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AN ANALYSIS OF FLORAL WHOLESALING FACILITIES IN LOS ANGELES, CALIFORNIA

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AN ANALYSIS OF FLORAL WHOLESALING FACILITIES IN LOS ANGELES, CALIFORNIA

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SUMMARY

Representatives of the Los Angeles wholesale flower market requested the assistance of the U.S. Department of Agriculture in planning improved floral marketing facilities. The need to relocate and to develop improved facilities has been hastened by inadequate and deteriorating facilities in the present market, space limitations prohibiting expansion to meet the rapidly growing floral market in the Los Angeles area, and the economic infeasibility created by rising real estate values in the present downtown location.

Final sales in the present market totaled \$20 million in 1972 and are expected to exceed \$40 million by the year 2000. The physical volume of floral commodities passing through the wholesale market annually is expected to in-

crease by nearly 80 percent during the same period.

To prepare for the future it is proposed that the 89 firms occupying facilities in the present market be accommodated in a building containing 217,500 square feet of enclosed first-floor area on a 20-acre site in suburban Los Angeles. A central refrigeration system, air-conditioning, covered docking facilities, and ample truck maneuvering and parking space are basic features of the plan.

At 1973-74 costs an initial investment of approximately \$5 million will be required to develop the proposed facilities. About \$1 million annually will be needed to amortize, pay taxes on, and operate the improved facilities.

INTRODUCTION

Background

The Southern California Flower Market, the American Florists Exchange, Ltd., several independent floral wholesaling firms, and the offices of the Southern California Floral Association are located in a two-block area of downtown Los Angeles, generally known as the Los Angeles floral market (fig. 1).

The center of this market is bounded by Seventh Street on the northeast, Eighth Street on the southwest, Maple Avenue on the northwest, and San Julian Street on the southeast (fig. 2). Wall Street runs through the center of the market and is parallel to Maple Avenue and San Julian Street.

Wholesalers operating in this market consider the facilities to be inadequate and obsolete. Security is poor. Marketing functions are hampered by traffic congestion, a lack of truck-bed-height platforms to facilitate unloading and loading operations, inadequate assembly areas, and insufficient refrigerated space.

Most of the wholesalers in the Los Angeles floral market believe that their business will continue to expand. However, they recognize that downtown Los Angeles is becoming less accessible to both retailers and growers. The growers and retailers in the suburbs are increasing relative to those near the downtown area. As a result, it has been speculated that



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FIGURE 1.—Los Angeles wholesale flower market area.
(Courtesy of Los Angeles Planning Department.)

the present market facilities may have to be relocated to more efficiently serve the needs of the southern California floral industry.

Prior to this study little current information was available concerning the Los Angeles flower market. Neither the sales volume nor the physical volume of floral products and supplies moving through the market had been quantified since 1956.¹ Suspected trends in market volume had not been substantiated.

The business outlook for the Los Angeles flower market has also been clouded by changes

in the marketing channels for floral products. Many growers are bypassing the wholesale market by selling directly to such mass outlets as supermarkets and variety stores and to retail florists. Prior to this study the ultimate effect of this trend on the market had not been considered.

With this as a background, representatives of the Los Angeles flower market requested planning assistance from the U.S. Department of Agriculture. In the fall of 1972 a survey was developed to collect background and support information pertinent to the study. It was administered by mail and by personal interviews during the spring and summer of

¹RADA, E. L. FLORAL WHOLESALING IN SOUTHERN CALIFORNIA—AN ECONOMIC ANALYSIS. U.S. Dept. Agr. Agr. Mktg. Res. Rpt. 406, 72 pp. 1960.



FIGURE 2.—Location of Los Angeles wholesale flower market.

1973. The data obtained were for 1972. All wholesalers of cut flowers and potted plants operating in the market were requested to participate in the study. More than 80 percent of these firms did so. Since they accounted for more than 95 percent of the total market volume in both physical and dollar terms, the data in this report are presented as market totals.

Objectives

This study had the following objectives:

- To describe the wholesale flower marketing facilities in Los Angeles and to determine their adequacy for present and future needs.
- To quantify and to project the sales volume of firms operating in the Los Angeles wholesale flower market.

- To determine the feasibility of renovating existing facilities.
- To establish the kind and amount of facilities required for the efficient wholesale marketing of floral commodities in Los Angeles.

- To outline the costs and benefits of relocating and constructing new facilities to meet present needs and to provide for anticipated growth.

THE LOS ANGELES WHOLESALE FLOWER MARKET

Evolution of the Present Market

Commercial flower growing in southern California dates back to 1893, when several Japanese growers raised field carnations at the corner of South Main Street and West Jefferson Boulevard in Los Angeles. At the turn of the century less than 100 acres of cut flowers were grown commercially in southern California. Flower production was a seasonal business, operating only in the winter. The population of Los Angeles was less than 100,000 and only five florists' shops were located in the city.

As the city population and the number of growers and retailers increased, the need became apparent for a market where growers and retailers could meet. Growers of Japanese and European ancestry developed separate but complementary markets. Japanese growers specialized in annuals and European growers in perennials. As a result, it was to the benefit of each to locate near the other. Until about 1905 the center of the floral market in Los Angeles was near First, Second, and Spring Streets. After the San Francisco earthquake in 1906 the number of Japanese flower growers in southern California increased. By 1910 the Los Angeles population had increased to 300,000, and 30 to 40 Japanese flower growers had established a headquarters on South Broadway near Sixth Street. In 1912 the Southern California Flower Growers Association was formed, and in 1913 the first Southern California Flower Market was opened at 421 South Los Angeles Street. This market was 20 feet wide and 60 feet deep.

By the end of 1913 the Association membership had increased to 124 and the Southern California Flower Market was incorporated. By 1914 the market had outgrown its Los

Angeles Street facility and had rented the premises at 421-423 Wall Street.

In 1919 the American Florists Exchange was organized by a group of 30 flower growers. It was originally located in a garage on Winston Street, which intersects Wall Street between Fourth and Fifth Streets.

By 1923 the Southern California Flower Market had again outgrown its facility and moved to a new building constructed on leased property at 753-755 Wall Street. At about the same time the American Florists Exchange settled directly across the street in the old White garage at 756 Wall Street. In a short time both markets had to expand. The Southern California Flower Market purchased several adjacent properties to provide more parking area and to enlarge its facility. Similarly the American Florists Exchange purchased additional property on San Julian Street immediately behind the existing market and expanded its facility; thereby a street to street "walk through" market was created.

In 1931 the Southern California Floral Association was created as a nonprofit trade group to service the industry. Thus, an avenue was established through which growers, wholesalers, retailers, and allied tradesmen could communicate and work together for their common interest.

In 1950 the Southern California Flower Market was reorganized from a nonprofit to a profit corporation for the purpose of expanding into other businesses. In 1952 the Southern California Flower Growers Association was incorporated and assumed management of the Southern California Flower Market.

During these years the Los Angeles flower market had developed into the only organized market for floral products and supplies in southern California. By 1956 some 225 whole-

salers did about a \$10 million business. The American Florists Exchange and Southern California Flower Market each had about 100 occupants. Monthly rentals per square foot averaged 18 cents in the former and 35 cents in the latter. In both markets rentals were higher near the rear and front entrances.

In the early 1960's both the American Florists Exchange and the Southern California Flower Market undertook substantial construction and modernization programs. The American Florists Exchange refurbished its existing cut-flower and potted-plant market and on adjacent property constructed a building containing three levels of 60,000 square feet each. The ground level was leased to two florist supply firms and the upper two levels provided parking space. During the same period the old Southern California Flower Market was demolished, and a facility containing three levels of 65,000 square feet each was constructed. Formerly the Southern California Flower Market fronted only on Wall Street; however, the new facility extended from Wall Street to Maple Avenue and thereby created a street to street "walk through" market similar to that of the American Florists Exchange. The ground level of this facility was leased to floral wholesalers and the upper two levels provided parking space.

By 1972 the volume of business by firms operating in the Los Angeles wholesale flower market had grown to about \$24 million. Twenty-nine firms occupied the American Florists Exchange and 61 firms the Southern California Flower Market. Their monthly rentals averaged about 30 and 45 cents per square foot, respectively. Six firms that rented stalls in either or both submarkets also occupied facilities elsewhere in the Wall Street area. One firm had separate facilities and did not maintain a stall in either submarket.

The arrangement of facilities in the Los Angeles wholesale flower market is illustrated in figure 2. Wholesalers of cut flowers and potted plants occupied nine buildings containing about 205,000 square feet of floorspace. Of this total, about 163,000, 36,000 and 6,000 square feet were first-, second-, and third-floor space, respectively, and 18,000 square feet were

refrigerated. Adjacent ground-level parking space totaled about 98,000 square feet.

The assessed value of the land and improvements in figure 2 totaled \$401,950 and \$429,420, respectively, in 1972. Based on the city and county tax rate of \$12.8694 per \$100 of assessed value, these holdings generated property taxes of about \$106,000. Based on a ratio of assessed value to market value of 25 percent, the market value of land and improvements used for wholesaling cut flowers, greens, and potted plants was assumed to be approximately \$3.3 million in 1972.

Originally the purpose of the Los Angeles wholesale flower market was to provide centralized wholesaling facilities for flower growers. Today its production capacity remains substantial. About 80 percent of its occupants manage growing operations. In total, the market occupants directly control about 5 million square feet of production area, which is under some form of protective covering, and about 1,000 acres of field area.

Status of the Market in Southern California

An excellent indicator of the commercial importance of the Los Angeles wholesale flower market to the floral industry in southern California is provided by analyzing the membership of the Southern California Floral Association. Until 1965, membership in the Association was virtually mandatory for those wishing to personally trade on the market.

The Association and the wholesale market became closely identified following the adoption of the California Retail Sales and Tax law in 1933. As prescribed by this law, anyone buying for resale is eligible for a certificate exempting him from paying the sales tax. Normally it is the responsibility of the seller to record the buyer's name, address, and tax exemption number on each sales slip. Recording this information for each of the many sales transacted in the wholesale market would seriously impede trading. With the sanction of the State Board of Equalization, the owners and tenants of the wholesale market and the Southern California Floral Association agreed to modify this procedure by having each retail and wholesale florist

register his exemption certificate with the Association in exchange for a numbered buyer's badge. Thus, the Association assumed the responsibility of determining a buyer's eligibility to purchase floral products at wholesale. Subsequent to this agreement the seller had to write only the buyer's identification number on each sales slip.

Acquisition of an identification badge also entailed acquiring membership in the Southern California Floral Association. On becoming a member of the Association, each eligible buyer was entitled to the services, benefits, and privileges thereof. In 1965 the policy requiring buyers to be members of the Association was abruptly reversed. It was decided to issue auxiliary numbers to those with the necessary credentials to trade on the market but not wishing to become members of the Association. On request, auxiliary identification numbers in the 9,000 series were issued at minimal cost to legitimate buyers holding resale certificates and proper business licenses.

In 1972 the State Board of Equalization issued 1,120 permits to retail florists in southern California (table 1). Of this total, 792 or 71 percent were members of the Southern California Floral Association and 87 or 8 percent held auxiliary numbers in the 9,000 series. Therefore it is reasonable to assume that in

1972 nearly 80 percent of the retail florists in southern California obtained all or part of their supplies in the Los Angeles wholesale flower market.

Sales Volume in the Present Market

The sales in the Los Angeles wholesale flower market in 1972 were analyzed as follows:

Total sales	\$24,172,853
Sales bypassing market	1,536,289
Sales handled within market or	
market sales	22,636,564
Intramarket transfers	2,963,274
Financial market sales	19,673,290

The sales volume of \$22.6 million handled within market facilities in 1972 is analyzed in table 2.

As shown in this table, 42.4 percent of the commodities were purchased outright by market occupants for resale, 36.2 percent were produced by the seller, and 21.4 percent were acquired on consignment.²

Retail florists were the principal buyers at the Los Angeles wholesale flower market, as shown in table 2. Independent routemen, street

² Note that the \$8.2 million in sales by market occupants represents 41.6 percent of the \$19.7 million in final sales that accrued to the market in 1972.

TABLE 1.—Permits and identification numbers issued to retail florists in southern California by county, 1972

County	Florist permits ¹	Identification numbers as proportion of florist permits						
		Number	Number	Percent	Number	Percent	Number	Percent
Imperial	4	2	50	2	50
Kern	36	5	14	1	3	6	17	
Los Angeles	675	593	88	69	10	662	98	
Orange	131	91	70	9	7	100	76	
Riverside	36	24	67	2	6	26	72	
San Bernardino	55	41	75	3	5	44	80	
San Diego	117	9	8	...	...	9	8
San Luis Obispo	9	...	...	...	...	...	...
Santa Barbara	24	11	46	1	4	12	50	
Ventura	33	16	49	2	6	18	55	
Total	1,120	792	71	87	8	879	78	

¹ California State Board of Equalization.

² Excludes 7 Southern California Floral Association members outside southern California.

TABLE 2.—*Sales breakdown by various categories of Los Angeles wholesale flower market, 1972*

Category	Market sales	Share of market	
		sales	
<i>Acquisition method</i>			
Purchased outright	9,593,875	42.4	
Self-produced	8,182,076	36.2	
Consignment	4,860,613	21.4	
Total	22,636,564	100.0	
<i>Purchases</i>			
<i>Type of buyer</i>			
Retail florists	13,844,017	61.2	
Wholesalers off L.A. market	3,208,507	14.2	
Wholesalers on L.A. market	2,963,274	13.1	
Independent routemen	1,340,845	5.9	
Street peddlers	454,574	2.0	
Mass outlets	420,266	1.9	
Other	405,081	1.7	
Total	22,636,564	100.0	
<i>Market sales</i>			
<i>Delivery method</i>			
Picked up by purchaser ¹	15,165,521	67.0	
Delivered by wholesaler	6,124,957	27.1	
Delivered by independent carrier . . .	1,346,086	5.9	
Total	22,636,564	100.0	
<i>Method of sale</i>			
Over the counter	9,705,578	42.9	
Standing order	7,374,640	32.6	
Telephone	5,556,346	24.5	
Total	22,636,564	100.0	
<i>Sales by day</i>			
Monday	5,705,696	25.2	
Tuesday	927,101	4.1	
Wednesday	5,227,125	23.1	
Thursday	1,918,606	8.5	
Friday	8,278,734	36.6	
Saturday	578,462	2.5	
Sunday	840	(²)	
Total	22,636,564	100.0	

<i>Sales by month</i>		
January	1,568,893	6.9
February	2,098,018	9.3
March	2,221,850	9.8
April	1,793,236	7.9
May	3,005,492	13.3
June	1,864,605	8.2
July	1,365,388	6.0
August	1,546,333	6.8
September	1,554,030	6.9
October	1,617,385	7.2
November	1,661,954	7.4
December	2,339,380	10.3
Total	22,636,564	100.0

<i>Commodity</i>		
Cut flowers and greens:		
Carnations	2,629,763	11.6
Chrysanthemums:		
Pompon	1,705,397	7.5
Standard	1,118,833	4.9
Daisies	652,607	2.9
Gladioli	1,357,431	6.0
Greens	1,935,911	8.6
Orchids	832,474	3.7
Roses:		
Hybrid tea	3,683,270	16.3
Sweetheart	674,641	3.0
Other	5,941,680	26.2
Potted plants	2,017,800	8.9
Florist supplies	86,757	.4
Total	22,636,564	100.0

¹ Includes \$1.3 million in sales purchased and delivered by independent routemen.

² Less than 0.05 percent.

peddlers, and mass outlets accounted for 9.8 percent of the sales.³

Overtime retail florists have become increasingly dependent on deliveries for their supplies. About one-third of the commodities sold were delivered by market occupants and independent carriers.

Market occupants are concerned with the growing trend for retail florists not to visit the wholesale markets because of the negative effect that lack of contact has on impulse purchases. In 1972 less than one-half of market sales were made by on-sight inspection. Standing order

³ An independent routeman is an unaffiliated jobber who sells floral products at wholesale to bona fide retailers along an established route. A street peddler is one who sells floral products at retail from a street location.

and telephone orders accounted for 32.6 and 24.5 percent of the sales, respectively.

The Los Angeles wholesale flower market is basically a 3-day-a-week market. Market sales occurring on Monday, Wednesday, and Friday totaled 25.2, 23.1, and 36.6 percent, respectively.

The effect of special days and holidays in creating seasonality in the demand for floral products is evident. In 1972, 13.3 percent of sales occurred in May (Mother's Day and Memorial Day), 10.3 percent in December (Christmas), 9.8 percent in March (Easter, Apr. 2, 1972), and only 6 percent in July.

As shown in table 2, the leading cut flowers sold by market occupants were hybrid tea roses 16.3 percent of sales, carnations 11.6 percent, pompon chrysanthemums 7.5 percent, gladioli 6 percent, and standard chrysanthemums 4.9 percent. Potted plants and florist supplies accounted for 8.9 and 0.4 percent of the sales, respectively.

The number of blooms and bunches of the major cut flowers handled in the wholesale market can be estimated by dividing the cut-flower sale data in table 2 by the average prices received by market occupants. The results are as follows:

<i>Cut flowers</i>	<i>Average price</i>	<i>Estimated amount handled (millions)</i>
Per bloom:		
Carnations	\$0.08	32.8
Standard chrysanthemums ...	.21	5.3
Hybrid tea roses .....	.16	23.0

Per bunch:

Pompon chrysanthemums .....	.75	2.3
Gladioli	1.50	.9

Market wholesalers were requested to provide sales data for 1958, 1963, 1967, and 1972 for the purpose of quantifying the overall trend in sales volume achieved by occupants of the Los Angeles wholesale flower market (table 3). Thirty-eight firms provided the data for the 4 years requested. In general, they were the oldest and largest firms in the market. These firms accounted for 79 percent of gross sales by market occupants in 1972.

As shown in table 3, total sales by these firms increased from \$7.1 to \$19.2 million between 1958 and 1972. To remove the effect of inflation from the data, total sales were deflated using the Consumer Price Index for nondurables less food.⁴ During these years the deflated sales more than doubled. From this it may be concluded that the physical volume of cut flowers and potted plants handled through market facilities approximately doubled during the 15-year period.

⁴ This index was used in preference to an index of wholesale prices because of the relationship existing between wholesale and retail prices in the floral industry. In general, retail prices are a fixed multiple of wholesale prices. As the Consumer Price Index for nondurables less food is used later in this analysis to deflate retail prices, it is used here to deflate wholesale prices.

TABLE 3.—*Sales volume of 38 firms operating in Los Angeles wholesale flower market for 4 years*

Year	Total sales	Consumer Price Index ¹	Deflated sales	
			Amount	Proportion of 1958 sales
			<i>Dollars</i>	<i>Percent</i>
1958	7,122,999	88.2	8,075,963	100.0
1963	9,056,367	92.7	9,769,544	120.1
1967	12,745,579	100.0	12,745,579	157.8
1972	19,196,597	119.8	16,023,871	198.4

¹ U.S. Department of Labor, Consumer Price Index for nondurables less food (1967 = 100).

INEFFICIENCIES IN THE PRESENT MARKET

Inadequate facilities and problems stemming from the location of the present market have fostered inefficiencies in the Los Angeles wholesale flower market. These inefficiencies are costly to producers, wholesalers, retailers, and consumers. They also impede the efforts of market occupants to maintain a competitive position.

Inadequate Facilities

Most facilities in the Los Angeles wholesale flower market are unsuited for their present use. The design, layout, and structural condition of many buildings make the use of modern materials-handling equipment impossible, impractical, or unsafe.

Nearly all firms in the market are encumbered with insufficient space, low ceilings, narrow doors, low door clearance, narrow aisles, or some combination of these deficiencies (fig. 3). Several firms are located in inadequate multistory facilities with antiquated elevators and wooden floors that have become unsound with age on upper levels.

Since truck-docking facilities are nonexistent in the present market, unloading and loading operations cannot be performed efficiently. Public streets, sidewalks, adjacent ground-level space, and upper level parking space are used to perform these operations (fig. 4). Under these conditions neither market occupants nor their clientele can be assured that a satisfactory space will be available on arrival at the market. Floral commodities are frequently carted by handtruck more than a block before reaching their destination in the market.

Trucks exceeding 1-ton capacity and semitrailers were once a rarity in the market; now they are commonplace. Because docking facilities are nonexistent and maneuvering space is limited, these trucks frequently encounter costly delays at the market.

To adapt to conditions in the market some semitrailers have been equipped with side doors so they can be unloaded on the sidewalk while parked parallel to the curb (fig. 5). However, this operation must be performed manually where narrow sidewalks and inadequate facil-



FIGURE 3.—Insufficient aisle space impedes movement in the market.



FIGURE 4.—Inefficient unloading and loading operations on sidewalks and street.

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ties prohibit the use of modern materials-handling equipment.

Several firms in the market have facilities that permit using forklifts. Incoming shipments arrive on pallets or flower racks. However, forklifts cannot be used efficiently in the present market. Without platforms, additional labor is required to pull pallets or racks to the rear of the truck where they can be engaged by the forklift (fig. 6).

Functional canopies are not provided in the present market. During inclement weather competition is intense for parking space near building entrances. Occasionally entrances are blocked by wholesalers attempting to avoid rainy conditions. Insufficient overhead clearance prohibits trucks exceeding 8 feet in height from using covered second-level parking areas.

Refrigeration facilities in the present market are inadequate. Some firms that need refrig-

erated space have none. Others have insufficient space. Many coolers in the market have doors less than 4 feet wide and ceilings less than 10 feet high. Cooler doors greater than 4 feet wide are needed to accommodate standard 48-inch shipping boxes and 40- by 48-inch pallets.

Some firms have had to create additional refrigerated space on levels above the ground floor. Floral commodities must be carted to an elevator, lifted, and then carted to the cooler. Upon sale a reverse procedure must be employed. Usually these elevators are of insufficient size and capacity to permit the use of modern materials-handling equipment.

Space limitations and structural problems in some market buildings prohibit the construction of additional refrigerated storage space within the main facility. Some firms have resorted to placing temporary refrigerated storage facilities on adjacent ground-level space (fig. 7). Al-



FIGURE 5.—Semitrailer being unloaded while parked parallel to curb.

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though these measures have been helpful, they have not been satisfactory. A refrigerated trailer used for this purpose, for example, creates numerous handling and inventory turnover problems.

Disadvantages of the Present Location

The present location of the Los Angeles wholesale flower market may appear to be optimal from the standpoint of distribution. It is centrally located in the hub of the Los Angeles freeway system. Unfortunately between 6 and 9 a.m. the central city experiences severe traffic congestion. These hours coincide with the time when retailers would most prefer to visit the market.

As traffic congestion has increased, buyers and sellers have attempted to alleviate this problem by coming to the market before the rush period. It is not uncommon for retailers and routemen to shop the market before 5 a.m. Some buyers believe they can acquire the highest quality flowers at the most favorable prices

at this time. Others who do not wish to shop the market at such early hours and contend with the traffic congestion are becoming increasingly dependent on routemen for their supplies. Market wholesalers believe the resultant lack of contact with retail florists eliminates the impulse sale and is therefore detrimental to the wholesaling business.

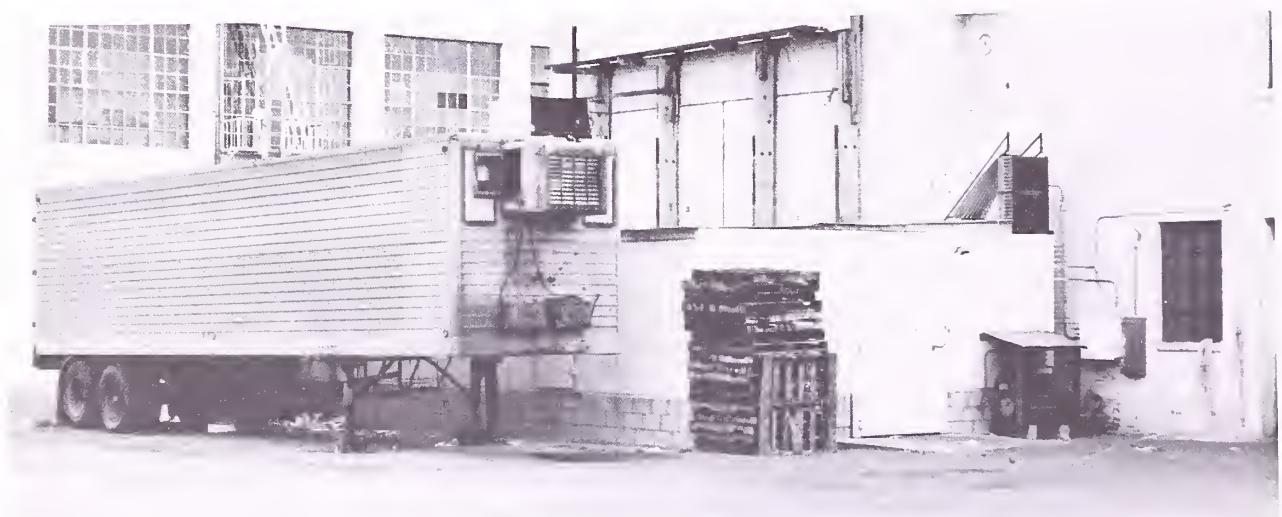
Real estate values in the Wall Street area have been rising. Recent transfers in the area have been about \$10 per square foot. The increase in real estate values has been reflected in the assessed value of real estate in the market area. To defray taxes and to achieve the maximum revenue possible, market parking lots have been put to dual use. After 7 a.m. these lots are opened to public parking. Vehicles on these lots between 7 a.m. and 5 p.m. are subject to a parking fee. During the transition period this dual usage fosters the intermingling of market and nonmarket traffic, which contributes to the overall traffic congestion in the area.

Public parking on market lots greatly increases the difficulty market occupants expe-



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FIGURE 6.—Forklift removing racks from truck.



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FIGURE 7.—Secondhand cooler and refrigerated trailer provide needed cold storage space with no protection from inclement weather.

rience in receiving shipments during daylight hours. Streets and traffic aisles are the only space available for truck maneuvering when the lots are opened to the public. As a result, delivery trucks arriving at the market simultaneously are forced to queue up for available maneuvering and unloading space.

The number of route trucks operated by market occupants is increasing. When not in use about 35 trucks are parked near the market. In the morning they leave before the nonmarket traffic arrives so there is no conflicting demand for parking space. However, should route trucks return in the early afternoon, the parking space on market lots probably will not be available. Accordingly market occupants are often fined for parking on public streets during hours when parking is not permitted.

During this study wholesalers most frequently complained that unregulated market hours were their most serious problem. Buyers and sellers are free to trade in the market at any hour. Although market hours are not specified, buyers typically appear from about midnight on, with most sales between 5 and 7 a.m.

Unregulated market hours have helped to create a chaotic marketing situation in the Los Angeles wholesale flower market. Flowers are received and orders are filled simultaneously. This leads to confusion, which reduces the overall efficiency of the marketing operation.

In the past, market hours were enforced in the Los Angeles wholesale flower market. However, wholesalers gradually deviated from specified hours to avoid problems created by the location of the present facilities.

Inadequate security in the Los Angeles wholesale flower market is a direct consequence of its present location and layout. Although activities there are largely nocturnal, the exterior lighting of its facilities is poor. Market occupants and clientele fear for their personal safety while in the vicinity. Flower thefts in market parking lots, particularly just prior to holidays, are common. Offices within the market have been subject to numerous burglaries.

Pedestrians face a hazardous situation because the market is intersected by Wall Street (fig. 8). This is a public street, heavily traveled by both market and nonmarket traffic. Whole-



FIGURE 8.—Wall Street, showing hazardous crossing for pedestrians.

salers and market clientele shop both sides of the market. Pedestrians carrying or pushing bundles of flowers across Wall Street must do

so at their own risk. Periodically the market has borne the expense of providing a crossing guard. At present no guard is employed.

POTENTIAL GROWTH IN THE LOS ANGELES WHOLESALE FLOWER MARKET

Population growth, rising per capita incomes, increased flower awareness, and other stimulating factors have resulted in a rapidly expanding market for flower products in the Los Angeles area. However, faced with rising real estate values, insurmountable problems in the present market, and the emergence of marketing channels for floral products in which the wholesale market is bypassed, market investors have been understandably cautious in responding to the need for improved floral wholesaling facilities in Los Angeles. Although management is certain that demand is expanding at the retail level, some uncertainty exists regarding the role the Los Angeles wholesale flower market will have in future marketing channels for floral products. Market management has ques-

tioned whether the wholesale market can expect a declining, stable, or increasing share of the total market.

Relationship of Wholesale Market Sales to Retail Sales in Los Angeles Five-County Area

In 1972, 930 retail florists or 83 percent of all retail florists in southern California were located in the Los Angeles five-county area, including Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. About 95 percent of the retail florists issued identification numbers by the Southern California Floral Association are located in this area (fig. 9).

In 1972 more than 90 percent of the retailers in the Los Angeles five-county area held identifi-

SOUTHERN CALIFORNIA

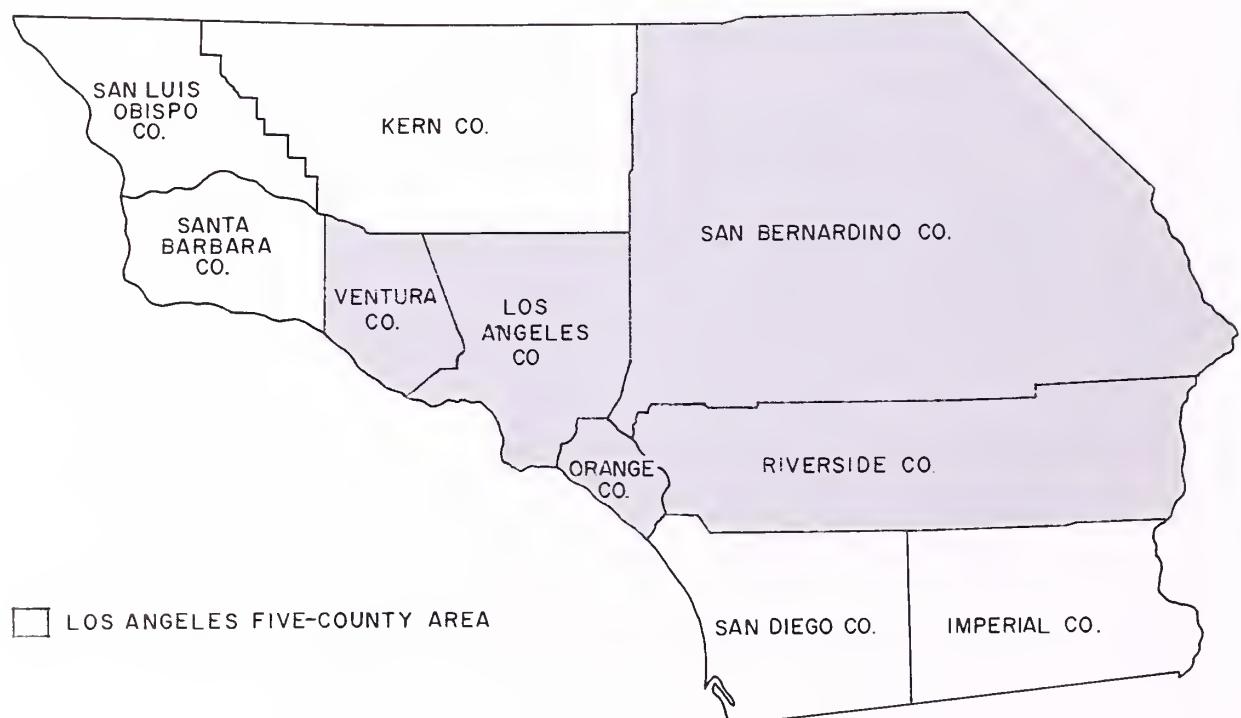


FIGURE 9.—The Los Angeles five-county area.

cation numbers issued by the Southern California Floral Association. In addition, routemen assembling their orders in the wholesale facility routinely serve retail florists not registered with the Association. Therefore it is reasonable to assume that the Los Angeles wholesale flower market serves as a source of supply to nearly 100 percent of the retail florists in this five-county area.

Of the \$19.7 million in final sales accruing to the Los Angeles wholesale flower market in 1972, approximately \$14.8 million or 75 percent of the commodities moving through the wholesale facility were marketed to final consumers through retail outlets in the Los Angeles five-county area. Occupants of the Los Angeles wholesale flower market sold cut flowers and potted plants valued at \$13.3 million directly to retail florists in the five-county area. The remaining \$1.5 million of commodities sold passed indirectly through the wholesale market to retail florists in the five-county area by way of sales and transfers to independent routemen (\$1 million) and wholesalers outside the market (\$0.5 million).

The remaining \$4.9 million or 25 percent of commodities sold were distributed to points either outside the Los Angeles five-county area or within this area through nonflorist outlets as follows:

	<i>Million dollars</i>
Shipped out of state by market occupants	2.3
Sold to mass outlets and street peddlers . . . . .	.9
Sold to retail florists outside 5-county area but within southern California . . . . .	.5
Sold or transferred to wholesalers and shippers outside market and distributed outside 5-county area . . . . .	.5
Income from plant rentals . . . . .	.4
Sold to independent routemen and distributed outside 5-county area . . . . .	.3
	<hr/>
	4.9

Because 75 percent of the floral commodities moving through the Los Angeles wholesale flower market are ultimately consumed through retail outlets in the Los Angeles five-county area, the trend in retail sales in this area and the proportion of these sales that pass through this facility are of particular importance to

market planners contemplating the future of this market.

Table 4 shows the population, number of permits issued to retail florists, total sales by retail florists, and personal income per capita in the Los Angeles five-county area for 1958-72. The Consumer Price Index for nondurables less food was used to deflate total sales by retail florists and personal income per capita.

Table 4 shows that the real growth in sales by retail florists in the five-county area has been substantial. Deflated total sales by retail florists in 1972 were nearly twice their 1958 level, indicating that the physical volume of floral commodities channeled annually through retail outlets in this area has approximately doubled since 1958.

It is estimated that flower arrangements, cut flowers sold loose, greens, and potted plants accounted for 85 percent⁵ or \$46.2 million of the \$54.4 million in total sales by retail florists in the Los Angeles five-county area in 1972.

As previously shown, \$14.8 million in sales passing through the wholesale facility were ultimately channeled through retail outlets in the Los Angeles five-county area in 1972. An additional \$1.1 million in sales by market occupants destined for retail outlets in this area did not pass through market facilities.⁶ Thus, final sales by market occupants, including those bypassing the market and channeled through retail outlets in the five-county area, totaled \$15.9 million in 1972.

In combination with the previous information, the markup ratio of retail price to wholesale cost employed by retail florists can be used to gage the share of retail sales in the five-county area that emanates from wholesalers in the Los Angeles wholesale flower market. This ratio most frequently used by florists in establishing prices for floral commodities at the re-

⁵ HAVAS, N. A GRAPHIC VIEW OF THE RETAIL FLORIST INDUSTRY. U.S. Dept. Agr. Mktg. Res. Rpt. 788, 48 pp. 1967.

⁶ Sales by market occupants that did not physically pass through market facilities in 1972 totaled \$1.5 million (p. 6), of which 75 percent (\$1.1 million) were distributed to retail outlets in the Los Angeles five-county area and 25 percent (\$0.4 million) outside this area or to nonflorist outlets.

TABLE 4.—*Population, permits issued to retail florists, total sales by retail florists, and personal income per capita in Los Angeles 5-county area, 1958–72*

Year	Population ¹	Florist permits ²	Total sales ²	Personal income per capita ³		Deflated total sales ⁴	Deflated personal income per capita
				1,000 dollars	Consumer Price Index ⁴		
	<i>Millions</i>	<i>Number</i>	<i>Million dollars</i>	<i>1,000 dollars</i>		<i>Million dollars</i>	<i>1,000 dollars</i>
1958	7.2975	775	20.736	2.681	88.2	23.510	3.040
1959	7.5509	758	22.675	2.781	89.3	25.392	3.114
1960	7.8152	767	23.776	2.794	90.7	26.214	3.081
1961	8.0702	769	25.678	2.899	91.2	28.156	3.179
1962	8.3420	775	27.160	3.028	91.8	29.597	3.299
1963	8.6935	766	29.241	3.123	92.7	31.544	3.369
1964	8.9927	777	30.830	3.243	93.5	32.973	3.469
1965	9.2477	803	33.124	3.354	94.8	34.941	3.538
1966	9.4010	829	35.225	3.557	97.0	36.314	3.667
1967	9.6149	858	37.262	3.710	100.0	37.262	3.710
1968	9.7520	850	41.588	4.008	104.1	39.950	3.850
1969	9.8757	873	44.977	4.279	108.8	41.339	3.933
1970	10.0032	881	46.830	4.527	113.1	42.072	4.003
1971	10.1128	909	48.584	4.713	117.0	41.525	4.028
1972	10.1383	930	54.371	5.066	⁵ 119.8	45.387	4.229

¹ Estimates prepared by Population Research Unit, California Department of Finance. Subtotals for individual counties in appendix table 11.

² Source: Statistical Research and Consulting Division, California State Board of Equalization. Subtotals for individual counties in appendix table 12.

³ Weighted average (by population per county) of personal income per capita in Los Angeles 5-county area. Source: Williams Research Associates and California Department of Finance. Data for individual counties in appendix table 13.

⁴ Source: U.S. Department of Labor, Consumer Price Index for nondurables less food (1967 = 100).

⁵ Preliminary.

tail level is 3 to 1.⁷ In 1972 the ratio of retail sales of cut flowers and potted plants in the Los Angeles five-county area to sales by market occupants destined for this area was \$46.2 to \$15.9 million or 2.9 to 1.

From this it can be concluded that wholesalers in the Los Angeles wholesale flower market supplied virtually 100 percent of the cut flowers and potted plants sold by retail florists in the five-county area. Furthermore, based on the percent sales that pass through the wholesale market by market occupants, it can be concluded that 93 percent of the cut flowers and potted plants sold by retail florists in the five-county area in 1972 physically passed

⁷ Havas, p. 43 (see footnote 5). The actual markup ratio used tends to be greater for flowers sold arranged than unarranged. Generally the higher the wholesale cost of the cut flowers, the lower the markup ratio. In practice the ratio for arrangements ranges from about 3 to 1 to about 4 to 1 and the ratio for flowers sold unarranged ranges from about 2 to 1 to about 3 to 1.

through the Los Angeles wholesale flower market.

Projected Sales

Having established the previous relationships, the sales volume in the Los Angeles wholesale flower market can be projected based on the anticipated growth in retail sales in the Los Angeles five-county area and on the anticipated growth in sales by market occupants to nonflorist outlets and to areas outside the five-county area. To accomplish this, the least squares multiple regression technique (p. 37) was used to develop equations capable of predicting in current and deflated dollars the total sales by retail florists in the Los Angeles five-county area.

Estimated sales by retail florists for 5-year intervals between 1975 and 2000 are shown in table 5. They are based on the population and personal income per capita estimates shown in

this table. Any marked change in the growth rate of these variables would, of course, affect the sales estimates accordingly. Furthermore, consumer tastes and preferences could change. Thus, confidence in the estimates necessarily decreases as the horizon is extended.

As shown in table 5, it is anticipated that the population of the Los Angeles five-county area will increase by about 1 million during each 5-year interval between 1975 and 2000. During the same period it is anticipated that personal income per capita will increase by about \$800 during each interval. It is projected that sales by retail florists will total \$56.8 million in 1975, \$79.8 million in 1985, and \$114.6 million in 2000. Thus, annual sales in current dollars are expected to more than double between 1975 and 2000.

As shown in table 5, real growth as measured by the increase in deflated total sales is expected to be substantial. It is projected that in 1985 deflated total sales will increase by 31.3 percent relative to 1975. In 2000 it is anticipated that the physical volume of floral commodities passing annually through retail outlets in the Los Angeles five-county area will be 78.7 percent greater than in 1975.

The sales volume of occupants in the Los Angeles wholesale flower market can be projected on the basis of projected retail sales in

the Los Angeles five-county area. The assumptions used to make the projections shown in table 6 are as follows:

(1) Eighty-five percent of sales by retail florists consist of cut flowers, greens, and potted plants.

(2) Retail florists in the Los Angeles five-county area obtain 100 percent of these floral commodities from the Los Angeles wholesale flower market.

(3) The ratio of retail price to wholesale cost averages 3 to 1.

(4) Seventy-five percent of sales by market occupants are channeled through retail outlets in the Los Angeles five-county area. Twenty-five percent of sales are shipped out of state or channeled through other outlets.

(5) Sales shipped out of state or channeled through other outlets are anticipated to grow at a rate similar to sales channeled through retail outlets in the Los Angeles five-county area.

(6) Ninety-five percent of sales by market occupants are expected to physically pass through the wholesale facility.

Based on the projections in table 6, it is anticipated that the annual sales volume in the Los Angeles wholesale flower market will approximately double between 1975 and 2000. During this same period the physical volume is expected to increase by nearly 80 percent.

TABLE 5.—*Estimated population, personal income per capita, and total sales by retail florists in Los Angeles 5-county area, 1975–2000*

Year	Population ¹	Personal income per capita ²		Total sales by retail florists		Total sales as proportion of 1975 sales	
		Current	Deflated	Current	Deflated	Current	Deflated
		<i>1,000</i> <i>Millions</i>	<i>1,000</i> <i>dollars</i>	<i>Million</i> <i>dollars</i>	<i>Million</i> <i>dollars</i>	<i>Percent</i>	<i>Percent</i>
1975	10.6419	5.259	4.423	56.808	48.270	100.0	100.0
1980	11.6186	6.097	4.851	68.158	55.613	120.0	115.2
1985	12.7580	6.934	5.279	79.861	63.372	140.6	131.3
1990	13.8691	7.772	5.707	91.512	71.059	161.1	147.2
1995	14.9293	8.609	6.135	103.038	78.615	181.4	162.9
2000	16.0172	9.447	6.563	114.637	86.243	201.8	178.7

¹ Projections prepared by Population Research Unit, California Department of Finance. Subtotals for individual counties in appendix table 11.

² Estimates based on simple linear regression equations derived using personal income per capita data in table 4. Annual personal income per capita = $-7.3033 + 0.1675$ (year), $R^2 = 0.95$. Deflated annual personal income per capita = $-1.9974 + 0.0856$ (year), $R^2 = 0.99$.

TABLE 6.—*Projected final sales in Los Angeles wholesale flower market, 1975–2000*

Year	Sales channeled through—							
	Retail outlets in Los Angeles 5-county area		Other outlets or other areas		Total		Proportion of 1975 sales	
	Current	Deflated	Current	Deflated	Current	Deflated	Current	Deflated
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Percent</i>	<i>Percent</i>
1975	15.276	12.980	5.087	4.323	20.363	17.303	100.0	100.0
1980	18.327	14.954	6.103	4.980	24.430	19.934	120.0	115.2
1985	21.474	17.040	7.151	5.675	28.625	22.715	140.6	131.3
1990	24.607	19.107	8.194	6.363	32.801	25.470	161.1	147.2
1995	27.706	21.139	9.226	7.040	36.932	28.179	181.4	162.9
2000	30.826	23.190	10.265	7.723	41.091	30.913	201.8	178.7

Impact of Direct Selling and Mass Marketing on Los Angeles Wholesale Flower Market

Market occupants have been concerned with the potential impact of direct selling and mass marketing on the future of the wholesale market. Direct selling refers to a method in which a centralized wholesale market is bypassed in the marketing process. Floral products flow directly from producers to traditional retail florists. In this method of operation the marketing functions normally performed by wholesalers are typically handled by producers.

Mass marketing refers to the sale of floral products through nonflorist outlets, such as variety stores, department stores, and supermarkets. In the Los Angeles area several supermarket chains are heavily involved in marketing floral products. Because these outlets handle a large volume and need a relatively constant supply they frequently enter into supply agreements with local growers having sufficient production capacity. In this way the chains benefit by being assured of a constant supply and large growers benefit by being assured of a market for their output. Of course, in this marketing procedure both the wholesale florist and the traditional retail florist are bypassed. In addition, many retailers speculate that sales through mass outlets compete directly with potential sales in retail shops.

This study indicates that direct selling is not likely to have a marked impact on the Los Angeles wholesale flower market in the fore-

seeable future. As previously shown, the retailers in the Los Angeles five-county area in 1972 obtained virtually 100 percent of their supplies of cut flowers, greens, and potted plants either directly or indirectly through the Los Angeles wholesale flower market. There are two principal reasons for this. First, the average retail florist in the five-county area with less than \$60,000 in total sales in 1972 does not have a sufficient sales volume to contract for supplies directly with specific producers on a year-round basis. Second, growers, regardless of size, tend to specialize in a limited line of floral products. Retail florists, on the other hand, use a wide variety of plant materials to produce flower arrangements and other items. Thus, a centralized wholesale market that offers a wide variety, including specialty items, better suits the needs of individual florists.

Similarly a centralized wholesale market offers advantages to growers of moderate size. In 1969 the average grower in the Los Angeles five-county area reported sales totaling \$64.1 thousand.⁸ Thus, average growers do not have sufficient production capacity to provide a continuous supply to mass market outlets.

In addition, many growers and wholesalers, including those with well above average production or sales volume, prefer the security of a

⁸ In 1969, 267 producers of cut flowers, greens, and potted and bedding plants in the Los Angeles 5-county area reported sales totaling \$17.1 million. Source: 1969 Census of Agriculture, County Data, U.S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census.

diffused market. That is, many growers feel insecure and powerless in agreeing to sell their entire output to a single buyer such as a retail chain. These growers prefer the security gained by developing a steady clientele of relatively small buyers. Thus, a centralized wholesale market providing exposure to numerous retailers is the type of outlet preferred by firms of this persuasion.

Based on the findings of this study it does not appear that mass marketing has had a negative impact on retail florists in the Los Angeles five-county area. Accordingly it can be reasoned that mass marketing has not adversely affected the wholesale market. As previously shown, sales in both the wholesale and retail markets have grown substantially.

As to the future, it can be speculated that mass marketing will not have a negative impact on traditional wholesale and retail markets. To date all available evidence indicates that sales through retail florists and sales through mass market outlets are representative of two distinct markets. Whereas sales by retail florists are highly correlated with special occasions, sales through mass market outlets are typically the result of impulse buying.

The impulse purchase market is the newest and probably the fastest growing segment of

the floral industry in the United States. Initially many retail florists were concerned with the success experienced by mass market outlets in developing this market. However, it is now generally agreed that there is room for both retail florist shops and mass market outlets in the industry. Although it is likely that mass market outlets will have continued success in developing the everyday, nonoccasion market, it is unlikely that such outlets will attempt to provide either the services or expertise offered by retail florists.

Apparently the industry is now coming to recognize that a complementary relationship exists between mass market outlets and retail florists. That is, it is hypothesized that overall consumer demand for floral commodities has increased as a result of the increased flower awareness of the public fostered by mass market outlets.

As shown in table 7, the per capita consumption through retail florist shops in the Los Angeles five-county area increased substantially between 1960 and 1970, a period when the flower marketing programs of several local supermarket chains became well established. As also shown in table 7, it is anticipated that this consumption will increase by nearly 20 percent between 1975 and 2000.

TABLE 7.—*Actual and projected per capita consumption of floral commodities through retail florist shops in Los Angeles 5-county area, 1960–2000*

Item	Per capita consumption		Deflated per capita consumption as proportion of 1975
	Current	Deflated	
	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>
<i>Actual:</i> ¹			
1960	3.04	3.35	73.8
1965	3.58	3.78	83.3
1970	4.68	4.21	92.7
<i>Projected:</i> ²			
1975	5.34	4.54	100.0
1980	5.87	4.79	105.5
1985	6.26	4.97	109.5
1990	6.60	5.12	112.8
1995	6.90	5.27	116.1
2000	7.16	5.38	118.5

¹ Based on population and total sales data in table 4.

² Based on population and total sales data in table 5.

Los Angeles Wholesale Flower Market as a Shipping Market

Faced with rising real estate values, many growers formerly located near the Los Angeles wholesale flower market have discontinued operations or relocated in surrounding counties. This is evidenced by the decrease in cut-flower production in Los Angeles County. In 1961, for example, 59 million carnations were produced in Los Angeles County compared with 15 million in 1972.⁹

Although some counties have had an influx of growers, the overall number of producers in southern California has decreased. However, floricultural production in southern California has changed markedly. In 1959, 832 producers of cut flowers, greens, and potted and bedding plants in southern California reported sales totaling \$21.9 million.¹⁰ By 1969 the number of firms reporting had decreased to 491; however, total sales had increased to \$36.8 million.¹¹

The relocation of growers away from the Los Angeles wholesale flower market and the trend to fewer but larger producers have resulted in a marked decrease in shipping activity in this market. In 1972 less than 12 percent of final

market sales were shipped out of state by market occupants.

Large growers to the north and south of Los Angeles, in such areas as Carpinteria and Encinitas, have shipping markets in the east. Rather than ship through the Los Angeles market, many of these growers ship their products in consolidated deliveries directly to the Los Angeles International Airport for transport to distant markets.

However, the rapidly expanding retail market in the Los Angeles five-county area apparently has more than compensated for the decline in shipping activity in the Los Angeles wholesale flower market. Furthermore, shipping activity in the market appears to have stabilized subsequent to the downswing that occurred during the preceding decade.

Several firms heavily engaged in shipping have substantially increased their sales. Although shipping probably will not become a major factor in the market in the future, the market apparently will continue to have a significant role in the assembly and shipping of certain floral commodities. Emphasized again is the advantage inherent in a centralized wholesale flower market of being able to provide a wide variety of floral commodities.

PLANNING FOR THE FUTURE IN THE LOS ANGELES WHOLESALE FLOWER MARKET

Poor facility design, layout, and location are the primary deterrents to efficiency in the present market. However, to determine the economic feasibility of making the necessary corrections, well-founded predictions concerning the future of the market are required.

This study has indicated that market management can expect substantial growth in sales for market occupants. At present the market facilities are severely overtaxed at certain times of the year. Considering the market's inadequacies and the anticipated growth in sales, it appears economically infeasible and physi-

cally impossible to handle the anticipated volume through present facilities. Unless market management takes corrective measures, the more progressive firms in the market probably will be forced to take individual action. Such action may lead to the splintering of the present market and a loss of the complementary relationships among the wholesalers.

In view of these findings, it is recommended that market management undertake a project to relocate and to develop an improved wholesale flower market. Renovation of existing facilities is not recommended primarily because of insurmountable problems in the present market. Also to be considered is the high opportunity cost, or potential value foregone, associated with allocating market properties to their present use.

⁹"Los Angeles County Crop and Livestock Reports," 1961 and 1972, Los Angeles County Department of Agriculture, Los Angeles, Calif.

¹⁰ 1959 Census of Agriculture.

¹¹ 1969 Census of Agriculture.

The facilities recommended in this report are based on the number and anticipated volume of the firms presently occupying the Los Angeles wholesale flower market. The space allocated to each firm includes an allowance for expansion sufficient to accommodate the real growth in sales anticipated during the amortization period of the proposed facilities.

In developing the project, costs should be kept at the lowest consistent with local building codes and user's specifications. To prevent overbuilding, the actual facilities constructed should be based on the space required by tenants who sign firm leases. Caution is needed to prevent overbuilding and to insure a high rate of occupancy.

Recommended Facilities

It is proposed that the 89 wholesalers of cut flowers, greens, and potted plants presently occupying facilities in the Los Angeles wholesale flower market be accommodated in a building

containing 217,500 square feet of enclosed first-floor space. It is recommended that the market be developed on an appropriate 20-acre site in suburban Los Angeles. An artist's rendering and a layout of the proposed facilities are shown in figures 10 and 11.

The facilities have been designed for the efficient flow of floral commodities through the market. Ample space has been made available for unloading, storage, assembly, sales, and loading. Adequate truck maneuvering and parking space has been provided. A functional design has been adopted so that the market can be expanded and modified to meet future needs.

The proposed facilities have been designed to meet the needs of each occupant. The individual space requirements of firms accommodated in the plan, excluding required auxiliary space, are shown in table 8. The basic requirements constitute the nucleus around which the plan has been developed. Units ranging in size from

TABLE 8.—*Space requirements of firms expected to relocate in improved Los Angeles wholesale flower market*

Number of firms	Nonrefrigerated		Refrigerated		Total
	Square feet	SPACE REQUIRED PER FIRM	Square feet	Cubic feet	
7	100		...	...	100
34	200		...	...	200
5	300		...	...	300
2	400		...	...	400
9	260		240	2,400	500
2	325		300	3,000	625
2	390		360	3,600	750
4	520		480	4,800	1,000
5	1,050		450	4,500	1,500
1	1,750		...	...	1,750
4	2,000		...	...	2,000
3	1,400		600	6,000	2,000
1	2,100		900	9,000	3,000
2	2,450		1,050	10,500	3,500
1	2,100		1,400	14,000	3,500
1	3,850		...	...	3,850
1	2,800		1,200	12,000	4,000
1	5,500		800	8,000	6,300
1	5,200		1,600	16,000	6,800
1	6,200		800	8,000	7,000
1	13,000		2,000	20,000	15,000
1	43,000		5,750	67,500	48,750
		TOTAL SPACE REQUIRED			
89	123,500		26,000	270,000	149,500



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FIGURE 10.—Artist's conception of improved facilities for the Los Angeles wholesale flower market.

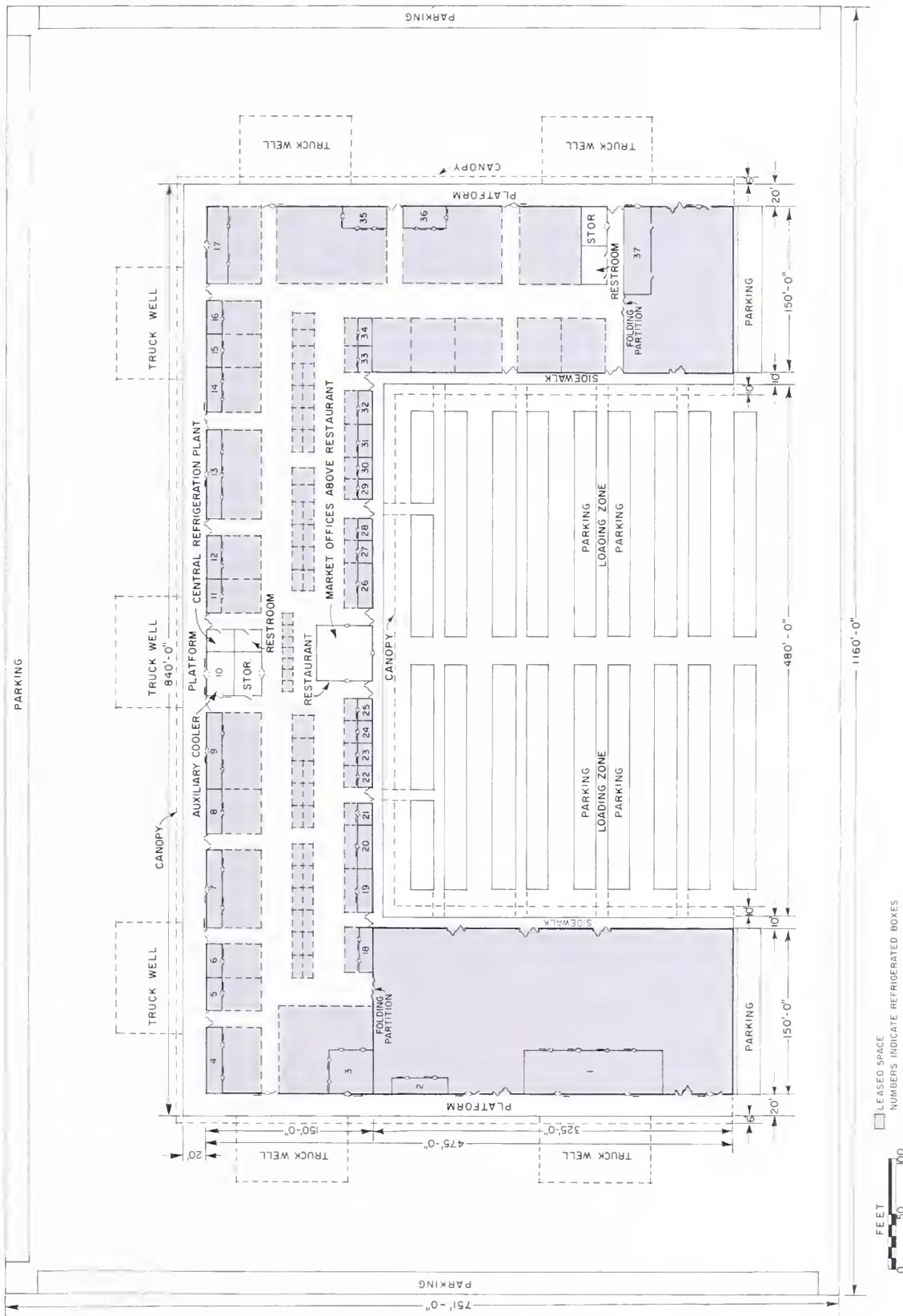


FIGURE 11.—Proposed layout of improved facilities for the Los Angeles wholesale flower market.

100 square feet without refrigeration to 48,750 square feet with refrigeration are required to meet the needs of prospective occupants. A total of 149,500 square feet of interior floorspace is allocated to specific wholesalers. Auxiliary interior first-floor space totaling 68,000 square feet is required for aisles, a market restaurant, restroom facilities, market storage, an auxiliary cooler, and a central refrigeration plant. An exterior area totaling 653,660 square feet is required for docking facilities, truck maneuvering, walkways, and parking.

It is proposed that market offices, a lounge, and a conference room complex containing 2,500 square feet be constructed above the restaurant. Glass panels should be installed in office walls to permit monitoring of the market floor.

Description of Proposed Facilities

Building

The building should be of tilt-up concrete construction and have a laminated-glue-beam construction roof. The floors should have a non-slip surface. They should be sloped for water runoff and equipped with floor drains.

A ceiling clearance of 22 feet is recommended to permit the space above coolers and other facilities to be used as mezzanine offices and storage space. High ceilings permit stacking and foster palletization. They provide for better air circulation and add versatility to the proposed structure.

Mezzanine space will be placed in condition to use at the discretion and expense of market occupants. To insure uniformity, it is recommended that modifications made to the basic facilities be subject to approval by market management.

The interior of the building should be well lighted. For general office work, between 50 and 100 foot-candles of illumination at working level are generally satisfactory. About 10 to 15 foot-candles should be provided in storage areas. Care should be taken to select the type of lighting that most attractively illuminates floral commodities. Approximately 50 foot-candles at viewing level are adequate for display purposes. The power consumption of the light source

should be considered in addition to the initial installation cost.¹²

Automatic doors are recommended to facilitate the movement of 4-wheel handtrucks about the market; 44 openings, 22 entrances, and 22 exits are so equipped. Each opening should be a minimum of 72 inches wide (two 36-inch panels) and 84 inches high.

To facilitate the use of forklifts and the transport of bulky loads about the market, nine openings (excluding exterior cooler doors), 96 inches wide and 96 inches high, are recommended. Each should be equipped with a sliding door and two double-acting inner panels with windows. Nine pedestrian doors, 36 inches wide and 84 inches high, are adjacent to each of these openings.

Skylights, which serve as vents in case of fire, will admit natural light. As much of the activity in the market is conducted at night, natural light cannot be considered a primary source of lighting. However, it will provide supplemental light during the day and reduce the artificial light required to maintain live plant inventories.

Units 500 square feet or greater should be equipped with cold water sinks. Community sinks should be placed at several locations for the convenience of wholesalers who occupy less than 500 square feet of floorspace.

Refrigeration Facilities

Thirty-seven coolers totaling 280,000 cubic feet of refrigerated space are required to meet the needs of prospective occupants. The dimensions of each refrigerated box included in the plan are given in appendix table 14. Refrigeration facilities are required for 35 of the 89 wholesale firms included in the plan. It is recommended that one larger firm be equipped with two coolers.

An auxiliary cooler to be used at the discretion of market management is recommended.

¹² Lighting recommendations are taken from the "IES Lighting Handbook, the Standard Lighting Guide," by the Illuminating Engineering Society, ed. 5, John E. Kaufman, editor, and Jack F. Christensen, associate editor, New York, 1972.

It will be used as an assembly point for consolidating airfreight shipments by market occupants or as a storage facility for shipments received during nonmarket hours. Occasionally it will be used by occupants without refrigeration.

The subfloor, walls, ceiling, and doors of each box should be properly insulated. Cooler floors should be equipped with floor drains. Removable partitions between boxes are recommended to facilitate future space adjustments. Additional removable partitions may be installed at the discretion and expense of market occupants to provide multiple storage temperature capabilities. Approximately 10 to 15 foot-candles of illumination should be provided in each cooler.

Cooler doors opening to the interior of the building should be 60 inches wide and 84 inches high. Each opening should be equipped with a sliding door and two double-acting inner panels with windows. Doors of this size and type facilitate the use of standard 48-inch shipping boxes and can be operated either manually or with powered handling equipment.

For most cut flowers an overhead clearance of 10 feet inside coolers would enable the most efficient use of space for stacking purposes. Standard chrysanthemums and carnations, for example, can be stacked in water cans in three 40-inch tiers. With this arrangement the third tier can be reached by hand.

A ceiling height in coolers of 12 feet is preferable where florist's greens are being stored. Many greens arrive at the market in bales. Usually they are bulky, wet, and heavy. These materials could be palletized, handled by forklift, and stacked higher.

Coolers occupying greater than 1,000 square feet of floorspace should be equipped with doors opening to the exterior of the building. Each door should be 96 inches wide and 96 inches high. By providing direct access between docks and coolers these openings will eliminate unnecessary handling and reduce the intermingling of pedestrian and forklift traffic. Each opening should be equipped with a sliding door

and two double-acting inner panels with windows.

Optimal storage temperatures vary by commodity. For most cut flowers and florist greens the storage temperature should be between 32° and 50° F.¹³ The refrigeration system recommended in this report is capable of maintaining 34° in all boxes simultaneously.

A central refrigeration system is recommended. The proposed system would have a capacity at the evaporators of approximately 150 horsepower, equivalent to 131 tons. Refrigeration would be provided by chilled water pumped directly from the central plant.

Air-Conditioning and Heating Systems

Approximately 500 tons of refrigeration will be required to air-condition the improved market. It is proposed that 10 air-cooled, self-contained cooling and heating units of approximately 50 tons' capacity each (600,000 Btu) with gas furnaces be installed to meet the air-conditioning and heating requirement. Packaged units are designed for roof installation and eliminate the need for extensive ductwork or piping. They are installed so that the duct is dropped into the specified area directly beneath the unit.¹⁴

¹³ For recommended storage temperatures, see "The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks," U.S. Dept. Agr. Agr. Handb. 66, by L. M. Lutz and R. E. Hardenburg, 1968. To illustrate the variation, the recommended storage temperatures (°F) for several cut flowers and florist greens are as follows: Babysbreath 40°, carnations 32°-36°, chrysanthemums 32°-35°, gladioli 35°-50°, roses (in preservative) 35°-40°, roses (dry packed) 32°, eucalyptus 35°-40°, brakefern 32°, leatherleaf fern 34°-40°, huckleberry 32°, and lemonleaf (salal) 32°.

¹⁴ Prior to construction, the merit of designing one central system to provide the required refrigeration, air-conditioning, and heating should be considered. In a study of alternative refrigeration systems for food centers issued by the U.S. Department of Agriculture, it was determined that one central system was the most economical choice. For further details, see Stahlman, Robert L., "A Study of Refrigeration Systems for Urban Food Centers," U.S. Dept. Agr. Mktg. Rpt. 921, 1972.

Docking and Parking Facilities

Docking facilities in the proposed market have been designed to accommodate a wide variety of vehicles ranging from passenger cars to tractor-trailers for transporting floral commodities.

The central court, which is enclosed on three sides, is designed to be used primarily as a loading area by retail florists. Loading zones 10 feet wide have been incorporated into the layout of the central court. Vehicles exceeding the size of those commonly used by retail florists should be discouraged from entering this area. Light-duty paving consisting of 3 inches of asphaltic concrete on a 4-inch base is recommended in the central court.

The central court is bordered on three sides by a 10-foot-wide sidewalk, which should have a nonslip surface and slope away from the building. It should be at parking-lot level to facilitate the use of handling equipment. To provide shelter during inclement weather, a 20-foot-wide canopy overhangs the sidewalk. The canopy should be a minimum of 16 feet above grade to permit large trucks entering the area. Lighting beneath the canopy should provide approximately 15 foot-candles of illumination at working level.

A continuous 20-foot-wide platform is recommended along the three outermost sides of the building facing away from the central court. It should have a nonslip surface and slope away from the building. Excepting segments fronting on truck wells, the platform should be at parking-lot level to facilitate the use of handling equipment.

To provide shelter during inclement weather, a 26-foot-wide canopy at a minimum of 16 feet above the platform is recommended. Posts supporting the canopy should be placed so as not to interfere with handling functions. Lighting beneath the canopy should provide approximately 15 foot-candles of illumination at working level.

Seven truck wells have been incorporated into the plan to facilitate the loading and unloading of tractor-trailers and other large trucks. Each of the proposed truck wells is 100 feet wide and 45 inches deep at the edge of the platform. They should rise to parking-lot level

at a slope of approximately 6 percent. Because of the deteriorating effect petroleum drippings have on asphalt, it is recommended that the truck wells be paved with concrete. Concrete paving is also needed to support disengaged trailers. Each truck well should be equipped with dock bumpers, safety railings, and a water-removal system.

Paved areas other than the central court will be trafficked by heavy vehicles regularly. Accordingly heavy-duty paving consisting of 4 inches of asphaltic concrete on an 8-inch base should be used in these areas.

The proposed layout provides a parking space, 10 by 20 feet, for approximately 640 vehicles. About 5 foot-candles of illumination should be provided in parking areas. All areas paved with asphalt should be sloped for water runoff and equipped with storm drains.

Selecting a Site for the Proposed Market

The cost of building and operating the proposed wholesale flower market will depend largely on its location. Real estate prices, taxes, and costs of site preparation, transportation, and labor will vary depending on the site selected.

Factors To Be Considered

In searching for the best site for the proposed market, proximity to growing operations (potential tenants) and market clientele is a major consideration. The ratio of about 10 retailers to 1 wholesaler suggests that proximity to retailers carries greater weight than proximity to sources of supply in determining an appropriate site. However, to achieve the maximum rate of occupancy possible and to attract floral commodities from local sources, the proposed wholesale market should also be conveniently located to production areas.

Concentrations of growers are developing at points north and south of central Los Angeles, as rising real estate values precipitate the decline of urban floral production. Consumers, however, remain concentrated in Los Angeles and Orange Counties. Furthermore, it is anticipated that the Los Angeles five-county area will continue to be the principal market for the Los Angeles wholesale flower market.

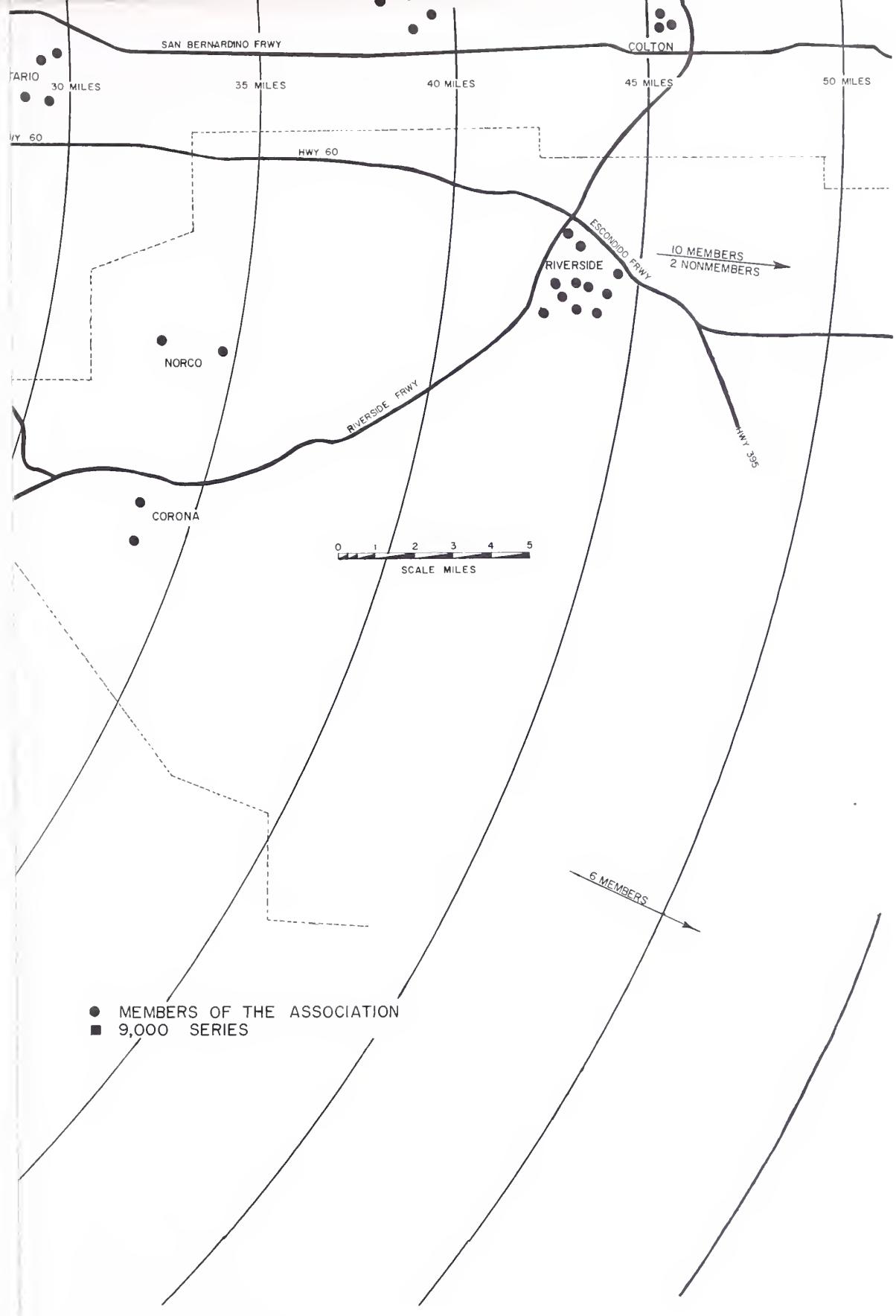




FIGURE 12.—Location of retail florists issued identification numbers by the Southern California Floral Association, 1972.



In this study the center of distribution or the point at which transportation costs are minimized is approximated based on a locational analysis of retail florists, current delivery patterns by market occupants, and the center of population in the Los Angeles five-county area.

Location of Retail Florists Issued Identification Numbers by the Southern California Floral Association.—Retail florists issued identification numbers by the Southern California Retail Association in 1972 have been plotted in figure 12. Traditionally those in the inner city have been near the resident population and the daily influx of potential buyers. Accordingly retail florists were heavily concentrated within a 10-mile radius of the market's present location. However, many retail florists formerly in the inner city have discontinued operations or relocated in rapidly growing suburban areas.

Table 9 compares the number of retail florists registered with the Southern California Floral Association and their proximity to the Los Angeles wholesale flower market in 1950 and 1972. In 1950, 561 or 53.7 percent of retailers identified by the Association were within 10 miles of the wholesale facility. By 1972, this number had decreased to 362 or 40.9 percent.

Most of the retail florists trading on the market today come from beyond the limits of metropolitan Los Angeles. It is anticipated that the relative concentration of retail florists in the inner city will continue to decline as retail

florists open local markets in suburban communities.

It should not be concluded that the inner city is representative of a declining market for floral products.¹⁵ To the contrary, urban renewal and related high-rise construction will have a positive effect on the demand for floral products in the inner city. Accordingly the inner city will remain an important market for floral commodities. However, it may be concluded that growth in suburban areas weakens the rationale for the wholesale market to pay the expense and suffer the consequences of maintaining a central city location.

As the geographic area served by the Los Angeles wholesale flower market has grown, the market's center of distribution has shifted. Burgeoning population growth and resulting retail activity in Orange County are gradually shifting the least cost transportation point southeast of the market's present location.

Destination of Commodities Delivered by Market Occupants and Independent Routemen.—In 1972 approximately \$7.4 million or nearly 40 percent of final sales accruing to the

¹⁵ Although the number of retailers in Los Angeles has decreased, total sales by these florists have increased substantially. For example, between 1958 and 1967 retailers in the city decreased from 297 to 280, but their total sales increased from \$10,918,000 to \$17,128,000. (Source: U.S. Dept. of Commerce, Bureau of the Census, "Major Retail Centers in Standard Metropolitan Statistical Areas.")

TABLE 9.—*Distance from market of retail florists issued identification numbers by Southern California Floral Association, 1950 and 1972*

Distance from market (miles)	Identification numbers issued in—					
	1950		1972			
	Members ¹	Percent	Members ²	9,000 series ³	Total	Percent
0-5	240	23.0	166	20	186	21.0
5-10	321	30.7	159	17	176	19.9
10-20	291	27.9	268	32	300	33.9
20-30	55	5.3	82	6	88	9.9
30-40	40	3.8	19	3	22	2.4
40 or more	97	9.3	105	9	114	12.9
Total ...	1,041	100.0	799	87	886	100.0

¹ Rada, E. L., "Floral Wholesaling in Southern California—An Economic Analysis," U.S. Dept. Agr. Agr. Mktg. Res. Rpt. 406, 72 pp. 1960.

² "Florist Directory—1972," Southern California Floral Association, Los Angeles.

³ Southern California Floral Association, Los Angeles.

market were delivered by market occupants (\$4.8 million), independent carriers (\$1.3 million), or independent routemen (\$1.3 million). These findings are indicative of an industrywide trend in which retailers are becoming increasingly dependent on deliveries for their supplies. By not personally shopping the market, retailers can forego the expense and problems associated with hiring labor to prepare flower arrangements in their absence. Furthermore, it can be hypothesized that the demand for floral products and services through retail florist shops is in the inelastic range, and therefore retail florists can readily pass along any added costs that might result from this practice. Accordingly the percentage of sales delivered to retailers probably will continue to increase.

A geographical analysis of the 187 truck routes per week emanating from the Los Angeles wholesale flower market in 1972 is as follows:

<i>From market to points—</i>	<i>Trips per week</i>
Northwest	34
Northeast	43
Southwest	38
Southeast	72

Of this total, 156 trips originated in 7 of the market firms and 31 trips were made by 10 independent routemen. Again a southeasterly shift in the center of distribution is indicated.

Center of Population.—In 1972 approximately 80 percent of the total population in the Los Angeles five-county area resided in Los Angeles and Orange Counties. Based on the projections shown in appendix table 11, it is anticipated that 78 percent of the five-county area's total population will reside in these two counties in 2000.

In 1970 the centers of population in Los Angeles and Orange Counties were near Huntington Park and Garden Grove, respectively.¹⁶ Because of the rapid population growth in Orange County since the mid-1950's, it may be concluded that the center of the combined populations of these two counties has been moving

¹⁶ Latitude and longitude of population center in 1970: Los Angeles County, 34.00°–118.24°; Orange County, 33.76°–117.92°. (Source: U.S. Bureau of the Census.)

southeasterly approximately along the Santa Ana Freeway and is presently near Downey.

Possible Sites

Although a minimum of 20 acres is required for the proposed facilities, it may be necessary to acquire additional acreage depending on the shape of the site. Also, more acreage may be needed to accommodate allied wholesalers.

Based on this study it is suggested that a site east or southeast of the present market and within a 5- to 15-mile radius be selected to minimize transportation costs. Additional criteria prescribe that major transportation arteries be available and the intended use be consistent with local land use plans.

The location of sites meeting these criteria are shown in figure 13. They are representative and do not include all that are available. No order of preference is intended.

The Montebello Boulevard site is west of Montebello Boulevard, about one-half mile south of the Pomona Freeway, and about 8 miles east of the present market.

The Rosemead-Edison site is about 1 mile north of the Pomona Freeway in the southwest quadrant of the intersection of Rush Street and Walnut Grove Avenue. It is about 9 miles east of the present market.

The Pellissier Industrial Park site is on the north side of the Pomona Freeway, about 1 mile east of the intersection of the Pomona and San Gabriel River Freeways, and about 11 miles east of the present market.

The Cerritos site is in the city by this name, about 1 mile southwest of the Santa Ana Freeway near the intersection of 116th Street and Carmenita Avenue. It is about 15 miles southeast of the present market.

Estimated Project Costs

The investment, annual costs, and revenue requirements in this report are intended only to be used as a guide in planning facilities. As estimates based on late 1973 and early 1974 prices, these costs are not presented as negotiated real estate prices or firm estimates by local architects and contractors that will be effective at the time of construction.



FIGURE 13.—Location of possible sites for the improved Los Angeles wholesale flower market.

Estimated Investment in Land and Facilities

Land.—It is estimated that the representative sites described here could be purchased for \$50,000 to \$70,000 per acre in condition to use. For this report a cost of \$60,000 per acre has been assumed. Thus, it is estimated that an appropriate 20-acre site will require an investment of approximately \$1,200,000.

Facilities.—A breakdown of the construction costs, including overhead and profit, architectural fees, construction loan, and contingency

allowance, is given in the following tabulations. The estimated costs are based on the facilities previously described.

Estimated Annual Costs and Revenue Requirements

Annual Costs.—The annual costs of owning and operating the wholesale flower market include (1) debt service, (2) management and maintenance expenses, and (3) real estate taxes. Estimates of these expenses were based on the following assumptions.

ESTIMATED CONSTRUCTION AND ASSOCIATED COSTS Building, Docking, and Parking Facilities

Construction costs:

Building:

Grading building pad, 217,500 sq ft @ \$0.08 per sq ft	\$17,400
Building shell, 217,500 sq ft @ \$3.21 per sq ft	698,175
Storage rooms, 1,600 sq ft @ \$8 per sq ft	12,800
Market offices (over restaurant), 2,500 sq ft @ \$13 per sq ft	32,500
Restroom fixtures, 40 fixtures @ \$1,000 each	40,000
Division walls, 7,800 sq ft @ \$2.25 per sq ft	17,550
Automatic doors, 44 @ \$2,500 each	110,000
Truck doors, 18 @ \$500 each	9,000
Single doors, 9 @ \$250 each	2,250
Plant electrical, 217,500 sq ft @ \$0.60 per sq ft	130,500
Plant insulation, 217,500 sq ft @ \$0.10 per sq ft	21,750
Skylights, 68 @ \$100 each	6,800
Fire sprinklers, 217,500 sq ft @ \$0.50 per sq ft	108,750
Water line, 1,150 linear ft @ \$4 per ft	4,600
Water meters, 3 @ \$600 each	1,800
Sewer line, 1,150 linear ft @ \$8 per ft	9,200
Sewer connections, 3 @ \$500 each	1,500
Architectural treatment ¹	41,600
Exterior painting, 83,200 sq ft @ \$0.10 per sq ft	8,320
General conditions ²	78,125
Subtotal	<u>1,352,620</u>

Docking facilities:

Truck wells, 7 @ \$7,000 each	49,000
Dock slab on grade, 35,800 sq ft @ \$0.80 per sq ft	28,640
Building sidewalk, 11,300 sq ft @ \$0.60 per sq ft	6,780
Canopies, 69,140 sq ft @ \$5.90 per sq ft	407,926
Canopies electrical, 69,140 sq ft @ \$0.60 per sq ft	41,484
Canopies fire sprinklers, 69,140 sq ft @ \$0.50 per sq ft	34,570
Subtotal	<u>568,400</u>

Parking facilities:

Rough grading, 564,000 sq ft @ \$0.05 per sq ft	28,200
Heavy duty paving (4-in asphaltic concrete, 8-in base), 331,000 sq ft @ \$0.40 per sq ft	132,400
Light duty paving (3-in asphaltic concrete, 4-in base), 233,000 sq ft @ \$0.25 per sq ft	58,250
Curbing, striping	11,000
Storm drains, 2,000 linear ft @ \$15 per ft	30,000
Parking lot lighting, 25 @ \$1,000 each	25,000
Landscaping, 30,000 sq ft @ \$1 per sq ft	30,000
Subtotal	<u>314,850</u>
Total construction costs	<u>2,235,870</u>

Associated costs:

Overhead and profit, 7 percent of construction costs	156,511
Architectural fees, 3 percent of construction costs	67,076
Construction loan, 10 percent of construction costs	223,587
Contingency allowance ¹	268,304
Total associated costs	715,478
Total construction and associated costs of building, docking, and parking facilities	2,951,348

Refrigeration, Air-Conditioning, and Heating Systems

Construction costs:²

Refrigeration, air-conditioning, and heating:

Walk-in refrigerated boxes, 280,000 cu ft	\$180,000
Central refrigeration equipment, 131-ton capacity ³	146,000
Air-conditioning and heating systems, 500-ton capacity	300,000
Total construction costs	626,000

Associated costs:

Construction loan, 10 percent of construction costs	62,600
Contingency allowance ³	68,860
Total associated costs	131,460
Total construction and associated costs of refrigeration, air-conditioning, and heating systems	757,460
Grand total construction and associated costs of proposed facilities	3,708,808

¹ Includes exposed aggregate, store front, building signs, feature lighting, and special facade.

² Includes permits, property survey, soil report, testing, inspection, job overhead, and field supervision.

³ 10 percent of total construction costs, overhead and profit, architectural fees, and construction loan.

⁴ Includes engineering, installation, overhead, and profit.

⁵ Includes electrical work from existing disconnects, all necessary controls for individual box applications, and evaporator installations complete with piping and necessary insulation.

(1) *Debt Service.*—It is assumed that the cost of the land, building, docking, and parking facilities will be amortized over a 30-year period at an annual interest rate of 9 percent. A 15-year amortization period and an annual interest rate of 9 percent are assumed on the refrigeration, air-conditioning, and heating systems. Assuming monthly payments, the annual amortization charges for the proposed facilities will be as follows:

Land (\$96.60 per \$1,000 X \$1,200,000)	\$115,920
Building, docking, and parking facilities	
(\$96.60 per \$1,000 X \$2,951,348)	285,100
Refrigeration, air-conditioning, and heating	
systems (\$121.80 per \$1,000 X \$757,460)	92,259
Total	493,279

(2) *Management and Maintenance.*—The annual management and maintenance expenses for the proposed wholesale flower market are estimated as follows:

ESTIMATED ANNUAL MANAGEMENT AND MAINTENANCE EXPENSES

Management:

Salaries:	
Market manager	\$18,000
Secretarial and bookkeeping staff	17,500

Associated expenses:

Legal and auditing	2,500
Travel and business expenses	2,000
Advertising and promotion	1,000
Office equipment and supplies	1,000
Communications (telephone and telegraph)	1,500
Utilities	75,000
Insurance:	
Fire and extended coverage	9,100
Liability	3,300
Security	10,000
Subtotal	140,900

Maintenance:

General market sanitation	20,000
Repairs and upkeep:	
Building, docking, and parking facilities ¹	14,800
Refrigeration system ²	6,500
Heating and air-conditioning ²	21,800
Subtotal	63,100
Total management and maintenance	204,000

¹ Assumed to be 0.5 percent of cost of building, docking, and parking facilities.

² Estimated cost of standard maintenance contract (24-hour emergency service). Includes parts, materials, and labor.

(3) *Real Estate Taxes.*—Tax rates on real property and improvements in Los Angeles County vary depending on the individual juris-

dition. The 1973-74 property tax rates per \$100 of assessed valuation in each of the four communities containing the sites discussed in this report were—

Site	City	Tax rate
Montebello Boulevard	Montebello	\$11.8292
Rosemead-Edison	Rosemead	12.0358
Pellissier Industrial Park	Industry	12.4192
Cerritos	Cerritos	11.6846

For this report a tax rate of \$12.0000 per \$100 of assessed valuation has been assumed. It is assumed that the assessed value of the proposed market will be 25 percent of the initial investment in land and facilities ($0.25 \times \$4,908,808 = \$1,227,202$). Based on these assumptions the estimated annual real estate taxes on the proposed facilities amount to \$147,264 ($(\$12.00 \text{ per } \$100) \times \text{assessed value } (\$1,227,202)$).

Revenue Required.—The estimated annual revenue required to finance and operate the proposed wholesale flower market is shown in table 10. The revenue requirement is based on

the annual costs described previously plus a reserve fund established to insure solvency.

A debt service reserve is usually required by creditors. Collections for this account are proposed at the rate of 10 percent of annual amortization until amortization charges for 1 year have been accumulated.

The accounts for management and maintenance expenses will have to be adjusted annually to reflect current costs. To provide for possible increases in these requirements, it is proposed that reserve accounts be established at the rate of 10 percent annually until a satisfactory reserve has been accumulated.

The revenue required to support the proposed market will be obtained from rents and charges for use of facilities. The rental required is approximated by the costs per square foot shown in table 10. This estimate is included only as a benchmark and is not intended to replace or reflect the detailed analysis and final considerations that will be required to establish equitable rents for market occupants.

TABLE 10.—*Summary of estimated investment costs, annual costs, and costs per square foot for improved Los Angeles wholesale flower market*

Item	Investment cost	Amortization or annual cost		Total annual cost	Annual cost per square foot of—	
		Dollars	Dollars		Dollars	Dollars
Land (20 acres @ \$60,000 per acre)...	1,200,000	¹ 115,920	11,592	127,512	0.59	0.85
Building, docking, and parking facilities	2,951,348	¹ 285,100	28,510	313,610	1.44	2.10
Refrigeration, air-conditioning, and heating systems	757,460	² 92,259	9,226	101,485	.47	.68
Subtotal or average	4,908,808	493,279	49,328	542,607	2.50	3.63
Management and maintenance .....	...	³ 204,000	20,400	224,400	1.03	1.50
Real estate taxes (\$12.0000 per \$100 assessed value) .....	...	⁴ 147,264	14,726	161,990	.74	1.08
Subtotal or average .....	...	351,264	35,126	386,390	1.77	2.58
Total or average	4,908,808	844,543	84,454	928,997	4.27	6.21

¹ Annual amortization based on 30 years @ 9 percent (\$96.00 per \$1,000 of investment assuming monthly payments).

² Annual amortization based on 15 years @ 9 percent (\$121.80 per \$1,000 of investment assuming monthly payments).

³ Itemized in text.

⁴ Assessed value based on 25 percent of investment cost ($0.25 \times \$4,908,808 = \$1,227,202$).

CONCLUSIONS

Inefficiencies in the present market and the high opportunity cost of remaining in its present location have culminated in the apparent need to relocate and develop improved floral wholesaling facilities in Los Angeles. Based on the sales projections in this analysis, the recommended facilities appear to be economically justifiable and necessary to insure the continued existence of a centralized wholesale flower market in this city.

Based on this study, the reasons for developing the improved market may be summarized as follows:

(1) Many facilities in the present market are structurally unsound, antiquated, and unsuited for the operations performed in them.

(2) A high opportunity cost is associated with allocating market properties to their present use. It should be noted that the requirement for borrowed capital to develop the improved facilities would be substantially reduced if the equity in these properties were transferred.

(3) Because of economic and physical con-

straints the present facilities cannot be expanded to meet future needs.

(4) As in the past, efforts to expand the capacity of present facilities can only be achieved at the expense of increased inefficiencies in handling operations.

(5) The fragmentation of the Los Angeles wholesale flower market is imminent unless its occupants are accommodated in improved facilities. Should this occur, the advantages inherent in a centralized wholesale market will be foregone.

(6) Small projects at separate locations will not be of sufficient size to benefit from the potential cost economies associated with the development of consolidated facilities.

Some benefits not measurable in dollars and cents will accrue immediately to the industry as a result of developing improved facilities. They include modern, clean, and pleasant surroundings; adequate facilities for occupants, clientele, and visitors; greater protection from vandalism and theft; and community pride in the wholesale florist industry.

APPENDIX

TABLE 11.—*Estimated and projected population of Los Angeles 5-county area, 1958–2000*¹

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Total
	Millions	Millions	Millions	Millions	Millions	Millions
1958.....	5.7873	0.5782	0.2800	0.4759	0.1761	7.2975
1959.....	5.9278	.6435	.2957	.4958	.1881	7.5509
1960.....	6.0719	.7195	.3117	.5090	.2031	7.8152
1961.....	6.2199	.7892	.3211	.5220	.2180	8.0702
1962.....	6.3563	.8715	.3379	.5401	.2362	8.3420
1963.....	6.5364	.9710	.3592	.5688	.2581	8.6935
1964.....	6.6606	1.0643	.3842	.5969	.2867	8.9927
1965.....	6.7667	1.1441	.4054	.6202	.3113	9.2477
1966.....	6.8107	1.2101	.4215	.6281	.3306	9.4010
1967.....	6.9167	1.2760	.4291	.6472	.3459	9.6149
1968.....	6.9698	1.3294	.4368	.6613	.3547	9.7520
1969.....	7.0275	1.3482	.4529	.6753	.3718	9.8757
1970.....	7.0429	1.4324	.4612	.6855	.3812	10.0032
1971.....	7.0691	1.4380	.4773	.6890	.3944	10.1128
1972.....	7.0062	1.5416	.4855	.6940	.4110	10.1383
1975.....	7.2547	1.6877	.4987	.7498	.4510	10.6419
1980.....	7.6805	1.9397	.5725	.8512	.5747	11.6186
1985.....	8.1907	2.2064	.6535	.9677	.7397	12.7580
1990.....	8.6906	2.4563	.7328	1.0838	.9056	13.8691
1995.....	9.1646	2.6844	.8094	1.1993	1.0716	14.9293
2000.....	9.6525	2.9182	.8833	1.3182	1.2450	16.0172

¹ Intercensal estimates and projections prepared by Population Research Unit, California Department of Finance.

TABLE 12.—*Permit and taxable sales data for florist shops in 5 counties, 1958–72*¹

County and year	Permits	1st quarter	2d quarter	3d quarter	4th quarter	Total	Sales per permit
<i>Los Angeles</i>		<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
<i>County</i>	<i>Number</i>	<i>dollars</i>	<i>dollars</i>	<i>dollars</i>	<i>dollars</i>	<i>dollars</i>	<i>dollars</i>
1958.....	645	4,025	5,126	3,671	4,789	17,611	27.3
1959.....	627	4,832	5,024	4,036	5,332	19,224	30.7
1960.....	628	4,707	5,677	4,250	5,329	19,963	31.8
1961.....	617	4,802	6,446	4,259	6,315	21,822	35.4
1962.....	626	5,140	6,283	4,735	6,747	22,905	36.6
1963.....	618	5,311	6,826	5,137	7,060	24,334	39.4
1964.....	621	6,397	6,757	5,217	6,776	25,147	40.5
1965.....	633	5,944	7,696	5,578	7,392	26,610	42.0
1966.....	639	6,461	8,077	5,798	7,701	28,037	43.9
1967.....	656	7,292	7,855	6,246	8,209	29,602	45.1
1968.....	642	7,299	9,416	6,913	9,065	32,693	50.9
1969.....	643	8,198	9,946	7,249	9,558	34,951	54.4
1970.....	649	9,147	9,775	7,429	9,643	35,994	55.5
1971.....	659	8,299	10,561	7,316	10,439	36,615	55.6
1972.....	675	9,804	10,950	8,480	11,503	40,737	60.4

See footnote at end of table.

TABLE 12.—*Permit and taxable sales data for florist shops in 5 counties, 1958–72¹—Continued*

County and year	Permits	1st quarter	2d quarter	3d quarter	4th quarter	Total	Sales per permit
<i>Orange County</i>	<i>Number</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
1958.....	52	250	371	300	336	1,257	24.2
1959.....	55	314	387	350	362	1,413	25.7
1960.....	57	353	465	365	401	1,584	27.8
1961.....	60	365	458	347	425	1,595	26.6
1962.....	60	397	513	400	462	1,772	29.5
1963.....	61	459	597	449	567	2,072	34.0
1964.....	70	577	721	547	653	2,498	35.7
1965.....	78	692	864	628	779	2,963	38.0
1966.....	88	735	981	711	857	3,284	37.3
1967.....	99	847	1,017	767	977	3,608	36.4
1968.....	102	939	1,300	905	1,090	4,234	41.5
1969.....	115	1,151	1,400	1,021	1,172	4,744	41.3
1970.....	117	1,298	1,432	1,135	1,316	5,181	44.3
1971.....	124	1,317	1,720	1,203	1,579	5,819	46.9
1972.....	131	1,587	1,907	1,429	1,837	6,760	51.6
<i>San Bernardino County</i>							
1958.....	36	214	272	183	273	942	26.2
1959.....	39	258	290	206	287	1,041	26.7
1960.....	42	249	339	232	284	1,104	26.3
1961.....	42	264	322	217	288	1,091	26.0
1962.....	43	264	371	228	316	1,179	27.4
1963.....	42	301	384	266	332	1,283	30.5
1964.....	38	351	416	276	366	1,409	37.1
1965.....	43	340	475	317	405	1,537	35.7
1966.....	47	385	520	366	424	1,695	36.1
1967.....	48	437	508	352	468	1,765	36.8
1968.....	47	460	631	418	558	2,067	44.0
1969.....	49	542	697	458	579	2,276	46.4
1970.....	50	623	710	509	638	2,480	49.6
1971.....	56	621	845	551	704	2,721	48.6
1972.....	55	748	848	562	775	2,933	53.3
<i>Riverside County</i>							
1958.....	27	144	153	95	153	545	20.2
1959.....	22	172	159	103	182	616	28.0
1960.....	22	176	196	129	173	674	30.6
1961.....	27	187	187	135	206	715	26.5
1962.....	29	201	247	132	223	803	27.7
1963.....	25	235	270	187	265	957	38.3
1964.....	28	298	290	238	277	1,103	39.4
1965.....	28	298	384	217	325	1,224	43.7
1966.....	30	346	414	270	350	1,380	46.0
1967.....	29	384	405	252	375	1,416	48.8
1968.....	31	416	440	317	393	1,566	50.5
1969.....	33	470	554	330	465	1,819	55.1
1970.....	33	557	536	385	501	1,979	60.0
1971.....	37	458	719	397	574	2,148	58.1
1972.....	36	654	704	458	607	2,423	67.3

See footnote at end of table.

TABLE 12.—*Permit and taxable sales data for florist shops in 5 counties, 1958–72* ¹—Continued

County and year	Permits	1st quarter	2d quarter	3d quarter	4th quarter	Total	Sales per permit
<i>Ventura County</i>	<i>Number</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
1958.....	15	81	104	77	119	381	25.4
1959.....	15	93	96	79	113	381	25.4
1960.....	18	108	133	85	125	451	25.1
1961.....	23	95	134	107	119	455	19.8
1962.....	17	114	144	103	150	511	30.1
1963.....	20	109	176	127	183	595	29.8
1964.....	20	148	186	150	189	673	33.7
1965.....	21	179	244	161	206	790	37.6
1966.....	25	181	257	169	222	829	33.2
1967.....	26	225	243	173	230	871	33.5
1968.....	28	230	314	222	262	1,028	36.7
1969.....	33	287	357	252	291	1,187	36.0
1970.....	32	294	331	284	287	1,196	37.4
1971.....	33	288	376	295	322	1,281	38.8
1972.....	33	345	417	354	402	1,518	46.0

¹ Statistical Research and Consulting Division, State Board of Equalization, State of California.

TABLE 13.—*Personal income per capita in Los Angeles 5-county area, 1958–72* ¹

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Weighted average ²
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	<i>1,000 dollars</i>
1958.....	2.755	2.190	2.103	2.009	2.288	2.681
1959.....	2.930	2.347	2.160	2.057	2.359	2.781
1960.....	2.944	2.419	2.106	2.133	2.358	2.794
1961.....	3.061	2.525	2.201	2.192	2.299	2.899
1962.....	3.200	2.703	2.287	2.292	2.328	3.028
1963.....	3.302	2.823	2.395	2.349	2.432	3.123
1964.....	3.450	2.877	2.464	2.461	2.459	3.243
1965.....	3.589	2.948	2.558	2.528	2.435	3.354
1966.....	3.832	3.088	2.685	2.623	2.485	3.557
1967.....	3.970	3.351	2.833	2.790	2.631	3.710
1968.....	4.291	3.625	3.111	3.001	2.862	4.008
1969.....	4.585	3.935	3.280	3.141	3.026	4.279
1970.....	4.849	4.143	3.527	3.443	3.185	4.527
1971.....	5.021	4.201	3.749	4.117	3.333	4.713
1972.....	5.485	4.522	3.880	3.847	3.429	5.066

¹ Williams Research Associates and California Department of Finance.

² Weighted by population estimates in table 11.

Sales Projection Analysis

The sales, personal income per capita, and population data in table 4 were used to develop the following prediction equations employed in this analysis:

$$Y_{1t} = -24.519 + 10.936X_{1t} + 2.238X_{3t}, R^2 = 0.988$$

and

$$Y_{2t} = -29.015 + 11.333X_{2t} + 2.552X_{3t}, R^2 = 0.995$$

where

Y_{1t} = total sales in millions of dollars by retail florists in Los Angeles 5-county area in time period t

Y_{2t} = Y_{1t} deflated by Consumer Price Index for nondurables less food (1967 = 100) in time period t

X_{1t} = weighted average of annual personal income per capita in thousands of dollars in Los Angeles 5-county area in time period t

X_{2t} = X_{1t} deflated by Consumer Price Index for nondurables less food (1967 = 100) in time period t

X_{3t} = population in millions in Los Angeles 5-county area in time period t

These equations quantify the relationship in the Los Angeles five-county area between personal income per capita, population, and total sales by retail florists. According to the first equation, an increase in personal income per capita of \$1,000 (holding population constant) is associated with an additional \$10.9 million in sales by retail florists. Similarly an increase in population of 1 million (holding personal income per capita constant) is associated with an additional \$2.2 million in sales by retail florists. Of course, decreases in these variables have the opposite effect.

The second equation in which deflated sales and income variables were used can be interpreted similarly. This equation quantifies the relationship between real growth in sales, real income per capita, and population in the five-county area.

These equations quantify the relationship that existed between the variables during the 15-year period (1958-72). If it is assumed that these relationships will hold into the near future, these equations can be used to predict sales by retail florists in the five-county area by inserting projected personal income per capita and population data into the equations.

TABLE 14.—Refrigerated box requirements

Box No. ¹	Width	Length	Volume	Height	Volume
	Feet	Feet	Square feet	Feet	Cubic feet
1.....	40	125	5,000	12	60,000
2.....	15	50	750	10	7,500
3.....	40	40	1,600	10	16,000
4.....	15	60	900	10	9,000
5.....	15	30	450	10	4,500
6.....	15	30	450	10	4,500
7.....	15	70	1,050	10	10,500
8.....	15	40	600	10	6,000
9.....	15	70	1,050	10	10,500
10.....	25	40	1,000	10	10,000
11.....	15	30	450	10	4,500
12.....	15	40	600	10	6,000
13.....	15	80	1,200	10	12,000
14.....	15	40	600	10	6,000
15.....	15	30	450	10	4,500
16.....	15	30	450	10	4,500
17.....	20	70	1,400	10	14,000
18.....	12	40	480	10	4,800
19.....	12	40	480	10	4,800

¹ See footnote at end of table.

TABLE 14.—*Refrigerated box requirements—Continued*

Box No. ¹	Width	Length	Volume	Height	Volume
	Feet	Feet	Square feet	Feet	Cubic feet
20.....	12	40	480	10	4,800
21.....	12	20	240	10	2,400
22.....	12	20	240	10	2,400
23.....	12	20	240	10	2,400
24.....	12	20	240	10	2,400
25.....	12	20	240	10	2,400
26.....	12	40	480	10	4,800
27.....	12	20	240	10	2,400
28.....	12	20	240	10	2,400
29.....	12	20	240	10	2,400
30.....	12	20	240	10	2,400
31.....	12	30	360	10	3,600
32.....	12	30	360	10	3,600
33.....	12	25	300	10	3,000
34.....	12	25	300	10	3,000
35.....	20	40	800	10	8,000
36.....	20	40	800	10	8,000
37.....	25	80	2,000	10	20,000
Total.....	...	...	27,000	...	280,000

¹Keyed to box numbers shown in figure 11. →