexpensive method of valuing retail outparcels. This method seems to develop values that are reasonable and compare well with known sale values of outparcels. The values developed can certainly be used as a guide in establishing asking prices for outparcels. However, the limitations of the methods used indicate that if an appraisal is needed for more accurate purposes, a standard fee appraisal should be made with perhaps the method developed herein used as a check. The true accuracy of this appraisal method will, however, eventually be proven or disproven when the appraised outparcel's true value is established when it is sold or leased.

FOOTNOTES

[1]American Institute Of Real Estate Appraisers, The Appraisal Of Real Estate (Chicago, Illinois: American Institute Of Real Estate Appraisers, 1973), p. 6.

[2]Boyce, Byrl N., Real Estate Appraisal Terminology (Cambridge, Massachusetts: Ballinger Publishing Company, 1975), p. 137.

[3]American, op. cit., p. 50.

[4]Weimer, Arthur M., Hoyt, Homer, And Bloom, George F., Real Estate (New York, New York: The Ronald Press Company, 1972), p. 373.

[5]Ibid, p. 369.

[6]American, op. cit., p. 144.

[7]McSwain, Robert H., "Perspective 1965: Assessing Versus Appraising," Ad Valorem Appraisers: The New Professionals, Monograph #6, June, 1975, p. 5.

[8]Smith, Paul E., "The Mass Appraiser," Ad Valorem Appraisers: The New Professionals, Monograph #6, June, 1975, p. 20.

[9]Bruce, Richard W. And Sundell, Darrell J., "Multiple Regression Analysis: History And Applications In The Appraisal Profession," The Real Estate Appraiser, January-February, 1977, p. 37.

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[11]Zuwaylif, Fadil H., General Applied Statistics (Reading, Massachusetts: Addison-Wesley Publishing Company, 1979), p. 329.

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[13]Chudleigh, Walter H., "The Application Of Correlation Matrix Analysis To Real Estate Appraisal," The Appraisal Journal, October 1979, p. 524.

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